

INSTALLATION MANUAL

EN



CCD-020 / CCD-040

Conventional fire detection control panel

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1. Introduction

1.1. About this manual

The CCD-020/040 series of conventional fire alarm control panels is designed for small and medium-sized facilities that require a simple detection system, such as small businesses, schools, warehouses, etc. These control panels have been approved according to the EN54-2 (UNE 23007-2) European standard for fire detection and alarm control panels and the EN54-4 (UNE 23007-4) standard for power supply systems, making them an investment in safety and peace of mind.

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 CCD-020/040 control panels quickly and safely.

- **READ ALL INSTRUCTIONS** carefully and fully before starting to install the control panel. If you have any queries regarding the assembly, installation or configuration of the control panel, please contact your distributor or technical support service 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.
- **MAKE SURE** that you have the necessary knowledge and the right tools to connect this control panel. Using unsuitable tools may damage the unit and jeopardise the integrity of the system. Bear in mind that these control panels must be installed by qualified staff and must meet the design and installation requirements that are applicable, such as the UNE 23007-14 standard and any local and industry-specific regulations.
- **KEEP THE PACKAGING BOX** as you may need it if you have to send the control panel to the technical support service.

Each step in the CCD-020/040 control panel's assembly, connection and start-up process includes descriptions and detailed graphics to make it easy to follow the instructions.

1.2. European Standards

This panel has the CE marking to indicate that it meets the requirements of the following EU directives.

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- 305-2011 CPR Construction Products Regulation.
- 2014/30/EU EMC Electromagnetic Compatibility Directive.
- 2014/35/EU LVD Low Voltage Directive.

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



- 2011/65/EU (RoHS), European standard on the restriction of the use of certain hazardous 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 monitoring instruments, including industrial control instruments, vending machines and other equipment not included in the above 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 notes to guide the user on how 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 installation may lead to an equipment malfunction, damage to the unit and even injury.

These warnings are classified in 3 levels, according to their importance:

WORD	DEFINITION
 WARNING!	Risk of injury, fire or electrocution.
CAUTION	Ignoring this instruction may damage the unit or jeopardise the integrity of the system.
NOTE	Advice that makes the process easier

1.4. Characteristics of the control panel

The CCD-020/040 series of conventional control panels has been certified to meet the requirements of the EN54-2 (UNE 23007-2) and EN54-4 (UNE 23007-4) standards. This range of control panels features:

- 2 detection zones (CCD-020) / 4 detection zones (CCD-040)
- 2 sounder outputs
- 1 alarm output
- 1 fault output
- 1 24 V auxiliary output

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1.5. Inventory

Before unpacking the unit, check that the packaging has no dents, holes or other damage. After unpacking the control panel, before installing it in the selected place, check that it is not damaged in any way.

Check that the equipment contains the following:

- One CCD-020 or CCD-040 control panel
- One end-of-line resistor for each detection zone (value = 4K7 ohms)
- Two end-of-line resistors for the sounder (value = 4K7 ohms)
- One 5x20 4 A fuse
- One 5x20 0.5 A fuse
- Two keys
- One quick guide
- A wire jumper to connect the batteries in series
- An insertable sheet in multiple languages

NOTE: If the control panel is damaged or any of these elements are missing, do not continue with the installation and contact your distributor.

1.6. Damage to the unit

If the unit is damaged, any accessory is missing or you have queries regarding the explanations in this manual:

- Contact your technical support service or distributor. If necessary, they will send you a document to manage your RMA request.
- Note down the invoice or delivery note number and whether the unit is still under warranty.
- Note down all of the relevant details in your RMA request: date of receipt of the product, detailed description of the fault, condition of the packaging, etc., and send it to your supplier.
- If you need to send the product to your supplier, use the original packaging, where possible.

1.7. Requirements

1.7.1. Assembly notes

KNOWLEDGE: Make sure that you have the necessary mechanical and electrical knowledge of fire detection systems to install this control panel and connect it to the detection system and mains supply.

TOOLS: To assemble the control panel, you will need:

- An electric drill
- A cross-head screwdriver (Phillips or Pozidrive)
- A small flat-head screwdriver for the terminals
- Insulating tape
- Measuring tape
- A cutter
- 4 lag screws, 3.6-4.1 mm in diameter and 40 mm long
- 4 DNP6 wall plugs (6 mm in diameter)
- A multimeter
- PG13 cable glands (the quantity necessary for the number of outputs/inputs that are going to be used)
- A crown drill bit with a diameter of 18 mm

1.7.2. Installation notes

This control panel has been designed to comply with the EN54 standard, so it must be installed in accordance with the requirements of that standard.

⚠ WARNING! Failing to meet these requirements may cause a system malfunction and constitute a breach of the EN54 standard.

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CERTIFIED INSTALLER: Make sure that the person installing the panel is a certified installer. It is also essential that the system of which this control panel is part has been designed by qualified staff and complies with the UNE 23007-14 standard, any municipal by-laws and any regulations in force in the place where the control panel is being installed.

1.7.3. Operating conditions

Before installing the CAD-020/040 series control panel, you must check that a number of conditions are met:

⚠ WARNING! Do not install the control panel if any of the following conditions are not met.

- The ambient temperature must be between -5°C and 40°C.
- The relative humidity must be between 5% and 95%, non-condensing.
- The control panel must be installed in a place where it is not subjected to vibrations.
- The control panel's controls must be accessible.
- The control panel must be properly earthed. The control panel may operate incorrectly or be damaged if it is subjected to induced transient electrical discharges.
- The wall on which the control panel is installed must be sufficiently flat, to avoid any deformation of the case and subsequent problems with closing it.
- Do not install the control panel in a place where it is difficult to access it or its connections.

