

ENICOM³



Security and Fire Communicator

Installer Manual

Version 1.01, Rev. 26.06.2023





DECLARATION OF PERFORMANCE

305/2011/EU szerint

1. Unique identification code of the product type:

ENICOM Security and Fire Communicator

2. Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer

Alarm and trouble signal transmission equipment for use in detection and alarm systems

3. Name, registered trade name or trade mark and contact address of the manufacturer (art.11(5))

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4. Where applicable, name and contact address of the authorised representative (art. 12(2))
Not relevant

5. Assessment and verification system of constancy of building product properties

System 1, (Annex V, point 1.2 of EU Directive No. 305/2011/EU issued on 9.3.2011)

6. In case of the Declaration of Performance covered by harmonised standard:

ÉMI Építésügyi Minőségellenőrző Innovációs Nonprofit Kft., Notified Body Number: 1415, Fire Protection Department Laboratory, 2000 Szentendre, Dózsa György út 26., accredited laboratory under NAT-1-1110/2018/K issued Certification of Conformity according to EN54-21:2006 under

1415-CPR-110-(C-3/2022)

as the base of this declaration.

7. Declared performance

Essential characteristic	Performance	Harmonized technical specification
Transmission time	DP4, SP5 < 10 s	EN 54-21:2006
Maximal transmission time	M4 < 30 s	
Reporting time	T5 < 90 s	
Reliability of operation	A4 > 99.8%	
Information security	NPD / IQ	
Resistance to heat	Environmental Class II	
Resistance to vibration	Environmental Class II	
Resistance to humidity	Environmental Class II	

8. Number of the technical measurement and test specifications: CT-M449K-23946-2021 (C-3/2022)

The performance of the product identified above is in full conformity with the properties in point 7. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 3.

Budapest, 16-09-2022

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general manager

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1. INTRODUCTION

The ENICOM communicators are recommended for security and fire installations, where the reporting to the Alarm Monitoring Station (AMS) must be provided using redundant reporting paths. The primary reporting path is the Ethernet network, a mobile network (GPRS, LTE) or Wifi network (optional) can be used as the secondary path. The reporting is done by standard IP based protocols. The ENICOM communicators offer an optimal and secure solution for reporting messages via the wired and mobile IP network.



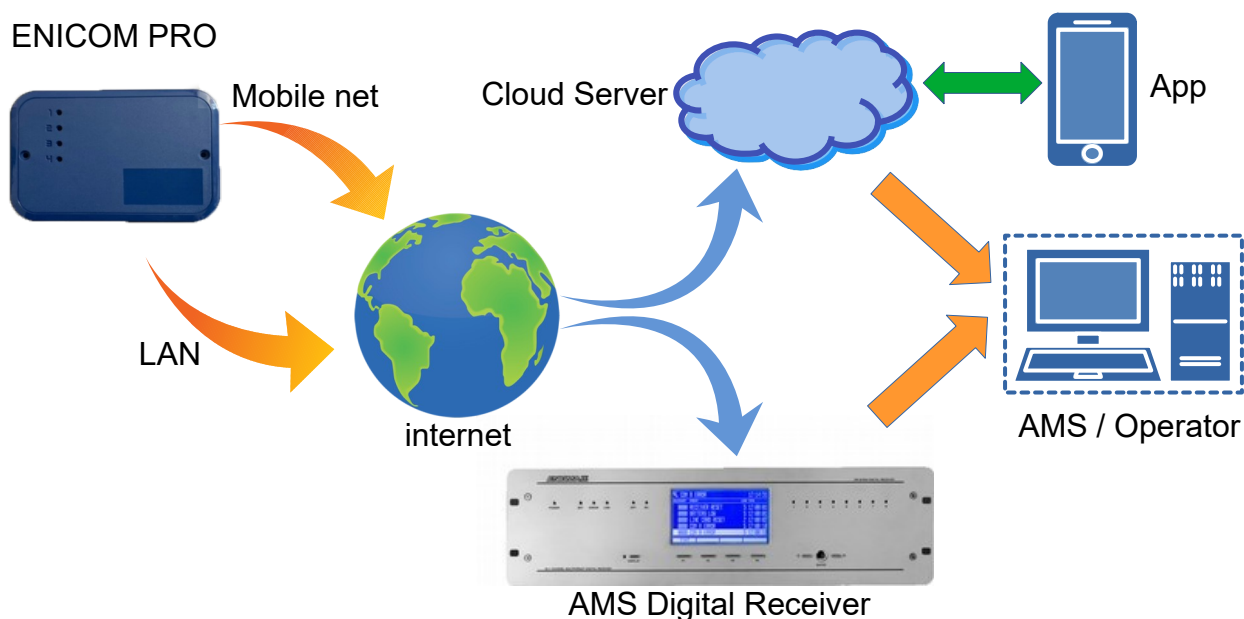
To be able to use and understand all the features of the ENICOM series communicators, please, read this *Installer Manual* carefully.



