NIBBLE®

NURIA®

Analogue Addressable Fire Alarm Panel

NIBBLE®

Contents

1 Overview

NURIA is an addressable fire alarm panel with ongoing EN54-2/4 certification and EN54-13 pending. Its main features are listed in this section.

1.1 Appearance

- Friendly user interface;
- 7" resistive touchscreen (800x480);
- Modern and functional design;
- Customizable main screen logo;
- Surface or flush installation;
- Easy installation with extractable electronics;
- Extractable front door for easy manipulation of internal components;
- Metallic enclosure with dimensions of 436x443x110 mm.

1.2 Features

- Up to 4 loops;
- Up to 32 panels and repeaters on the same network;
- Compatible with Apollo XP95 / Discovery (up to 126 devices per loop);
- Compatible with Apollo CoreProtocol (Soteria) (up to 254 devices per loop);
- 120 customizable zones;
- Redundancy network communication: Ethernet and CAN;
- 4 supervised voltage outputs:
    - 2 for fire;
    - 2 for sounders;
- 1 fault output;
- 3 relay outputs;
- 2 auxiliary voltage outputs;
- 12W of power per loop;
- 150W power supply;
- 2 lead acid 12V 12Ah batteries;
- Optional external enclosure with capacity to hold 6 lead acid 12V 12Ah batteries;
- Logical programming of events;
- Firmware update over USB flash drive;
- MicroSD card support for event logging.

2 Installation

NURIA was designed for **indoor use** to operate under the following conditions:

- **Temperature:** -5º to 45ºC;
- **Relative humidity:** < 95%;

To make the installation easier, NURIA has several mechanical features to make the installation process quicker.

2.1 Enclosure

Dimensions	436x443x110 mm
Weight	6.95 kg
Color	Dark grey

Table 1: Enclosure specifications.

NURIA has a metallic enclosure with dimensions 436x443x110 mm that can be flush mounted or at surface. The cables for the setup can pass through the holes located on the top, where plastic glands should be used, or through the opening on the back of the cover.

The inside can be accessed by opening the front door using a specific key supplied with the equipment. The door can be removed and reinstalled quickly, without the need of unscrewing anything, using the existent pivot hinges, making the setup process easier.

The enclosure was designed to hold two 12V 12Ah lead-acid batteries on its bottom part with maximum dimensions of 151x98x99 mm.

2.2 Electronics

The electronics of NURIA can be completely separated from the enclosure to simplify the installation or for maintenance proposes by removing the four screws in the lower part, without the need of splitting all parts of the panel.

For the panel to work correctly, at least the following hardware should be installed inside the enclosure:

- 150W power supply;
- Two 12V batteries connected in series;
- Touch screen and main boards;
- One loop board.

There are also additional modules that can be acquired separately to provide NURIA with extra capabilities such as:

- Wi-Fi;
- GSM;
- DALI.

2.3 Mounting

Mounting the NURIA directly on the wall should be made using the four screws available on the back of the enclosure according to figure 1.

2.4 Connections

This section explains how the connections to the panel should be made in order to put it to work. To make NURIA compatible to the standards **EN54-2/4**, the following instructions should be followed carefully.

2.4.1 Main power supply

There is a three terminal connector with an incorporated fuse of 4A that should be used to connect the panel to the mains (230VAC) using a cable with 3 wires with cross section of at least 0.5mm^2.
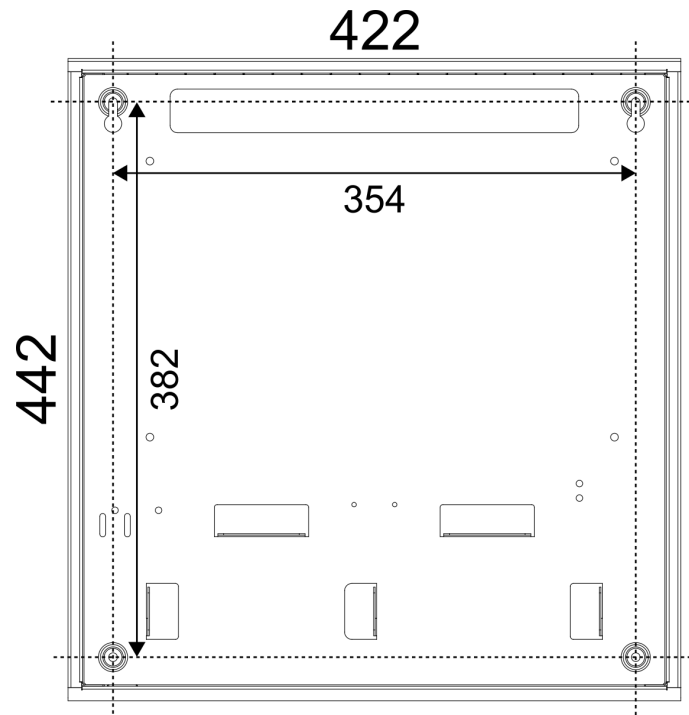
Figure 1: Mechanical details of the mounting holes. Dimensions in mm.

2.4.2 Backup power supply (batteries)

As a backup power supply NURIA uses **2 lead-acid 12V batteries connected in series**. Connections should be made using the available faston terminals. The capacity of the batteries depends on the desired lifetime for the installation. A previous calculation should be made to specify the batteries capacity.

The absolute minimum battery voltage is 19.2V for each battery series.

