# USER
# MANUAL



SERVICIO   FUERA SERVICIO   SIRENAS TEMPORIZADAS

ALARMA   FALLO SISTEMA   SIRENAS FALLO/ANULADA

ANULAR   FALLO ALIMENTACION   SALIDAS ANULADAS

FALLO   FALLO DERIV. TIERRA   RESERVADO 2

PRUEBA   RESERVADO 1   RESERVADO 3

ACTIVAR SIRENAS   SILENCIAR SIRENAS   SILENCIAR CENTRAL   RESET

07:58
Thu Oct 11 2018

detnov

SYSTEM NORMAL

# CONTENTS

**Revision control**

| Revision | Comment | Date |
|:---:|:---|:---:|
| a | First edition | 29/11/2019 |
| b | Typographical correction and regulatory references | 05/12/2019 |
| c | Specification of correction, typographical errors and contents | 16/12/2019 |

## 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. INTRODUCTION

## 1.1. ABOUT THIS MANUAL

The purpose of this manual is to provide the user with all of the descriptions regarding procedures and technical details necessary to carry out the assembly, connection and start-up of CAD-250 fire alarm control panels.

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.

**READ ALL INSTRUCTIONS** carefully and fully before starting to install the control panel. This manual is of no use if you ignore any of the points described in it.

> If you have any queries regarding the assembly, installation or configuration of the control panel, please contact your distributor before continuing to install the equipment.

**STORE THIS MANUAL** in a place that is easy to access as it contains important instructions regarding installation and use. You may need to consult it until you familiarise yourself with the control panel.

**MAKE SURE** you have the necessary know-how to operate this control panel.

As required, the procedures are divided into one or more diagrams, depending on the complexity of the task.

> This guide does not describe the advanced features related to the configuration or operation of the control panel, as they are included in other manuals.

For more information, see:

· Installation Guide for the CAD-250 Control Panel
· Advanced configuration guide for the CAD-250 Control Panel

## 1.2. EUROPEAN STANDARDS

This panel has the distinctive CE mark to indicate that it meets the requirements of the following directives 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 |

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In addition to these directives, the manufacturing of this control panel meets the following European directives for manufacturing and waste management:

· 2011/65/EU (RoHS 2), European standard on the restriction of the use of certain harmful substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers) in small and large household appliances, computer and telecommunications equipment, consumer electronic devices, lighting fixtures, electrical and electronic tools, toys, leisure and sports equipment, medical devices, control and surveillance instruments, including industrial control instruments, vending machines and other equipment not included in the previous categories.

· 2012/19/EU (WEEE), European standard on the recycling of non-disposable products, such as unclassified municipal waste within the area of the European Union. When purchasing an equivalent new unit, return this product to your local supplier or dispose of it at the collection points designated for this purpose in order to facilitate its appropriate recycling.

## 1.3. 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 follow the warnings in this manual, as misuse or improper installation may result in incorrect assembly or even death.

These warnings alert you to serious fire and electrocution risks (high voltage areas, i.e. voltages that exceed the safety level), the risk of damage to elements of the control panel that are sensitive to static current or short circuits if the procedures or simple tips 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, fire or electrocution. |
| ⚠ | Risk for the product and system |
| 📄 | There is no risk and no observations or comments to facilitate the action |

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### 1.3.1. Notes on the use of this control panel

**KNOWLEDGE:** Make sure you have the necessary knowledge and authorisation to operate this control panel.

> ⚠**WARNING!:** The improper or negligent use of the USER access level may cause a malfunction of the facility that can cause the loss of human lives.

### 1.3.2. Installation notes

Make sure an authorised installer has checked and certified your facility.

### 1.3.3. Disclaimer

The CAD-250 control panel is a fire prevention control panel that was created to comply with the most demanding operating conditions, whilst also being able to adapt to any facility thanks to the versatility provided by its modularity.

This control panel is certified according to the requirements of the European standard EN54 part 2 (UNE 23007-2) and EN54 part 4 (UNE 23007-4).

Remember that incorrect assembly, improper installation or poor configuration of the unit are not the responsibility of the control panel manufacturer.

Nor is the installation or the state of the detection wiring the responsibility of the control panel manufacturer.

## 1.4. CONTROL PANEL FEATURES

The **CAD-250** is an addressable control panel with advanced configuration and functional features, designed to work with **DETNOV** addressable sensors, modules and addressable buttons. Its modular design provides the user with an extremely powerful and completely flexible system.

**Basic configuration (single panel):**

**10" TFT COLOUR SCREEN** (1024 x 600 pixels). The colour touchscreen allows the user to interact easily with the control panel.

**USER-FRIENDLY MULTILINGUAL INTERFACE.** The graphical interface was designed for intuitive and user-friendly browsing and allows important information to be identified quickly in each case, such as alarms or events.

**2** sounder outputs.

**1** alarm output.

**1** fault output.

**8** loops and **2000** devices (250 per loop).

**1** Ethernet connection.

**2** Class A USB 1 ports for configuration with a pen drive and 1 Class B for configuration from SC250 software.

**64** network nodes.

**1 GHZ PROCESSOR**, high-speed microprocessor core.

**512 MB RAM**. It allows all information to be processed quickly.
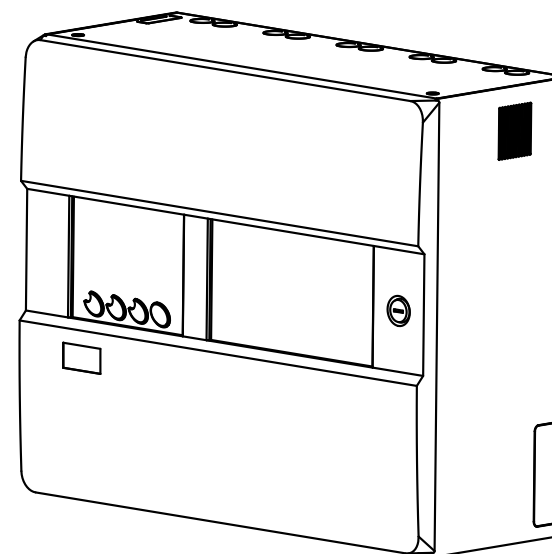


CAD-250 in simple configuration

**8 GB FLASH** of internal static memory stores the software, image databases, etc.

**64** areas, **512** programmable zones, **262** groups.

**100,000** events in the history log.

The internal static memory stores the software, databases and images, etc. With 8 GB, the system can handle the information of any facility.

## 1.5. ARCHITECTURE

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

**8000** devices

**2000** programmable zones

**250** areas

**1000** groups

**250** virtual controls or relays

**2500** special modes

| Item | Ref. | Description |
|------|------|-------------|
| A | CAD-250 | Main cabinet with interface<br>Expands up to + 8 loops<br>The ref. does not include the loops |
| B | CAD-250-BLED | Cabinet with 250 dual LEDs for zones<br>Expands up to + 8 loops<br>The ref. does not include the loops |
| C | CAD-250B | Blind cabinet to expand up to + 8 loops<br>The ref. does not include the loops |
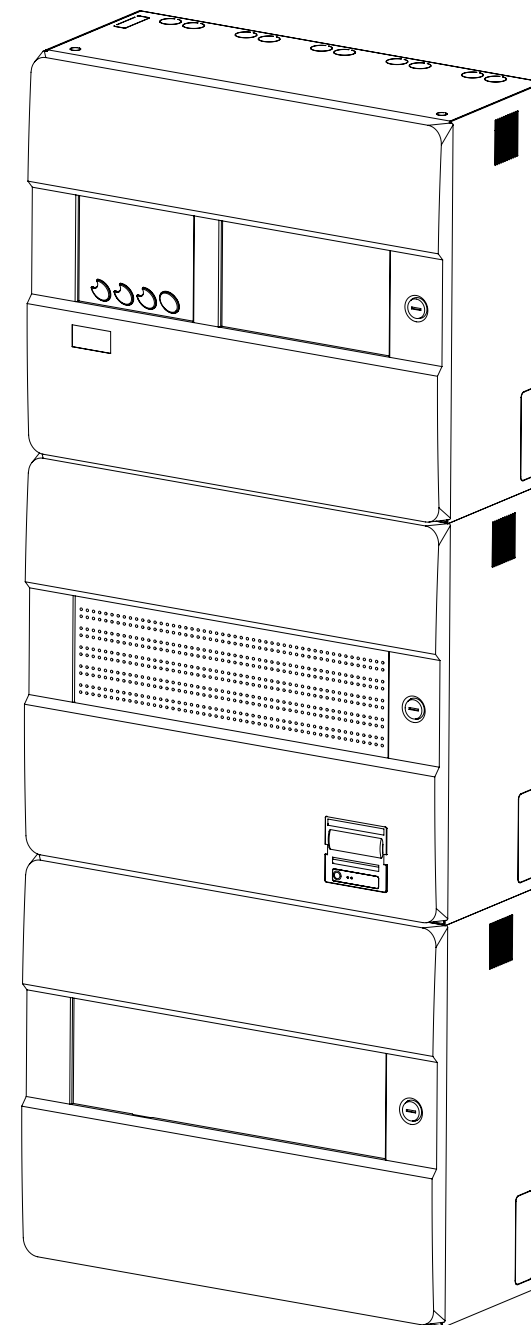
CAD-250 in 'totem' combination with 3 control panels