NOTE: The CAD-020/040 series control panel is certified to operate under certain conditions; exceeding the operating ranges of the control panel may result in the warranty being voided.

1.7.4. Disclaimer

CCD-020/040 fire detection control panels have been designed to work under the most demanding operating conditions and they can also be adapted to any type of system, thanks to their versatility.

Remember that incorrect assembly, improper installation or poor configuration of the unit may jeopardise the integrity of the system and is not the responsibility of the control panel manufacturer.

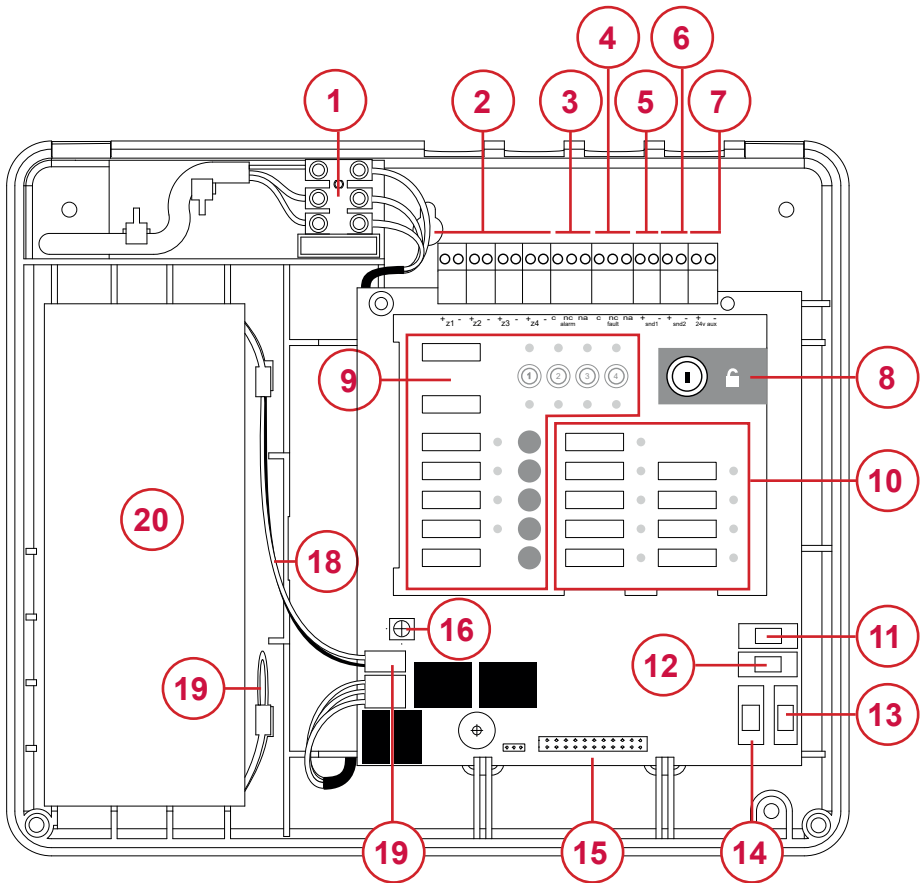
The condition of the detector wiring is also not the responsibility of the control panel manufacturer.

The accuracy of the contents of this manual is the most important aspect and has been the focus of all of our efforts. Nevertheless, the manufacturer reserves the right to change the information without prior notice.

You can access the latest version of this manual at www.detnov.com

2. General description of the series

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- | | |
|--------------------------|---|
| 1. MAINS TERMINAL BLOCK | 11. 2 A FUSE OF BATTERY |
| 2. ZONE CONNECTORS | 12. 0.5 A FUSE OF 24 V AUXILIARY OUTPUT |
| 3. ALARM OUTPUT | 13. 0.5 A FUSE OF SOUNDER 2 |
| 4. FAULT OUTPUT | 14. 0.5 A FUSE OF SOUNDER 1 |
| 5. SOUNDER OUTPUT 1 | 15. SOUNDER DELAY CONFIGURATION |
| 6. SOUNDER OUTPUT 2 | 16. START PUSH-BUTTON WITH BATTERY |
| 7. 24 V AUXILIARY OUTPUT | 17. BATTERY CONNECTOR |
| 8. LOCK KEY | 18. BATTERY WIRE |
| 9. CONTROLS | 19. BATTERY JUMPER |
| 10. INDICATOR LIGHTS | 20. BATTERIES |

3. Assembly guide

Read this chapter carefully and familiarise yourself with the various parts of the control panel, its internal components and its configuration before starting to install the system.

CAUTION: Failing to follow the instructions in this chapter may lead to the unit being damaged.

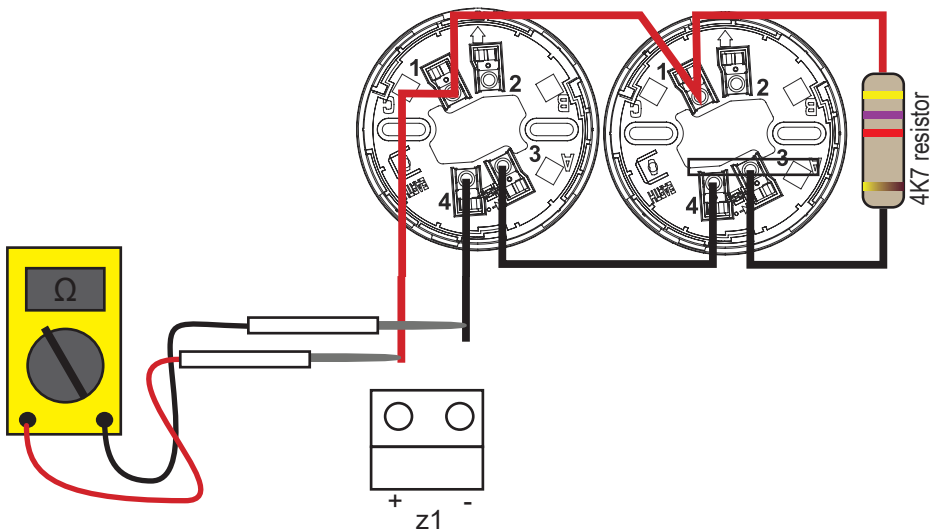
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3.1. Pre-installation checks

It is also essential that the detection system of which this control panel is part has been designed by qualified staff and complies with the **UNE 23007-14** standard, any municipal by-laws and any regulations in force in the place where the control panel is being installed.

