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ET082

GSM/GPRS COMMUNICATOR

SAFETY INSTRUCTIONS

Please read and follow these safety guidelines to safeguard yourself and others:

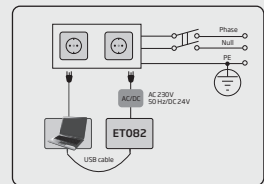
- GSM/GPRS communicator ET082 (later referred to as “the device” or “the communicator”) contains a built-in radio transceiver operating in GSM 850/900/1800/1900 MHz bands.
- DO NOT use the device where it can cause potential danger and interfere with other devices – such as medical devices.
- DO NOT use the device in hazardous environment.
- DO NOT expose the device to high humidity, chemical environment or mechanical impact.
- DO NOT attempt to repair the device yourself – any repairs must be carried out by fully qualified personnel only.



Please, use the 10-24V 300 mA DC power supply unit that meets the EN 60950-1 standard. Any additional device you connect to the device, such as a computer, must also be powered by an EN 60950-1 approved supply. When connecting the power supply to the device, mind the polarity terminals. DO NOT switch the polarity terminals places.



External power supply 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 and the disconnection current 5A.



Disconnect the mains power before installing. Never install or carry out maintenance during stormy weather. The electric socket that powers the device must be easily accessible.



To switch the device off, unplug the external electric power supply or any other linked equipment that the device is powered from.



A blown fuse cannot be replaced by the user. The replacement fuse has to be of the kind indicated by the manufacturer (fuse F1 model – MINISMDC050F 0.5A).



If you use a computer for the device configuration, it must be earthed.



The WEEE (Waste Electrical and Electronic Equipment) marking on this product (see left) 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 of 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.

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Limited Liability

The buyer agrees that the device will reduce the risk of fire, theft, burglary or other danger but that it does not guarantee against the occurrence of such events.

“ELDES UAB” will not take any responsibility for the loss of personal effects, property or revenue whilst using the device. The liability of “ELDES UAB” is limited to the value of the device purchased.

“ELDES UAB” is not affiliated with any mobile/wireless/cellular provider and is therefore not responsible for the quality of such services.

Manufacturer Warranty

The device carries a 24-month manufacturer warranty from “ELDES UAB”.

The warranty begins the day the device is purchased by the user and the receipt must be retained as proof of purchase date. The warranty remains valid only if the device is used as intended, following all guidelines outlined in this manual and in accordance with the operating conditions specified.

The warranty is void if the device has been exposed to mechanical impact, chemicals, high humidity, fluids, corrosive and hazardous environments or force majeure factors.

Dear Customer,

Thank you for choosing to purchase the GSM/GPRS communicator ET082. Your thoughtful decision will ensure reliable solution for many years as all ELDES products are manufactured to meet the highest standards.

We are confident that you will be completely satisfied with your product. However, in the unlikely event that you do experience a problem, please contact the dealer from whom you made your purchase.

Contents of Pack

Item	Quantity
1. ET082	1
2. User manual.....	1
3. GSM/GPRS antenna	1

Not included:

- SIM card – we recommend you get a contract SIM, not Pay As You Go.
- miniUSB cable – can be obtained from your local distributor.

1. GENERAL INFORMATION

ET082 is a micro-controller based device intended to replace the third-party PSTN/non-GSM alarm panel communication method via the GSM and IP-based networks.

Examples of using the system:


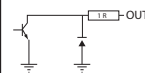
- Property security.
- Non-GSM/PSTN alarm panel communication replacement by GSM, SMS, GPRS, CSD or Ethernet communication methods
- Backup connection for PSTN (land line).
- Any electrical appliance control: lighting, watering, heating etc.
- Remote reboot of the “frozen” systems, such as computer network or a server.

Main features

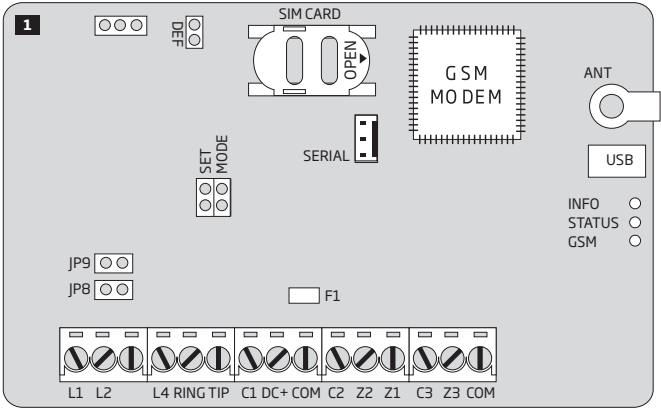
- Configuration by PC and SMS text message.
- Supported communication methods: Voice Calls (direct channel or data buffering via GSM audio), SMS, CSD, GPRS network and Ethernet via ELAN3-ALARM device.
- PSTN line state supervision.
- Supported communication protocols: Ademco Contact ID, 4+2, Scancom, EGR100, Kronos, SIA IP.
- Alarm panel wiring via PSTN (RING/TIP terminals) or keybus (serial data) interface.
- 3 inputs customizable as NC (normally-open) or NO (normally-closed) with customizable alarm/restore Contact ID code and text for monitoring station notification and user by SMS text message respectively.
- 3 open-collector outputs for electrical appliance control, non-GSM alarm panel arming/ disarming (keyswitch) or alarm/restore event report.
- Manual output control by free of charge phone call and SMS text message.
- Automatic output control in accordance with a specified event.
- Up to 3 users for minor device configuration by SMS text messages, acceptance of input alarm SMS text messages, output control by SMS text message and free of charge phone call.
- Up to 5 users for SMS text message containing Contact ID data converted to user-understandable text acceptance.
- Up to 2 administrators for remote device configuration initiation.
- Event log indicating communication activity in real-time.
- Periodic self-test notification to monitoring station.
- Automatic device restart.

2. TECHNICAL SPECIFICATIONS

2.1. Electrical and Mechanical Characteristics

Supply voltage	10-24V  300mA max
Peak current	Up to 700mA
Current used in idle state	Up to 120mA
GSM modem frequency	850/900/1800/1900 MHz
Number of “low” level (negative) digital inputs	3
Allowable input values voltage	0... 1.45V; current: 0.8... 0.6mA
Number of outputs	3
Output C1 - C3 circuit	 Open collector output. Output is pulled to COM when turned ON.
Maximum commuting output values	Voltage: 30V ; current: 50mA
Generated phone line values	Voltage: 48V; current: 25mA; impedance: 270Ω
Dial tone frequency of generated phone line	425 Hz
Dimensions	129 x 78 x 18 mm
Operating temperature range	-20...+55 °C
Humidity	0-90% RH @ 0... +40 °C (non-condensing)

2.2. Main Unit, LED Indicator and Connector Functionality



Main Unit Functionality	
DEF	Pins for restoring default settings
SIM CARD	SIM card slot / holder
GSM MODEM	GSM network 850/900/1800/1900 MHz modem
ANT	GSM antenna SMA type connector
SET - MODE	Pins for Basic mode communication method set up
SERIAL	RS232 interface pins for ELAN3-ALARM connection
USB	Mini USB port
INFO	Light-emitting diode indicating data transmission/ conversion activity
STATUS	Light-emitting diode indicating micro-controller status
GSM	Green light-emitting diode indicating GSM signal strength
JP8 - JP9	Pins for PSTN state supervision set up
F1	0.5A fuse

Connector Functionality	
L1 - L4	Terminals for connection to PSTN/PBX
RING - TIP	Terminals for connection to alarm panel's RING/TIP interface
C1 - C3	Open-collector output terminals
DC+	Positive power supply terminal
COM	Common terminal
Z2	Input terminal / DATA terminal for alarm panel connection via keybus interface
Z1	Input terminal / CLOCK terminal for alarm panel connection via keybus interface
Z3	Input terminal

2.3. LED Indicator Functionality

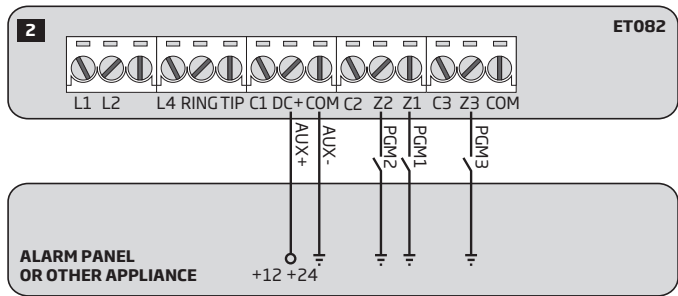
INFO indication	Description
OFF	Idling
Flashing several times per sec.	Transmitting data, retrieved from alarm panel, to the monitoring station
Steady ON	Converting Contact ID data to user-understandable text

STATUS indication	Description
OFF	No mains power / micro-controller fault
Flashing several times per sec.	SIM card not present / PIN code enabled
Steady ON	Device operating successfully

GSM indication	GSM signal strength
OFF	No GSM signal
Flashing every 3 sec.	Poor
Flashing every 1 sec.	Medium
Flashing several times per sec.	Good
Steady ON	Excellent

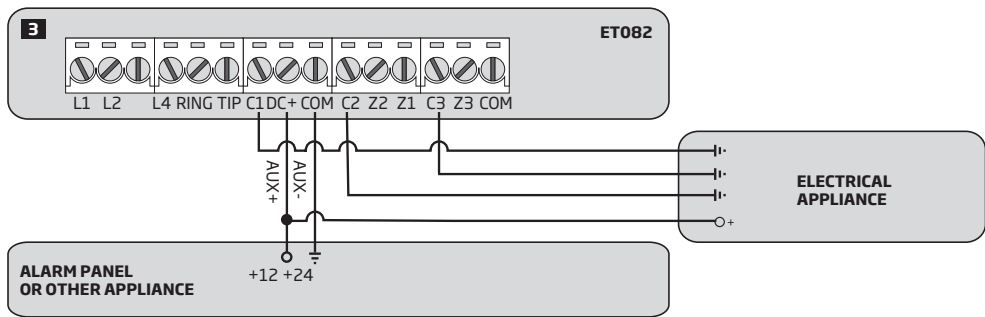
2.4. Wiring Diagrams

2.4.1. General Wiring



ATTENTION: When connecting ET082 power supply terminals to alarm panel's auxiliary output (AUX), ensure that the output is able to maintain peak current consumption of up to 700mA. Otherwise, please use an external power supply unit for ET082.