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## 2. 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.
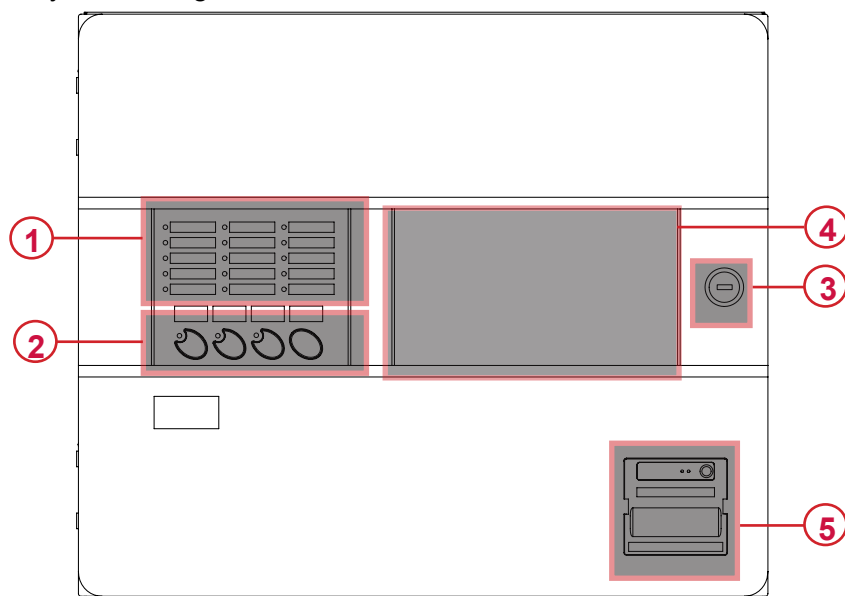


📄 The European standard EN54-2 (UNE 23007-2) sets out the requirements for this panel, including the visual indications, acoustic signals and the behaviour of the obligatory functions.

| 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 | Permits or blocks 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. |

## 2.1. GENERAL LEDS

| No. | Condition | Colour/status | Description |
|-----|-----------|---------------|-------------|
| 1 | SERVICE | Green Permanent | The control panel is powered and works correctly |
| 2 | ALARM | Red Permanent | The fire alarm condition is active from any initiator device in the loop |
| 3 | CANCEL | 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 Intermittent | 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 | An element of the system, area or zone 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 Intermittent | There is a power supply issue caused by the network, batteries or fuses |
| 8 | POWER SUPPLY FAULT | Amber Permanent | Critical system fault. In this case, the system is not operative. |
| 9 | EARTH LEAKAGE FAULT | Amber Intermittent | 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 | FAULT/CANCELLED SOUNDERS | Amber Permanent | Programmable indicator for customisable function |
| 13 | OUTPUTS CANCELLED | Amber Intermittent | Indicates that there is a fault in the sounder circuit or in a loop sounder |
| 14 | RESERVED 2 | Amber Permanent | Indicates that there is a control element or relay disabled on the main board. |
| 15 | RESERVED 3 | Amber | Programmable indicator for customisable function. |

## 2.2. GENERAL CONTROLS

| No. | Function | Symbol | Description |
|---|---|---|---|
| 16 | ACTIVATE SOUNDERS | | Press the button to activate the sounders. EVACUATION |
| 17 | SILENCE SOUNDERS | | Press the button to silence the sounders. The sounders will reactivate if a new alarm event arrives. |
| 18 | RELAYS DISABLED | | 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. The control panel will reset all of the alarm and fault conditions; it will also set all of the control activations to zero. If the incidents persist, the activation and operating process will be reactivated again. |

2. Main panel





2.4.2 Primary LEDs

2.4.1 Primary CONTROLS
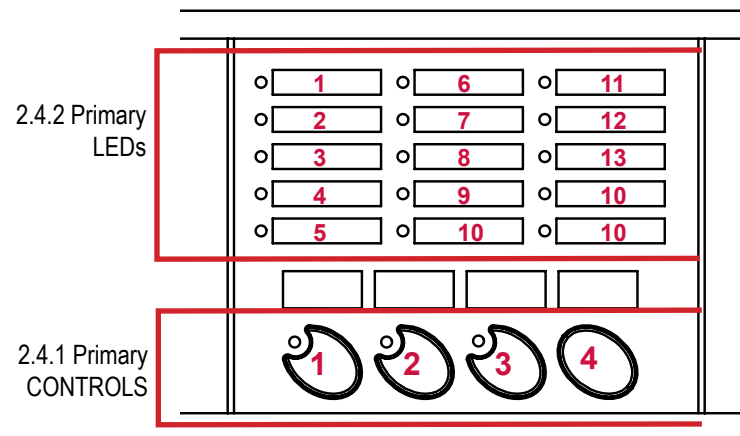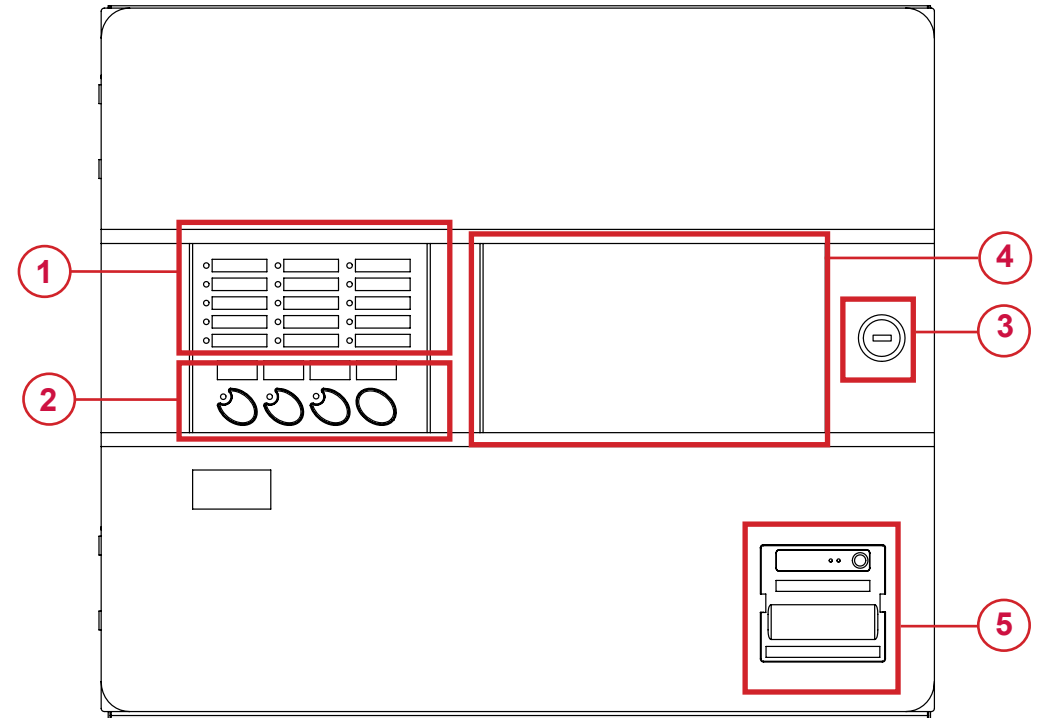
## 3. USER LEVEL

### 3.1. STANDBY SCREEN

Until an event occurs in the facility, the system states that it is **IN STANDBY**. In this status, the screen will show:
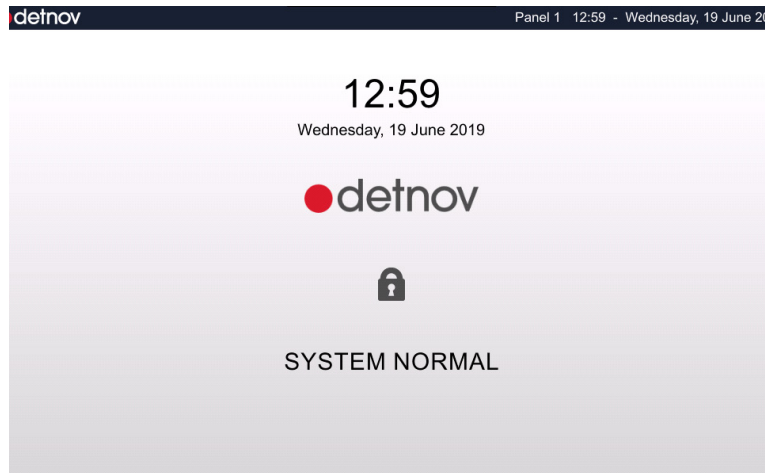


This screen shows the date and time in the **UPPER BAR**, the **CONTROL PANEL NAME** and a padlock. If you touch the padlock ( 🔓 ), you will enter the **ACCESS SCREEN**, which will ask you for a security code.

### 3.2. USER ACCESS

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

📄 Depending on the password entered, certain configuration parameters will not be available to prevent improper use of the system.

