CONFIGURATION GUIDE

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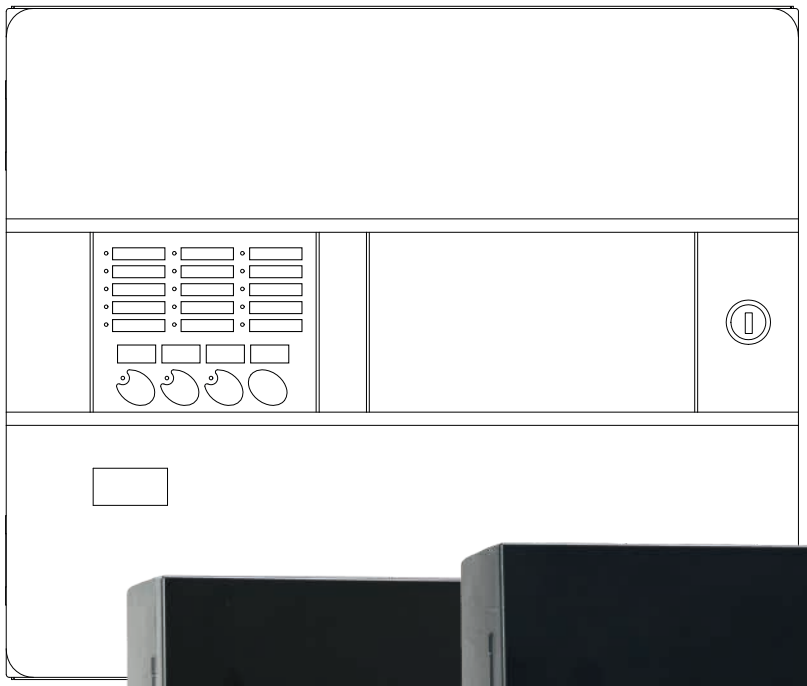

Revision control

Revision	Comment	Date
a	First edition. Software version 0.19.12 (27 Nov 2019)	09/04/2020
b	Updated layout. Software version 1.1.1.	16/06/2020

Conditions of use

Before installing the CAD-250 control panel, you must check that a series of criteria are met.

If these criteria are not met, the control panel may be damaged, problems may arise during system start-up or the functioning of the system may be adversely affected.

The CAD-250 control panel is certified to work under certain conditions; exceeding the working ranges of the control panel or inadequate conditions can lead to the warranty being voided.

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1. INTRODUCTION

1.1. DISCLAIMER

The manufacturer or distributors of this range of fire alarm panels cannot accept any responsibility for any misinterpretation of an instruction or guidance note or for full system compliance.

The manufacturer's policy is of continuous improvement and we reserve the right to make changes to the product specifications at our discretion and without prior notice.

Incorrect assembly, improper installation, poor configuration of the unit or the state of the detection wiring are not the responsibility of the control panel manufacturer.

1.2. STANDARDS AND COMPLIANCE

The CE marking on this control panel indicates its compliance with the applicable directives and regulations of the European Community.

Directive	Standard	Description
2014/30/EU		Electromagnetic Compatibility Directive
2014/35/EU		Low Voltage Directive
305/2011/EU		Construction Products Directive
	EN54-2	Fire detection and fire alarm systems.
	EN54-4	Power supply equipment

1.3. REQUIRED DOCUMENTATION AND DESIGN

For the correct and complete installation, start-up, installation and maintenance, consult the following information and the annexes they reference:

Document	Description
MI 375 en 2020	CAD-250 control panel Installation Manual
MU 379 en 2020	CAD-250 control panel User Manual
MS 419 en 2020	CAD-250 control panel Configuration Software Manual.

As required, the procedures will be shown in one or more diagrams, depending on the complexity of the task.

Check that the manual version corresponds to the unit you are going to install.

Detnov pays special attention to the compatibility of the components and the integrity of the system in the long term; however, check any compatibility notes between versions to ensure the greatest reliability and the best user experience.

The features, specifications and information related to the product described in this manual refer to the date of this document and may be modified due to system design, installation and configuration regulations and standards.

The most up-to-date information and the approvals for this are available on our website www.DETNOV.com.

1.4. EXPLICIT DEFINITIONS

The procedures described in this manual include warnings and cautions to advise the user to adopt methodical and safe working practices during installation, start-up and configuration.

Please heed the warnings in this manual, as incorrect use or improper configuration may lead to an unacceptable risk for people or property.

These warnings alert you to serious risks or precautions to consider when configuring the system, if the procedures, recommendations, regulatory references or advice for facilitating the assembly, connection or installation processes are not followed.

The definitions are classified according to the following levels:

Word	Definition
⚠ WARNING!	Risk of personal injury
	Risk for the product and system
	Check according to the applicable regulations
	There is no risk and no observations or comments to facilitate the action
	Go to the technical support service
	Recommended action
	Action not recommended or incorrect

1.5. ABOUT THIS MANUAL

The purpose of this manual is to provide the engineer with the required minimum understanding of the system menus, with all kinds of descriptions regarding procedures and technical details necessary for programming the CAD-250 fire alarm control panels from the control panel screen. This manual does not provide the required minimum knowledge that the engineer must possess for designing a fire detection and alarm system.

For each step in the process, a detailed description is included with drawings, diagrams and charts, making these instructions easier to understand.

The accuracy of the contents of this manual is the most important aspect and on which all efforts have been focused; nevertheless, the manufacturer reserves the right to change the information without prior notice.

The advanced graphical interface of the CAD-250 control panel allows complete configuration of the detection and alarm system. However, use of the PC configuration program is recommended. This application allows you to manage your facilities in a quicker and easier way, providing an extremely efficient transfer method.

The manual includes all configurable aspects that allow the system to be adapted to any user requirement.

It also includes sections on verification and diagnosis, which will be used by the start-up engineer.

1.6. BEFORE GETTING STARTED

Please note that fire detection and alarm systems play an important role in protecting people and property. The design, installation, configuration and start-up require specific knowledge of the product and the design standards. There may be specific local rules and regulations.

For the detection system to be effective, the protected building's spaces must be organised and grouped so that both the detection of a potential fire and the warning are accurate and allow an immediate response. The speed of the response and with which action is taken is essential for safeguarding people and minimising damage to the facilities.

1.7. AREAS AND ZONES

The subdivision of the space protected by the system is organised into what we call zones. These zones are subdivisions, whereby one protection function is carried out independently of any other.

Their definition must take the building's layout into account, as well as any potential difficulties in searching or moving around the building. The differentiation between automatic and manual alarm signals, manual call points or the varying risks between different parts of the building are reasons for subdividing the spaces into different zones.

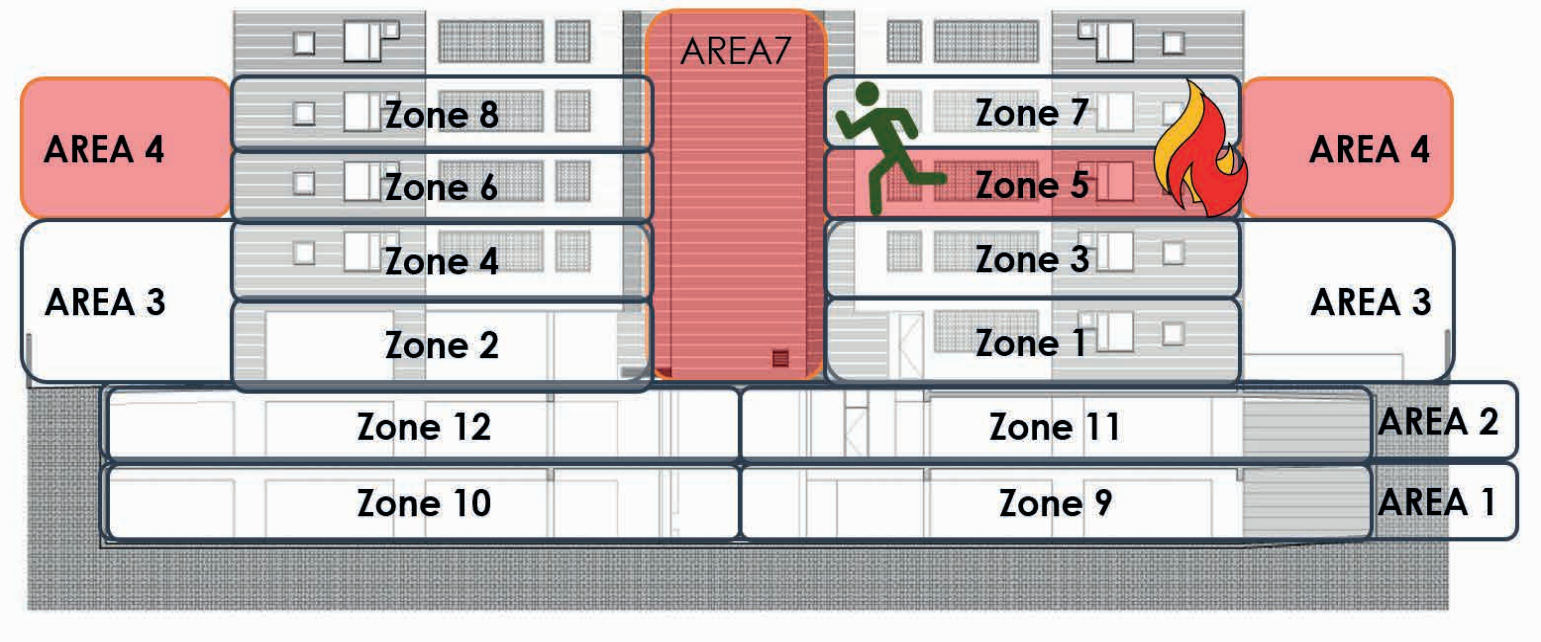
The function may be automatic fire detection, the activation of an alarm signal or the activation of a fire protection signal.

Please also note the need to differentiate the type of alarm to be emitted, if there is a sequence and the potential limits in the event of a fault as determined by the applicable regulation.

There may be limitations in terms of the size of the zones.

EN UNE ISO This organisation of the zone space is necessary for accurate detection, thus preventing an excess of information coming from the multiple points that make up the system. This distribution is usually a regulatory requirement, stipulated, for example, in the EN 54 standard and the technical design specification TS54-14.

For complex systems, CAD-250 allows a subdivision level that is higher to the zone, the **Areas**. For the CAD-250 system, the zones are spatial subdivisions restricted locally by a single panel, whereas the areas can break this restriction and constitute subdivisions on the control panel network level.



2. VESTA SYSTEM ARCHITECTURE

VESTA is a powerful addressable fire detection and alarm system based on CAD-250 control panels. This is an addressable control panel with advanced configuration and functional features, designed to work with **DETNOV** addressable sensors, modules and addressable manual call points. Its modular design provides the user with an extremely powerful and completely flexible system.

2.1. LOOPS AND DEVICES

The automatic detection elements, manual detection elements, manual call points, monitoring modules or output elements, such as sounders or control modules, are the devices that are connected to the CAD-250 control panels in a closed loop.

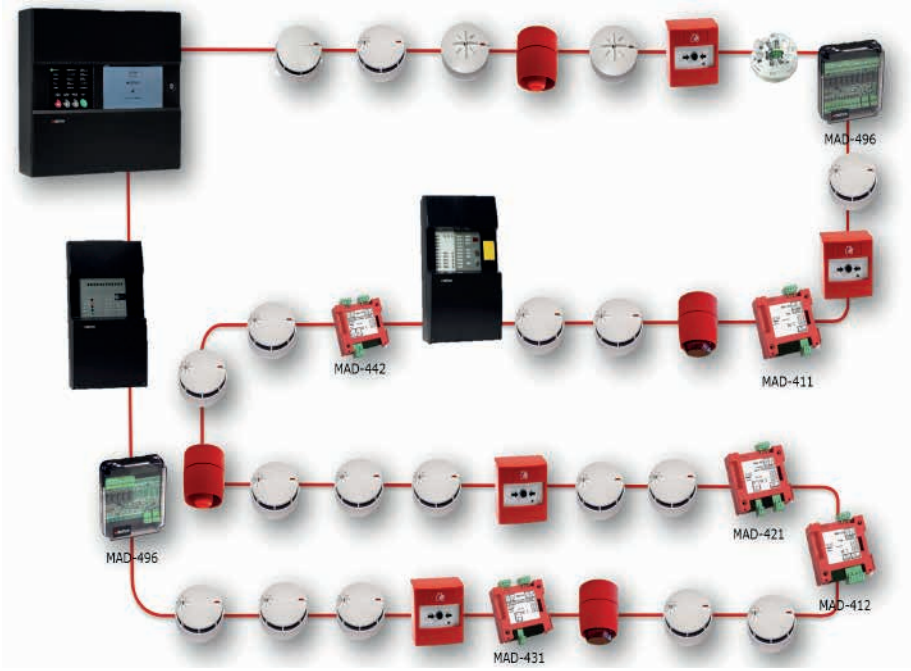
The control panel allows open loop operation, but the use of this topology, whereby a single incident in the transmission lines can lead to the loss of protection in quite large areas, is not recommended. It is preferable to apply the closed loop configuration. The design and product or local standards may require the use of closed loop systems.

Each loop can support up to 250 different devices and 250 addresses. Please note that some devices use more than one address. Go to APPENDIX 1 at the end of the chapter to check the types of device available, the number of addresses they use in the loop and their consumption.

2.2. FIRE AND AUXILIARY INPUTS

The main purpose of the detection panel is to detect a potential fire. The panel features automatic detectors, alarm manual call points and monitoring modules configured for this task.

The purpose of certain monitoring modules is to monitor signals that are not directly related to detection. They are auxiliary signal control modules. It must be indicated on the control panel when a module is carrying out a fire monitoring function and when it is carrying out an auxiliary function.

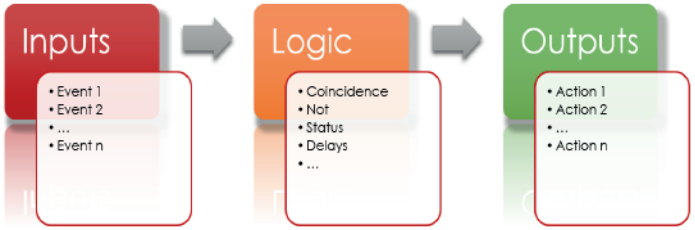


2.3. ALARM AND CONTROL OR MANOEUVRE OUTPUTS

If a hazard is detected or a control signal is received, the system will carry out preset actions, either by default or the programming of conditioned manoeuvres.

These manoeuvres will act on the different output elements, whether they are sounders or control modules.

The system provides different tools for grouping inputs or outputs or associating manoeuvres, states and events, allowing the creation of the most demanding emergency plans.



2.4. PANEL

The modular design of the CAD-250 control panel allows up to 3 modular components to be combined in a single structure of up to 4 sections or cabinets.

This feature provides CAD-250 control panels with extraordinary versatility and power. As such, nodes or single control panels can be generated with a capacity of:

32 loops per node

8000 devices per node

2000 programmable zones

250 areas

1000 groups

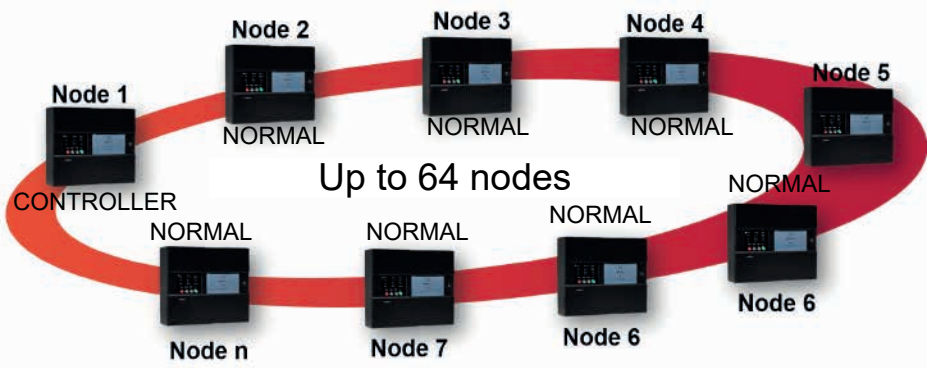
250 virtual controls or relays

2500 special modes per control panel

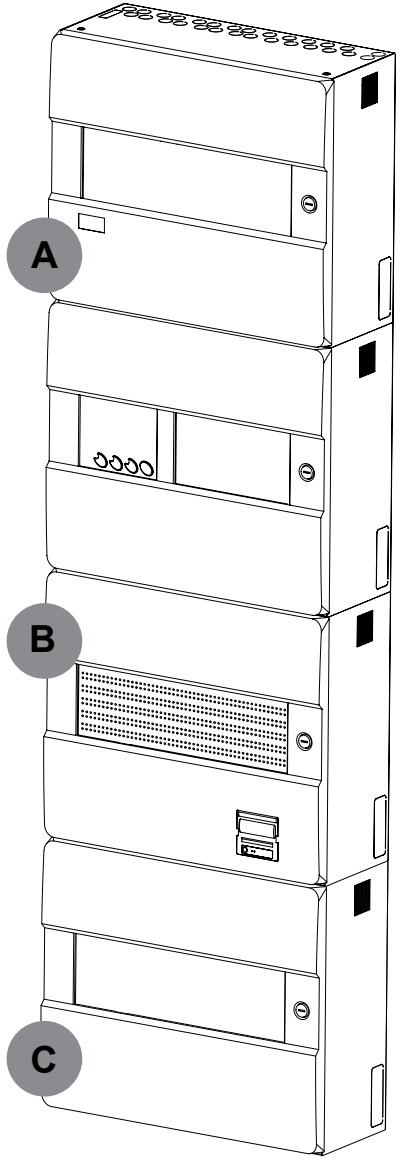
The panel typology to be used and the basic data of the facility must be configured.

2.5. NODES

The **VESTA** system allows a network architecture of up to 64 control panels that share events and manoeuvres. The complexity of a network system means that it is preferable to carry out the configuration completely offline from the **SCD-250** configuration software. It is also possible to carry out most configuration steps using the panel's graphical interface, but it is more complicated to do it in that way. In the configuration, the controller or master unit must be identified.



Item	Ref.	Description
A	CAD-250	Main cabinet with interface Expands up to + 8 loops The ref. does not include the loops
B	CAD-250-BLED	Cabinet with 250 dual LEDs for zones Expands up to + 8 loops The ref. does not include the loops
C	CAD-250B	Blind cabinet to expand up to + 8 loops The ref. does not include the loops



1 x CAD-250 +
1 x CAD-250LBLED +
2 x CAD-250 B

3. INITIAL CONFIGURATION

Before you do anything else, a series of basic steps must be carried out.

1. Define and obtain the physical sectorisation of the building, according to the project.

2. Define or identify each action to be carried out, based on the emergency plan.

3. Define or identify any condition or exception to be taken into account when carrying out manoeuvres, delay manoeuvres, actions conditioned by times or dates, coincidences and automatic or monitoring actions.

4. Analyse the working conditions that may imply the design of confirmation manoeuvres.

5. Design a scenario plan for the actions, so that once the manoeuvres have been carried out, you can check their compliance.

6. Define the system users and permissions.

7. If you are going to work with a network, define the node number to be assigned to each panel. Although the system supports a random numbering of nodes, it is good practice to number the nodes consecutively.

8. Make sure you have assigned addresses to all devices in the system.

9. As in the case of the definition of nodes, the loops support a random assignment of addresses, though it is not recommended for the identification of potential errors in the facility.

10. Check that no overlaps have been generated, remember that some devices use more than one address, see **APPENDIX 1** of this manual.

11. In general, this manual has been designed according to the menu structure of the control panel interface for easy location of the menus, apart from the initial settings menu, which is located at the start.

12. The system has 4 access levels.

Access level 1 does not require any permissions. It provides access to:

- The events view
  Control functions, such as:
- Control panel acoustic silencer
- Sounder silencer
- Sounder activation
- Reset
- Latched button functions.
- Special modes configured

For more information, see also the User Manual.

Access level 2 or user access provides access to:

- Entity disablement
- Event log review with various filter options
- System settings menu review, including general data such as the contact phone, installation company or language.
- Date setting
- Version review
- Printer setting
- Performing the LED and indicator test

For more information, see the User Manual.

Access level 3 or installer and configuration access lets you carry out all system configuration actions or diagnosis actions.

Access level 4 is defined by the setting actions that require the opening of the control panel, such as configuration with PC or PEN DRIVE or TOTEM configuration.
For more information, see also the installation and configuration software manuals for PC.

Configuration steps

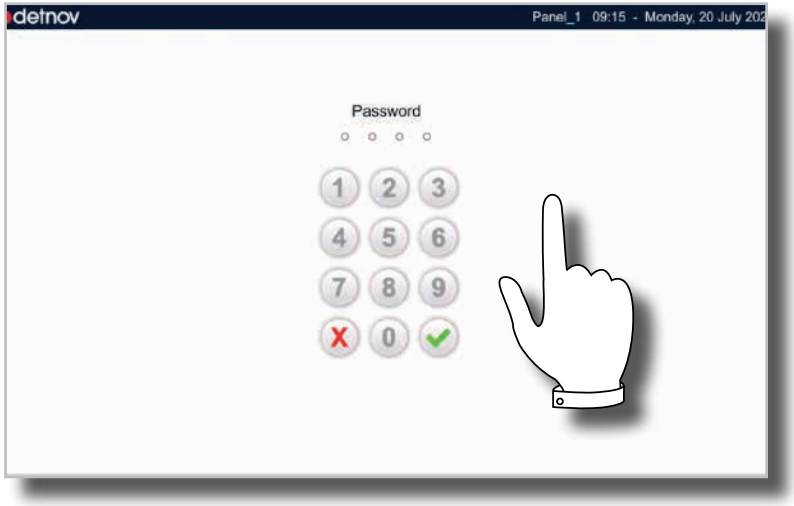
With the systems already installed, it may be necessary to edit a loop unit due to updates or changes made in the facilities.

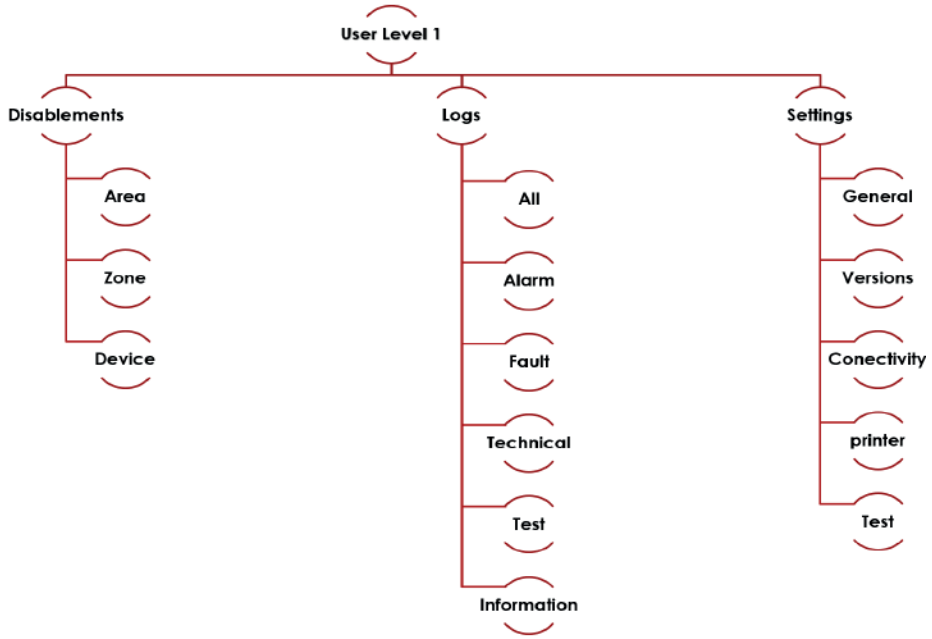
For the loop unit functions:

3.1. USER LEVEL

Access with a user access code. The user codes are generated from the **SETTINGS** menu, accessible from level 2 with the administrator password (see section 4.1 ADMINISTRATOR ACCESS).

From this menu, it is possible to disable entities, view the event log, check certain configuration parameters, set the date or carry out a control panel indicator test.





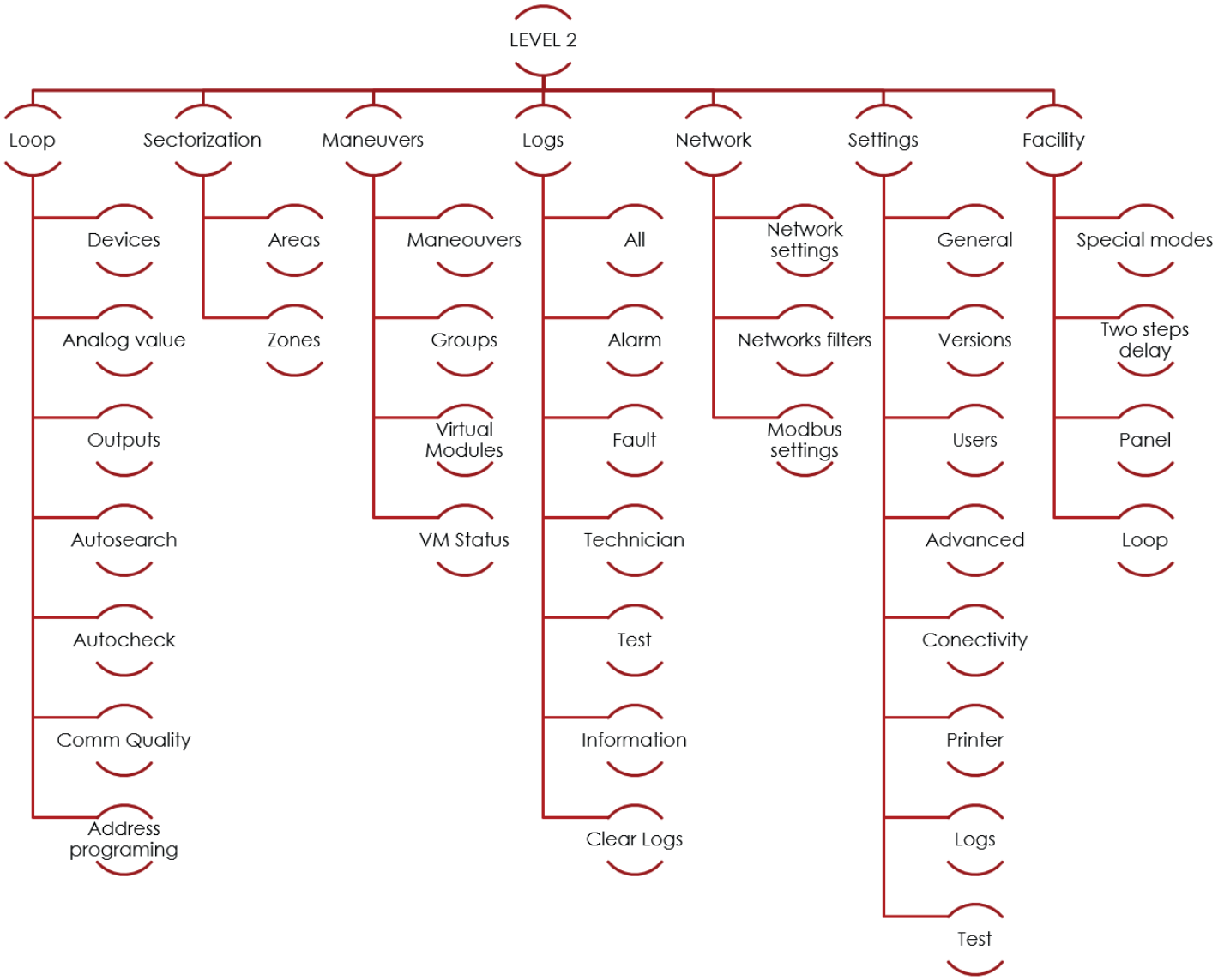
3.2. CONFIGURATION LEVEL

From this level, it is possible to set all control panel parameters. For example, descriptions of all entities, operating modes, communications, network, etc.

You can also view the status of all elements and their analogue values, or carry out an autosearch for the elements installed in each loop.

The configuration submenus include diagnosis procedures for loop and communication elements.

Manoeuvres is one of the detection system's key configuration menus. CAD-250 features an intuitive and powerful manoeuvre creation procedure that can be accessed from this access level. (See SECTION .1)

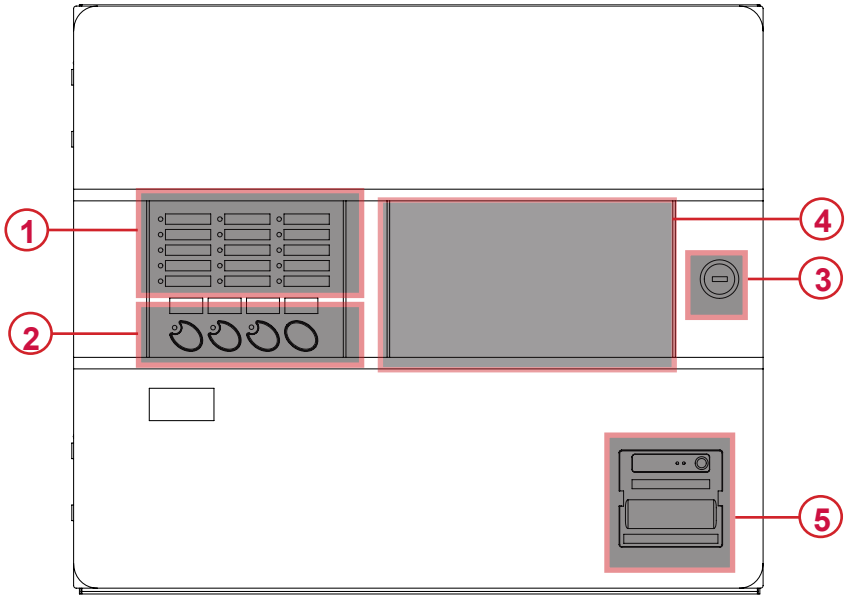


3.3. MAIN FEATURES OF THE CONTROL PANEL

3.4. MAIN PANEL

The main panel is located on the left part of the door and consists of a series of lights and basic controls that let you know what is happening in the system at a glance.

The European standard EN54-2 sets out the requirements for this panel, including the buttons, visual and audible indications and their behaviour.



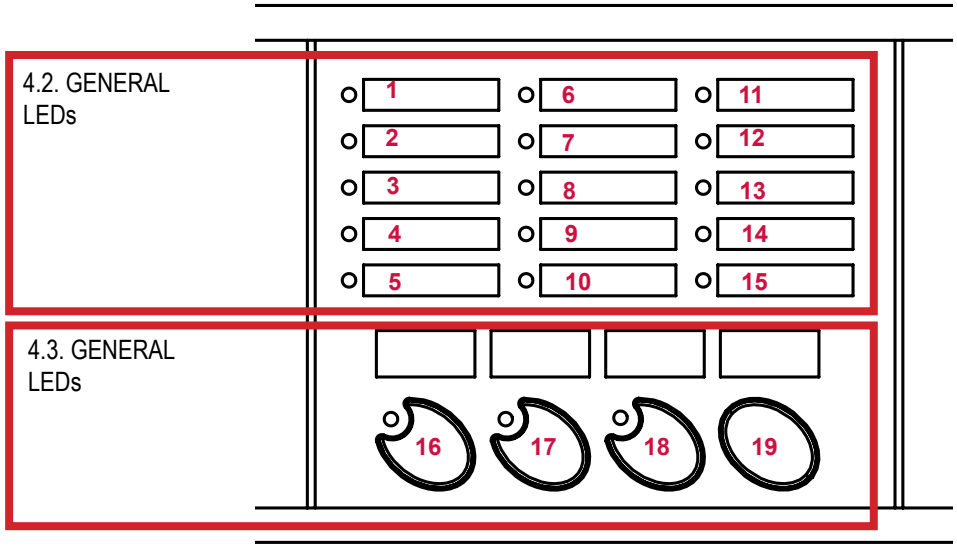
No.	Area	Description
1	GENERAL LEDs	General state indicators in accordance with the UNE 23007-2 and EN54-2 requirements
2	GENERAL CONTROLS	Mandatory general control buttons in accordance with the UNE 23007-2 and EN54-2 standards.
3	LOCK	Allows or prevents access to the inside of the control panel. (Acts as access level 3).
4	10” TOUCHSCREEN	Main interface of the CAD-250 control panel.
5	PRINTER	Only available on CAD-250-P: It allows you to obtain a paper copy of the system's events. This device cannot be installed as an option.

3.5. GENERAL LEDs

No.	Condition	Colour/ status	Description
1	SERVICE	**Green Permanent**	The control panel is powered
2	ALARM	**Red Permanent**	The fire alarm condition is active from any initiator device in the loop
3	DISABLE	**Amber Permanent**	An element of the system is disabled (device, group, etc.) or there is a delay applied. Normally active together with another general indicator
4	FAULT	**Amber Flashing**	Indicates a fault in the system from a loop element, communication ports or the control panel; normally active in combination with other general indicators
5	TEST	**Amber Permanent**	A system, area or zone element is in test mode.
6	OUT OF SERVICE	**Amber Permanent**	There is a mains network power failure and the battery voltage is less than 20 V.
7	SYSTEM FAULT	**Amber Flashing**	Critical system fault. In this case, the system is not operational
8	POWER SUPPLY FAULT	**Amber Permanent**	There is a power supply issue caused by the network, batteries or fuses.
9	EARTH L E A K A G E FAULT	**Amber Flashing**	Some of the system lines are earthed directly or indirectly.
10	RESERVED 1	**Amber**	Programmable indicator for customisable function
11	TIMED SOUNDERS	**Amber**	Programmable indicator for customisable function
12	SOUNDER FAULT/ DISABLED	**Amber Permanent**	Indicates that there is a fault in the sounder circuit or in a loop sounder
13	OUTPUTS CANCELLED	**Amber Flashing**	Indicates that there is a control element or relay disabled on the main board
14	RESERVED 2	**Amber Permanent**	Programmable indicator for customisable function
15	RESERVED 3	**Amber**	Programmable indicator for customisable function.

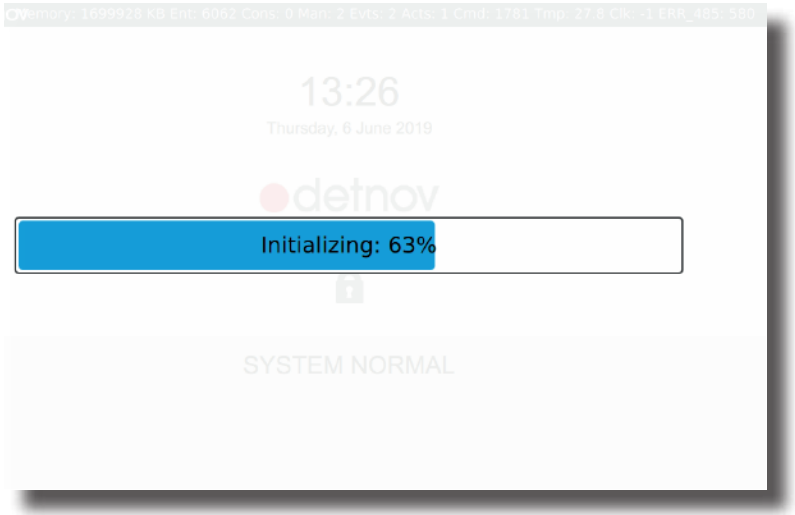
3.6. PRIMARY CONTROLS

No.	Function	Symbol	Description
16	ACTIVATE SOUNDERS		Press the button to activate the sounders. EVACUATION
17	MUTE SOUNDERS		Press the button to silence the sounders. The sounders will be reactivated if a new alarm event arrives.
18	SILENCE CONTROL PANEL ACOUSTIC SIGNAL		Press the button to silence the acoustic signal of the control panel. The signal reactivates when a new event is received.
19	RESET		Press to reset the system. All alarm and fault conditions, as well as all control activations will be reset. If the incidents persist, the activation and operating process will be reactivated again.



4. CONTROL PANEL CONFIGURATION

4.1. ADMINISTRATOR ACCESS

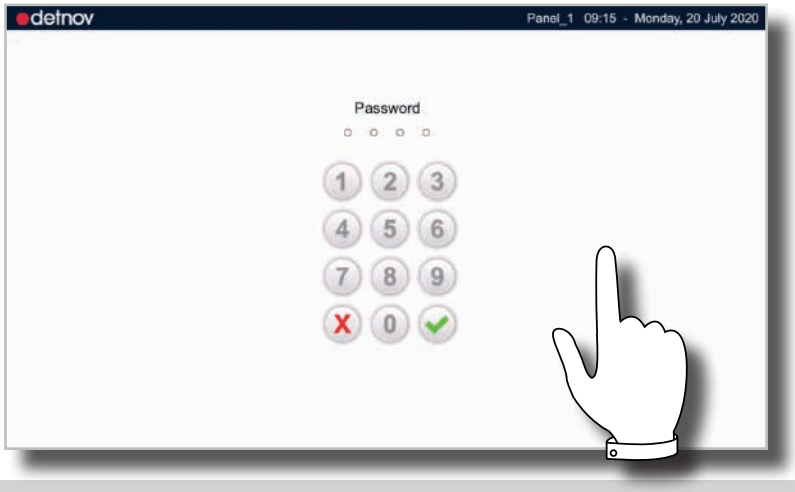


Once the system has started up, you will see the following screen, called the **STANDBY SCREEN**.

This screen shows the date and time in the **TOP BAR**, the **CONTROL PANEL NAME** and a padlock.

This screen will be displayed, provided the system does not detect any event (alarm, fault or technical event).

Tap the padlock icon on the touchscreen (🔓). By doing so, you will access the **ACCESS SCREEN**, requesting the access code and password.



Depending on the password entered, certain configuration parameters will not be available to prevent improper use of the system. See also sections 3.1 and 3.2.

Make sure you have the necessary authorisation and knowledge to operate this control panel as an administrator, otherwise do not use this level without the supervision of an authorised person.

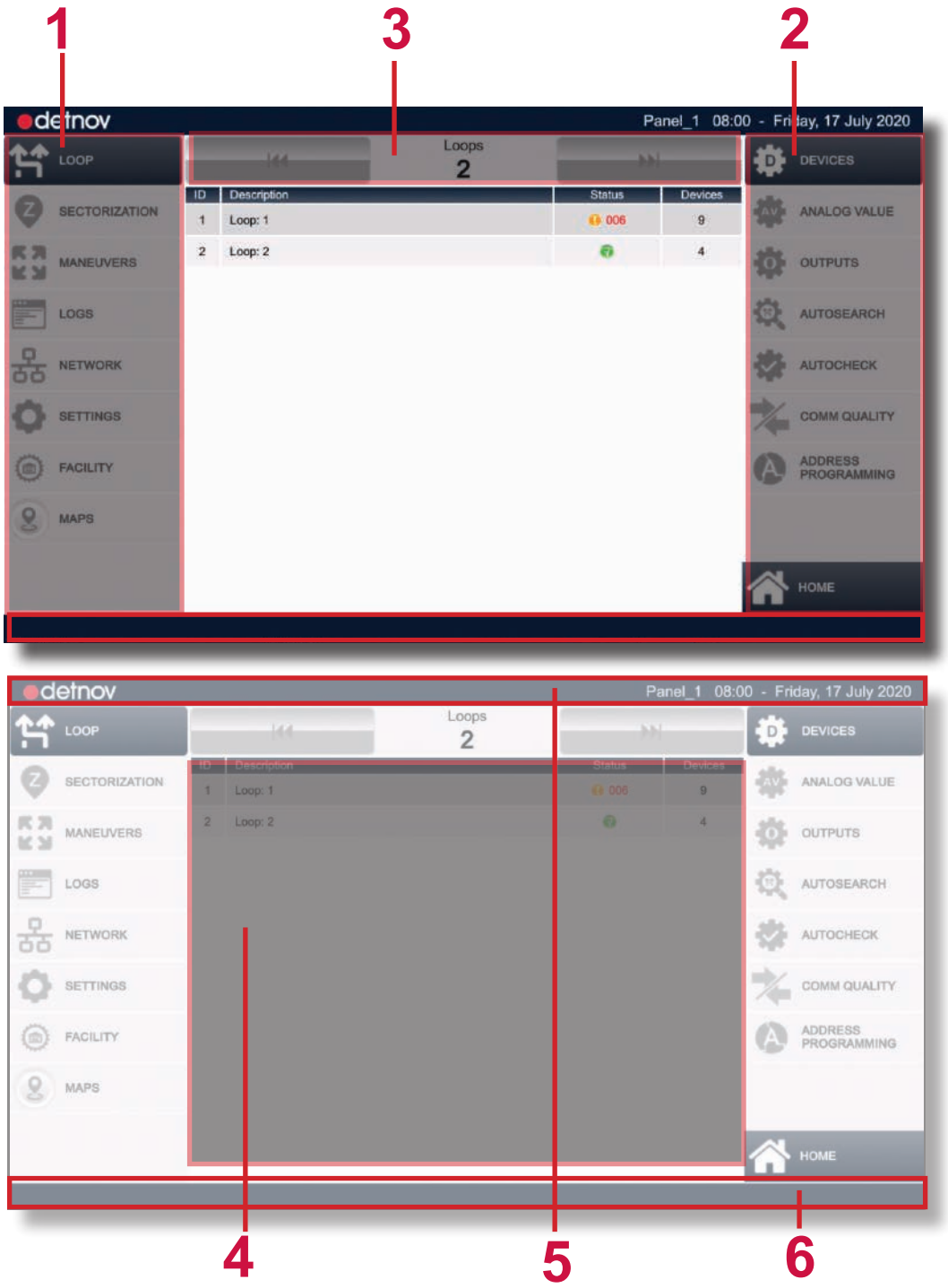
⚠ **WARNING!:** The improper or negligent use of the access level with ADMINISTRATOR PRIVILEGES may cause a malfunction of the facility that can put the protection of people and property at risk.