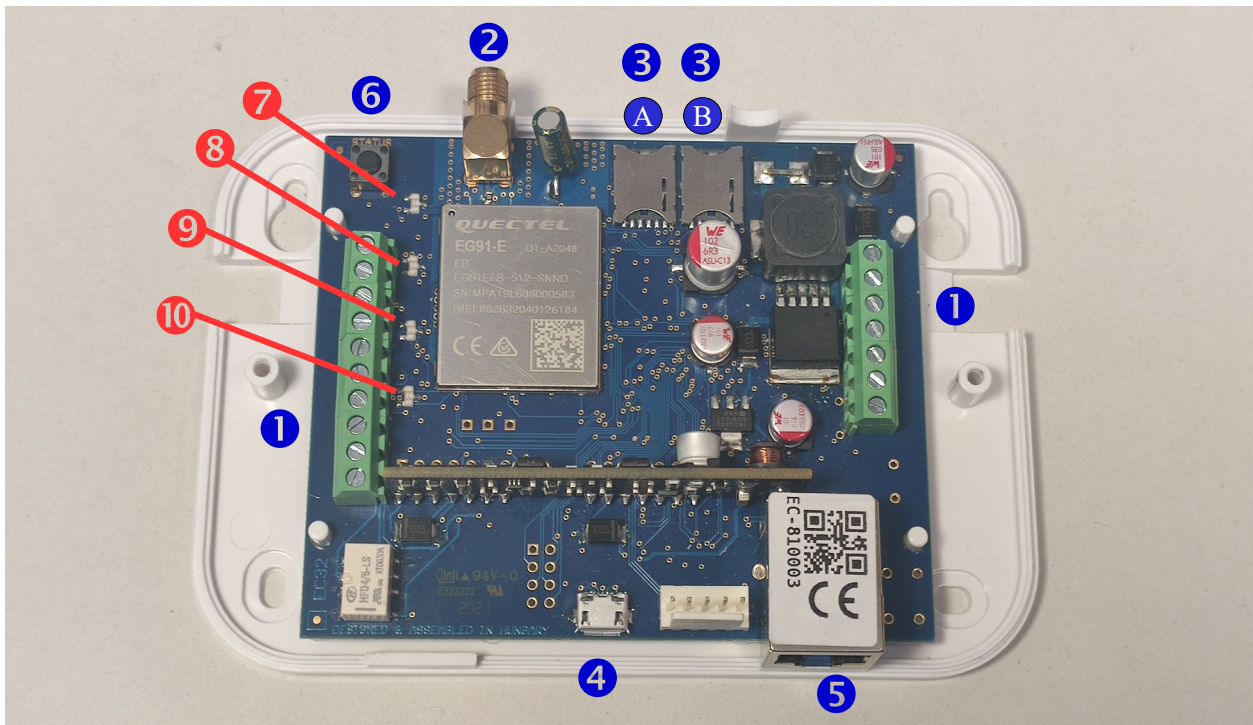
SAFETY NOTICE! Please, take care of installing and using this product according to the instructions and procedures detailed in this manual to ensure proper product safety.

2. SYSTEM OVERVIEW

The ENICOM communicator receives events from its inputs, serial port or telco interface (depend on type), and forwards these through the Ethernet / mobile internet network (LTE) to the servers of the Alarm Monitoring Station. It also can make a connection with Cloud Server, to provide remote maintenance and control options.