⚠️**WARNING!:** The improper or negligent use of the USER access level may cause a malfunction of the facility that can cause the loss of human lives.

If no event has occurred in the facility, the system will be in the **STANDBY SCREEN**.

If you press the padlock (🔒) that appears in the centre of the **STANDBY SCREEN**, you will enter the **ACCESS SCREEN**.
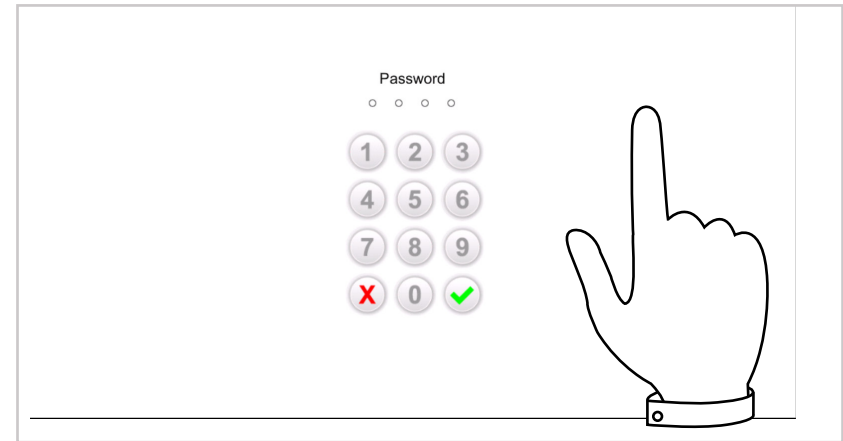


If you are in the **EVENT SCREEN**, press the padlock (🔒) in the upper right corner to enter the **ACCESS SCREEN**.

After pressing the (🔒), the screen menu will show a numeric keyboard for you to enter the password. If you make a mistake when typing it in, press X and re-enter it.

The default user password is **1111**
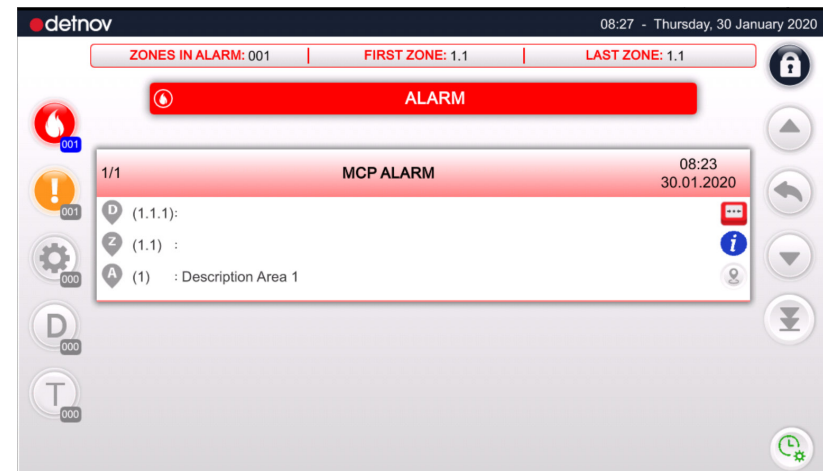
## 3.3.  USER SCREEN

Once you have entered the password, you will access the **USER MENU**, which is divided into:

| No. | Name | Posit. | Description |
|---|---|---|---|
| 1 | MAIN MENU | Left | Categorises the sections. Loops - Sectors - Manoeuvres - Log - Network - Configuration - Engineering - Maps |
| 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. |
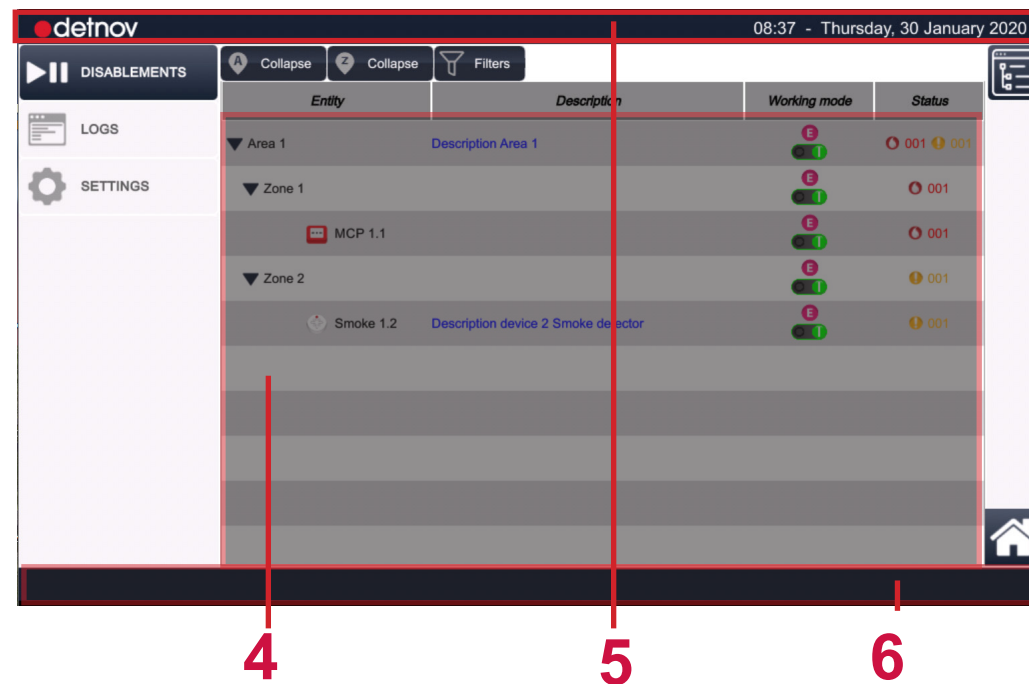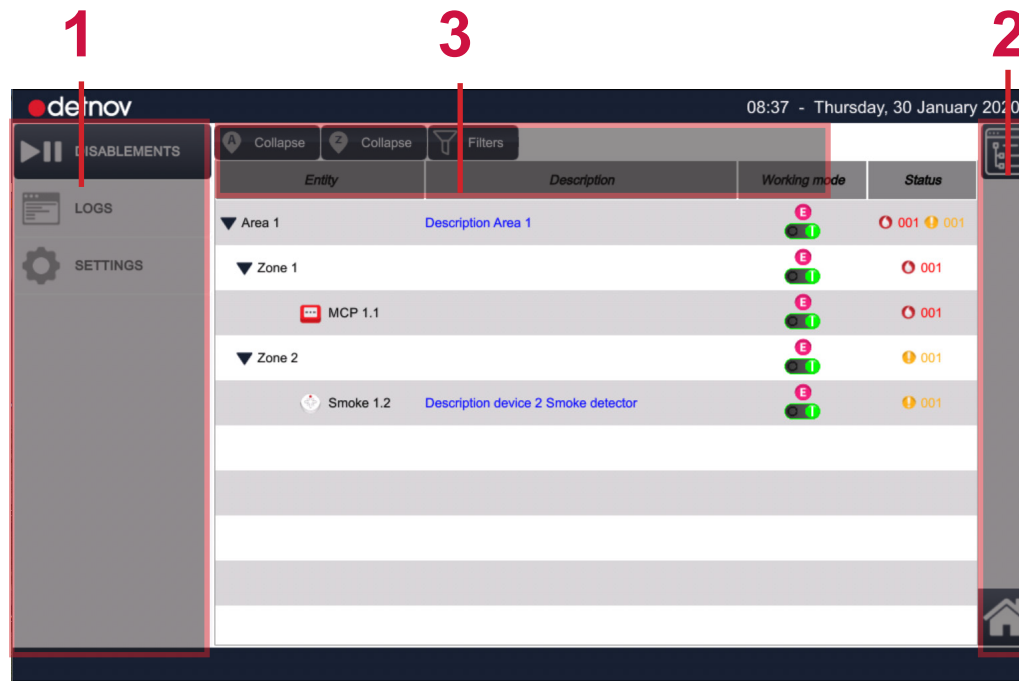
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# 4. DISABLEMENT MENU

This feature allows you to deactivate a detection facility entity, whether it is an **AREA**, a **ZONE** or a **DEVICE**. To disable a zone, press:

**DISABLEMENT** (Main menu) > **Element tree**
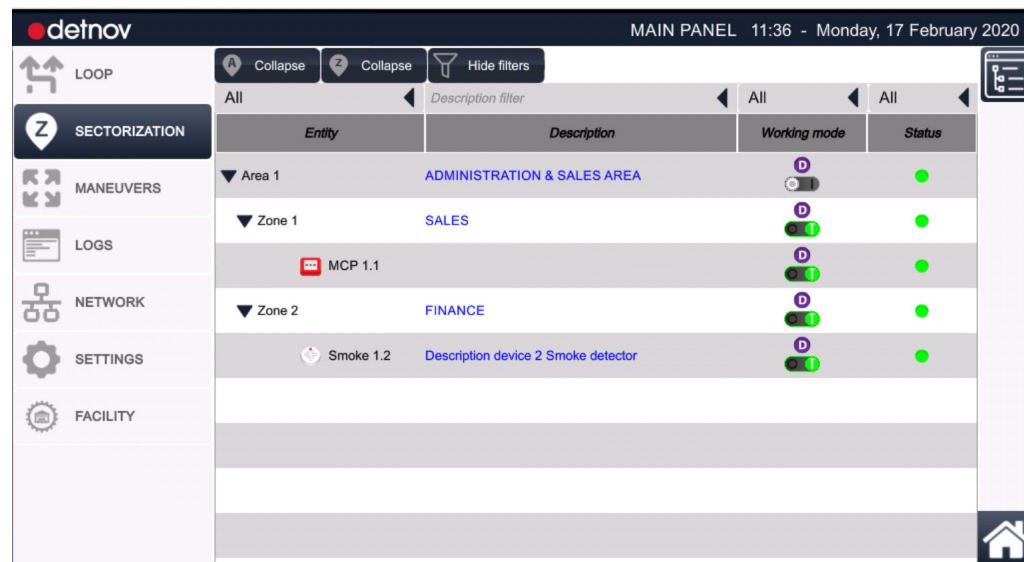


It is a useful feature, for example, if work needs to be done on a part of the building where there is a detection facility.

