

Safely into a new day



FIRE PROTECTION

Advanced modular **FIRE ALARM CONTROL PANEL**
with additional functionality

NJP-400A

NJP-401A



I'm on FIRE
(Bruce Springsteen)



EN 54-2, EN 54-4 Cert No. 1124a

DESCRIPTION

The NJP-400A and NJP-401A are two relatively small but very efficient modular analogue addressable fire alarm control panels. They are cost effective and, through the use of sophisticated software and hardware solutions, they enable reliable fire detection without false alarms. Numerous possibilities to control alarms and other fire protection devices, including fire extinguishing systems are also provided. The NJP-400A and NJP-401A are fully compatible with all devices which use Apollo communication protocols, as well as with virtually all Apollo and other brands of conventional non-addressable detectors. Additional functionality includes detection and alarms for increased gas concentrations, various technical alarms, and addressable SOS alarm signals from hotel bathrooms. External devices can be connected to the panel's outputs, or to addressable output interfaces. Control panels and OP-400A repeaters can be connected to a full fault tolerant ZarjaNet-400 network. The Graphical Control Centre connected to the ZarjaNet-400 network enables more user friendly view of the system's state as well as management of the entire system.

FEATURES

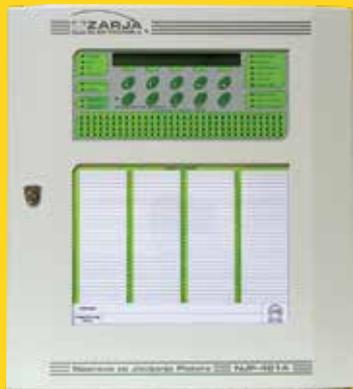
- Approved to EN 54, Parts 2 and 4.
- NJP-400A expandable to 4 loops; NJP-401A to 2 loops.
- NJP-400A expandable to 64 conventional zones; NJP-401A to 32 conventional zones.
- Loopless panel option (repeater).
- 2 x 40 characters LCD display, available in English, Slovenian, Croatian and Serbian language.
- 128 zone LED indicators and hard copy zone descriptions.
- User friendly commissioning with dedicated software tools, which is also on-site programmable via the on-board keypad.
- Powerful cause and effect programming, locally or over a network.
- Integral SPI bus for panel expansion, or adding functional modules.
- Event log for 1,364 events and site specific data in non-volatile memory.
- RS-232 serial ports for connection to a standard serial printer, PC or modem.
- Networkable for up to 16 panels in ZarjaNet-400, using the MRMO-400 module.
- The 500mA loop current makes it possible to connect a number of loop powered addressable devices.

FUNCTIONALITY

- Fire detection and alarm signalling.
- The detection and alarm signalling of an increased concentration of toxic and combustible gasses, while also providing suitable actions.
- The control and activation of various elements for fire protection (fire doors, smoke vents etc.).
- The control and activation of extinguishing equipment (FM-200, Novec1230, Hi-Fog, Argonite, CO₂ and others).
- Various technical alarms.
- SOS signalisation from hotel bathrooms.



OP-400A, NJP-400A, NJP-401A



NJP-400A



NJP-401A



COMMISSIONING

The panel's expandable modular platform provides the facilities and functions for all kinds of sites. For each project, the site-specific data (number and type of modules, detectors, interfaces, activators, detector location descriptions, etc.) and actions after an alarm, fault and other events should be inscribed into the panel with a process called commissioning.

Commissioning can be done:

OFF-LINE

Using Windows based OffLineStudio Software to generate a configuration file, which is uploaded to the panel via a serial COM port.

ON-LINE

Where the commissioning of the panel is performed directly on the panel using the LCD menus and keys on the front panel. A PC is not required, but can be used as a back-up storage for site specific data.