In the unlikely event that the unit arrives damaged, contact your distributor as detailed in SECTION 1.6.

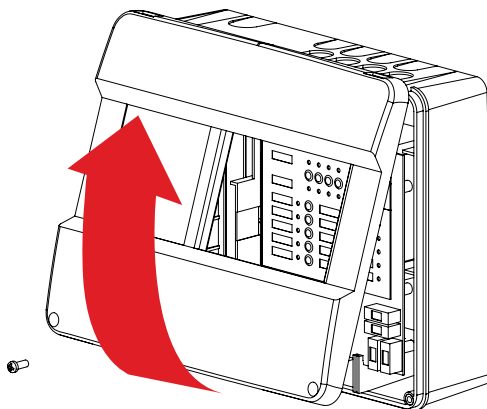
Before connecting anything, use the multimeter to check the resistance of the zone lines and the sounder lines. You can check the resistance of each line by measuring it on the + and - terminals. If the end-of-line resistor is connected, the value should be 4K7 ohms.



3.2. Installation steps

3.2.1. Removing the front cover

To access the inside of the control panel, remove the 2 screws from the front part in the lower area. After unscrewing them, remove the cover.

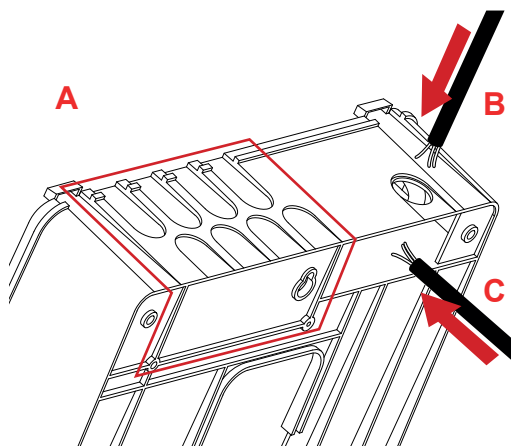


3.2.2. The control panel's wiring

Before mounting the control panel, establish where the necessary wires will pass through (the lines for the zones, sounders and connection to the mains supply).

The sounder and zone lines should be connected via the right side of the case (A), either by making holes at the top using a crown drill bit (drill the necessary holes and use PG13 cable glands) or by breaking through the rear wall.

Use the openings on the left side of the case to feed in the wires for the mains supply, either through the opening at the top (B) or the hole at the back (C).



CAUTION: Be careful when drilling the housing to make a hole for the lines, you may damage the control panel's electronics.

3.2.3. Location of the control panel on the wall

Choose a place that is easy to access and free of obstacles, where the indicator lights can be seen without difficulty and the cover can be removed easily. The control panel must be placed at a height of 1.5 m from the floor.

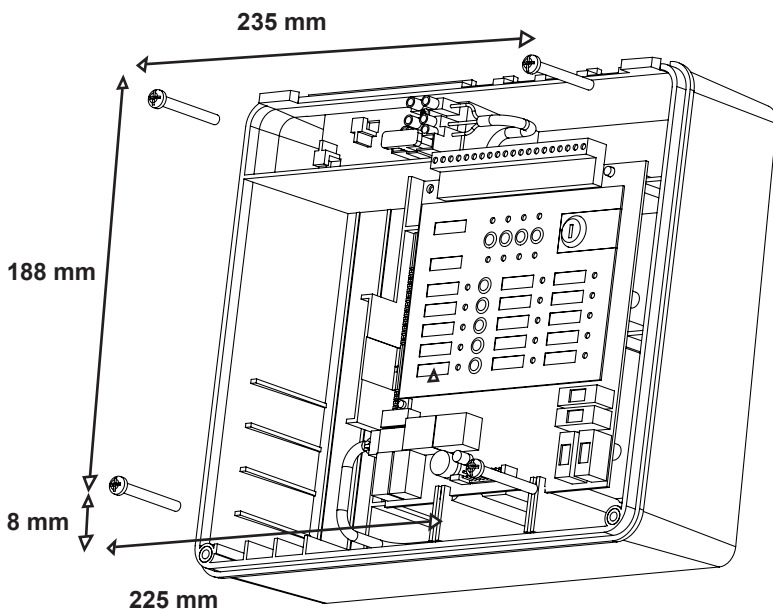
3.2.4. Fixing the control panel to the wall

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To fix the control panel to the wall, use the rear housing as a template. To do this, hold it against the wall in the desired place and mark the position of the fixing holes, making sure that the housing is level.