3. OVERVIEW



- ① Terminal block for connections
- ② Antenna socket (SMA)
- ③ A SIM #1 holder
- ③ B SIM #2 holder
- ④ USB connector for programming and debugging
- ⑤ Ethernet connector (RJ-45)
- ⑥ Status button
- ⑦ Activity LED (LED-1)
- ⑧ LAN / WLAN Status LED (LED-2)
- ⑨ Mobile internet Status LED (LED-3)
- ⑩ Mobile Signal Strength (LED-4)

4. LED INDICATORS

LED-1: Activity LED

Indicates the power supply and the activity of the communicator

<i>Red</i>	On – Power supply is ok, there's no cloud connection Blink – low power supply
<i>Green</i>	On – Power supply is ok, Cloud connection is active
<i>Yellow</i>	Flash - Activity indicator (watchdog)



In Status Display mode, LED-1 indicates the type of information displayed on LED-2, LED-3 and LED-4, by a given number of flashes. More information about Status Display later in this section.

LED-2: LAN/WLAN LED

Indicates the status and activity of the local network – Ethernet (LAN) or Wireless (WLAN), in case the communicator has built-in Wifi adapter. Ethernet is always in priority over WLAN.

<i>No light</i>	Not Connected, Wifi disabled/not present
<i>Red</i>	Network is not ready – due to error or during the initialization phase
<i>Green</i>	Network connection is ready
<i>Yellow</i>	Activity on the network connection (send/receive)

LED-3: Mobile internet LED

Indicates the status and activity of the mobile network.

<i>No light</i>	Modem is turned off
<i>Red</i>	Mobile network is not ready – due to error or during the initialization phase
<i>Green</i>	Mobile network connection is ready
<i>Yellow</i>	Activity on the mobile network connection (send/receive)

LED-4: Telco Communication LED

Indicates the activity of the Telco interface (SLIC). The LED flashes indicate the progress of the actual communication activity over the Telco interface

Status Display Mode

By pressing the Status button, the ENICOM enters into Status Display mode. In this mode, different status information are displayed on LEDs 2-4, while the number of short flashes on LED-1 indicates the type of information displayed. Up to six different status indications are possible. The index on LED-1 is repeated every 5 seconds. The displayed status information can be as follows:

1	<i>Extended Cloud Status</i>	LED-2 connection status LED-3 reporting in progress LED-4 up/download in progress
2	<i>Mobile signal level</i>	The number of LEDs at LEDs 2-4 indicate the current mobile signal level. (low-average-high)
3	<i>WIFI signal level</i>	The number of LEDs at LEDs 2-4 indicate the current WIFI signal level. (low-average-high)
4	<i>Future use</i>	
5	<i>Future use</i>	
6	<i>Power level</i>	The number of LEDs at LEDs 2-4 indicate the current supply voltage level. (low-normal-high)

5. OPERATION AND SETTINGS

The ENICOM communicators can send messages to the AMS receivers (servers) using the Ethernet, Wifi (ENICOM PRO) or mobile internet network. Four independent communication paths can be defined, with 8 communication channels for each, that can be assigned up to 4 different servers.

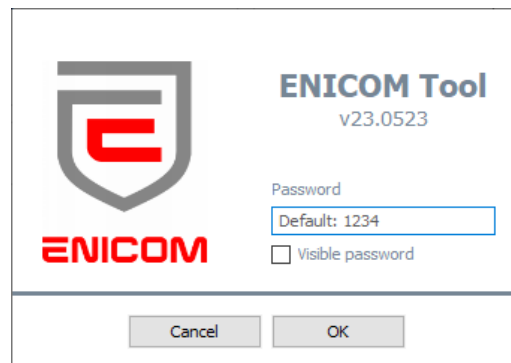


The ENICOM communicators can make connection with the Cloud Server, that enables remote control, maintenance, programming . More informaton in the Cloud Service section.