CONTROL PANEL'S STRUCTURE

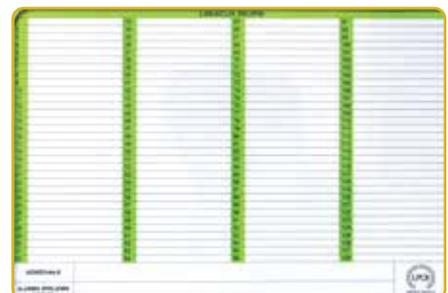
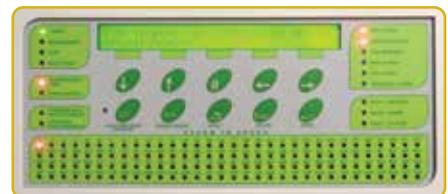
The panels are modular devices composed of mandatory, functional and optional modules. The number and types of functional modules is dependent on the size of the protected premises. Mandatory modules form the basic structure for the NJP-400A and NJP-401A, which includes the housing, power supply, control and display module, and central processor module, with two relay outputs and two programmable monitored outputs. On the panel's front cover there is room for 128 zone descriptions. The basic structure needs at least one functional LIMO-Ap or LIMO-Ko module to become a real control panel.

NJP 400A Basic structure

This includes a sheet-metal housing, a mandatory NAMO -400 power supply module, an UPMO-400 control and display module, and a CPMO-400 central processing module. In the housing there is a space for 2 x 12 V/24 Ah batteries, and rail support for optional industrial relays. The power supply can deliver 3A for external loads and 1A for detection circuits. The NJP-400A's basic structure has the capacity of 8 functional modules and 3 optional modules.

NJP 401A Basic structure

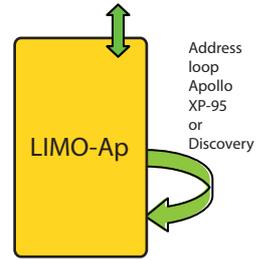
This includes a sheet-metal housing, a mandatory NAMO -401 power supply module, an UPMO-400 control and display module, and a CPMO-401 central processing module. Inside the housing there is a space for 2 x 12 V/12 Ah batteries and rail support for optional industrial relays. The power supply can deliver 1A for external loads and 0.5A for the detection circuits. The NJP-401A's basic structure has the capacity of 4 functional modules and 3 optional modules.



MODULES

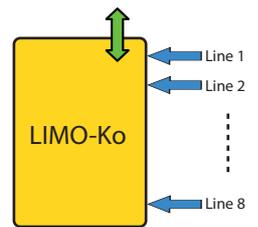
Apollo LIMO-Ap-400 Line (functional) Module

This module controls up to 126 addressable devices in one loop. Apollo S-90/XP-95 protocols are also supported. Sophisticated algorithms and a special HW loop interface assure reliable communications even in a high interference conditions. Short circuit protection is provided on both ends of the loop. The high current loop capacity enables it to connect to number loop powered addressable sounders, beacons etc. The NJP-400A can control up to four (4) loops (4 LIMO-Ap) and the NJP-401A and control up to two (2).



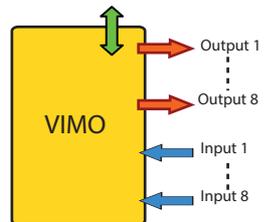
Conventional LIMO-Ko-400 Line (functional) Module

This module controls 8 lines with conventional detectors (Apollo S-60/65, Orbis, and other similar brands, also in intrinsically safe (EExi) versions). Lines with a stabilised voltage of 28 V are monitored via end of line resistor. Standard industrial gas detectors with a 4-20 mA output can be connected to the line directly. The NJP-400A can control up to 8 LIMO-Ko and the NJP-401A can control up to 4.



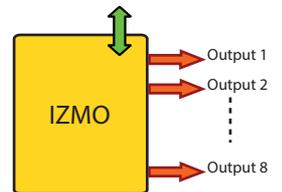
VIMO-400 Input-Output (functional) Module

This module controls 8 programmable transistor outputs and 8 programmable analogue inputs. The outputs are protected from overloads and short circuits. The inputs can be used for output monitoring, or the supervision of simple contacts or fuses. The NJP-400A can control up to 8 VIMO and the NJP-401A up to 4.