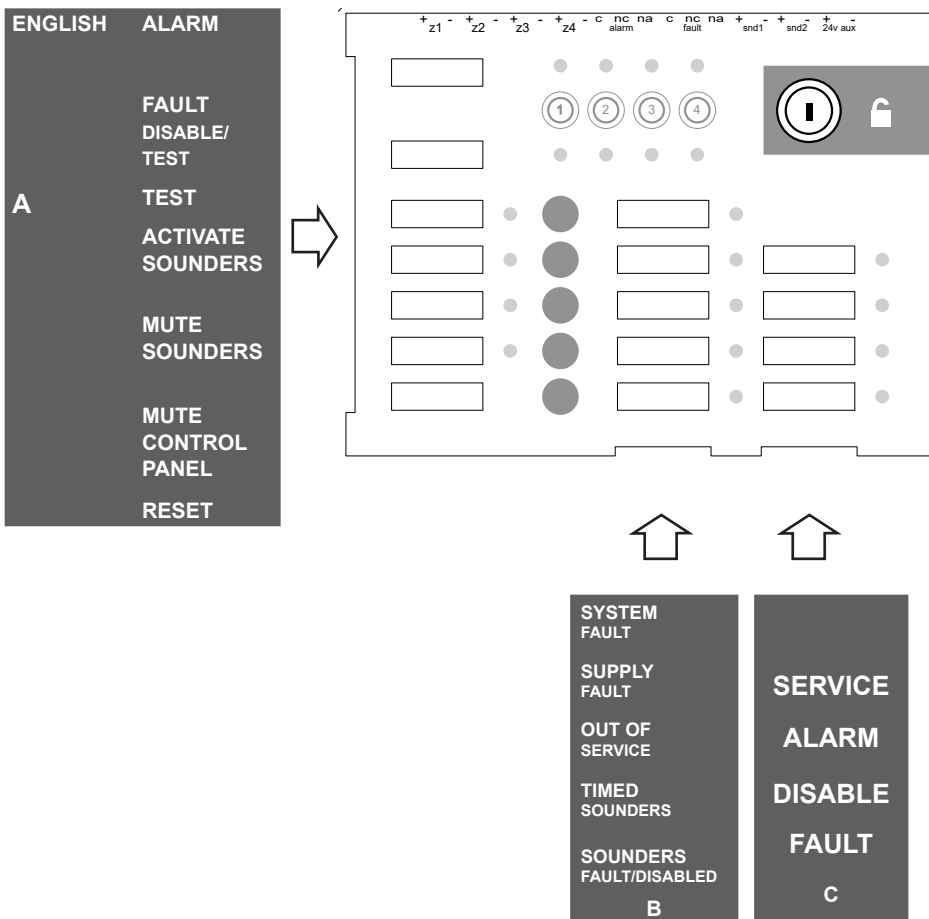
CAUTION: Do not use the rear housing as a guide when you are going to drill the holes, it may cause irreparable damage to the unit.

Drill the holes into the wall and insert the wall plugs. Use the wall plugs recommended in SECTION 1.7.1. and screw in the housing through the holes in the case, using the screws recommended in that point.



3.2.5. Language selection

CAD-020/040 conventional control panels allow you to customise the language by using the inserts included on the language sheets that are supplied. Select the required language and insert the sheet into the corresponding slot located on the lower left side of the keypad. These locations are marked with the letters A, B and C. To prevent any movement of the B and C inserts, secure them at the bottom with adhesive tape.



4. Wiring guide

The types of wiring that you will normally find in a conventional fire detection system are listed below.

4.1. Zone wiring

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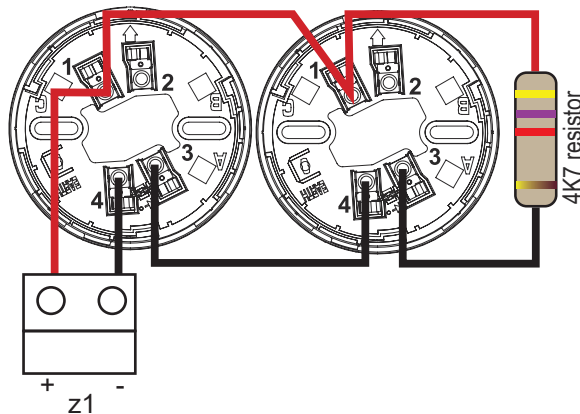
CCD-020/040 series control panels are designed to manage the signals of up to 32 detectors or 32 manual call points for each zone, as recommended in the EN54 and UNE 23007-14 standards.

A zone's wiring should begin in the control panel's terminal block and finish in the end-of-line resistor (4K7 ohms). If any zone is not going to be used, it is necessary to place the end-of-line resistor (4K7 ohms) in the terminals of this zone's terminal block so that the system does not detect a fault.

According to the standards, it is not permitted to make a star-connected wire shunt or install the end-of-line resistor on the terminal block if that zone is in use.

4.1.1. Detector wiring

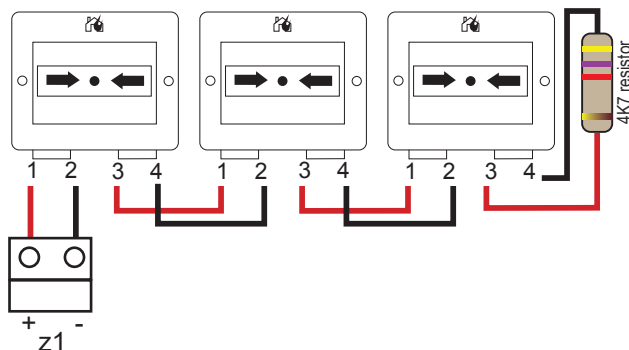
Conventional fire detection control panels are compatible with DETNOV's range of conventional detectors. We cannot guarantee that the system will work correctly with devices made by another manufacturer.



As shown in the above drawing, the + is connected to contact no. 1 (through which it enters and leaves), while the negative terminal is connected with the line entering through contact no. 4 and leaving through contact no. 3 to the following detector. At the end of the line you must place a 4K7 ohm resistor.

4.1.2. Manual call point wiring

The recommended place to install manual call points is on the walls of emergency routes, with the distance between them not exceeding 25 m. Local regulations may be stricter.



