TELETEK

LYNX

LAN/4G Communication Module

- Installation Instructions
- Programming Manual
- User Guide

Attention:
This manual contains information on limitations regarding product use and function and information on the limitations as to liability of the manufacturer. The entire manual should be carefully read.
The information in this manual is a subject to change without notice!

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Abbreviations used into this documentation

- **ACK** – Acknowledgement
- **AFP** – Addressable Fire Panel
- **ARC** – Alarm Receiving Center
- **CIE** – Control and Indication Equipment
- **EOL** – End-of-Line (Module/Resistor)
- **ESPA** – European Selective Pagers Association
- **ProsTE –** Programming Software Teletek Electronincs JSC
- **PSU** – Power Supply Unit
- **SNTP** – Simple Network Time Protocol
- **UPS** – Uninterruptible Power Station

DOCUMENTATION FEEDBACK

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Your feedback on product documentation will help us to improve the contents of our manuals and stickers and keep them up-to-date.

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1. INTRODUCTION

1.1 General Information

LYNX is a communication module designed to operate with addressable fire alarm panels, produced by Teletek Electronics JSC – series iRIS and SIMPO X, supporting ESPA4.4.4 serial communication protocol. The module supports communication via LAN and Mobile (4G) networks for transmitting messages for events to ARC using SIA09 or Ademco CID Receiver monitoring stations.

The operation of the LYNX module is based on converting the ESPA serial data to SIA and CID formats, suitable for processing in monitoring. The module is capable to transmit the events over the both communication media ensuring reliable and stable connection covering different security needs and applications.

The module is equipped with 4 additional input terminals, suitable for activation on a pre-programmed event. Six hardware connection diagrams can be realized at the inputs according the system characteristics and used equipment. Messages for events for the changed status of the inputs are sent to users and ARC monitoring station.

For reliable operation there are two additional outputs in the module's configuration. Their functionality is to activate some specialized inputs in the control panel or device:

- Fire Alarm Confirmation (LYNX OUT1) in case of fire alarm or evacuation in the premises and received confirmation from ARC station;
- Fault Protection (LYNX OUT2) in case of fault condition with the LYNX's operation.

LYNX is delivered mounted in a small plastic box with compact dimensions suitable for mounting directly into the panel's box or out of it. The pluggable connectors included into the kit (2x2-pin, 2x3-pin, and 2x5-pin) make all electrical connection quick and easy.

The status of the communication between the module and the AFP, also between the module and the ARC, is visualized on the front panel via LED indication. The user can also check the status of the connected power supply, LAN and Mobile (4G) networks.

The module is designed and covers the requirements of EN 54-21 standard: Alarm transmission and fault warning routing equipment.

LYNX communication module is programmed via ProsTE software.

The kit contents:
1 x LYNX Communication module
1 x External monopole antenna, SMA connector, 50Ohm, 1m cable
1 x Jumper
2 x M4x6 DIN7985 screws for metal

Important note:
The purpose of this manual is to give directions for installation, possible hardware connections to CIE and configuration, and programming of the LYNX module, when using it as a notification device for different events, including fire or trouble in the system.
Find out more materials also at https://portal.teletek-electronics.com/

1.1.1 Functional Features

- Compatible with addressable fire alarm panels iRIS4, iRIS8 and SIMPO X
- Supporting ESPA4.4.4 communication protocol
- Converting ESPA text part of the code to SIA or CID format
- Built-in RS232 interface
- Communication channels – LAN, Mobile (4G)
- Messages for events to users and ARC
- 4 telephone numbers
- Main and Back-up reporting channels to ARC
- Connecting to ARC through IP or DNS address
- Supports operation with SIA-DC09 IP protocol messages
- LAN settings – Manual or Automatic (DHCP)
- 4 inputs (setting NO or NC type, programmable activation events)
- 2 outputs OC type
- Internal buffer for 1024 events
- USB-C input for direct PC connection and programming
- External mobile antenna
- Jumper for restoring of the default factory settings
- Main and back-up power supply
- Reversed polarity protection

1.1.2 Technical Specifications

- Main power supply..... 12-30VDC (no tolerance)
- Back-up power supply (separate terminal)..... 12-30VDC (no tolerance)
- Maximal consumption..... 200mA
- Relay outputs (NC, COM, NO):
    - Max. switching power 30W, 37.5VA
    - Max. switching voltage..... 220V DC, 250V AC
    - Max. switching current..... 1A
    - Max. carrying current..... 1A
- Terminals, pluggable connectors (2x2-pin, 2x3-pin, 2x5-pin):
    - Screw clamp unit ..... M2, slot
    - Wiring orientation ..... 180° (wire-to-plug)
    - Wire cross section ..... 0.35-1.5mm^2
- Working frequencies ..... 4G LTE bands (EU)
- Antenna connector..... SMA 50Ohm
- Operating temperature..... -20°C ÷ +60°C
- Enclosure box:
    - Protection class IP30
    - Dimensions..... 140x60x30mm
    - Weight ..... ~142g
    - Color ..... white, RAL 9016
    - Material ..... plastic, ABS

1.1.3 Operation Block Diagram

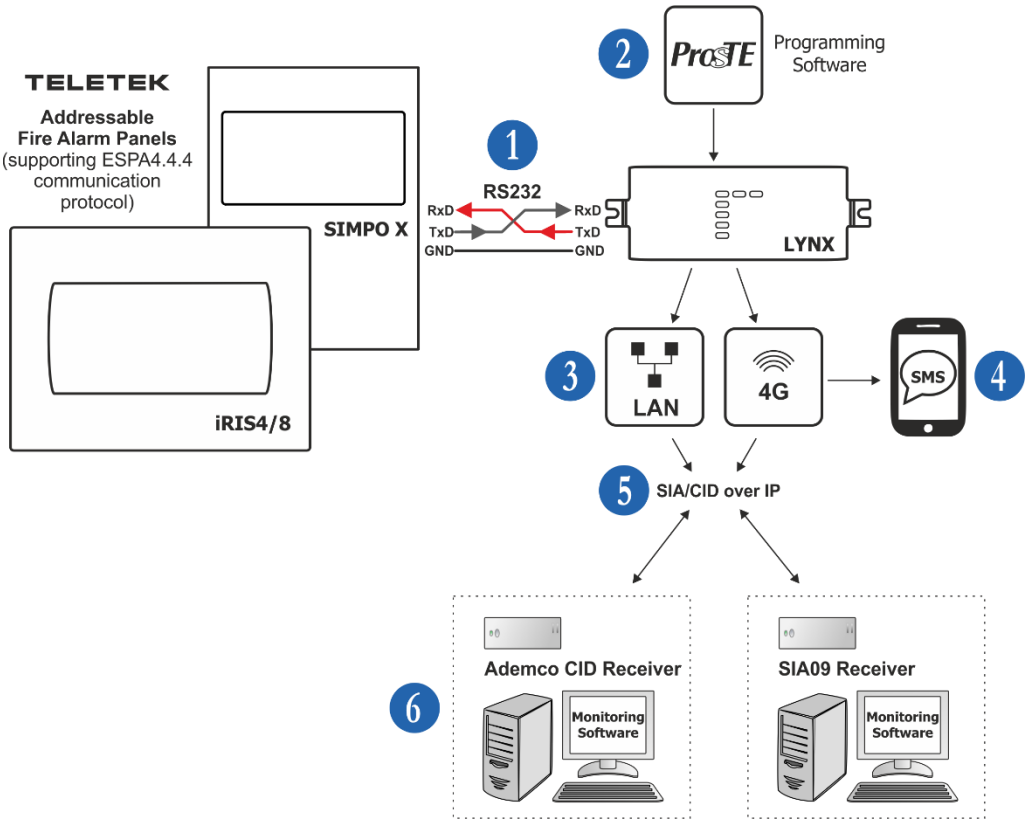


Figure 1. Operation diagram

1. RS232 interface connection between LYNX module and addressable fire alarm panel supporting ESPA4.4.4 communication protocol (iRIS4, iRIS8, SIMPO X). The LYNX module is designed to convert the received from ESPA4.4.4 serial data into SIA or CID format, suitable for sending to ARC monitoring stations.
2. Programming the general settings and communication media characteristics of the LYNX module is via ProsTE programming software.
3. Communication media – LAN and/or Mobile (4G) for connection to ARC. The user can use only one communication channel or both, as set a priority in communication – which channel is main and which is back-up.
4. Messages for events to users and ARC.
5. SIA/CID over IP communication protocol.
6. Ademco CID/SIA DC-09 ARC and Monitoring Software. Monitoring stations of a service security provider operating with Ademco CID/SIA-DC09 IP Receiver reporting to monitoring software.

1.2 Before you start

Before starting you need the following equipment (full configuration):
- ProsTE Programming Software installed on a local computer or laptop for reading, writing, and saving the module's configuration.
- USB-C data cable.
- For 4G mobile network: Valid nano SIM Card supporting 4G networks with disabled PIN protection code.
- For LAN network: Router; CAT-5/6A Ethernet cable, max. 90 m (not included into the kit); Access to WAN/LAN available and enabled network.
- Addressable Fire Alarm Panel supporting ESPA4.4.4 communication protocol – iRIS4, iRIS8, SIMPO X.
- 10kOhm EOL balancing resistors (not included into the kit) for realizing the hardware wiring to the inputs (the number depends on the type of used connection diagrams – see item 3.2 and Figure 8).
- Tools: plain screwdriver 2mm; cross-slot screwdriver 3-3.5mm.
- In case of remote installation of LYNX module, out of the panel's enclosure box, use a separate box ensuring of minimum IP30 protection.