The supplied Velcro strip should be used to fix the batteries by wrapping it around them as showed in figure 2. The two tips of the tape should then be placed over each other and over the tape that fix the batteries.
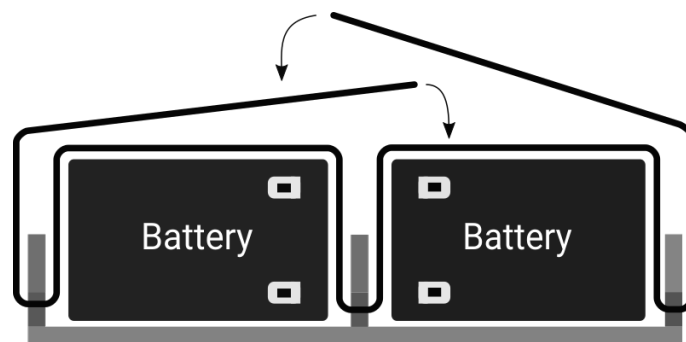

Figure 2: Top view. Demonstration of how to fix the batteries using the Velcro strip.

2.4.3 External battery pack

NURIA is designed to support two 12V 12Ah batteries on its enclosure. For greater lifetime, additional batteries can be connected using an external enclosure placed next to the main one, which should be fixed

to the wall by using all of its 5 mounting holes. The batteries should be connected in parallels of 24V just like in figure 3.

When using an external enclosure with a battery pack, the connection with the panel should be performed using cables with a maximum length of 1m according to table 2. Cable glands with clamping should be used on both enclosures.

Function	Terminal	Conductor core section
Battery	+	1.5 mm^2
	-	
Bat sensor	+	0.25 mm^2
	S	
	-	
Earth	Earth	0.5 mm^2

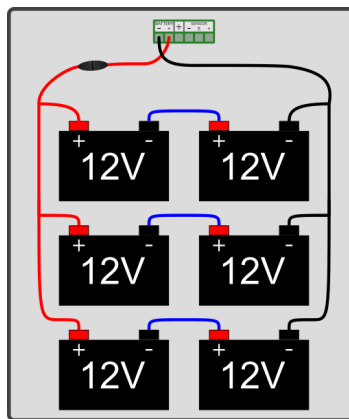**Table 2:** Cable specifications to connect external batteries.

Figure 3: Additional batteries connection.

The fixation of external batteries should use the same method as the internal ones (Figure 2).

To provide additional protection, two 250V 10A fuses are supplied. One of them is already assembled in the battery enclosure while the other shall be placed in series with the plus (+) terminal inside of the panel enclosure.

2.4.4 Loops and devices

Before connecting devices to the panel, at least a loop board is required. A loop board should be fitted in the connectors identified with the words *Loop n card* where *n* is the number that identifies each board.

The maximum number of devices per loop, depends on the protocol supported by the devices:

- Apollo XP95/Discovery - 126 devices;
- Apollo CoreProtocol - 254 devices.

It is possible to place devices communicating with different protocols on the same loop. The panel will automatically detect the device type and communicate using the appropriate protocol. To use mixed protocols on the same loop the following restrictions apply:

- XP95/Discovery devices must have their addresses between 1 and 126 inclusive;

- Devices with CoreProtocol must not have the addresses 127, 128 and 255;
- Each XP95/Discovery device will block an address at 128 over its own address, this will create a duplicated address error. Ex: a XP95/Discovery device with address 10 will block the use of address 138 (128+10) for a CoreProtocol (Soteria) device.

Connections to devices should be made using **shielded cables with at least 1.5mm^2 cross section per wire and the shield should be connected to the PE terminal**. They should always be connected from the terminals with the LOOP *n* A indications, go through all devices and return to the panel on the LOOP *n* B terminals, where *n* is the loop number. Each loop can supply up to 500mA.

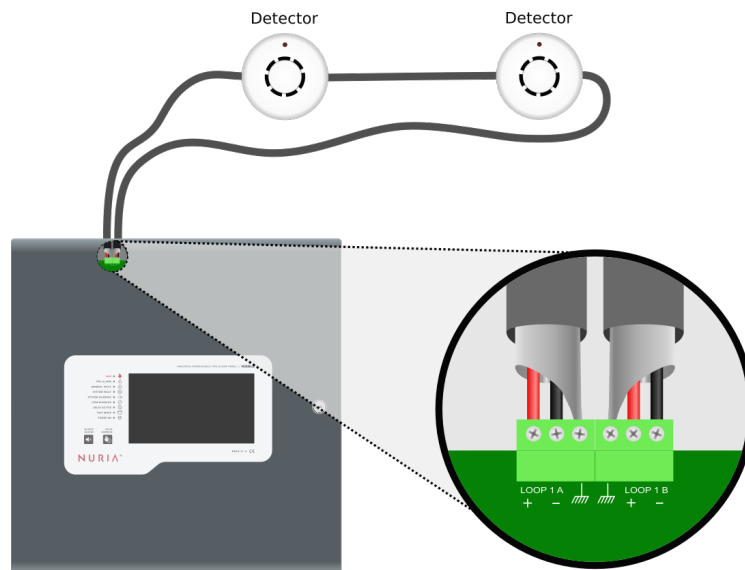Figure 4 shows an example of how to connect two detectors on loop 1.

Figure 4: Example connection of two detectors.

2.4.5   28V outputs

NURIA has **4 supervised**, **1 fault** and **2 unsupervised auxiliary** voltage outputs. Table 3 shows all the voltage outputs as well as its specifications. Supervised outputs must be terminated with a **10 kΩ** resistor. Figure 5 shows an example of how to correctly connect a sounder to the SND1 output. Any other supervised output should follow the same logic.