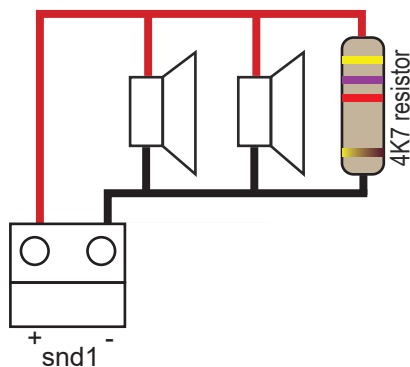
Manual call points must be installed at a height of between 1.2 and 1.5 m from the floor and be clearly visible, properly labelled and accessible. If the manual call points of another manufacturer are used, check that they are compatible, e.g. check that they use an alarm level resistor. Otherwise, it will have to be added (the value of this resistor is 100 ohms 2 W).

Remember that you must place a 4K7 ohm resistor at the end of the line.

4.2. Sounder wiring

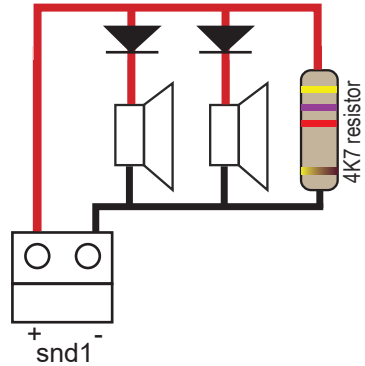
CCD-020/040 series control panels have 2 outputs for sounders on the MAIN BOARD marked as SND1 and SND2. Each output allows a maximum current of 450 mA. The wiring should begin in the control panel's terminal block and finish in the end-of-line resistor (4K7 ohms).

If any of the sounder outputs are not going to be used, it is necessary to place this resistor on the terminals of the sounder output, so that the system does not signal a fault.



According to the standards, it is not permitted to make a star-connected wire shunt or install the end-of-line resistor on the terminal block if the sounder output is in use.

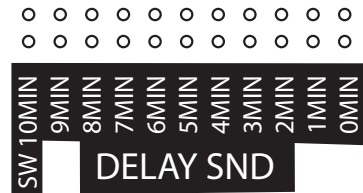
If using non-polarised sounders or bells, it is necessary to install a 1N4007 diode to avoid the effect of the reverse current.



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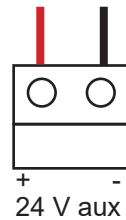
4.2.1. Sounder timer

On the bottom left part of the MAIN BOARD there is a double line with pins to configure the time delay of the sounders. This time delay is configured by placing the jumper in the corresponding position of the desired timer (between 0 and 10 minutes).



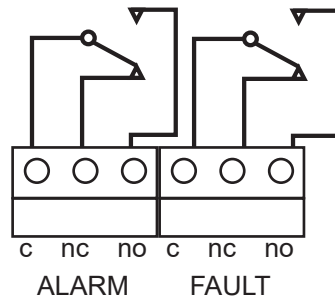
4.3. Wiring of 24 VDC auxiliary output

CCD-020/040 control panels have 1 24 VDC auxiliary output that is used to supply power to the devices that require this power. Its maximum current is 450 mA and it is protected by a fuse. Do not use this output to supply power to devices with excessive power consumption when on standby. This output is not resettable.



4.4. Wiring of voltage-free relay output

CCD-020/040 control panels have a fault relay and an alarm relay. These relays, with a maximum current of 2 A, switch when the control panel detects an alarm or fault. The fault relay is energised and, if there is a loss of power, it will signal the respective fault.



NOTE: If using the contacts to supply power to inductive loads, use a protection diode to avoid damaging the contacts.

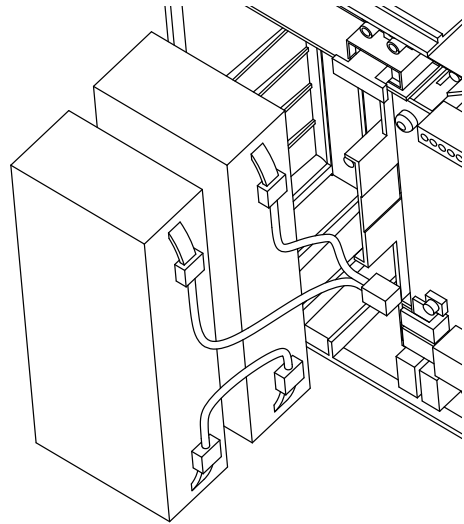
4.5. Power supply wiring

4.5.1. Battery wiring

Convention control panels require two 12 VDC batteries connected in series. The capacity of these batteries must be 2.3 A/h.

The wire jumper supplied with the control panel must be connected so that the + pole of one battery is connected to the - pole of the other.

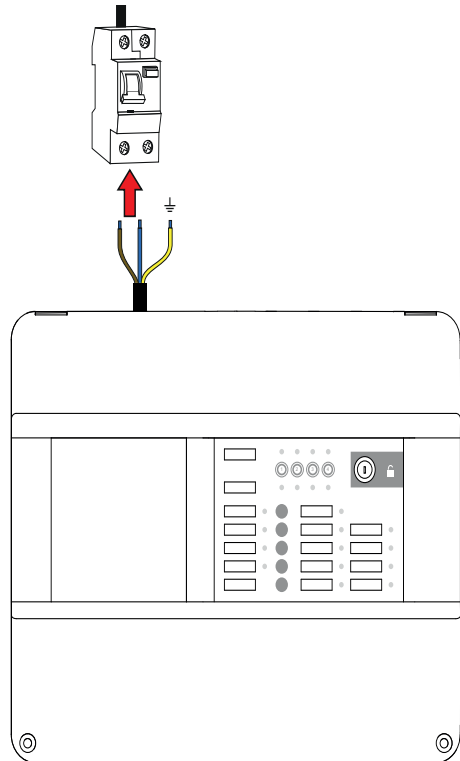
The batteries are placed in a vertical position on the left side of the case, as shown in the image to the right.