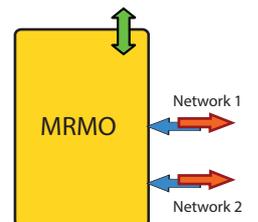
IZMO-400 Output (functional) Module

This module controls 8 relay programmable outputs which can be used for non-EN 54-2 compliant alarm devices and fire protection equipment. Each output is rated as 3 A/30 V.



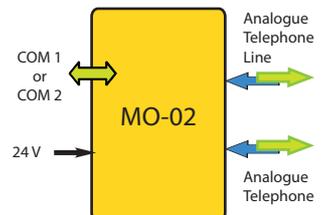
MRMO-400 Network (optional) Module:

This module is used to form a ZarjaNet-400 network with up to 16 panels, OP-400A repeaters, or GA-400 modules. The ZarjaNet-400 can be configured in either a ring or bus topology. The Module allows the use of copper or optical lines. A combination (copper/optical) connection is also possible. The distance between the two network units is always more than 1500m, and the cable depends on the distance.



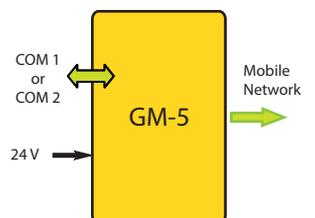
MO-02 (optional module) Modem:

This modem makes it possible to connect the control panel to the alarm centre via analogue telephone lines. Here, a standard Ademco Contact ID communication protocol is used. The MO-02 modem connects to the main processing module via a COM 1 or COM 2 port. It does not use the space provided for other optional modules.

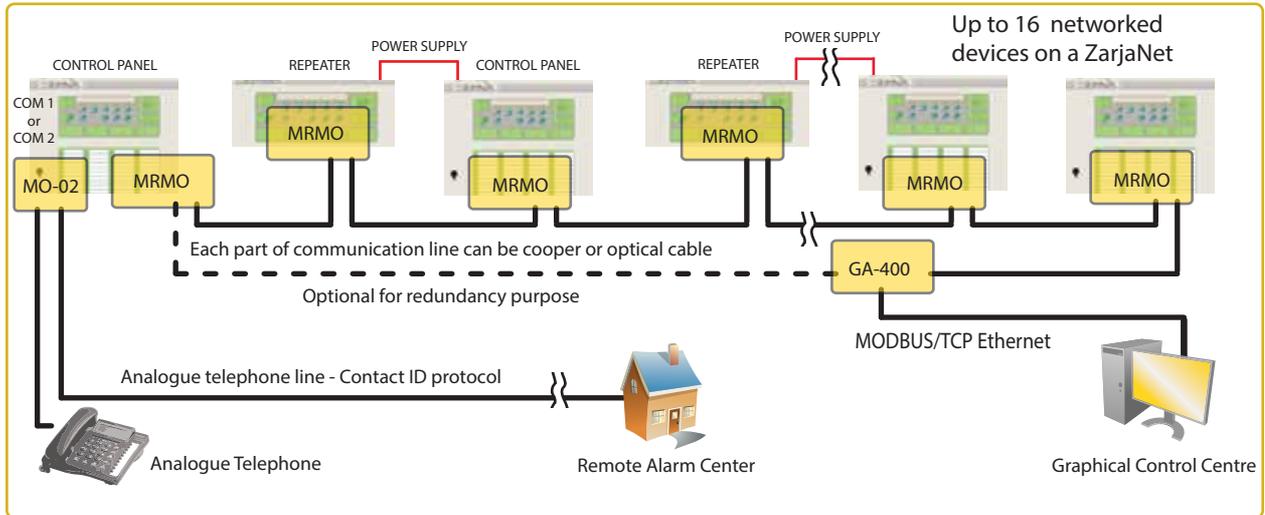


GM-5 GSM (optional module) Modem:

This GSM modem makes it possible to send SMS text messages to up to 10 different telephone numbers. The types of messages sent to each number can be commissioned: alarms, faults, or all messages. SMS text messages have the same format as they, displayed on the LCD panels. The GM-5 modem connects to the main processing module via a COM 1 or COM 2 port.