It is also helpful to check:
- Your version of ProsTE software. Check if it is the latest one and it supports programming of LYNX comminution module.
- Power supply 12-30V DC, suitable for powering on the LYNX communication module.

The manufacturer also recommends:
- Review the status of the addressable fire alarm panel to which the LYNX module is going to be connected. Check where the ESPA4.4.4 communication protocol is set at Printers programming menus.
- Check the subscription plan of the used SIM card and network coverage. The SIM card must support 4G networks.
- In case the LYNX communication module is mounted into the panel's box, and the Mobile (4G) communication channel will be used, it is obligatory to place the antenna out of the metal case. The mounting place of the antenna must be away from any electromagnetic and radio sources, which could cause interference and incorrect working of the LYNX module!

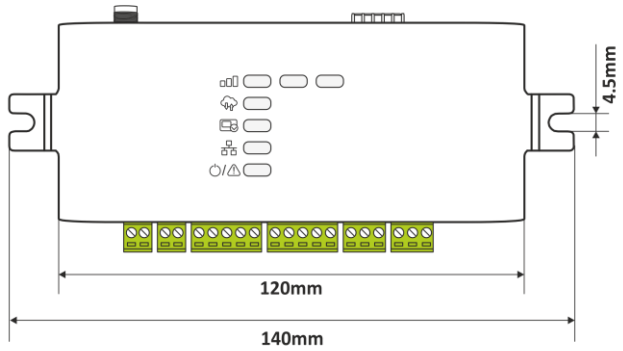
Important note:
When **only LAN communication channel** is going to be used for reporting of events, it is obligatory to equip your Router device with a UPS unit. In this way, in case of a main power supply failure in the protected site, the router will stay powered on and will be able to send messages for "AC lost" and "Fire Alarm" to the ARC.

2. HARDWARE INSTALLATION

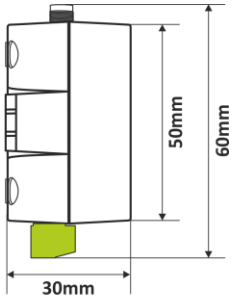
The LYNX communication module is delivered into a plastic box with compact dimensions. The box is designed for easy mounting to the installation surface with just two screws. In the equipment is included also a monopole antenna with 1m cable length and SMA connector type. The electrical connections are realized via terminals with pluggable connectors for easy and quick installations.

2.1 Design and dimensions

a) LYNX – front view



b) LYNX – side view



c) Antenna

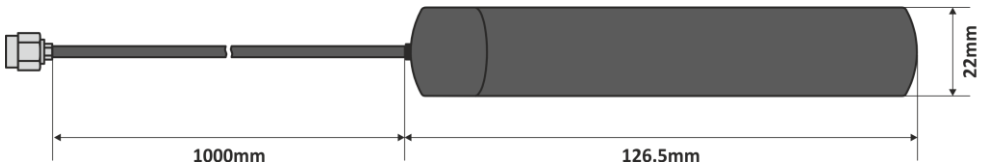
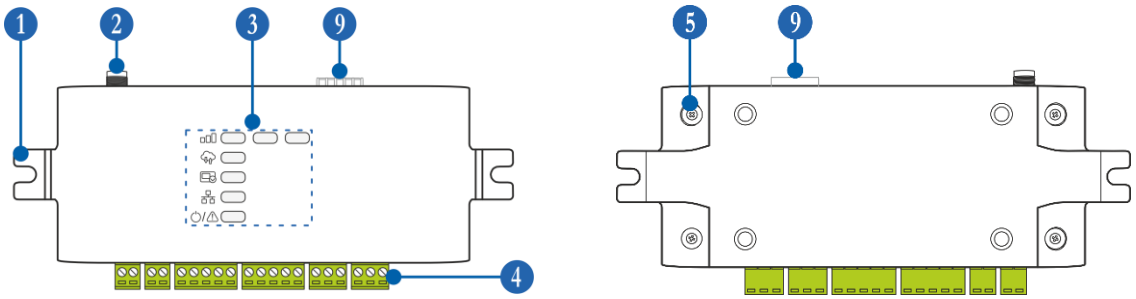


Figure 2. Dimensions

2.2 LYNX Elements

a) LYNX Front view

b) LYNX Back-side view



c) LYNX Rear-side view

d) LYNX Up-side view

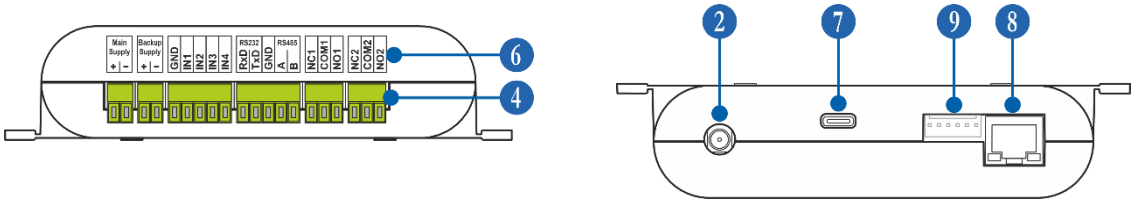


Figure 3. Elements

1. Mounting supports, opening Ø4mm. In case of mounting into iRIS4, iRIS8, or SIMPO X metal box, use supplied in the kit the crossed slot screws M4x6 DIN7985 for metal.
2. Antenna connector.
3. Status LED indication – see for details item 5.
4. Pluggable terminals for electrical connections.
5. Screws for fixing the bottom to the front cover of LYNX module. The screws are fixed for protection during transportation of the product.
6. Engraved descriptions of the functions of the electrical connections – see for details Figure 6.
7. USB-C connector.
8. LAN connector.
9. For future use.

2.3 Mounting place

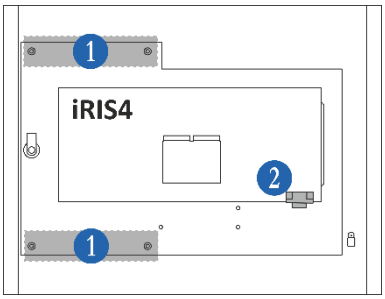
There are two possibilities for hardware installation of the LYNX module: built-in into the panel's box, or out of the panel's box – remote mounting.

2.3.1 Built-in Mounting

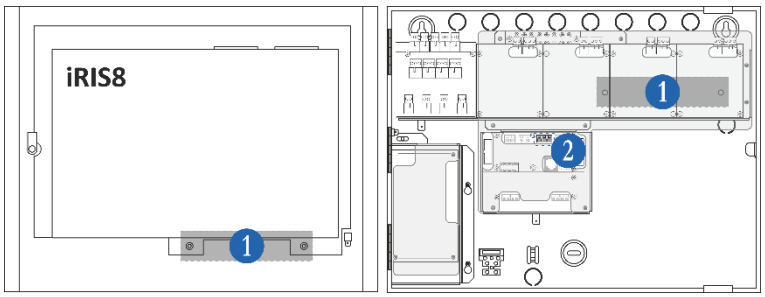
The built-in mounting of the LYNX module is realized at special dedicated places into the iRIS4, iRIS8 or SIMPO X metal box. The antenna itself must be moved out of the metal box.

- **iRIS4 –** In the configuration of iRIS4 AFP are provided two possible placed for mounting of LYNX module – both on the back-side of the front cover. The RS232 interface connection is realized to "Printer" terminal at the bottom of the main board – Figure 4 a).
- **iRIS8 –** In the configuration of iRIS8 AFP are provided two possible placed for mounting of LYNX module – one on the back-side of the front cover and second over the protected plastic shield for the loop controllers. The RS232 interface connection is realized to "RS232" terminal on the interface communication board – Figure 4 b).
- **SIMPO X -** In the configuration of SIMPO X AFP is provided one possible place for mounting of LYNX module on the back-side of the front cover. The RS232 interface connection is realized to "Printer" terminal at the main board – Figure 4 c).

a) iRIS4 - back side of the front cover



b) iRIS8 – opened metal box



c) SIMPO X – opened metal box

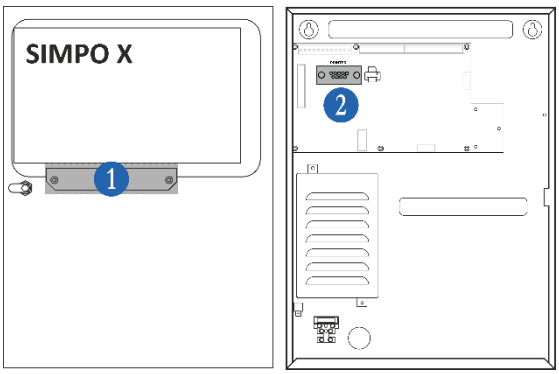


Figure 4.
1. Possible place for mounting of LYNX module into the AFP's metal box.
2. Place of the RS232 interface connector.