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4.5.2. Wiring to the mains

The control panel must be connected to the mains using an external double pole circuit breaker and a cable with a 1.5 mm² cross section. The mains voltage must be 230 VAC.

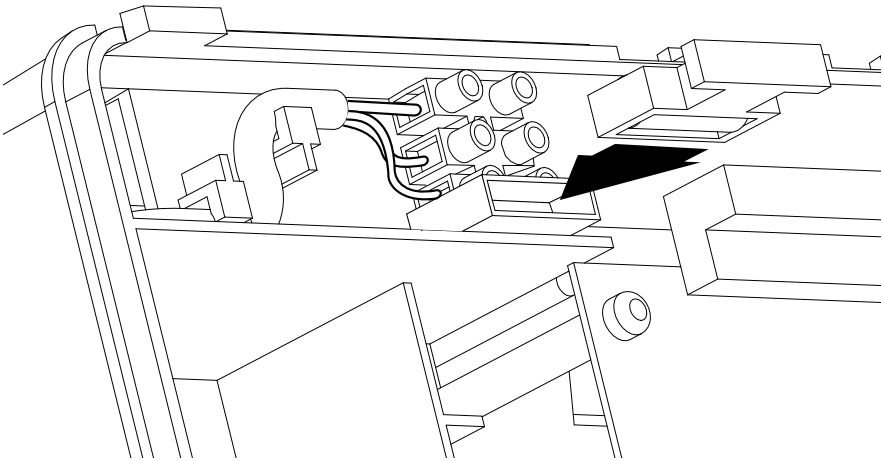


⚠ WARNING!: Do not connect the control panel to the mains if you have not finished wiring the system's components. Always disconnect the circuit breaker before handling the connections to avoid any risk of electrocution.

To ensure that the mains cable is securely attached, insert the cable into the plastic guide, using the tabs in the housing. This will prevent the cable from coming loose in the event of sudden removal.

NOTE: If the system is in an area with electromagnetic interference, it is advisable to use ferrite beads. Place them as close as possible to the connection terminals of the MAIN BOARD.

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NOTE: Never use the fuse from the mains terminal block as a switch to connect and disconnect the control panel from the mains. Use the circuit breaker's lever.

5. Start-up guide

This chapter provides a step-by-step explanation of how to correctly start up CCD-020/040 series conventional control panels.

5.1. System verification

Before supplying power to the unit, check the points detailed below:

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- Check that the unit has been installed correctly.
- Check that the zone lines have end-of-line resistors (4K7 ohms).
- Check that the sounder lines are connected with the correct polarity and that they have end-of-line resistors (4K7 ohms).
- Check that the sounder timer is configured correctly.
- Check that the mains voltage is 230 VAC.
- Check that the voltage of the batteries is above 24 VDC using a multimeter..

5.2. The system's power supply

After checking all of the above points, the correct order for connecting the power is as follows:

- Connect the power supply by activating the double pole circuit breaker.
- Connect the batteries. You can also start up the unit with the batteries. To do this, press the BAT key on the MAIN BOARD (see point 6 in SECTION 2).

When this process is completed, all of the control panel's indicator lights should be off except for the green service indicator light. If the sounder timer has been programmed, the active time delay indicator light should also be lit.

If any indicator light other than those described above is lit, investigate the source of the problem in the system and fix the fault before continuing. For further information, see the TROUBLESHOOTING section (see SECTION 8).

5.3. Testing the system

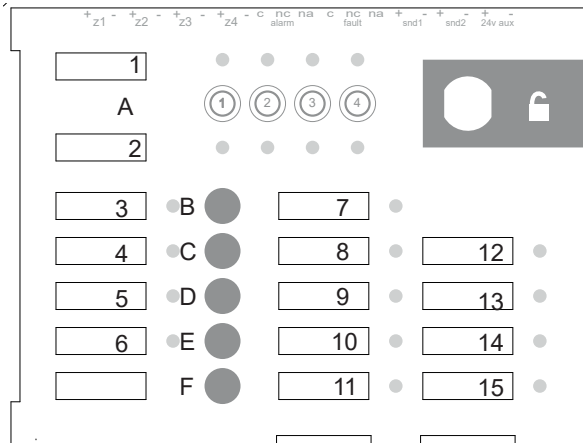
When the system is in operation, check the following points:

- Trigger a fault in each of the zones and check that the fault relay is activated and the respective indicator lights are lit.
- After triggering a fault in each of the zones, check that the alarm relay is activated and the sounder outputs are activated after the time programmed in the timer has elapsed and the alarm indicator lights are lit.
- On disconnecting the control panel's power, check that it works with batteries and that the supply fault indicator light is lit. Bear in mind that it may take a while for this fault to be displayed.
- With the mains supply connected, check that the unit continues to operate with the batteries disconnected. The supply fault indicator light will come on.

NOTE: As some faults may take a while to be displayed, pressing the TEST key can be useful for showing all of the faults immediately.

6. User guide

The functions of all of the unit's indicator lights and control keys are detailed below, as well as its operating modes.



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6.1. Indicator lights

1. Zone alarm (RED / one per zone): This is activated when an alarm is detected in the corresponding zone.

- FLASHING: The detectors have detected an alarm. In this case, no alarm has been triggered by the activation of a manual call point.
- STEADY: A manual call point has been activated. Manual call points take priority over detectors.

2. Fault/Disable/Test (YELLOW / one per zone): Associated with the operating mode of each of the zones.

- FLASHING: The associated zone is in fault or test mode.
- STEADY: The associated zone is disabled.