NETWORKED ZARJANET-400 SYSTEM



ZarjaNet-400 Devices

The NJP-400A and NJP-401A panels can become network devices by adding an optional MRMO module into the panel. The OP-400A repeater and GA-400 gateway are the default network devices. Up to 16 panels, repeaters or gateways can be networked on ZarjaNet-400. A physical connection can be made by copper or fibre optic cables, or a combination of both. ZarjaNet-400 operates as a true peer-to-peer system and can be configured either as fault tolerant ring, or simple bus topology. The network is configured without a master unit. All units send their messages to the net. The hierarchy of network devices is defined during the commissioning stage, and this ranges from all panels being equal to all panels being independent, meaning they do not “see” each other.

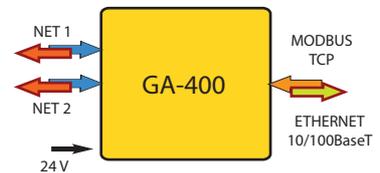
OP-400A Repeater

The OP-400A incorporates the UPMO-400 in its own smaller housing. It is similar to a panel, but without a functional and power supply module. The OP-400A shows the condition of the control panels on ZarjaNet-400. Depending on the commissioning, it can show the condition off all, or just one panel, and it allows for control from either all panels, or just one.



GA-400 Gateway

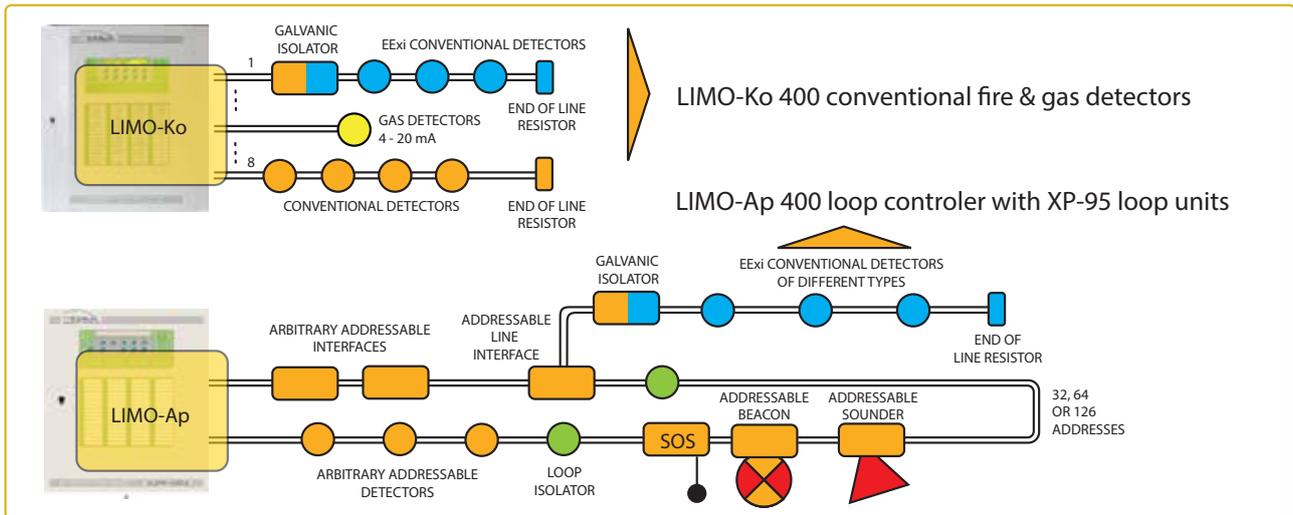
The GA-400 is used as a gateway between ZarjaNet-400 and third party devices. It is used primarily to connect to the Graphical Control Centre software running on a PC. The GA-400 transforms ZarjaNet internal messages to the MODBUS/TCP protocol. It comes with its own housing and is powered from the nearest control panel.