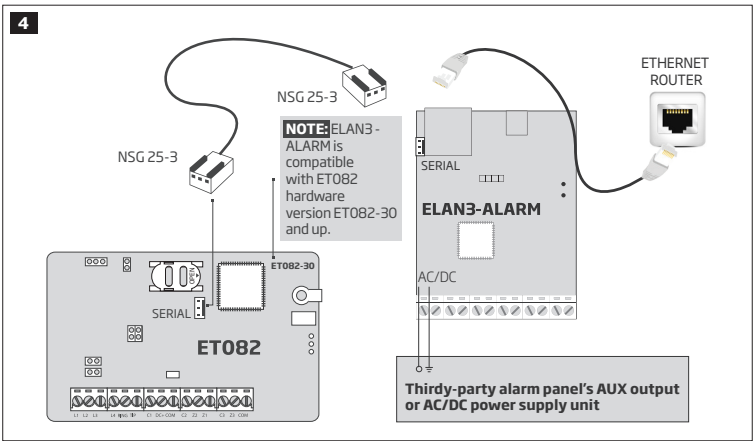
2.4.2. Output Wiring



2.4.3. ELAN3-ALARM

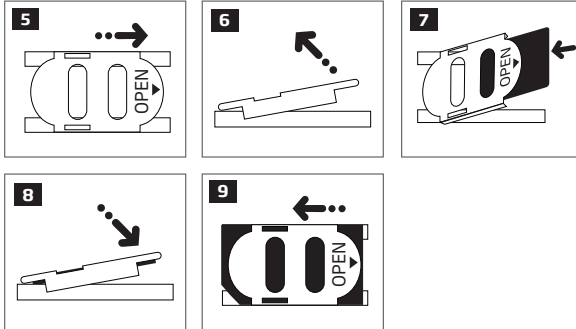
Compatibility: ELAN3-ALARM v0.4 and up + ET082 v01.12.00 and up; hardware version ET082-30 and up.

For more details on ELAN3-ALARM device

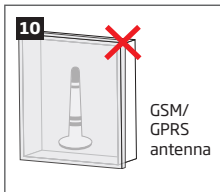


3. INSTALLATION

- The device can be installed in a metal or non-flammable cabinet only.
 - The device should be installed indoors, in stationary environment ONLY.
 - For terminal connection, use 0.50 mm² 1 thread unshielded cable of up to 100 meters length.
1. Disable the PIN code of the SIM card by inserting it into a mobile phone and following the proper menu steps. Ensure that the additional services, such as **voice mail, call forwarding, report on missed/busy calls („call catcher“)** are disabled on the SIM card. For more details on how to disable these services, please contact your GSM operator.
 2. Once the PIN code is disabled, place the SIM card into the SIM CARD slot of the device.



3. Place the device inside the metal enclosure.
4. Connect the GSM/GPRS antenna. Based on the type of the GSM/GPRS antenna supplied with ET082 device, follow the recommendations for the antenna installation:



Never install in the following locations:

- inside the metal cabinet
- closer than 20 cm from the metal surface and/or power lines

5. Wire up ET082 device power supply and communication terminals to the third-party alarm panel (see **2.3. Wiring Diagrams** and **6. COMMUNICATION WIRING METHODS** for more details).
6. Power up the device and wait until indicator STATUS lights up.
7. The device starts up in less than a minute. Indicator STATUS should be steady ON indicating successful micro-controller operation.
8. The illuminated or flashing indicator or GSM indicates that the device has successfully registered to the GSM network. To find the strongest GSM signal, place the GSM/GPRS antenna and follow the indications provided by GSM indicator (see **2.2. Main Unit, LED Indicator and Connector Functionality** for more details).
9. Select and configure the communication mode and method (see **7. COMMUNICATION MODES AND METHODS** for more details)

ATTENTION: When connecting ET082 power supply terminals to alarm panel's auxiliary output (AUX), ensure that the output is able to maintain peak current consumption of up to 700mA. Otherwise, please use an external power supply unit for ET082

ATTENTION: The device is NOT compatible with pure 3G SIM cards. Only 2G/GSM SIM cards and 3G SIM cards with 2G/GSM profile enabled are supported. For more details, please contact your GSM operator.

NOTE: For maximum device reliability we recommend you do NOT use a Pay As You Go SIM card. Otherwise, in the event of insufficient credit balance on the SIM card, the device would fail to make a phone call or send messages.

NOTE: We advise you to choose the same GSM SIM provider for your device as for your mobile phone. This will ensure the fastest, most reliable SMS text message delivery service and phone call connection.

NOTE: Even though ET082 installation process is not too complicated, we still recommend to perform it by a person with basic knowledge in electrical engineering and electronics to avoid any device damage.

4. GENERAL OPERATIONAL DESCRIPTION

ET082 communicator is used with third-party PSTN/non-GSM alarm panels as a communication gateway via GSM and IP-based networks for data transmission from the alarm panel to monitoring station and/or preset user phone number by SMS text message.

The device comes equipped with PSTN line state monitoring feature that in case of PSTN line loss would result in switching to a pre-configured communication method, such as GSM, SMS, GPRS, until the PSTN line is restored followed by notifying the monitoring station and/or preset user phone number by SMS text message. The device can detect a physical PSTN line cut-off or even when a dial tone is still present due to temporary service suspension by the service provider for technical or billing reasons (requires Smart PSTN module).

The device has 3 digital inputs (normally closed or normally open) for alarm device's PGM output or detection device connection, such as magnetic door contact. By connecting the input to a non-GSM alarm panel's PGM output, up to 3 preset user phone numbers will be able to receive an SMS text message as well as to notify the monitoring station regarding arming/disarming and other events depending on the alarm panel configuration.

The device comes equipped with 3 open-collector outputs allowing up to 3 preset user phone numbers to turn ON or OFF the electrical appliances, such as heating, lighting, lift the gates, blinds by free of charge phone call or SMS text message. Alternatively, the outputs can be controlled automatically based on the associated ET082 input alarm/restore event. The outputs can also be used for PSTN or GSM connection loss indication as well as for arming/disarming by connecting an output to one of the alarm panel's zones pre-configured as a keyswitch.

The device will ignore SMS requests and phone calls coming from non-preset phone numbers.

5. CONFIGURATION METHODS

5.1. SMS Text Messages



!!! In this user manual the underscore character “_” represents one space character. Every underscore character must be replaced by a single space character. There must be no spaces or other unnecessary characters at the beginning and at the end of the SMS text message.

SMS

In order to configure and control the device by SMS text message, send the text command to the ET082 device phone number from one of the preset administrator phone numbers. The structure of SMS text message consists of 4-digit SMS password (the default SMS password is 0000 - four zeros), the parameter and value. For some parameters the value does not apply e. g. STATUS. The variables are indicated in lower-case letters, while a valid parameter value range is indicated in brackets.

5.2. ELDES Configuration Tool Software



Software ELDES Configuration Tool is intended for ET082 communicator configuration locally via USB port or remotely via GPRS network or Ethernet connection (ELAN3-ALARM device required). This software simplifies system configuration process by allowing to use a personal computer in the process. Before starting to use *ELDES Configuration Tool* software, please read the user guide provided in the software's HELP section.

5.2.1. Administrator Phone Numbers

The device supports 2 administrator phone numbers identified as Admin 1 and Admin 2. When the phone number is set, the administrator will be able to initiate remote configuration session by SMS text message.

The supported phone number format is the following:

- **International (with plus)** - The phone numbers must be entered starting with plus and an international country code in the following format: +[international code][area code][local number], example for UK: +441709111XXXX.
- **International (with 00)** - The phone numbers must be entered starting with 00 and an international country code in the following format: 00[international code][area code][local number], example for UK: 00441709111XXXX.
- **Local** - The phone numbers must be entered starting with an area code in the following format: [area code][local number], example for UK: 01709111XXXX.

Set administrator phone number



This operation may be carried out from the PC using the *ELDES Configuration Tool* software.

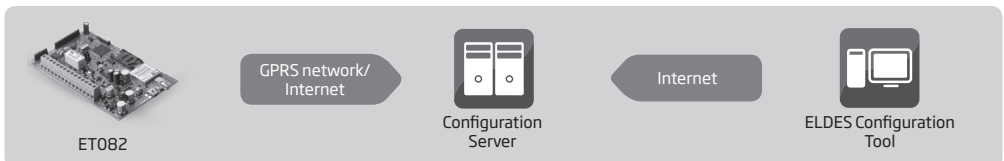
NOTE: The administrator phone numbers are used for remote configuration session initiation ONLY. Admin 1/Admin 2 phone numbers CAN NOT be used for output control or input alarm/restore SMS text message acceptance.

5.2.2. Remote System Configuration via Configuration Server

ATTENTION: The system will NOT send any data to monitoring station while configuring the system remotely via GPRS network or Ethernet connection. However, during the configuration session, the data messages are queued up and transmitted to the monitoring station after the configuration session is over.

Before configuring ET082 remotely using GPRS network or Ethernet (using ELAN3-ALARM) connection, please ensure that:

- SIM card is inserted into SIM CARD slot of ET082 device (see **2.2. Main Unit, LED Indicator and Connector Functionality**).
- Mobile internet service (GPRS) is enabled on the SIM card - required for GPRS network connection only.
- APN, user name and password are set up - required for GPRS network connection only.
- Power supply is connected to ET082.
- At least Admin 1 phone number is set up (see **5.2.1. Administrator Phone Numbers**)



Remote system configuration via GPRS network connection



ET082 & ELAN3-
ALARM

Ethernet/
Internet



Configuration
Server

Internet



ELDES Configuration
Tool

Remote system configuration via Ethernet connection using ELAN3-ALARM

- a) In order to activate a remote connection between ET082 device and ELDES configuration server, please send the following SMS text message from preset administrator phone number. Upon the successful SMS text message delivery, the device establishes a connection session for 20 minutes.

Initiate connection
with ELDES server

GPRS

SMS text message content:

ssss_STCONFIG

Value: ssss - 4-digit SMS password.

Example: 1111_STCONFIG

ELAN3
ALARM

SMS text message content:

ssss_STCONFIG:ELAN

Value: ssss - 4-digit SMS password.

Example: 1111_STCONFIG:ELAN

- b) Once the SMS text message containing device IMEI number and confirming a successful connection establishment is received, please run *ELDES Configuration Tool* software.
- c) Click **Remote Connection Management...**
- d) In the next window, select **Connect to Remote Server (recommended)** and click **Next** button.
- e) In **Device IMEI** entry, enter the IMEI number previously received by SMS text message.
- f) Click **Continue** button.
- g) By default, upon the successfully established connection, the system will prompt for an SMS password.
- h) By entering a valid SMS password, the device grants access to full configuration remotely.
- i) **Remote Configuration Management** window displays all performed configuration actions and connectivity information.