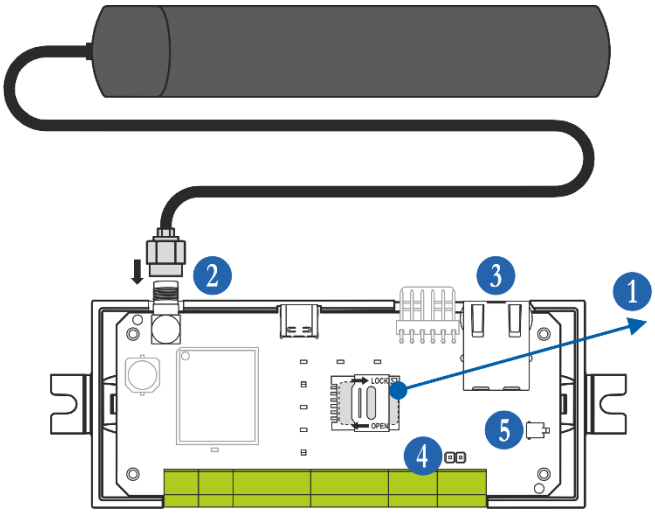
Attention: The mounting place of the antenna must be away from any electromagnetic and radio sources, which could cause interference and incorrect working of the LYNX module! The antenna is equipped with strong adhesive tape on the back-side for secure mounting at the installation place.

2.3.2 Remote Mounting

For remote mounting, out of the panel's box, use an additional mounting box with minimum IP30 degree of protection. The maximum distance between the control panel and the LYNX module in this case must be up to 3 meters.

2.4 LYNX PCB

To access the main PCB of LYNX module you must undo the four screws on the back side of the enclosure box – see Figure 3 b), position 5.



1. Nano SIM card holder.
2. Positioning of the antenna.
3. LAN connector.
4. RESET jumper.
5. Tamper switch for self-protection against unauthorized opening of the front cover.

Note:
The used SIM card holder is hinged type.

Figure 5.

2.5 Using the Mobile (4G) communication channel

To use the 4G communication mobile channel, you must equip the LYNX module with a valid nano SIM card and to mount the external antenna to the connector. First, you must remove the front cover of the module. **Attention: Use another mobile device to disable the PIN code protection of the SIM card.** Place the SIM card as observing the position of the beveled edge. Close the front cover of the module. You can place the external antenna later after mounting the LYNX module at the installation place, and before switching on the main power supply of the module.
The signal strength of the 4G network is displayed via LEDs on the front cover – see item 5 for details. You can set the 4G mobile channel to be main, back-up or only one used for communication with ARC for monitoring - see items 4.2 and 4.5 for details.

2.6 Using the LAN communication channel

To use the LAN communication channel, you must connect a CAT-5/6A Ethernet cable to the LAN connector of the module. After powering up the LYNX module, and presence of enabled Ethernet network, the LAN connector has the following status LED indication:

RJ-45 (LAN connector indication)	LAN Status	Green	LED LAN Action. The LED is blinking when there is activity on the link; otherwise, the LED is on.
		Yellow	LED LAN Link. The LED is lit on when there is a link to an Ethernet device; otherwise, the LED is off.

The signal status of the LAN communication channel is displayed via special LED on the front cover – see item 5 for details. You can set the LAN communication media to be main, back-up or only one used for communication with ARC for monitoring - see items 4.2 and 4.6 for details.

2.7 Restore to Factory Settings

This function is for restoring of the default parameters of the module set by the manufacturer. The Reset Jumper is accessible after removing the front cover of the module – see Figure 5, position 4. To perform restoring of the factory settings:

1. Turn off the power supply of the module.
2. Place a jumper on Reset Jumper terminals.
3. Turn on the power supply of the module.
4. Wait for 10 seconds and remove the Reset Jumper.
5. Program the module with ProsTE software according the application.

3. WIRING and ELECTRICAL CONNECTIONS

The wiring of LYNX module is designed for easy connection of all electrical circuits. There is no need of opening the front cover, which makes the operations flexible and quick. The terminals of the module are equipped with pluggable connectors situated out of the enclosure box. Use a small plain screwdriver to do/undo the screws of the clamp units.
For enhanced reliability and durability of the working with LYNX module, the functions of the terminals are engraved on the bottom of the cover – Figure 6.

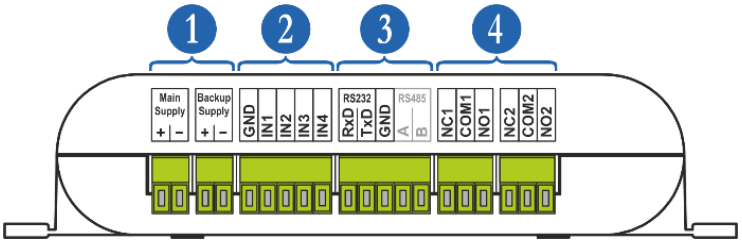
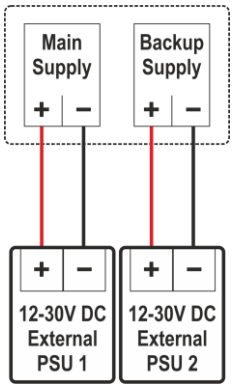


Figure 6.

1. Main and Back-up power supply terminals 2x2-pins – see item 3.1.
2. Terminals for connection of INPUT circuits (IN1-4) 1x5-pins – see item 3.2.
3. Terminals for RS232 interface connection 1x5-pins – see item 3.3.
4. Terminals for connection of OUTPUT circuits (OUT1-2) 2x3-pins – see item 3.4.

Attention: All electrical connections to the LYNX module must be realized with main and/or back-up power supply OFF!

3.1 Main and Back-up power supply



According the application, LYNX communication module can be powered up directly from the control panel (± AUX terminals, 12-30V DC) or from a stand-alone DC PSU. The module is designed with an option for back-up power supply located on separate additional terminals.

It is obligatory to observe the polarity of the connection!

The presence and status of the connected Main and Back-up PSUs is displayed via LED on the front cover – see item 5 for details.

Figure 7.

3.2 Connection of INPUT circuits

LYNX module is designed with 4 additional inputs providing the opportunity for activation/restoring on special alarm events and sending messages to monitoring station and users. The activation events are programed in advance according the system configuration and application. For flexibility and convenience in operation, every input can be set to operate according a specific connection diagram, supported from the control panel or device sending the activation signal.

The operation of every input is enabled/disabled via ProsTE programming software, at menu "3. INPUTS". By default, all inputs are disabled for operation. The programming of the INPUT circuits is described in item 4.4.

Six connection diagrams can be realized according the application, as the type is set in the programming menus. Follow the connection diagrams on Figure 8, to choose the most appropriate for your security needs and compliant with the used hardware equipment. (Same diagrams are displayed at the ProsTE programming menus for INPUT circuits.)

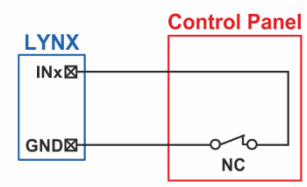
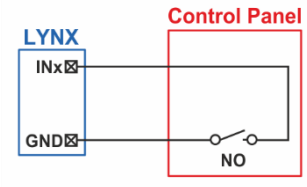
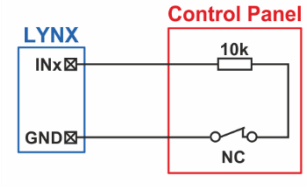
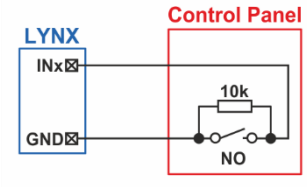
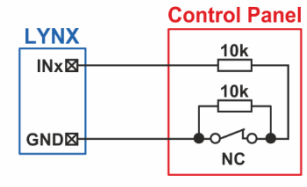
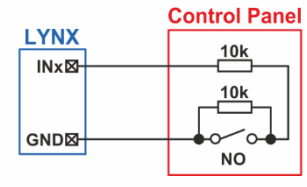
No	Schematic Diagram	Description
1		Connection diagram to NC relay output, not-balanced. No indication for short-circuit or cutting the connection wires.
2		Connection diagram to NO relay output, not-balanced. No indication for short-circuit or cutting the connection wires.
3		Connection diagram to NC relay output, balanced with a one 10k EOL resistor. With realizing this connection is possible to detect a wire short-circuit fault, as this generates an alarm type event.
4		Connection diagram to NO relay output, balanced with a one 10k EOL resistor. With realizing this connection is possible to detect a wire cutting, as this fault generates an alarm type event.
5		Connection diagram to NC relay output, balanced with two 10k EOL resistors. With realizing this connection is possible to detect a short-circuit fault and cutting of the wires, as both troubles will generate an alarm type event.
6		Connection diagram to NO relay output, balanced with two 10k EOL resistors. With realizing this connection is possible to detect a short-circuit fault and cutting of the wires, as both troubles will generate an alarm type event.

Figure 8.

Important Notes:

- Check the hardware capabilities of the control panel to which the LYNX INPUTs will be connected. It is strongly recommended to realize all wire connections and set the appropriate connection diagram for every of the inputs before enabling them for operation.
- If an INPUT circuit must be disconnected, to avoid sending of fault and alarm messages from the LYNX module, do one of the following:
    - Using ProsTE programming software, disable the operation of the INPUT, and then disconnect the circuit;
    - If disabling with ProsTE is not possible, terminate the INPUT, according the set connection diagram: for diagrams 1 and 2 use a simple wire to connect the input to GND; for diagrams 3 and 4, use a 10k resistor; for diagrams 5 and 6 use a 20k resistor.

3.3 RS232 interface

The connection between LYNX communication module and the addressable fire alarm control panel (iRIS4, iRIS8, SIMPO X) is realized via RS232 serial interface – see the Figure 1.

Note: To enable the operation between LYNX and iRIS4, iRIS8 or SIMPO X panels, you must set ESPA4.4.4 communication protocol into the Printers settings menu.