The ENTITY TREE displays the following information on the main screen:



| Field | Definition |
|---|---|
| ENTITY | It shows the entities that make up the facility, Area, Zone or individual device<br>In terms of the devices, the device type is identified through a characteristic icon and a text. To its right, a numbering appears that indicates **'loop', 'device address'**. |
| DESCRIPTION | Alphanumeric definition assigned for each entity. |
| WORKING MODE | It indicates the mode in which the facility's entities are operating<br><br>**ENABLED:**<br>The events of the elements are monitored.<br><br>**DISABLED:**<br>The events of the elements are NOT monitored.<br><br>**TEST:**<br>Intended for the maintenance and inspection tasks of the detection facility.<br><br>These alarms will be shown in the **EVENT WINDOW** under the **"T"** icon for 5 seconds, after which the device will reset and the alarm will disappear. |
| STATUS | Condition of the device:<br>**Green** : Normal or in standby<br>**Red** : Alarm<br>**Amber** : Fault<br>**Blue** : Technical event active |

When you press the selector of an entity, the behaviour of all associated entities in the hierarchy will change, being shown with a **D (purple, disabled)**.

On the main screen, there is **the NAVIGATION BAR**, where a series of buttons are shown that enable the following:
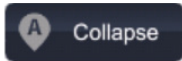
It allows the sectorisation tree of the Area upper hierarchy to be collapsed or expanded.
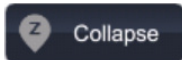
It allows the sectorisation tree of the Zones hierarchy to be collapsed or expanded.
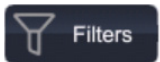
It allows view filters to be applied by type, description, mode or status.
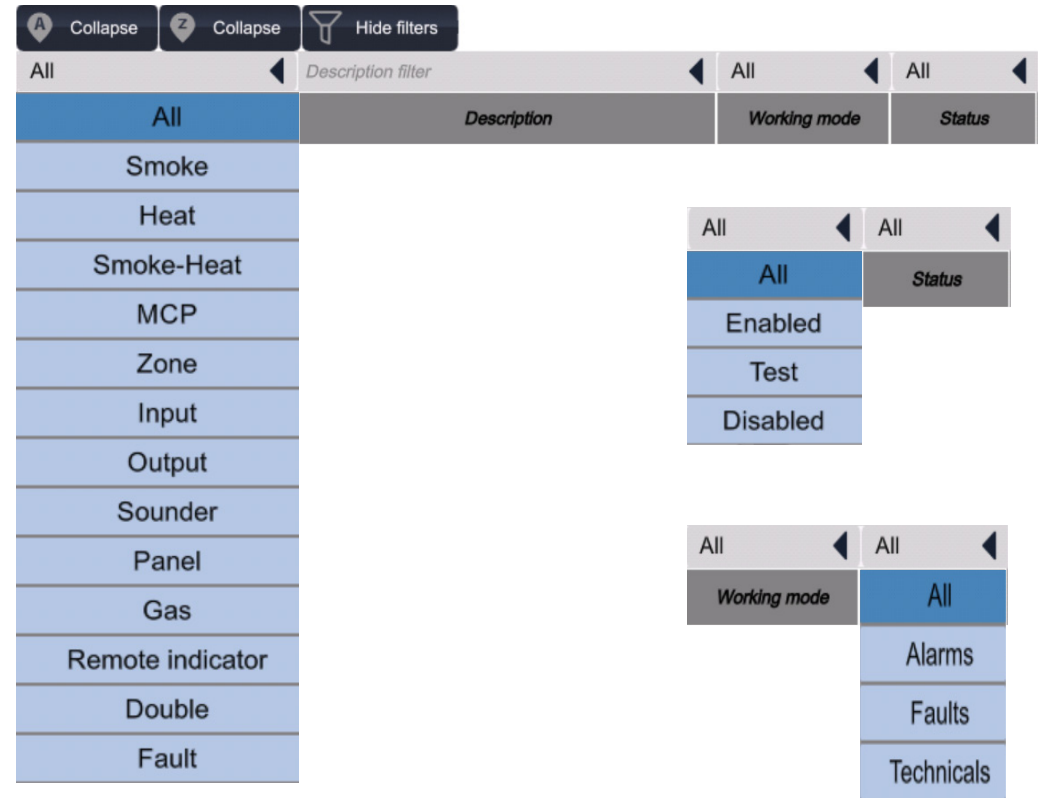


| Filter | Definition |
|---|---|
| ENTITY | It allows you to filter by the device type related to each entity |
| DESCRIPTION | It allows you to filter by an alphanumeric chain contained in the description of each entity |
| WORKING MODE | It allows you to filter the tree view by working mode, between All, Enabled, Test and Disabled |
| STATUS | It allows you to filter the tree view by entity status, between Alarm, Fault and Technical activations. |



If you disable an **AREA**, for all the zones and devices contained in that area, the distinguishing status will change to **"D"**, meaning that the events that occur in that AREA will not be monitored.
If you disable a **ZONE**, the events detected by the devices of that zone will not be monitored.
If you disable a **DEVICE**, that device will not be monitored.

Make sure the selector of dependent entities does not change. When you re-enable the upper entity. The dependent entities will recover the preset mode according to the position of their selector.

# 5. LOG MENU (historical event log)

The LOGS section shows you a list of all events recorded by the control panel.

To access the **LOGS** category, press the **MAIN MENU**:

**LOGS**



In the **MAIN VIEW**, this log shows the events detected since the last time that the event log, **LOG**, was deleted. They are shown in order of most recent to oldest

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

From the **NAVIGATION BAR**, it is possible to jump to the following pages in the event list or to filter by a date range.



📄 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:

| 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<br>Fire alarm events |
| |  FAULT OR FAILURE<br>Fault events of any system element |
| |  TECHNICAL ACTIVATIONS<br>Events caused by the activation of technical signals, which are not a fire alarm detection |
| |  TEST<br>Zone or area events when configured in test mode |
| |  INFORMATION<br>General events, such as access, area or zone changes or actions on general control function keys, such as RESET, SILENCE, etc. |
| Description | The system generates a description of the event |



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



The **"ALL"** button is active by default and all log events are shown

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

Click 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 occur on 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.
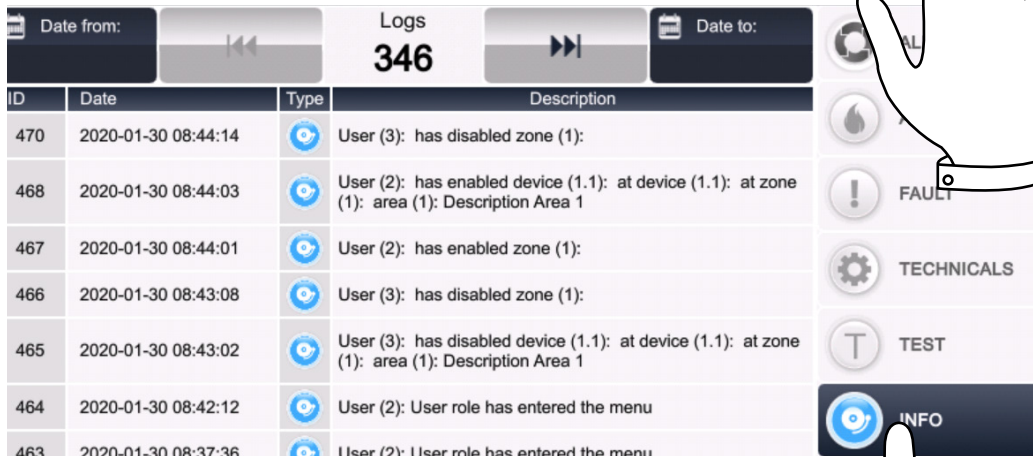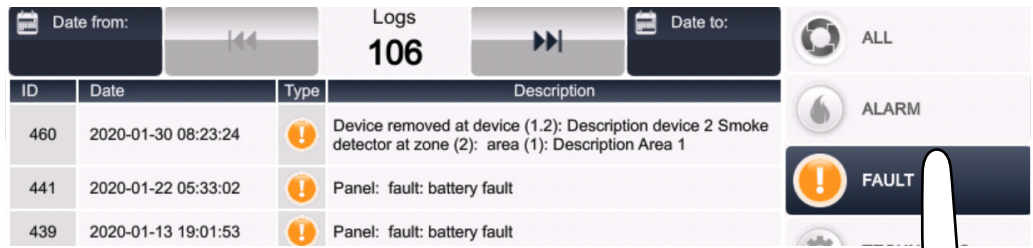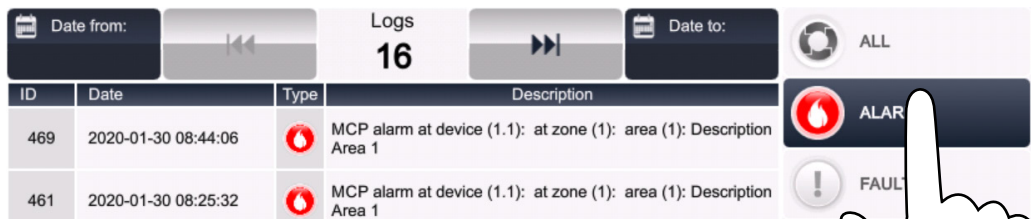
# 6. SETTINGS MENU