5.1 Programming / ENICOM Tool

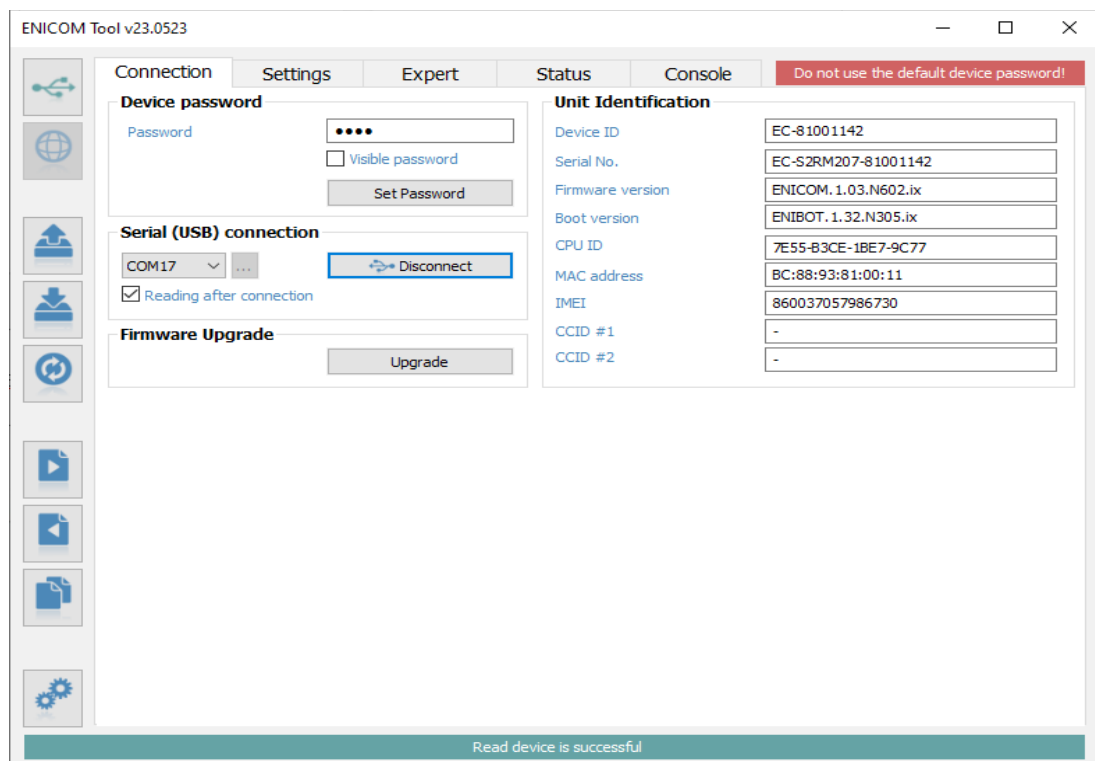
The settings of the communicator can be programmed with the ENICOM tool. Please, contact your local distributor to receive a copy of the ENICOM tool for free. The ENICOM tool requires Windows O/S, (Windows 10 or higher 32/64 bit).

After the installation is completed, the ENICOM tool is ready to use. All the necessary settings of the communicators can be programmed by the ENICOM tool.

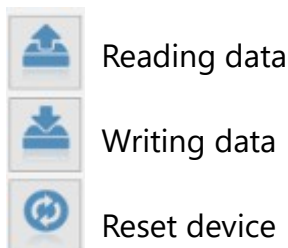


After startup, the login window appears. The ENICOM Tool requires an administrator password to prevent unauthorized access. The default password is 1234.

It is strongly recommended to change the password after the first login to prevent the misuse of the program. Once logged in, the Connection settings appear. Select the COM port of the ENICOM communicator and press the connect button, or the connection icon on the top left of the toolbar. The program will connect to the device and read out its identification datas.



In the left toolbar, settings can be read out from the device with the download button, and be written back to it with the upload button. The device can be reset by pressing the reset button.



The most important settings of the communicator can be programmed at the "Settings" tab.



Editing parameters in Expert mode is not recommended for the normal workflow. If in any doubt, contact Technical Support about expert settings and features, as tampering with these parameters can affect the the proper operation of the communicator.