The supervised outputs are enable by default, which means that if they are not properly terminated a fault will be generated by the panel. It is possible to disable a supervised output in the configuration menu, in that case there is no need to place a terminating resistor.

Connection of unsupervised outputs works the same way as the supervised ones but without the need of a terminating resistor.

2.4.6   Relay outputs

NURIA also has **3 relay outputs** with capability of handling **250VAC** and **5A**. The trigger of these outputs can be defined in the event configuration (see 5.4).

Name	Supervised	Max. current	On	Off
FIRE1	Yes	100mA	$28V^1$	$0V^2$
FIRE2				
SND1		500mA		
SND2				
FAULT	No	100mA	$0V^2$	$28V^1$
AUX1		1A (shared)	$28V^1$	0V
AUX2				

Table 3: 28V outputs and its specifications.

[1] When mains is not present, the voltage may vary from 28V to 21.6V, according to the battery voltage.
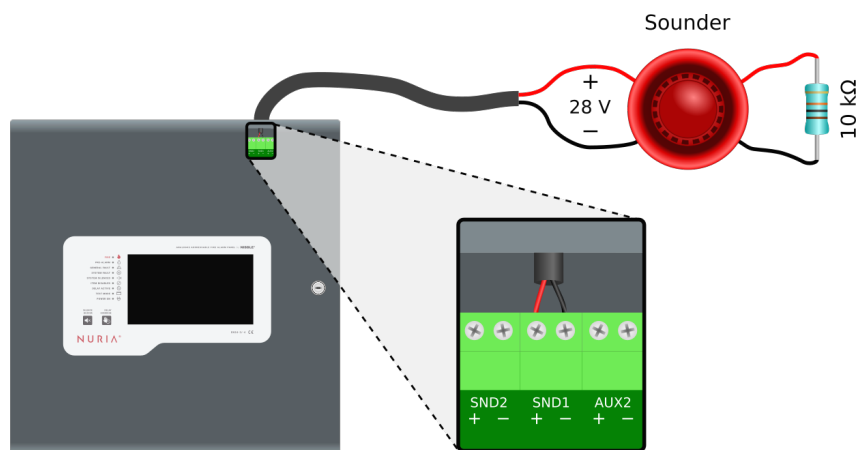[2] A residual voltage of 3.3V might be present to supervise the output.

Figure 5: Example connection of a supervised output using a sounder (SND1).

2.4.7   Network (CAN and Ethernet)

It is possible to connect several panels and create a network. If the Ethernet interface is used, the panels should be connected to a switch or router compliant with the EMC[3] standards to enable full compatibility with the **EN54-2** standard.

When connecting panels over CAN, a termination resistor of 120Ω should be placed on the last one. Always use a bus topology when connecting devices over CAN.

[3]Electromagnetic compatibility

3 Maintenance

The system should be periodically maintained in order to keep the installation safe. The instructions in this section should be followed carefully to make sure the installation site is protected.

3.1 Testing the panel

Menu → Test → Panel

To test the panel interface, navigate to the Test Panel screen. Press each button to test the corresponding function. Visual indicators, internal buzzers and physical buttons can be tested here.

3.2 Testing the outputs

Menu → Test → Outputs

Testing the outputs will make sure that they operate correctly when needed. Navigate to the Test Outputs screen and test all, one by one. **This will enable the output, check if it safe to enable in order to avoid unwanted behaviours in the installation site.**

3.3 Testing the battery and loop communication

Menu → Test → Diagnostic

In the diagnostic menu, check if the **Power DC** and **Battery** voltages are correct, indicated by a green background in the box that contains the value.

The communication errors must also be noticed, to verify that the loop is operating correctly, a rate of errors over frames should keep a value less than 1%.

3.4 Testing the devices

Devices should be tested following the recommended instructions of the manufacturer. To test if the devices operate correctly, place a zone under test mode (see 5.12) and activate the devices that you want to test.

4 Interface

NURIA has an interface composed by nine light indicators, two physical buttons and a 7" 800x480 touchscreen.

4.1 Light indicators

Table 4 contains the meaning of those visible indicators. Fault and fire indicators will remain blinking when there are any unacknowledged alarms or faults.

4.2 Physical buttons

There are two physical buttons on the panel to enable quick access level 1 operations, described in table 5.

Indicator	Name	Description
	Fire alarm	System in the alarm condition
	Pre-alarm	System in pre-alarm, triggered by a detector or by a zone configured in type A or B (see 5.3.3)
	General fault	Signals a problem with the system
	System fault	Signals a fault in the panel itself
	System silenced	Indication that sounders have been silenced
	Item disabled	At least one item in the system is disable, that can be a supervised output, a loop device or a zone
	Delay active	Fixed - There are delays configured Blinking - Delays are running, if the user does not act, an alarm will occur after the configured time
	Test mode	There are items under test that will not trigger alarms or faults
	Power on	Fixed - The system is powered with the mains Blinking - The system is powered with the battery

Table 4: NURIA light indicators.

Button	Function
	Silence buzzer - disables the internal buzzer
	Delay override - activates sounders immediately when the system is with the delay active

Table 5: Function of the panel buttons.

4.3 Touchscreen

Figure 6 shows the look of the home screen when in access level 1.
The display can be divided in two main areas:

- **Header** - Permanently visible, contains information about the panel status;
- **Panel information** - Displays an overview of the panel status.