The settings category allows you to consult basic operating parameters of the control panel. To access the category, press:

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

## 6.1. GENERAL

The GENERAL submenu is active by default and has 2 TABS:

### 6.1.1. Miscellaneous

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

> **MISCELLANEOUS** (Tab)

The Miscellaneous tab on the general submenu shows the **CONFIGURATION TABLE**, in which the following information can be consulted:



**Main Menu** | **Submenu** | **Main View**
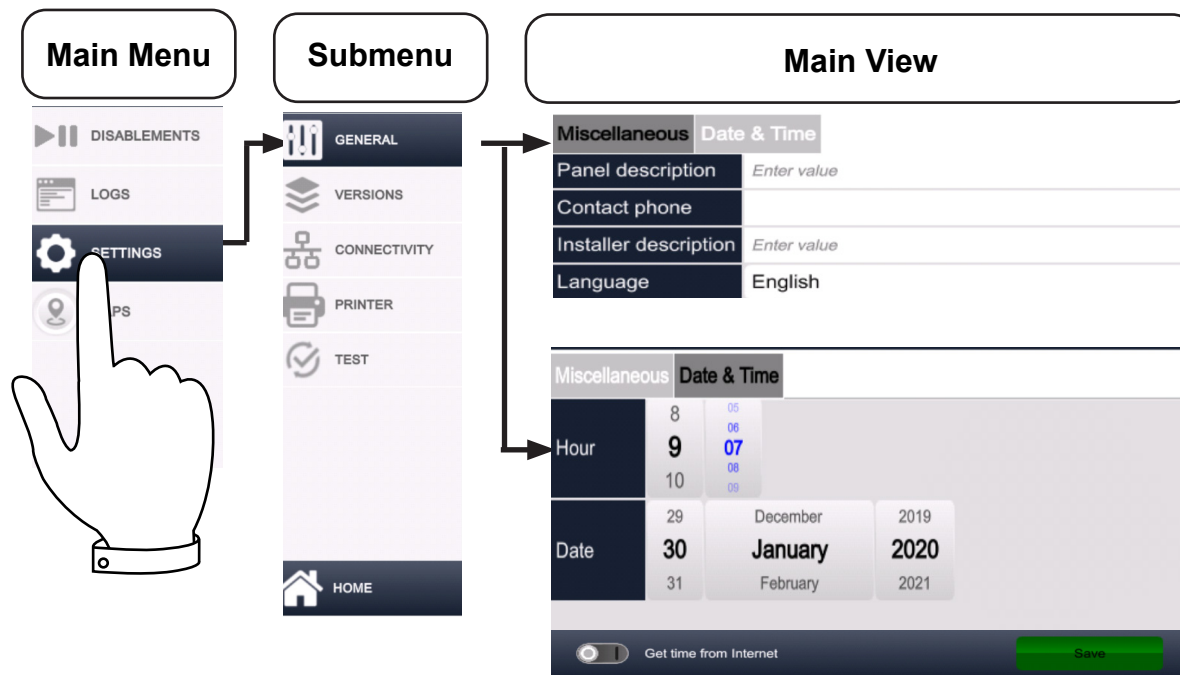
| Field | Definition |
|---|---|
| PANEL DESCRIPTION | Name assigned to the control panel. |
| CONTACT PHONE | This contact phone will be shown in the **EVENT MANAGER** when a fault is detected. |
| INSTALLER DESCRIPTION: | Installer information that will be shown in the **EVENT MANAGER** when a fault is detected |
| LANGUAGE | Current control panel language |

📄 If any of this data is not configured, notify the person responsible for the system so that they complete the information.

### 6.1.2. Date

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

In this section, the date and time of the system will be defined.

It is possible for the time to be updated automatically; for this, activate the [ Get time from Internet ] option. The system must be connected via the RJ45 port to an Ethernet network with Internet access.

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

⚠️ CAUTION: Take into account that the system date is used by certain manoeuvres, so if you modify it incorrectly, they may be executed erroneously.

📄 If you connect the control panel to the Internet via the RJ45 port, you can activate the "Update time from Internet" option, so that the time updates automatically. This option may not work in some countries.

## 6.2. VERSIONS

The version menu shows the software installed in the different components of the control panel. To access the submenu, press:

**SETTINGS** (Main menu) **> VERSIONS** (Default submenu)

This submenu allows you to consult the following values:

| Field | Definition |
|---|---|
| SOFTWARE VERSION | Control panel software version. |
| HARDWARE VERSION | It shows the version of the additional cards connected to the control panel |

## 6.3. CONNECTIVITY

From this section, the IP network configuration parameters of the control panel can be consulted. To access the submenu, press:

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

This section allows you to check:

| Field | Definition |
|---|---|
| DHCP MANUAL/ AUTO | The assignment of the control panel IP address is manual or automatic. |
| LOCAL IP | IP address of the control panel. |
| GATEWAY | IP address of the gateway |
| MASK | IP address of the subnet mask. |
| DNS | IP address of the domain name system. |
| MAC | This field shows the MAC (Media Access Control) of the control panel network adapter. |
| REMOTE CONTROL (ON/OFF) | If it is activated, you can remotely access the control panel. |

**Main Menu**

DISABLEMENTS
LOGS
SETTINGS
MAPS

**Submenu**

GENERAL
VERSIONS



**Main View**

| Versions | |
|---|---|
| Software version | 1.0.0 RC1 (Jan 30 2020) |
| Software CRC | 367A4E03AAB69F6AC7C7CFFE66D1EDA8 |
| Firmware version | Loop 1: 0.60.3 |
| | Loop 2: 0.60.3 |
| | Aux µC 1: 0.3.1 |

VERSIONS
CONNECTIVITY

| DHCP | Auto |
|---|---|
| Local IP | 192.168.11.7 |
| Gateway | 192.168.10.254 |
| Mask | 255.255.254.0 |
| DNS | Enter value |
| MAC | F8:DC:7A:16:A1:C0 |
| Remote management | |

## 6.4.  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.

### 6.4.1.  Printer

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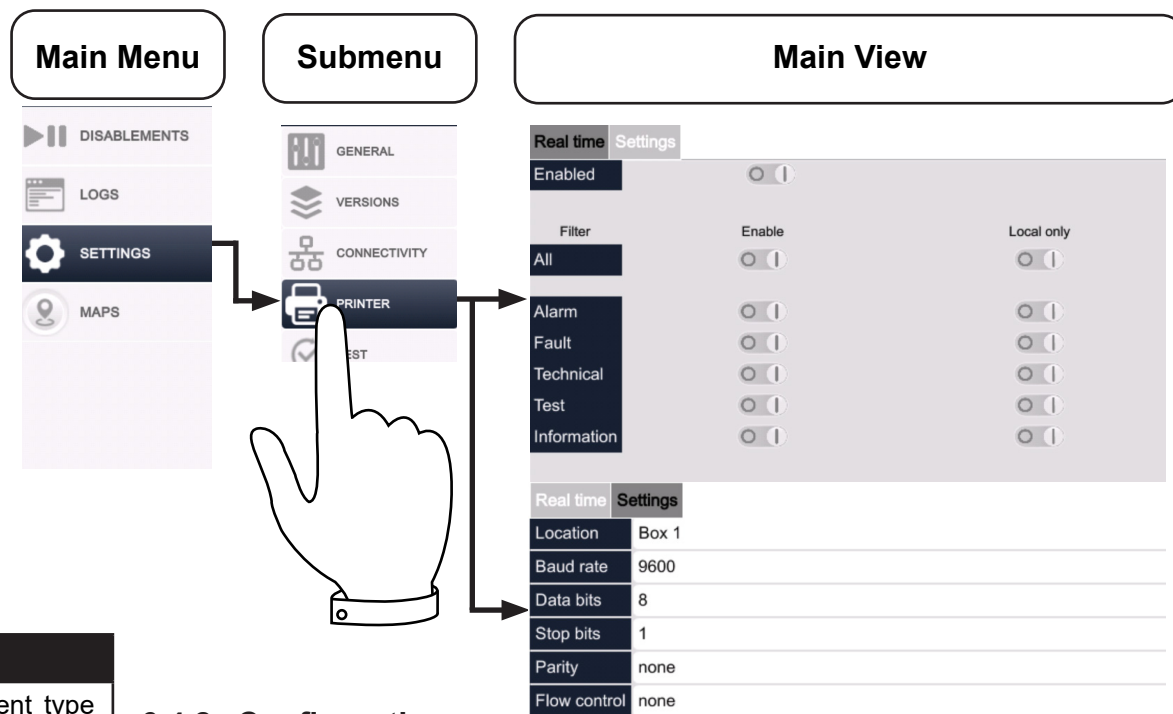
| Option | Definition |
|--------|------------|
| ENABLE | ENABLES printing for all system events or for the event type selected, see table below |
| LOCAL ONLY | If the control panel is networked, when you mark this option, it will only print the control panel events and will filter out any events from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