3. Test (YELLOW): This flashes along with indicator 2 (FAULT/DISABLE/TEST) if any zone is configured in test mode.

4. Activate sounders (YELLOW): Associated with the sounder outputs.

- FLASHING: The sounders will be activated when the time programmed in the timer has elapsed.
- STEADY: The sounders have been activated.

- 5. Mute sounders (YELLOW):** This is activated when the MUTE SOUNDERS key is pressed after the sounders have been activated.
- 6. Mute control panel (YELLOW):** This is activated when the control panel's internal buzzer is activated after pressing the MUTE CONTROL PANEL key.
- 7. System fault (YELLOW):** This is activated when a critical situation occurs in the system. In this case, the system may not be operational.
- 8. Supply fault (YELLOW):** This flashes if there is a power supply issue caused by the mains supply, the 24 VDC auxiliary output, the batteries or the fuses.
- 9. Out of service (YELLOW):** Sufficient power is not being supplied to the unit either because there is no mains power or the battery power is insufficient.
- 10. Timed sounders (YELLOW):** This is activated if a time delay has been programmed for the sounder outputs.
- 11. Sounder Fault/Disabled (YELLOW):**
 - FLASHING: There is a fault in one of the sounder lines.
 - STEADY: One of the sounder lines is disabled.
- 12. Service (GREEN):** This indicates that the control panel is being properly powered by the mains or batteries.
- 13. General alarm (RED):** This is lit when the unit detects an alarm condition in any of its zones:
 - FLASHING: Alarm triggered by automatic detection (detectors). In this case, no alarm has been triggered by the activation of a manual call point.
 - There may be restrictions for connecting detectors and alarm manual call points in the same zone.
 - STEADY: A manual call point has been activated. Manual call points take priority over detectors.
- 14. Disable (YELLOW):** If any zone is disconnected, this will be lit, as well as the yellow indicator light of the zone in question. If any sounder line is disconnected, this will be lit together with the SOUNDER FAULT/DISABLE indicator.
- 15. Fault (YELLOW):** This flashes if any fault is detected in the system. Check the panel's individual indicators described in this section to identify the source.

6.2. Audible indicators

A. Alarm indicator:

When an alarm situation occurs, the internal buzzer is activated continuously.

B. Fault indicator

If a fault occurs and there is no alarm, the buzzer is activated intermittently. Remember that the alarm audible indicators take priority over the fault indicators.

C. System fault indicator

In this situation, the internal buzzer is activated continuously.

6.3. Control keys

A. Zone keys

The zone keys connect and disconnect the corresponding zone or put it in test mode. When pressed once, the corresponding zone is put in test mode, when pressed twice, the zone is disabled. If a zone is disabled, the DISABLE indicator and the corresponding FAULT/DISABLE/TEST indicator will be activated. See point G in this section.

B. Test

Holding down this key for a few seconds will make all of the indicators light up for a few seconds and, if there is any type of fault, this will be displayed immediately. If the control panel is in test mode, pressing this key will return it to standby mode. See point G in this section.

C. Activate sounders

This immediately activates the sounders. In this case, the time delay configuration of the sounders is overridden if configured. See point G in this section.

D. Mute sounders

This deactivates the sounders when they have been activated and disconnects them if they have not. In the latter case, the general disconnected indicator and sounder disconnected indicator will be lit. See point G in this section.

E. Mute control panel

This stops the internal buzzer if it is active and the mute control panel indicator is lit. The indicator will be turned off when the buzzer is reactivated.

F. Reset

This key returns the system to standby mode. See point G in this section.

G. Lock key

When the key is in the closed position, the keypad is disabled and pressing the keys will have no effect, except for the MUTE CONTROL PANEL key. Turn the key to the open position to enable the keypad.

6.4. Operating modes

6.4.1. Standby mode

The unit is on standby when there is no type of fault, alarm, disconnection or test. In this case, only the service indicator will be on and the other audible and light indicators will be off. The delay mode indicator may be active, depending on the programming of the timer.

6.4.2. Alarm mode

The unit is in alarm mode when any of the zones is in alarm mode. Alarms are indicated as follows:

- GENERAL ALARM INDICATOR ACTIVE: Flashing if the alarm was triggered by a detector or steady if it was triggered from a manual call point.
- ZONE ALARM INDICATOR ACTIVE: Flashing if the alarm was triggered by a detector or steady if it was triggered from a manual call point.
- AUDIBLE INDICATOR ACTIVE: Continuously.
- ALARM RELAY ACTIVATION.
- SOUNDER ACTIVATION: When the time programmed in the timer has elapsed, sounders will be activated.

Actions in the event of an alarm. When in alarm mode, the following actions can be taken:

- **PRESS THE MUTE CONTROL PANEL KEY:** The buzzer will be muted and the muted buzzer indicator will be activated.
- **PRESS THE RESET KEY:** The unit will return to standby mode. We do not recommend resetting the unit until the cause of the alarm has been resolved.
- **PRESS THE ACTIVATE SOUNDERS KEY:** This will override the programmed timer and the sounders will be activated immediately. If the sounders are activated, it will not have any effect.
- **PRESS THE MUTE SOUNDERS KEY:** If the sounders are active, they will be deactivated. If the time programmed for the activation timer has not elapsed, this will be overridden.

NOTE: The key must be turned to the ON position when pressing any key for it to have any effect, except for the MUTE CONTROL PANEL key.

6.4.3. Fault mode

The unit is in fault mode when there is any fault in the unit or the system. Faults are indicated as follows:

- **GENERAL FAULT INDICATOR ACTIVE:** This will flash on and off.
- **ACTIVE FAULT INDICATORS:** These will flash on and off, depending on the type of fault (zone, power supply, sounders).
- **AUDIBLE INDICATOR ACTIVE:** Intermittently.
- **FAULT OUTPUT ACTIVATION.**

Actions in the event of a fault. When in fault mode, the following actions can be taken:

- **PRESS THE MUTE CONTROL PANEL KEY:** The buzzer will be muted and the muted buzzer indicator will be activated.
- **PRESS THE RESET KEY:** The unit will return to standby mode. See SECTION 9, which contains a list of the most common faults and how to fix them.