Enter the default administrator password **2222**

4.2. ADMINISTRATOR SCREEN

The administrator screen is divided into 6 different sections:

No.	Name	Posit.	Description
1	MAIN MENU	**Left**	Categorises the sections. Loops - Sectorisation - Manoeuvres - Logs (history) - Network - Settings - Facility
2	SUBMENU	**Right**	Classifies the options for each menu section. It is different for each section.
3	NAVIGATION BAR	**Top centre**	Browsing elements; they may be TABS, ARROWS or BUTTONS.
4	MAIN VIEW	**Centre**	Information relating to the chosen menu. It allows the editable fields to be modified via a virtual keyboard. It can show: **ELEMENT LIST:** Ordered in list form. Their features are shown when you press on them. **CONFIGURATION TABLE:** It shows the information in a table, some of these fields can be editable. **GRID:** It shows elements in a grid, as well as any value or feature. **TREE:** It shows Areas, Zones and/or Elements in a tree, as well as any modifiable value or feature. **FLOATING WINDOW:** It can be shown within the main screen, allowing various actions to be consulted or carried out.
5	STATUS BAR	**Top**	It shows general information, such as the description of the control panel, the time and date.
6	MESSAGE BAR	**Bottom**	It shows contextual messages depending on the selected section.



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5. SETTINGS

5.1. GENERAL

In this section, you will be able to establish basic configuration parameters for the control panel. To access these settings, press:

SETTINGS(Main menu) > **GENERAL** (Submenu)

5.1.1. Control panel description

SETTINGS(Main menu) > **GENERAL** (Submenu) > **MISCELLANEOUS** (Tab)

This field defines the name of a control panel in the facility.

Default value: **Panel 1**.

To modify it, select the **PANEL DESCRIPTION** field and a virtual keyboard will appear.

Press **ENTER** to finish editing and save the data automatically. It accepts up to 60 characters.

5.1.2. Contact phone

SETTINGS(Main menu) > **GENERAL** (Submenu) > **MISCELLANEOUS** (Tab)

The contact phone will be shown in the **EVENT MANAGER** (see User Manual) when a FAULT is detected.

To modify it, select the **CONTACT PHONE** field and a virtual keyboard will appear.

Press **ENTER** to finish editing; the data will be saved automatically.

It accepts up to 30 characters.

5.1.3. Installer information

SETTINGS(Main menu) > **GENERAL** (Submenu) > **MISCELLANEOUS** (Tab)

This information will be shown in the **EVENT MANAGER** when a FAULT is detected.

To modify it, select the **INSTALLER DESCRIPTION** field and a virtual keyboard will appear. Press **ENTER** to finish editing; the data will be saved automatically.

It accepts up to 60 characters.

5.1.4. Language

SETTINGS(Main menu) > **GENERAL** (Submenu) > **MISCELLANEOUS** (Tab)

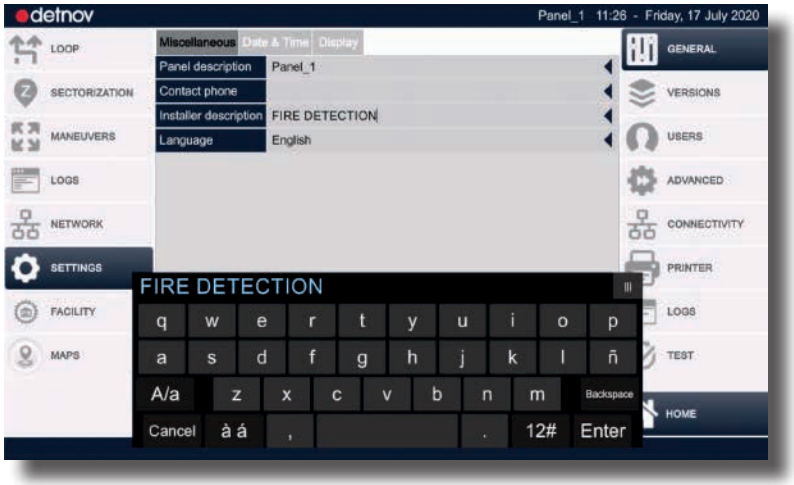
It allows the language of the control panel to be changed. To change the language, select the **LANGUAGE** field and a drop-down menu will appear; select the required option, the interface language will change to the selected language and it will return to the **STANDBY** screen.

When modifying the language, a pop-up screen will appear to confirm the changes.

Press **YES** to confirm

Press **NO** to cancel the changes

Default value: **English**



5.1.5. Date selection

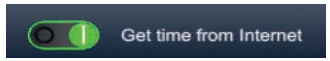
SETTINGS (Main menu) > **GENERAL** (Default submenu) > **DATE AND TIME** (Tab)

This section defines the time and date of the control panel, which will be used when manoeuvres are programmed.

To modify each field, just touch the required field and slide the field's scroll wheel until the required value is reached.

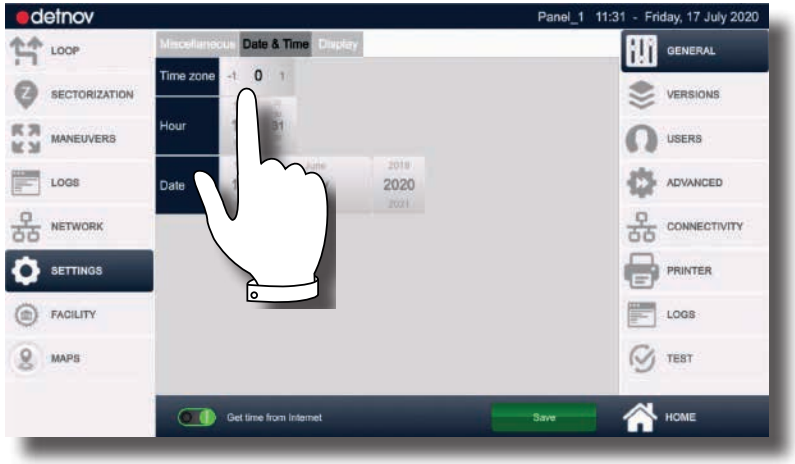
Press Save, **SAVE** to update the settings.

If your system is connected via the RJ45 port to an Ethernet network with Internet access, the time can be updated automatically by activating the **UPDATE TIME FROM INTERNET** option.



Set the time zone as required by moving the scroll wheel to the left or right. The time field will automatically adapt to the selected time zone.

Press Save, **SAVE** to update the settings.



5.1.6. Screen settings

SETTINGS (Main menu) > **GENERAL** (Default submenu) > **Screen** (Tab)

From this section of the settings menu, the following screen elements can be calibrated:

Backlight. It allows you to adjust the screen brightness in order to adapt it to the ambient conditions.

Left margin. Adjust the image to the left margin of the screen. Touch the left arrow to move the left margin in that direction.

Touch the right arrow to move the left margin of the image in that direction.

Right margin. Adjust the image to the right margin of the screen. Touch the left arrow to move the right margin in that direction.

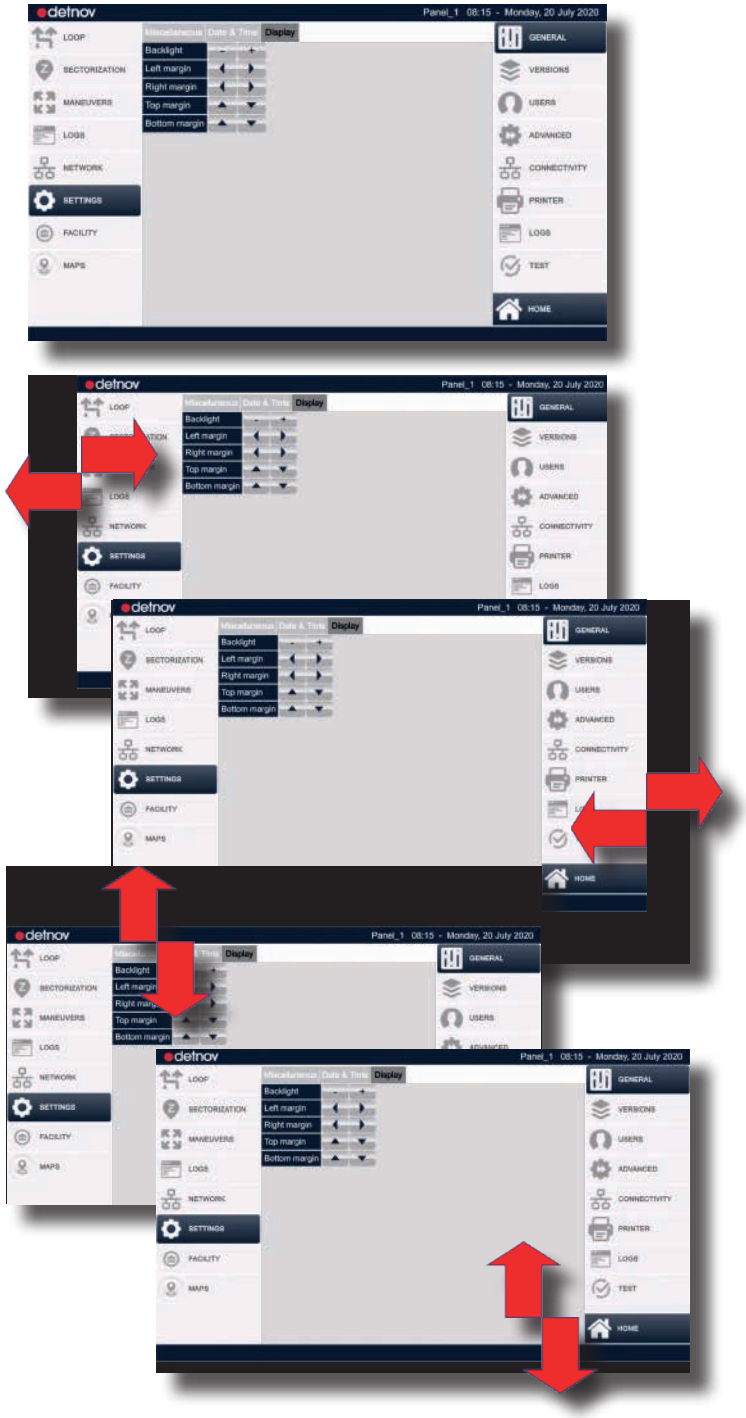
Touch the right arrow to move the right margin of the image in that direction.

Top margin. Adjust the image to the top margin of the screen. Touch the up arrow to move the top margin in that direction.

Touch the down arrow to move the top margin of the image in that direction.

Bottom margin. Adjust the image to the bottom margin of the screen. Touch the up arrow to move the bottom margin in that direction.

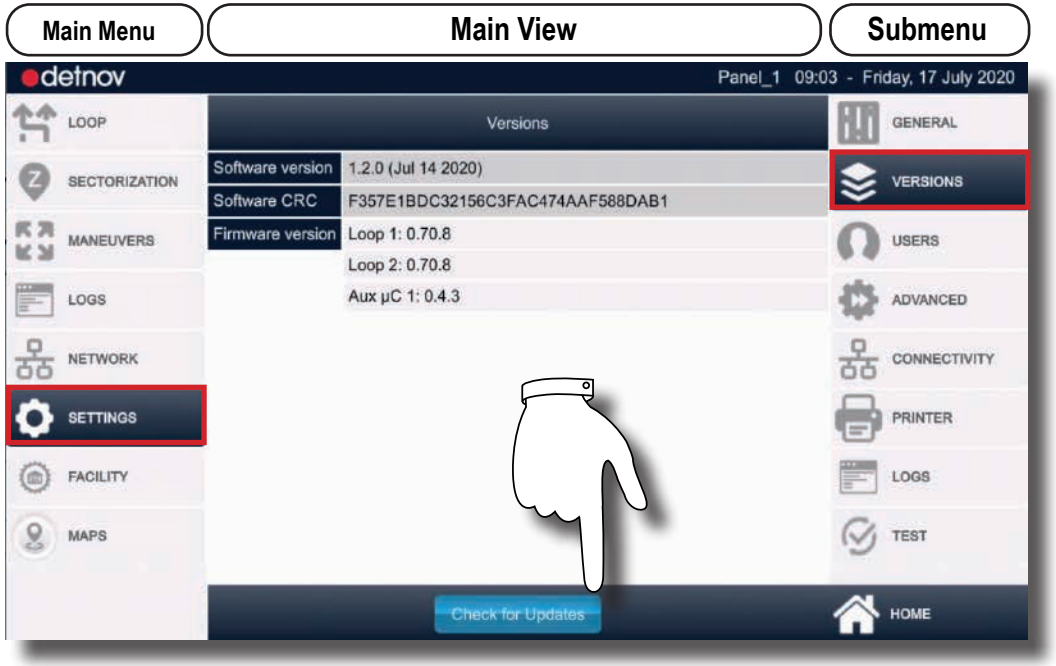
Touch the down arrow to move the bottom margin of the image in that direction.

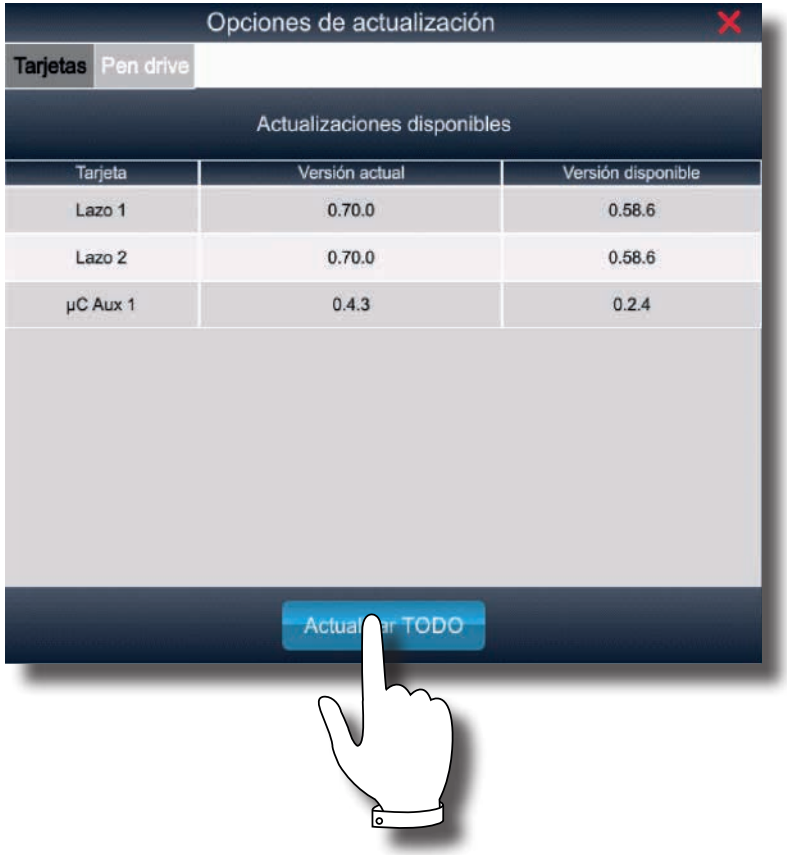


5.2. VERSIONS

In this section, you can check the firmware and control panel versions, as well as update them from the external program for PC or from a pen drive. To access these settings, press:

SETTINGS(Main menu) > **VERSIONS**(Submenu)





The screen shows you all of the firmware versions the control panel currently has:

- Control panel management software version
- Version of each loop
- CPU version

By touching the **CHECK UPDATES** button, a pop-up screen with 2 tabs will immediately appear:

- Current and available card firmware
- Pen drive

5.2.1. Card firmware

The card tab shows a comparison of the versions you have installed and the ones that are loaded and ready to install.

The available versions are loaded from the USB type A port on the control panel or from the SCD-250 configuration software. See the update from pen drive example in the following section or check the SCD-250 control panel configuration program manual.

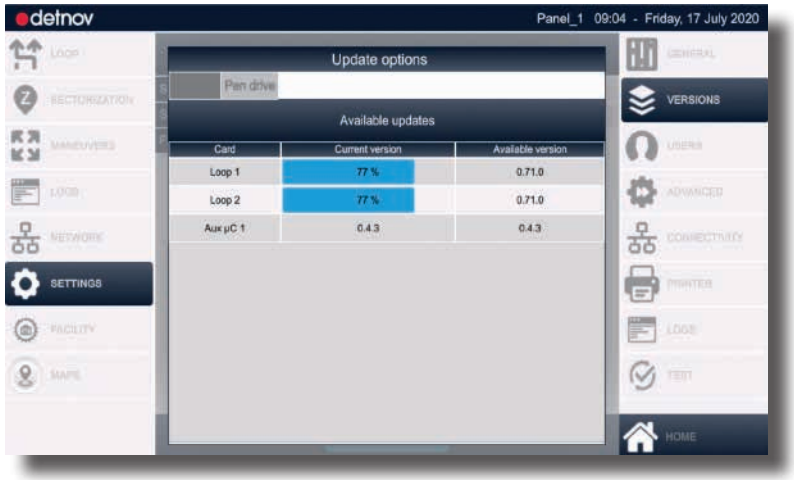
Press **X** to discard the update.

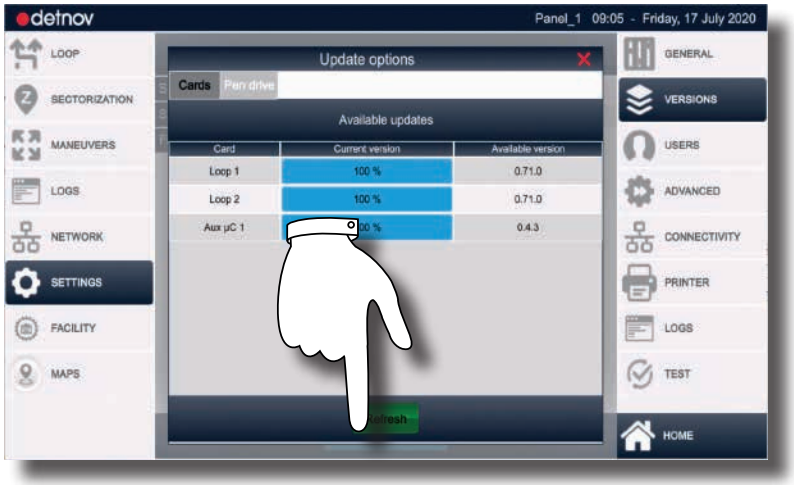
If you want to install the loaded versions, press **UPDATE ALL**.

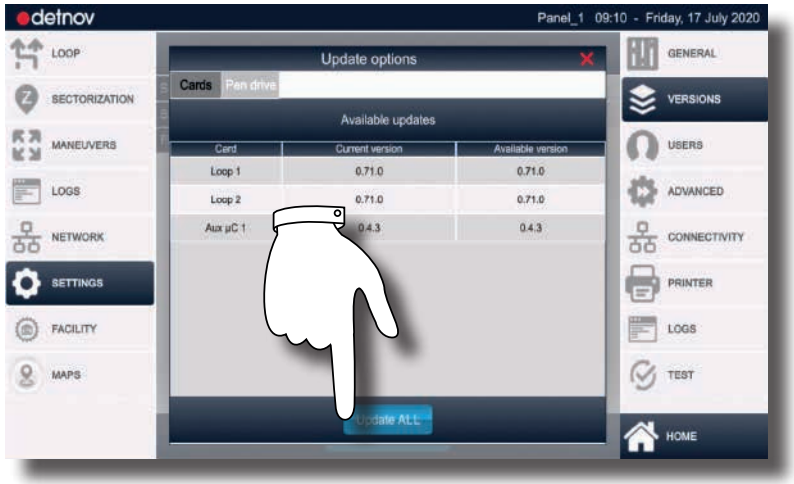
The control panel will show the loop and CPU update process with a progress bar for each element.

Press **Refresh** to update the available firmware table.

> ⚠ It is recommended to have a copy of the previous versions of the firmware or configuration. Although it is unlikely, if the upload file is corrupted or incorrect, the upload may not be carried out correctly or the version may not be suitable for the facility's needs, potentially affecting one of the functions or the entire system. In this case, start the control panel and reload the firmware and software versions.







ENG

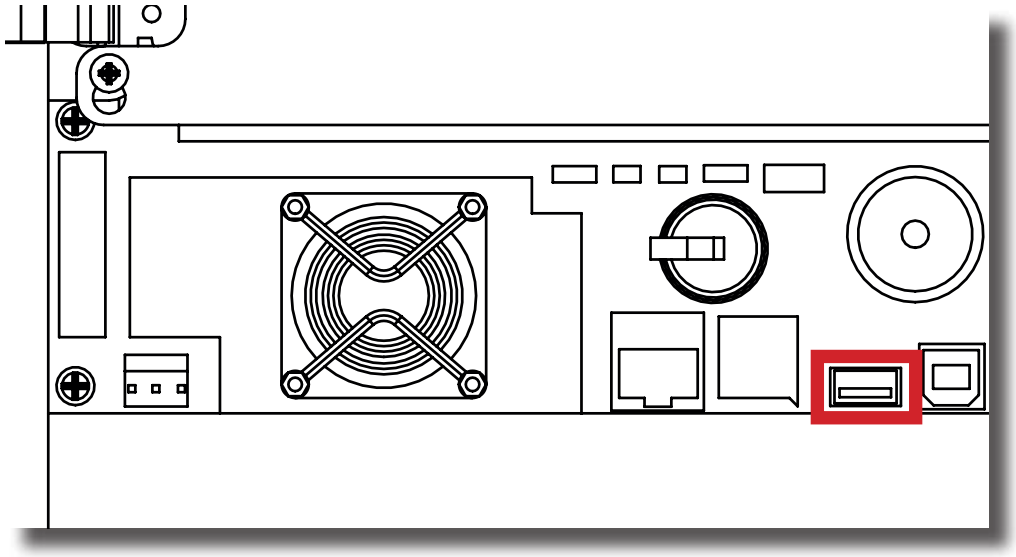
5.2.2. Installation from the USB port

One of the easiest ways to update the CAD-250 is via the USB TYPE A port using a PEN DRIVE.

Make sure that the PEN DRIVE is formatted as FAT32; it is not necessary for it to be empty.

Once the ZIP file that your supplier has sent to you is decompressed and copied to the PEN DRIVE root, carry out the steps below.

1. Locate the USB type A port on the MAIN BOARD and insert the PEN DRIVE.



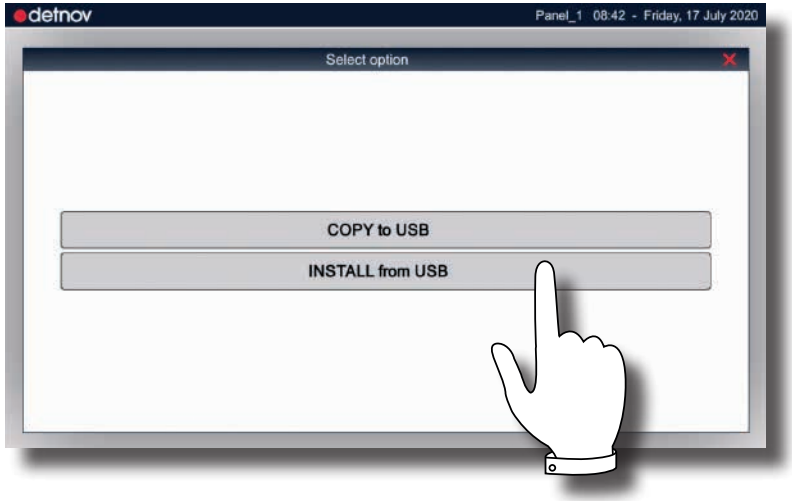
If you are not in the administrator screen, enter the password to exit the STANDBY screen.

A window will allow you to choose between two options:

COPY TO USB: Export the configuration and logs of a control panel.

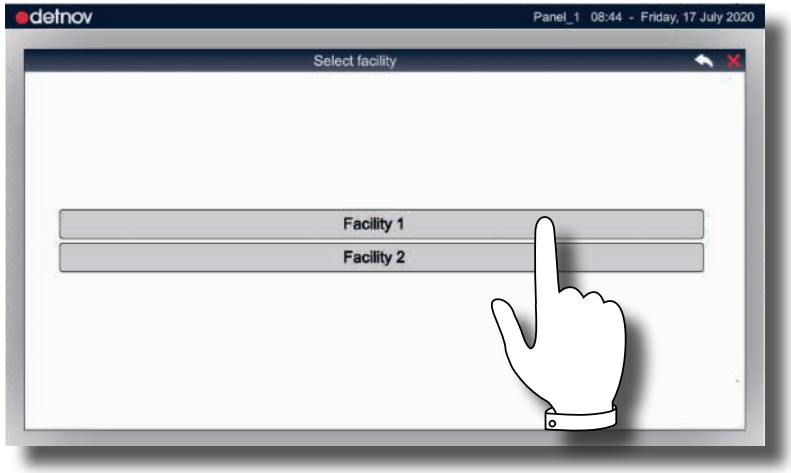
INSTALL FROM USB: Import the different configurations available on a PEN DRIVE, both the databases of each configuration and the firmware or all.

2. To update the FIRMWARE, press **INSTALL FROM USB**.



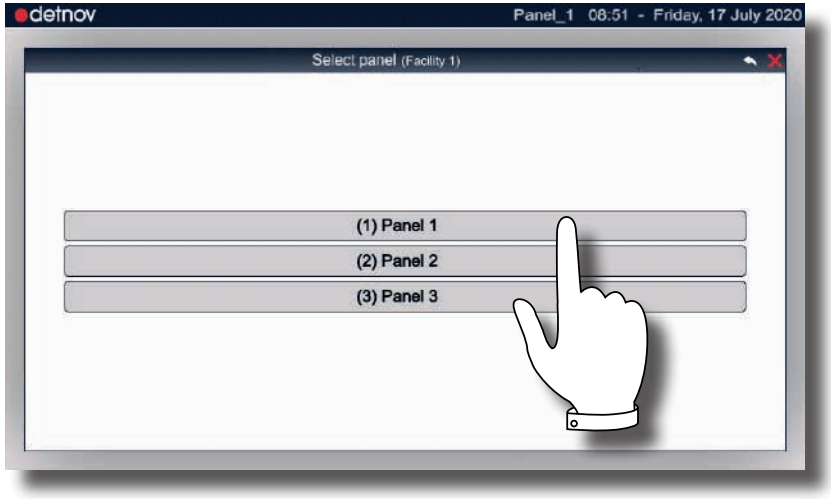
If the PEN DRIVE has configurations for different detection facilities, you will be able to choose between them:

3. Press the **Facility 1** button.



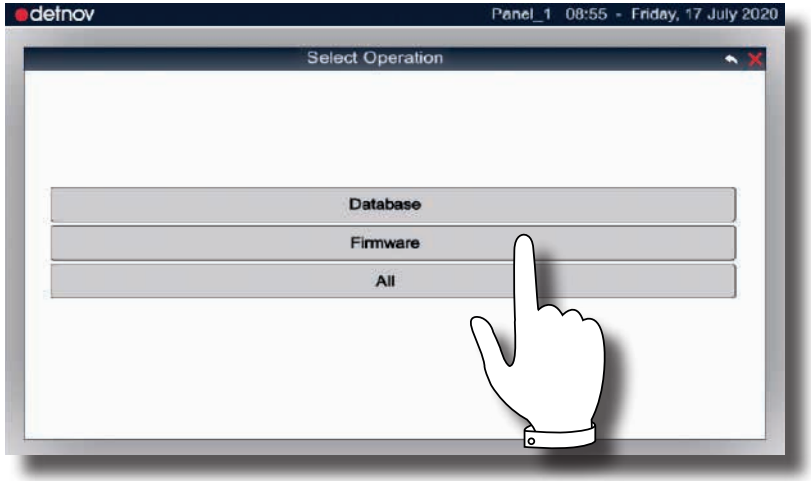
If the chosen facility contains various panels, you will be able to choose between the panels that comprise it.

4. Press the **Panel 1 button (1).**



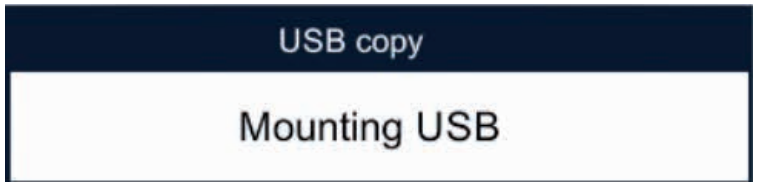
Once you have selected the panel, the system will ask you to choose between updating the **DATABASE**, **FIRMWARE** and **ALL**.

5. Press the FIRMWARE button.



A window will ask you to confirm the FIRMWARE update.

6. Press the **FIRMWARE** button.



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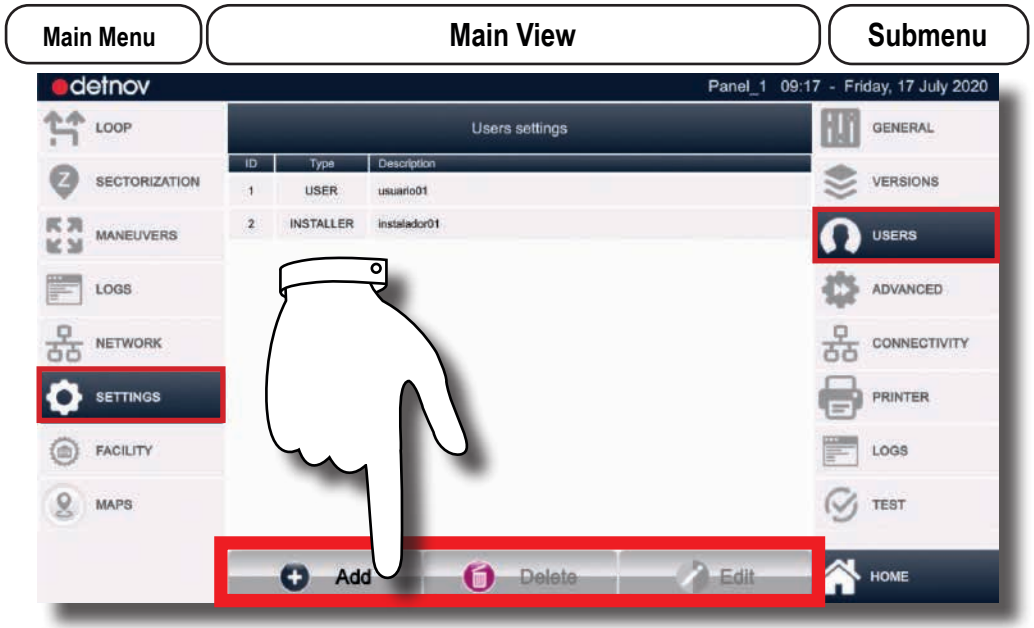
5.3. USERS

In this section, you can generate passwords to access the CAD-250 system and assign the corresponding access levels in each case. To access these settings, press:

SETTINGS(Main menu) > **USERS**(Submenu)



The CAD-250 system allows the creation of **1000 users** with their respective access levels. Via 3 buttons on the bottom margin, it is possible to add new users, delete users or edit existing ones.

To add a user, press the **ADD** button, the pop-up screen will provide access so you can edit the new user's information. The editable fields are:

Description: name assigned to the user or groups of users. Allows up to 60 characters.

Password: a 4-digit numerical password.

Level: there are 2 options, user level and installer level. The user level has restricted access to certain configuration functions (see the ACCESS LEVELS section), whereas the installer level has no restrictions.

By touching the **DESCRIPTION** field, a QWERTY keyboard will appear so that you can enter the username description. This field accepts special characters, numbers and upper and lower case. Once you have finished the description, press **SAVE** to confirm the changes or **CANCEL** to discard.

By touching the **PASSWORD** field, a numerical keyboard will appear. This field only accepts 4-digit numbers, thus providing 9,999 possible combinations. Once you have finished editing, press **SAVE** to confirm the changes or **CANCEL** to discard.

5.4. ADVANCED

In this section, you can set basic configuration parameters for the control panel, as well as engineer settings to facilitate start-up and configuration tasks. To access these settings, press:

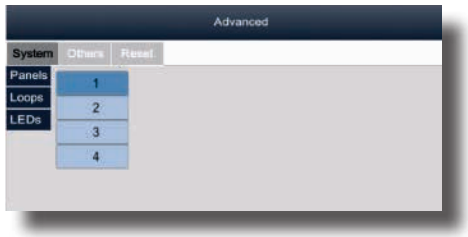
SETTINGS (Main menu) > **ADVANCED** (Submenu)

There are 3 configuration tabs on this level, **SYSTEM, OTHERS** and **RESET**.

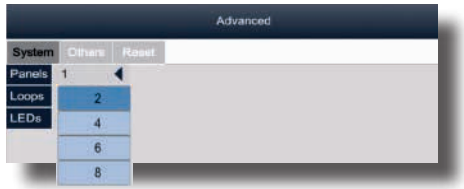
SETTINGS (Main menu) > **ADVANCED** (Submenu) > **System**

In the **SYSTEM** tab, you can confirm key characteristics, such as the number of cabinets your control panel has, the number of loops or whether it has a cabinet with zone LEDs. See section 2 of this manual and the hardware configuration descriptions in the Installation Manual, APPENDIX 1.

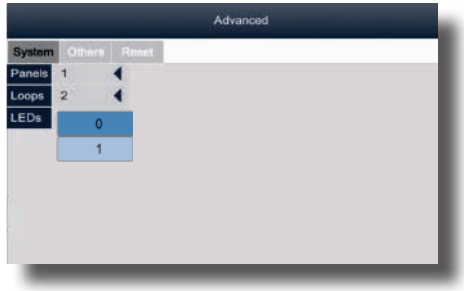
By touching the **PANELS** field, you will be able to include a value from 1 to 4. Enter the corresponding value.



By touching the **LOOPS** field, the possible combinations will be displayed according to the number of cabinets indicated in the previous point. 2, 4, 6 or 8 loops if you have defined a single control panel, up to 16 loops if you have defined 2 cabinets, up to 24 with 3 cabinets and 32 loops with 4 cabinets. If the number of loops to be configured is not shown, check the number of panels configured or try to scroll through the drop-down menu.



By touching the **LED** field, you can define whether the system has a cabinet with zone LEDs or not. You can select 0 or 1.



To confirm the changes, press the ***Save & Restart*** button.

ENG

In the **OTHERS** tab, there are 3 slider buttons for facilitating start-up and maintenance tasks.

Inactivity timeout: by deactivating this slider button, the control panel will always remain in the last access level and screen that you used. Always active by default, the control panel will return to the main screen if there is no activity and the access password must be re-entered in order to gain access.

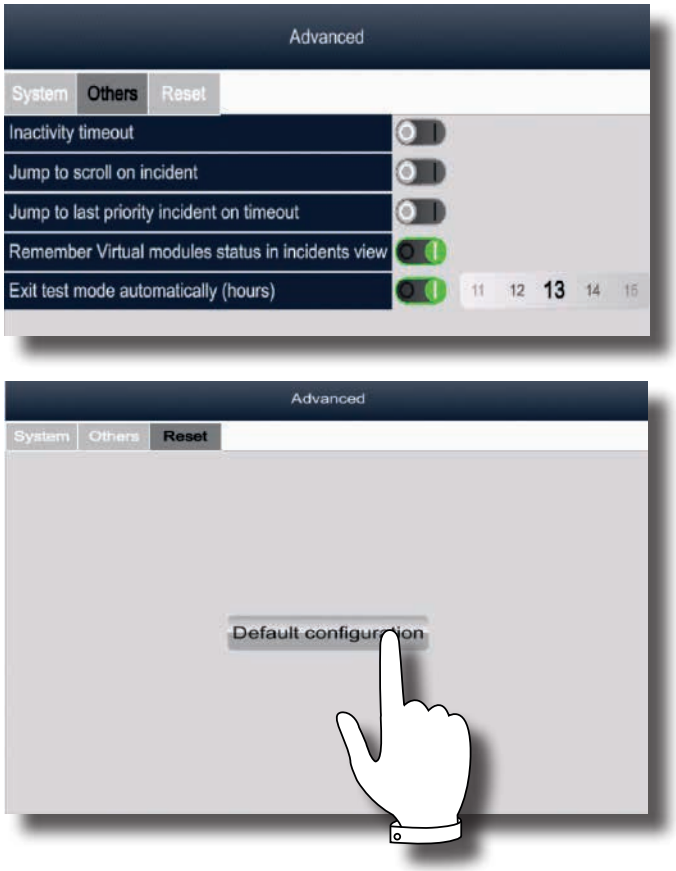
Jump to scroll on incident: by default, if a new event occurs, the EN54-2 control panels must exit the configuration, user or log menus that are being displayed and must show the new event for this to be recognised.

In start-up tasks, when the facility is not operating, it may be useful to use this function. By deactivating the slider button, a new incident will not be shown immediately. It is always active by default.

Jump to last priority incident on timeout: when activating the slider button by moving the scroll, the priority event will be shown after the timeout period.

⚠**WARNING!** For reasons of system security and regulatory requirements, all inactivity, timeout and scroll slider buttons must be activated (green) by default.

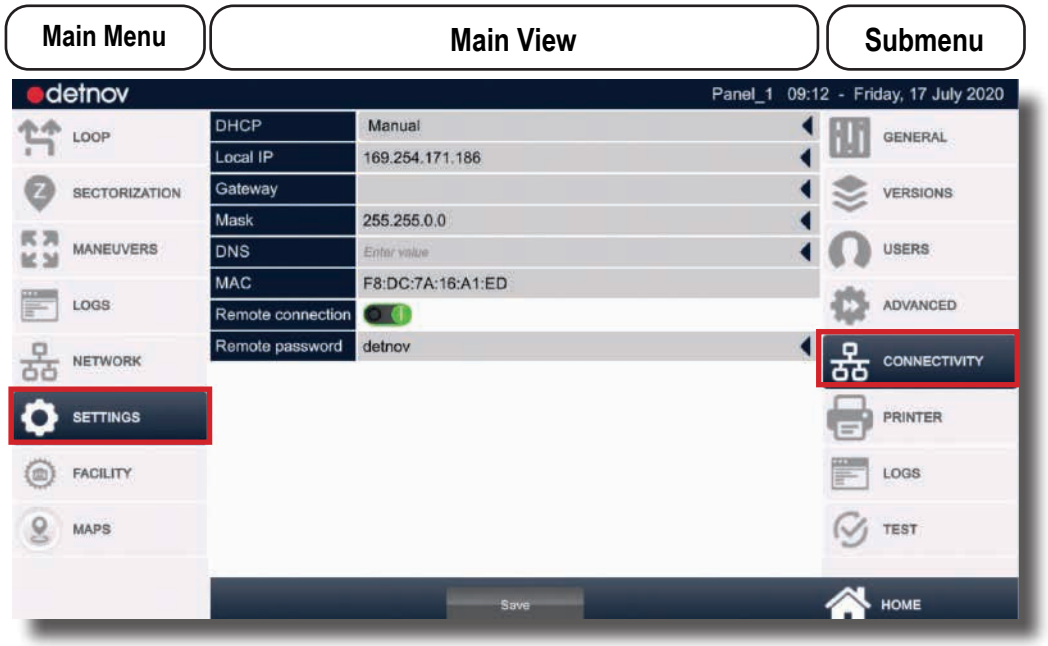
In the **RESET** tab, the control panel's entire configuration can be returned to factory settings.



5.5. CONNECTIVITY

In this section, you can set configuration parameters for the TCP/IP gateway. To access these settings, press:

SETTINGS (Main menu) > **CONNECTIVITY** (Submenu)



This gateway lets you access the control panel configuration or integrate CAD-250 into other platforms or applications.