Main Menu    Submenu    Main View

### 6.4.2.  Configuration

In the configuration screen, you can consult the connection data of the printer.

| Field | Definition |
|-------|------------|
| LOCATION | It shows which cabinet the printer is installed in if the control panel consists of more than one section.<br>Box 1 will indicate that it is the upper cabinet containing the first loop |
| BAUD RATE | It shows the communication speed of the printer.<br>**By default:** 9600 |
| DATA BITS | It shows the number of data bits.<br>**By default:** 8 |
| STOP BITS | It shows the number of stop bits.<br>**By default:** 1 |
| PARITY | It shows whether your printer is configured WITH or WITHOUT parity.<br>**By default:** Without |
| FLOW CONTROL | It shows whether your printer has flow control.<br>**By default:** Without |

## 6.5. PANEL TEST

To access the TEST submenu, carry out the following steps:

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

> **START** (Button in the middle of the screen)

During the test process, you should check that the LEDs of the MAIN PANEL and the screen work correctly.

**Main Menu**   **Submenu**   **Main View**



**DISABLEMENTS**
**LOGS**
**SETTINGS**
**MAPS**

**VERSIONS**
**CONNECTIVITY**
**PRINTER**
**TEST**

**START**
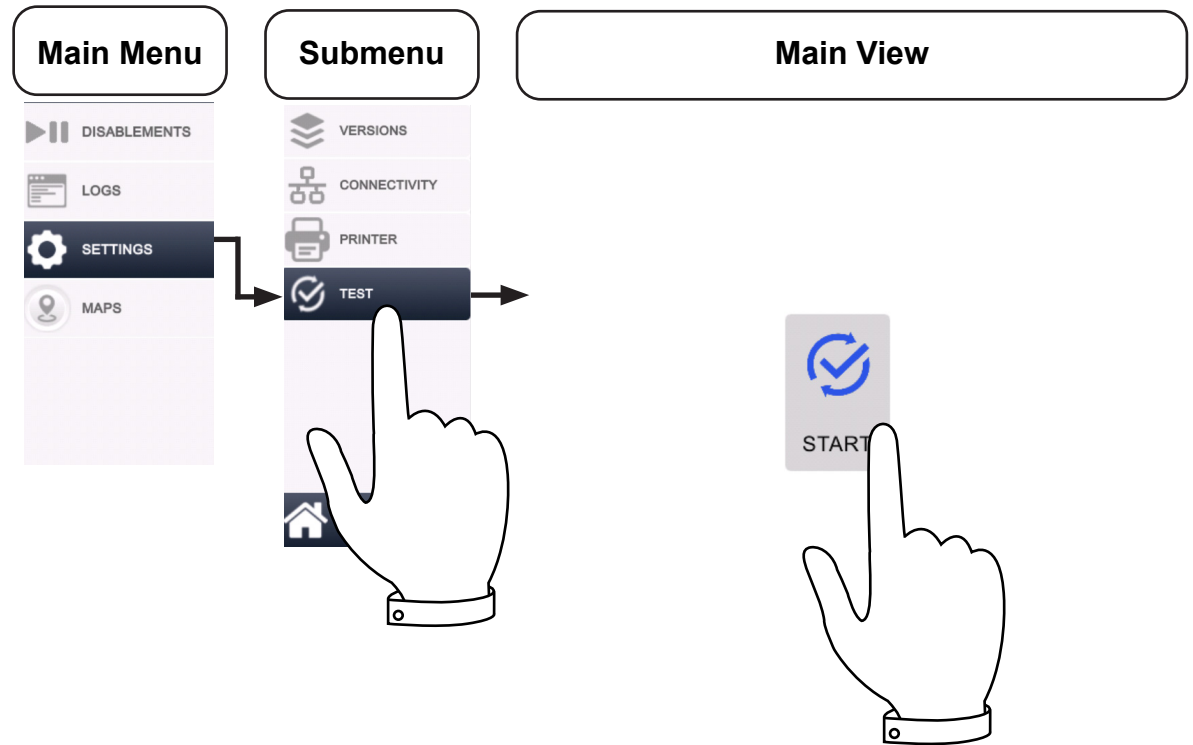
# 7. MAINTENANCE

## 7.1. LOG

According to the recommendations of the EN54 Part 14 standard, you should create a log in which you can record the following information:

## 7.2. PERIODIC TESTS

To ensure the system is fully operational and to comply with the requirements of EN54 Part 14 and BS5839 Part 1: 1998, you should carry out the following recommendations periodically:

**DAILY:** Check the panel does not indicate any fault. Otherwise, record it in the log, as well as the measures taken, for example, informing the maintenance company.

**WEEKLY:** As a minimum, test a sensor or push-button to confirm the panel and acoustic alarms are working. Test a different zone, and if possible also a unit, each week. Keep a log of the unit and zone tested each week. Record and report any anomaly.

**QUARTERLY:** Every three months you should check:

· The log entries and the measures taken.

· The batteries in standby and the charger voltage.

· As a minimum, one unit from each zone to check the functions of the panel.

· The functioning of the acoustic alarms and any connection to a remote control centre, central station, etc.

· Perform a visual inspection of the facility to check for any alterations or obstructions and prepare a test certificate.

**ANNUALLY:** The person responsible must ensure that, as well as the quarterly checks, each unit of the system is tested and a visual inspection of the wiring and equipment is performed.

## 7.3. CLEANING

The control panel must be cleaned regularly with a soft cloth dampened with water. Do not use solvents.

## 7.4. LOG.

(Log proposal according to UNE23007/14:2014

A person responsible for monitoring all entries to this log should be appointed. The name of this person (and all changes of person responsible) should be recorded.

<u>Reference data</u>

Name and address: ..........................................................................
..............................................................................................

Person responsible: ............................................ Date:.......................

Date:.....................

Date:.....................

Date:.....................

The system was installed by:...........................................................

and its maintenance is carried out according to the contract with: ........
..............................................................................................

until ......................................................................................

Call this phone number ........................................ if service is required.

All events (including fire alarms, false alarms, faults, pre-alarm warnings, tests, deactivations, temporary disconnections, service visits and any other significant event) must be recorded correctly. A brief note about any work carried out or pending should be included

# LOG

| Date | Time | Alarm counter reading | Incident | Action required | Person responsible | Completion date |
|------|------|----------------------|----------|-----------------|--------------------|-----------------|
|      |      |                      |          |                 |                    |                 |
|      |      |                      |          |                 |                    |                 |
|      |      |                      |          |                 |                    |                 |
|      |      |                      |          |                 |                    |                 |
|      |      |                      |          |                 |                    |                 |
|      |      |                      |          |                 |                    |                 |
|      |      |                      |          |                 |                    |                 |
|      |      |                      |          |                 |                    |                 |
|      |      |                      |          |                 |                    |                 |
|      |      |                      |          |                 |                    |                 |

Consumable components: ............................................................................................................

.............................................................................................................................................

.............................................................................................................................................

Date on which they must be replaced: ..........................

.............................................................................................................

.............................................................................................................

## 8. EVENT SCREEN

If an event occurs in the facility, the STANDBY SCREEN will change to this window. The EVENT SCREEN is an environment that shows the events (alarms, faults, disablements, etc.) that are being detected in the facility.