REMOTE CONNECTION

Server Type: **Not Running**

Device Status: --

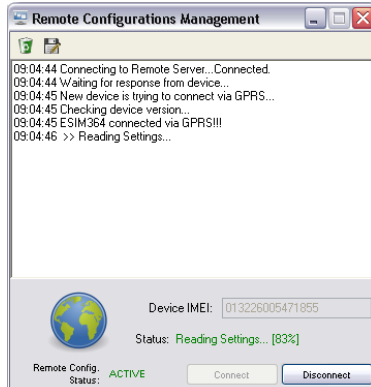
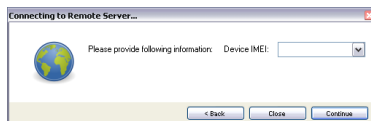
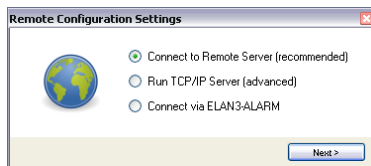
Device Type: --

Firmware Version: --

Current State: --

Open Configuration (N/A)

Remote Connection Management...



5.2.3. Remote System Configuration via Direct Connection

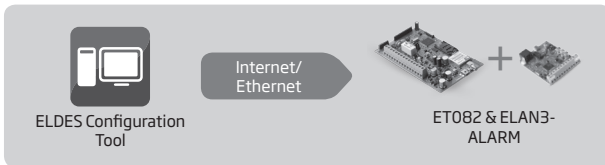
ATTENTION: The system will NOT send any data to monitoring station while configuring the system remotely via GPRS network or Ethernet connection. However, during the configuration session, the data messages are queued up and transmitted to the monitoring station after the configuration session is over.

Before configuring ET082 remotely using GPRS network or Ethernet (using ELAN3-ALARM) connection, please ensure that:

- SIM card is inserted into SIM CARD1 slot of ET082 device (see **2.2. Main Unit, LED Indicator and Connector Functionality**) - required for GPRS network connection only.
- Mobile internet service (GPRS) is enabled on the SIM card - required for GPRS network connection only.
- APN, user name and password are set up - required for GPRS network connection only.
- At least Admin 1 phone number is set up (see **5.2.1. Administrator Phone Numbers**) - required for GPRS network connection only.
- Machine running *ELDES Configuration Tool* software provides access via public IP address.
- TCP port 5000 is forwarded for the IP address of the machine running *ELDES Configuration Tool* software.
- Power supply is connected to ET082.



Remote system configuration via GPRS network connection



Remote system configuration via Ethernet connection

5.2.3.1. Establishing Remote Connection Between ET082 System and ELDES Configuration Tool via GPRS Network

GPRS

- Run *ELDES Configuration Tool* software.
- Click **Remote Connection Management...**
- In the next window, select Run **TCP/IP Server (advanced)** and click Next button.
- Set a TCP port for listening for incoming connections or leave the default TCP port 5000.
- Click **Continue** button.
- In order to activate a remote connection between ET082 system and *ELDES Configuration Tool* software running as remote configuration server, please send the following SMS text message from preset user phone number. Upon the successful SMS text message delivery, the system establishes a connection session for 20 minutes.

Initiate connection
with ELDES
Configuration Tool

GPRS

SMS text message content:

`ssss_STCONFIG: add.add.add.add:pprrt`
or

`ssss_STCONFIG:host-name:pprrt`

Value: ssss - 4-digit SMS password;
add.add.add.add - public IP address
of the machine running ELDES
Configuration Tool software; pprrt -
TCP port number, range - [1... 65535];
host-name - public host-name of the
machine running *ELDES Configuration*
Tool software.

Example: 1111_STCON-
FIG:62.80.115.102:4522

- By entering a valid SMS password, the device grants access to full configuration remotely.
- Remote Configuration Management** window displays all performed configuration actions and connectivity information.

REMOTE CONNECTION

Server Type: **Not Running**
Device Status: --
Device Type: --
Firmware Version: --
Current State: --

Open Configuration (N/A)

Remote Connection Management...

Remote Configuration Settings



- ☐ Connect to Remote Server (recommended)
☒ Run TCP/IP Server (advanced)
☐ Connect via ELAN3-ALARM

Next >

Running TCP/IP Server...



Please provide following information: Port: 5000

< Back Close Continue

Security Request



[TCP/IP connection] Please enter code/password for configuration:

Remaining Attempts: 9

Close Continue

TCP/IP Server Management



09:12:29 Server active
09:14:23 New connection pending...
09:14:24 New device is trying to connect via GPRS...
09:14:24 Checking device version...
09:14:38 ESIM 364 connected via GPRS!!!



Port: 20020 IP: 192.168.3.150

Status: **Reading Settings...** [35%]

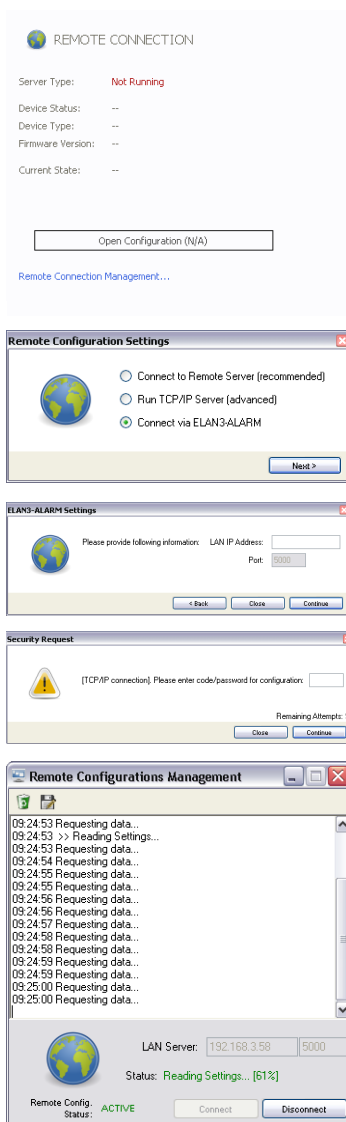
Remote Config
Status: **ACTIVE**

Start Stop

5.2.3.2. Establishing Remote Connection Between ET082 System and ELDES Configuration Tool via Ethernet Using ELAN3-ALARM



- Run *ELDES Configuration Tool* software.
- Click **Remote Connection Management...**
- In the next window, select **Connect via ELAN3-ALARM** and click **Next** button.
- Click **Continue** button.
- In **LAN IP Address** entry, enter the public IP address of ELAN3-ALARM device and click **Continue** button.
- By entering a valid SMS password, the device grants access to full configuration remotely.
- Remote Configuration Management** window displays all performed configuration actions and connectivity information.



5.2.4. Ending the Configuration Process



After the system configuration is complete, use one of the following methods to end the configuration process:

- Click **Disconnect** or **Stop** button and close *ELDES Configuration Tool* software;
- The session will automatically expire in 20 minutes. Before the last 5 minutes, the software will offer the user to extend the session for another 20 minutes.
- Alternatively, the connection with the server can be terminated at any time by sending an SMS text message.



SMS text message content:
`ssss_ENDCONFIG`
Value: ssss – 4-digit SMS password.
Example: `1111_ENDCONFIG`

Once the session is expired or terminated, the system will reply with an SMS text message confirming the end of the session.

6. COMMUNICATION WIRING METHODS

ET082 communicator supports one of the following communication wiring methods:

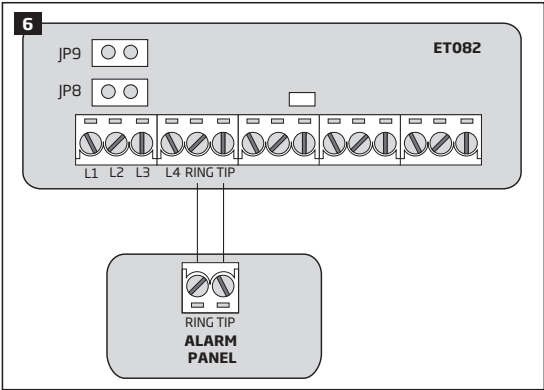
- **RING/TIP interface** - The alarm panel is linked up with ET082 communicator via the RING and TIP terminals simulating the connectivity of the PSTN line. For more details, please refer to **6.1. RING/TIP Interface**
- **Keybus interface** - The alarm panel is linked up with ET082 communicator via the keybus (serial data) interface just like the alarm panel accessory, such as keypad. For more details, please refer to **6.2. Keybus Interface**

ATTENTION: Only one of the aforementioned methods is supported at a time.

6.1. RING/TIP Interface

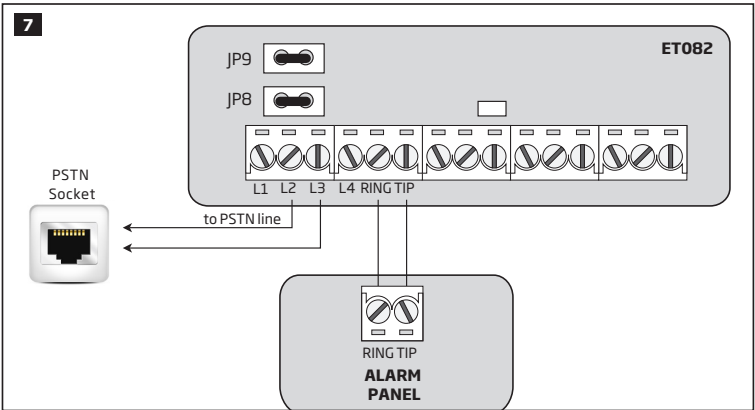
Using this communication wiring method, the communicator simulates the PSTN line presence for the alarm panel. Depending on the PSTN line accessibility in the installation area and user requirements, the communicator can be wired to the alarm panel using one of the following diagrams:

- **No PSTN line** - The communication link between the alarm panel and the monitoring station is established using ET082 device in the middle. The communicator retrieves data from the alarm panel and transmits it to the monitoring station via the pre-configured communication method. PSTN line is completely excluded from the communication process.