5.2 Report Settings

The screenshot shows the 'Settings' tab of the ENICOM Tool v23.0523. The interface is divided into several sections:

- Server / Reporting settings:** A table for configuring up to 4 servers. Each row includes checkboxes for 'Eth', 'WiFi', and 'Modem' communication channels, fields for 'Account ID', 'IP address / domain', 'Port', and 'AES Encryption key'. Below this table is a 'Reporting mode' section with radio buttons for '1 Path (channel)', '1 Path (server)', 'Server paths', 'Channel paths', and 'Expert'. The '1 Path (channel)' mode is currently selected.
- Ethernet:** A section with checkboxes for 'DHCP enable' and fields for 'Static IP', 'Netmask', 'Gateway', 'Primary DNS', and 'Secondary DNS'.
- WiFi:** A section with a checkbox for 'WiFi enable' and fields for 'SSID' and 'Password'.
- Device Test:** A section with fields for 'Event code' and 'Period'.
- Modem:** A section with fields for 'SIM #1 APN', 'SIM #2 APN', and 'SMS forward'.
- Telco:** A section with a checkbox for 'Passthrough'.
- Serial mode:** A dropdown menu currently set to 'Disabled'.
- Input:** A table for configuring input events. It has columns for 'Type', 'Nr.', and 'Event'. Four input events are listed, each with a 'Type' of 'NC' and a 'Nr.' value (1, 2, 3, 4) and an 'Event' value (1137, 1301, 1373, 1110).
- Output:** A table for configuring output events. It has columns for 'Type', 'Nr.', 'Timer', 'Event', and 'Follow'. Two output events are listed, each with a 'Type' of 'NC (bistable)' or 'NO (bistable)', a 'Nr.' value (1, 2), a 'Timer' value (0), and a 'Follow' value (Zone).

A status bar at the bottom indicates 'Read device is successful'.

The most important parameters required for the operation of the ENICOM communicator can be set up at the Settings tab, as follows:

Up to 4 servers can be defined, where the ENICOM can send messages, an Account ID, address, port, encryption key can be specified for each. Address and port are obligatory parameters, but encryption is optional, you can leave the field empty. For each server it can be specified, which communication channels to use (Ethernet, Wifi or Mobile).

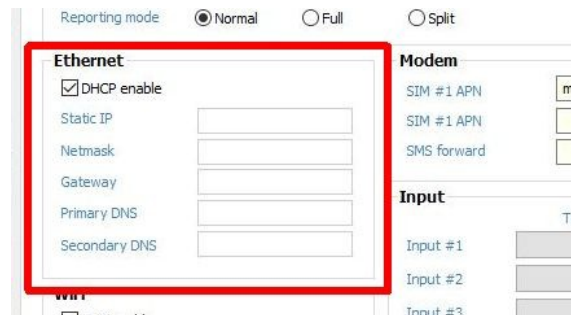
The reporting mode can be set the following ways:

- 1 path (channel)
- 1 path (server)
- Server paths
- Channel paths

Further settings available in expert mode.

In case of using 1 path modes, the servers/channels act as alternatives for each other. Once the message is successfully reported to any of them, the reporting is considered complete. In case of using server/channel paths modes, all events will be reported to all servers/channels given.

5.3 Network Settings



For the Ethernet network, the ENICOM communicator uses DHCP by default, so that the network parameters are obtained from the network automatically. If needed, DHCP can be turned off, and the network parameters can be specified manually.



When using Ethernet (LAN) and Wi-Fi connection, the internet access is provided by the router of the local network. It is always recommended to provide an uninterrupted power supply (UPS) for powering up the router, to ensure problem-free operation.

The ENICOM communicator can handle two SIM cards for two different mobile networks. The primary mobile network is SIM1 and the secondary mobile network (for fall-back) is SIM2, network selection is automatic.