Please note that for integration with ModBus, you must configure and enable the ports from the menu:

NETWORK > ***M*ODBUS CONFIGURATION**

The screen will show a **CONFIGURATION TABLE** with the following fields:

Field	Definition
DHCP (MANUAL/AUTO):	Define whether the assignment of the control panel IP address is manual or automatic. Check with your network administrator for the type of IP assignment of your connection.
LOCAL IP (Editable):	If it is assigned manually, the IP address is assigned in this field. Check with your network administrator for the free IP address for this control panel.
GATEWAY (Editable):	If it is assigned manually, the IP address of the gateway is assigned in this field. Check with your network administrator for this address.
MASK (Editable):	If it is assigned manually, the IP address of the subnet mask is assigned in this field. Check with your network administrator for this address
DNS (Editable):	Configure the domain address to the DNS server.
MAC:	This field shows the MAC (Media Access Control) of the control panel network adapter.
REMOTE PASSWORD (Editable):	If the remote control is activated, this function lets you set an access password for the control panel. The remote control function is solely intended as a support service, limit its use to this purpose.

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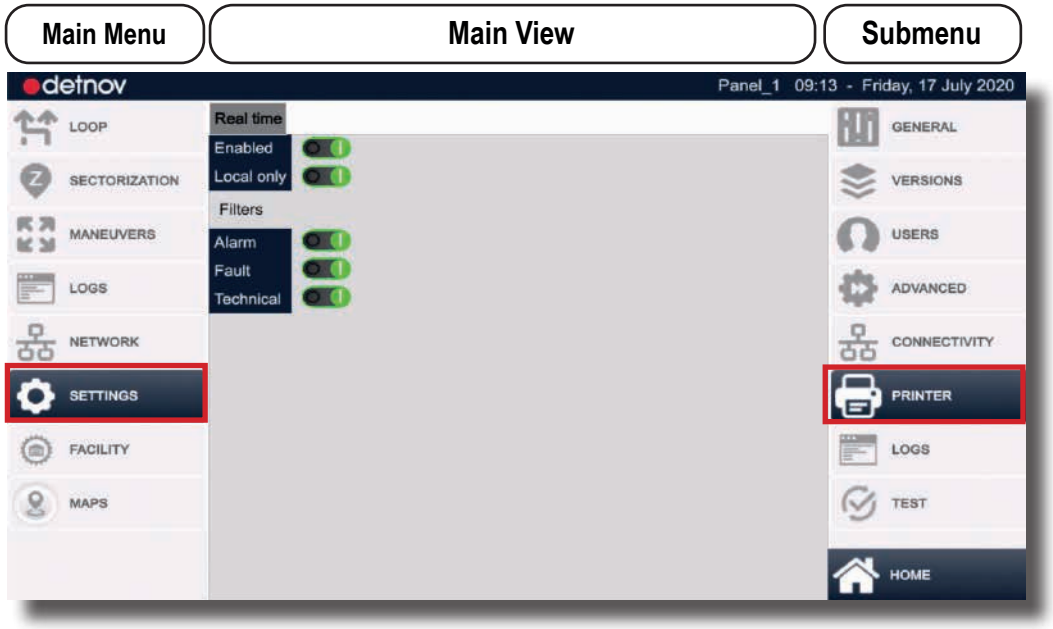
5.6. PRINTER

If your control panel model is the CAD-250-P, this submenu will be available. To access the SETTINGS category, press:

SETTINGS(Main menu) > **PRINTER** (Submenu)



This submenu has two tabs.

5.6.1. Printer options

The printer screen shows a series of parameters that can be activated via selectors.

To activate the event output by the printer, press:

ENABLED: It activates the event output by the printer.

The printable information is divided into two columns: if you have a network of CAD-250 control panels, you can choose whether to print all system events, **ENABLE** selector, or just the events of the panel you are configuring, **LOCAL ONLY** selector.

Option	Definition
ENABLE	ENABLES printing for all system events or for the event type selected, see table below
LOCAL ONLY	If the control panel is networked, when you mark this option, it will only print the control panel events and will filter out any events from other networked control panels.

From each column, you can select what information to print:

Option	Definition
ALL	This filter activates the printing of all events.
ALARM	Activates the alarm event output.
FAULT	Activates the printing of faults.
TEST	Activates the printing of events from tests.
INFORMATION	Activates the printing of all events.

5.6.2. Printer connection configuration

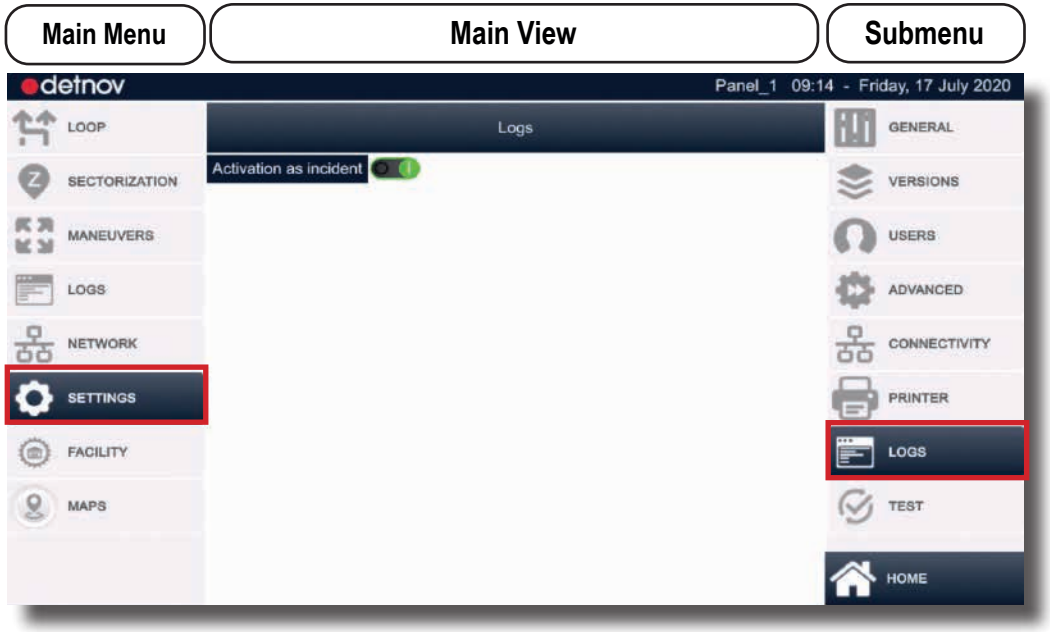
In the configuration screen, you can check the printer connection data.

Field	Definition
LOCATION	It shows which cabinet the printer is installed in if the control panel has more than one section. Box 1 will indicate that it is the upper cabinet containing the first loop
BAUD RATE	It shows the printer communication speed. **By default:** 9600
DATA BITS	It shows the number of data bits. **By default:** 8
STOP BITS	It shows the number of stop bits. **By default:** 1
PARITY	It shows whether your printer is configured WITH or WITHOUT parity. **By default:** Without
FLOW CONTROL	It shows whether your printer has flow control or not. **By default:** Without

5.7. LOGS

In this section, you can modify the type of event recorded by the control panel. To access these settings, press:

SETTINGS(Main menu) > **LOGS** (Submenu)



This menu provides a single configuration option.

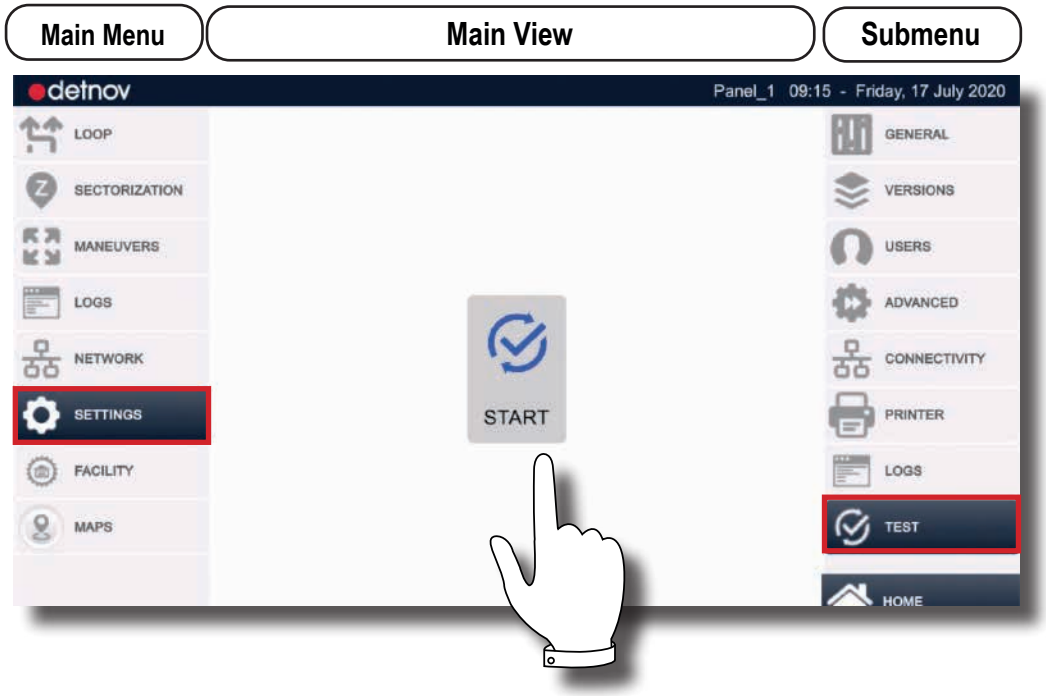
The **ACTIVATION AS INCIDENT** option allows all output actions to be recorded in the event log.

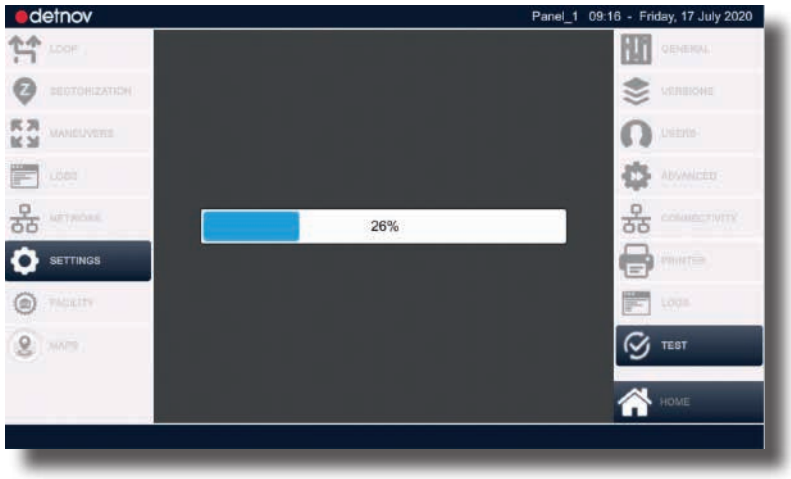
The event log has a capacity of 1,000,000 logs. If the system to be configured has many control elements and you do not want these manoeuvres to be recorded in the log, deactivate this function, moving the slider button into the deactivated position (grey).

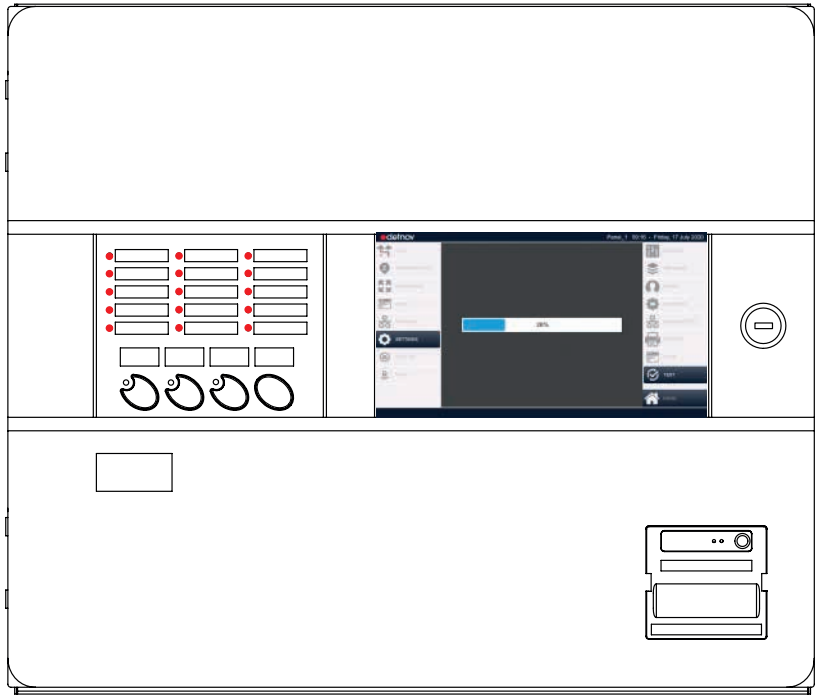
5.8. TEST

In this section, you will be able to establish basic configuration parameters for the control panel. To access these settings, press:

SETTINGS (Main menu) > **TEST** (Submenu)







This function allows verification of the mandatory indicator lights on the front of the control panel (see section 3.5) and the display's performance.

Press the start button to carry out the test; the control panel will begin the test process, illuminating the LED indicators for a few seconds whilst a progress bar is shown on the main screen and there is a gradual change in the screen brightness and contrast.

6. LOOP MENU

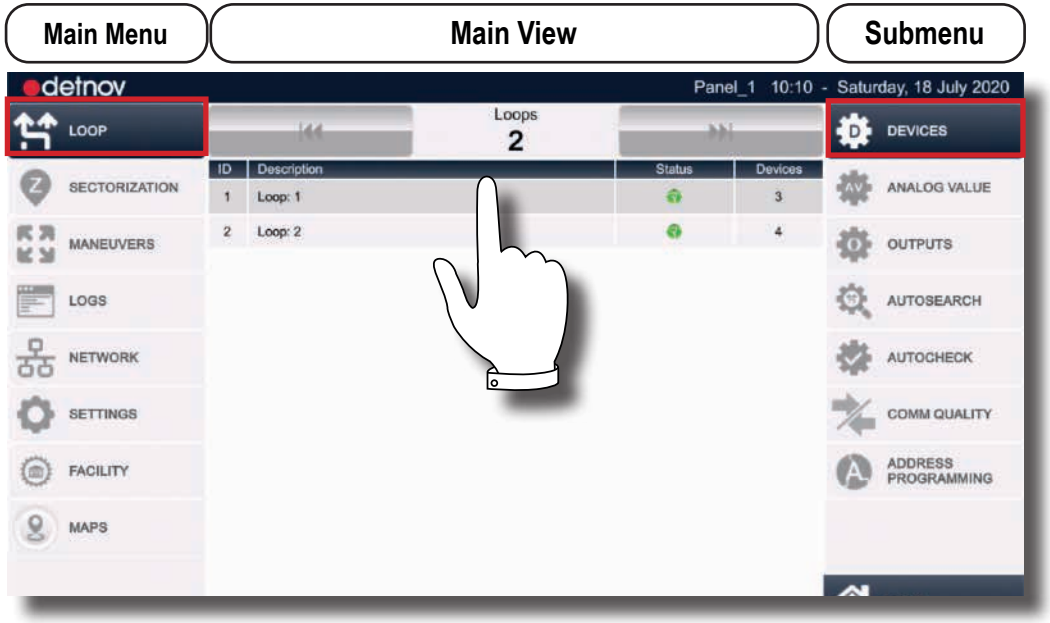
6.1. DEVICES

In this submenu, you can configure the devices connected to a loop individually.

LOOP (Main menu) > **DEVICES** (Submenu)

To see the **LIST** of devices in each loop:

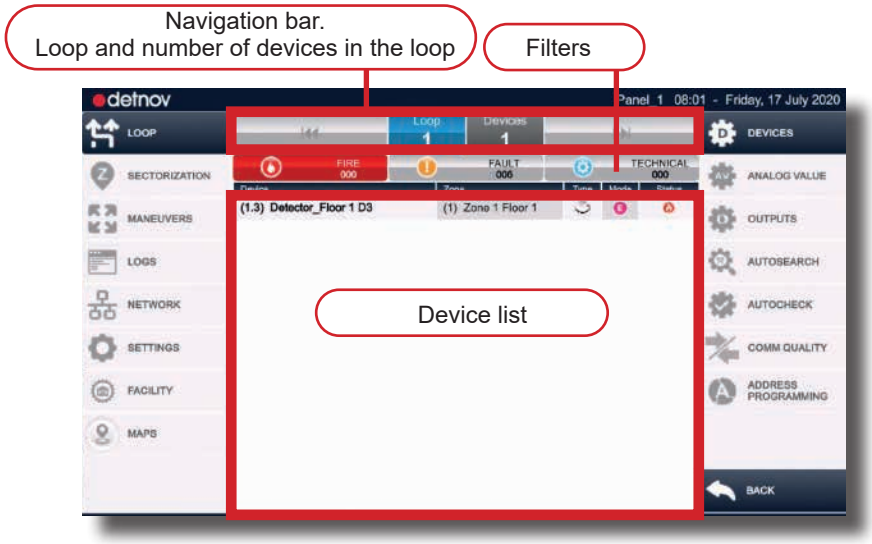
Press Loop (n) > Device list



Until an autosearch is performed or a new configuration is downloaded from the PC configuration application, the device list will be empty.

From the **AUTOSEARCH** submenu, you can carry out the recognition of devices connected to the loop.

From the **Settings** > **Versions** menu, you can update the control panel's firmware and configuration from a file stored on a pen drive.



From the SCD-250 CONFIGURATION SOFTWARE, you can generate a configuration and download it onto the control panel.

It is not possible to insert devices manually from the control panel. It is only possible to create a configuration entirely manually using the PC configuration program.

When the loop or device list does not fit on the screen, from the navigation bar and using the buttons, you can jump to the next page of the loop or device list.

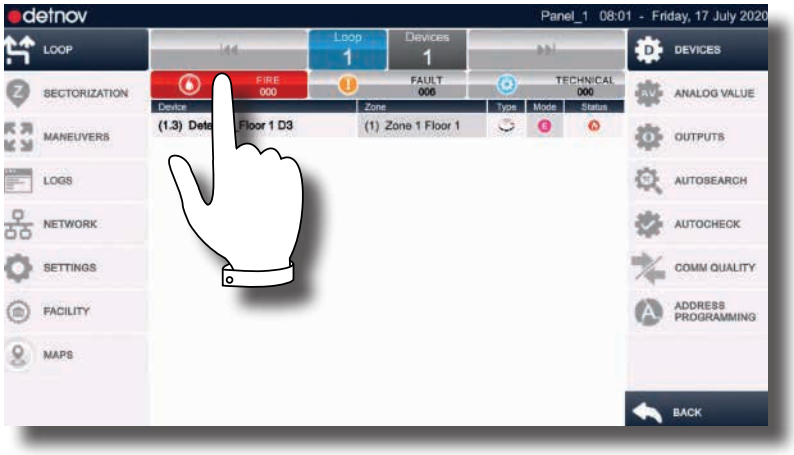
Press one of the loops to view the devices.

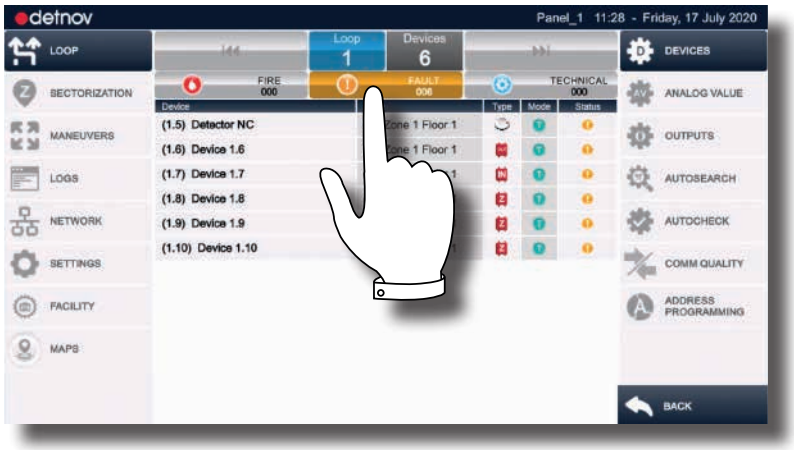
Under the navigation bar arrow keys are the status filter buttons. By touching the filter option, the device list will be limited to those whose condition matches the selected filter:

ALARM: Devices in fire alarm condition. They may be detectors, buttons or inputs configured as fire zones. It shows the number of elements in this condition.

FAULT: Devices in fault or failure condition. As in the case of the alarm filter, it shows the number of input devices in fault condition, including detectors, push-buttons or inputs configured as fire zones.

TECHNICAL: Monitored inputs that are not considered fire alarms. As in the case of the alarm or fault filter, it shows the number of input devices that are not configured as fire alarms and that are in active condition.





Descriptive term	Definition
DEVICE	Identified by loop number **(L)** and the device's physical address **(D)**. It is shown in brackets **(L,D)**. The device description is also shown here when it is assigned.
ZONE	It identifies the zone number to which the device belongs in brackets, by default **(1)**.
TYPE	It identifies the type of device found or assigned via an icon. Optical detector, heat detector, optical-heat detector, input, technical input, detection zone, push-button, sounder output, sounder, panel or gas detector.
MODE	It indicates whether the device is enabled or disabled. It can also show that the element is in test mode, if, from the sectorisation menu, the zone or area to which it belongs is in test mode. This field can only be modified from the **SECTORISATION** section of the main menu. The zone or area modes may be **ENABLED**, **DISABLED** or **TEST**
STATUS	Condition of the device: **Green:** Normal or in standby **Red:**Alarm **Amber:** Fault **Blue :** Technical event active

6.1.1. Device information and configuration

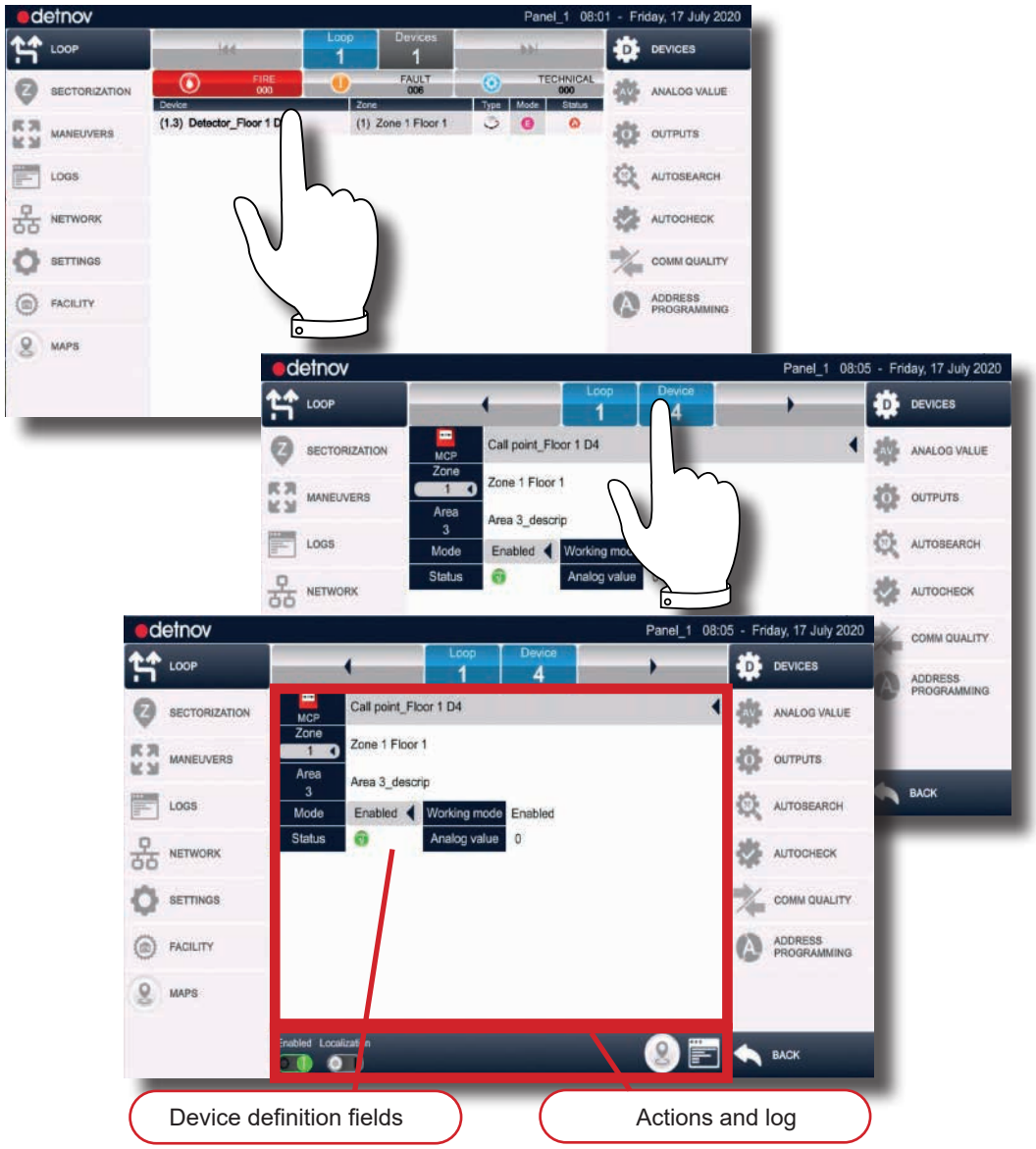
From the device list and when selecting one of them, you will have access to its detailed fields, which will allow you to check or configure its operation. The navigation bar identifies the loop number and device that you are in currently.

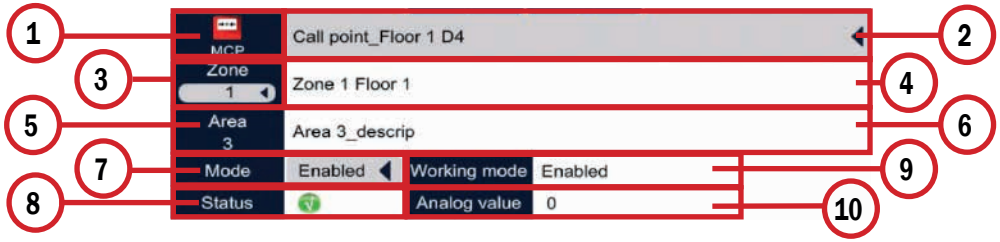
By pressing **LOOP** on the navigation bar, you will return to the loop table.

By pressing **DEVICES** on the navigation bar, you will return to the device list.

The fields that define the devices show the following information:

No.	Editable	Definition
1	No	**Type.** It identifies the type of device found or assigned. Detector, push-button or module.
2	Yes	**Device description.** To edit it, tap on the description field. A virtual keyboard will appear; enter the name of the corresponding device and press enter to confirm.
3	Yes	**Zone no.** It indicates the zone number to which the device belongs. By default: 1. To change the zone assignment, touch the numerical Zone field and a virtual keyboard will appear. Enter the corresponding zone number and press ENTER to confirm. If the chosen zone number does not exist, it will be created automatically in the sectorisation tree.
4	No	**Zone description.** It shows the description if it has been created. It is not possible to edit this field on this level. Go to the sectorisation menu to edit it.
5	No	**Area no.** It shows the area number to which the device's zone belongs. By default: 1. It is not possible to edit this field on this level. Go to the sectorisation menu to edit it.
6	No	**Area description.** It shows the area description if it has been created. It is not possible to edit this field on this level. Go to the sectorisation menu to edit it.
7	Yes	**Mode.** ENABLED or DISABLED mode. To change it, click on the field and a list of options will appear.
8	No	**Status.** Condition of the device: **Green:** Normal or in standby; **Red:** Alarm; **Amber:** Fault; **Blue:** Technical event active.
9	No	**Working mode.** It indicates the ZONE or AREA mode to which the device belongs. This field can only be modified from the SECTORISATION section of the main menu.
10	No	It shows the addressable value corresponding to the device status and the sensor reading at that time





In the information and configuration menu, each device has an action and associated information bar, which will be longer or shorter depending on the type of device:

Enabled: in line with the mode field in the device definition menu. By moving the button to the left, the device will be disabled. If the slider button is set to the right and is green, the device will be enabled.

Location: by moving the slider button to the right, the device's LED indicator will be activated, allowing physical identification in the facility.

Technical: by moving the slider button to the right, the activation of the associated device will be technical and the control panel will not recognise it as a fire signal. It is applicable to input signals.

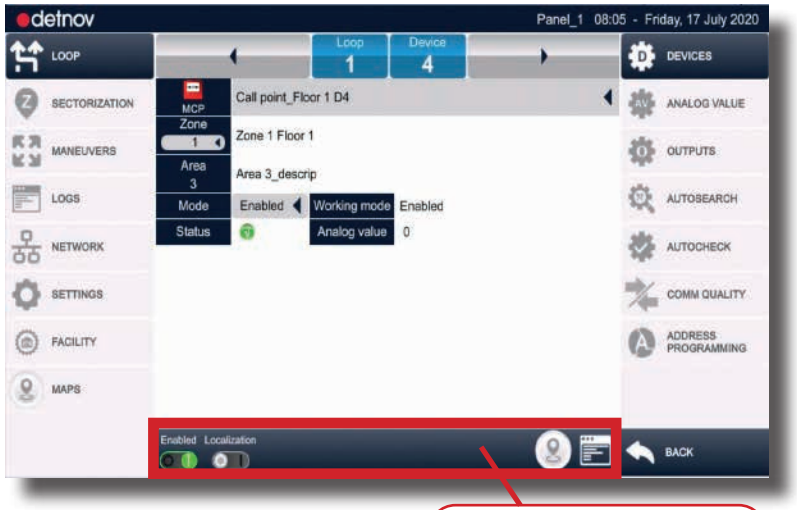
Activation: by moving the button to the right, the corresponding output will be activated. It is applicable to outputs, modules, sounders or indicators.

Sounder: by moving the button to the right, the output module for the corresponding output will be recognised by the system as a sounder.

Special modes: for the configuration of special modes associated with this device, see the **SPECIAL MODES** section in the **FACILITY** menu. If a special mode associated with the device is active, this icon will be green.

LOG: For access to the device's event log, see the **LOGS** menu and the **LOGS** submenu in the **SETTINGS** menu.

When you carry out system checks, make sure that people and services that may be affected have been warned.

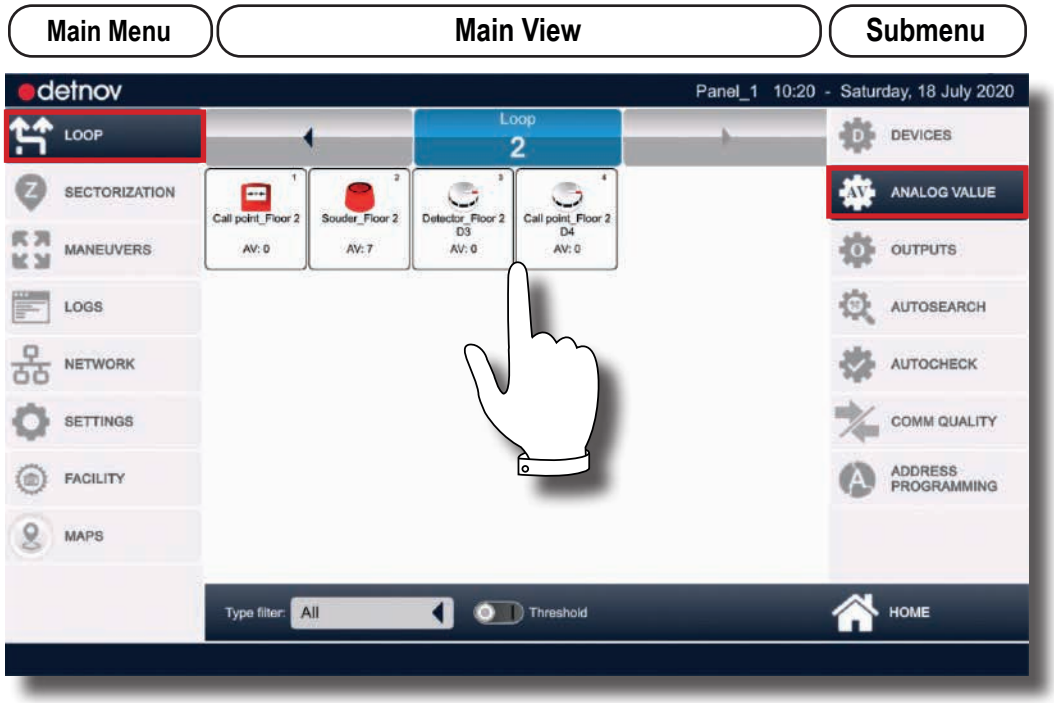


Type		Enabled	Localization	Technical	Activation	Sounder		
OPT		YES	YES				YES	YES
OPT-HEAT		YES	YES				YES	YES
HEAT		YES	YES				YES	YES
PUS		YES	YES				YES	YES
ZONE		YES	YES					YES
SOUNDER		YES			Yes			YES
IN		YES	YES	YES				YES
OUT		YES	YES		YES	YES		YES
INDICATOR		YES	YES		YES			YES
PANEL		YES	YES					YES
GAS		YES	YES					YES

6.2. ADDRESSABLE VALUE

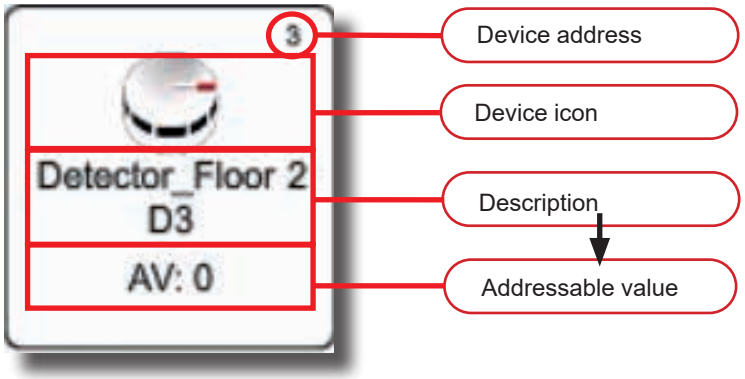
From this submenu, you will see the addressable value of each device installed in the loop.

LOOP (Main menu) > **Addressable value** (Submenu)



From the navigation bar, you can browse the different loops configured on the control panel.

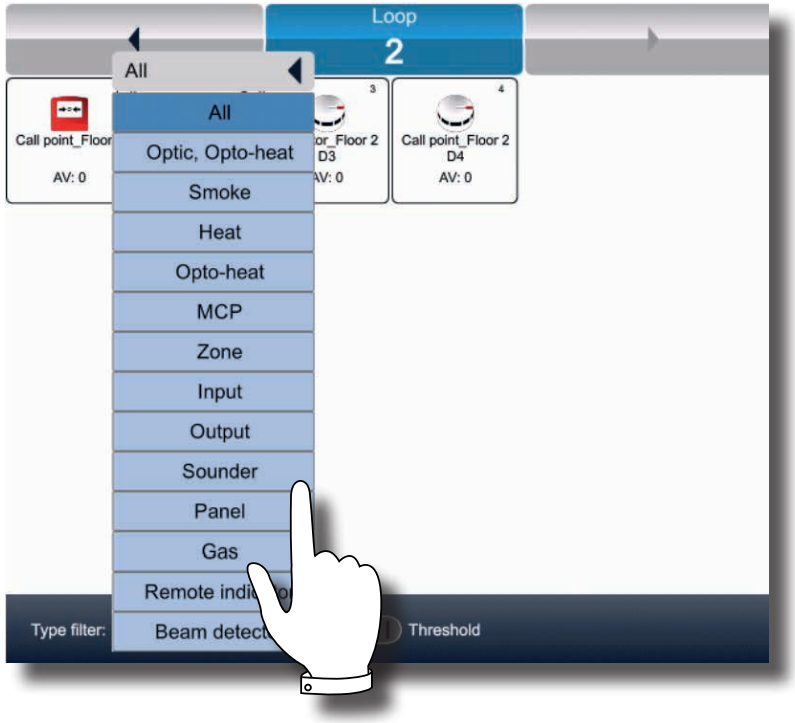
The devices are shown graphically on the screen.



On the action bar, there are two options for filtering the elements to be viewed.

- **Type filter:** allows you to filter by the type of device.
- **Threshold filter:** allows you to filter by the element's addressable value.

In standby and when there is no smoke or temperature, all devices adopt the addressable value of zero (0).



By activating the **THRESHOLD** filter:

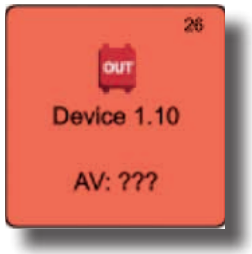
1. Devices with a value that is lower than the configured value will have an orange background.

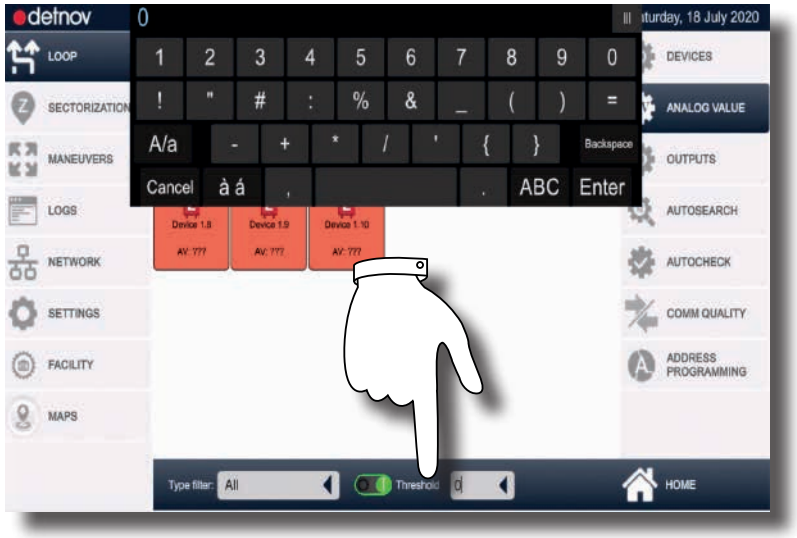
2. Devices with a value that is the same as the configured value will have a yellow background.

3. Devices with a value that is higher than the configured value will have a green background.

To edit the value, touch the numerical frame next to the **THRESHOLD** button. The pop-up keyboard will allow you to modify the value, touch **ENTER** to confirm.

Devices can adopt the following values:



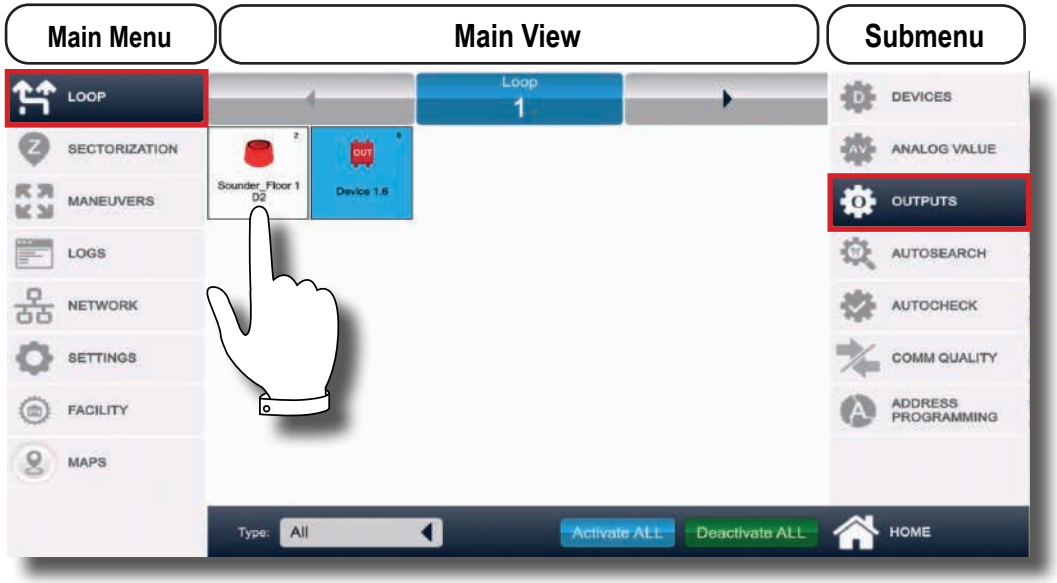


Type		Addressable value range	Values	Definition
OPT		0 - 255	100	Alarm
OPT-HEAT		0 - 255	100	Alarm
HEAT		0 - 255	100	
PUS		0 - 100	100	Alarm
ZONE		0 - 5	0 1 2 3 4 5	Short-circuit fault Alarm push-button Alarm detector Standby Open circuit fault Power supply fault
SOUNDER		0 -255	0 -	Not active Tone activated
IN		0 - 3	0 1 2 3	Activated Standby Open circuit fault Short-circuit fault
OUT		0-100	0 1 or 100	Deactivated Active
INDICATOR			0 1	Off On
PANEL		0-2	0 1 2	Standby Alarm Fault
GAS		0-4	0 1 2 3 4	Standby Pre-alarm Alarm 24 V fault Sensor fault

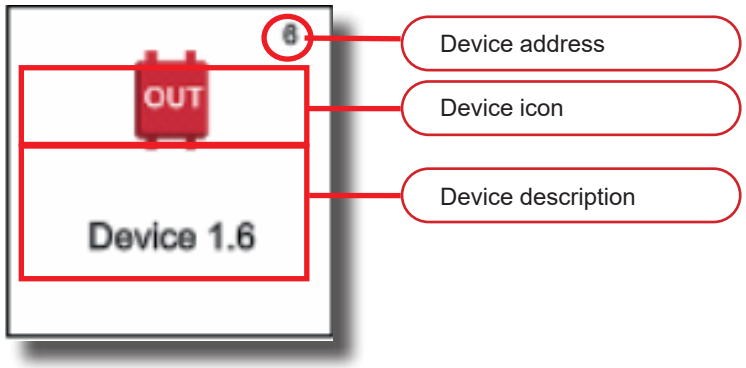
6.3. OUTPUTS

From this submenu, you can activate each output in each loop.