- **Serial connection to iRIS4 and SIMPO X addressable panels**

The serial connection RS232 is realized using the Printer terminal on the main board – see the exact position in Figure 4 a) and c). For connection of AFPs to the LYNX module, you must prepare a special cable with wires 0.35-1.5mm^2 and length up to 3m. Mount a male DB9 type connector at the one side – see the diagram on Figure 9. On the other side of the cable leave the bare wire cores. After mounting the LYNX module, connect the DB9 connector to the Printer terminal and the free wires to the RS232 interface of the LYNX module.

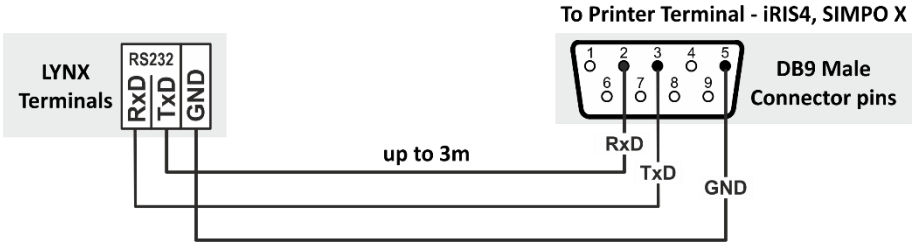


Figure 9.

- **Serial connection to iRIS8 addressable panel**

The serial connection RS232 is realized using the RS232 terminals on the built-in communication board of iRIS8 – see the exact position in Figure 4 b). Use cable with wires 0.35-1.5mm^2 and length up to 3m. After mounting the LYNX module, you must follow the diagram on Figure 10 to realize the hardware connection.

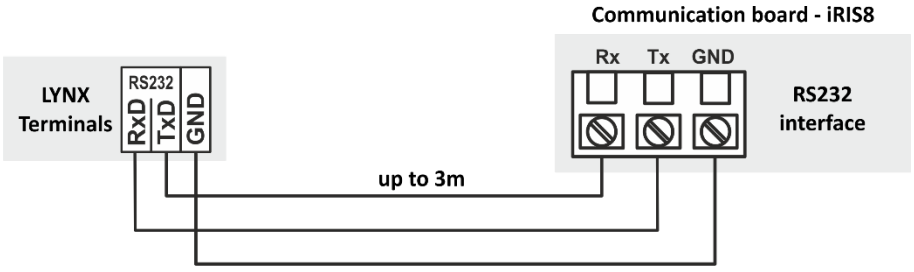


Figure 10.

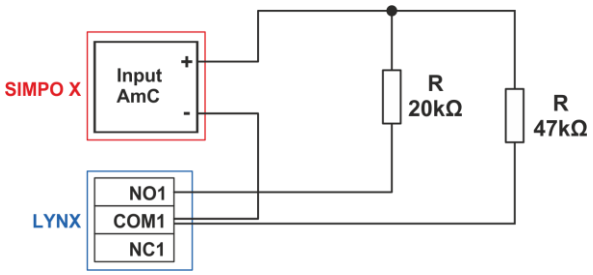
3.4 Relay OUTPUT circuits

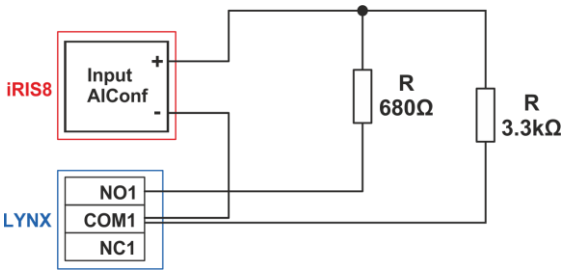
LYNX module is designed with 2 additional outputs. Each of the outputs provides special functionality and has one NO (normal open) and one NC (normal closed) contact with common lead on a terminal. The functionality of every output is as follows:

<table>
<tr><th>Output</th><th>Functionality</th><th>Diagram</th></tr>
<tr><td>OUT1</td><td>
Fire Alarm Confirmation. The functionality of the output is to activate a special input for Fire Confirmation in the fire alarm control panel/device, and the respective LED indication if such is available.
The OUT1 relay output is activated (switching on to NO state) in case of receiving an ACK message from the ARC station, confirming that “Fire Alarm/Evacuation (FA)” message event is received successfully.

The “Fire Alarm/Evacuation (FA)” message event can be received in the LYNX module via:
- ESPA 4.4.4. protocol (RS232 interface connection), if supported from the control panel/device, or
- LYNX’s Input (1-4), when it is enabled for operation (using ProsTE software) and “Fire Alarm [FA]” is programmed for activation event - see item 4.4.

The OUT1 terminal must be connected to an input terminal with Fire Alarm Confirmation function in the respective control panel/device. For the correct operation, the wiring connection diagram between OUT1 and the input terminal of the panel/device must be balanced with resistors* with values according the control panel/device technical characteristics.
* Check the values of the balancing resistors in the technical manual of the used control panel/device.

In case of connection to SIMPO X (terminal “In AmC”) and iRIS8 (terminal AIConf) control panels, the values of the balancing resistors, are as follows:




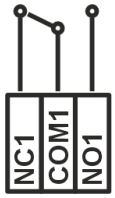
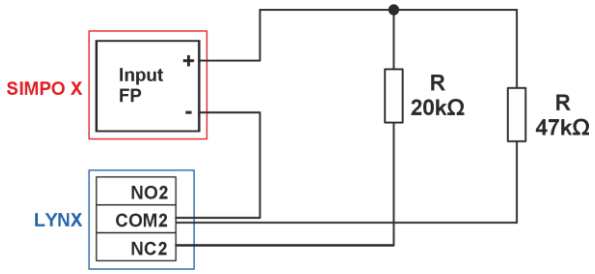
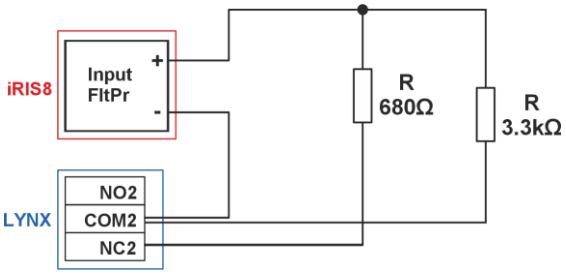
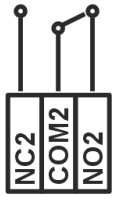
</td><td>


Figure 11.
Normal state of OUT1 output - NC
</td></tr>
</table>

Output	Functionality	Diagram
	After activation of Fire Alarm Confirmation terminal, the LED indication “Fire Confirmed” on the front panel (SIMPO X, iRIS8) is activated. The OUT1 is deactivated (returning to NC state) after receiving a “Fire Restore (FR)”, or “RESET (RR)” command from the panel via ESPA 4.4.4. protocol; or after reset of the activated input.	
OUT2	**Fault Protection.** The output is activated in case of fault in operation of the LYNX module, or the module is powered off. The functionality of the output is to activate a special input for Fault Protection in the fire alarm control panel/device, and the respective LED indication. The OUT2 terminal must be connected to the input terminal with Fault Protection function in the control panel/device. For the correct operation, the wiring connection diagram must be balanced with resistors* with values according the control panel/device technical characteristics. ** Check the values of the balancing resistors in the technical manual of the used control panel/device.* In case of connection to SIMPO X (terminal “In FP”) and iRIS8 (terminal FltPr) control panels, the values of the balancing resistors are as follows:   After activation of Fault Protection terminal, the LED indication “Protection Panel Fault” (SIMPO X, iRIS8) on the front panel is activated. The OUT2 is deactivated automatically when all faults are cleared. For the possible faults during the operation of LYNX module, and their description – see item 5.	 **Figure 12. Normal state of OUT2 output - NO**

4. PROGRAMMING WITH ProsTE

ProsTE is a specialized software for programming of panels and modules produced by Teletek Electronics JSC. The installer can quickly read the current configuration, to set new parameters and to write it back to the panel or module.

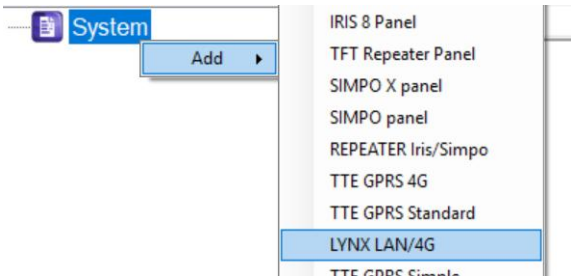
Attention: Always use the latest version of ProsTE software downloaded from https://portal.teletek-electronics.com/ or ask your local distributer for more information and details.

To connect the LYNX module to a local computer or laptop for programming, use a USB-C data cable.

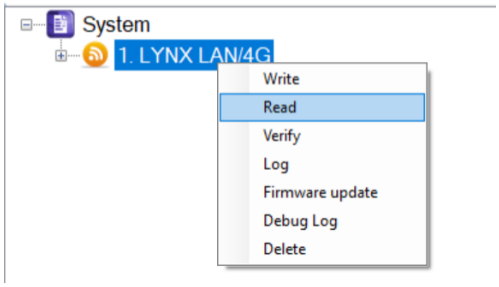
Note: The LYNX module must be powered up during programming! After connecting to the computer, you may be asked to wait until the system is installing some USB drivers.