4.3.1 Header

The header can be divided in three separated areas, marked in figure 7 with orange rectangles:

1. **Navigation** - Buttons and indications there are touchable;
2. **Information** - Information about the panel;
3. **Access level** - Information and actions related to access level.

Details for the icons for **Navigation** and **Information** are available in table 6. To change the current **access level** of the panel, press the button on the top right corner: if in access level 1 press the **Login** button insert the pin (see section 5.1), if in level 2 or 3 just press **Logout** to return to level 1.

4.3.2 Panel information

Figure 8 shows the display with login in access level 3, with number identifying 8 different areas:
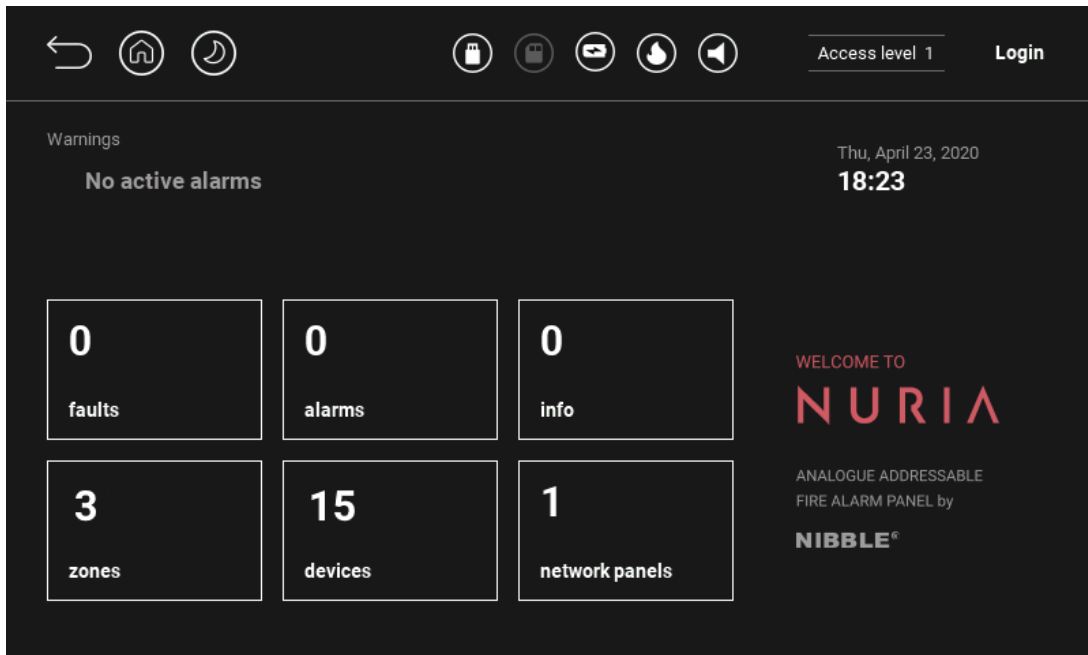
Figure 6: Touchscreen interface - main page.

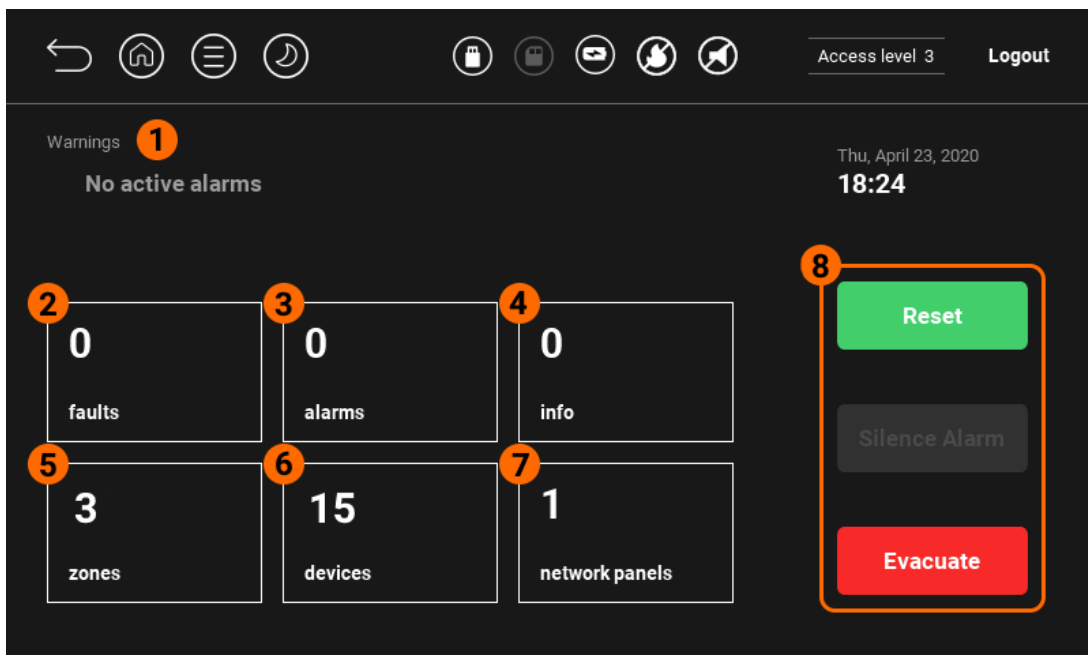**Figure 7:** Header in access level 3, showing the different areas in orange.

Figure 8: Home screen in access level 3, showing the different areas in orange.