The screen is divided into various zones:

| No. | Name | Description |
|---|---|---|
| 1 | ALARM BAR | It shows if there is an active alarm, according to the EN54-2 standard. It includes a zones in alarm counter; the first zone in alarm and the last zone in alarm. |
| 2 | STATUS BAR | The status bar only shows which event list you are in, the types of event it shows may be: **ALARM**, **FAULT**, **TECHNICAL**, **DISABLED**, **TEST.** |

| No. | Name | | Description |
|---|---|---|---|
| 3 | STATUS COLUMN | | List filters according to status. Each icon includes a counter that indicates the number of active events for each status. |
| | | (flame icon) | The icon is highlighted when the counter shows 1 or more alarms. By touching the icon, the event list is filtered by that status |
| | | (! icon) | The icon is highlighted when the counter shows 1 or more faults. By touching the icon, the event list is filtered by that status |
| | | (gear icon) | The icon appears highlighted when the counter indicates 1 or more active technical signals from input modules configured as technical input. By touching the icon, the event list is filtered by that status |
| | | (D icon) | The icon appears highlighted when the counter indicates 1 or more disabled entities. By touching the icon, the event list is filtered by that status. By touching the icon, the event list is filtered by that status. |
| | | (T icon) | The icon appears highlighted when the counter indicates 1 or more entities in test status. By touching the icon, the event list is filtered by that status. The test mode is used to carry out maintenance tasks. The recorded events are not considered alarms and the devices will reset automatically a few seconds after being triggered. |
| | | (!) icon) | It shows the supplier's contact information if a fault has occurred. |
| | | (clock/gear icon) | It appears if special modes are activated and shows the information of those modes. |

| No. | Name | | Description |
|---|---|---|---|
| 4 | NAVIGATION | | On the right side of the screen there is a column of navigation icons |
| | | (lock icon) | It allows access to higher user and configuration levels |
| | | (up arrow icon) | Scroll up the list; by touching it, the previous incident will be shown successively. |
| | | (back arrow icon) | An item is highlighted only if technical events are detected, pressing it returns you to the standby screen |
| | | (down arrow icon) | Scroll down the list; by touching it, the following incident will be shown successively. |
| | | (double down arrow icon) | If you are in the last event, it will return you to the first one and it will take you to the last one if you are in the first |
| | | (!) icon) | It shows the supplier's contact information if a fault has occurred and if it was defined from the configuration menu. |
| | | (clock/gear icon) | It is highlighted if special modes are activated. When you touch the icon, a list of modes that have been configured is shown. |

| No. | Name | | Description |
|---|---|---|---|
| 5 | EVENT WINDOW | a | EVENT BAR: it describes the type of event, as well as the date and time it occurred. |
| | | b | DEVICE IDENTIFICATION: a number that codifies the device's position in the loop appears next to the icon ('control panel identification', 'loop identification', 'device address') and the description of the device. |
| | | c | ZONE IDENTIFICATION: It shows the panel number and the zone that codifies the device's position in the loop, as well as the current description of the zone |
| | | d | AREA IDENTIFICATION: It shows the area number and description associated with the event identified. |
| | | e | DEVICE TYPE: it graphically identifies the device type. |
| | | f | EVENT INFORMATION: Icon highlighted and active when there is additional information regarding the event. By touching the icon, the CONFIGURATION TABLE opens with information regarding the event, which allows certain parameters to be changed. |

# 9. TROUBLESHOOTING

This section aims to respond to the most common faults and problems you may come across when installing a CAD-250 control panel.

## 9.1. FAULTS SHOWN ON THE PRIMARY CONTROLS

The LEDs and primary controls of the CAD-250 control panel allow the user to know the status of the facility quickly and to initiate a series of actions easily. These LEDs normally indicate anomalies in the detection network or control panel.

> 📄 The European standard EN54-2 sets out the minimum requirements for this panel, including the buttons, visual and audible indications and its behaviour.
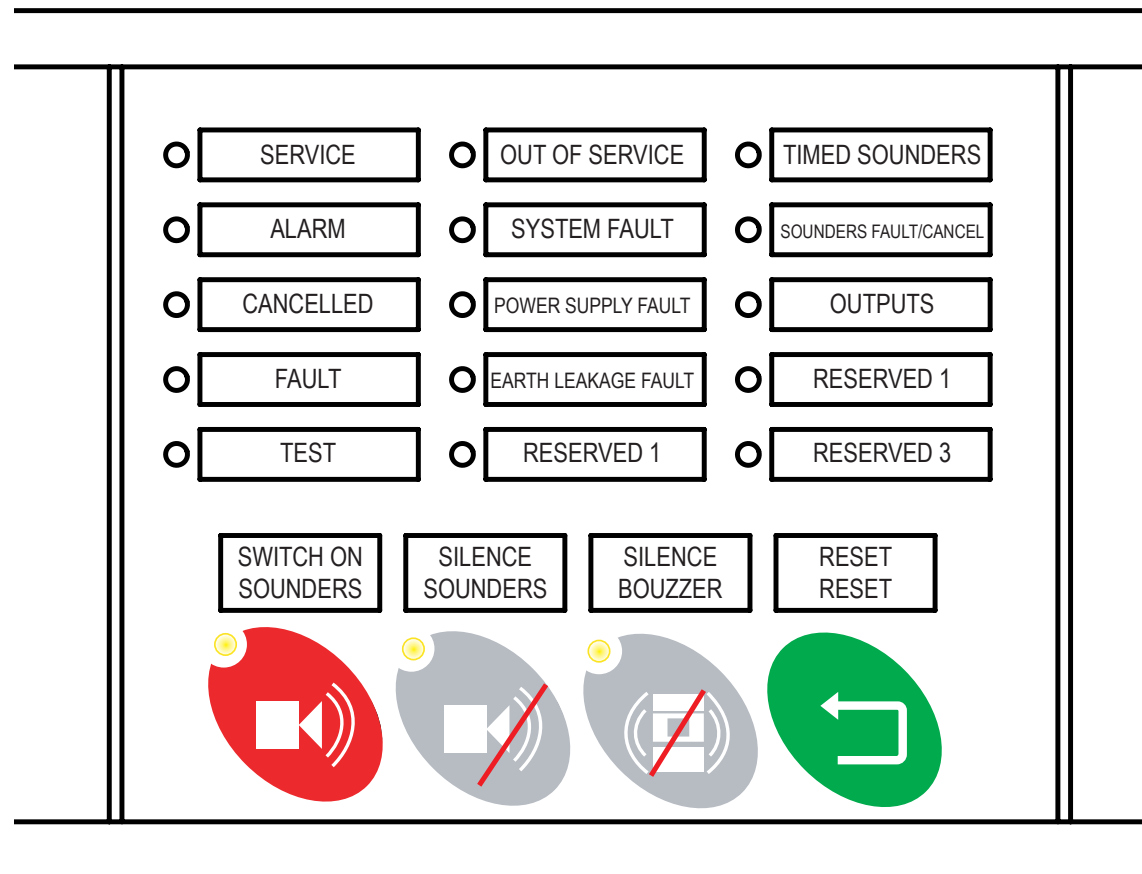
## 9.2. FAULTS SHOWN ON THE EVENT SCREEN

Under the FAULTS icon in the EVENT SCREEN, the different system faults are shown. Below is a list of errors, causes and solutions for each of them:

| LEDS | CAUSE | SOLUTION |
|---|---|---|
| SERVICE (Green) | Switched on whenever the control panel is operating and powered. | If there is no power or it is out of service, the LED will switch off. |
| ALARM (Red) | Switched on whenever an event or alarm is detected. | Switched off if the control panel has no alarm event. |
| OUT OF SERVICE (Amber) | Switches on when the control panel has no power and the battery voltage is equal to or lower than 20 V. | Switched off when it is in service and there are no issues with the power supply. |
| CANCEL (Amber) | Switched on when a device is disabled, such as the buzzer or any disabled device. | When there is no disablement or cancellation of the buzzer. |
| TEST (Amber) | Switched on when a device/zone/area is in test mode. | Remains off if nothing is in test mode |
| FAULT (Amber - flashing) | Flashes when a fault occurs. | Stops flashing when there is no fault |
| SYSTEM FAULT | The microprocessor has stopped delivering pulses to the WatchDog, meaning that it is down. | If it is off, it means there is no problem regarding communication with the central processing unit or CPU. |
| POWER SUPPLY FAULT | It activates when a fault occurs in the batteries or the power supply. | Off when everything is working correctly in terms of the batteries and the power supply. |
| EARTH LEAKAGE FAULT | When the control panel detects an earth potential that is positive relative to GND. | Off when the condition that switches it on is not met. |
| TIMED SOUNDERS | It switches on when a delay or sounder is applied, whether from the PCB or a loop device. | If there is no delay associated with the sounders |
| SOUNDERS FAULT/ CANCELLED | It switches on and flashes if there is a fault on any of the sounders. The FAULT LED also flashes. It switches on permanently, as does the CANCEL LED, when the disablement involves a sounder. | Off when neither of the previous two premises is met. |
| CANCELLED OUTPUTS | It switches on permanently when an output is disabled and is always accompanied by the CANCEL LED. For example, when an output module is disabled. | It is switched off when there is no output device disabled. |