LOOP (Main menu) > **Outputs**(Submenu)



If the number of loop outputs exceeds the screen capacity, press the navigation arrow keys to the right or left to jump to the next page. By touching the **LOOP** field in the browser, a pop-up screen will appear with a complete list of the control panel's loops. Select the required loop. For each device, the address within the loop, the icon and the description is shown.

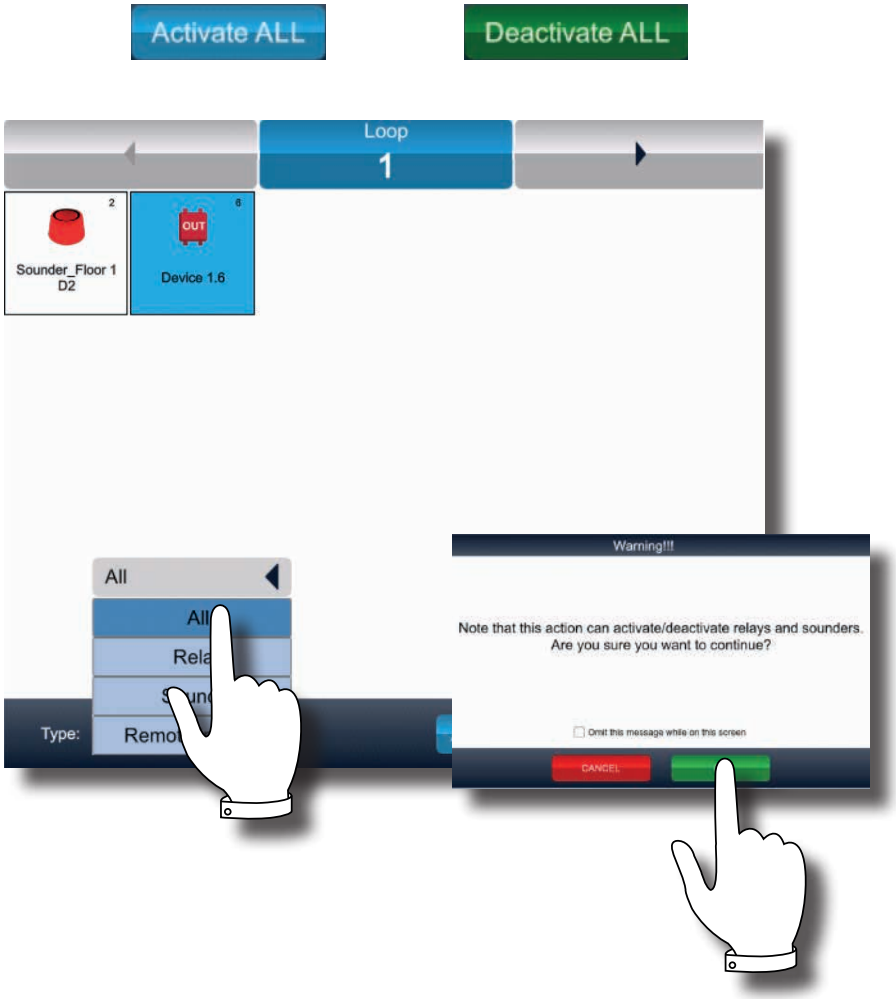


By touching the device, a warning and confirmation message will appear.

> ⚠ Exercise caution and make sure that users have been warned and there is no risk of activating the output.

The output will be activated and the colour of the element on the main screen will change to blue.

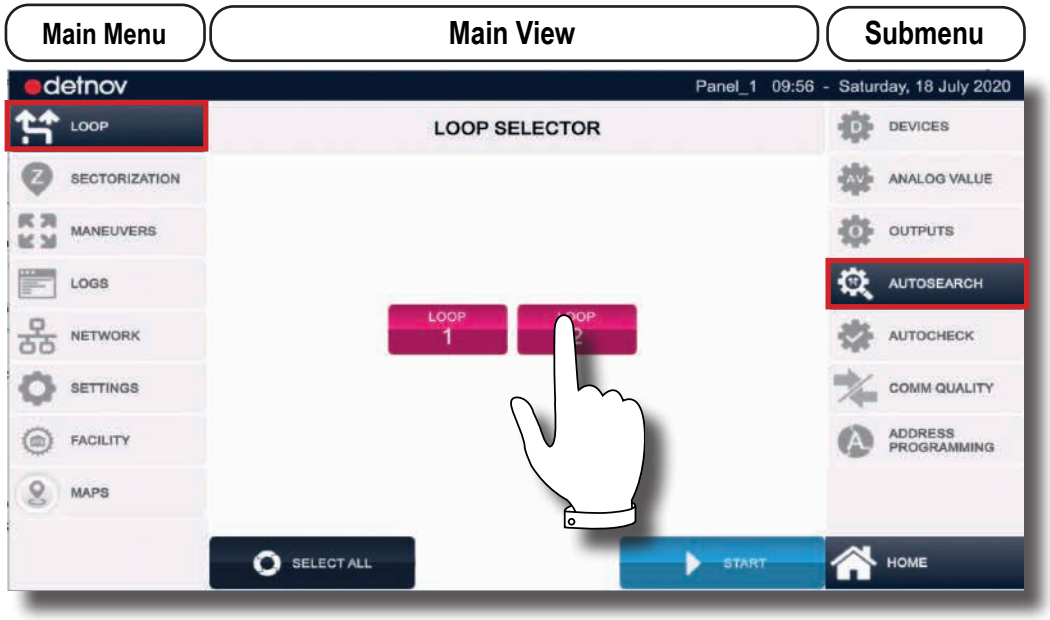
On the bottom bar of the main screen, there is 1 filter field according to the type of output, **ALL**, **RELAY** or **SOUNDER**, and two buttons for activating and deactivating all outputs. The activation is sensitive to the applied filter field.



6.4. AUTOSEARCH

When starting the system up for the first time, it should recognise the devices installed in the loops. You can perform this action automatically via the **AUTOSEARCH** function.

LOOP (Main menu) > **AUTOSEARCH** (Submenu)



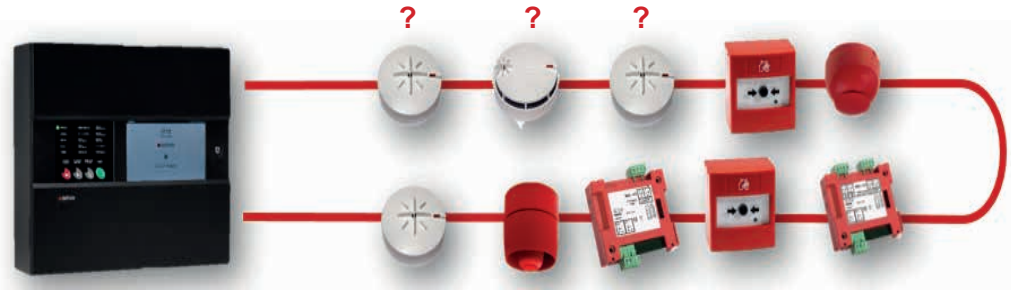
By default, all devices are supplied ex-works without an address.

To perform an **AUTOSEARCH,** the addresses for each device must have been configured previously. For this, you will need the PGD-200 programmer.

It is recommended that you carry out plan in advance using plans and drawings and assign the addresses according to this plan.

The devices can be programmed via the **ADDRESS PROGRAMMING** submenu of the **LOOP** menu.

Remember that some devices use more than one address. APPENDIX 1 includes a list of compatible devices, providing information on the consumption and the number of addresses it uses.



With the addresses assigned, the control panel still does not know which elements are installed.

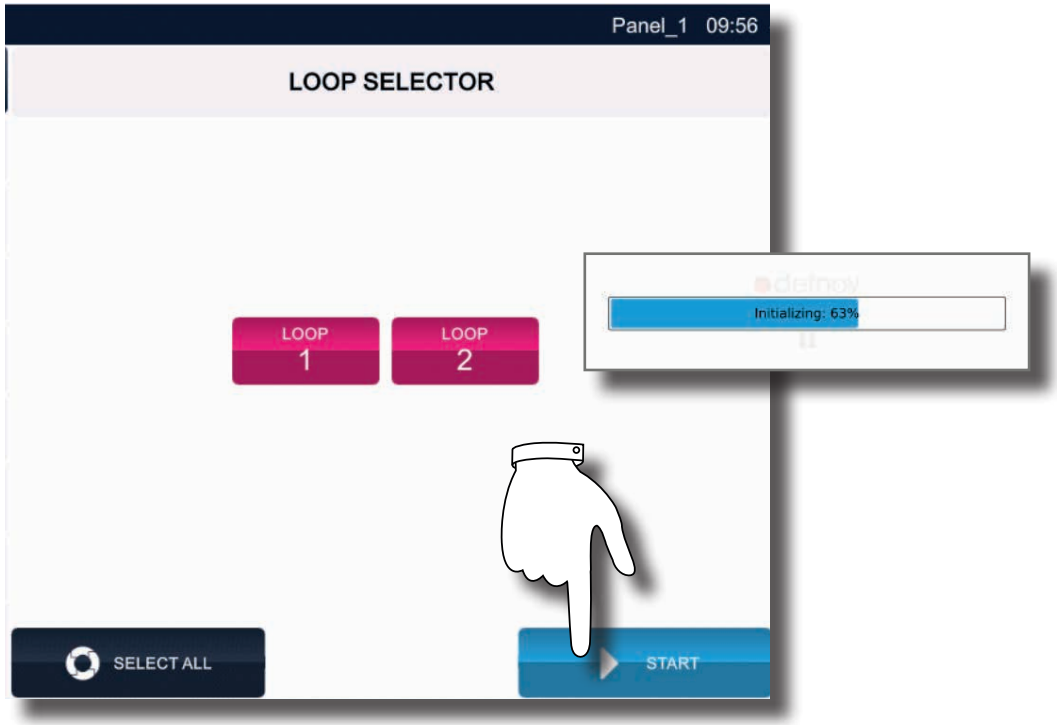
The main view will show the loops installed on the control panel, see the **SETTINGS** > **ADVANCED** menu. Select the loops you want to synchronise. When you do this for the first time, you should select them all.

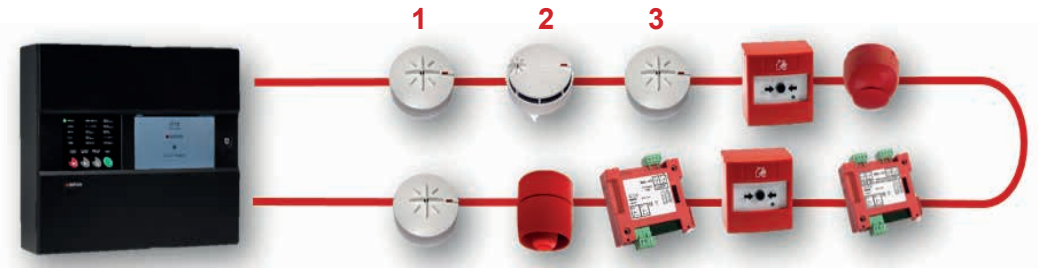
ENG

Press START, **START** to begin the search process.

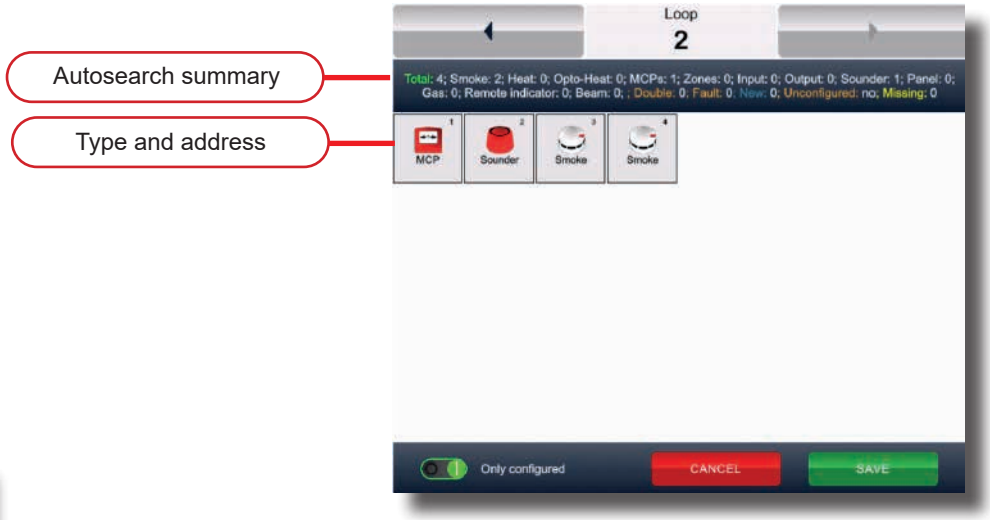
Alternatively, the SELECT ALL button lets you select all of the loops or delete the entire selection.

A progress bar will be shown in the main view.





Once complete, the main view will show the devices found for each loop with detailed information of each type under the navigation bar. Use the arrow keys to view all of the devices found



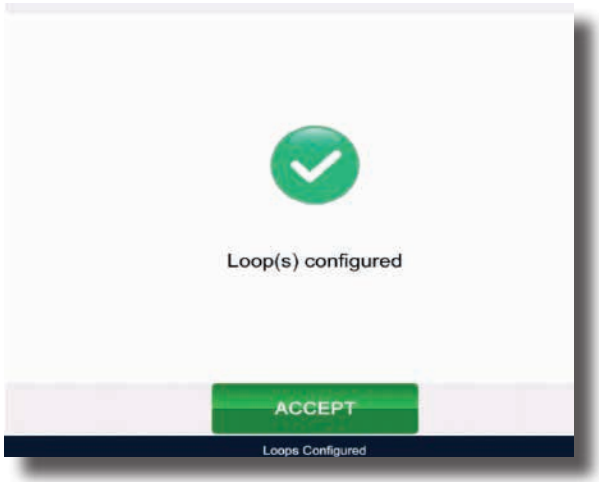
Press SAVE, SAVE to update the database.

Press CANCEL, CANCEL to undo the proposed changes.

The Only configured slider button lets you limit the view of the elements found after the search. If the option is deactivated, it will show all possible addresses for each loop.

By saving, a new progress bar will appear for this process.

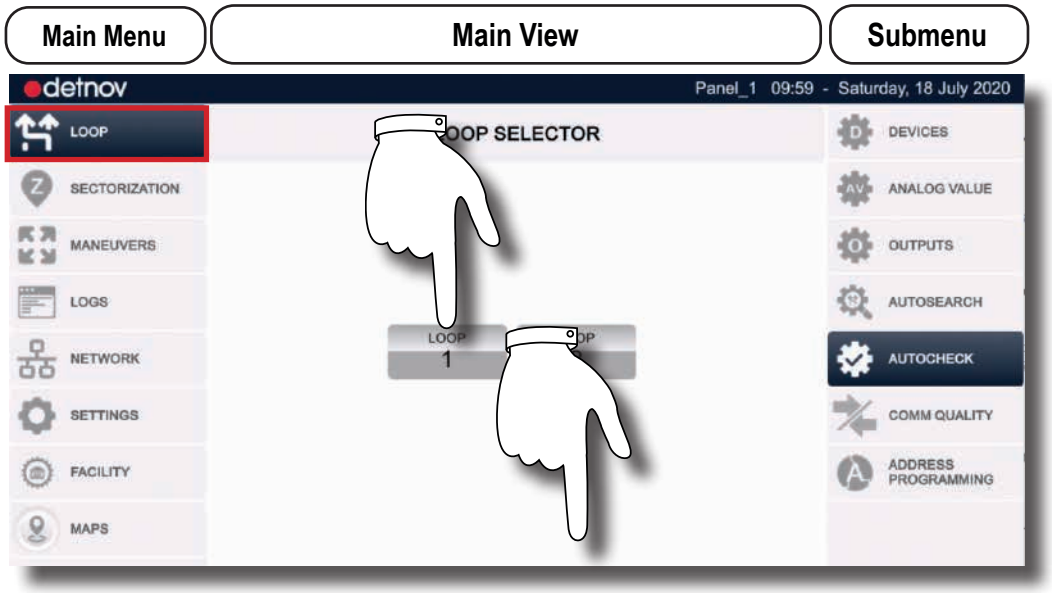
The message **CONFIGURED LOOP(S)** will be shown on the screen. Press **ACCEPT** to finish.



6.5. AUTOCHECK

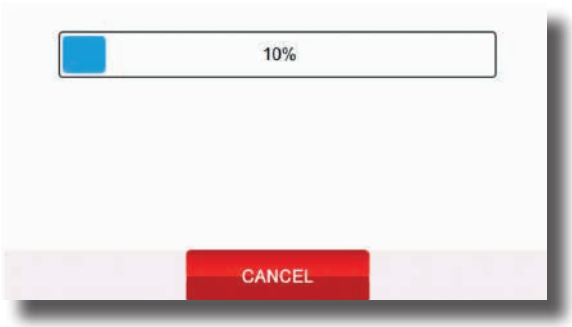
This is a support function for start-up. It lets you check the communications on both sides of the loop. To access it, press:

LOOP (Main menu) > **AUTOCHECK** (Submenu)

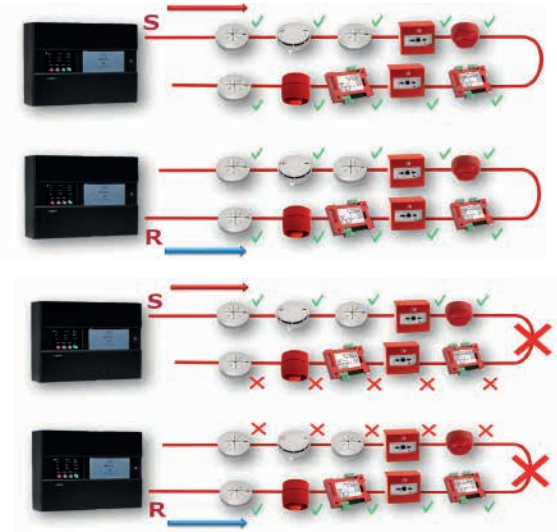


Select the loop that you want to check and press the **START** button. Once this process has begun, it can be stopped by pressing the **CANCEL** button.

The control panel will show a pop-up screen with a progress bar.



The control panel will try to identify all of the loop's elements, firstly via the data transmission output and then via the reception side. It will check that both diagnoses match and will indicate any error in the report.



Once the check is finished, the screen will show a list with the result for each address. Addresses with errors are highlighted in yellow.

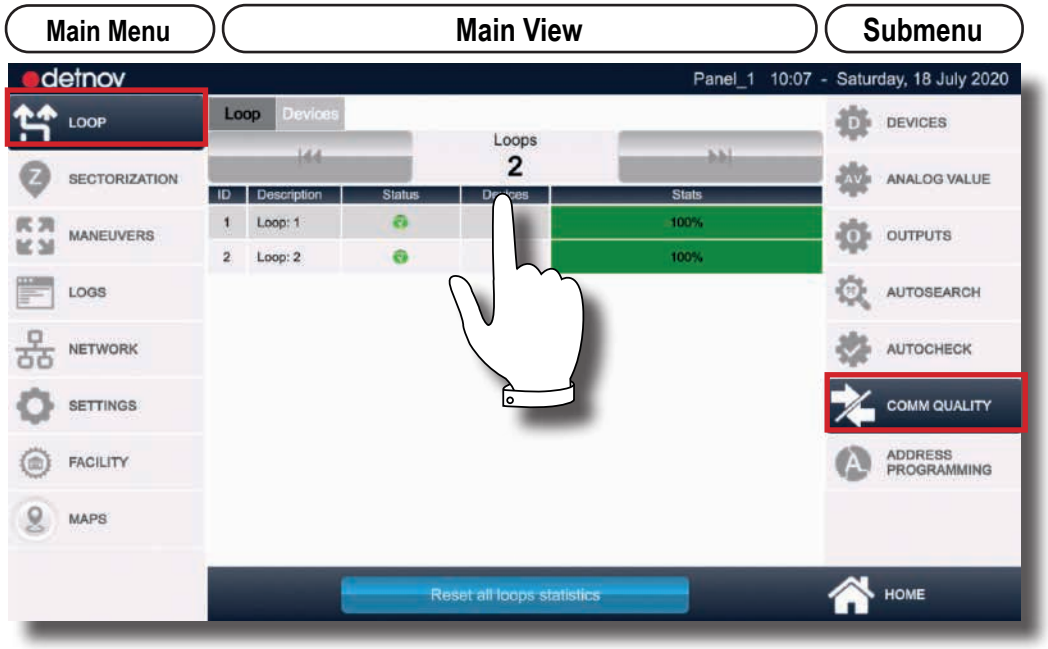
This function is very useful for locating break points in the line.

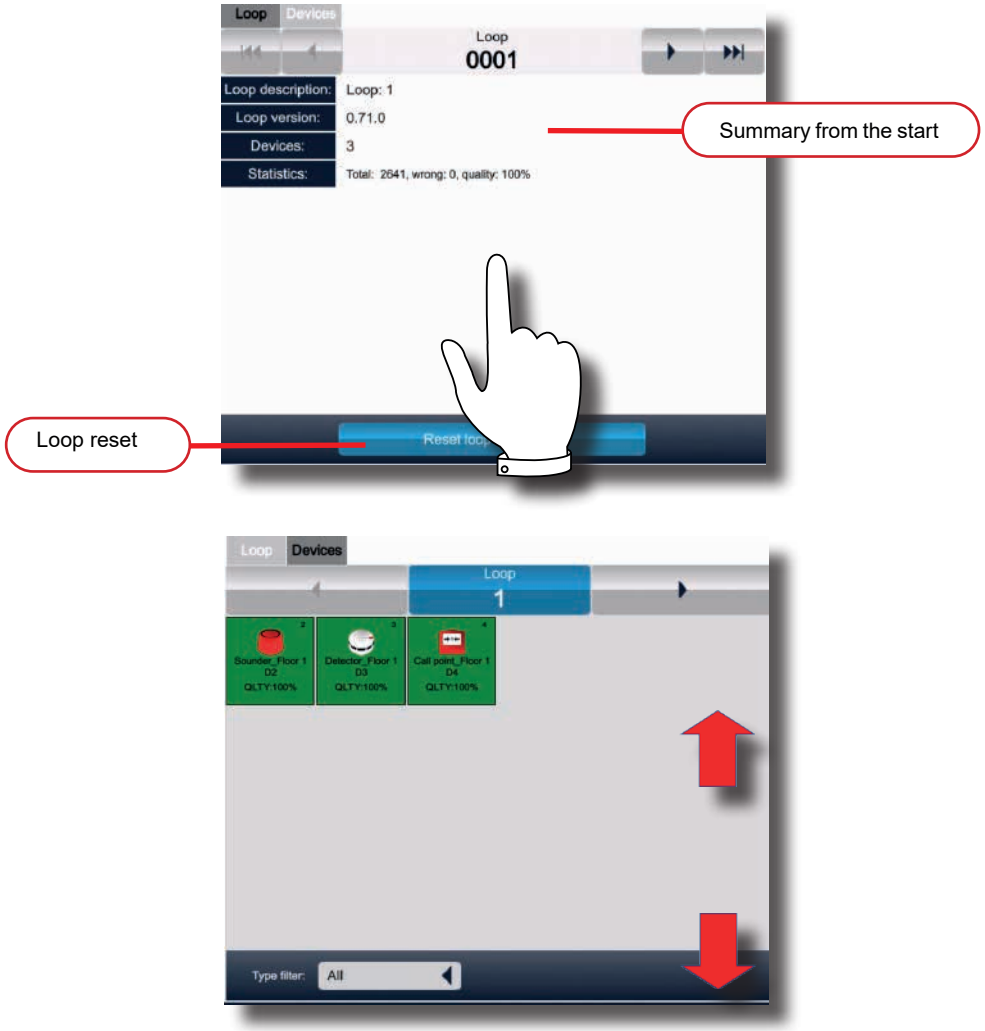
ENG

6.6. COMMUNICATION QUALITY

This submenu provides statistical information on the quality of communications in the loop. To access this function, press:

LOOP (Main menu) > **COMMUNICATION QUALITY**(Submenu)





This function is useful for identifying potential coupling issues in the loop line, inductions or the erratic behaviour of a component.

This is a tool for experienced staff. There are many reasons why the system might show multiple faults, so when using it, consider a specific period and issue.

Reset the loop, reset the statistics and try to associate the error rate with the behaviour of units next to the devices and detection and alarm lines.

The tool shows the failure percentage, as well as the total number of errors computed. If issues are occurring, observe elements in the system that show a quality of less than 95% and relate them to the environment.

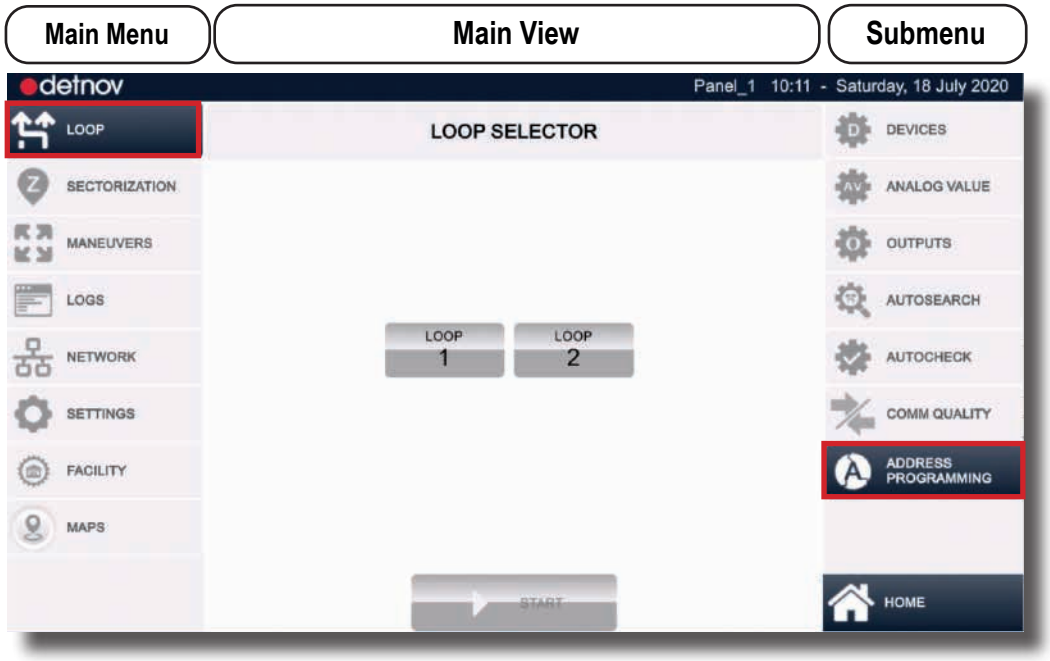
The **DEVICES** tab will show detailed information on each element in the loop. To view more elements, move the screen by scrolling up and/or down.

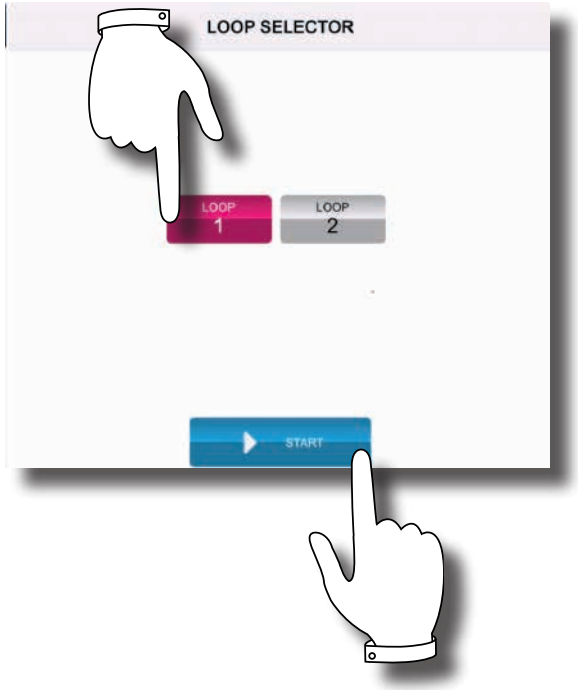
The **NAVIGATION BAR** lets you view the quality of the communications in other loops.

6.7. ADDRESS PROGRAMMING

From this submenu, the address of a single device connected to the loop can be configured. To access it, press:

LOOP (Main menu) > **ADDRESS PROGRAMMING**(Submenu)





Before searching for a device in the installation, the address that corresponds to each of the devices must be configured. To do so, use a PGD-200 programmer.

If you do not have a programmer and you need to assign an address to a device, you can do so via the control panel and from this submenu.

For this task, you only need to have one device connected in the loop, i.e. the unit to which you want to assign the address.

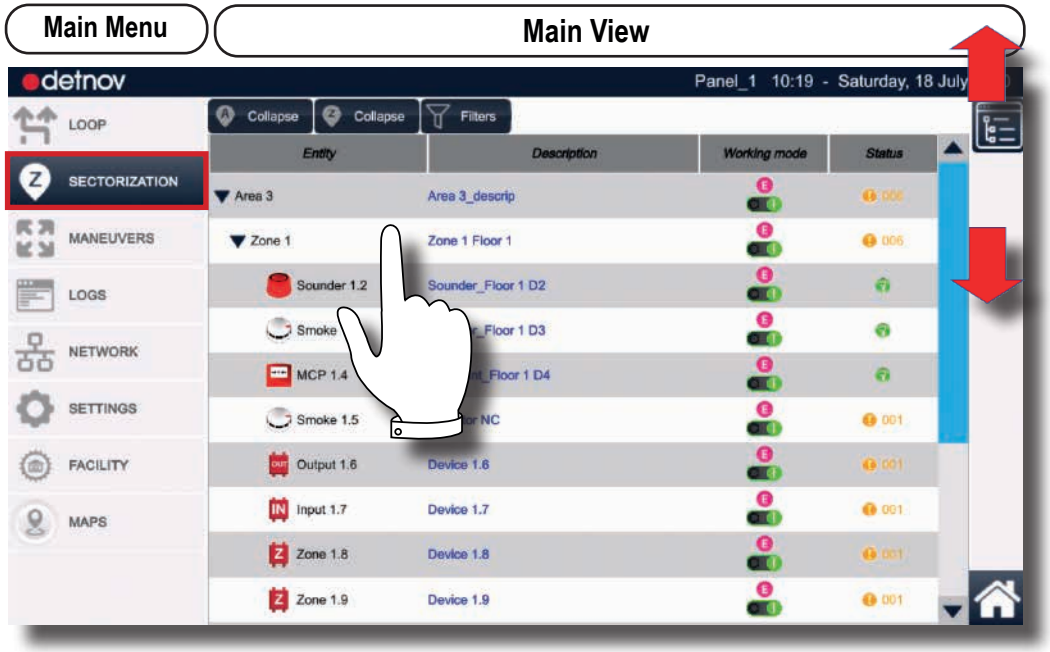
If the system finds more than one element, it will return an error.

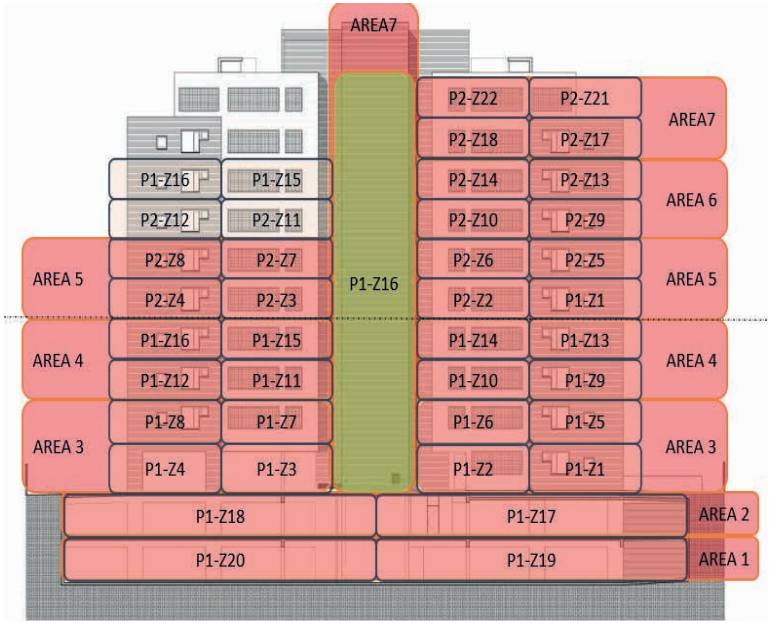
Select the loop in which the device to be configured is connected and press the **START** button.

7. SECTORISATION

From the SECTORISATION section in the main menu, it is possible to create, review, tag and modify the sectorisation tree.

SECTORISATION (Main menu)





INTRODUCTION TO SECTORISATION:

One of the fundamental design principles of a fire detection system is the division of the facility into areas and zones, with the aim of monitoring the indication of events and alarm inputs. The zones allow better organisation of the devices in the facility, whether they are installed in the same loop or not. This also allows the working mode of these locations (AREAS or ZONES) to be changed.

There may be limits established by local regulations for the definition, scope and coverage of the zones.

Consult the project and local standards, for example, **TS 54-14** or **UNE 23007-14**, as well as any sector regulations that may be applicable

CAD-250 organises the system structure into **Entities**.

7.1. SECTORISATION HIERARCHY AND LEGACY

The entities have a specific hierarchy:

- Areas
- Zones
- Devices

Working modes can be established for **ZONES/AREAS** from the **SECTORISATION** section in the main menu.

- **ENABLED:** the devices and their events are taken into account.
- **DISABLED:** the devices in this zone/area are ignored.
- **TEST:** useful for carrying out maintenance tasks without the alarm being activated.

LEGACY MODE

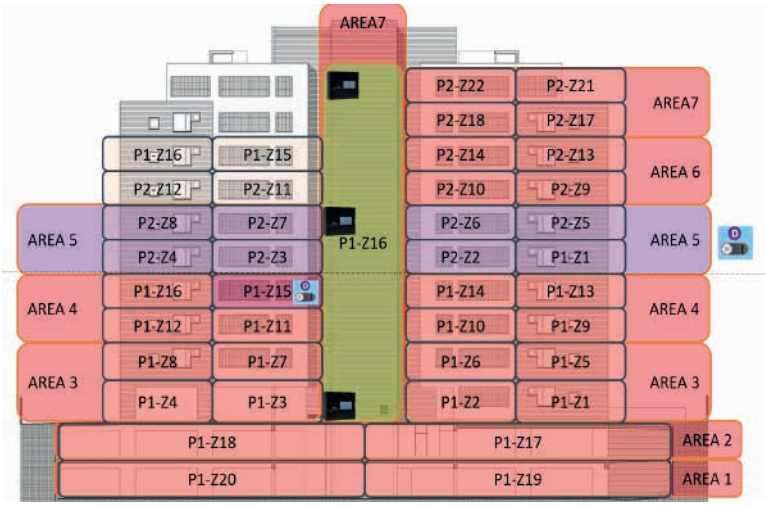
The modes establish the behaviour according to a hierarchical structure whereby the **AREA** is superior to the **ZONE** and this is superior to the **DEVICE**.

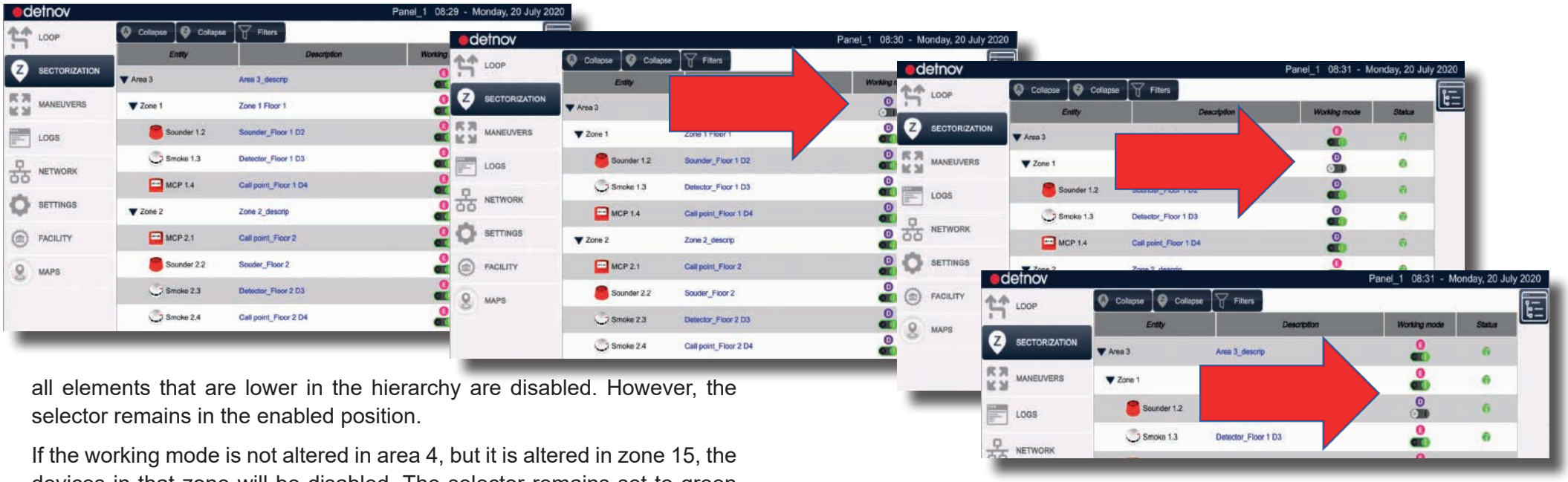
The behaviour due to the **WORKING MODE** of an **AREA** will affect the **ZONES** and the **DEVICES** of each one, but this does not happen the other way around:

- If an **AREA** is **DISABLED**, the **ZONES** contained in that **AREA** will be also, as will the **DEVICES** contained in those **ZONES**.
- If a **ZONE** is **DISABLED**, the devices contained within that **ZONE** will be also, though the **AREA** that contains them will not.
- If you **DISABLE** a **DEVICE**, this does not disable the **ZONE** or the **AREA** that contains it.

Similarly, when you enable an upper hierarchy, the lower hierarchies will only be disabled if they have not been individually configured in **DISABLED** mode.