1. Navigation icons

	Return to the previous screen
	Return to the home screen
	Opens the menu
	Panel in day mode
	Panel in night mode
	Panel in day mode (scheduled)
	Panel in night mode (scheduled)

The day/night mode rows share the description: Go to day/night configuration screen

2. Status icons

	SD card inserted
	USB flash drive inserted
	Battery OK and charging
	Battery disconnected
	Battery in fault condition
	Fire outputs are OK
	Fire outputs are active
	At least one fire output in fault
	At least one fire output disabled
	At least one fire output active and one in fault condition
	At least one fire output active and one disabled
	At least one fire output in fault condition and one disabled
	All sounders are OK
	Sounders are active
	At least one sounder in fault
	At least one sounder disabled
	At least one sounder active and one in fault condition
	At least one sounder active and one disabled
	At least one sounder in fault and one disabled
	At least one sounder active, one in fault and one disabled

Table 6: Description of icons in the navigation area.

1. **Warnings** - each time the panel has something important to report, such as alarm and faults, this area will be updated with the information of the last event;

2. **Faults** - this rectangle will change every time a fault event appears. The total number of active faults will be displayed that will only be clean after a reset. Press this rectangle to view fault details;
3. **Alarms** - same as faults but related to alarms;
4. **Info** - this area is used to display relevant information not directly related to alarms or faults. This counter can be cleared without a reset.
5. **Zones** - information related to zones. NURIA supports up to 120 zones but a zone will only become active, and integrate in this counter, if it has devices associated to it. When a zone is disabled or in test this rectangle will be updated with the corresponding information;
6. **Devices** - same as zones but related to devices;
7. **Network panels** - displays the number of panels in the network including the current panel. It can be pressed to show detailed information.
8. **Quick actions** - level 2 and 3 actions:

   - **Reset** - clear all alarms, faults and all fire and sounder outputs;
   - **Silence alarm** - silence the internal buzzer and all sounders;
   - **Evacuate** - turn on all sounders.

5   Configuration

NURIA can be configured entirely using its touchscreen in a simply and intuitive manner, even the more complex configurations can be defined from here. This section describe the most important configuration for the panel to work accordingly to the needs of the surrounding environment.

5.1   Access levels

In order to change configurations in NURIA access level 2 or 3 is required. Use the *Login* button on the right top of the screen to enable advanced access level operations.

5.1.1   Access level 2

The default code to enter access level 2 is **2222**. It is recommended to change this code which is possible with access level 3.
Available options in access level 2:

- Silence alarms, evacuate and reset;
- Enable/Disable zones, devices and supervised outputs;
- Visualize log of events;
- Set date and time;
- Switch day/night configuration: day, night or scheduled;
- Manage interface settings: language, screen backlight and touch feedback.

5.1.2   Access level 3

The default code to enter access level 3 is **3333**. It is recommended to change this code which is possible with this level.
Available options in access level 3:

- All the options of the access level 2;
- Full configuration of loops, zone and devices;
- Event configuration;
- Modify access level codes;

- Day/night settings;
- Factory defaults;
- Access to diagnostic tools.

5.1.3   Changing access level codes

Menu → Panel → Access codes

Select the access level and follow the instruction to insert the new code. **Changing the code is only possible with access level 3.** There are a few restrictions when changing access level codes:

- The code must contain 4 digits;
- Access codes for level 2 and 3 must be different.

5.2   Device configuration

Menu → Field → Devices

Use the arrows on the right to navigate through the devices or use the filters to navigate directly to a device or loop.

It is possible to change the name of a device as well as its zone. The button Identify will start the device identification process, it should be pressed again to end this process, otherwise it will only stop it after a reset. It is also possible to enable or disable it using the buttons Enable / Disable ;

5.3   Zone configuration

Menu → Field → Zones

Use the arrows on the right to navigate through the devices or enter the zone directly to jump to it. Through the button Configure the following options can be changed: **Sounder delay**, **Enable type**, **Mode** and **Cancellation delay**.

5.3.1   Sounder delay

Sets the maximum time to delay a sounder activation after an alarm has been confirmed. This delay will not work in the following conditions:

- The alarm has been activated by a manual callpoint;
- The panel is in night mode.

During a delay, the *Delay active* indicator will light up. If the button Delay override is pressed, the delay will be cancelled and the sounders will be activated.

5.3.2   Enable type

This parameter allows the configuration of the zone behaviour according to the day/night mode setting with the following options:

- **Normal** -The zone will always be enabled:
- **Disabled in day mode** - The zone will be disabled during the day mode and will not trigger any alarm;
- **Disabled in night mode** - The zone will be disabled during the night mode and will not trigger any alarm.

5.3.3 Mode

- **Normal** - an alarm will be triggered when a device reports an alarm state;
- **2 devices type A** - zone will behave as follows:
    - If a detector enters in alarm state, the zone will enter in a prealarm state, which will be signalled by the **Pre-Alarm** light indicator. The panel will not make any sound and this information will be showed in the information box.
    - The zone will enter in alarm if any of the following occur:
        * The same detector is still in alarm after approximately 45 seconds;
        * Another detector in the same zone enters in alarm state.
    - The zone will return to the normal state if none of the previous conditions occur after the time defined in **Cancellation delay**.
- **2 devices type B** - zone will behave as follows:
    - If a detector enters in alarm state, the zone will enter in a prealarm state, which will be signalled by the **Pre-Alarm** light indicator. The panel will notify and this information will be showed in the alarm box.
    - The zone will enter in alarm if any of the following occur:
        * The same detector is still in alarm after approximately 3 minutes;
        * Another detector in any zone enters in alarm state;
        * The panel is already in prealarm.
    - The zone will return to the normal state if none of the previous conditions occur after the time defined in **Cancellation delay**.