Graphical Control Centre

The control panel(s) on ZarjaNet-400 allows the connection of a Graphical Control Centre as an additional aid to personnel responsible for the fire alarm system. Control panel states are displayed graphically on a ground plane or picture of the site with several level and zoom options. The handling of programmed functions and the activation of certain output elements (sounders etc.) can be done with the click of a mouse on a graphic element on the PC monitor. A GA-400 gateway is needed to connect the PC to the panel(s).





SPECIFICATIONS

- Mains power supply:
- 230 V +10%, -15%,
 - NJP-400A: 135 VA, NJP-401A: 60 VA.
- Max power supply output:
- External loads NJP-400A: 3 A, NJP-401A: 1A,
 - Loops and conventional lines NJP-400A: 1A, NJP-401A: 0.5A.
- Charger characteristic:
- Constant float voltage 27.3 V +-1% at 20 °C, temperature compensated, NJP-400A: 1 A, NJP-401A: 0.5 A.
- Standby power supply:
- Sealed lead acid batteries 2 x 12 V,
 - NJP-400A: 24 Ah, NJP-401A: 12 Ah.
- Max current on one LIMO-Ap 400 loop:
- limited to 500 mA.
- Quiescent current on LIMO-Ko 400 input:
- 4.5 mA with 6k2 End of line resistor.
- VIMO-400 and CPMO-400 transistor outputs:
- current limited and short circuit protected monitored outputs, 2 on CPMO, 8 on VIMO with 24 V/1.4 A each.
- IZMO-400 and CPMO-400 relay outputs:
- 2 on CPMO 30 V/1 A, 8 on IZMO with 30 V/3 A each, voltage free change over contacts.
- VIMO-400 and CPMO-400 analogue inputs:
- 8 on VIMO-400 and 2 on CPMO-400, programmable, for monitoring outputs, contacts or fuses,
 - Input voltage: from -10 V to 30 V DC.
- Dimensions (without fixing frame):
- NJP-400A: 510x575x150 mm,
 - NJP-401A: 415x470x125 mm,
 - OP-400A: 324x230x70 mm.
- Power consumption:
- Basic structure without optional modules:
 NJP-400A: 70 mA, NJP-401A: 65 mA, OP-400A: 50 mA.
- Weight of basic structure:
- without accumulators: NJP-400A: 14 kg, NJP-401A: 9.2 kg,
 - with accumulators 24 Ah: 32 kg,
 - with accumulators 12 Ah: 21.4 kg, NJP-401A: 16.6 kg,
 - OP-400A: 2.5 kg.
- Temperature operating limits: -5°C do +40°C.
- Construction: Sheet steel painted, sealed to IP30,
- Front panel: polycarbonate foil keyboard.
- Capacity: modular structure enables for up to 8 functional modules,
- NJP-401A: up to 4.

HOW TO ORDER

- Basic structure NJP-400A: housing with power supply, display and central processor module.
- Basic structure NJP-401A: housing with power supply, display and central processor modul.
- Repeater OP-400A: type of physical media for each of two network connections must be provided (copper, MM fiber or SM fiber).
- Gateway GA-400: type of physical media for each of two network connections must be provided (copper, MM fiber or SM fiber).
- Network module MRMO-400: type of physical media for each of two network connections must be provided (copper, MM fiber or SM fiber)
- LIMOAп 400/32: loop controller for 32 devices.
- LIMOAп 400/64: loop controller for 64 devices.
- LIMOAп 400/128: loop controller for 128 devices.
- LIMOKo 400: 8 conventional lines.
- VIMO-400: 8 monitored outputs or 8 transistor outputs and 8 analogue inputs.
- IZMO-400: 8 relay outputs.
- UPMO-400: Control and display module, language version must be provided (Slovenian, English or Croatia/Serbian).
- GM-5 modem: GSM modem for text messages.
- MO-02 modem: Contact-ID modem for analogue telephone line



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