By modifying the working mode of area 4 and changing it to disabled,





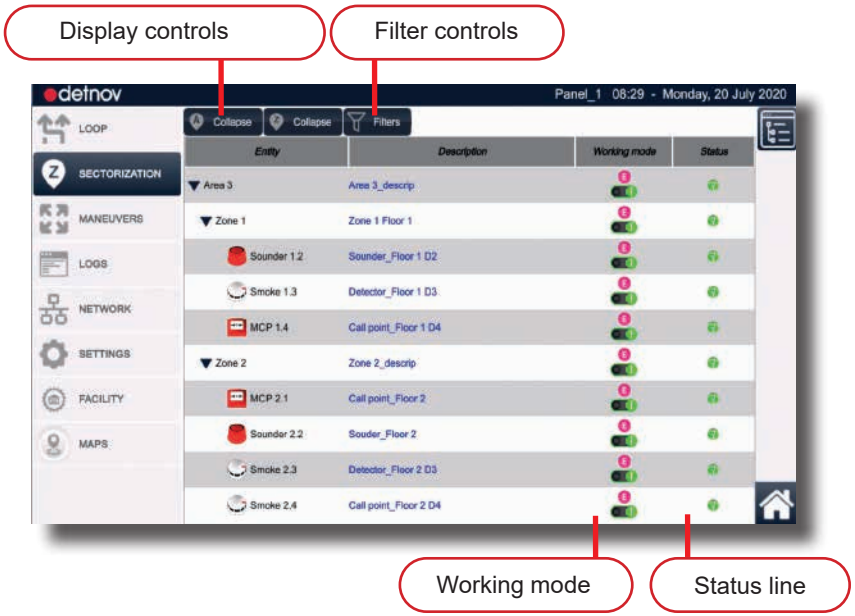
all elements that are lower in the hierarchy are disabled. However, the selector remains in the enabled position.

If the working mode is not altered in area 4, but it is altered in zone 15, the devices in that zone will be disabled. The selector remains set to green and the other elements in area 4 are not affected by the change.

Likewise, the mode change in input 13 does not affect any other element.

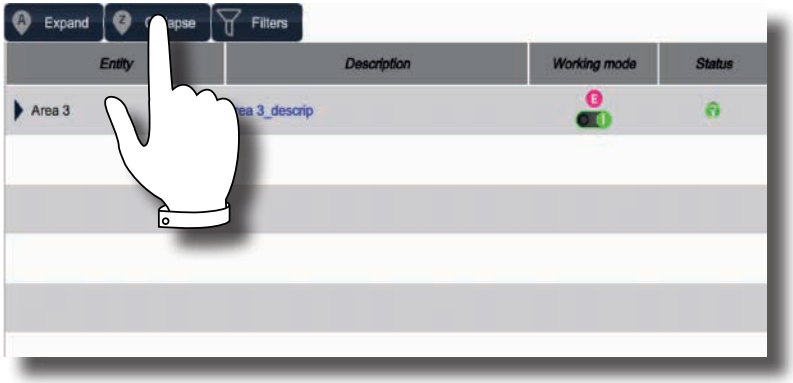
7.2. DISPLAY CONTROLS

Projects with CAD-250 will have a complex structure with innumerable entities configured. To make it easier to view the information and check it, there are 3 control buttons in the top margin of the main screen of the sectorisation menu.

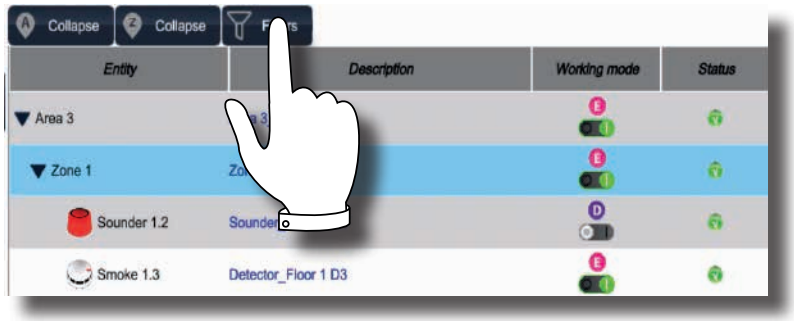


Collapse It allows the sectorisation tree of the **AREA** upper hierarchy to be collapsed or expanded.

Collapse It allows the sectorisation tree of the **ZONES** hierarchy to be collapsed or expanded.



Filters It allows view filters to be applied by type, description, mode or status.



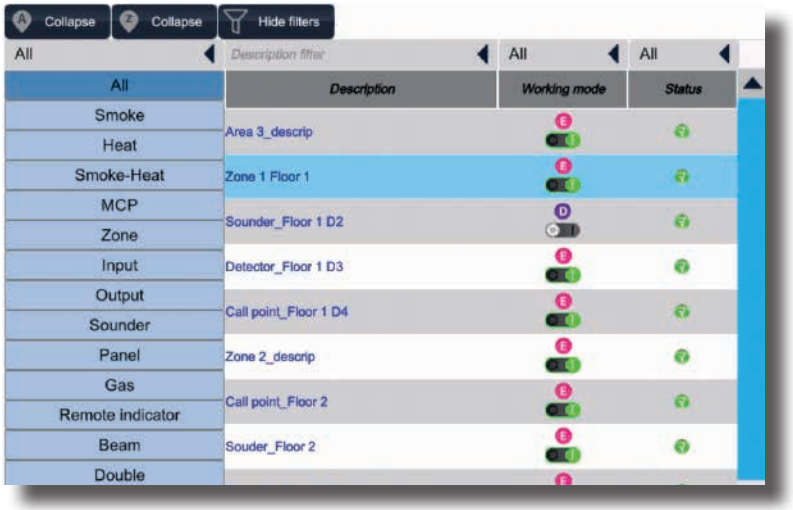
7.3. FILTERS

In addition to display controls, there are also segmentation list filters, which let you filter by the following criteria:

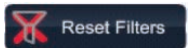
- Entity
- Description
- Working mode
- Status

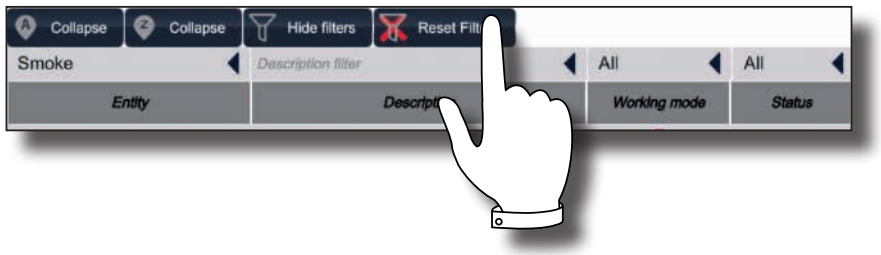
By touching the filter controls, you will access the line of filters.

The entity filter lets you choose between **ALL**, there is no filter, and each type of device, optical detector, heat detector, entity, etc.

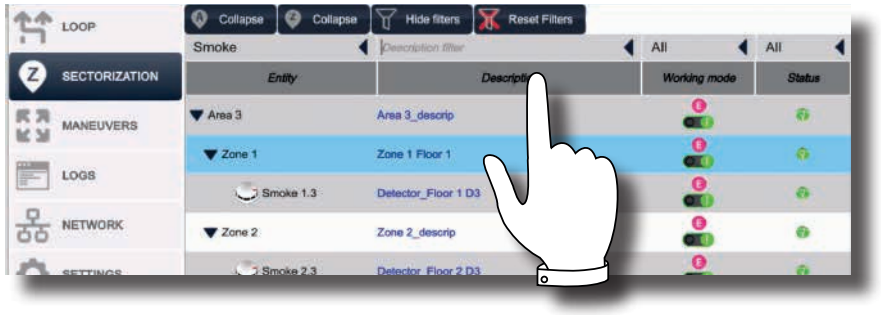


By applying the filter, the filter tag will be recorded in the filter control. A new button will appear.

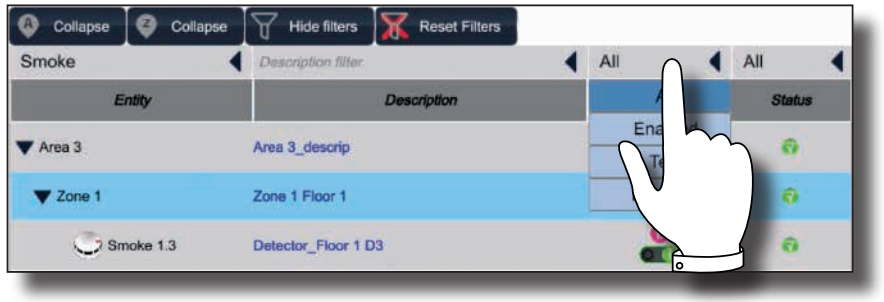
To delete the filters, touch the **RESET FILTERS** button 



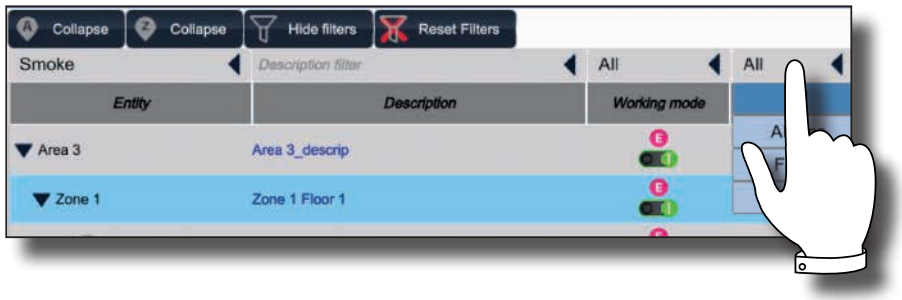
By touching the **DESCRIPTION** field, a virtual keyboard will appear for you to enter the required description on which the filter will act. This entry is sensitive to upper and lower case.



The action on the **WORKING MODE** field displays the list of filter options: **All, Enabled, Test or Disabled.** Select the most appropriate option.



The action on the **STATUS** field displays the list of filter options: **All, Alarm, Faults, Technical.**



7.4. EDITING SECTORISATION ENTITIES

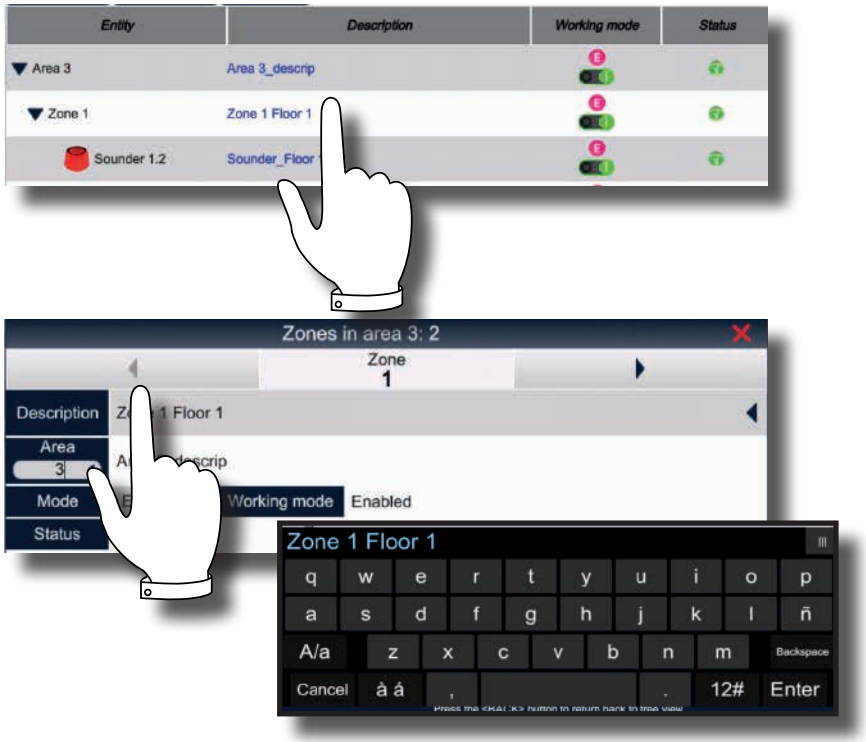
To edit an entity, all you need to do is touch it on the main panel, for example, zone 1.

7.4.1. Description

A zone data menu will appear, as described in the device configuration section, which lets you edit:

- The zone description
- The area number to which it belongs
- The working mode

Touch the zone description area on the screen, edit the required text using the floating keyboard and press **ENTER** to enter the value.



7.4.2. Defining and assigning sectorisation entities

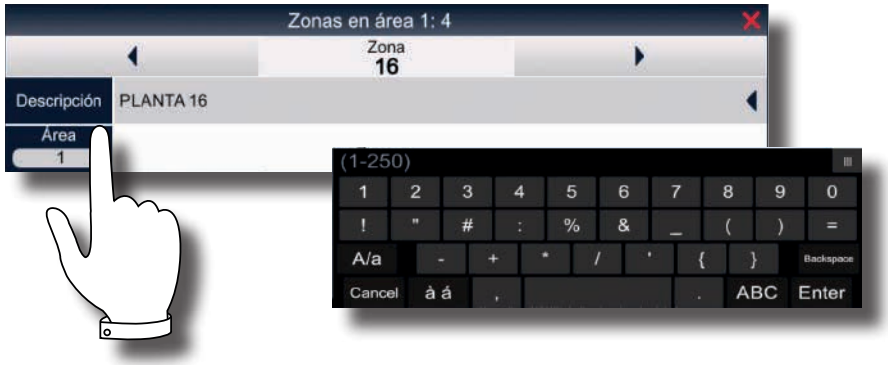
From the sectorisation menu and from each entity, you can edit the relationship with the entity immediately above.

This means that when editing a device entity, you can define or modify the zone number to which it belongs.

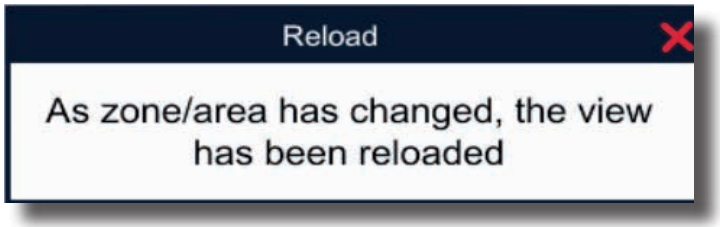
If you edit a zone, you will be able to define or modify the area to which that zone belongs.

When defining the assignment of an upper sectorisation, zone or area entity, if it does not exist, the new entity will be generated automatically.

By touching the entity field, a numerical keyboard will appear for you to enter the required value. Press **ENTER** to enter the value.



By modifying the entity's value, the control panel updates the system structure and reloads the sectorisation structure view, implementing the new changes.



7.4.3. Mode change in the sectorisation menu

From the pop-up menu for editing entities, touch the **MODE** field and the selectable options will be displayed.

- **Enabled**
- **Test**
- **Disabled**

It is not possible to configure the device entities in **TEST** mode as this mode is inherited from the configuration of superior entities.

The enabled mode of the entity recognises it as a fully active element for carrying out its function of detection, alarm or activation of the system's fire or auxiliary signals.

For each entity and as described in the **LOOPS** > **DEVICES** menu**,** there is an action and information bar associated with each entity.

Depending on the entity type, there will be more or fewer slider buttons available.

While the entity is in **ENABLED** mode, the slider button on the bottom action bar will remain activated (green).

7.4.4. Test mode

By modifying the entity mode to **TEST** mode, the working mode field will also change to **TEST**. As described in the hierarchy and legacy mode chapter, this working mode will affect all lower hierarchy entities, even if they are configured in **TEST** mode.

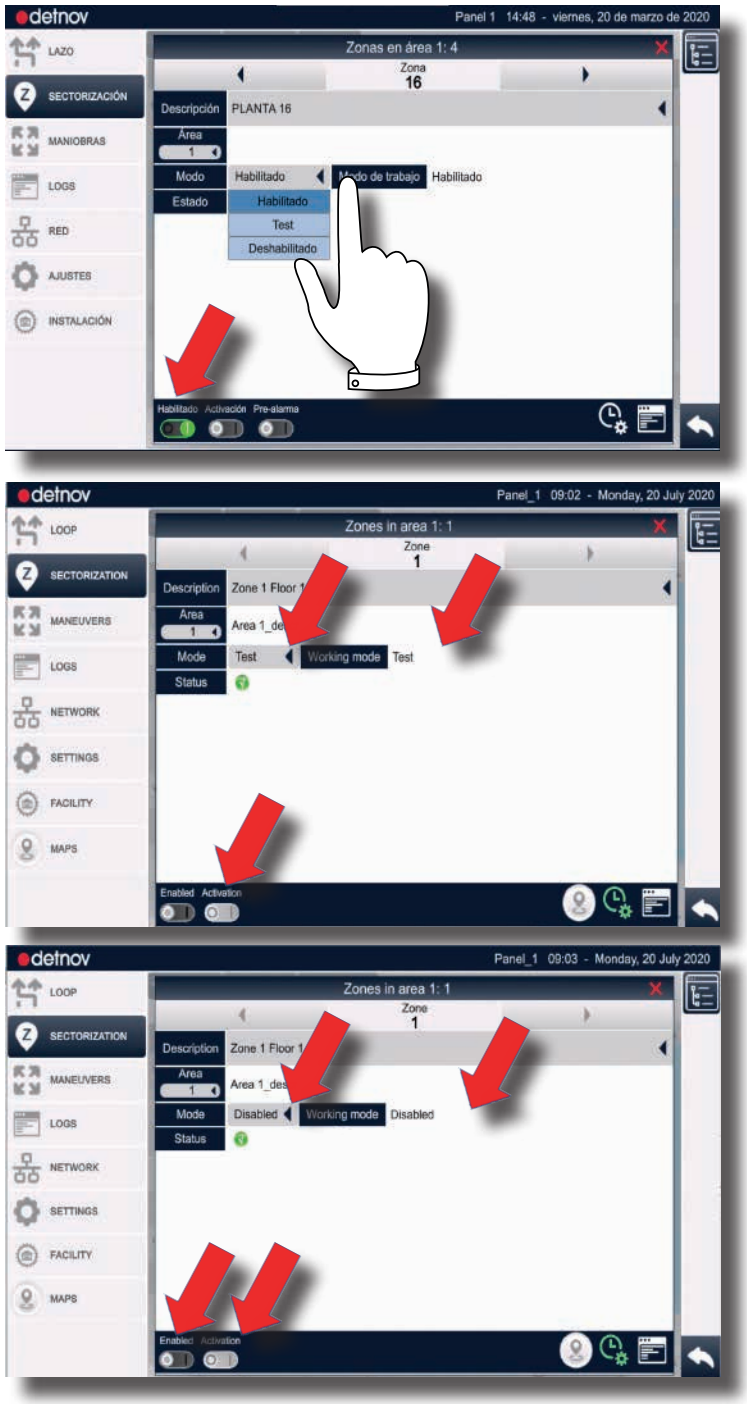
Observe how, when applied, the **ACTIVATION** slider button on the bottom action bar remains locked when adopting **TEST** mode.

Test mode cancels all delays associated with entities affected by this mode.

7.4.5. Disabled mode

By modifying the mode to **DISABLED** in the main screen menu, the slider button will also be moved to the left and it will be switched off.

Observe how, when applied, the **ACTIVATION** slider button remains locked when entering **DISABLED** mode.



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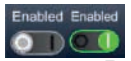


Enabled: in line with the mode field in the device definition menu. By moving the slider button to the left, the device will be **DISABLED**. If the slider button is set to the right and is green, the device will be **ENABLED**. It applies to all entity types.

Location: by moving the button to the right, the device's LED indicator will be activated, allowing physical identification in the facility. This slider button will only be available for some devices, see the **LOOP** > **DEVICES** menu.

Technical: by moving the button to the right, the activation of the associated device will be technical, the control panel will not recognise it as a fire signal. It is only applicable to input device entities, **IN**, see the **LOOP** > **DEVICES** menu.

Activation: by moving the button to the right, the corresponding output(s) will be activated. It is applicable to zones, outputs, modules, sounders or indicators, see also the **LOOP** > **DEVICES** menu.

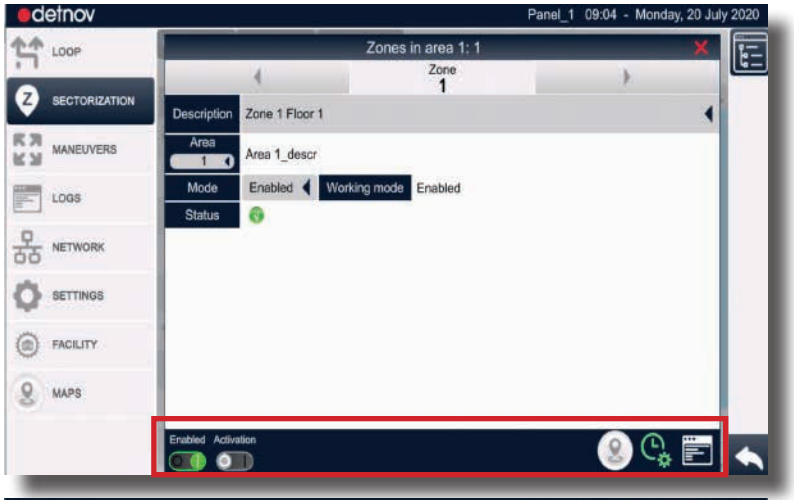
Sounder: by moving the button to the right, the corresponding output module will be recognised by the system as a sounder, see the **LOOP** > **DEVICES** menu.

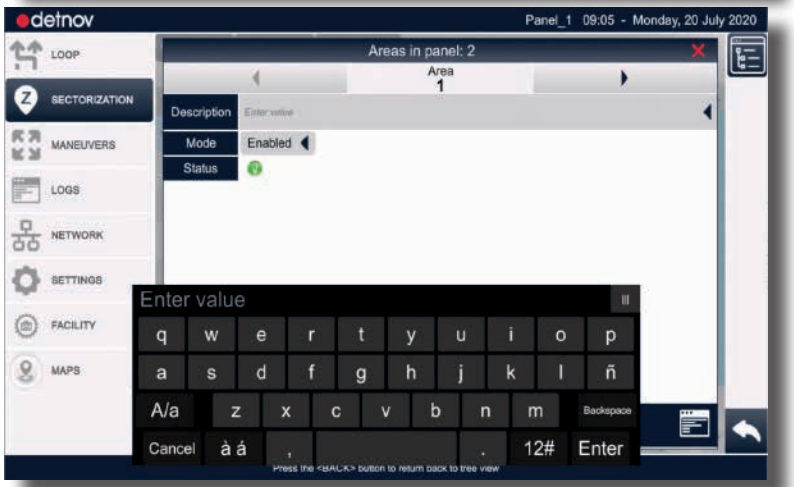
Special modes: for the configuration of special modes assigned to this device, see the **FACILITIES** > **SPECIAL MODES** menu. If a special mode associated with the device is active, this icon will be green.

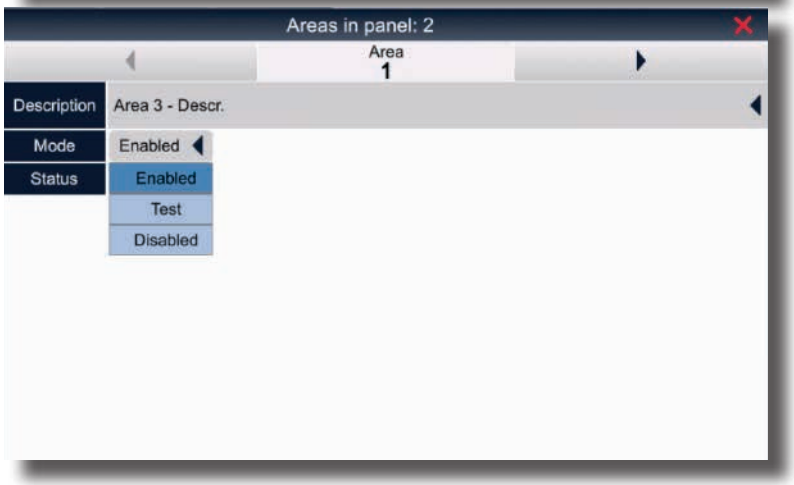
LOG: for access to the device event log, see the **LOGS** menu.

As in the case of editing a zone, you can edit the **AREAS** or **DEVICES** (see the LOOP > DEVICES menu).

Edit the area description field. Use tags that make sense for you and the physical coverage in the facility. You can edit the mode; by changing it to the **TEST** or **DISABLED** mode, all entities with a lower hierarchy contained within it will inherit it, i.e. zones and devices.







8. MANOEUVRES

A manoeuvre can be defined as a set of actions that are programmed on a control panel based on the states taken by the system, areas, zones or devices.

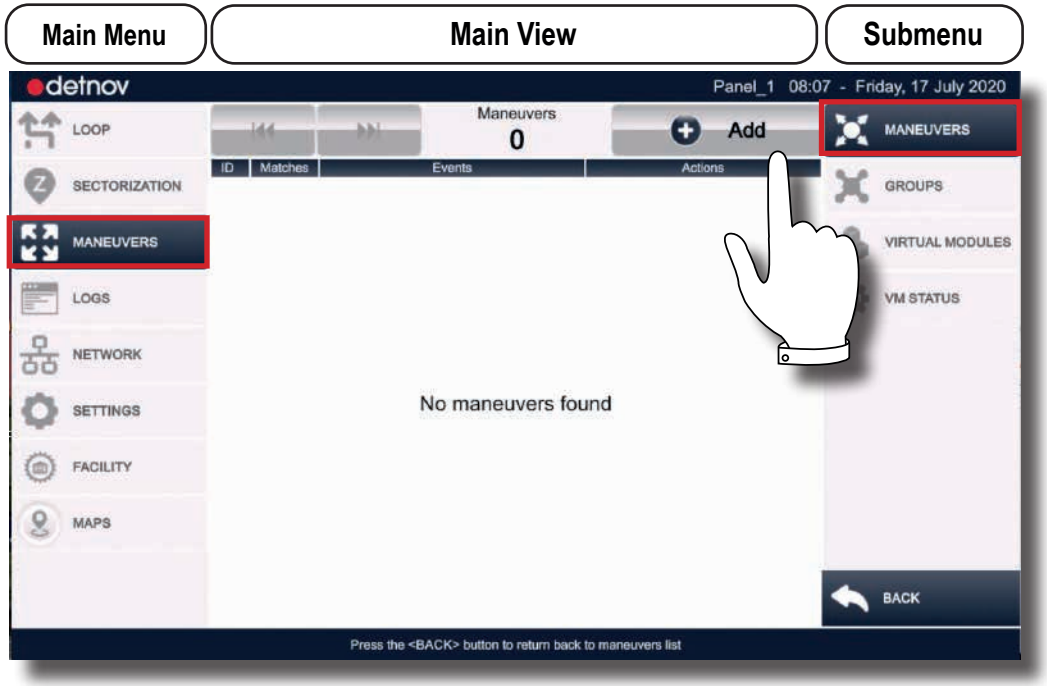
Status changes are called events, and an action will be linked to each event, such as the activation of sounders, relays, etc.

The process of programming a manoeuvre involves first defining the event or events that must trigger the action and then associating the action or actions.

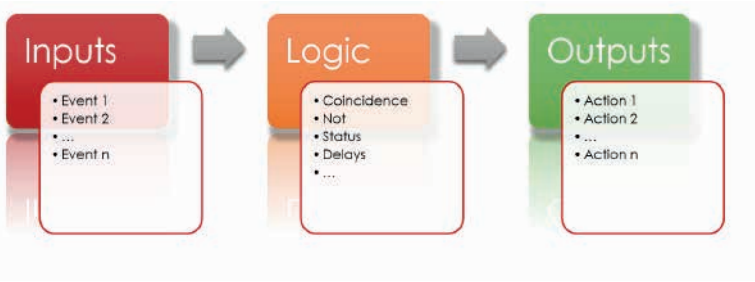
To access the manoeuvre programming menu, press:

MENU (Main menu) > **MANOEUVRES** (Submenu)

+ADD (Bottom navigation bar)



Manoeuvre programming is one of the most critical functions in the configuration of the fire detection and alarm system. This configuration requires specific knowledge of the installed system, the protection plan and the product.



The manoeuvre configuration on CAD-250 control panels is extremely powerful and flexible. Each manoeuvre can include innumerable inputs as events and innumerable actions.

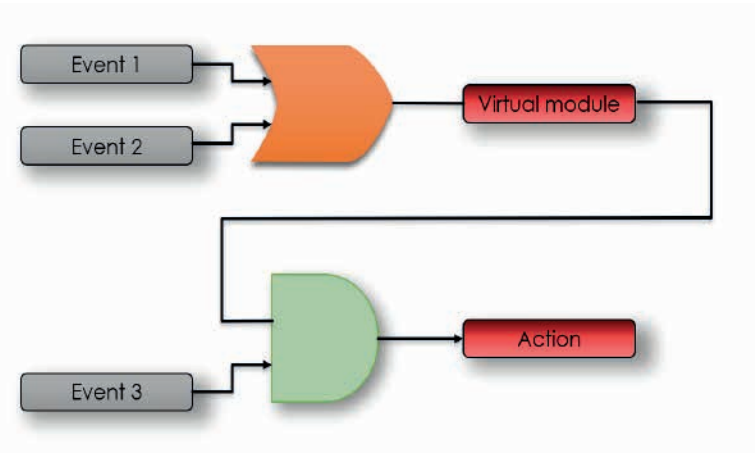
From this menu, you have the following submenu options:

Manoeuvres: where the input and output relationships required by the protection plan are generated.

Groups: you can specify associations of elements, areas, zones or devices that will help you to create action rules.

Virtual modules: they allow the creation of interdependent loops. A set of inputs will determine the virtual module status and this can, in turn, act as an input for another rule.

VM status: it allows you to view the status of virtual modules, activate them or use them as quick access buttons from the main screen.



The **EVENTS**, inputs, can be distinguished according to:

Their origin:

- Local or network
- Facility, panel, loop, area, zone, device, group or virtual module.

Condition: alarm, fault, technical.

Type: all, push-button, detector or inputs.

Logic state: Normal or Rejected (if you select alarm, the condition will be valid if there is no alarm).

Coincidences: number of inputs that must be true for the condition to be valid.

Repetitions: whole number, up to 9999, the event must be repeated in the entity for the input to be valid.

For the **ACTIONS**, outputs, the following must be determined:

Delays: if the action must occur after a certain time. The delay starts from the moment the input condition is true. The delay time can be configured between 0 and 600 seconds

Their destination:

- Panel, loop, area, zone, device, group or virtual mode.

Action: activate, deactivate, enable, disable, test, reset or pulse.

Type: all, sounders, relays, intermittent sounder.

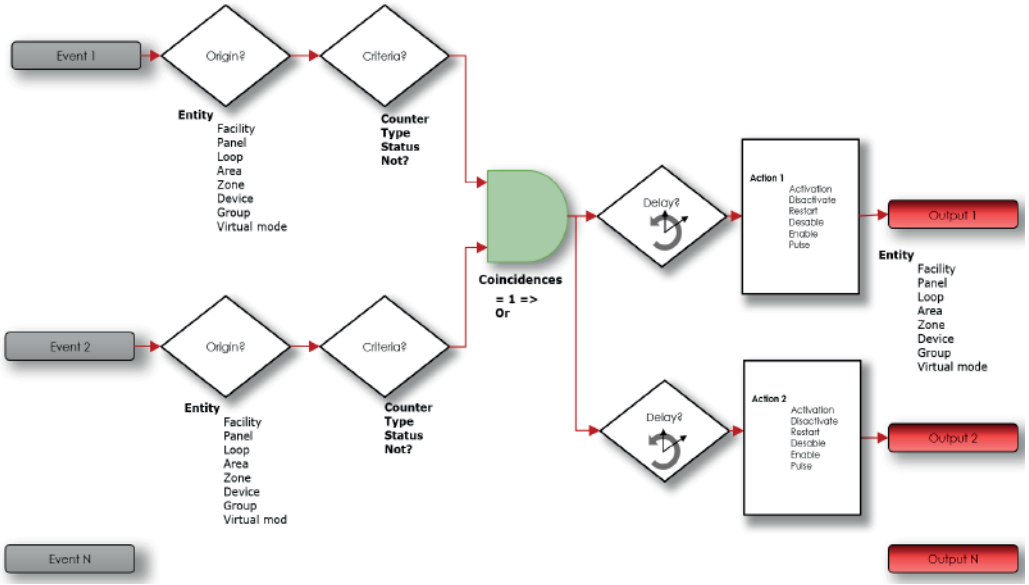
Only if the input conditions are met will the planned actions be executed.

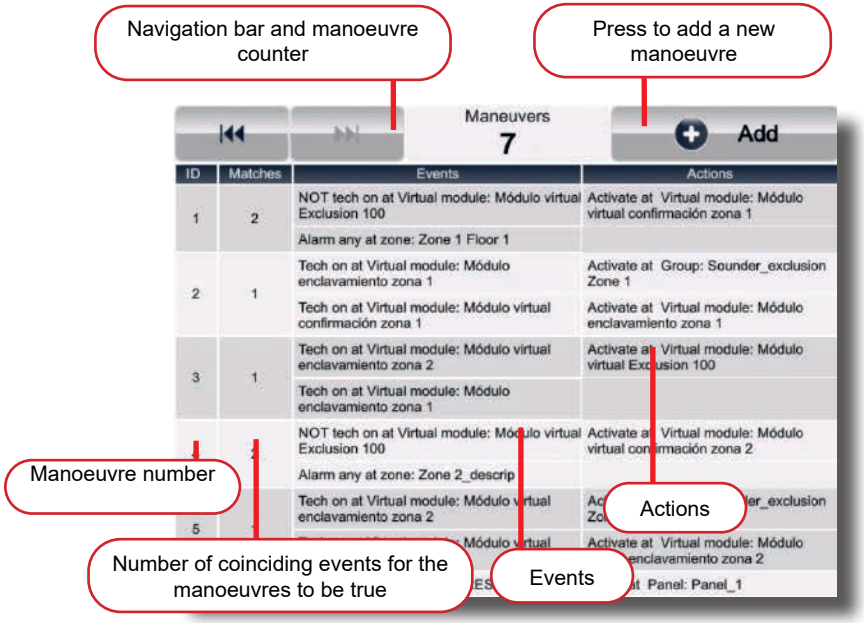
8.1. MAIN MANOEUVRES MENU

When entering the manoeuvres menu for the first time, it may be empty or, depending on the target market, it may include some factory preset manoeuvres.

The **NAVIGATION BAR** lets you jump to the next page if the list of manoeuvres does not fit on the page displayed on the screen.

The main screen provides information such as the manoeuvre index, the number of coincidences, the event and action summary.





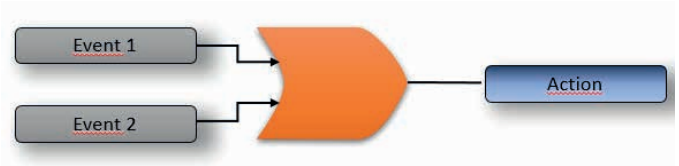
8.2. CONFIGURING A MANOEUVRES

To create a manoeuvre, press the **ADD** button.

This action will give you access to the screen for editing the manoeuvre. Using the navigation bar, you can move from one manoeuvre to another in order to edit each one. The counter shows the number of the manoeuvre you are currently in.

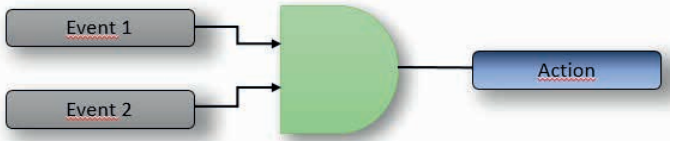
In the coincidences field, indicate the number of events that must occur at the same time for the function to be true.

If two input events occur at the same time in the manoeuvre and you have indicated a value of 1 in the coincidences field, if either of the events occur, the output will be true and the programmed output manoeuvre(s) will be executed.



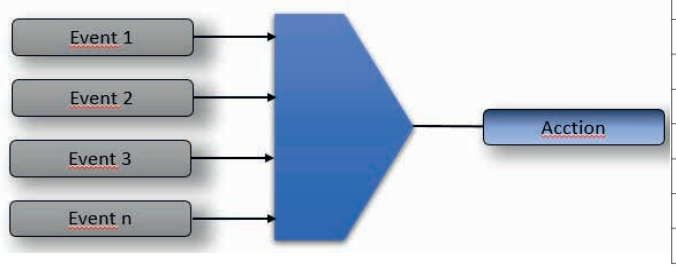
Event 1	Event 2	Action
✗	✗	✗
✗	✓	✓
✓	✗	✓
✓	✓	✓

If two input events occur at the same time in the manoeuvre and you have indicated a value of 2 in the coincidences field, the two events must occur for the output to be true and for the programmed output manoeuvre(s) to be executed.



Event 1	Event 2	Action
✗	✗	✗
✗	✓	✗
✓	✗	✗
✓	✓	✓

If four input events occur at the same time in the manoeuvre and you have indicated a value of 3 in the coincidences field, then 3 of the events (any of them) must occur for the output to be true and for the programmed output manoeuvre(s) to be executed.



Event 1	Event 2	Event 3	Event n	Action
✗	✗	✗	✓	✗
✗	✓	✓	✗	✗
✗	✗	✓	✓	✗
✗	✓	✗	✗	✗
✗	✓	✗	✓	✗
✗	✓	✓	✗	✗
✗	✓	✓	✓	✓
✓	✗	✗	✗	✗
✓	✗	✗	✓	✗
✓	✓	✓	✗	✓
✓	✗	✓	✓	✓
✓	✓	✗	✗	✗
✓	✓	✗	✓	✓
✓	✓	✓	✗	✓
✓	✓	✓	✓	✓

8.2.1. Inputs for manoeuvres, events.

1. To add input or output events to the manoeuvre to be configured, touch the **ADD** button in the bottom margin of the main screen. The pop-up screen allows you to choose between:

- an **EVENT**
- an **ACTION**

By selecting event, you can establish the inputs to be taken into account by the manoeuvre. .

By selecting action, you can establish the outputs that must be activated if the input conditions are met.

The maximum number of manoeuvres between events and output actions is 100,000.

Please note that the manoeuvre configuration manages events and not states. The event is the status change. If this coincides with the established condition, it will activate the outputs.

The **CANCEL** button lets you abort the manoeuvre configuration process.

2. By pressing the **EVENT** option, a new floating screen will appear that lets you choose between:

- an **ENTITY**
- a **TIME CONDITION**

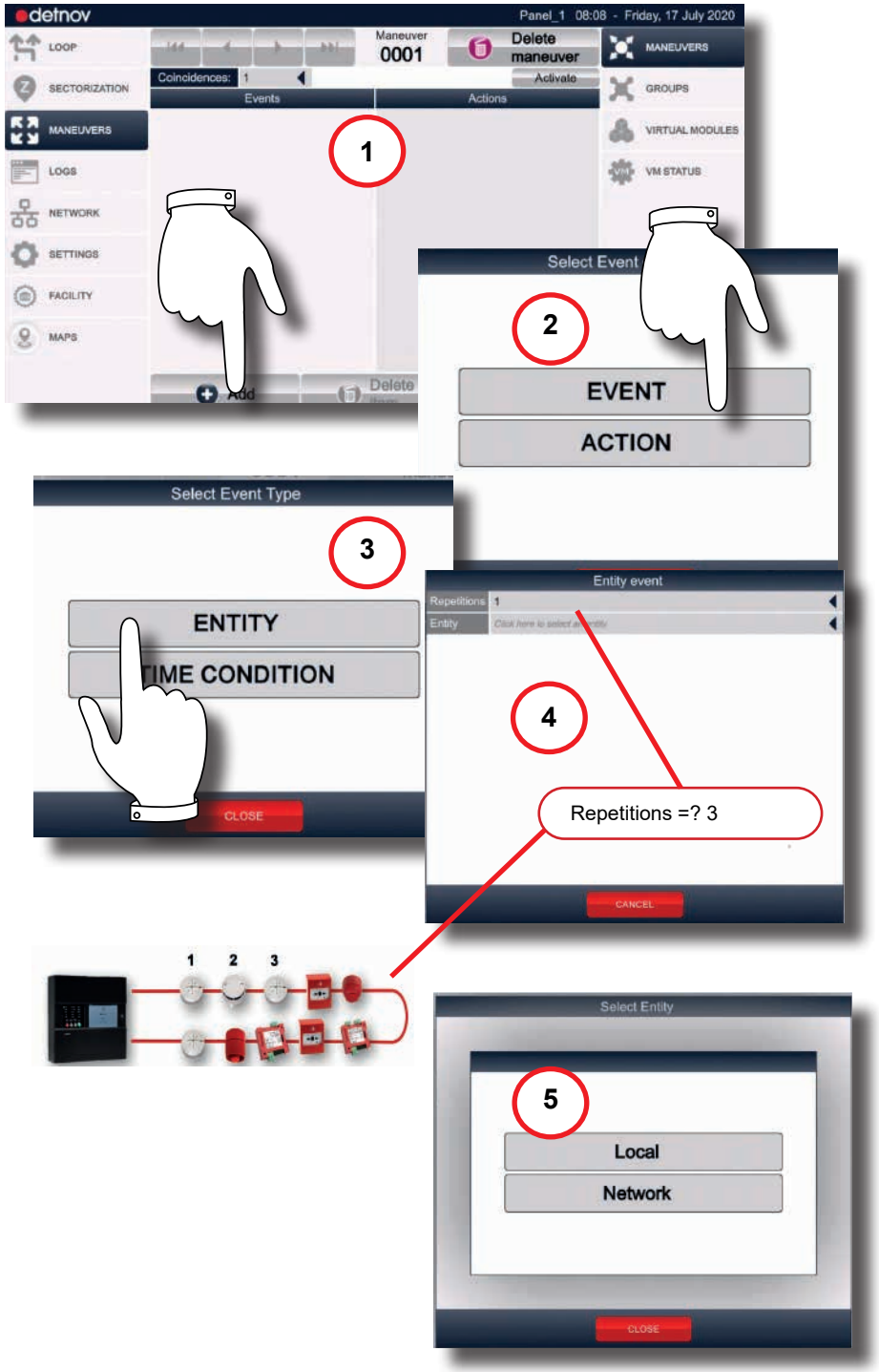
The **ENTITY** is any element in the system hierarchy that belongs to the local system (current control panel) or the network (any of the networked system control panels). The entities may be a facility, panel, loop, area, zone, device, group or virtual mode.