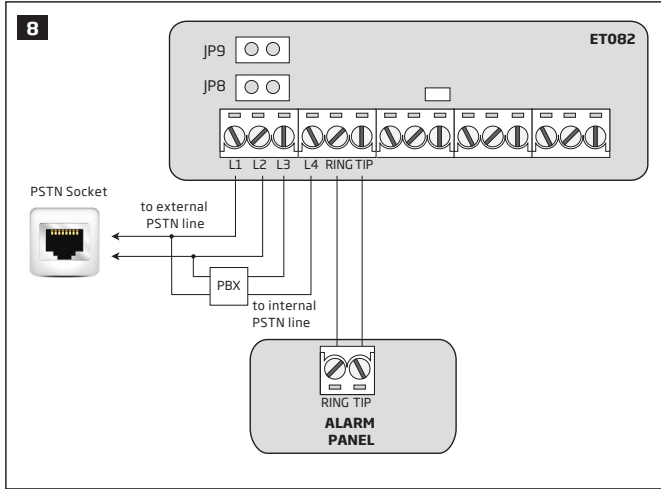
1. Connect the communicator's RING and TIP terminals to the alarm panel's RING and TIP terminals respectively.
2. DOT NOT set any jumpers on the communicator's JP8 and JP9 pins.

- **With PSTN Line Supervision** - The communication link between the alarm panel and the monitoring station is established directly via PSTN line adding PSTN state (terminals L3 and L4) supervision provided by ET082 communicator. The communicator is not involved in the communication process while PSTN connectivity is available. In case of PSTN loss (terminals L3 and L4), the communicator will take over the communication link and continue data transmission via the pre-configured communication method as described in **No PSTN Line** until PSTN connectivity is restored.



1. Connect the communicator's RING and TIP terminals to the alarm panel's RING and TIP terminals respectively.
2. Connect L3 and L4 terminals to the PSTN socket.
3. Set the jumpers on the communicator's JP8 and JP9 pins.

- **With External PSTN Line Supervision** - The communication link between the alarm panel and the monitoring station is established directly via PSTN line connected via PBX (private branch exchange) adding external PSTN state (terminals L1 and L2) supervision provided by ET082 communicator. The communicator is not involved in the communication process while PSTN connectivity is available. In case of external PSTN loss (terminals L1 and L2), the communicator will take over the communication link and continue data transmission via the pre-configured communication method as described in **No PSTN Line** until PSTN connectivity is restored. In case of internal PSTN loss (terminals L3 and L4), the PSTN connectivity would remain present.



1. Connect the communicator's RING and TIP terminals to the alarm panel's RING and TIP terminals respectively.
2. Connect the communicator's L1 and L2 terminals in parallel to the external PSTN line of the PBX connected to PSTN socket.
3. Connect L3 and L4 terminals to the internal PSTN line of the PBX.
4. DOT NOT set any jumpers on the communicator's JP8 and JP9 pins.

For more details on how the PSTN loss is detected and managed by the communicator, please refer to **14. PSTN CONNECTION STATE MONITORING**.

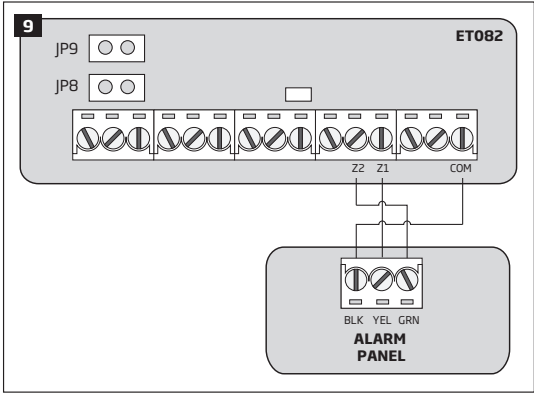
6.2. Keybus Interface

ATTENTION: This communication wiring method is supported by hardware version ET082-30 and up.

NOTE: PSTN connectivity is NOT supported when using this communication wiring method.

Using this communication wiring method Z1 and Z2 terminals convert to keybus interface for alarm panel connection. In such case Z1 and Z2 terminals cannot be used as digital inputs.

The communicator retrieves serial data from the alarm panel and transmits it to the monitoring station via the pre-configured communication method.



1. Connect the communicator's Z2 and Z1 terminals to the alarm panel's GRN and YEL terminals respectively.
2. If the communicator is powered from the external power supply unit, connect the communicator's COM terminal to alarm panel's BLK (on some alarm panel models GND) terminal.
3. Select the alarm panel model from the list of the supported third-party alarm panels supported by the communicator:
 - Paradox SP*
 - Paradox EV0192*
 - DSC 1616/1832/1864
 - DSC PC585
4. Set up the Account number, which reflects individual alarm panel's partition, on the communicator..

To manage the aforementioned parameters, please refer to the following configuration parameter.

Select third-party alarm panel model

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

* Supported by device s/n: and up.

7. COMMUNICATION MODES AND METHODS

ET082 communicator supports Basic and Advanced modes and methods providing a variety of communication protocols. Please, note that some protocols and communication methods are not supported in Basic mode and vice versa.

Basic mode – The communication methods supported by Basic Mode can be set as primary connection only. Backup connections are NOT available in this mode.

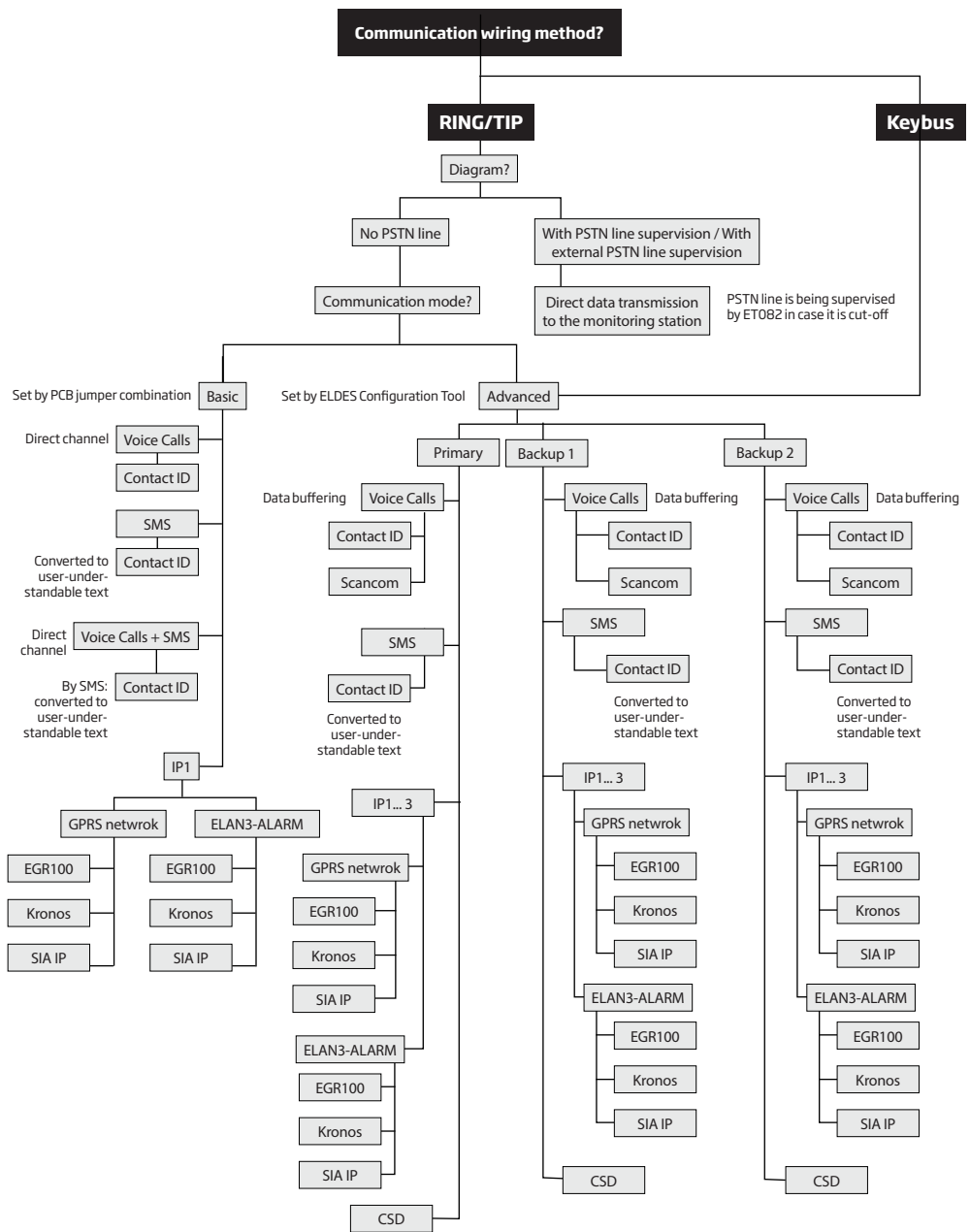
Advanced mode – The communication methods supported by Advanced Mode can be set as primary or backup connection. The user can set up to 2 backup connections in any sequence order.

Basic mode*		Advanced mode	
Method	Protocol	Method	Protocol
Voice Calls (direct channel via GSM audio)	Ademco Contact ID, 4+2	Voice Calls (GSM audio with data buffering)	Ademco Contact ID, Scan-com**
SMS – up to 5 user phone numbers	Ademco Contact ID (converted to user-understandable text)	SMS – up to 5 user phone numbers***	Ademco Contact ID (converted to user-understandable text)
IP (GPRS/Ethernet via ELAN3-ALARM) – 1 destination IP address	EGR100, Kronos, SIA IP	IP (GPRS/Ethernet via ELAN3-ALARM) – up to 3 destination IP addresses	EGR100, Kronos, SIA IP
Voice Calls (direct channel via GSM audio) + SMS – up to 5 user phone number	Ademco Contact ID (by SMS: converted to user-understandable text)	CSD	

* Supported only when ET082 is linked up with the alarm panel via RING/TIP interface (see **6.1. RING/TIP Interface**). Does NOT support notifications to the preset user by SMS text message and data report to the monitoring station regarding PSTN line loss/restore events (see **14. PSTN CONNECTION STATE MONITORING**).

** Supported only when ET082 is linked up with the alarm panel via RING/TIP interface (see **6.1. RING/TIP Interface**).

*** Can be used with any communication method of Advanced mode simultaneously (see **7.2.2. SMS Method**)



7.1. Basic Mode

The communication method of Basic mode is selected by jumper position on the SET/MODE pins on board. Basic mode features the following communication methods:

- Voice Calls
- SMS
- Voice Calls + SMS
- IP

ATTENTION: Basic mode is supported only when ET082 is linked up with the alarm panel via RING/TIP interface.