4.1 Reading a Configuration

Run the ProsTE software and choose in sequence using the right-hand side mouse button: *System – Add – LYNX LAN/4G.*

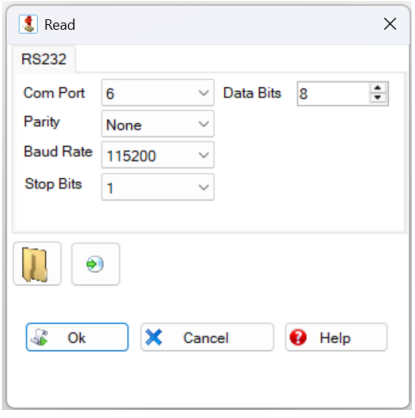


The LYNX menus are loaded at the left side as a tree structure. Select the module and using the right-hand side mouse button again choose in sequence: *LYNX LAN/4G – Read.*



Read is a command for downloading the current module's parameters and settings into ProsTE software.

A new window with options for *Reading* is opened:

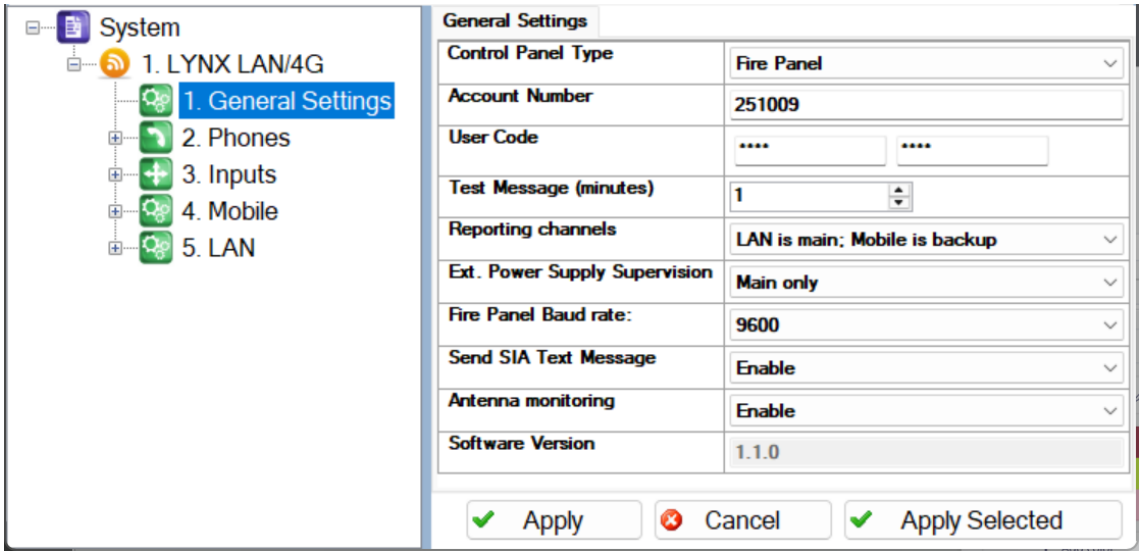


In *Com Port* field, select the number of *USB port* to which the module is physically connected. Press OK button to continue.

If the downloading is successful a message *"Download from hardware finished successfully!"* will appear on the screen.

4.2 General Settings Menu

Click on the "+" icon in front of *LYNX LAN/4G* to expand the programming menus. Select *General Settings* menu. The possible settings are displayed on the right-hand side on the screen:



Description of the fields

- ***Control Panel Type*** - Choose from the drop-down list the type of the panel to which the module is physically connected:
  - *Fire panel* - Set this option for connection to iRIS4, iRIS8 or SIMPO X panels.
  - *Stand Alone/None* - For future use
- ***Account Number*** - This is the number of the protected site (up to 6 digits), where the module LYNX is installed (set of the monitoring company).
- ***User Code*** - User access code for writing parameters to the module via ProsTE. The default set code is 0000. To change it you must enter a new 4-digit code into the field. The code is used also when reading the LOG, for firmware update and verifying the current module's version.
- ***Test Message (minutes)*** - Enter a time in minutes (from 1 to 10080) for sending test message from the module to an ARC monitoring station. You can disable the sending of test messages with setting "0" in the field.
  Example: For sending a test message every hour, enter 60; for sending a test message every 24 hours – enter 1440, etc.
- ***Reporting Channels*** - Use the drop-down list to set the type and the way of reporting of used channels (also called media) for transmitting of events to ARC. The user can choose among several options according the application and needs.
  - *LAN is main; Mobile is back-up* – The both communication media are used for reporting. The *Alternative reporting* is applied for transmitting of events. LAN channel is the Main channel for reporting and Mobile (4G) is the Back-up one.
  - *Mobile is main; LAN is back-up* - The both communication media are used for reporting. The *Alternative reporting* is applied for transmitting of events. Mobile (4G) channel is the Main channel for reporting and LAN is the Back-up one.
  - *Use only Mobile channel* - Only the 4G channel is used for reporting of events.
  - *Use only LAN channel* - Only the LAN channel is used for reporting of events.
  - *Both LAN and Mobile are main* - The both communication media are used for reporting. The *Parallel reporting* is applied for transmitting of events. The both media are Main.

Note: *According the set reporting channels it is obligatory to set properly also the submenus "Mobile Settings" (see item 4.5) and/or "LAN Settings" (see item 4.6)!*

Definitions

- ***Alternative Reporting.*** *In alternative reporting, to the available communication channels are set priorities for using. One of the channels is set with the highest priority for using – **Main**, and the other is set with lower priority – **Back-up.** In case of an event in the system, it is transmitted first through the Main channel and if the transmitting is successful, the event is not transmitted further. If the transmitting through the Main channel is failed, the event is transmitted through the Back-up channel. In alternative reporting is important the events to be successfully transmitted through only one of the set communication media, starting with the Main one. The User sets the priority of the used communication media.*
- ***Parallel Reporting.*** *In parallel reporting, the events are transmitted through all used communication media. All reporting channels are Main in priority and are used for transmitting. If the transmitting through one of the channels is failed, the incoming events will be stored in the loop buffer of the module (LYNX). When the transmitting through the channel is restored, all the stored events will be sent. In parallel reporting is obligatory the events to be successfully transmitted through all communication media.*

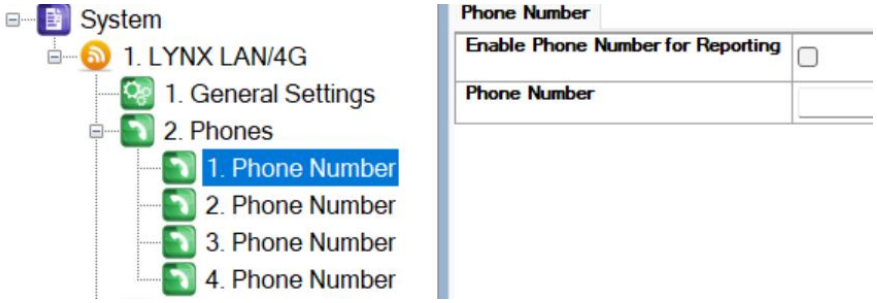
Important: *In case the option "LAN is main; Mobile is back-up" or "Mobile is main; LAN is back-up" is set, and the module uses Alternative reporting type for transmitting of events, the set time in "Test Message (minutes)" field will be used for verifying the availability and presence of the used channel. The purpose of the test message is to inform the Monitoring station for possible problems with both Main and Back-up media.*
In case of a problem with any of the media, a message "Communication trouble" ("YC" SIA code) will be sent to the monitoring station, as the type of the channel is presented with "1" for 4G and "2" for LAN. For example, the SIA code "YC1" means that there is problem with the used 4G channel of LYNX.
The restoring event is "Communication Restore" ("YK" SIA code).

- ***Ext. Power Supply Supervision*** – Use the drop-down list to set an option for supervision of the status of the power supply unit and reporting the possible troubles with it. The terminals for Main and Back-up power supply are displayed on Figure 6. Note that you can use both power supplies, but to supervise only the Main one.
    - *Main only* – Only the Main power supply is supervised. In case of trouble, the LED for Power ON (see item 5) will light on in yellow. The Back-up PSU, if used, will not be supervised in this case.
    - *Main and back-up* – Both Main and Back-up PSUs are supervised, as in case of trouble with any of them, the LED for Power ON (see item 5) will light on in yellow.
    - *None* – Set this option if the status of the PSUs will not be supervised.
- ***Fire Panel Baud rate*** - Bits per second in communication with the fire panel. The set values for Baud rate in LYNX and AFP must be the same. For connection to iRIS4, iRIS8 and SIMPO X panels, you must leave the value set by default - 9600 Bd.
- ***Send SIA Text Message -*** Enable the option to allow sending messages for events generated in the panel as text (ESPA), using SIA format. In ARC the messages are received as combination from text (the event, for example "Evacuation") and special SIA coding.
- ***Antenna Monitoring*** – This setting is enabled by default and allows supervision of the physical presence of the antenna. Do not change!
- ***Software version*** - The software revision of the LYNX module. The field is not accessible for changing.

Confirm all settings with *"Apply"* button.