The following example creates a manoeuvre whereby an event on one panel will execute an action on another networked panel.

The **TIME CONDITION** lets you establish a period of time for which the input equation is true and the output action can be carried out.

3. By selecting the **ENTITY** option, you will access the **ENTITY EVENT** configuration screen, where:

REPETITIONS is a numerical condition that indicates the number of



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entity elements that will make the input true.

ENTITY: the configuration of this field requires you to first choose between a local system (control panel) and another network entity.

4. Now choose the entity from the following options:

Panel, Loop, Area, Zone, Element, Group or Virtual Module.

Once the entity has been selected, the **ENTITY EVENT** window will be shown again and new available fields will appear.

4. The Entity Event will display the following fields for configuring the features that will make the input event true.

- **Repetitions:** as previously defined, this is a numerical condition that indicates the number of entity elements that will make the input true. It is only applicable to grouping entities, such as Facility, Panel, Loop, Area, Zone or Group.
- **Type:** it has two fields that correspond to the status and type of device.

  Status conditions:

  Alarm: when the input entity has one or more elements in alarm, the input condition is met.

  Fault: when the input entity has one or more faulty elements, the input condition is met.

  Technical: when the entity has one or more active inputs, the input condition is met.

  Type condition: it allows you to ascertain that the input is true only if this is due to:

  All, any active device in the entity

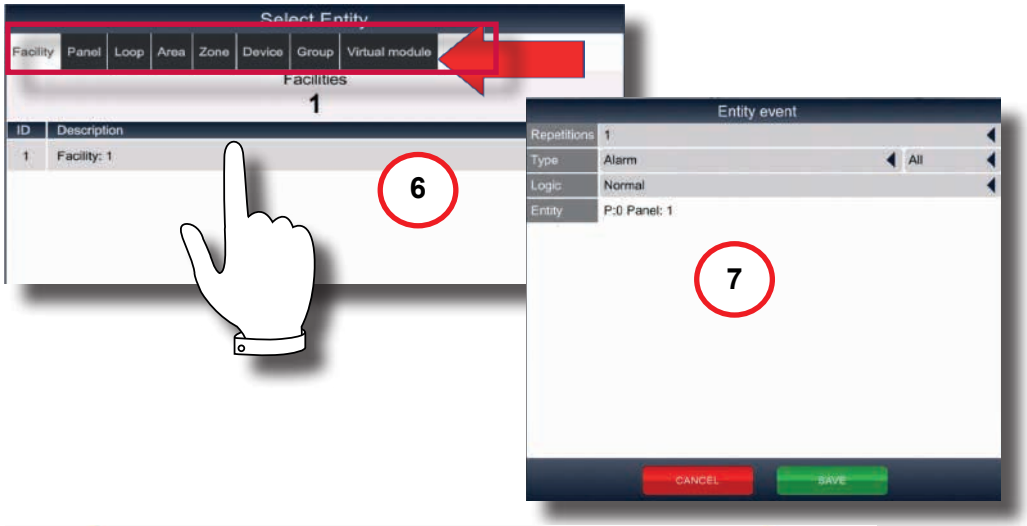
  Push-buttons, only any push-button in the entity

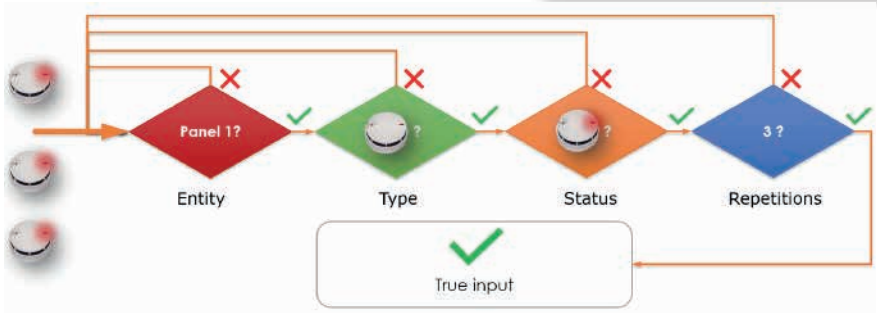
  Detectors, only any detector in the entity

  Input, only any input in the entity

- **Logic:** it has two configurable options

  Normal: the state condition is true





No: the state condition is false, for example, it is not an alarm

- **Entity:** shows the entity you are configuring. It is not editable.

The CAD-250 will confirm the input if it meets all requirements in its definition.

For example, they belong to the Panel1 entity, they are detectors, they are in alarm, there are 3 detectors in this condition.

8 - Press **SAVE** to update the manoeuvre database.

Press SAVE, **SAVE** to update the database.

Press CANCEL, **CANCEL** to undo the proposed changes

The screen will return you to the **EVENT LIST** and **ACTIONS** for the current

manoeuvre. You see that there is an event defined, but there is no **ACTION**.

Device configuration

When you configure inputs on the device level, you must select the loop to which the device belongs.

The navigation bar will show you the loop it is currently in and the number of devices in the loop.

Press **LOOP** to return to the loop selection window.

Press the navigation arrow keys to jump to the next page and view the devices not shown on the current screen.

By default, the list will only show the input devices, it is possible to select an output device. In this case, only the faulty status of the device will be accepted as a validation condition. The logic state can also be configured as normal or rejected.

The configuration of devices as a manoeuvre input does not allow repetitions to be configured.

8.2.2. Defining a time condition

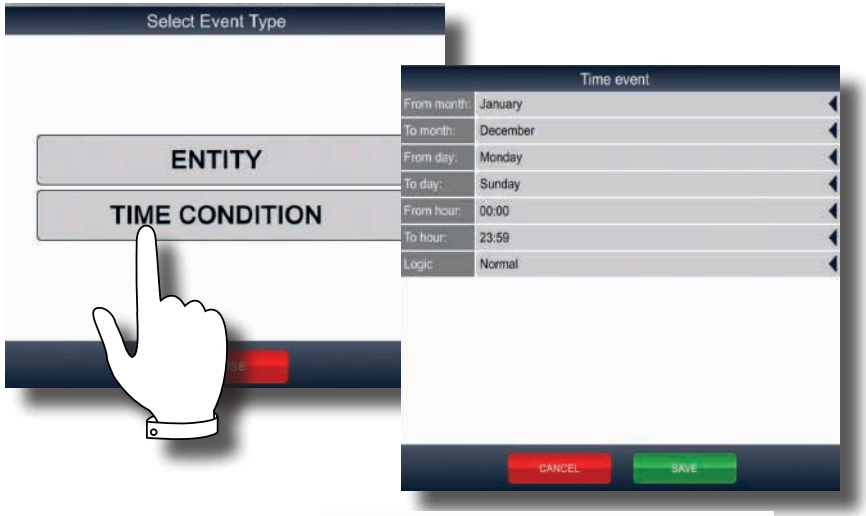
In order to define a time condition for an input, proceed as described in the previous section. When you arrive at point 3 of the previous section, select the **TIME CONDITION** option.

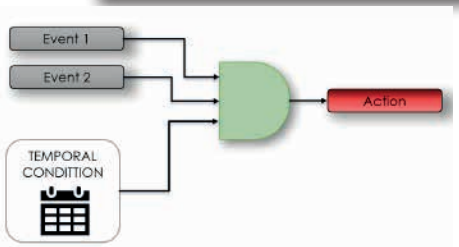
This option lets you condition the actions to a moment in time:

- **From month to month:** define the interval in months.
- **From day to day:** define the interval in days of the week.
- **From time to time:** define the time range.
- **Logic:** define the logic state.

  Normal: the defined period makes the state true.

  No: the defined period makes the state false.





A specific period is identified in which the input equation will be considered valid, or during which the input equation should not carry out any action.

For example, it may be necessary for the sounders to not be activated in a specific area on a particular day of the week at a certain time.

8.2.3. Outputs for the manoeuvres

To create an action associated with an event, go back to point 1 in the previous section, inputs for manoeuvres.

1. Press the **ADD** button in the bottom margin of the main screen.

The pop-up screen gives you the option of choosing between generating an **ACTION** or an **EVENT**.

The **CANCEL** button lets you abort the manoeuvre configuration process.

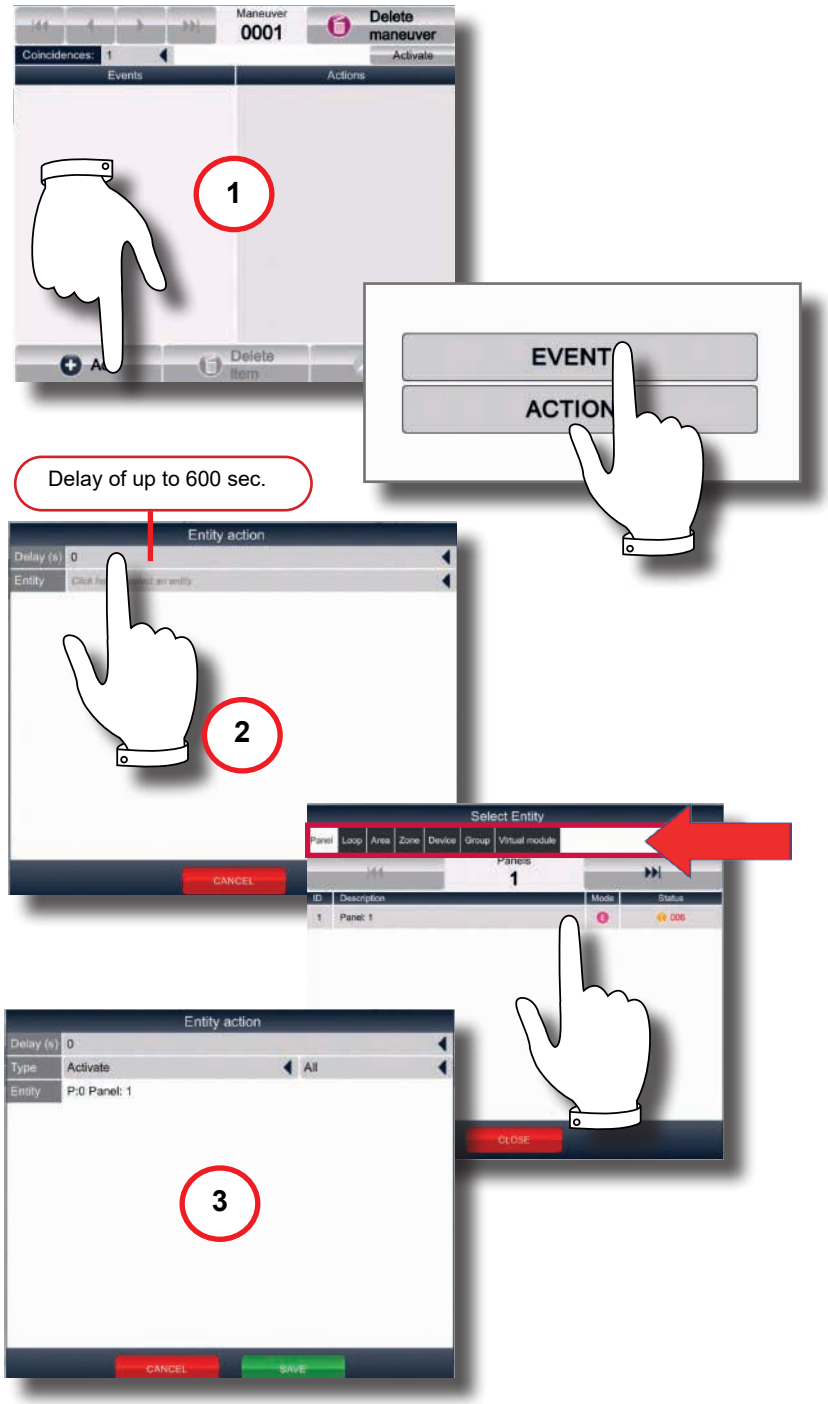
2. By pressing the **ACTION** option, two fields will be shown, **DELAY** and **ENTITY:**

- **Delay** lets you assign a time of up to 600 seconds before starting the action to be defined.
- **Entity** refers to any element in the system hierarchy belonging to the local system (current control panel). The entities may be a panel, loop, area, zone, device, group or virtual mode.

The actions always relate to the selected entity.

3. The new **ENTITY ACTION** screen displays the configuration fields:

- **Delay:** this is the **DELAY** field described above, which lets you modify the value.
- **Type:** this identifies the action and element type to which the action will be applied within the entity.



Actions:

Activate the outputs.

Deactivate the outputs.

Enable the entity.

Disable the entity.

Test, sets the entity to test mode.

Reset the entity.

Pulse activates the entity's outputs with a pulse width that can be configured between 0-600 seconds (10 seconds by default).

Configuration, allows you to cancel delays.

Element type:

All. All of the entity's outputs.

Sounders. It only activates the entity's sounders.

Relays. It only activates the entity's relays.

Intermittent sounder. It activates the entity's sounders intermittently.

PCB Sounder 1. It activates sounder 1 on the control panel.

PCB Sounder 2. It activates sounder 2 on the control panel.

The options depend on the selected entity, see the attached table.

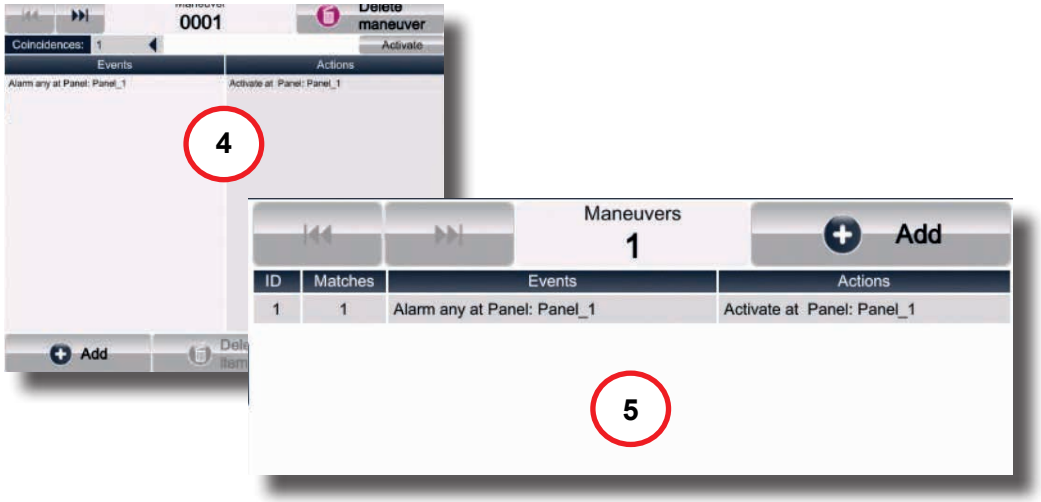
Press SAVE, **SAVE** to update the database.

Press CANCEL, **CANCEL** to undo the proposed changes

4. The control panel will return you to the manoeuvre list. Once the entity is selected, the software will return you to the **ENTITY ACTION** window and will show new available fields.

5. If you press the **MANEOUVRES** icon on the **MAIN MENU**, you can view the list of manoeuvres.

Type		Entity							
Action	Element type	Panel	Loop	Area	Zone	Dev. OUT	Dev. IN	Group	VM.
ACTIVATE	All	Yes	Yes	Yes	Yes	Yes		Yes	Yes
	Sounders	Yes	Yes	Yes	Yes			Yes	
	Relays	Yes	Yes	Yes	Yes			Yes	
	Sounders dev.	Yes	Yes	Yes	Yes			Yes	
	Sounder 1	Yes							
	Sounder 2	Yes							
DEACTIVATE	All	Yes	Yes	Yes	Yes	Yes		Yes	Yes
	Sounders	Yes	Yes	Yes	Yes			Yes	
	Relays	Yes	Yes	Yes	Yes			Yes	
	Sounder 1	Yes							
	Sounder 2	Yes							
RESET		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PULSE	Time	Yes	Yes	Yes	Yes	Yes		Yes	
ENABLE		Yes		Yes	Yes	Yes	Yes	Yes	Yes
DISABLE		Yes		Yes	Yes	Yes	Yes	Yes	Yes
TEST		Yes		Yes	Yes				
PROGRAMMING	Cancel delay	Yes							



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Designing a manoeuvre

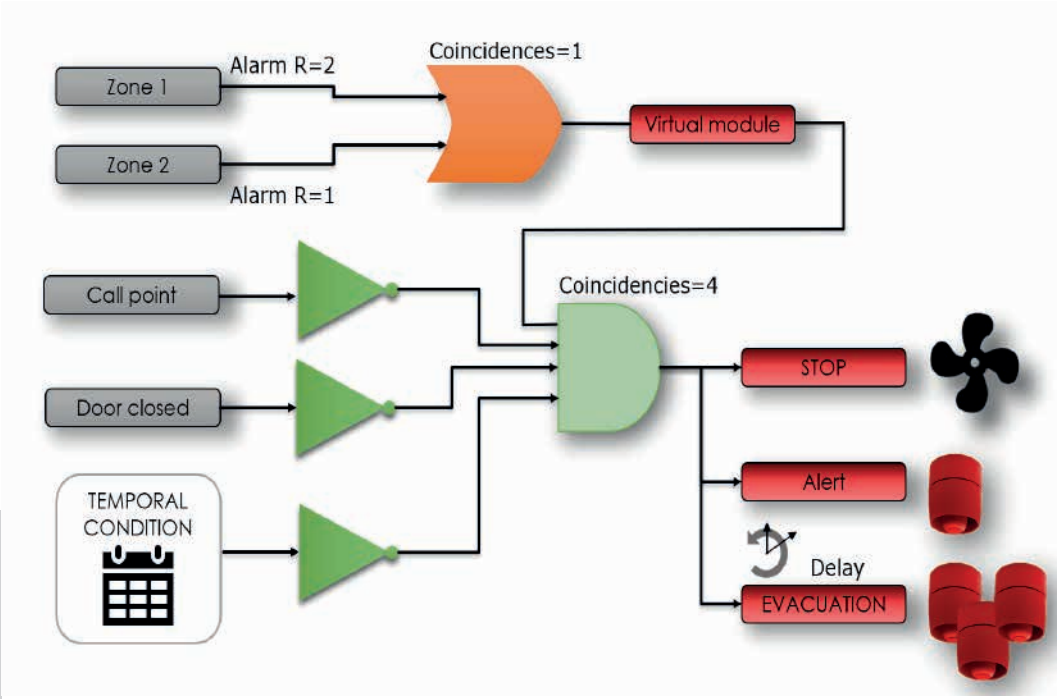
In the event of a fire, the defined scenario requires the following manoeuvres to be carried out in zone 1 or in zone 2:

- Immediate shutdown of the ventilation.
- Activation of the alert signal.
- Delayed activation of the evacuation signal in the area.

In order to confirm the alarm in ZONE 1, there must be at least 2 ACTIVE DETECTORS in that zone.

In zone 2, any element immediately activates the manoeuvre.

These actions will be carried out only if the access doors are closed. It must not be possible, under any circumstances, for the manoeuvre to operate locally on the weekend. It must be possible to stop the manoeuvre using a push-button in the local area.



The attached example describes a medium complexity manoeuvre that can be configured with CAD-250. The configuration options are extremely flexible, letting you create very complex manoeuvres.

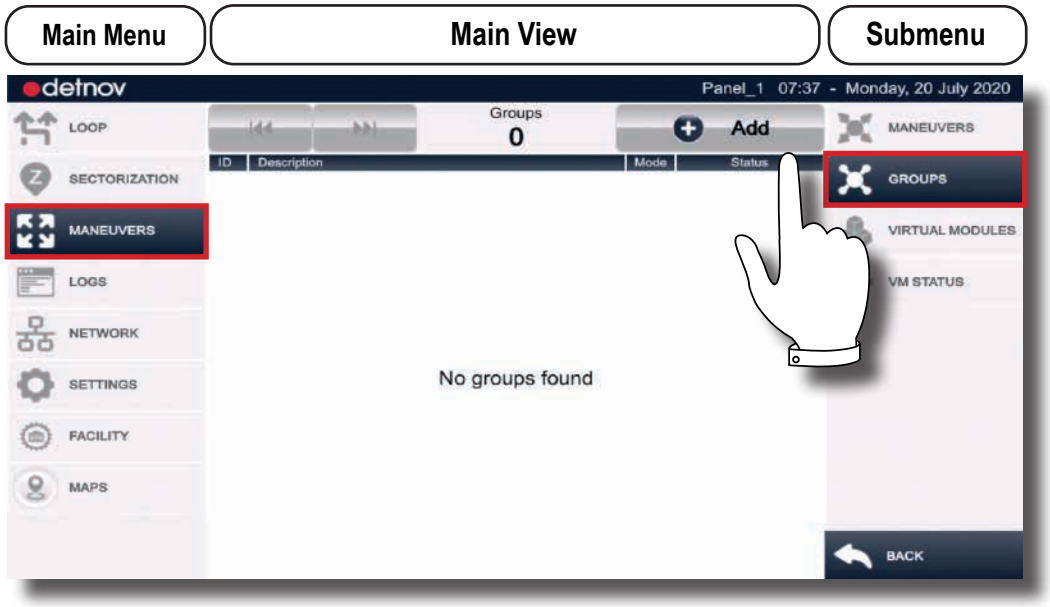
When you create manoeuvres, plan the scenarios well and avoid creating loops.

In any case, check each scenario and make sure you have not generated missing or incorrect gateways, and more importantly, test each manoeuvre and complete scenario.

8.3. PROGRAMMING GROUPS

From this submenu, you can configure element groupings to facilitate the creation of complex manoeuvres beyond the zone and area structure. To access it, press:

MANOEUVRES (Main menu) > **GROUPS**(Submenu)

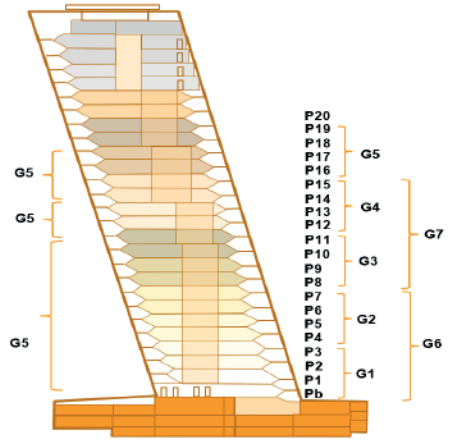


The creation of groups is a very powerful tool that radically streamlines the creation of manoeuvre rules.

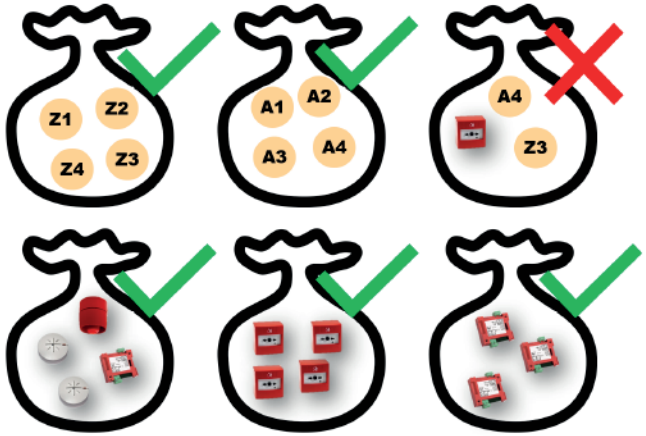
The entities, zones and areas (also element groupings), associated with the distribution of elements on the physical plane, have been defined. This type of grouping is restrictive when it comes to carrying out manoeuvres, and on many occasions, you will have to manage actions that will require you to go beyond physical or zone grouping.

You may have to organise an evacuation sequence that groups different floors or sectors of a building.

You may also have to manoeuvre elements that are located in other zones and areas.



A specific group of elements may be required in different input or output rules. That is why it is important to organise the elements so they respond better to the action plan, instead of organising them according to the physical location of the detection area.



In a group, you can enter as many system elements as required for one entity type. It is not allowed to mix different entities. For example, if you create a group with zones, you can only include zones. An entity can only be contained in up to 8 groups.

ENG

Creating a group

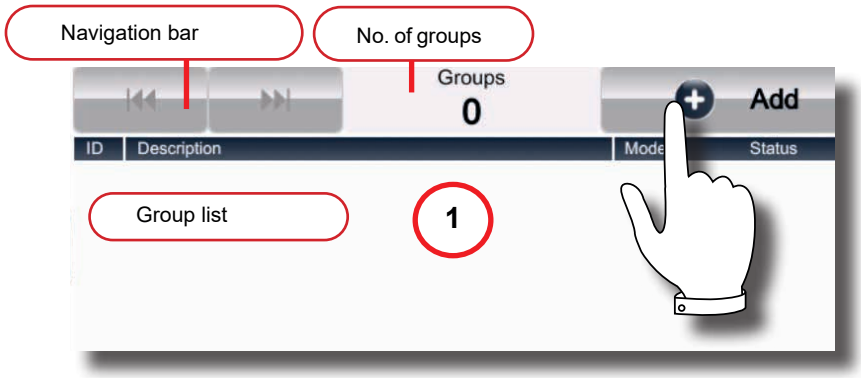
From the **GROUPS** submenu, the following elements appear on the main screen:

Navigation bar: it lets you jump to the next page if the number of groups defined exceeds the screen capacity.

Group counter: it shows the total number of groups created.

Add button: it starts the creation of a new group.

Group list: It shows the list of groups and information on the group (description, mode - enabled or disabled - and status).



1. To create a group, press the **ADD** button.

2. It shows a screen that lets you associate the group number that will be assigned to the group. The system shows the first available number.

To move the controller up or down, touch the ▲ ▼ arrow keys. If you press the number, a keyboard will appear for you to indicate the group number. You can create up to 1,000 groups.

Press OK, **OK** to confirm.

Press CANCEL, **CANCEL** to discard.

If you enter a number that has already been assigned, the system will return the message **ERROR CREATING THE GROUP.**

3. The menu for defining the group is shown, where the initial condition of the group is defined. The following areas will be shown:

Navigation bar: move consecutively through each group that has been created in order to edit them.

Group: it is the number associated with the edited group.

Delete button: it lets you delete the group.

Description of the group: enter a tag that lets you identify the group's function. By pressing the field, you will access the keyboard in alphanumeric mode.

Mode: select whether the group should be **ENABLED** or **DISABLED.**

Activation: it lets you test the action of the configured group.

Entity area: list of entities that make up the group as you incorporate them.

4. Once you have defined the group, press the **ADD ENTITY** button.

5. CAD-250 will display a new configuration window with 3 tabs for selecting entities:

- Area
- Zone
- Device

Select the entity type that you require. Once you have chosen a type, you cannot include any other type of entity.

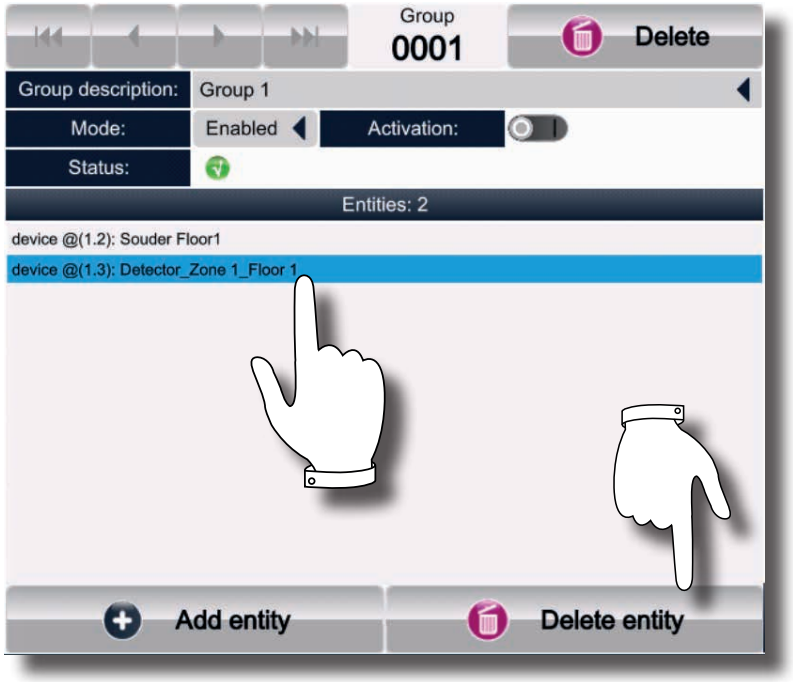
When you select the device tab, the list of loops will appear, select the loop and then the devices.

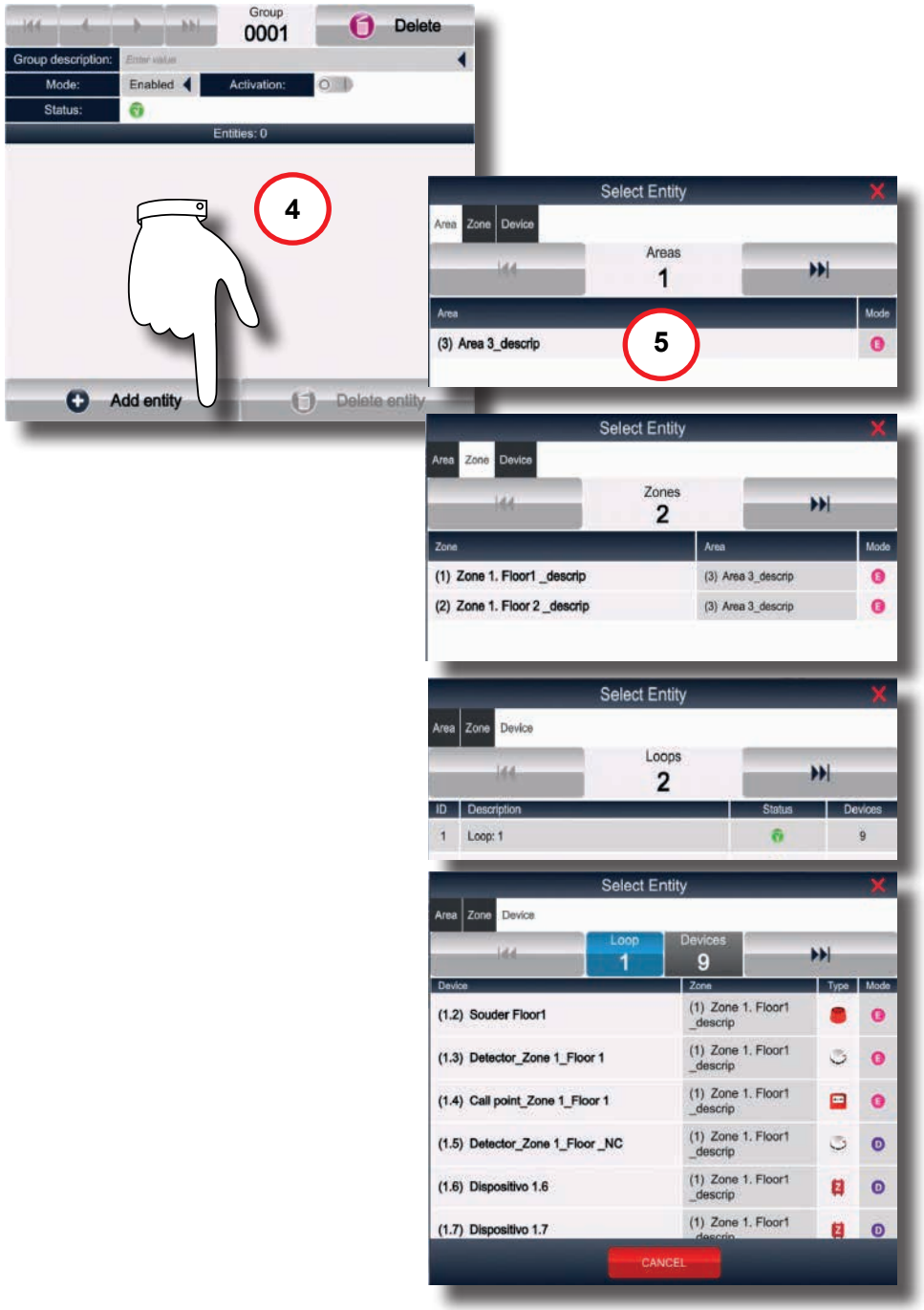
You must incorporate each entity that you want to include in the group one at a time.

To discard, press **CANCEL**.

To confirm, simply exit the menu by pressing the **BACK** button.

To delete an entity from a group, select it and press the **DELETE ENTITY** button.

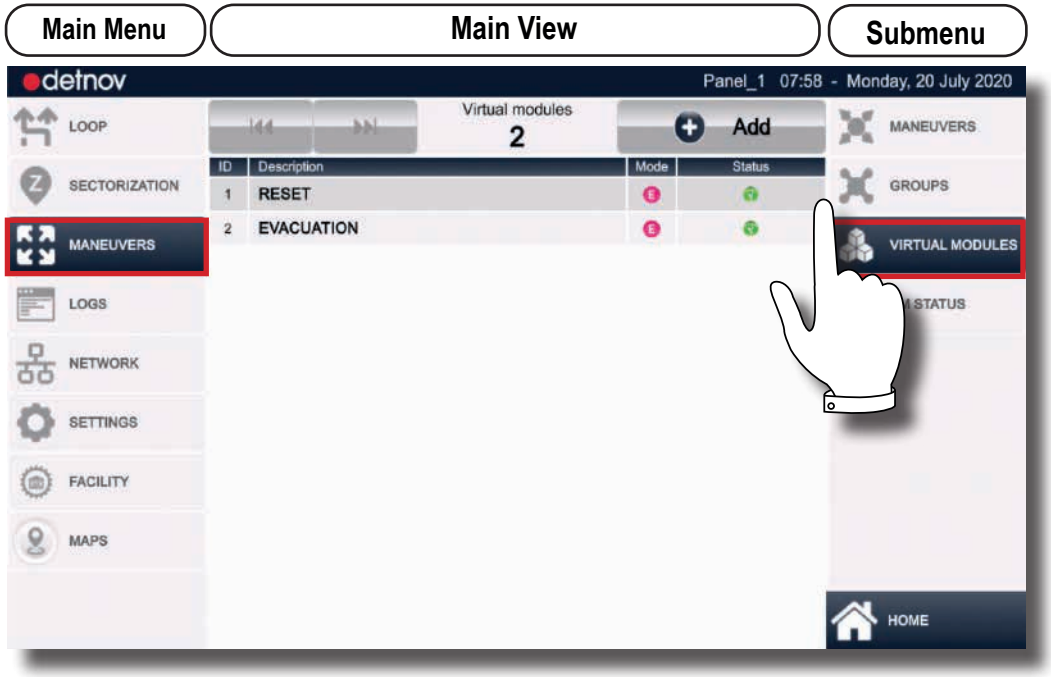


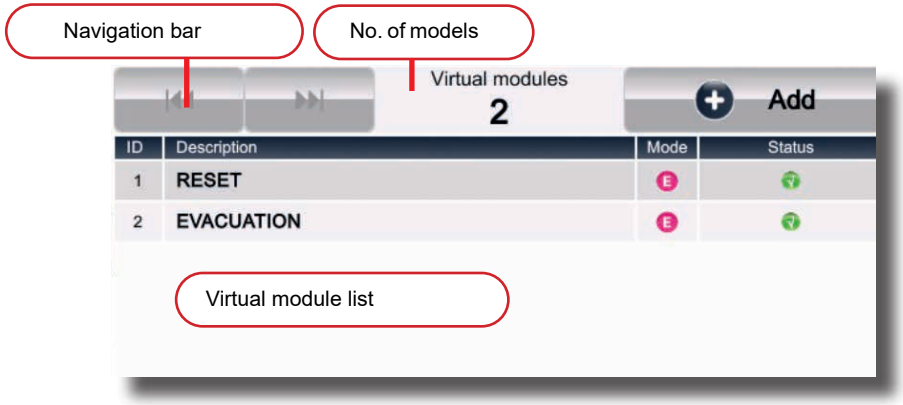


8.4. PROGRAMMING VIRTUAL MODULES

From this submenu, you can establish intermediate states that are very useful for creating feedback or conditioned sequences. To access it, press:

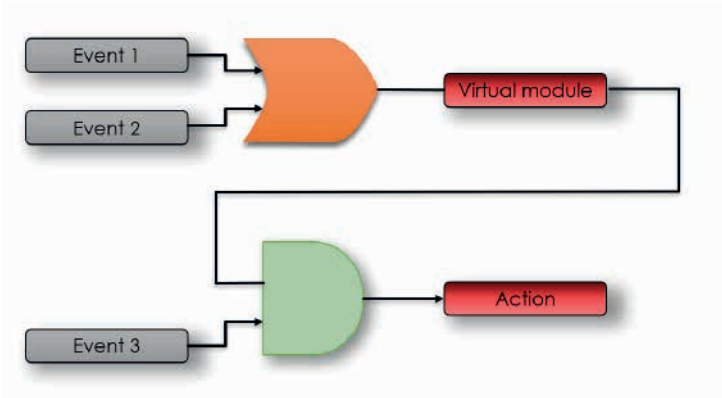
MANOEUVRES (Main menu) > **VIRTUAL MODULES** (Submenu)





Virtual modules are intermediate functions. They let you create complex functions, using the results of one manoeuvre as a condition for another manoeuvre.

Virtual modules can be used as quick button functions on the initial panel.



As described in the previous chapter, Groups, the virtual module menu appears with the following elements:

Navigation bar: it lets you jump to the next page if the number of virtual modules defined exceeds the screen capacity.

Virtual module counter: it shows the total number of modules created.

Add button: it starts the creation of a new virtual module.

Group list: the list of created modules and associated information, module number, description, the current mode (enabled or disabled) and status will be displayed.

1. To create a virtual module, press the **ADD** button.

2. A screen appears that lets you associate the virtual module number that will be assigned. The system shows the first available number.

Touch the arrow keys ▲ ▼ to move the counter up or down.

If you press the number field, a numerical keyboard will appear for you to indicate the virtual module number.

Up to 1000 virtual modules can be created.

Press OK, **OK** to confirm.

Press CANCEL, **CANCEL** to discard.

If you enter a number that has already been assigned, the system will return the message **ERROR CREATING VIRTUAL MODULE**.

3. The menu for defining the module appears, where the initial condition of the module is defined, displaying the following areas:

Navigation bar: move consecutively through each virtual module that has been created in order to edit them.

Virtual Module: it is the number associated with the edited module.

Delete button: it lets you delete the virtual module.

Module description: enter a tag that lets you identify the virtual module's function. By pressing the field, you will access the keyboard in alphanumeric mode.

Mode: select whether the module should be enabled or disabled.

Resettable: by resetting the control panel, the resettable module, if activated, will return to standby and not active mode.

Activation: this slider button sets the virtual module to 1, active (ON).

Quick buttons: define whether the virtual module is also a button function that can be accessed from the standby screen.

If you have virtual modules configured as a button function, you can access them by clicking the **VM** icon, which will appear in the bottom left corner of the standby screen.

The following configuration options for the quick buttons let you pin them on the screen, accessing them from the screen or hiding them on the standby screen:

- **Shortcut:** if this is active, it indicates that the button will appear on the standby screen, you can pin up to 5 buttons.
- **Hidden:** if it is not active and the shortcut button is not active, the virtual modules will be accessible from the quick access by clicking the + icon.

If the slider button is active, the button will not appear on the standby screen. Neither in latched mode nor from the + icon.

By defining the virtual module, you are reserving space in the system for executing an intermediate condition. To make it functional, generate a manoeuvre following the steps described in the previous points.