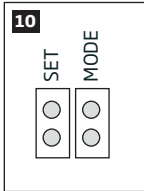
NOTE: The jumper position on SET/MODE pins becomes ineffective as soon as Advanced mode is enabled.

7.1.1. Voice Calls Method

Using this method the communicator retrieves Ademco Contact ID or 4+2 data from the alarm panel and transmits it to the monitoring station via GSM audio direct channel without influencing the data itself. Before proceeding with any further configuration, please complete the steps provided in **6.1. RING/TIP Interface**.

To set the communicator to transmit data using this communication method, please proceed as follows:

1. On alarm panel: Enable Ademco Contact ID or Ademco 4+2 mode.
2. On alarm panel: Set Account number..
3. On alarm panel: Set the monitoring station phone number (-s) in one of the following formats:
 - **International (with 00)** - The phone numbers must be entered starting with 00 and an international country code in the following format: 00[international code][area code][local number], example for UK: 00441709111XXXX.
 - **Local** - The phone numbers must be entered starting with an area code in the following format: [area code][local number], example for UK: 01709111XXXX.
4. On ET082: Ensure that NO jumpers are set on SET/MODE pins on board.



5. If required to override the Account number set on the alarm panel, please use Voice Calls communication method provided by Advanced mode (see **7.2.1. Voice Calls Method**). In addition, please refer to **9. MONITORING STATION PHONE NUMBER AND ACCOUNT REPLACEMENT**.

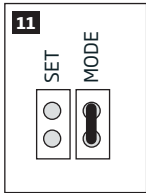
ATTENTION: In the event of failure using this communication method, please refer to **8. GSM MODEM SETTINGS** or use Voice Calls communication method provided by Advanced mode (see **7.2.1. Voice Calls Method**).

7.1.2.SMS Method

Using this method the communicator retrieves Ademco Contact ID data from the alarm panel, converts it to user-understandable text and delivers to up to 5 preset users by SMS text message. Before proceeding with any further configuration, please complete the steps provided in **6.1. RING/TIP Interface**.

To set the communicator to transmit data using this communication method, please proceed as follows:

1. On alarm panel: Enable Ademco Contact ID mode.
2. On alarm panel: Set random Account number..
3. On alarm panel: Set random monitoring station phone number; single digit is sufficient.
4. On ET082: Set a jumper on **MODE** pins on board.



5. On ET082: Connect the device to the computer via USB cable and run *ELDES Configuration Tool software*.
6. On ET082: Open **Messaging Settings** section and proceed as follows:
 - a. Set up to 5 user phone numbers that will be permitted to receive the data converted to user-understandable text by SMS text message. The supported phone number formats are the following:
 - **International (with plus)** - The phone numbers must be entered starting with plus and an international country code in the following format: +[international code][area code][local number], example for UK: +441709111XXXX.
 - **International (with 00)** - The phone numbers must be entered starting with 00 and an international country code in the following format: 00[international code][area code][local number], example for UK: 00441709111XXXX.
 - **Local** - The phone numbers must be entered starting with an area code in the following format: [area code][local number], example for UK: 01709111XXXX.
 - b. Manage SMS text message content reflecting the Ademco Contact ID data message structure.
 - c. Based on the alarm panel's documentation, ensure that all CID event codes supported by the alarm panel are added under the **Messaging Settings** section, otherwise the communicator will be unable to deliver a certain event

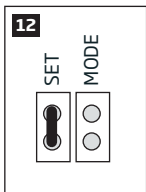
For more details on the parameters located under **Messaging Settings** section, please refer to *ELDES Configuration Tool software's HELP file*.

7.1.3.Voice Calls+SMS Method

Using this method the communicator retrieves Ademco Contact ID data from the alarm panel, transmits to the monitoring station via GSM audio direct channel without influencing the data itself followed by data conversion to user-understandable text and delivery to up to 5 preset users by SMS text message. Before proceeding with any further configuration, please complete the steps provided in **6.1. RING/TIP Interface**.

To set the communicator to transmit data using this communication method, please proceed as follows:

1. On alarm panel: Enable Ademco Contact ID mode.
2. On alarm panel: Set valid Account number..
3. On alarm panel: Set the monitoring station phone number (-s) in one of the following formats:
 - **International (with 00)** - The phone numbers must be entered starting with 00 and an international country code in the following format: 00[international code][area code][local number], example for UK: 00441709111XXXX.
 - **Local** - The phone numbers must be entered starting with an area code in the following format: [area code][local number], example for UK: 01709111XXXX.
4. On ET082: Set a jumper on **SET** pins on board.



5. On ET082: Connect the device to the computer via USB cable and run *ELDES Configuration Tool* software.
6. On ET082: Open **Messaging Settings** section and proceed as follows:
 - a) Set up to 5 user phone numbers that will be permitted to receive the data converted to user-understandable text by SMS text message. The supported phone number formats are the following:
 - **International (with plus)** - The phone numbers must be entered starting with plus and an international country code in the following format: +[international code][area code][local number], example for UK: +441709111XXXX.
 - **International (with 00)** - The phone numbers must be entered starting with 00 and an international country code in the following format: 00[international code][area code][local number], example for UK: 00441709111XXXX.
 - **Local** - The phone numbers must be entered starting with an area code in the following format: [area code][local number], example for UK: 01709111XXXX.
 - b) Manage SMS text message content reflecting the Ademco Contact ID data message structure.
 - c) Based on the alarm panel's documentation, ensure that all CID event codes supported by the alarm panel are added under the **Messaging Settings** section, otherwise the communicator will be unable to deliver a certain event.
7. If required to override the Account number set on the alarm panel, please use Voice Calls communication method provided by Advanced mode (see **7.2.1. Voice Calls Method**). In addition, please refer to **9. MONITORING STATION PHONE NUMBER AND ACCOUNT REPLACEMENT**.

For more details on the parameters located under **Messaging Settings** section, please refer to *ELDES Configuration Tool* software's HELP file.

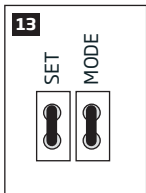
ATTENTION: In the event of failure using this communication method, please refer to **8. GSM MODEM SETTINGS** or use Voice Calls communication method provided by Advanced mode (see **7.2.1. Voice Calls Method**).

7.1.4. IP Method

Using this method the communicator retrieves Ademco Contact ID data from the alarm panel, converts it to EGR100, Kronos or SIA IP protocol and transmits it to the monitoring station via GPRS network or Ethernet connection using ELAN3-ALARM device. Before proceeding with any further configuration, please complete the steps provided in **6.1. RING/TIP Interface**.

To set the communicator to transmit data using this communication method, please proceed as follows:

1. On alarm panel: Enable Ademco Contact ID mode.
2. On alarm panel: Set random Account number..
3. On alarm panel: Set random monitoring station phone number; single digit is sufficient.
4. On ET082: Set the jumpers on **SET** and **MODE** pins on board.



5. On ET082: Connect the device to the computer via USB cable and run *ELDES Configuration Tool* software.
6. On ET082: Open **IP / CSD Settings** → **IP Settings** → **IP 1** section and set the following parameters:
 - **Server IP** - Public IP address of the machine running EGR100/Kronos/SIA IP-based software.
 - **Port** - Forwarded TCP/UDP port number of the machine running EGR100/Kronos/SIA IP-based software. Kronos and SIA IP-based software require communicates via TCP port, while EGR100 supports both - TCP and UDP. UDP is highly recommended for EGR100 in order to reduce the data traffic consumption.
 - **Protocol** - Format of the data message transmitted from ET082 to the monitoring station's IP address. Available protocols:
 - **EGR100** - EGR100 middleware data format.
 - **Kronos** - Kronos LT/Kronos NET monitoring station software data format.
 - **SIA IP** - SIA/IP data format complying with ANSI/SIA DC-09-2007 standard.
7. On ET082: If EGR100 is selected, it is **MANDATORY** to change the default **Unit ID** number, which is 0000, to any other 4-digit number.
8. On ET082: Select one of the following ways of data transmission:
 - **GPRS** - GPRS network connection using the SIM card with active mobile internet (data) service.

- **Ethernet** - Ethernet (LAN) connection using ELAN3-ALARM device.
9. On ET082: If GPRS network is selected, please set the following parameters:
- **APN** - Access-point-name provided by GSM operator.
 - **User Name** - User name provided by GSM operator.
 - **Password** - Password provided by GSM operator.
10. On ET082: If a ping signal is required in order to periodically verify the online status of the device, set the **Test Period**. For SIA IP protocol, please enable **Contact ID Ping** parameter and change the CID event code (by default - 602) if required.
11. On ET082: Open **Events Log** section to monitor the activity.
12. On ET082: If required, the Account number set on the alarm panel can be overridden under **System** → **Security Panel Settings** section. For more details, please refer **9. MONITORING STATION PHONE NUMBER AND ACCOUNT REPLACEMENT**.

For more details on the parameters located under **IP / CSD Settings IP** → **Settings** section, please refer to *ELDES Configuration Tool* software's HELP file.

For detailed step-by-step instructions on how to establish the communication between ET082 communicator and EGR100 middleware, please refer to the middleware's HELP file.

7.2. Advanced Mode

The communication method of Advanced mode is selected using *ELDES Configuration Tool* software. Advanced mode features the following communication methods:

- Voice Calls
- SMS
- IP
- CSD

Advanced mode supports 1 primary and up to 2 backup connections. All of the aforementioned communication methods can be set up as primary or backup connection in any sequence order.

Initially, the device communicates via primary connection with the monitoring station. By default, if the initial attempt to transmit data is unsuccessful, the device will make additional attempts until the data is successfully delivered. If all attempts are unsuccessful, the device will follow this pattern:

- The device switches to the backup connection that follows in the sequence (presumably - Backup 1).
- The device then attempts to transmit data by the backup connection.
- If the initial attempt is unsuccessful, the device will make additional attempts until the data is successfully delivered.
- If the device ends up with all unsuccessful attempts, it will switch to the next backup connection in the sequence (presumably - Backup 2) and will continue to operate as described in the previous steps. The connection is considered unsuccessful under the following conditions:
 - **IP** - The device has not received the ACK data message from the monitoring station within 40 seconds.
 - **Voice calls:**
 - The device has not received the "handshake" signal from the monitoring station within 40 seconds.
 - The device has not received the "kiss-off" signal from the monitoring station within 5 attempts each lasting 1 second.
 - **CSD** - The device has not received the ACK data message from the monitoring station within 35 seconds.
 - **SMS** - The device has not received the SMS delivery report from the SMSC (Short Message Service Center) within 45 seconds.
- If one of the attempts is successful, the device will transmit all queued up data messages by this connection.
- The device then returns to the primary connection and attempts to transmit the next data messages by primary connection.
- If the device ends up with all unsuccessful attempts by all connections, it will return to the primary connection.