4.3 Phones Menu

There are 4 optional phone numbers for reporting and sending messages for events, as all of them have one and the same programming.
Click on the "+" icon in front of *2. Phones* menu to expand the possible submenus. Select a submenu and set the requested information on the right-hand side of the screen:

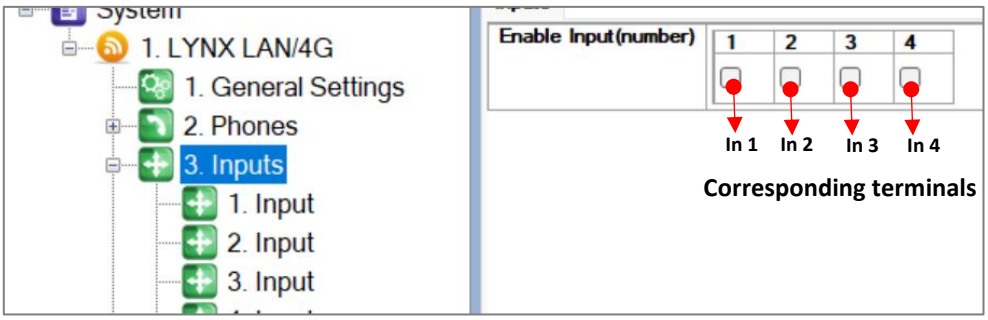


- ***Enable Phone Number for Reporting*** – Select the field to enable the phone number for receiving messages for events.
- ***Phone Number*** – Enter the phone number. The combination must be up to 32 digits, and to include "+…" or "00…" at the beginning. Enter the phone number without intervals, free spaces between the digits, no special symbols or letters are allowed.

Confirm the settings with *"Apply"* button.

4.4 Inputs Menu

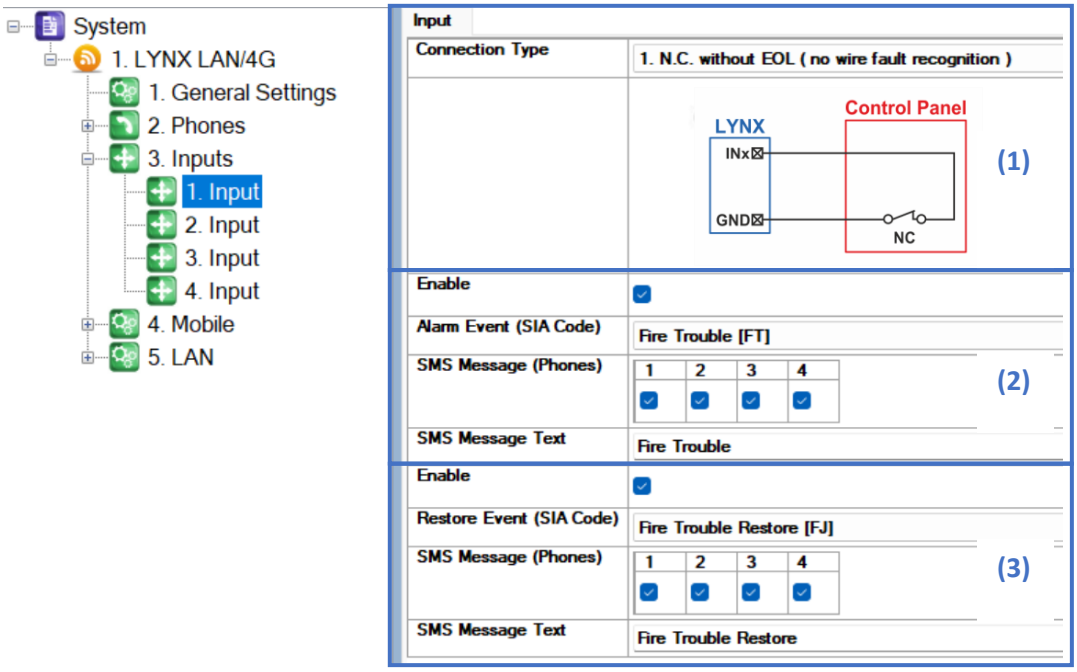
In INPUTs menus are set the type of events (as SIA codes) corresponding on the type of activation and restoring the input's state. Every input operates on specific hardware electrical circuit according the system requirements. The installer sets the type of the connection diagram according the wiring at every module's input.
By default, all input terminals are disabled for operation. The correspondence between the ProsTE settings and the physical terminals is as follow:



To enable an input, select the field under its number. Then confirm the choice with *"Apply"* button.
Note: *Enable only inputs with realized hardware connection. If you enable an input without respective hardware wiring to the terminals (INx and GND), after writing the configuration to the module, in the module's Log will be generated the activation event set by default to the input and the corresponding message will be send to ARC and user.*

To avoid sending unreal fault messages, it is recommended to realize all the hardware connections first, set the parameters for every input, and at the end to enable the inputs for operation.

The individual parameter settings for Inputs 1-4 are realized in separate submenus. Select the Input number on the left-side of the screen to access the settings. All inputs are programmed in one and the same way. The settings on the right-hand side are divided in three sections: (1) Connection Type; (2) Activation/Alarm Event; (3) Restoring Event.



(1) Connection Type – Select the realized hardware wiring to the input terminal. Six connection diagrams are available for selection from the drop-down list. The electrical circuits are presented in the field. For details refer to Figure 8.

(2) The settings for the Activation/Alarm Event:

- ***Enable*** - The transmitting of an event can be enabled/disabled. To enable transmitting when the input is activated, select the check box. The deselected check box means that the sending messages for events is disabled (will not be transmitted to ARC and User).
- ***Alarm Event (SIA Code)*** - From the drop-down list select the type of the event for activation of the input. The events are presented with their corresponding SIA codes. In activation of the input, the set SIA code is sent to the ARC.
- ***SMS Message (Phones)*** - Enable the phone numbers to which a message must be sent in case of activation of the input.
- ***SMS Message Text*** - This is an editable field, where the user can enter personal text describing the activation event. The text can be up to 31 symbols long, including spaces. It is acceptable to use digits, special symbols (except "[", "]", "|"), and Latin letters only. This text will be sent to the set phone numbers.

(3) The settings for the Restoring Event:

- ***Enable*** - The transmitting of an event can be enabled/disabled. To enable transmitting when the state of the input is restored, select the check box. The deselected check box means that the sending messages for events is disabled (will not be transmitted to ARC and User).
- ***Restore Event (SIA Code)*** - From the drop-down list select the type of the event for restoring the input. The events are presented with their corresponding SIA codes. In restoring of the input normal state, the set SIA code is sent to the ARC.
- ***SMS Message (Phones)*** - Enable the phone numbers to which a message must be sent when the state of the input is restored.
- ***SMS Message Text*** - This is an editable field, where the user can enter personal text describing the restoring event. The text can be up to 31 symbols long, including spaces. It is acceptable to use digits, special symbols (except "[", "]", "|"), and Latin letters only. This text will be sent to the set phone numbers.

By default, transmitting of messages for activation and restore type events are enabled and the following settings are pre-programmed from the manufacturer:

IN No	Activation Event		Restore Event	
	SIA Code	SMS Text	SIA Code	SMS Text
1	Fire Trouble [FT]	Fire Trouble	Fire Trouble Restore [FJ]	Fire Trouble Restore
2	Fire Alarm [FA]	Fire	Fire Alarm Restore [FH]	Fire Restore
3				
4				

To change the currently selected SIA code Alarm/Restore event message, click on it to expand a drop-down list with other events, click on the new one to select it. Confirm the new settings of the menu with *"Apply"* button.

Below is presented a list with all available SIA code Alarm/Restore event messages for events selectable from the drop-down list.
Note: *It is recommended to set only messages for Activation event type in section (2) and only (respective corresponding) messages for Restore event type in section (3)!*

Activation Events		Restore Events	
SIA Code Text Message	Code	SIA Code Text Message	Code
Burglary Alarm	BA	Burglary Alarm Restore	BH
Fire Alarm	FA	Fire Alarm Restore	FH
Panic Alarm	PA	Panic Alarm Restore	PH
Tamper Alarm	TA	Tamper Alarm Restore	TH
Medical Alarm	MA	Medical Alarm Restore	MH
Sensor Bypass	UB	Sensor Bypass Restore	UU
Water Alarm	WA	Water Alarm Restore	WH
Heat Alarm	KA	Heat Alarm Restore	KH
Low Temperature	ZA	Low Temperature Restore	ZH
Arm User	CL	Disarm User	OP
Arm Key	CS	Disarm Key	OS
Quick Arm	CL	-	-
Duress	HA	-	-
Communication Line Trouble	YS	Communication Line Trouble Restore	YK
AC Lost	AT	AC Restore	AR
Fire Trouble	FT	Fire Trouble	FJ