The **sounder delay** will always be applied in whichever mode is configured.

5.4 Event configuration

| Menu → Field → Events |

NURIA has a very versatile event configuration system which allows the panel to be adapted to many use cases by creating logical event schemes fully customizable by the user.

To proceed to an event configuration there must be at least one event input and one event output, that can be created using the buttons Event input and Event output respectively. Then, configure the event itself using the Event button that will allow the definition of a logical configuration of inputs to trigger the outputs.

5.4.1 Event input

- **Name** - name of the event input;
- **Type** - type of input (see table 7);
- **Subtype** - subtype according to selected type (see table 7);
- **Arguments** - arguments of the selected type (see table 7);
- **Delay** - delay, in seconds, before triggering the event input.

5.4.2 Event outputs

- **Name** - event output name;
- **Type** - output type (see table 8);

Type	Arguments	Subtype
Zone state	Zone name	Disabled Test Offline
Device state	Device name	Comm Failure Online
Zone alarm state	Zone name	Fault Normal
Device alarm state	Device name	Pre Alarm Alarm
Calendar	Weekdays	On Off
Power	N/A	OK Not OK
Battery		
Earth		
Fault		
Fire		
Evacuate		
Reset		
Silence		

Table 7: Configuration possibilities for event inputs.

- **Arguments** - arguments according to selected type (see table 8);
- **Action** - action on output (see table 8);
- **Delay** - delay, in seconds, after the event is triggered.

Type	Arguments	Action
Device output	Device name	On Off
Auxiliary output	Auxiliary output index	Toggle Pulse ON
Relay output	Relay output index	Pulse Off Strobe
SMS	To be defined	To be defined
DALI	To be defined	To be defined

Table 8: Configuration possibilities for event outputs.

5.4.3 Event

- **Name** - event name;
- **Equation** - inputs logic to trigger outputs;
- **Inputs** - event inputs;
- **Outputs** - event outputs to be triggered;

In addition to these settings it is possible to **Remove** , **Edit** or **Disable** an event using the respective button.

Always be aware when configuring events to prevent the programming of conflicting ones that can lead to undesirable behaviour of the outputs.

5.5 Loop configuration

Menu → Field → Loops

This menu is used to configure the loops. Loop 1 is enable by default, if more loops are installed, they must first be enable through this menu. Use the right arrows to navigate through the loops The menu contains the following items:
Loop configuration description:

- **Type** - type of loop installed (limited to Apollo loop for now);
- **Devices** - number of devices in the current loop;
- **Name** - the name and id of the loop;
- **Status** - the current status of the loop, it can have the following:

    - **Online** - loop is working correctly;
    - **Offline** - loop is not present or unable to communicate;
    - **Comm failure** - There is a problem with the loop and communications are failing;
    - **Disabled** - loop is disabled and communications are disabled.

- **Firmware version** - version of the loop firmware.

Use the Configure to update the firmware, the Scan to force the loop to perform a scan for new devices and the button Enable / Disable to enable or disable the loop. Disabled loops will not trigger alarms or faults and will not communicate with the devices installed in its interface.
There is no need to force a scan in a loop because the loop is always querying the devices and scanning for new ones. When a new device appears on the loop, it will automatically be placed in zone 1.

5.6 Field configuration

Menu → Field → Field configuration

Several global configurations of the panel can be set in this area:

- **Common delay** - This field sets a global delay for all the sounders in the system, when in day mode. This delay only applies to detectors.
- **Permanent delay** - This field sets a permanent delay for all the sounders in the system independently day/night mode configuration. This delay only applies to detectors.
- **Evacuate transition delay** - Sets a delay to make sounders change its sound to evacuation after an alarm from a detector. Alarms from manual callpoints will instantly trigger the evacuation sound while detectors will trigger the alarm sound.
- **Sounders** - sets up the behaviour of the loop sounders in the system:

    - **Common** - when an alarm is triggered, all the sounders is the system will be activated;
    - **Zonal** - sounders connected to SND1 and SND2 and the ones that are in the same zone as the device in alarm will be activated, sounders in other zones will not suffer any change.

- **Polling LED** - enter this menu to select the devices that will blink its led when they are working;
- **Re-sound on new alarm** - activate this, if you want sounders to be activated again when a new alarm triggers, after they had already been silenced.

5.7 Global device configurations

> *Menu → Field → Global device configuration*

This option can be use to globally change the parameters of some devices listed in table 9

Device type	Parameter
Detectors	Sensitivity
Sounders	Tone
	Volume

Table 9: Available parameter configuration.

5.8 Set date and time

> *Menu → Panel → Date and time*

In order to correctly save the logs in the system the date and time must be correct. Navigate to this menu and follow the instructions to change this settings.

5.9 Panel network

> *Menu → Panel → LAN connection*

If there are multiple panels connected in a network using the Ethernet interface, this configuration is required in order for it to work correctly.

5.9.1 IP address

To allow the communication between panels, each panel has to be assigned with an IP address, which allows for it to be identified in a network. NURIA has the ability to configure its IP using the **DHCP**[1] or manually trough a **fixed IP**. To switch between configuration, just press the button LAN Connection or Fixed IP and edit the configuration accordingly. The **Link Status** will show if the panel is correctly connected to the network by changing its value from *Offline* to *Has IP Address*.