Under the FAULTS icon in the EVENT SCREEN, the different system faults are shown. Below is a list of errors, causes and solutions for each of them:

| DEVICES | CAUSE | SOLUTION |
| --- | --- | --- |
| Open fault | This fault is due to the lack of end-of-line monitoring of some devices with this feature. For example, the input modules where monitoring mode can be configured with a switch. Where via an end-of-line resistor, "open fault" is indicated if it is not present. | Replace the end-of-line monitoring or change the switch and do not carry out the monitoring. |
| 24 V fault | A loop device needs 24 V power, such as certain input/output modules or a zone module, and this is not being carried out correctly. | To resolve it, repower the device correctly. |
| Short-circuit fault | There is a short circuit in an input device or zone module. | Check the affected device and undo the short circuit. |
| Double address fault | There are two devices with the same address in one loop. | Change the device address to another that is free. |
| Device removed | A device has been removed from the loop | Carry out an auto search or change the device type again from the configuration software to the correct type. |
| Type fault | An incorrect type has been assigned to one of the facility's devices with the configuration software. For example, there is a detector installed on address 1 of loop 1, but with the software, a push-button was assigned to that address. | Carry out an auto search or change the device type again from the configuration software to the correct type. |
| Dirty fault | Dirty fault due to a dirty detector. This fault is activated because the option: **FACILITY > LOOP > DIRTINESS NOTIFICATION** is activated. | Change the control panel's configuration so that it does not detect this fault or it cleans the detector. |
| Unconf fault | A device has been introduced in a loop without previous configuration, although it is correctly addressed and the option: **FACILITY > LOOP > NOT CONFIGURED NOTIFICATION** is activated. | Remove the device or carry out a new auto search of the affected loop. |

| LOOPS | CAUSE | SOLUTION |
| --- | --- | --- |
| Open sounder fault 1 or 2 | The end of line (4K7 resistor) of the sounders is not detected. | Fit the end-of-line resistor to ensure proper monitoring. |
| Short-circuit in sounder fault | There is a short circuit on sounder outputs 1 or 2 of the PCB. | Locate the short circuit |
| 24 V output fault | The 24 aux 0.5 A fuse on the PCB is blown. | Change the fuse. |
| Battery fault | The control panel detects that there is no battery and the option: **FACILITY > LOOP > BATTERY FAULT** is activated. | Change the battery |
| Battery charger fault | It is generated when the control panel detects that the drop on the battery terminals is more than 3 ohms. | Check and correctly connect the power supply |
| Earth fault | The control panel detects that there is an earth leakage and the option **FACILITY > LOOP > EARTH FAULT** and JUMPER JP7 are activated. | Look for the earth leakage point. |
| Main power fault | Power supply fault | Check the power input fuse, the position of the electrical protection element lever and/or the mains power supply. |

| LOOPS | CAUSE | SOLUTION |
|---|---|---|
| High temperature | The charger temperature is above the maximum | Check the battery connections. |
| Out of service | When the control panel is without power and the battery charge is below 20 V and is close to switching off. | Reconnect the power supply. |
| iso open fault (S) or (R) | The loop is open. The fault indicates whether the fault is on the output (O) or return (R) of the loop, or on both. | Locate and repair the fault in the loop. |
| iso short fault (S) or (R) | There is a short circuit in the loop. The fault indicates whether the short circuit is on the output (O) or return (R) of the loop. | To resolve it, repower the device correctly. |

# 10. TECHNICAL SPECIFICATIONS

This fire control panel meets the subsections of the following European

standards: EN 54-2:1997,

EN 54-2:1997/AC:1999,

EN 54-2:1996/A1:2006

| EN-54-2 | SUBSECTION | |
|---|---|---|
| General requirements | 4. | PASS |
| General requirements for the indications | 5. | PASS |
| Standby state | 6. | PASS |
| Fire alarm state | 7. | PASS |
| Fault warning state (annex F) | 8. | PASS |
| Disconnected state | 9. | PASS |
| Test state (option with requirements) | 10. | PASS |
| Design requirements | 12. | PASS |
| Additional design requirements for control and indication units controlled by the software | 13. | PASS |
| Marking | 14. | PASS |
| Cold (operational) | 15.4 | PASS |
| Damp heat, steady state (operational) | 15.5 | PASS |
| Impact (operational) | 15.6 | PASS |
| Vibration, sinusoidal (operational) | 15.7 | PASS |
| EMC immunity | 15.6 | PASS |
| Variation of the supply voltage | 15.13 | PASS |
| Damp heat, steady state (endurance) | 15.14 | PASS |
| Vibration, sinusoidal (endurance) | 15.15 | PASS |

The CAD-250 control panel was designed, manufactured and certified in accordance with the subsections of the following European standards:

EN 54-4:1997,

EN 54-4:1997/AC:1999,

EN 54-4:1997/A1:2002,

EN 54-4:1997/A2:2006

| EN-54-4 | SUBSECTION | |
|---|---|---|
| General requirements | 4. | PASS |
| Functions | 5. | PASS |
| Materials, design and manufacturing | 6. | PASS |
| Documentation | 7. | PASS |
| Marking | 8. | PASS |
| Cold (operational) | 9.5 | PASS |
| Damp heat, steady state (operational) | 9.6 | PASS |
| Impact | 9.7 | PASS |
| Vibration, sinusoidal (operational) | 9.8 | PASS |
| Electrostatic discharges (operational) | 9.9 | PASS |
| Damp heat, steady state (endurance) | 9.14 | PASS |
| Vibration, sinusoidal (endurance) | 9.15 | PASS |

## MECHANICAL SPECIFICATIONS

| | |
|---|---|
| MATERIALS: | Iron sheet housing with a thickness of 1.2 mm. ABS front with V0 fire resistance |
| DIMENSIONS: | Maximum measurements of the control panel (in mm):<br>Width: 533 / Height: 450 / Depth: 225 |
| WEIGHT: | Without batteries: 12.5 kg<br>With NP24-12 batteries: 30.5 kg |

## ENVIRONMENTAL SPECIFICATIONS

| | |
|---|---|
| CLIMATE CLASSIFICATION: | 3K5, (IEC 721-2-3) |
| OPERATING TEMPERATURE: | from -5°C to +40°C |
| HUMIDITY: | from 5% to 95% RH |
| PANEL PROTECTION: | IP 30, (EN 60529) |
| EMC (electromagnetic compat.): | Immunity EN 50130-4 |

## INDICATION SCREEN

| | |
|---|---|
| 10" TOUCHSCREEN: | IPS, 1024x600 pixel resolution, 300 dpi touch resolution |
| PRIMARY INDICATORS: | Service, Alarm, Disabled, Fault, Test, Out of service, Power supply fault, System fault, Earth leakage, Sounder delay, Sounder fault/disablement, Disabled relays. |
| ZONE INDICATORS (Optional): | 250 alarm indications and 250 fault indications |

## CONTROL KEYS

| | |
|---|---|
| PRIMARY CONTROLS: | Switch On Sounders, Silence Sounders, Silence Buzzer, Reset. |
| EXTERNAL CONNECTIONS: | 2 USB ports, 1 Ethernet port<br>1 RS232 port for printer |
| CABLE ENTRIES: | 28 entries with a diameter of more than 23 mm<br>421 x 55 mm on the back |
| EXPANSION INPUTS: | 2 (upper and lower)<br>measuring 50 mm x 15 mm |
| CONDUIT ENTRIES: | 2 side entries (left and right)<br>measuring 100 mm x 35 mm |
| EXTERNAL POWER INPUTS: | Rear input measuring 50 x 74 mm<br>Lower input measuring 35 x 75 mm |

## ELECTRICAL SPECIFICATIONS

| | |
|---|---|
| CLASSIFICATION: | Class I facility (the panel must be earthed) |
| POWER SUPPLY: | 88 V-264 V~(ac),<br>3 A (110 V), 2 A (230 V) |
| FUSE: | 4 A |
| INTERNAL BATTERIES: | 24 Ah-12 V |
| OUTPUTS: | 2 Sounder outputs / 2 Fault outputs / 1 Auxiliary output of 24 V / 8 Loop outputs (optional) |

## SOUNDER OUTPUT VALUES

| | |
|---|---|
| TYPE: | Inverted voltage. |
| OUTPUT VOLTAGE: | active 26 to 28 V /<br>inactive -6 V to -7 V |
| MAXIMUM LOAD: | 0.45 A |
| FUSE: | 0.5 A |
| MONITORING: | Open circuit and short circuit |

## RELAY OUTPUT VALUES

| | |
|---|---|
| TYPE: | Single pole changeover switch |
| MAXIMUM LOAD: | 28 V 10 A contacts |
| FUSE: | 0.5 A |

## 24 V AUXILIARY OUTPUT VALUES

| | |
|---|---|
| OUTPUT VOLTAGE: | 26 to 28 V |

## LOOP OUTPUTS

| | |
|---|---|
| OUTPUT VOLTAGE: | 26 Vdc to 33 Vdc (Detnov protocol) |
| MAXIMUM LOAD: | 0.45 A |
| MAXIMUM DEVICES/LOOP: | Up to 250 devices (*) |

## RS232 PORT

| | |
|---|---|
| ISOLATION: | Functional at 30 V |
| BAUD RATE: | Up to a maximum of 9600 baud |
| CONNECTOR: | Terminal block on board |
| MAXIMUM CABLE LENGTH: | 15 m |

⚠️ (*) The number of elements may be limited by local requirements, system autonomy and the requirements of the emergency plan.
Take into account the consumption of the devices at the most unfavourable time, for e.g. alarm or evacuation in relation to the maximum current of the loop and the necessary autonomy.

📄 The specifications and features described in this manual may be subject to modification without prior notice by the manufacturer.