4.5 Mobile Settings Menu

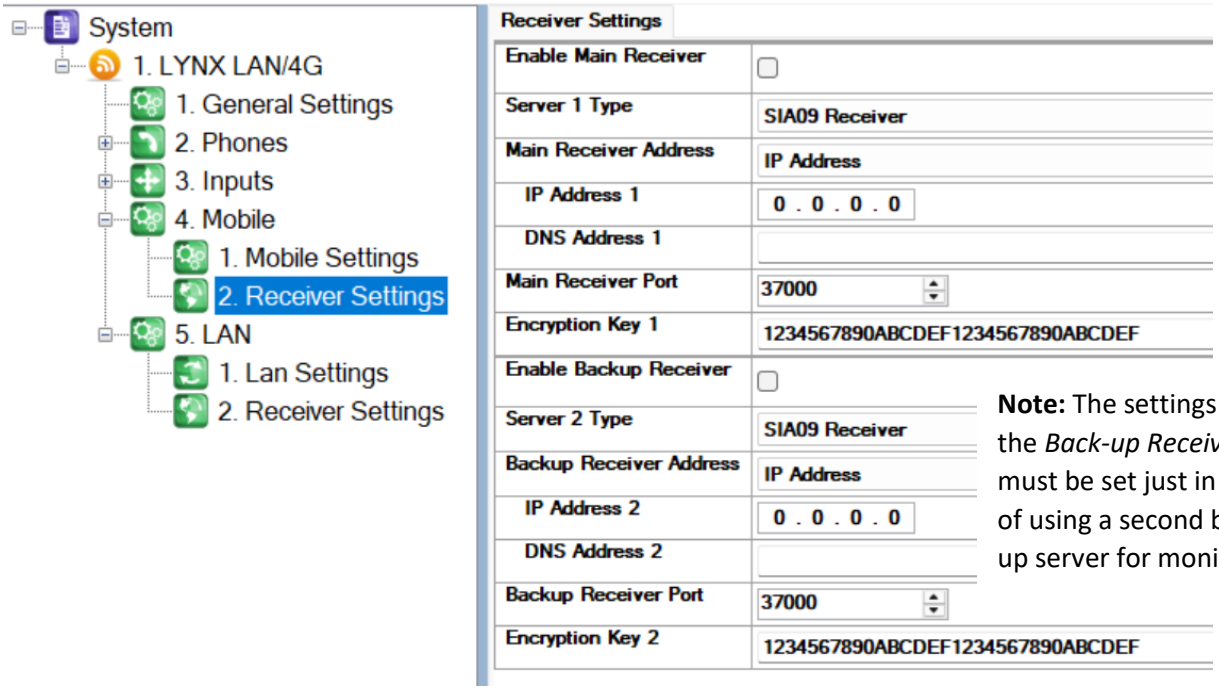
Click on "+" icon in front of the "*4. Mobile"* menu to expand the available submenus.
Select *"1. Mobile Settings"* and on the right-hand side of the screen you must set some specific information for the mobile operator:



"Net APN" – Enter the APN (Access Point Name) of the 4G network.
"User Name" – Enter valid user name for access to the 4G network.
"Password" – Enter valid password for access to the 4G network.

Save the settings with *"Apply"* button.

Select *"2. Receiver Settings"* and on the right-hand side of the screen you must set some specific information for the ARC station, using the Mobile (4G) network for monitoring. There are two sections for settings: for *Main Receiver* and for *Back-up Receiver.*



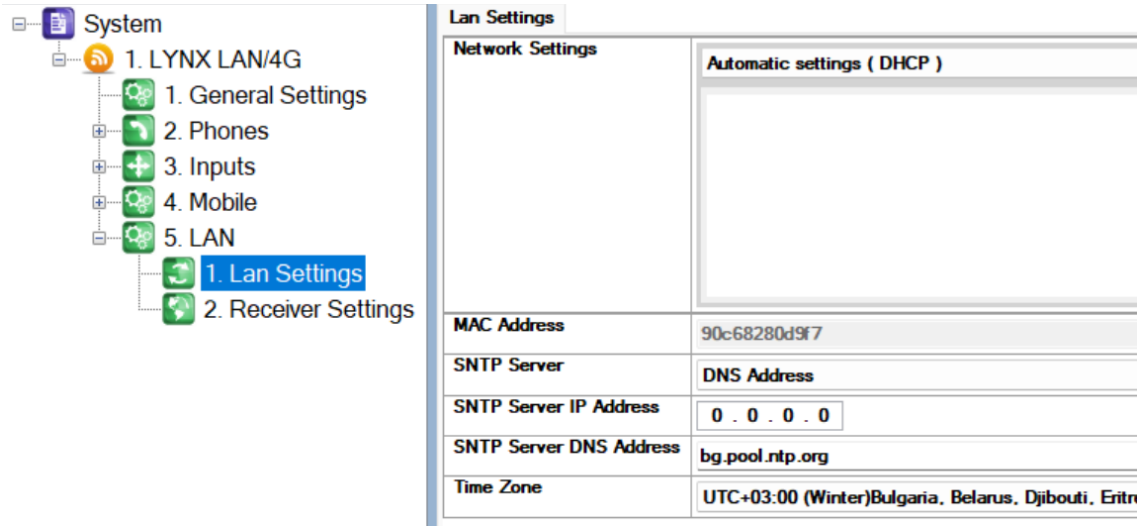
Note: The settings for the *Back-up Receiver* must be set just in case of using a second back-up server for monitoring.

Here is a short description of the fields:

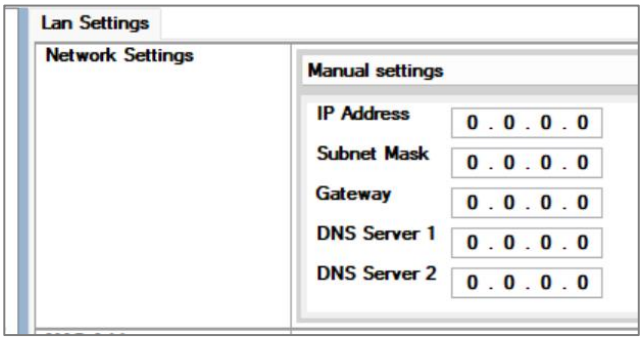
- ***"Main Receiver" Section*** – These are the settings for the Main Receiver Server for monitoring.
  - ***Enable Main Receiver*** – Enabling the communication with the Main Receiver server for monitoring.
  - ***Server 1 Type*** – From the drop-down list, select the type of the server for monitoring: *SIA09 Receiver or Ademco CID Receiver*.
  - ***Main Receiver Address*** – From the drop-down list select the way of access to the main receiver: over IP or over DNS Address.
  - ***IP Address 1*** – Enter the IP address of the Main Receiver server for monitoring. Fill in this field, if "IP Address" is set for *Main Receiver Address.*
  - ***DNS Address 1*** – Enter the DNS address of the Main Receiver server for monitoring. Fill in this field, if "DNS Address" is set for *Main Receiver Address.*
  - ***Main Receiver Port*** – Enter the Port of the Main Receiver server for monitoring.
  - ***Encryption Key 1*** – A special security encrypted key for the connection. The key is 32-symbols long with AES128 encryption, including HEX code. The key must be set one and the same at the LYNX module and the server for monitoring for proper operation.
- ***"Back-up Receiver" Section*** – These are the settings for the Back-up Receiver Server for monitoring in case of the Main Receiver is failure. The settings in this section have the same description as those for the Main Receiver.

4.6 LAN Settings Menu

Click on "+" icon in front of the "*5. LAN"* menu to expand the available submenus. Select *"1. LAN Settings"* and on the right-hand side of the screen you must set some specific information for the network:



- ***Network Settings*** – Select the way of setting the network parameters: *Automatic (DHCP) or Manual.*
  - The *"Automatic Settings (DHCP)"* option is set by default; it is recommended for a network using DHCP server. In this case the LYNX module will take the network settings directly from the server.
  - If you are not sure about your server type, choose the option *"Manual Settings"* from the drop-down list and enter manually the parameters of the network – IP address, Subnet Mask, Gateway, DNS Server 1, and DNS Server 2.



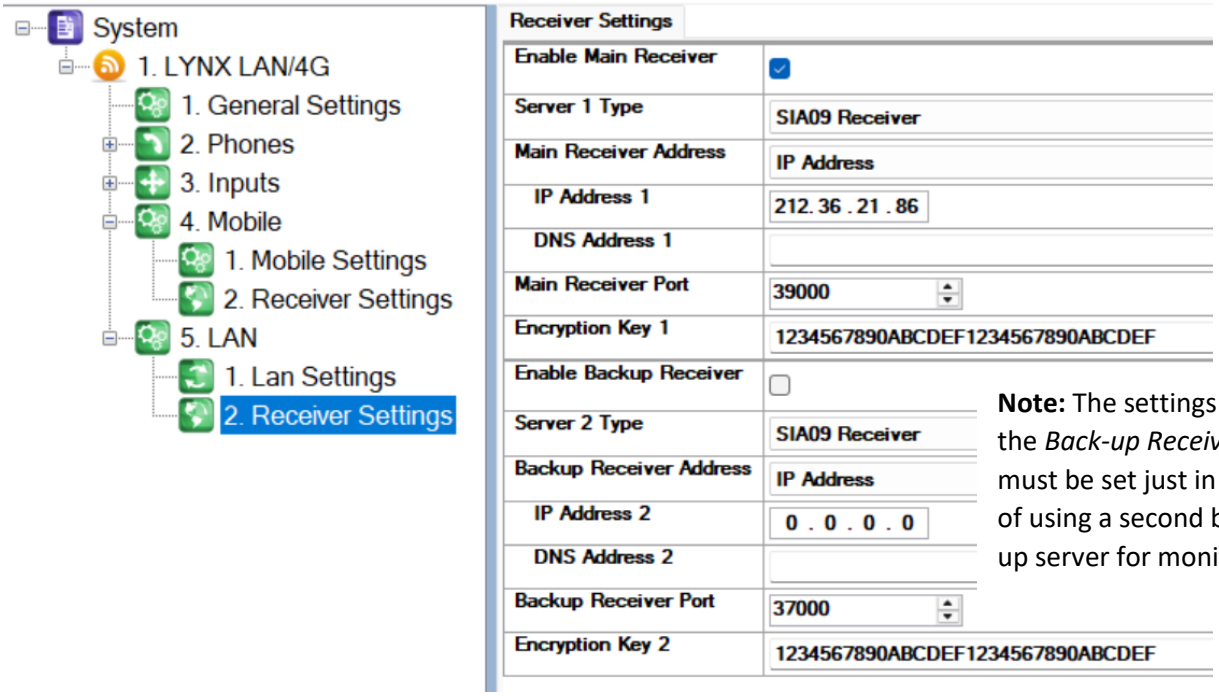
The other available setting in this screen:

- ***MAC Address*** – Not editable field, where the MAC address of the LYNX module is displayed after reading its configuration.
- ***SNTP Server**** - From the drop-down list select the way of access to the SNTP Server: over IP or over DNS Address.
- ***SNTP Server IP Address*** - Enter the IP address of the SNTP server for setting the correct time. Fill in this field, if "IP Address" is set for *SNTP Server.*
- ***SNTP Server DNS Address*** - Enter the DNS address of the SNTP server for setting the correct time. Fill in this field, if "DNS Address" is set for *SNTP Server.*
- ***Time Zone*** - From the list select the time zone with your exact location.