1. Creation of a quick button function for **EVACUATION**.

Create a virtual module following the steps described:

- **Description: EVACUATION.**
- **Mode:** enabled.
- **Resettable:** active slider button.
- **Shortcut:** active slider button.

Create a manoeuvre assigning the **EVACUATION** virtual module as an event (input).

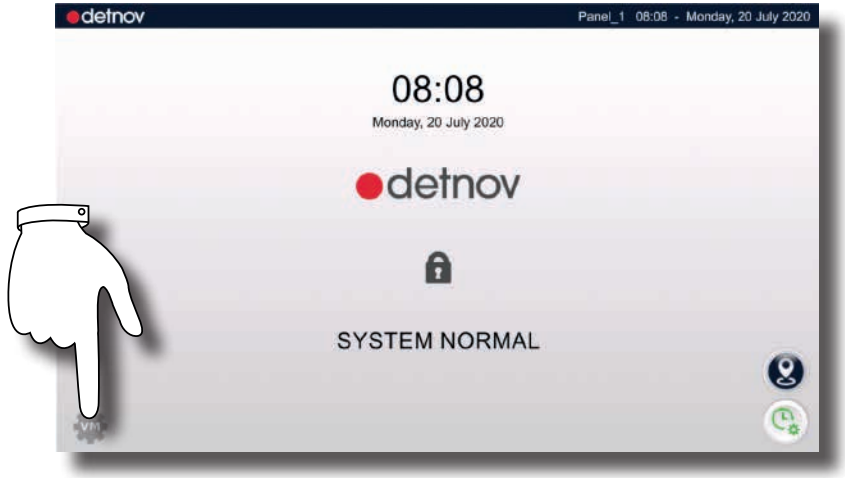
Associate the outputs. Select the **PANEL** entity:

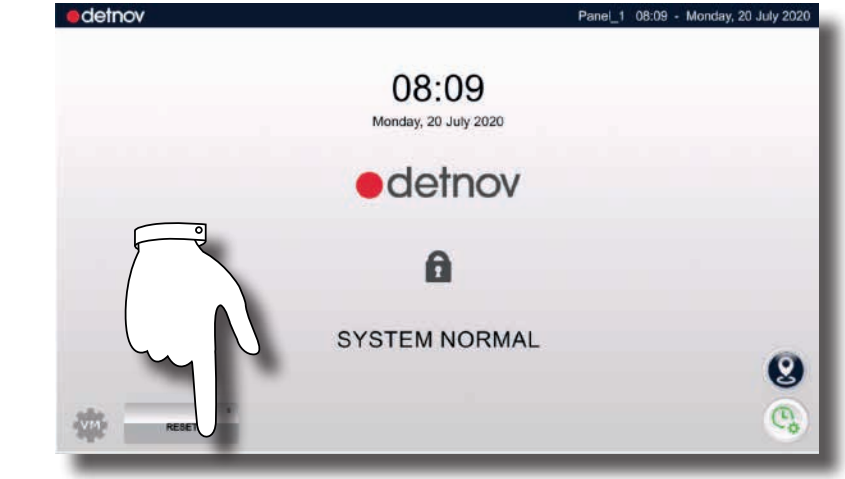
- **Action to be carried out:** activate.
- **Type:** sounders.

Press **SAVE**.

Check that the **VM** icon for accessing the quick buttons appears on the main standby screen. By touching the button, the configured buttons will appear on the bottom margin. In this case, the **EVACUATION** button appears. By pressing the **EVACUATION** button, a warning screen will appear requesting confirmation.

When you carry out element action tests, inform the managers of the facility.

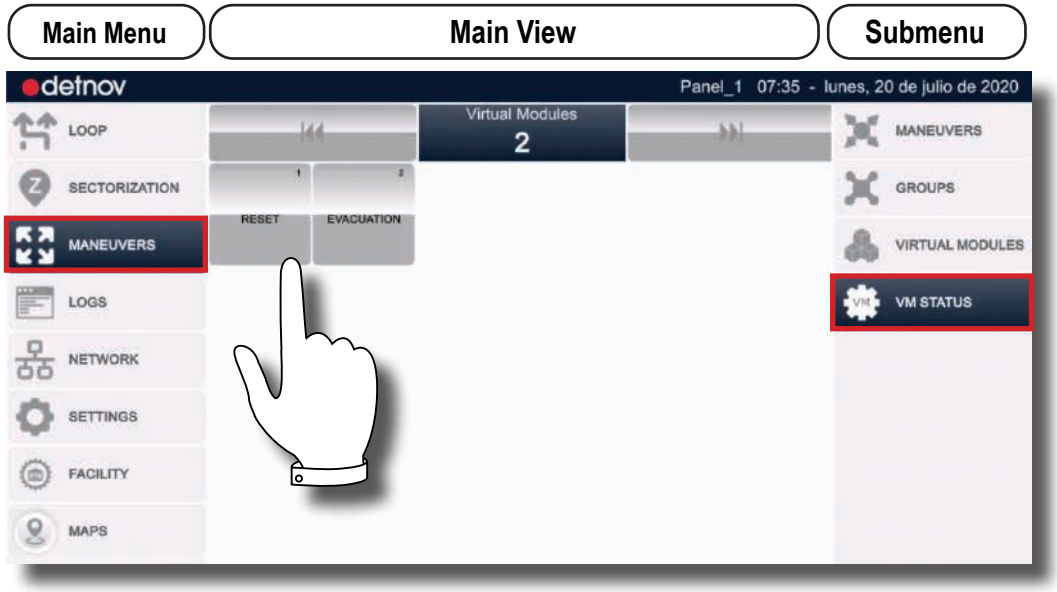


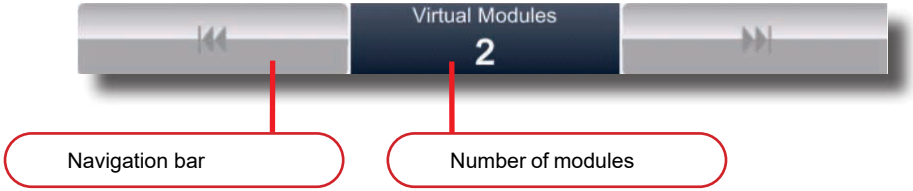


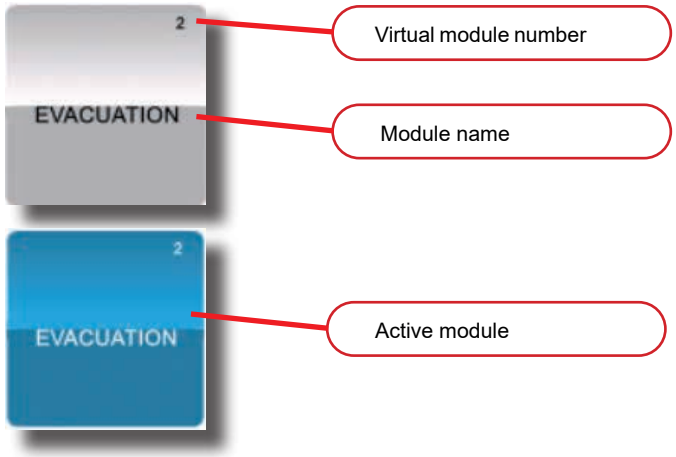
8.5. VIRTUAL MODULE STATUS

This submenu lets you view the status and activate the virtual modules.
To access it, press:

MANOEUVRES (Main menu) > **VM STATUS** (Submenu)







There is a navigation bar in the menu that lets you jump to the next screen if the number of elements created exceeds the screen capacity.

Each virtual module is represented in this menu by a button that shows basic information about the module, the virtual module number and the description given to it.

Touch the module to activate it. By doing so, it will change colour, showing its new status.

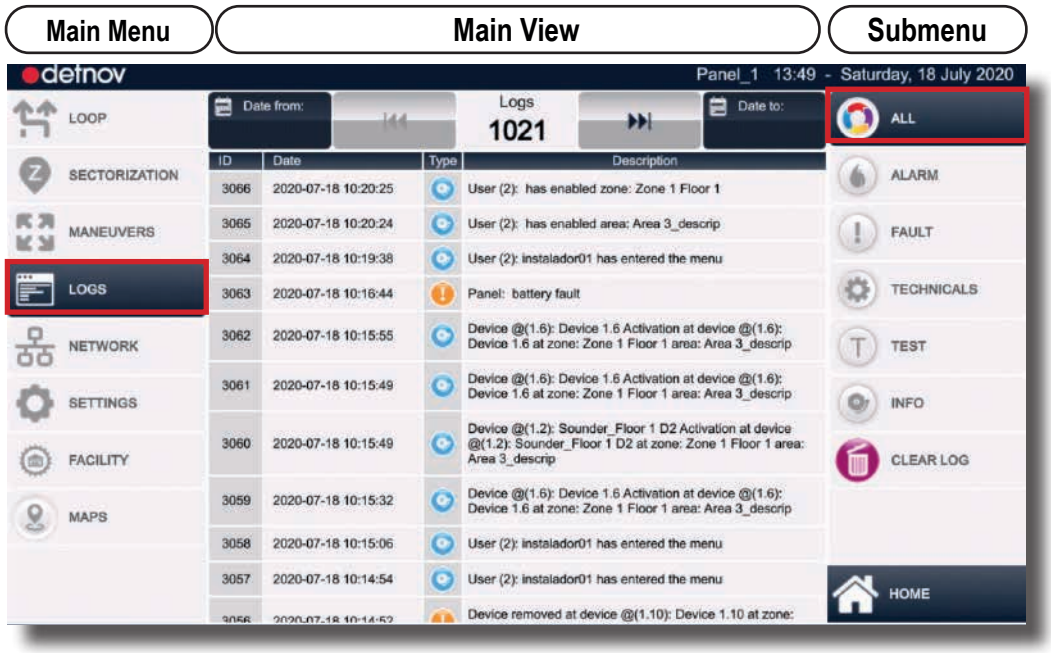
Virtual modules can be configured as quick button functions accessible from the standby screen. Virtual modules are configured as indicated in the previous section, **VIRTUAL MODULE CONFIGURATION**.

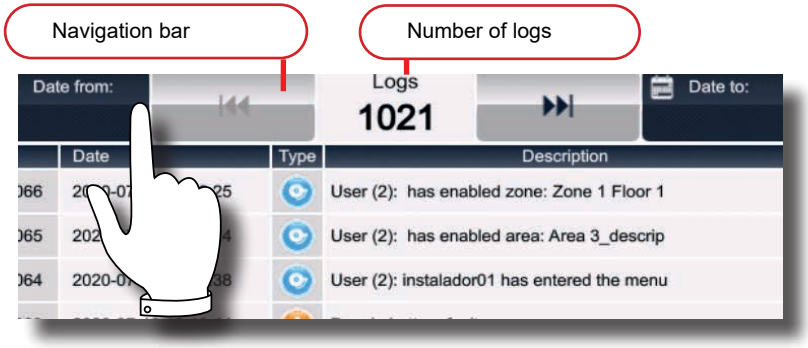
Virtual modules carry out the actions described by the manoeuvresthey are associated with. For more information, see the **MANOEUVRES** section.

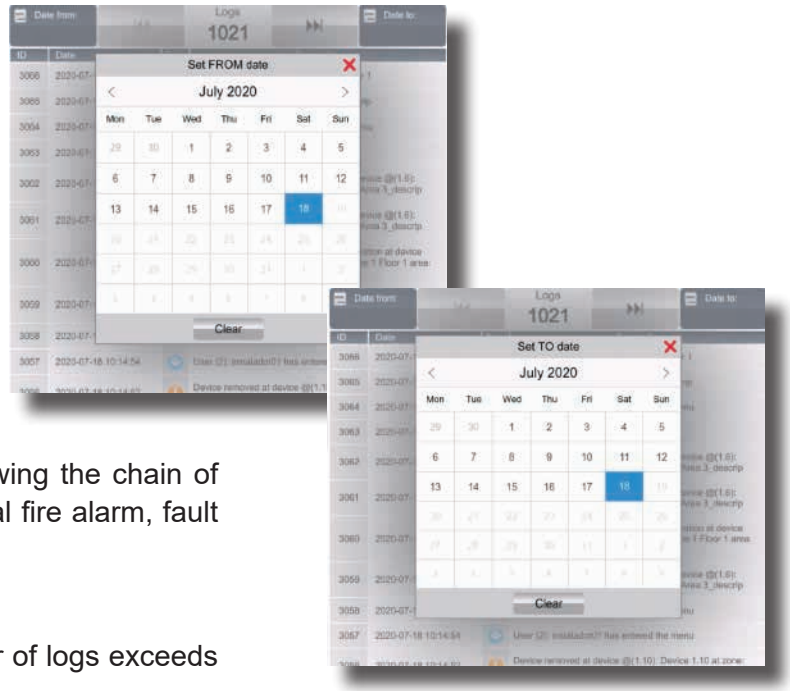
9. LOGS

This submenu lets you extract information on the events and actions carried out on the control panel. To access it, press:

LOGS (Main menu) > **ALL** (Submenu)







CAD-250 has the capacity for up to 1,000,000 event logs. These logs are vital for reviewing the chain of events, understanding the causes and checking the deployment of actions after a potential fire alarm, fault or activation.

The **LOGS** menu or event log displays the following information:

- **Navigation bar:** it lets you jump to the next page to review more events if the number of logs exceeds the screen capacity.
- **Date filter:** there are two buttons for restricting the events shown to the period.
- **From date:** filter start date, events that occurred at an earlier date are not displayed. Pressing the **FROM DATE** button gives you access to the calendar where you can set the filter start date. Press delete to discard the start filter.
- **To date:** filter end date, events that occurred at a later date are not displayed. Pressing the **TO DATE** button gives you access to the calendar where you can set the filter end date. Press delete to discard the filter.

Event list: list of events recorded since the last deletion of events. They are displayed consecutively and in order of occurrence.

In the **SUBMENU** column, the filters per event type are available, Alarm, Fault, Technical signals, Test and Information.

The system will not save the events of devices, zones or areas that are disabled.

The **EVENT LIST** shows the following information, ordered from most recent to oldest:

When selecting each option on the **SUBMENU**, you can filter the events by the corresponding types for better analysis.

By default, the **ALL** button is active and all log events are shown.

By filtering the event type, the **NAVIGATION BAR** counter will also update its value.

Tap one of the filter options on the submenu to view:

ALL: All events are shown.

ALARMS: Only the alarms are shown.

FAULT: Only the faults are shown.

TECHNICAL: Events that are produced by technical inputs are shown.

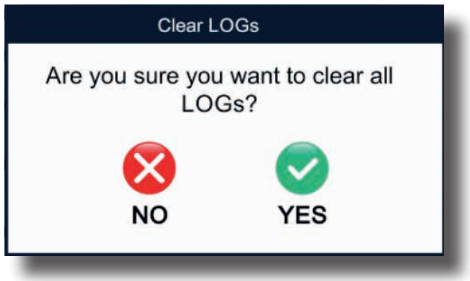
TEST: The events of ZONES and AREAS configured in test mode are shown.

INFORMATION: Log of accesses to the control panel, zone/area mode changes and physical keys pressed.

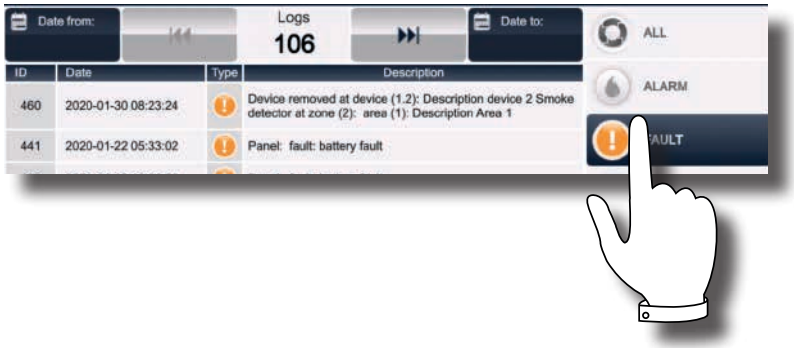
By touching the CLEAR LOGS button, a confirmation message will appear.

Press YES to delete all of the log's content.
Press NO to discard the action.

It is important to keep the log complete; save the start-up and maintenance event logs using the PC configuration tool. Make sure you have included all relevant incidents in the log book prior to deletion.



Field	Definition
ID	Event identifier, event sequence number.
Date	Date and time when the event occurred.
Type	Event typology, corresponds to the types of filter in the submenu
	ALARM Fire alarm events
	FAULT OR FAILURE Fault events of any system element
	TECHNICAL ACTIVATIONS Events caused by the activation of technical signals, which are not a fire alarm detection
	TEST Zone or area events when configured in test mode
	INFORMATION General events, such as access, zone or area changes or actions on general control function keys, such as RESET, SILENCE, etc.
Description	The system generates a description of the event

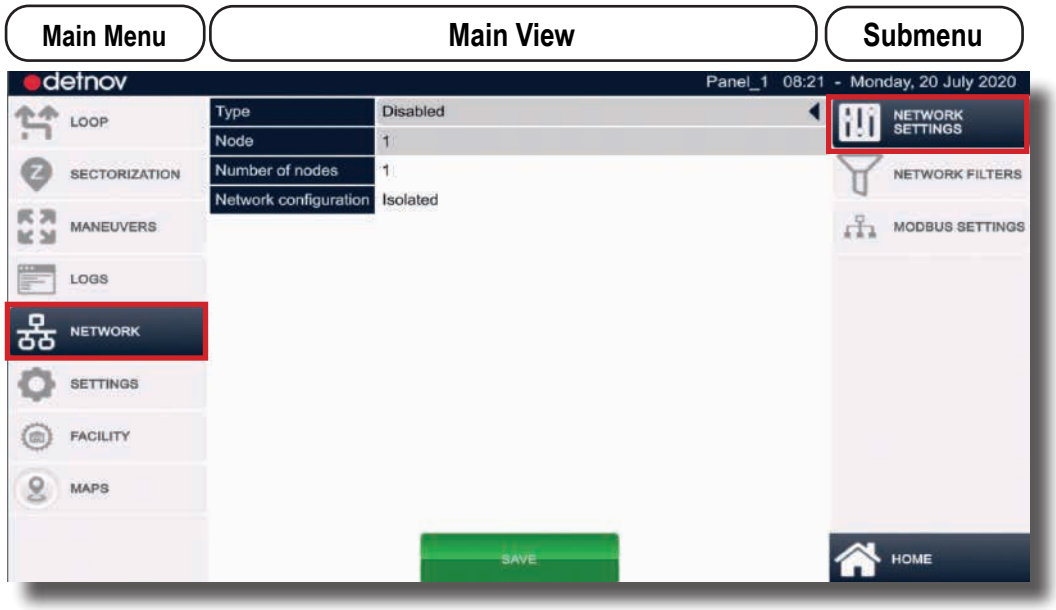


10. NETWORK

10.1. NETWORK CONFIGURATION

This configuration lets you configure basic parameters for the network architecture. To access it, press:

NETWORK (Main menu) > **NETWORK CONFIGURATION** (Submenu)



This menu has the following configuration fields:

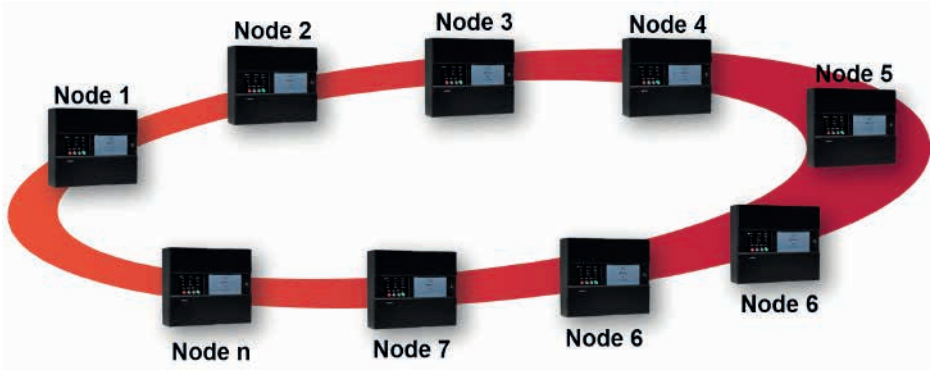
Type: it has 3 configuration options.

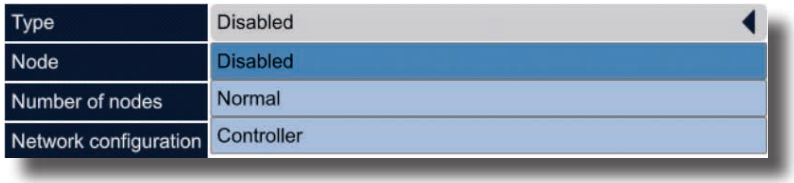
- **Disabled**, when it is not a network node.
- **Normal,** when it is defined as a network node but it is not the main unit.
- **Controller**, when it is the main node from which the complete recognition of the network will be done.

Node: it is the node number assigned to the panel or booster.

Number of nodes: it is the number of nodes in the network. It is 1 by default and until the network has been synchronised.

Network configuration: always isolated if a synchronisation has not been carried out from the controller panel.





Node synchronisation

To configure the network, it is preferable to have an IP connection to each node and to use the PC configuration software for the control panel.

It is also possible to carry out the configuration manually from the control panel screen, but the process will be slower and more tedious.

Once all control panels have been assigned their network configuration, go to the control panel programmed as **CONTROLLER** and access the network configuration screen.

Press the **SEARCH FOR NODES** button to start the search.

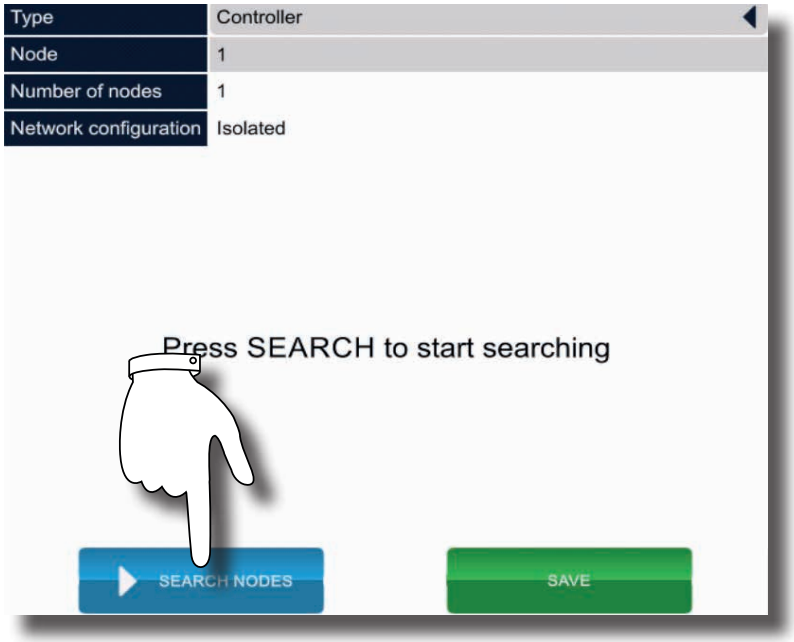
If the control panel does not have a network card, it will show the message **NODE INFORMATION NOT AVAILABLE.**

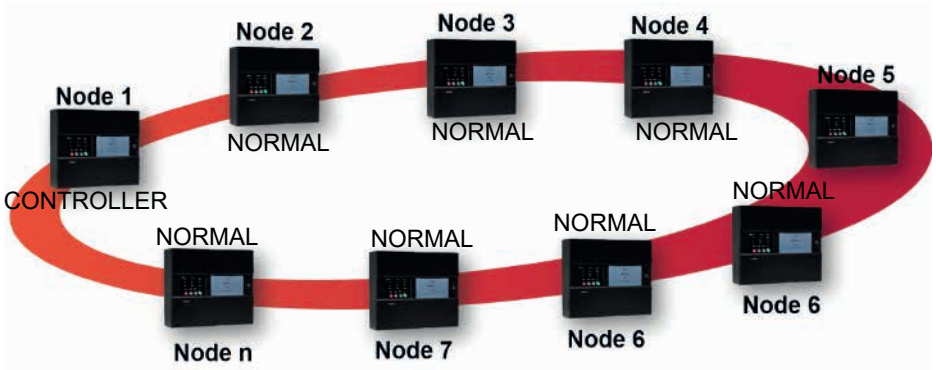
If the controller control panel has a network card but it does not identify any other network nodes, it will show:

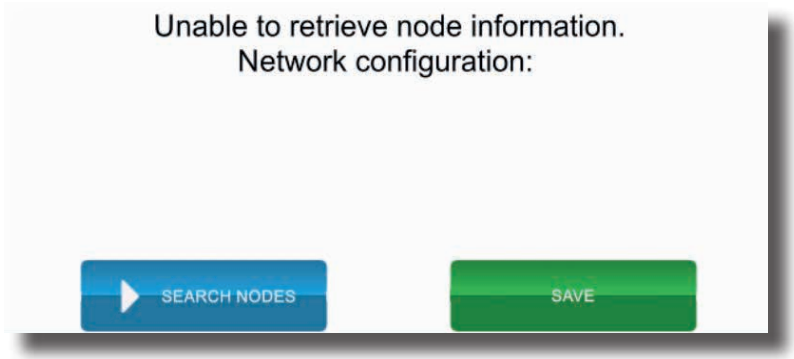
Number of nodes: 1

Configuration: isolated.

Once the search is complete, the control panel will show the number of nodes found and the **NETWORK** configuration type.



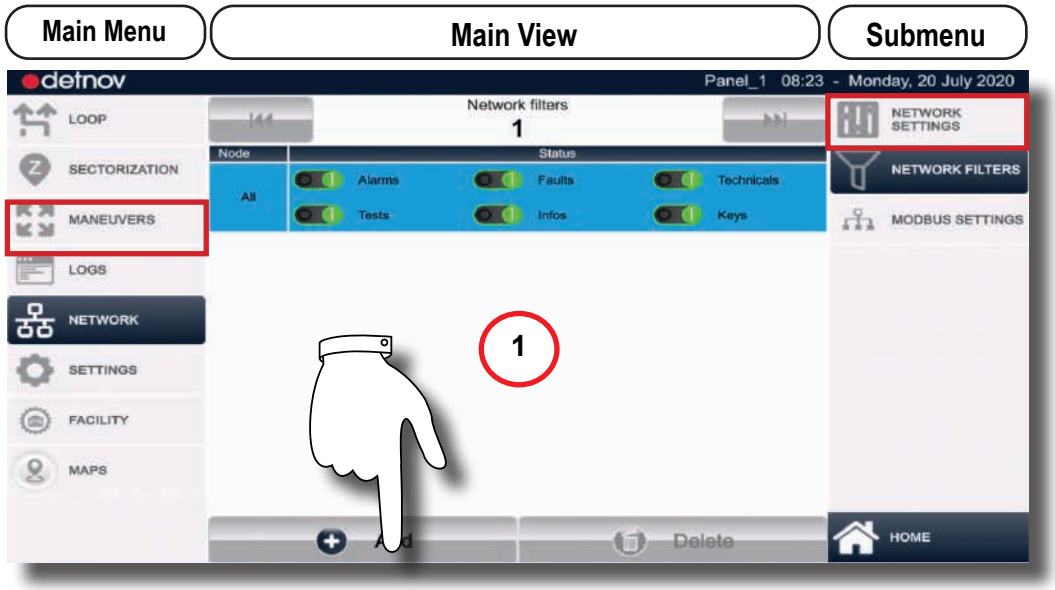




10.2. NETWORK FILTERS

From this submenu, filter the information you want to view for the remaining network nodes in the current panel. To access it, press:

NETWORK (Main menu) > **NETWORK FILTERS** (Submenu)



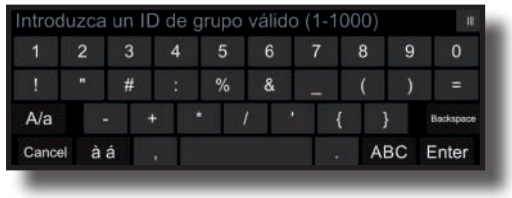
Networked systems move a lot of information and it may not always be convenient, practical or even useful to try to show all the information for all control panels that make up the system.

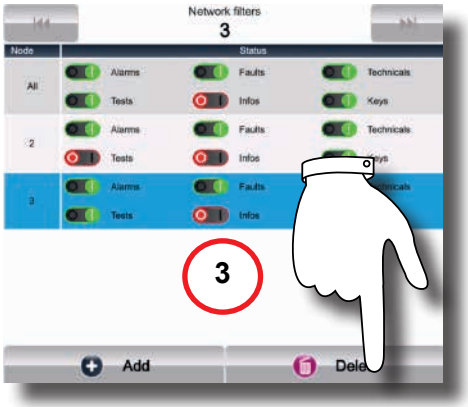
By default, the control panel has slider buttons for general filters that you can activate. These filters only apply to the control panel you are currently configuring and only affect the view. To filter the information, move the slider button to the left and it will change to red. From then on, that type of event will not be shown on the control panel screen.

The event information is always propagated via the network and on each control panel, it is only possible to choose whether or not to show certain information.

1. If you need to create filters for specific control panels, add the filter for the required control panel by pressing the **ADD** button.

2. Touch the arrow keys to move the counter up or down.





If you press the number field, the numerical keyboard will appear for you to indicate the node number. .

Press **OK** to confirm.

Press **CANCEL** to discard.

If you enter a number that has already been assigned, the system will return the message **ERROR: LOCAL NODE OR ALREADY INSERTED**.

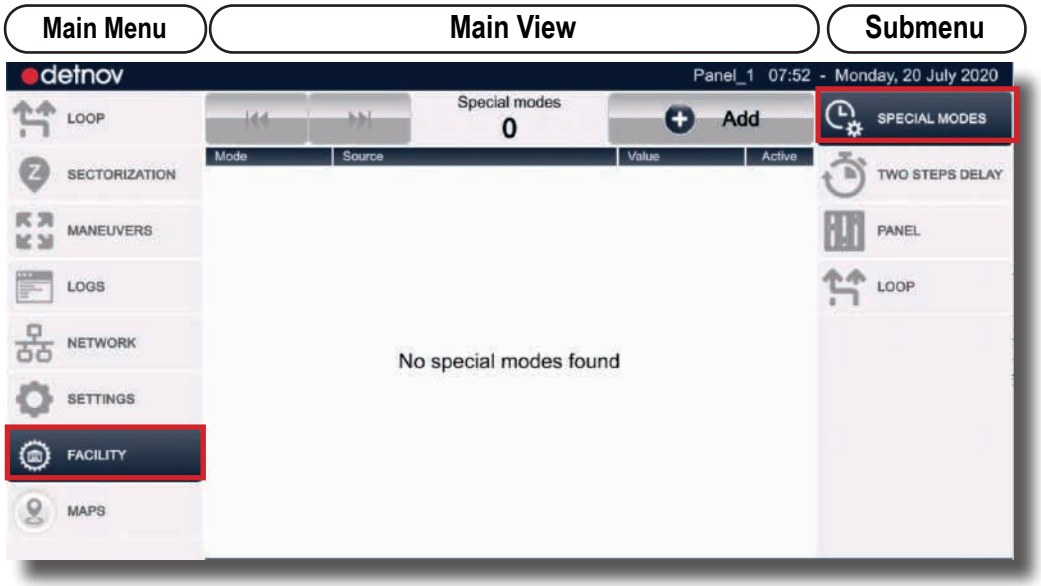
3. To delete a filter, select it and press the **DELETE** button.

11. FACILITY

11.1.SPECIAL MODES

This submenu lets you define and organise working modes. To access it, press:

FACILITY (Main menu) > **SPECIAL MODES** (Submenu)

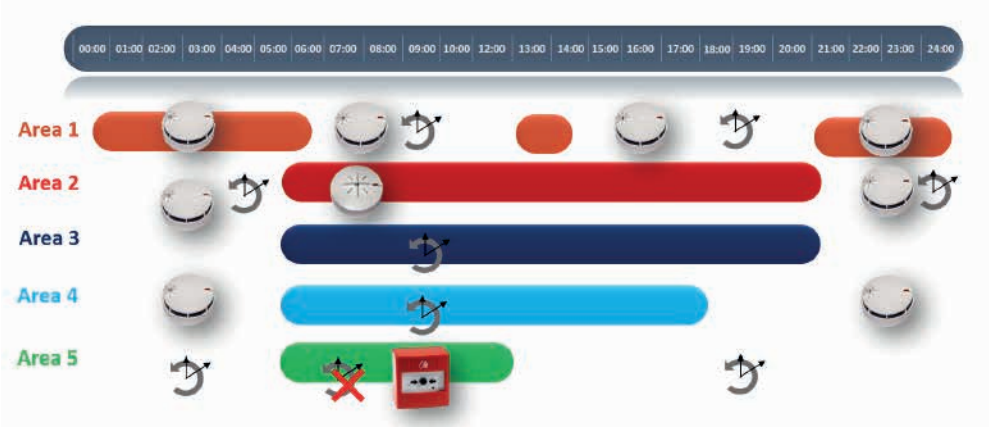


It is normal that in different detection areas or zones in the same system, different activities are carried out that require specific processing.

It is also very likely that the activity in each area is dynamic and that the mode in which alarm detection signals are processed requires special attention.

CAD-250 lets you create up to 2500 special modes for processing the detection signals adjusted to the activity. For example, it is possible to adjust the detector sensitivity levels for specific panels, areas, zones or devices or to define whether the signal they activate requires some kind of prior confirmation to confirm the alarm.

It is possible to create comprehensive plans that cover periods ranging from fractions of hours to the entire year.



Special modes are a powerful and extremely flexible tool. Their configuration requires a good level of knowledge of the tool, the project and the fire detection and alarm concepts. Medium and high complexity configurations require method and thoroughness when checking the system's functionality. Let skilled professionals who have the specific technical training help you.

Special modes have certain precedence rules to determine the priority of the rule in case several are applied at once.

Configuration overlaps on the same entity are not permitted with different sign modes.

The most specific mode takes precedence, therefore, if an area is defined with high sensitivity and a specific device in that area is defined with low sensitivity, the low sensitivity mode will continue to be met for that device and the high sensitivity mode for the other devices.

The special mode menu appears with the following elements:

Navigation bar: it lets you jump to the next page if the number of special modes defined exceeds the screen capacity.

Special mode counter: it shows the total number of modes created.

Add button: it starts the creation of a new mode.

Mode list: the list of created modes and associated information is shown:

- **Mode:** (sensitivity, confirmation, etc.)
- **Source:** panel, zone or device that will be affected by the mode
- **Value:** magnitude associated with the configured mode
- **Active:** the modes being applied at the time of inspection

Mode filters: in the bottom margin, the filter fields let you review the filters by mode or status. For each mode, it is possible to filter by the magnitude adopted by the value.

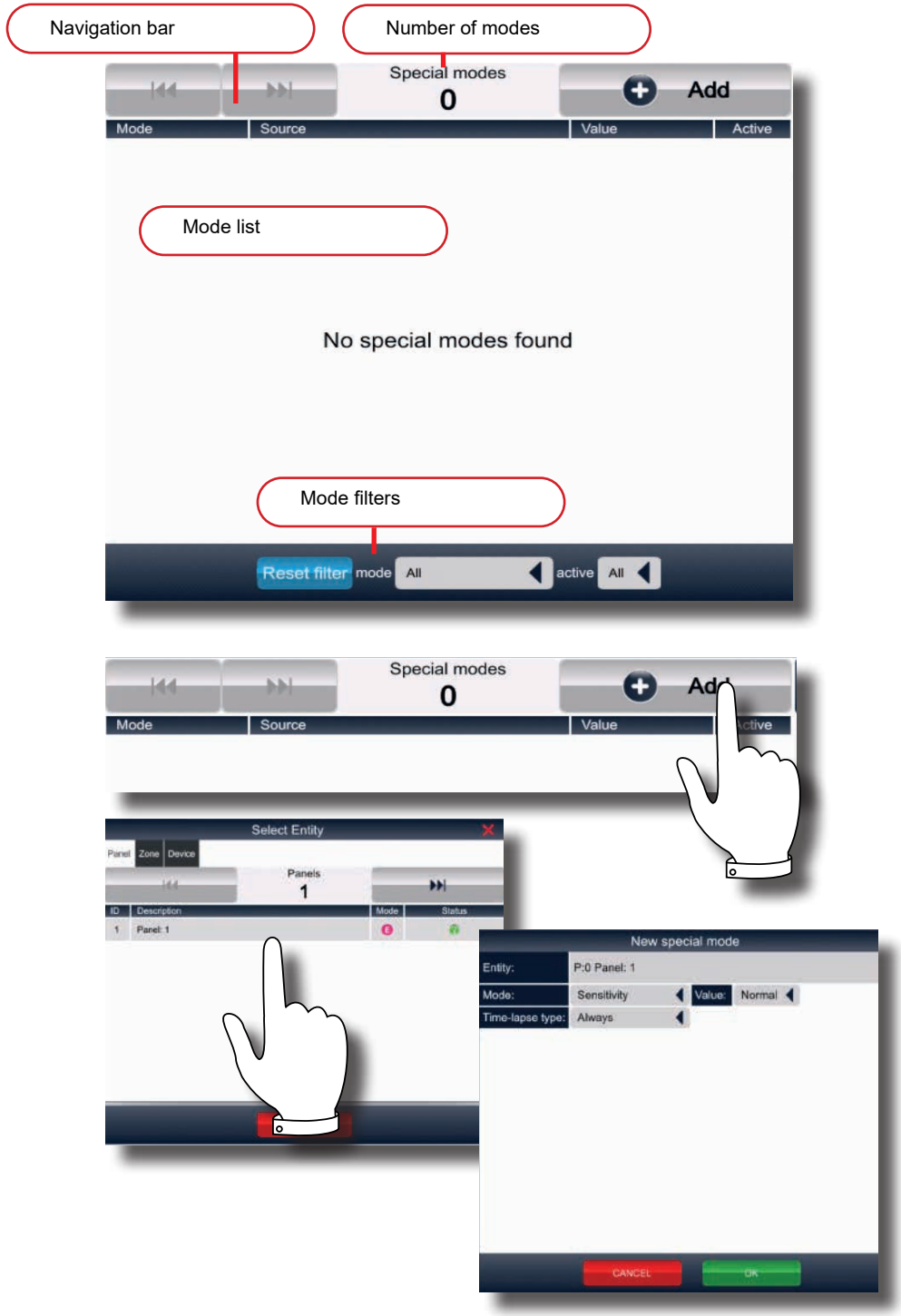
To incorporate a mode, press the add button. In doing so, you will access the entity selection menu. According to the tabs in the top margin of the menu, select Panel, Zone or Devices. By selecting Panel or Zone, after you have selected the entity, you will access the new special mode's configuration menu directly. If you select Devices, you must select the loop in order to access the loop device selection screen.

Select the entity for which you want to generate a new mode. The configuration menu shows the following configuration fields:

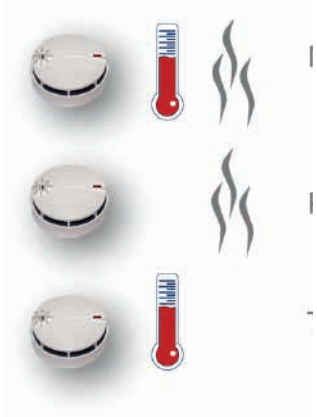
Entity: it is possible to modify it as long as you have not closed the mode configuration.

Mode: it accepts the following configurations

Sensitivity: it is applied to smoke and temperature detection. When it is assigned generically to the panel or zone, it will only have an effect on the smoke or heat detection elements included in that entity. You can adopt the values of lower, low, normal, high or higher within the approval range.

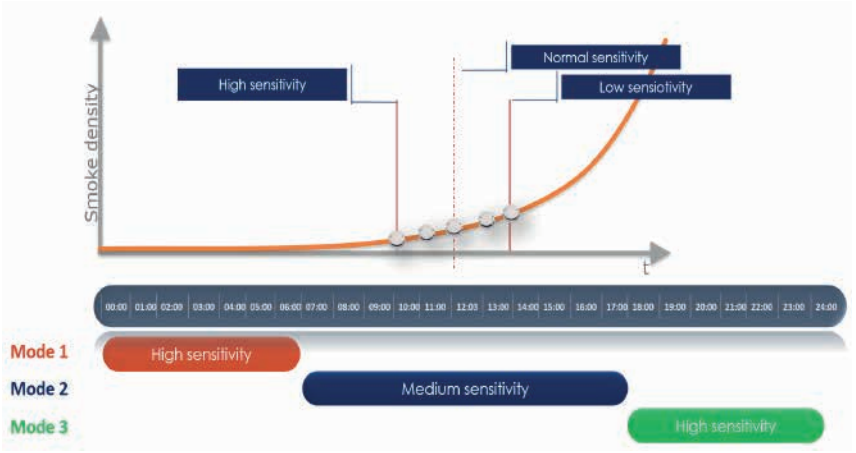


You can generate a low sensitivity mode applicable to a daily fraction of time and a high sensitivity mode applicable to another fraction of time.