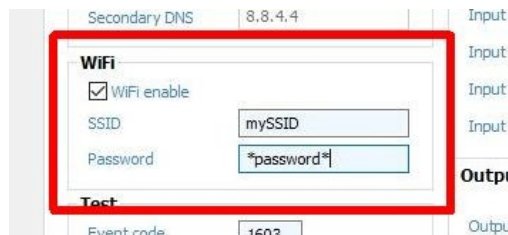


The average mobile data usage of the ENICOM communicator is estimated at 5-6 MB/month. This value can depend on the frequency of the test (keep-alive) signals, and on the usage of Cloud Server access. Please, use a SIM card with at least 5-10MB/month data plan.



PIN code must be turned off on SIM cards.

In case the ENICOM has an optional WiFi/WLAN interface (ENICOM PRO), the wireless LAN can also be used for connecting to the network. To use WLAN, it must be enabled, and the SSID and login information for the access point has to be given:



5.4 Setting Up the Telco interface

ENICOM PRO communicator is connected in most cases by the telco interface (TIP and RING terminals) to the security control panel. At connecting to the telco interface of a security control panel, the following might be considered:

- Telephone communication should be enabled for the security control panel
- DTMF (Tone) dialing must be set
- A telephone number must be set for reporting
- A user account must be set for reporting (do not use '0' digit, if possible)
- Contact ID (all codes) format must be selected
- It might be necessary to turn off Telephone line monitoring (TLM) option
- It might be necessary to turn off dial tone detection
- For some control panels, the „Force Dialing“ option must be set.

The communicator receives the reports over its telco interface, and forwards the messages to the AMS servers.



By default, ENICOM acknowledges the events to the control panel automatically, but using the „Passthrough“ option the communicator will wait with sending the acknowledge signal (Kissoff) until it has successfully reported the received event to the AMS servers on one of the Paths. This results a somewhat slower but altogether more secure message reporting.



In case, the received messages cannot be forwarded to any of the AMS Servers, the communicator might suspend further reception on the telco interface, until the server access is restored. In this case, the control panel will display Comms Fault on its keypad.

5.5 Setting Up Inputs and Outputs

The ENICOM communicators have 4 inputs and 2 outputs (OC or relay, depending on variant) on board. The behavior of these I/O is programmable. The following settings are available for the inputs and outputs.

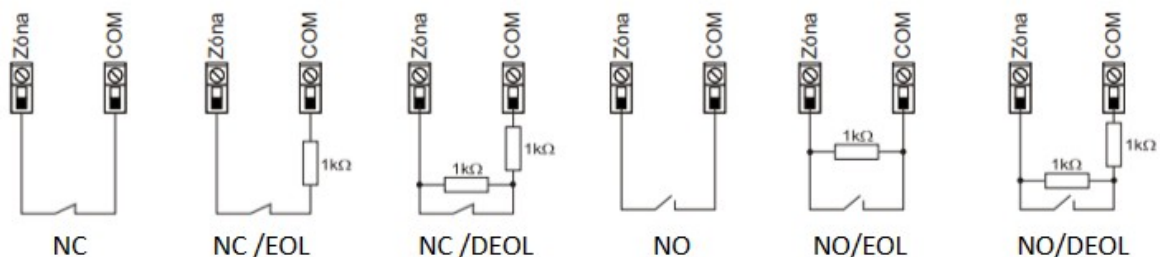
Input settings (ENICOM Tool)

Input			
	Type	Nr.	Event
Input #1	NC (EOL)	A 1	114A
Input #2	NC (EOL)	A 2	114A
Input #3	NC (EOL)	A 3	114A
Input #4	NC (EOL)	A 4	114A

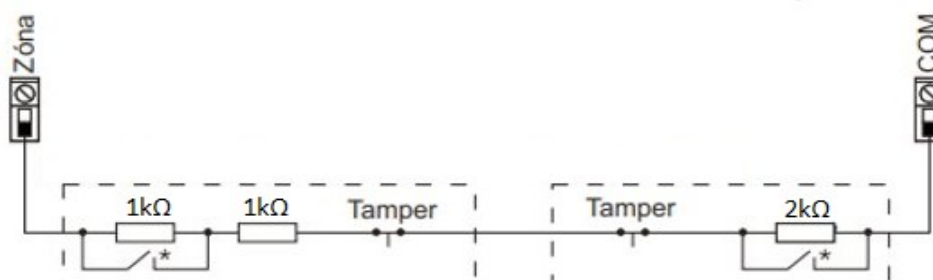
Output				
	Type	Nr.	Timer	Event
Output #1	NO (bistable)	1	0	
Output #2	NO (bistable)	2	0	

The loop type of the inputs can be programmed as NC or NO, without or with 1 or 2 EOL resistors, or can be doubled using 3 EOL resistors. The standard value for EOL resistors is 1kOhm. In case of zone doubling, the 3rd EOL resistor should be 2kOhm.