** The SNTP Server is used to synchronize the correct time set in the LYNX module, when the communication is only over LAN communication channel. If for communication is used also and Mobile (4G) network, then the setting of the time is automatic through the mobile network of the service provider. In case both communication media are used filling the SNTP Server setting is not necessary.*

Confirm with *"Apply"* button.

Select *"2. Receiver Settings"* and on the right-hand side of the screen you must set some specific information for the ARC station, using the LAN network for monitoring. There are two sections for settings: for *Main Receiver* and for *Back-up Receiver.*



Note: The settings for the *Back-up Receiver* must be set just in case of using a second back-up server for monitoring.

Here is a short description of the fields:

- ***"Main Receiver" Section*** – These are the settings for the Main Receiver Server for monitoring.
  - ***Enable Main Receiver*** – Enabling the communication with the Main Receiver server for monitoring.
  - ***Server 1 Type*** – From the drop-down list, select the type of the server for monitoring: *SIA09 Receiver or Ademco CID Receiver*.
  - ***Main Receiver Address*** – From the drop-down list select the way of access to the main receiver: over IP or over DNS Address.
  - ***IP Address 1*** – Enter the IP address of the Main Receiver server for monitoring. Fill in this field, if "IP Address" is set for *Main Receiver Address.*
  - ***DNS Address 1*** – Enter the DNS address of the Main Receiver server for monitoring. Fill in this field, if "DNS Address" is set for *Main Receiver Address.*
  - ***Main Receiver Port*** – Enter the Port of the Main Receiver server for monitoring.
  - ***Encryption Key 1*** – A special security encrypted key for the connection. The key is 32-symbols long with AES128 encryption, including HEX code. The key must be set one and the same at the LYNX module and the server for monitoring for proper operation.
- ***"Back-up Receiver" Section*** – These are the settings for the Back-up Receiver Server for monitoring in case of the Main Receiver failure. The settings in this section have the same description as those for the Main Receiver.

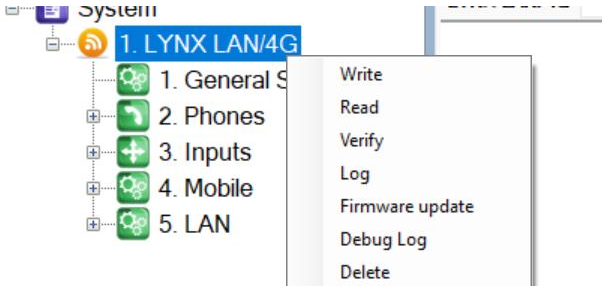
4.7 Saving a TDF File

When you complete with all parameters setting of LYNX Module you must save the module's configuration as TDF file. TDF (Teletek Data File) is a file format for ProsTE software.

To save the current opened module configuration, press the *"Save as"* button on the ProsTE ribbon bar and browse a place on your local computer. **It is recommended in one TDF file to save only one LYNX module configuration.**

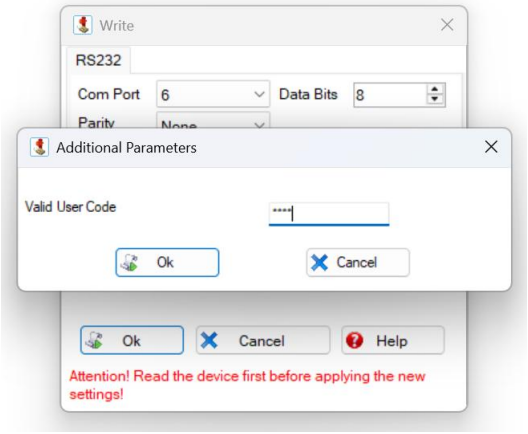
4.8 Writing a Configuration

To upload the settings from ProsTE to LYNX module you must *write* them to the currently connected module. Select *LYNX LAN/4G main menu* and choose using the right-hand side mouse button: *LYNX LAN/4G – Write.*



Write is a command for uploading the current ProsTE settings to the device configuration.

In the *Write* window select the USB port number to which you are physically connected and press *OK* button. The software will ask for a password. The default password is 0000:

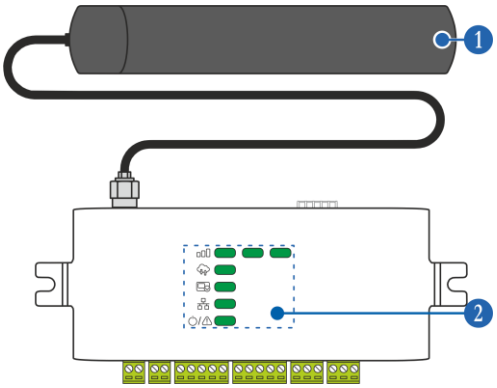


Note: *The "Password" is set at General Settings Menu.*

A system message will inform if the writing of the new configuration in the LYNX module is successful.

5. USER GUIDE

LYNX LAN/4G is a communication module designed for monitoring of addressable fire alarm panels – iRIS4, iRIS8, SIMPO X - supporting operation with ESPA 4.4.4. communication protocol.



The module consists of external mobile antenna (1) and a main unit with LED indication (2).

At normal operation mode, when both communication media - LAN and Mobile (4G) - are used, all LEDs must light on in green

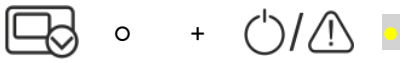
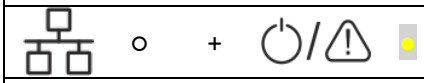
Figure 13.

Table 1. General LED Indication

Symbol	LED	Action	Description
	**RSSI*** - Mobile (4G) network signal strength *(green)*	●○○	The signal strength is poor.
		●●○	The signal strength is good.
		●●●	The signal strength is very good.
		○○○ *(LEDs OFF)*	• The Mobile (4G) channel is not used/programmed. • The 4G network is out of range – Fault, see Table 2.
	**Acknowledgement** *(green/red)*	Green ON	The connection to the ARC is working properly via the used communication media - all messages for events are transmitted, received, and confirmed.
		Red ON	• Generated from the control panel “Fire Alarm (FA)” or “Evacuate (FA)” type message is transmitted to ARC, and an ACK message for confirmation is received also (from ARC). • Generated from LYNX Input “Fire Alarm (FA)” type message is transmitted to ARC. The red indication will turn off in case of received event for restore or reset from the control panel; or when the Input of the LYNX is restored to normal state.
		OFF	There are not transmitted messages for events to the ARC via all communication channels - Fault, see Table 2.
	**AFP** Connection *(green)*	ON	The AFP (iRIS4, iRIS8, SIMPO X) is connected to the LYNX module via RS232 (ESPA 4.4.4 protocol) and the communication interface works properly.
		OFF	• The module is programmed to work as stand-alone device. • No connection between AFP (iRIS4, iRIS8, SIMPO X) and LYNX module - Fault, see Table 2.
	**LAN** *(green)*	ON	The LAN network is connected and available for operation.
		OFF	• The LAN network is not used/programmed for operation. • The LAN network fails in operation - Fault, see Table 2
	**Power ON / Fault** *(green/yellow)*	Green ON	The power supply - main and/or back-up - is switched on and working properly.
		Yellow ON	Fault in the operation of the module – Fault, see Table 2.

The Fault LED lights on in yellow in case of one or several problems in LYNS operation. Use the table below to define the type of fault and its description.

Table 2. Faults Indication

Symbols	Action	Fault Description
	The RSSI LEDs are OFF and the Fault LED is ON.	Problem with the 4G network.
	The ACK LED is OFF and the Fault LED is ON.	The connection to the ARC is lost and there are untransmitted events into the panel's memory.
	The AFP LED is OFF and the Fault LED is ON.	Trouble of the connection between the panel and the module. The RS232 interface is disconnected, or ESPA4.4.4 communication protocol is not programmed at "Printers" menu.
	The LAN LED is OFF and the Fault LED is ON.	There is a trouble with the LAN network or connection.
	The Fault LED is ON.	Fault in operation of the main or back-up power supply.

In case of fault event during the LYNX module operation, the relay output OUT2 is activated – see item 3.4.

AFP indication for faults in operation with LYNX module.
A fault message "ESPA transmission failure" is displayed on the "Faults" menu in case of: problem with the wiring of the LYNX module; RS232 interface is disconnected; ESPA4.4.4 not programmed at Printer menu; or, the LYNX module is not programmed with ProsTE. In case of fault indication from the panel, you must call your technical support for help and inform the monitoring ARC for the status of the module. The fault message is erased automatically after the fault condition is restored.

TELETEK

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