NOTE: Once enabled, Advanced mode overrides the jumper position on **SET/MODE PCB** pins.

7.2.1. Voice Calls Method

Based on the communication wiring method that is being used, using this method the communicator:

- **RING/TIP interface** - Retrieves Ademco Contact ID or Scancom data from the alarm panel, saves it to the memory buffer (the data may be stored for up to 10 seconds) and transmits it to the monitoring station via GSM audio channel. Before proceeding with any further configuration, please complete the steps provided in **6.1. RING/TIP Interface**.
- **Keybus interface** - Retrieves serial data from the alarm panel, converts it to Ademco Contact ID data followed by transmission to the monitoring station via GSM audio channel. Before proceeding with any further configuration, please complete the steps provided in **6.2**.

Keybus interface.

To set the communicator to transmit data using this communication method, please proceed as follows:

1. On alarm panel*: Enable Ademco Contact ID or Scancom mode.
2. On alarm panel*: Set valid Account number..
3. On alarm panel*: Set the monitoring station phone number (-s) in one of the following formats:
 - **International (with 00)** - The phone numbers must be entered starting with 00 and an international country code in the following format: 00[international code][area code][local number], example for UK: 00441709111XXXX.
 - **Local** - The phone numbers must be entered starting with an area code in the following format: [area code][local number], example for UK: 01709111XXXX.
4. On ET082: Connect the device to the computer via USB cable and run *ELDES Configuration Tool* software.
5. On ET082*: Open **System** → **Security Panel Settings** and set the monitoring station phone number.
6. On ET082: Open **System** → **Settings** section and proceed as follows:
 - a) Enable **Advanced Mode**.
 - b) Set **Voice Calls** as **Primary** connection. In addition, **Backup 1** and **Backup 2** connections can be set under this section.
7. On ET082: Open **Voice Calls Settings** section and select protocol:
 - **Contact ID** - Ademco Contact ID data format.
 - **Scancom***** - Data format complying with Scancom/BSIA Fast Format protocol requirements.
8. On ET082: Open **Events Log** section to monitor the activity.
9. ****On ET082: If required, the Account number set on the alarm panel can be overridden under **System** → **Security Panel Settings** section. For more details, please refer **9. MONITORING STATION PHONE NUMBER AND ACCOUNT REPLACEMENT**.

* Necessary only when using RING/TIP interface communication wiring method.

** Necessary only when using Keybus interface communication wiring method. When using RING/TIP interface communicates wiring method, it might be useful to replace the monitoring station phone number retrieved from the alarm panel.

*** Supported only when using RING/TIP interface communication wiring method.

**** Useful only when using RING/TIP interface communication wiring method.

For more details on the parameters located under **Voice Calls Settings** section, please refer to *ELDES Configuration Tool* software's HELP file.

7.2.2. SMS Method

Based on the communication wiring method that is being used, using this method the communicator:

- **RING/TIP interface** - Retrieves Ademco Contact ID data from the alarm panel, converts it to user-understandable text and delivers it up to 5 preset users by SMS text message. Before proceeding with any further configuration, please complete the steps provided in **6.1. RING/TIP Interface**.
- **Keybus interface** - Retrieves serial data from the alarm panel, converts it Ademco Contact ID data followed by conversion to user-understandable text and delivery to up to 5 preset users by SMS text message. Before proceeding with any further configuration, please complete the steps provided in **6.2. Keybus interface**.

To set the communicator to transmit data using this communication method, please proceed as follows:

1. On alarm panel*: Enable Ademco Contact ID mode.
2. On alarm panel*: Set random Account number.
3. On alarm panel*: Set random monitoring station phone number; single digit is sufficient.
4. On ET082: Connect the device to the computer via USB cable and run *ELDES Configuration Tool* software.
5. On ET082: Open **System** → **Settings** section and proceed as follows:
 - a. Enable **Advanced Mode**.
 - b. Set SMS as Primary connection. In addition, **Backup 1** and **Backup 2** connections can be set under this section.
6. On ET082: Open **Messaging Settings** section and proceed as follows:
 - a. Set up to 5 user phone numbers that will be permitted to receive the data converted to user-understandable text by SMS text message. The supported phone number formats are the following:
 - **International (with plus)** - The phone numbers must be entered starting with plus and an international country code in the following format: +[international code][area code][local number], example for UK: +441709111XXXX.
 - **International (with 00)** - The phone numbers must be entered starting with 00 and an international country code in the following format: 00[international code][area code][local number], example for UK: 00441709111XXXX.

- **Local** - The phone numbers must be entered starting with an area code in the following format: [area code][local number], example for UK: 01709111XXXX.
 - b. Manage SMS text message content reflecting the Ademco Contact ID data message structure.
 - c. Based on the alarm panel's documentation, ensure that all CID event codes supported by the alarm panel are added under the **Messaging Settings** section, otherwise the communicator will be unable to deliver a certain event.
7. On ET082: Open **Events Log** section to monitor the activity.
8. On ET082: This method can be used simultaneously with any other communication method that is currently active. To used it in this way, open **Messaging Settings** section and enable **Send SMS message to SMS recipients even if system uses other communication method**.
- * Necessary only when using RING/TIP interface communication wiring method.
- For more details on the parameters located under **Messaging Settings** section, please refer to *ELDES Configuration Tool* software's HELP file.

7.2.3. IP Method

Based on the communication wiring method that is being used, using this method the communicator:

- **RING/TIP interface** - Retrieves Ademco Contact ID data from the alarm panel, converts it to EGR100, Kronos or SIA IP protocol and transmits to the monitoring station via GPRS network or Ethernet connection using ELAN3-ALARM device. Before proceeding with any further configuration, please complete the steps provided in **6.1. RING/TIP Interface**.
- **Keybus interface** - Retrieves serial data from the alarm panel, converts it to Ademco Contact ID followed by data conversion to EGR100, Kronos or SIA IP protocol and transmission to the monitoring station via GPRS network or Ethernet connection using ELAN3-ALARM device. Before proceeding with any further configuration, please complete the steps provided in **6.2. Keybus interface**.

To set the communicator to transmit data using this communication method, please proceed as follows:

1. On alarm panel*: Enable Ademco Contact ID mode.
2. On alarm panel*: Set random Account number..
3. On alarm panel*: Set random monitoring station phone number; single digit is sufficient.
4. On ET082: Connect the device to the computer via USB cable and run *ELDES Configuration Tool* software.
5. On ET082: Open **System** → **Settings** section and proceed as follows:
 - a. Enable **Advanced Mode**.
 - b. Set **IP1, IP2 or IP3** as **Primary** connection. In addition, **Backup 1** and **Backup 2** connections can be set under this section.
6. On ET082: Based on the configuration set up in step #5-b), open **IP / CSD Settings** → **IP Settings** → **IP1/2/3** section and set the following parameters:
 - **Server IP** - Public IP address of the machine running EGR100/Kronos/SIA IP-based software.
 - **Port** - Forwarded TCP/UDP port number of the machine running EGR100/Kronos/SIA IP-based software. Kronos and SIA IP-based software require communicates via TCP port, while EGR100 supports both - TCP and UDP. UDP is highly recommended for EGR100 in order to reduce the data traffic consumption.
 - **Protocol** - Format of the data message transmitted from ET082 to the monitoring station's IP address. Available protocols:
 - **EGR100** - EGR100 middleware data format.
 - **Kronos** - Kronos LT/Kronos NET monitoring station software data format.
 - **SIA IP** - SIA/IP data format complying with ANSI/SIA DC-09-2007 standard.
7. On ET082: If EGR100 is selected, it is MANDATORY to change the default **Unit ID** number, which is 0000, to any other 4-digit number.
8. On ET082: Select one of the following ways of data transmission:
 - **GPRS** - GPRS network connection using the SIM card with active mobile internet (data) service.
 - **Ethernet** - Ethernet (LAN) connection using ELAN3-ALARM device.
9. On ET082: If GPRS network is selected, please set the following parameters:
 - **APN** - Access-point-name provided by GSM operator.
 - **User Name** - User name provided by GSM operator.
 - **Password** - Password provided by GSM operator.
10. On ET082: If a ping signal is required in order to periodically verify the online status of the device, set the **Test Period**. For SIA IP protocol, please enable **Contact ID Ping** parameter and change the CID event code (by default - 602) if required.
11. On ET082: Open **Events Log** section to monitor the activity.

12. **On ET082: If required, the Account number set on the alarm panel can be overridden under **System → Security Panel Settings** section. For more details, please refer **9. MONITORING STATION PHONE NUMBER AND ACCOUNT REPLACEMENT**

* Necessary only when using RING/TIP interface communication wiring method.

** Useful only when using RING/TIP interface communication wiring method.

For more details on the parameters located under **IP / CSD Settings → IP Settings** section, please refer to *ELDES Configuration Tool* software's HELP file.

For detailed step-by-step instructions on how to establish the communication between ET082 communicator and EGR100 middleware, please refer to the middleware's HELP file.

7.2.4. CSD Method

Based on the communication wiring method that is being used, using this method the communicator:

- **RING/TIP interface** - Retrieves Ademco Contact ID data from the alarm panel, converts it to CSD data protocol and transmits to the monitoring station via CSD connection. Before proceeding with any further configuration, please complete the steps provided in **6.1. RING/TIP interface**.
- **Keybus interface** - Retrieves serial data from the alarm panel, converts it to Ademco Contact ID followed by data conversion to CSD data protocol and transmission to the monitoring station via CSD connection. Before proceeding with any further configuration, please complete the steps provided in **6.2. Keybus interface**.