Zone wiring



Zone doubling



Output settings (ENICOM Tool)

	Type	Nr.	Timer	Follow
Output #1	NC (bistable) ▾	1	0	Zone ▾ <input type="text"/>
Output #2	NO (bistable) ▾	2	0	Event ▾ <input type="text"/>

In case of using key-switch arm for controlling alarm system it is recommended to use (monostabile) controll, especially when system is containing more partitions which used to have different status to each other (partially open/ close). With using monostabile control – depends on control panel type – system at first will be opened/closed fully.



EC-84 extension module optional input types are NO/NC EOL.

5.6 Saving and Loading Device Data

The device settings can be saved into files, for archivation or for later review. The saved settings can also be loaded to work with them at a later time.



To Save current device settings, press the Save button on the left toolbar. The program prompts you for a filename, and will save the file at the selected location. It is a very important feature of the program, that the saved data is encrypted with the User Password to prevent access to device data by unauthorized parties. This means, that a saved file cannot be opened by another user, unless the User Password is disclosed. This feature should effectively prevent misuse of the files, that can contain sensitive data of the monitoring companies.



Similarly, to load previously saved device settings, click on the Load button on the toolbar, then select the file you want to load.



However, in cases when the device settings must be shared with a 3rd party, in order to create templates, or to get technical support, the Export function must be used. The Export function works similar to the Save function, but will save an unencrypted copy of the device settings, that can be loaded by any users.

6. CLOUD SERVICE

The ENICOM Communicators can make connection to the Cloud Server. This function is enabled by default, and is done independently from the reporting functions. Through the connection it is possible to access the communicators for remote control and programming functions.



The Cloud Service requires a public internet connection. In case this is not provided, as reporting is done through private network (VPN or private APN), the Cloud functions can be disabled.



It is highly recommended to use always the newest version of ENICOM Tool, which can be downloaded from www.villbau.com.

ENICOM programming could be upgraded through cloud connection, for this process it is necessary to create a configuration file by ENICOM Tool.

With cloud connection it is possible to access remotely by using ENICOM application which can be downloaded by official stores. After installation, user must create an account in order to use application.

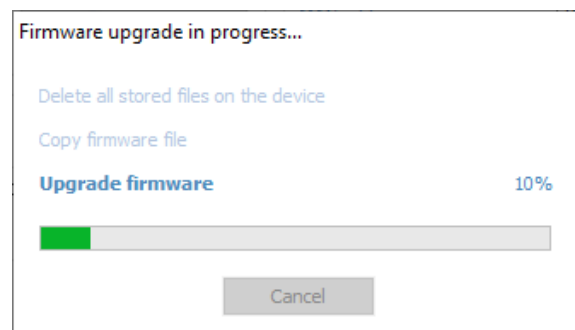
7. FIRMWARE UPGRADE

The Firmware can be upgraded with the ENICOM Tool, as follows:

1. Connect to the communicator with the ENICOM Tool, via USB:
2. It is recommended to save current settings before firmware upgrade.
3. Click on the Firmware Upgrade button and select file:



4. The upgrade process is performed automatically in several minutes.



5. After successful upgrade, check all device functions. In case you experience any problems, or the upgrade was unsuccessful, the upgrade process can be repeated by power-cycling the communicator and/or copying the firmware file again.



Do not power down the communicator during firmware upgrade! In case the upgrade process is aborted due to inadequate power supply, the device can fail, and might be recovered only by direct reprogramming in the service.



It is recommended to upgrade the device to the latest firmware version, whenever it is available, to use new functions and eliminate possible bugs.