5.10 Day/Night

> *Menu → Panel → Day / Night*

This menu allows the user to configure and schedule the day and night times. This configuration is relevant when sounder delay is active or for zones that are configured to behave differently during the day or night, otherwise this configuration will have no impact in the system normal working mode.

There are three configurations available using the buttons in the bottom:

- Night - sets the panel in night mode, cancelling all configured sounder delays;
- Day - sets the panel in day mode, enabling all the configured sounder delays;

---

[1]Dynamic Host Configuration Protocol - basically, the IP is given by the server.

- Schedule - switches automatically between day and night mode, according to the defined schedule on the screen. Each schedule define the period for the **day mode**.
  Touch a schedule rectangle to edit the start and stop time as well as the weekdays. To enable it press the switch button on the top right corner. **For the configure schedules to work, make sure that the** Schedule **button is green meaning that the mode is active.**

5.11   Enable/Disable items

Menu → Enable/Disable → *Devices*
Inputs
Outputs
Zones

To quickly enable or disable an item just press the selected item to toggle its status. The **disable** indicator will light up when there are items disabled.
Disable items will not trigger faults or alarms.

5.12   Testing zones

Menu → Test → Zones

NURIA provides the functionality to test individual zones of the system without interfering with the others. When any zone is in test mode the **Test** indicator will be turned.
To enable test mode navigate to this menu and press a zone to put it in test. You can press Select all to place all zones in test mode or Deselect all to place zones in normal mode again.
Devices in a zone under test, will not generate faults or alarms. These notifications will be visible in the info area and will be registered in the system logs.

5.13   Firmware update

The firmware of the NURIA can be updated in access level 4. To enable firmware update the jumper in the PCB, on the left side of the fault connector, should be in the ON position. It is possible to update the firmwares of the motherboard and the loops.
The firmware upgrade is performed using an USB flash drive (formatted in FAT32) with the firmware files that must be placed in the **USB HOST** connector. These files are supplied by the manufacturer, on request.

5.13.1   Motherboard

Menu → About

If the USB is correctly identified by NURIA with the correct file in it, the button Update Firmware will become active. Press the button to proceed to the update.

5.13.2   Loops

Menu → Field → Loops

Use the arrows on the right to navigate to the loop that needs to be upgraded. By pressing the Configure button the loop configuration page will open.

If the USB is correctly identified by NURIA with the correct file in it, the button Update Firmware will become active. Press the button to proceed to the update.

5.14 Factory defaults

Menu → Panel → Factory resets

If there is the need to clear data from the panels memory, in this menu it is possible to do so partially. The list bellow shows which portions of data it is possible to reset:

- **Devices** - removes all devices from the system;
- **Zones** - sets all zone settings to factory defaults, devices will still maintain its associated zone;
- **Loops** - sets loops to default: Enable loop 1, disable the remaining loops;
- **Events** - removes all events, event inputs and event outputs;
- **Logs** - clear all the logs;
- **Network panels** - removes all stored network panels;
- **All data** - resets all data to factory default.

5.15 Earth leakage detection

Menu → Panel → Power

To inhibit errors coming from earth leakages, it is possible to disable their detection. When disabled the panel will not generate any faults related to bad earth connections.

Warning: Disabling earth leakage detections makes the panel non compliant with the EN54 standard

6   Operation

6.1 Fire alarm condition

When the panel receives a signal from a device which is interpreted as a fire signal, the panel enter in the fire alarm condition and the fire alarm window (figure 9) opens on the top of the screen. When in this condition, this window will open every 30 secs since the last user interaction with the panel.

6.1.1 Sounder delay

If a sounder delay is configured, the sounders will only be activated after the configured delay, this condition is indicated by the **Delay active** visual indicator. When entering in the fire alarm condition, this LED will start blinking. If the user is in access level 3, the Add delay (30s) will allow the operator to add 30 second delay up to a maximum of 10 minutes since the first alarm signal has been received by the panel.

6.2 System fault

6.2.1 Memory fault

In case of a damaged memory, the system will light the **System fault** indicator and will indicate which zone of the memory is affected.
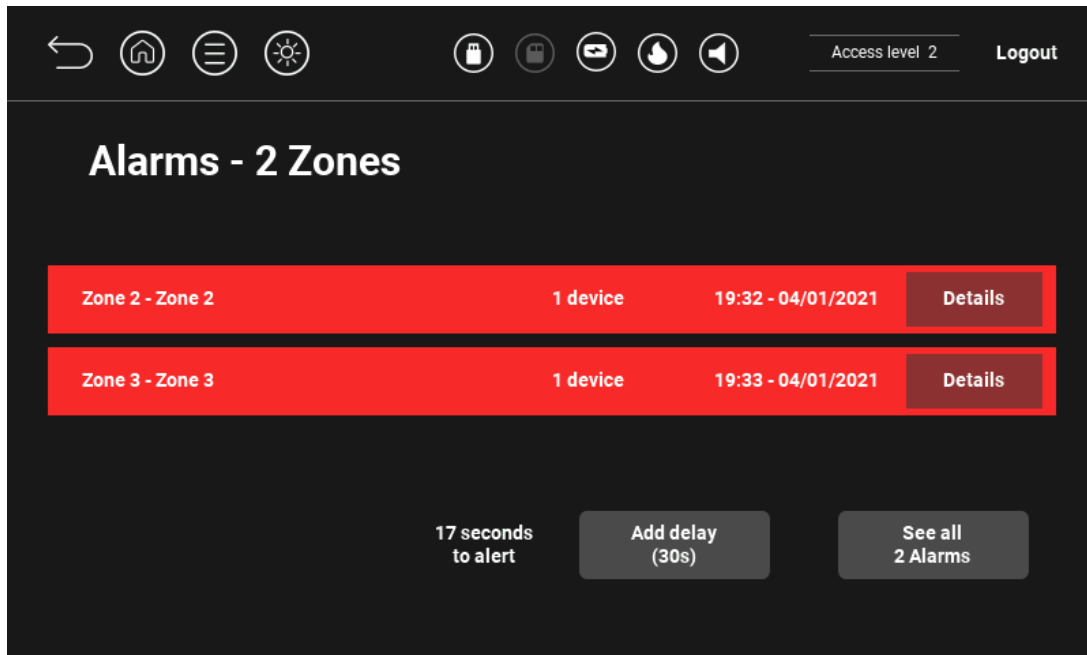
Figure 9: Fire condition window in access level 2.