To set the communicator to transmit data using this communication method, please proceed as follows:

1. On alarm panel*: Enable Ademco Contact ID mode.
 2. On alarm panel*: Set valid Account number.
 3. On alarm panel*: Set random monitoring station phone number; single digit is sufficient.
 4. On ET082: Connect the device to the computer via USB cable and run *ELDES Configuration Tool* software.
 5. On ET082: Open **System → Settings** section and proceed as follows:
 - a. Enable **Advanced Mode**.
 - b. Set **CSD** as **Primary** connection. In addition, **Backup 1** and **Backup 2** connections can be set under this section.
 6. On ET082: Open **IP / CSD Settings → CSD Settings** section and set the following parameters and set up to 3 monitoring station phone numbers. The supported phone number format is the following:
 - **International (with plus)** - The phone numbers must be entered starting with plus and an international country code in the following format: +[international code][area code][local number], example for UK: +441709111XXXX.
 7. On ET082: Open **Events Log** section to monitor the activity.
 8. **On ET082: If required, the Account number set on the alarm panel can be overridden under **System → Security Panel Settings** section. For more details, please refer **9. MONITORING STATION PHONE NUMBER AND ACCOUNT REPLACEMENT**.
- * Necessary only when using RING/TIP interface communication wiring method.
- ** Useful only when using RING/TIP interface communication wiring method.

For more details on the parameters located under **IP / CSD Settings → CSD Settings** section, please refer to *ELDES Configuration Tool* software's HELP file.

8. GSM MODEM SETTINGS

Voice Calls communication method might partly or completely fail with some alarm panel models due to the audio level differences. In the event of failure or corrupted data delivery to the monitoring station, it is recommended to configure the Microphone Gain and Speaker Level parameters. Recommendations:

- **“Handshake” signal error** – In the event of error it is recommended to gradually increase Speaker Level parameter by value of 20-25 and repeat the data transmission. If the error persists when testing with the maximum parameter value of 100, try decreasing the value by value of 10-15 until a successful “Handshake” signal is achieved.
- **“Kissoff” signal error** – In the event of error it is recommended to gradually increase Microphone Gain parameter by value of 2-3 and repeat the data transmission. If the error persists when testing with the maximum parameter value of 15, try decreasing the value by value of 1-2 until a successful “Kissoff” signal is achieved.

To manage Microphone Gain and Speaker Level parameters, please refer to the following configuration methods.

Select third-party alarm panel model

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

9. MONITORING STATION PHONE NUMBER AND ACCOUNT REPLACEMENT

The communicator comes equipped with monitoring station phone number and Account number replacement features useful for RING/ TIP communication wiring method.

When using Voice Calls communication method of Advanced mode, the user can override the monitoring station phone number existing on the alarm panel by setting it on the communicator. This feature allows to re-direct data transmission to a different monitoring station phone number.

In addition, the user is allowed to override up to four Account numbers, reflecting up to four alarm panel's partitions each, by providing the Account numbers existing on the alarm panel and the new ones.

Typically, monitoring station phone number and Account replacement is used with the alarm panels that have been locked by the previous security service provider/installer.

To manage monitoring station phone number and Account replacement, please refer to the following configuration method.

Manage monitoring station phone number and Account number (-s)

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

10. SMS PASSWORD

For security reasons, the device uses the following type of password:

SMS password - 4-digit password used for device configuration and output control from up to 3 user phone numbers by SMS text messages, remote configuration initiation from up to 2 administrator phone numbers and logging in to *ELDES Configuration Tool* software. By default, SMS password is **0000**, which is **RECOMMENDED** to change.

Set SMS password

SMS

SMS text message content:
`www_PSW:ssss`
Value: `www` - 4-digit default SMS password; `ssss` - 4-digit new SMS password; range - [0001... 9999].
Example: `0000_PSW:1111`

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

NOTE: The device rejects the SMS text messages containing wrong SMS password even from a preset user phone number.

11. USER PHONE NUMBERS

The device supports up to 3 user phone numbers identified as User 1 through 3. When the phone number is set, the user will be able to perform minor configuration and control the outputs by SMS text messages as well as by free of charge phone call (see **13. OUTPUTS**), receive the input alarm/restore and PSTN loss/restore SMS text messages from the device (see **12. INPUTS**).

By default, the device ignores any incoming calls and SMS text messages from a non-preset phone number as well as it rejects the SMS text messages containing wrong SMS password even from a preset user phone number.

The supported phone number format is the following:

- **International (with plus)** - The phone numbers must be entered starting with plus and an international country code in the following format: +[international code][area code][local number], example for UK: `+441709111XXXX`.
- **International (with 00)** - The phone numbers must be entered starting with 00 and an international country code in the following format: 00[international code][area code][local number], example for UK: `00441709111XXXX`.
- **Local** - The phone numbers must be entered starting with an area code in the following format: [area code][local number], example for UK: `01709111XXXX`.

Set user phone number

SMS

SMS text message content:
`ssss_NRu:ttteeellnnuumm`
Value: `ssss` - 4-digit SMS password; `u` - user phone number slot, range - [1... 3]; `ttteeellnnuumm` - up to 15 digits user phone number.
Example: `1111_NR1:+441709111111`

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

12. INPUTS

The system comes equipped with 3 inputs identified as Z1, Z2 and Z3. The inputs are designed for different detection device connection, such as motion detectors, door contacts and other passive or active digital level sensors. Once the detection device is triggered, the communicator can notify up to 3 preset user phone numbers by SMS text message (see **11. USER PHONE NUMBERS**) as well as the monitoring station via the pre-configured communication method. The inputs can also be used for PGM output connection of non-GSM alarm panel.

When ET082 communicator is linked up with the alarm panel using keybus interface communication wiring method (see **6.2. Keybus Interface**), Z1 and Z2 terminals convert to keybus interface and can no longer be used as digital inputs. In such case only Z3 terminal can still be used as a digital input.

By default, the inputs are disabled. To enable/disable a certain input, please refer to the following configuration methods.

Enable input	SMS	SMS text message content: <u>ssss_Zn:ON</u> Value: ssss - 4-digit SMS password; n - input number, range - [1... 3]. Example: 1111_Z2:ON
	Config Tool	This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i> .
Disable input	SMS	SMS text message content: <u>ssss_Zn:OFF</u> Value: ssss - 4-digit SMS password; n - input number, range - [1... 3]. Example: 1111_Z1:OFF
	Config Tool	This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i> .

By default, the inputs are set as NO (normally-open). To set the input as NC (normally-closed) or NO (normally-open), please refer to the following configuration method.

Set input as NC or NO	Config Tool	This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i> .
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By default, input alarm and restore notifications delivered by SMS text message are *Input 1... 3 TRIGGERED* and *Input 1... 3 RESTORED* respectively. To manage input alarm and restore texts, please refer to the following configuration methods.

Set input alarm text	SMS	SMS text message content: <u>ssss_TZn:ON:in-alarm-text</u> Value: ssss - 4-digit SMS password; n - input number, range - [1... 3]; in-alarm-text - up to 23 characters input alarm text. Example: 1111_TZ3:ON:Input3 violated
	Config Tool	This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i> .
Set input restore text	SMS	SMS text message content: <u>ssss_TZn:OFF:in-restore-text</u> Value: ssss - 4-digit SMS password; n - input number, range - [1... 3]; in-restore-text - up to 23 characters input restore text. Example: 1111_TZ1:OFF:Input1 restored
	Config Tool	This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i> .

ATTENTION: Colon, dash, comma characters are NOT allowed in the input alarm/restore notification texts.

Input alarm and restore data reports require to set up the Account number that is included in the data report. This Account number is also included in the periodic test data report.

Manage input data reports	<div> <div>Config Tool</div> <div>This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i>.</div> </div>
Set Account for input alarm/restore data reports	<div> <div>Config Tool</div> <div>This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i>.</div> </div>

To view current input state (violated/restored), please refer to the following configuration method.

View input states	<div> <div>SMS</div> <div> <div>SMS text message content:</div> <div> <div>ssss_TZn:ON:in-alarm-text</div> <div>Value: ssss - 4-digit SMS password; n - input number, range - [1... 3]; in-alarm-text - up to 23 characters input alarm text.</div> <div>Example: 1111_TZ3:ON:Input3 violated</div> </div> </div> </div>
	<div> <div>Config Tool</div> <div>This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i>.</div> </div>
Set input restore text	<div> <div>SMS</div> <div> <div>SMS text message content:</div> <div> <div>ssss_TZn:OFF:in-restore-text</div> <div>Value: ssss - 4-digit SMS password; n - input number, range - [1... 3]; in-restore-text - up to 23 characters input restore text.</div> <div>Example: 1111_TZ1:OFF:Input1 restored</div> </div> </div> </div>

13. OUTPUTS

The system comes equipped with 3 open collector outputs identifies as C1 through C3 designed for electrical appliance connection. Normally, the outputs can be used to arm/disarm a non-GSM alarm panel that has a zone configured as key-switch. The output can also be used to open/close garage doors, activate lights, heating, watering and much more. When output turns ON, the device triggers any equipment or relay connected to it.

For more details on how to wire the output, please refer to **2.3. Wiring Diagrams**.

13.1. Output Name

Each output has a name that can be customized by the user. Typically, the name specifies a device type connected to the output, for example: *Lights*.

By default, the output names are *OUTPUT1... 3*. To rename a certain output, please refer to the following configuration methods.

Rename output

SMS

SMS text message content:
ssss_TC0:out-name
Value: ssss - 4-digit SMS password; o - output number, range - [1... 3]; *out-name* - up to 23 characters output name.
Example: 1111_TC1:Pump

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

View output names

SMS

SMS text message content:
ssss_STATUS
Value: ssss - 4-digit SMS password.
Example: 1111_STATUS

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

ATTENTION: Colon, dash, comma characters are NOT allowed in the output names.

13.2. Output Control by SMS Text Message

By default, all outputs are turned OFF. To instantly turn ON/OFF an individual output, please refer to the following configuration methods.

Turn ON output

SMS

SMS text message content:
ssss_Co:ON or ssss_out-name:ON
Value: ssss - 4-digit SMS password; o - output number, range - [1... 3]; *out-name* - up to 23 characters output name.
Example: 1111_C2:ON

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

Turn OFF output

SMS

SMS text message content:
ssss_Co:OFF or ssss_out-name:OFF
Value: ssss - 4-digit SMS password; o - output number, range - [1... 3]; *out-name* - up to 23 characters output name.
Example: 1111_Pump:OFF

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

To instantly turn ON an individual output for a determined time period and automatically turn it OFF when the time period expires, please refer to the following configuration method.

Turn ON output for time period

SMS

SMS text message content:

`ssss_Co:ON:time or ssss_out-name:ON:time`

Value: ssss - 4-digit SMS password; o - output number, range - [1... 3]; time - time period; range - [1... 9999] seconds; up to 23 characters output name; out-name - up to 23 characters output name.