8. SMS PROGRAMMING

If the SIM card in the communicator supports sending and receiving SMS messages, the options and parameters of the ENICOM communicator can also be set up by SMS messages



The <password> used at SMS programming can be programmed with the EniTerm software, the default value is 1234. The <ch> parameter is the number of the actual channel, where it is applicable.

The following SMS commands can be used:

+cloud

In case there is no valid Cloud subscription for the communicator, we can try to reconnect by using command (application or ENICOM Tool remote access).

#<password>* reset – pl.: #1234* reset

The communicator will be reset within 30 seconds.

#<password>* ? – pl.: #1234* ?

The communicator reports the status of its inputs and its firmware version.

#<password>* o<n>=<on/off> – pl.: #1234* o1=on

The outputs of the communicator can be controlled by SMS messages as well. The value <n> can be 1..2, and selects, which output to control. The operation of the output follows the scheme set in the configuration file, parameter value „on“, or „1“ will activate, „off“ or „0“ will deactivate the output.

#<password>* [<section>] <parameter>=<value> – pl.: #1234* [Server1] ID=4567

Any parameter of the configuration file can be set up by sending an SMS command. This command is an expert feature, use it with caution, if you have any doubts, contact Technical Support for further help.



An SMS message can contain multiple commands, separated by spaces. The proper execution of the commands is verified by answering an „OK“ messages. If there is any problem with the commands, a „FAIL“ reply message is generated. After some specific control commands, the device will perform a reboot.

9. TROUBLESHOOTING



If there is any problem with the communicators it is always recommended to upgrade their firmware to the latest available version, as this could solve most problems.

SYMPTOM: The ENICOM communicator does not register on the Cloud Server after power-up.

SOLUTION: Verify the power supply. Check if the SIM card is properly installed in the SIM slot. Ensure, that PIN request is disabled for the SIM card. Verify the network connection and RF signal levels. Provide a valid subscription for the Cloud Server (application or ENICOM Tool remote access)

SYMPTOM: The ENICOM reports its events properly, but there are no events received from the control panel connected on the Telco interface.

SOLUTION: Ensure, that Telco reporting is enabled and set up properly in the control panel. Phone number and Account ID must be set, reporting format must be set to Contact ID, and Tone dialing must be set, while dial tone detection must be disabled. Check idle voltage on the TELCO terminals of the communicator (ca. 48V DC)

SYMPTOM: The events are not received at the AMS servers, and the communicator displays fault for the communication channels.

SOLUTION: Check the reporting path settings in the communicator. Verify server and channel setup, and at the same time, check if the servers are available for communication with the IPT.EXE applicaton. (see Chapter 8. *AMS Server Access Testing*) Ensure, that the AMS servers support the communication format and protocol used by the communicator. The ENICOM communicator uses SIA DC-09 IP Reporting Protocol with Contact ID format, by default.

10. TECHNICAL DATA

	ENICOM
Power Supply	10 – 28,0 V DC
Standby Current	150 mA (average)
Maximal Current	1000 mA (peak)
Inputs / Outputs	4 / 2
Output type / rating	Open collector @ max. 50 mA, relay @ max. 1A (optional)
Ethernet connection	10/100 Base T (RJ 45)
Mobile modem	ENICOM S2x/F2R M95 Quad Band 850/900/1800/1900MHz GPRS Class B, Multislot Class 12 ENICOM S4x/F4R EG91-EX LTE Cat.1 (EMEA Region) LTE B1/B3/B7/B8/B20/B28, WCDMA B1/B8 EG91-AUX LTE Cat.1 (Australia/Latin America) LTE B1/B3/B4/B5/B7/B8/B28/B66, WCDMA B1/B2/B5/B8 ENICOM SNx BG96 LTE Cat.M1/Cat.NB1/EGPRS LTE B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B28 EGPRS 850/900/1800/1900MHz
Antenna	SMA
USB connection	USB 2.0 CDC/MSD
Event Buffer	512 events, with timestamp
Operating conditions	0 °C...50 °C , rel.60%
Size (W / L / H)	135 x 95 x 25 mm
Weight	140 g



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