To solve a memory fault, a factory reset to the affected area must be performed (see 5.14)).

6.2.2 Loop card program fault

If an error occurs in a loop card processor, which makes it impossible to communicate with the main controller unit, the **System fault** indicator will signal this information along with a fault description on the panel, which will keep operating with the remaining loop cards.

If a system reset is unable to solve a loop card communication fault, a power cycle must be performed.

6.2.3 Main program fault

This system fault occurs when the main processor of the panel stops working, caused by an unexpected fault condition. In this scenario, the backup processor will take control of the panel and the display will stop working. This operation mode allows the panel to still communicate with devices and receive fire alarm signal with a limited operation mode:

- The panel will detected fire alarm signals and activate sounders;
- All the configuration of the panel will be ignored, which includes, delays, zones, tests and disablements;
- Only the first device to enter in alarm, on each loop, will be identified by its indicator:
- All sounders will be activated.

Access level 2
The following steps allows to enter in access level 2 when in this condition:

1. Press and hold the **Silence buzzer** and **Delay override** buttons;
2. The **Delay active** indicator will blink and the the internal buzzer will sound intermittently for 5 seconds;
3. After that, press and hold the **Silence buzzer** button;
4. The **Delay active** indicator will blink and the the internal buzzer will sound intermittently for 5 seconds;

5. After that, press the **Delay override** button continuously;
6. The **Test mode** LED will start blinking indicating the success of the operation.

After the previous steps, **press and hold Silence Buzzer and Delay Override buttons to reset the panel.**

All operations should be performed in a 15 seconds interval, otherwise the **Item disable** indicator will blink and the internal buzzer will sound indicating an error and the whole procedure should be restarted. If there is no action after the defined steps for 30 seconds the panel will return to level 1.

7   EN54 - References and functions

Here is a description of how NURIA behaves according to EN54-2/4. The tables have the following information:

- **Table 10** - optional functions implemented by NURIA and the matching EN54-2 clause;
- **Table 11** - association between the outputs and the device type of EN54-1. **Only connect the device types to its matching output**.
- **Table 12** - specification of Imin, ImaxA and ImaxB currents.

Function	EN54-2
Fault signals from points	8.3
Alarm counter	7.13
Dependency on more than one alarm signal	7.12
Delays to outputs	7.11
Disablement of each address point	9.5
Test condition	10
Fire alarm device(s)	7.8
Automatic fire protection equipment	7.10.2

Table 10: Implemented optional functions with requirements.

Output	EN54-1
FIRE1	G
FIRE2	G
SND1	C
SND2	C
LOOP*n*	A C D Short circuit isolators

Table 11: EN54-1 device types associated to NURIA outputs.

Name	Current (mA)
Imin [1]	290
ImaxA	3100
ImaxB	4400

Table 12: Minimum and maximum currents.

[1] Without Wi-Fi and GSM modules.

8   Specifications

Dimensions	436x443x110 mm
Main power	110 - 240 VAC 50/60Hz 150W
Batteries	Min: 2 x 12V 12Ah in series Max: 8 x 12V 12Ah in 24V pairs
Working environment	Indoor use Temperature: -5 a 45ºC Relative humidity: <95% (no condensation)
Maximum number of zones zones	120
Maximum number of loops	4
Maximum number of devices	126 per loop (Apollo XP95/Discovery) 254 per loop (Apollo CoreProtocol)
Fire outputs	2x supervised: 28V[1]100mA
Sounder outputs	2x supervised: 28V[1]500mA
Fault outputs	28V[1]100mA (in Off state)
Auxiliary outputs	2x 28V[1]500mA shared
Relay outputs	3x 250VAC 5A
Terminating resistor (supervised outputs)	10 kΩ
Max battery impedance	800 mΩ
Network	CAN + Ethernet
External memory devices	Micro SD Card + USB flash drive
Other features	Sounders delay Scheduled day/night mode Alarm counter (more than 1 million alarms) Test mode Polling led Zones type A and B Logic event programming Event logging Custom logo

Table 13: Technical details

[1] When mains is not present, the voltage may vary from 28V to 21.6V, according to the battery voltage.

9   Declarations

9.1   Product development

NIBBLE declares that its analogue addressable fire alarm panel – NURIA – was developed under its development internal innovation and quality standards, which are certificated under the NP:4457 standard.

9.2   Performance and conformity

NIBBLE declares that its analogue addressable fire alarm panel – NURIA – was designed to perform according to the fire detection and fire alarm systems standard parts 2 and 4 – EN54-2 and EN54-4 – and all its components have been selected for the intended purpose and are expected to operate within their specification when the environmental conditions outside the cabinet of the conform to class 3K5 of EN 60721-3-3:1995.