Example: 1111_C3:ON:335

To instantly turn OFF an individual output for a determined time period and automatically turn it ON when the time period expires, please refer to the following configuration method.

Turn OFF output for time period

SMS

SMS text message content:

`ssss_Co:OFF:time or ssss_out-name:OFF:time`

Value: ssss - 4-digit SMS password; o - output number, range - [1... 3]; time - time period; range - [1... 9999] seconds; up to 23 characters output name; out-name - up to 23 characters output name..

Example: 1111_Pump:OFF:56

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

View output status

SMS

SMS text message content:

`ssss_STATUS`

Value: ssss - 4-digit SMS password.

Example: 1111_STATUS

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

NOTE: PGM output can be turned ON for a determined time period only when it is in OFF state

NOTE: PGM output can be turned ON for a determined time period only when it is in OFF state

NOTE: In case of complete device shut down, the output will always stay turned OFF on the device startup regardless of the last output state.

13.3. Output Control by Event

The device comes equipped with output control by event feature allowing to assign a certain output to operate based on a specific event occurrence in the device.

Output Actions

The action of the determined output can be set as follows:

- **Turn ON** - Turns ON the output and keeps it in this state regardless of the associated event recurrence.
- **Turn OFF** - Turns OFF the output and keeps it in this state regardless of the associated event recurrence.
- **Turns ON (Pulse)** - Turns ON the output for a determined time period and automatically turn it OFF when the time period expires (pulse) regardless of the associated event recurrence.
- **Turns OFF (Pulse)** - Turns OFF the output for a determined time period and automatically turn it ON when the time period expires (pulse) regardless of the associated event recurrence.
- **Toggle** - Turns ON the output and keeps it in this state until the associated event reoccurs.

Device Events

The aforementioned output actions can be associated with the following events that have occurred in the device:

- **Tel. Line Lost** - The output action will be carried out in case the PSTN line connectivity is lost. For more details on PSTN line supervision, please refer to **14. PSTN CONNECTION STATE MONITORING**.
- **Tel. Line Restored** - The output action will be carried out in case the PSTN line connectivity is restored. For more details on PSTN line supervision, please refer to **14. PSTN CONNECTION STATE MONITORING**.
- **GSM Lost** - The output action will be carried out in case the GSM connection is lost. For more details on GSM connection supervision, please refer to **15. GSM CONNECTION STATE MONITORING**.

- **GSM Restored** - The output action will be carried out in case the GSM connection is restored. For more details on GSM connection supervision, please refer to **15. GSM CONNECTION STATE MONITORING**.
- **User 1... 3 Calls** - The output (-s) can be controlled by dialling the device's phone number from the specified preset user phone number (see **11. USER PHONE NUMBERS** for phone number management). The phone call is free charge as the system rejects it and carries out the associated output action. If there is more than one preset caller dialing to the system at the same time, the system will accept the incoming call from the caller who was the first to dial while other caller (-s) will be ignored.
- **Input Violated** - The output action will be carried out in case a specified device's input is violated. For more details on input management, please refer to **12. INPUTS**.
- **Input Restored** - The output action will be carried out in case a specified device's input is restored. For more details on input management, please refer to **12. INPUTS**.

Manage output control
by event

Config
Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

14. PSTN CONNECTION STATE MONITORING

NOTE: This section applies to **With PSTN Line Supervision** and **With External PSTN Line Supervision** communication wiring methods only (see **6.1. RING/TIP Interface**).

ATTENTION: Notifications to the user phone number by SMS text message and data reports to the monitoring station regarding PSTN line loss/restore events can be used only when Advanced communication mode is enabled (see **7.2. Advanced Mode**).

The device comes equipped with PSTN line supervision and supports the following PSTN loss detection methods operating simultaneously:

- **Physical PSTN loss detection** - When PSTN line cable is cut off or disconnected resulting in voltage drop below 4V.
- **Smart PSTN loss detection** - When the alarm panel, which is linked up to the communicator, dials the 1st set up monitoring station phone number, but due to PSTN loss it fails to do so, it would attempt to contact the monitoring station by the 2nd monitoring station phone number set up on the alarm panel. In such case even if a dial tone is still present on the PSTN line, the communicator will detect the PSTN line connection failure as soon as the alarm panel attempts to dial the 2nd phone number starting with a dash character (#). This method requires Smart PSTN module on-board.

By default, when the PSTN is lost or restored for a longer time period than the set delay value (by default - 20 seconds), the communicator will turn output ON and OFF (by default - output C1) respectively followed by, if enabled, notification to the preset user phone number (see **11. USER PHONE NUMBERS**) by SMS text message and/or the monitoring station by data report via the pre-configured communication method regarding PSTN loss/restore event.

Any of the aforementioned PSTN loss detection methods would result in communication link take-over by the communicator and data transmission via the pre-configured communication method until the PSTN connectivity is restored.

If enabled, the default PSTN loss/restore notifications delivered by SMS text message are *Tel. Line LOST* and *Tel. Line RESTORE* respectively, while the data report is delivered to the monitoring station under CID event code 351. To manage PSTN loss/restore notifications and PSTN loss/restore delay value, please refer to the following configuration methods.

Manage PSTN loss/restore notifications

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

Set PSTN loss/restore delay

SMS

SMS text message content:
`ssss_TELDLY:del`
Value: ssss - 4-digit SMS password; del - PSTN loss/restore delay; range - [0... 250] seconds.
Example: 1111_TELDLY:45

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

For more details on automatic output control regarding the PSTN connection loss/restore, please refer to **13.3. Output Control by Event**.

ATTENTION: To use the Smart PSTN loss detection method, Smart PSTN module must be implemented on request in advance.

15. GSM CONNECTION STATE MONITORING

The device supervises the GSM connection every 10 minutes. When the GSM signal is lost, the indicator GSM will light OFF and the device will turn ON a determined output (by default - output C2) if the GSM signal is lost for a longer time period than the set delay value (by default - 10 seconds). By default, once the GSM signal restores, the device will notify the preset user phone number (see **11. USER PHONE NUMBERS**) by SMS text message and the determined output will turn OFF.

When using the Advanced communication mode, in case of GSM connection loss the communicator would switch to the pre-configured backup communication method (if any) and continue to transmit data until the GSM connection is restored.

By default, the notifications by SMS text message regarding the output restore is enabled. To disable/enable this notification and set a different delay value, please refer to the following configuration method.

Disable/enable output restore notification

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

Set output control delay value

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

For more details on automatic output control regarding the GSM connection loss/restore, please refer to **13.3. Output Control by Event**.

16. DATE AND TIME

The device comes equipped with internal real-time clock (RTC) that keeps track of the current date and time. Once the device is up and running, the user must set the correct date and time, otherwise he will not be able to use periodic test (**17. PERIODIC TEST**) and automatic restart (**18. AUTOMATIC RESTART**) features. By default, after shutting down and starting up the device, the date and time must be set again.

Set date and time

Config Tool

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

NOTE: When the device is connected to the monitoring station via GPRS network or Ethernet connection (see **7. COMMUNICATION MODES AND METHODS**), the date and time will be automatically synchronized with the monitoring station upon the device startup.

17. PERIODIC TEST

The device comes equipped with periodic test data report transmitted under CID event code 602 to the monitoring station via the pre-configured communication method. The minimum period is every 1 hour. Typically, this feature is used to verify the power supply and online status of the device when used without an alarm panel.

Periodic test data report requires to set up the Account number that is included in the data report. This Account number is also included in input alarm/restore data report.

By default, the periodic test is disabled and Account number is not set. To enable/disable periodic test, set a transmission period and Account number, please refer to the following configuration method.

Manage periodic test data report	Config Tool This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i> .
Set Account for periodic test data report	Config Tool This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i> .

18. AUTOMATIC RESTART

In some critical situations, a periodic device restart may be required. The device may carry out the restart automatically. The minimum period is every 1 hour.

By default, the automatic restart is disabled. To enable/disable it and set a restart period, please refer to the following configuration method.

Manage automatic restart	Config Tool This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i> .
---------------------------------	--

19. EVENTS LOG

The device supports the event log feature allowing to monitor the activity and communication status between the device and the monitoring station. To view, export and clear the event log, please refer to the following configuration method:

Manage event log	Config Tool This operation may be carried out from the PC using the <i>ELDES Configuration Tool software</i> .
-------------------------	--

20. TECHNICAL SUPPORT

20.1. Troubleshooting

Indication	Possible Reason
GSM LED is off or not flashing	<ul style="list-style-type: none">• No external power supply• Circuit not properly connected• Blown fuse• No GSM network signal
STATUS LED flashing several times per second	<ul style="list-style-type: none">• SIM card not inserted / improperly inserted• PIN code enabled• SIM card inactive
System does not send any SMS text messages	<ul style="list-style-type: none">• SIM card credit limit exceeded• Incorrect SMS centre phone number• No GSM network signal• User phone number is not preset.
Received SMS text message "Wrong syntax" or "Command is not correct"	<ul style="list-style-type: none">• Incorrect syntax• Extra <space> character is left in SMS message

20.2. Restoring Default Parameters

1. Unplug the USB cable.
2. Power down the device.
3. Short-circuit (connect) the DEF pins.
4. Power up the device for 7 seconds.
5. Power down the device.
6. Remove the short-circuit from DEF pins.
7. Parameters restored to default.

Alternatively, please refer to the following configuration method.

**Restore default
parameters**

**Config
Tool**

This operation may be carried out from the PC using the *ELDES Configuration Tool software*.

20.3. Updating the Firmware via USB Cable

1. Power down the device.
2. Short-circuit (connect) the DEF pins.
3. Connect the device via USB cable to the PC.
4. Power up the device.
5. The new window must pop-up where you will find the .bin file. Otherwise open My Computer and look for *Boot Disk* drive.
6. Delete the .bin file found in the drive.
7. Copy the new firmware .bin file to the very same window.
8. Power down the device.
9. Unplug the USB cable.
10. Remove the short-circuit from DEF pins.
11. Power up the device.
12. Firmware updated.

NOTE: It is strongly recommended to restore default parameters after the firmware update.

21. RELATED PRODUCTS



Plastic enclosure



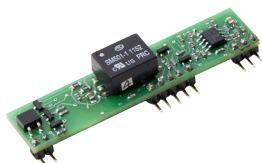
Power supply



Magnet mount straight GSM antenna.



Adhesive flat GSM antenna



Smart PSTN module



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