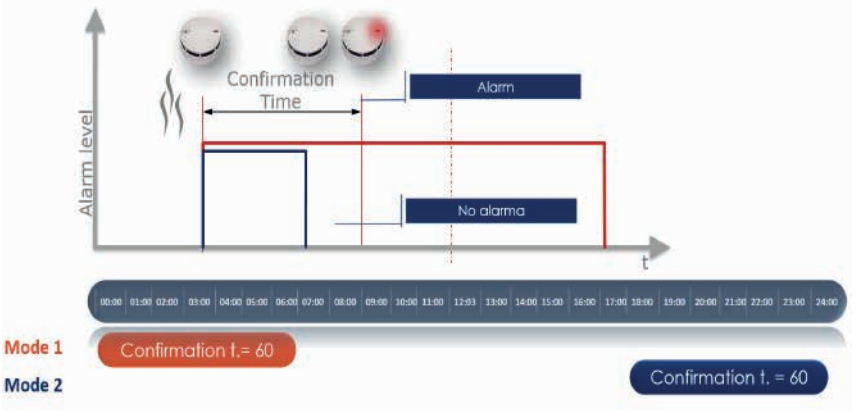
Optical-heat: it is applied to detectors that have both technologies. It can adopt the following values: optical only, heat only or both. When the protected space has different uses, it may be necessary to programme a different working mode for each use. If work that generates smoke is planned for a specific time, you can opt to apply a heat only mode during a period of time.

Please note that the change in principle may be subject to regulatory restrictions.



Confirmation: the confirmation mode is applicable to all alarm detection entities. Under this mode, the control panel will check that the alarm condition is maintained for a prolonged period. The mode allows the configuration of values of between 1 and 60 seconds.

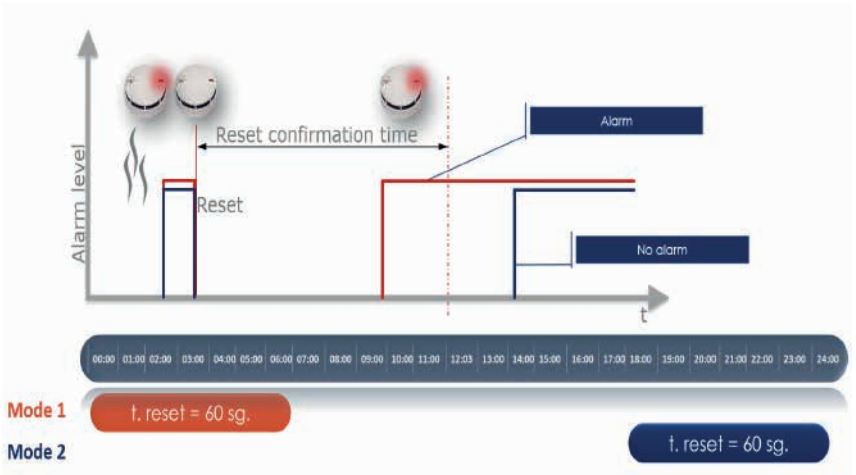
The control panel will not show the alarm condition until the confirmation time is over. Once this is over, if the addressable value falls below the alarm level of 100, the alarm will not be confirmed. The process will start again when the detector exceeds the alarm level.



Reset confirmation: the reset confirmation mode applies to all alarm input devices. Under this mode, the control panel resets the device and checks the recurrence within a specific period.

If the device is activated again, the control panel will process the alarm and will trigger all mandatory and programmed actions.

Any device in the monitoring entity selected for the mode that exceeds the alarm level, for example, within the zone, will confirm the alarm.



Type of time lapse: this field lets you assign the time fraction to the mode in which the mode will be active. It accepts the following values:

• **Always.** This is the default value. There is no interruption in the assignment of the lapse and it will always remain active unless a precedence criterion is applied. This means that if the mode was applied to a generic panel entity and there is a mode assigned to a zone or device with a value criterion in a different way, the most specific one will prevail.

• **Lapse.** it defines a fraction of time in which the mode is applicable. By selecting this option, the list of configuration options is displayed within the menu.

• **Time.** It lets you choose between the entire day and a time range. If you opt for the time range, define the start and end times.

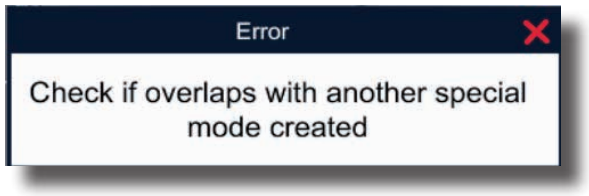
If a mode overlap occurs, you will get the error message **CHECK IF OVERLAPS WITH ANOTHER SPECIAL MODE CREATED**.

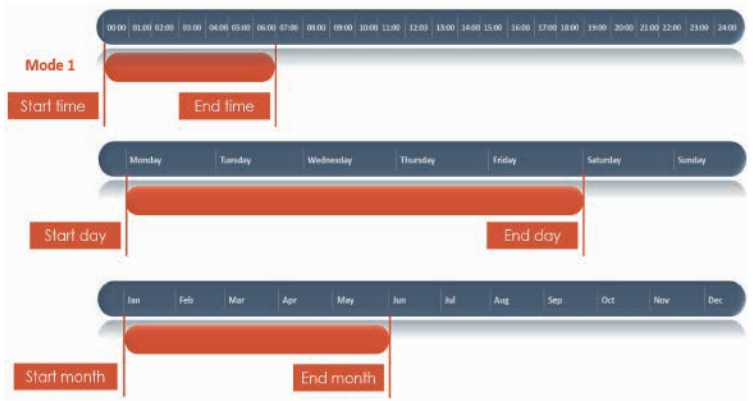
• **Day.** It lets you choose between the whole week, a day of the week from Monday to Sunday and a range of days. If you opt for a range of days, define the start and end days. CAD-25 regards Monday as the first day of the week.

If a mode overlap occurs, you will get the error message **CHECK IF OVERLAPS WITH ANOTHER SPECIAL MODE CREATED**.

• **Month.** it lets you select the entire year, a month from January to December or a range of months. If you opt for a range of months, specify the start and end months.

If a mode overlap occurs, you will get the error message **CHECK IF OVERLAPS WITH ANOTHER SPECIAL MODE CREATED**.





Mode filters

As special modes are incorporated, the monitoring of the types that have been created or the identification of those that are active may be complex.

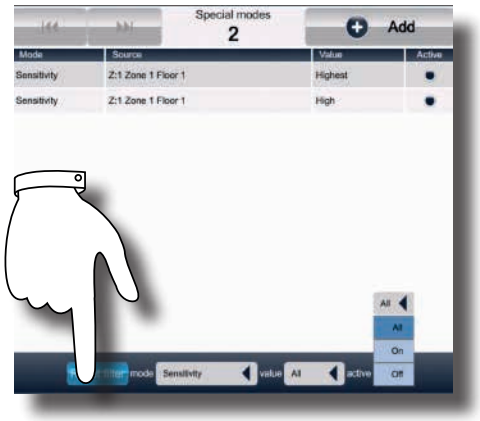
The filters located in the bottom part of this menu's main screen will help to carry out the inspection. The available actions are:

Reset filters button. It deletes all filters and makes the screen display the full list. In these conditions, use the arrow keys on the navigation bar to jump to the next page.

Mode filter. Use this filter to distinguish the modes to be viewed:

Value filter. This filter is dynamic and will be different according to the selected mode.

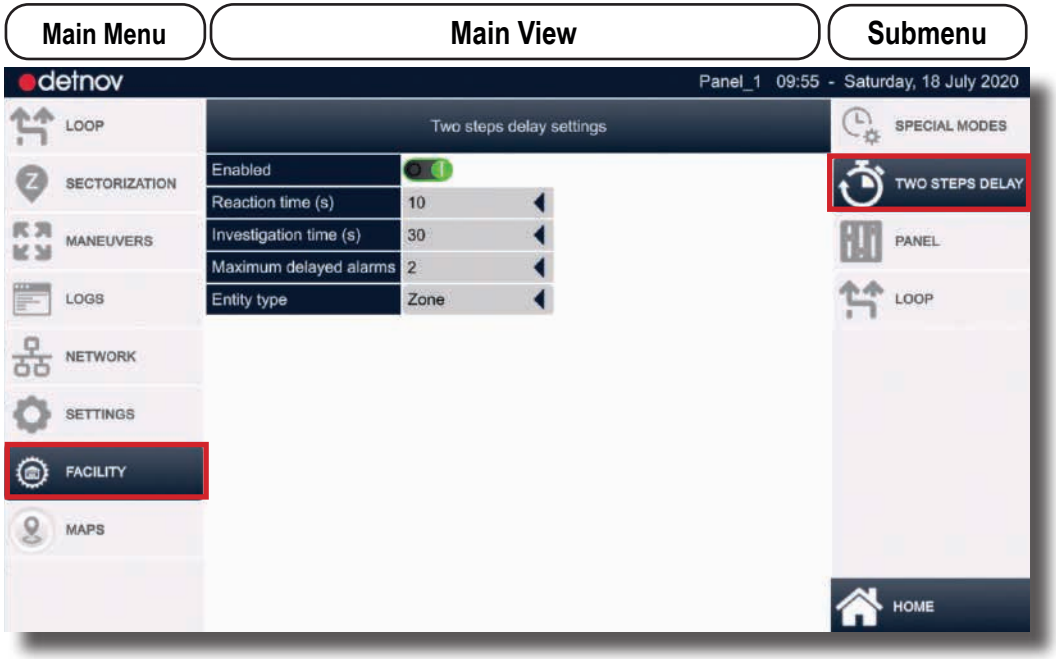
Active mode filter. Select this filter so that only active modes or those that are not active are displayed.



11.2.TWO-STEP DELAY

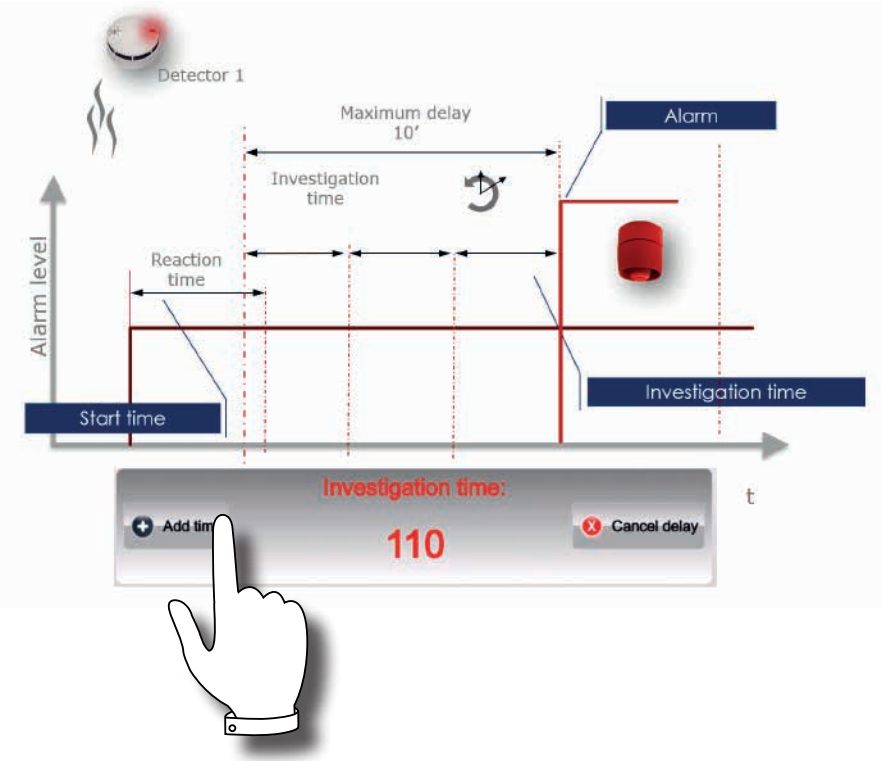
From this submenu, configure the delay mode in automatic detection.
To access it, press:

FACILITY (Main menu) > **TWO-STEP DELAY** (Submenu)



The two-step delay function lets you configure the reaction times before the activation of all planned outputs. This function helps to prevent unnecessary costs caused by an unwanted automatic alarm. The menu lets you configure:

- **Enabled:** activates the two-step delay. This applies to the local control panel.
- **Reaction time:** waiting time before any activation from an automatic detection, whether they are smoke or heat detectors. The reaction time may range from **10 to 60 sec**.
- **Investigation time:** it is the maximum time from the first activation, considering the initial reaction time and all successive extensions. It allows between **30 and 600 sec.**



When a detector is activated, two function buttons appear on the control panel's main screen:

Add time: It extends the waiting time by a value equal to the reaction time multiplied by the number of presses and up to a maximum of 600 sec.

Cancel time: it cancels all delays and activates the actions.

The two-step delay is only applied to the automatic detection elements, smoke and heat detectors.
The reaction time also defines the delay extension times, as specified in the EN 54-2 standard.
The activation of any control panel manual call point cancels all delays.
If you have a network, all panels must be configured with the same criterion.

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The activation of the number of incidents specified in the **MAXIMUM ALARM DELAY** and **ENTITY TYPE** fields will cancel the delays.

• **Maximum alarm delay:** it is the number of active detectors for cancelling the delay.

It can adopt values of between 2 and 10.

If 2 is defined as the value for this field, following activation of the first detector, the reaction time counter will start and from the main screen, you will be able to extend the delay until the second detector within the entity is activated or the maximum investigation time has passed.

If 3 is defined as the value for this field, at least 3 detectors must be active at the same time in order to cancel the delay.

By cancelling the delay or if the investigation time has passed, the activation of all actions will be carried out as defined in the programming.

• **Entity type:** it defines the origin of the elements that can cancel the delay.

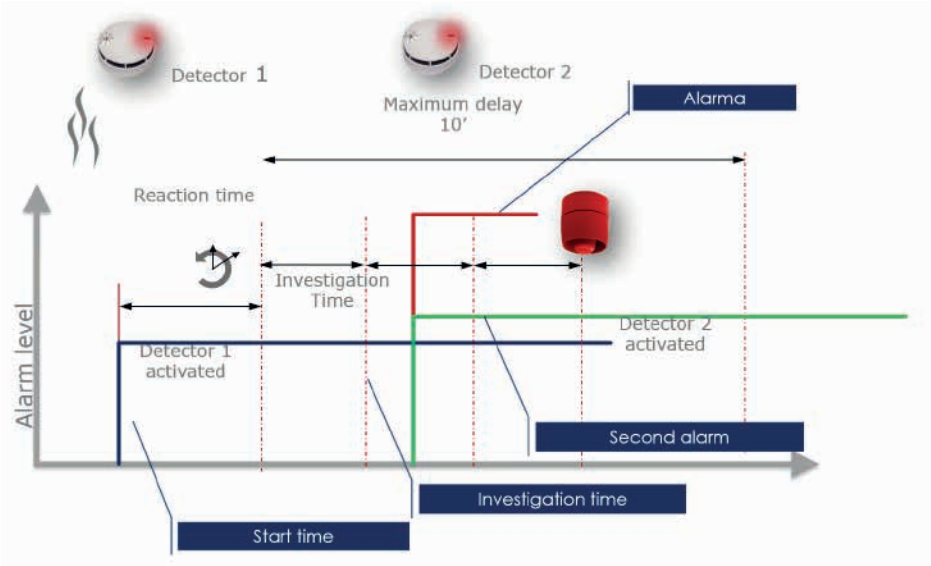
It can adopt the following values:

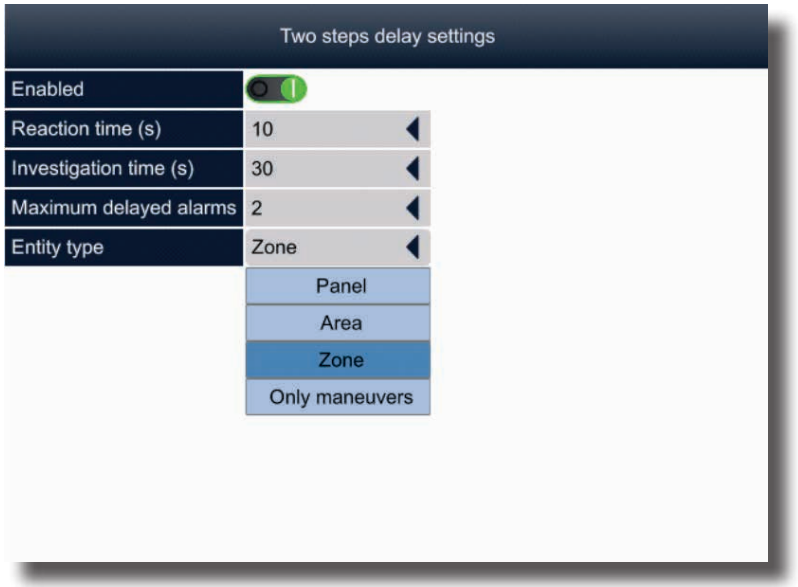
Panel, area, zone or only manoeuvres

If the number of detectors in alarm in the entity meets the value criterion for the **MAXIMUM ALARM DELAY** field, the delays will be cancelled.

By configuring this function, if the configured entity is **PANEL**, then, for example, if the value for the maximum alarm delay field is 2, with alarm detection by the first detector, the reaction time counter will be activated. If any other detector of the **PANEL** is activated, the delays will be cancelled and all programmed actions will start.

If the configured entity is **AREA**, if any other detector in the same **AREA** is activated, the delays will be cancelled and all programmed actions will start.





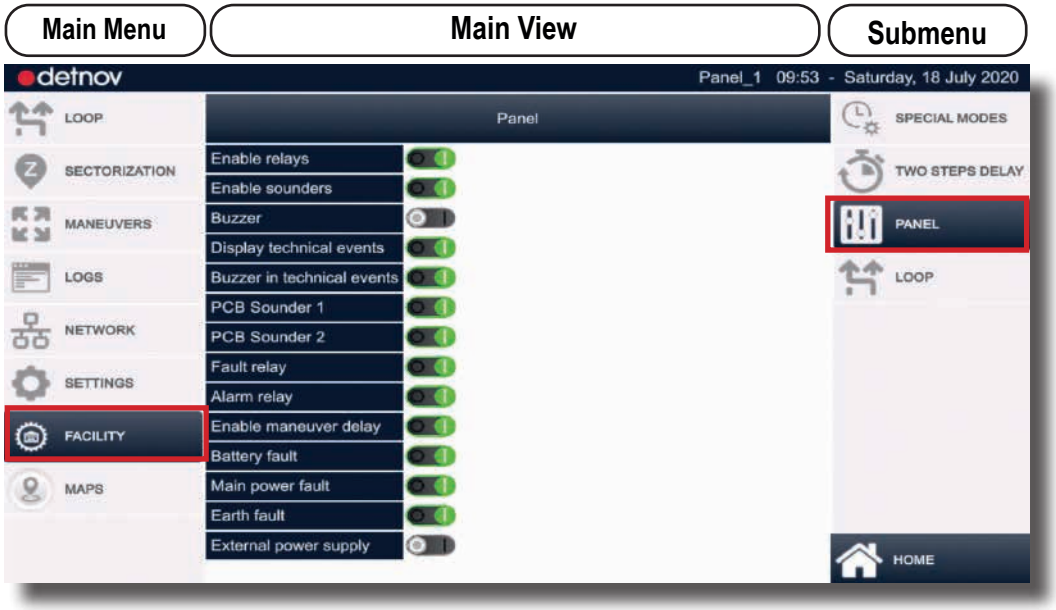
If the configured entity is **ZONE**, if any other detector in the same **ZONE** is activated, the delays will be cancelled and all programmed actions will start.

If the configured entity is **ONLY MANOEUVRES**, if any manoeuvre is activated, the delays will be cancelled and all programmed actions will start.

11.3.PANEL CONFIGURATIONS

This submenu lets you adjust some useful modes in the start-up process. To access it, press:

FACILITY (Main menu) > **PANEL** (Submenu)



⚠ **WARNING!** The options that are available in this menu should only be used by trained staff. In general, they should all remain active, deactivation would put the panel outside of the scope of compliance with the EN54-2 standard. Please read each case carefully.

During the start-up process or troubleshooting tasks, the partial or total deactivation of these elements may be justified. Take the appropriate preventive measures if the system is already active when using this menu.

The deactivation of mandatory signals will cause the corresponding cancellation signalling on the panel indicators. Remember that this is a manual configuration, recover the correct configuration as soon as you finish the work. Inform the system manager of the changes in this menu and their consequences.

The panel menu lets you configure the following elements:

Enable relays. The deactivation of this slider button (grey) will prevent the activation of all relay outputs, the control panel and system control modules. It should normally be active.

Enable sounders. The deactivation of this slider button (grey) will prevent the activation of all sounder outputs, the control panel main board, control modules configured as sounders, as well as sounders and visual devices of the system. It should normally be active. Permanent deactivation may contravene the approval criteria of the EN54-2 standard and local regulations, potentially impeding evacuation.

It is vital to reset the activation of this slider button. Limit its use to essential cases.

Buzzer. The deactivation of this slider button (grey) will prevent the activation of the control panel's acoustic signal. It should normally be active. Permanent deactivation contravenes the EN54-2 standard.

It is vital to reset the activation of this slider button. Limit its use to essential cases.

View technical events. In highly-complex systems, it is easy for there to be a constant flow of events, especially of technical events. Always showing this type of event on the screen may be confusing and not very useful. This slider button lets you lock the screen view.

You can monitor the changes produced in this type of element from the event log, LOG.

Sound in technical events. This slider button lets you lock the screen view. Its application is the same as that described in the previous point.

PCB Sounder 1. The deactivation of this slider button (grey) will prevent the activation of the sounder 1 output on the main board. It should normally be active. Permanent deactivation may contravene the approval criteria of the EN54-2 standard and local regulations. Limit its use to essential cases.

PCB Sounder 2. The deactivation of this slider button (grey) will prevent the activation of the sounder 2 output on the main board. The slider button should normally be active. Permanent deactivation may contravene the approval criteria of the EN54-2 standard and local regulations. Limit its use to essential cases.

Fault relay. The deactivation of this slider button (grey) will prevent the activation of the fault relay on the main board. The slider button should normally be active (green). Permanent deactivation may contravene the approval criteria of the EN54-2 standard.

Alarm relay. The deactivation of this slider button (grey) will prevent the activation of the alarm relay on the main board. The slider button should normally be active (green). Permanent deactivation may contravene the approval criteria of the EN54-2 standard.

Enable manoeuvre delay. The deactivation of this slider button (grey) will cancel any delay configuration. The slider button should normally be active (green).

Battery fault. The deactivation of this slider button (grey) will prevent the indication of any battery fault. The slider button should normally be active (green). Permanent deactivation may contravene the approval criteria of the EN54-2 standard and local regulations.

Main power supply fault. The deactivation of this slider button (grey) will prevent the indication of any main power supply fault. The slider button should normally be active (green). Permanent deactivation may contravene the approval criteria of the EN54-2 standard and local regulations.

Earth leakage fault. The deactivation of this slider button (grey) will prevent the indication of any earth leakage faults. Earth leakage faults may generate errors in the transmission of data and cause harm to people or damage to the unit. The slider button should normally be active (green). Permanent deactivation may contravene the approval criteria of the EN54-2 standard and local regulations.

External power supply. The CAD-250 system supports up to 32 loops on a single NODE. When implementing large systems, it may be necessary to increase the capacity of the secondary power supply in order to ensure the required autonomy.

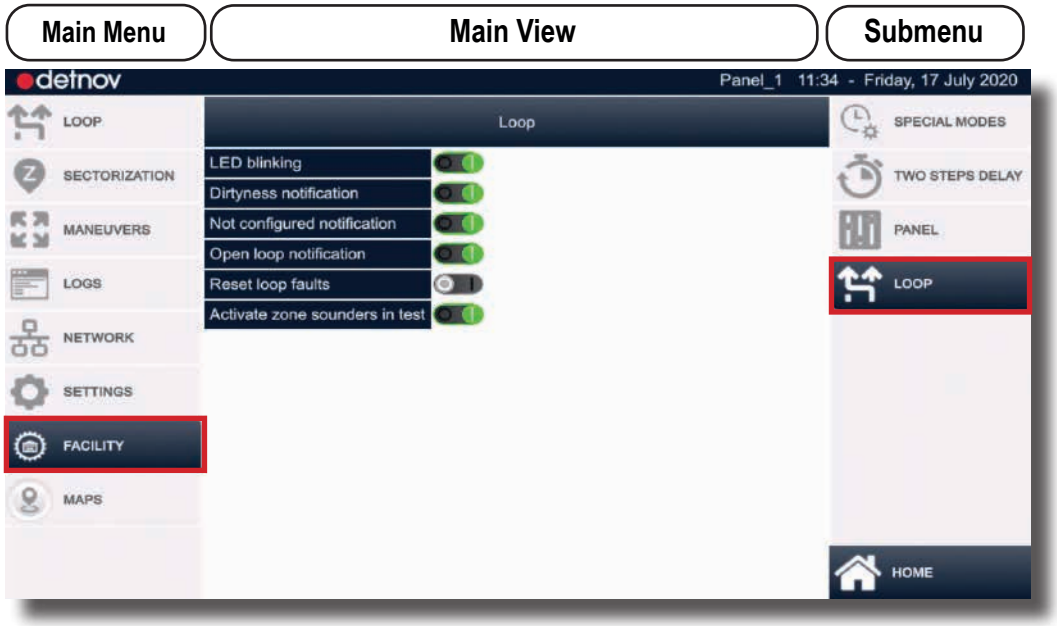
To meet this requirement, the CAD-250 system features the FD-500 power supply, which allows the use of batteries of up to 150 Ah.

By activating this slider button, CAD-250 will monitor the FD-500 external power supply as a secondary power supply. In this mode, the sounder 1 output on the main board will be used as a monitoring line for the secondary power supply.

11.4. LOOP CONFIGURATIONS

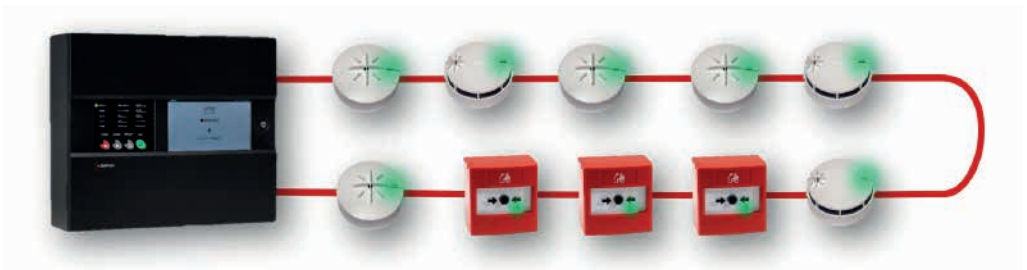
This submenu lets you adjust some loop functions. To access it, press:

FACILITY (Main menu) > **PANEL** (Submenu)



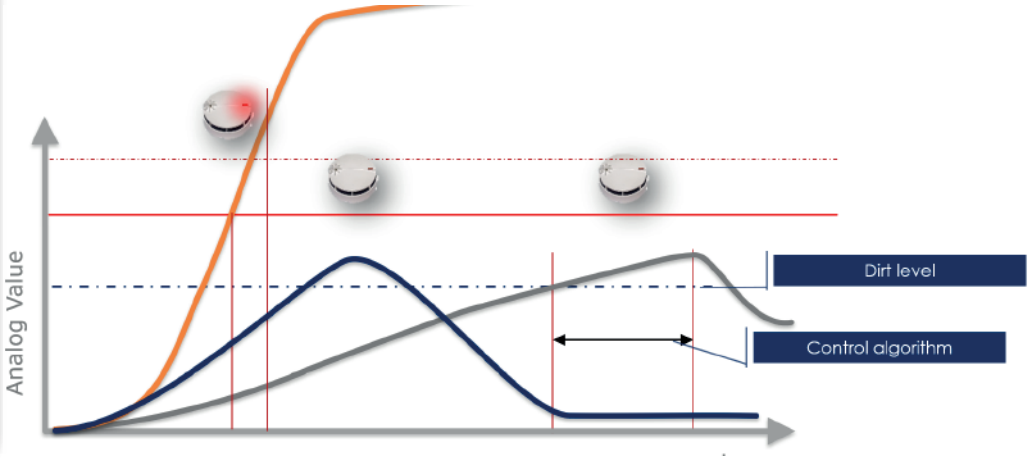
This menu provides the following configuration options:

LED flashing: The intermittent flash of the LED indicators indicates that information is being exchanged between the control panel and the detector. In certain uses, for example, when people are sleeping, the brightness of the LED indicators may be very annoying for the resident. By moving this slider button to the off position (grey), this search indication will not be shown. Normally, its position is active (green).

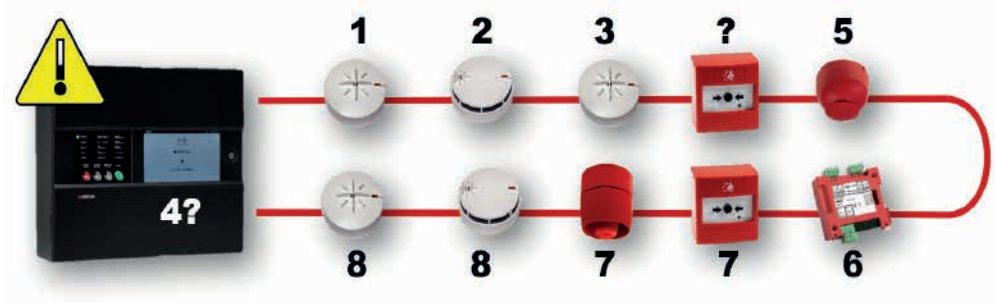


Dirtiness notification. Over time, dirt will accumulate in the smoke detector chamber. The speed at which this occurs will depend on the working environment.

The CAD-250 control panel has a dirty chamber detection procedure. The control algorithm assesses the changes in the chamber's value, and according to this value, determines whether it should activate a maintenance alert or not. You can disable this function by deactivating the dirtiness notification slider button. Its normal configuration is activated (green).



Not configured notification. When searching using the **AUTOSEARCH** function in the loop menu, the address may not have been configured for certain devices. This function lets you identify devices without a configuration while the slider button is active (green). The slider button's default position is active (green). Identify the devices and configure them using the PGD-200 programmer or using the **ADDRESS PROGRAMMING** function from the **LOOP** menu.



Open loop notification. Systems for protecting people establish mechanisms that guarantee the continuity of the systems in the event of faults. They also try to limit the effects of the systems by establishing design and application criteria. Detection systems limit the effects of a short-circuit fault or an open circuit in the transmission lines. Loop configuration and the use of isolator switches meet this requirement.

Even if local regulations do not require it, the use of this kind of loop typology is recommended. However, in certain circumstances, such as the renovation of old facilities or difficult access, it may be necessary to use an open loop configuration. By deactivating this slider button, the control panel will not show the open loop fault and will operate normally.

The normal configuration of this slider button is activated (green).

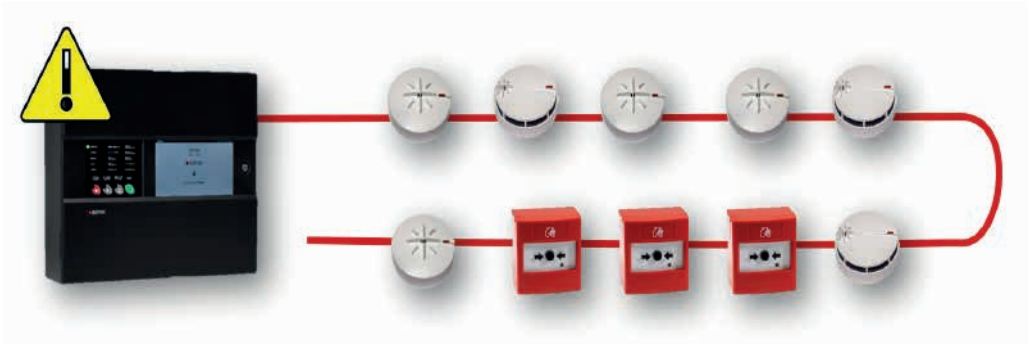
Permanent deactivation may contravene the approval criteria of the EN54-2 standard and local regulations.

Reset loop faults. Loop fault errors may be generated sporadically if the facility is in an environment with a high amount of electromagnetic interference, exceeding the approval levels.

Under normal conditions, the loop fault indications will remain set until a manual system reset occurs.

By using this function, this fault time will reset automatically.

The reset does not affect any other type of indication or the event log (LOG).



APPENDIX 1: Compatible devices and consumption

Reference	Type	Standby consumption	Alarm consumption	Isolator switch	External power supply	Address no.	Description
DTD-210A	HEAT.D	0.3 mA	3 mA	No	No	1	Addressable thermovelocimetric detector
DTD-215A	HEAT.D	0.3 mA	3 mA	No	No	1	Addressable high-temperature heat detector
DOD-220A	OPTICAL.D	0.3 mA	3 mA	No	No	1	Addressable optical detector
DOTD-230A	OPTICAL-HEAT.D	0.3 mA	3 mA	No	No	1	Optical-heat detector
DTD-210A-I	HEAT.D	0.3 mA	3 mA	Yes	No	1	Addressable thermovelocimetric detector with isolator switch
DTD-215A-I	HEAT.D	0.3 mA	3 mA	Yes	No	1	Addressable high-temperature heat detector with isolator switch
DOD-220A-I	OPTICAL.D	0.3 mA	3 mA	Yes	No	1	Addressable optical detector with isolator switch
DOTD-230A-I	OPTICAL-HEAT.D	0.3 mA	3 mA	Yes	No	1	Addressable thermovelocimetric detector with isolator switch
DGD-600	GAS	4.5 mA	65 mA	No	No	1	Light flammable gas detector, Methane, Natural Gas, Hydrogen
DGD-600-AC		3.5 mA	62 mA	No	No		
DGD-620	GAS	4.5 mA	65 mA	No	No	1	Heavy flammable gas detector, Liquefied Petroleum Gases, Propane, Butane
DGD-620-AC		3.5 mA	62 mA	No	No		
MAD-401	MOD	0.3 mA	1.5 mA	No	No	1	Addressable 1-input monitor module.
MAD-401-I	MOD	0.3 mA	1.5 mA	Yes	No	1	Addressable 1-input monitor module with isolator switch.
MAD-402	MOD	0.3 mA	1.5 mA	No	No	2	Addressable 2-input monitor module.
MAD-402-I	MOD	0.3 mA	1.5 mA	Yes	No	2	Addressable 2-input monitor module with isolator switch.
MAD-405-I	MOD	0.3 mA	1.5 mA	Yes	No	5	Addressable 5-input module with isolator switch.
MAD-409-I	MOD	0.3 mA	1.5 mA	Yes	No	10	Addressable 10-input module with isolator switch.
MAD-410-I	MOD	0.3 mA	1.5 mA	Yes	No	10	
MAD-411	MOD	0.3 mA	1.5 mA	No	No	1	Addressable 1-output control module.
MAD-411-I	MOD	0.3 mA	1.5 mA	Yes	No	1	Addressable 1-output control module with isolator switch
MAD-412	MOD	0.3 mA	1.5 mA	No	No	2	Addressable 2-output control module.
MAD-412-I	MOD	0.3 mA	1.5 mA	Yes	No	2	Addressable 2-output control module with isolator switch.
MAD-415-I	MOD	0.3 mA	1.5 mA	Yes	Yes	5	Addressable module of 5 relay outputs with isolator switch
MAD-419-I	MOD	0.3 mA	1.5 mA	Yes	Yes	10	Addressable module of 10 relay outputs with isolator switch.
MAD-421	MOD	0.3 mA	1.5 mA	No	No	2	Addressable 1-input monitor and control module.

Reference	Type	Standby consumption	Alarm consumption	Isolator switch	External power supply	Address no.	Description
MAD-421-I	MOD	0.3 mA	1.5 mA	Yes	No	2	Addressable 1-input monitor and control module with isolator switch.
MAD-422	MOD	0.3 mA	1.5 mA	No	Yes	4	Addressable monitor and control module with 2 relay inputs and 2 relay outputs
MAD-422-I	MOD	0.3 mA	1.5 mA	Yes	Yes	4	Addressable monitor and control module with 2 relay inputs and 2 relay outputs with isolator switch.
MAD-425-I	MOD	0.3 mA	1.5 mA	Yes	Yes	10	Addressable module with 5 technical inputs and 5 relay outputs
MAD-429-I	MOD	0.3 mA	1.5 mA	Yes	Yes	20	Addressable module with 10 technical inputs and 10 relay outputs
MAD-431	MOD	0.3 mA	1.5 mA	No	Yes	1	Addressable control module with 1 monitored 24 V output
MAD-431-I	MOD	0.3 mA	1.5 mA	Yes	Yes	1	Addressable control module with 1 monitored 24 V output with isolator switch
MAD-432	MOD	0.3 mA	1.5 mA	No	Yes	2	Addressable control module with two 24 V outputs
MAD-432-I	MOD	0.3 mA	1.5 mA	Yes	Yes	2	Addressable control module with two 24 V outputs with isolator switch
MAD-441	MOD	0.3 mA	1.5 mA	No	Yes	1	Addressable monitor module of 1 conventional zone.
MAD-441-I	MOD	0.3 mA	1.5 mA	Yes	Yes	1	Addressable monitor module of 1 conventional zone with isolator switch
MAD-442	MOD	0.3 mA	1.5 mA	No	Yes	2	Addressable monitor module of 2 conventional zones.
MAD-442-I	MOD	0.3 mA	1.5 mA	Yes	Yes	2	Addressable monitor module of 2 conventional zones with isolator switch
MAD-450	PUS	0.3 mA	1.5 mA	No	No	1	Addressable button
MAD-450-I	PUS	0.3 mA	1.5 mA	Yes	No	1	Addressable button with isolator switch
MAD-451-I	PUS	0.3 mA	1.5 mA	Yes	No	1	Resettable addressable alarm button with built-in isolator switch
MAD-450-IW	PUS	0.3 mA	1.5 mA	No	No	1	IP67 resettable addressable alarm button
MAD-461-I	SIR	0.3 mA	4.5 mA	Yes	No	1	Addressable sounder with isolator switch.
MAD-464-I	SIR	0.3 mA	6.5 mA	Yes	No	1	Addressable sounder with built-in isolator switch.
MAD-465-I	SIR	0.3 mA	6.5 mA	Yes	No	1	Sounder with addressable beacon with built-in isolator switch.
MAD-467-IC	SIR			Yes		1	Addressable red alarm sounder with white beacon for ceiling installation, with built-in isolator switch.
MAD-467-IW	SIR			Yes		1	Addressable red sounder alarm with white beacon, for wall installation, with built-in isolator switch
MAD-469-IC	SIR			Yes		1	Addressable white beacon with red base for ceiling installation with deep base, with built-in isolator switch.
MAD-469-IW	SIR			Yes		1	Addressable white beacon with red base for wall installation with deep base, with built-in isolator switch.

Reference	Type	Standby consumption	Alarm consumption	Isolator switch	External power supply	Address no.	Description
MAD-472	SIR	0.35 mA	7 mA	No		1	
MAD-473	SIR	0.35 mA	7.5 mA	No		1	Connection base with built-in sounder and addressable beacon.
MAD-481	MOD	0.3 mA	1.5 mA	No	Yes	1	Addressable control module with 1 voltage-free relay input of 240 Vac and 5 A.
MAD-490	ISO	0.3 mA		N/A	No	N/A	Isolator switch module
PAD-10	INDICATOR	0.625 mA	2.5 mA		No	1	Addressable remote indicator
T P L D - 1 0 0 (CCD-102)	PANEL ZONE	0.3 mA			No	3	Gateway card to the addressable loop for conventional control panels
T P L D - 1 0 0 (CCD-103)	PANEL ZONE	0.3 mA			No	7	Gateway card to the addressable loop for conventional control panels
T P L D - 1 0 0 (CCD-104)	PANEL ZONE	0.3 mA			No	5	Gateway card to the addressable loop for conventional control panels
T P L D - 1 0 0 (CCD-108)	PANEL ZONE	0.3 mA			No	9	Gateway card to the addressable loop for conventional control panels
T P L D - 1 0 0 (CCD-112)	PANEL ZONE	0.3 mA			No	13	Gateway card to the addressable loop for conventional control panels
RLI 3-30 V					No	N/A	Action indicator for embedding