NOTE: The control panel has self-resettable faults. If the control panel is in fault mode and said fault is fixed, this fault will cease to be indicated without any intervention.

6.4.4. Disconnected (disabled) mode

CCD-020/040 series control panels allow zones and sounders to be disconnected. When a zone is disconnected, the control panel will not monitor the disconnected zone, so it is important not to use this function unless it is strictly necessary. The disconnected mode is indicated as follows:

- **DISABLED INDICATOR:** Continuously active.
- **DISABLED ZONE INDICATORS:** This will be continuously lit, indicating the disabled zone.
- **DISABLED SOUNDER INDICATOR:** This will be continuously lit, indicating that the sounders are disabled.

Zone connection/disconnection actions. A zone is connected and disconnected by pressing the zone key after enabling access to the keypad (section 6.3, point G):

- **CONNECTED ZONE + 2 PRESSES OF THE ZONE KEY:** Zone disconnected.
- **DISCONNECTED ZONE + 1 PRESS OF THE ZONE KEY:** Zone connected.

Sounder output connection/disconnection actions. Sounders are connected and disconnected using the mute sounder and activate sounder keys:

- **SOUNDERS CONNECTED + PRESSING THE MUTE SOUNDERS KEY:** This will disconnect the sounders.
- **SOUNDERS DISCONNECTED + PRESSING THE ACTIVATE SOUNDERS KEY:** This will connect the sounders.

6.4.5. Test mode

This operating mode is designed to facilitate the maintenance of the system. The unit is in this mode when any of the zones is set to test mode. This mode is indicated as follows:

- **GENERAL TEST INDICATOR:** This will flash on and off.
- **ZONE TEST ACTIVE INDICATORS:** The indicator for the zone that is in test mode will flash on and off.

In this operating mode, any alarm triggered in the zone that is in test mode will be shown on the unit for 3 seconds. After that time, the unit and detection zones will be reset automatically.

Steps to configure test mode. The test mode configuration of a zone is activated by pressing the key of the zone that you want to configure in that mode. To deactivate the test mode for a zone, follow these steps after enabling access to the keypad (section 6.3, point G):

- PRESS THE KEY OF THE CORRESPONDING ZONE: Test mode is activated.
- PRESS THE GENERAL TEST KEY: Test mode is deactivated.

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6.4.6. Out of service mode

The unit enters out of service mode when there is no power supply and the voltage of the batteries is below 22 V. When in this mode, the control panel will not display any event that occurs in the system and, therefore, no alarms or faults will be detected.

The fact that the unit is out of service is indicated as follows:

- GENERAL FAULT INDICATOR STEADILY LIT
- OUT OF SERVICE INDICATOR LIT STEADILY
- AUDIBLE INDICATOR ACTIVATED CONTINUOUSLY
- FAULT OUTPUT ACTIVATED

Actions in out of service mode. The only actions that can be taken are as follows:

- PRESS THE MUTE BUZZER KEY TO STOP THE AUDIBLE INDICATOR.
- RESTORE THE MAINS SUPPLY (220 V).
- REPLACE THE BATTERIES WITH ONES THAT ARE CHARGED.

6.4.7. System fault mode

System fault mode occurs when a critical situation has occurred in the system and it is not working correctly. System faults are indicated as follows:

- GENERAL FAULT INDICATOR STEADILY LIT
- OUT OF SERVICE INDICATOR LIT STEADILY
- AUDIBLE INDICATOR ACTIVATED CONTINUOUSLY
- FAULT OUTPUT ACTIVATED

6.5. What to do in the event of an alarm

Conventional control panels are designed to ensure an effective response in the event of a fire. You should familiarise yourself with the unit in order to act correctly in a critical situation.

NOTE: Read the following steps carefully, as they will be extremely helpful in the event of an alarm.

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1. • **KEEP CALM:** The control panel will activate the bells and sounders that alert you of an issue, which may make you feel nervous and prevent you from reacting appropriately.
2. • **UNLOCK THE KEYPAD:** The person responsible for the unit, who should have a key that gives them access to the unit's keypad controls, will unlock the keypad.
3. • **MUTE THE CONTROL PANEL:** The person responsible for the unit must press the MUTE CONTROL PANEL key to mute the internal buzzer and, if they want to mute the sounders, they must press the MUTE SOUNDERS key.
4. • **IDENTIFY THE ALARM:** The person responsible will be able to identify the alarm as the indicator lights on the panel will show the type of alarm that has been detected by the system.
5. • **ACT:** When the cause of the alarm has been identified, act in accordance with the emergency plan that is in place in each site.
6. • **RESET THE CONTROL PANEL:** When the problem has been resolved, reset the control panel by pressing the RESET button.

7. Maintenance guide

Always follow the maintenance recommendations in the EN54-14 standard.

7.1. The user

The user must perform daily and monthly checks:

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7.1.1. Daily checks: The control panel must show that it is operating normally via the service indicator light. Otherwise, make a note of the faults in the incident log book and notify the company responsible for the unit's maintenance.

7.1.2. Monthly checks: Check the state of the system by activating a detector or manual call point from each zone. Any fault detected during those tests must be noted down in the incident log book, with corrective actions being taken as quickly as possible.

7.2. The maintenance company

The maintenance company must perform six-monthly and yearly checks. During these inspections, check the following:

7.2.1. Six-monthly checks. Every six months, it should check:

- The notes in the incident log book, performing any corrective actions that may be necessary.
- The battery connections and charging voltage.
- The alarm, fault and auxiliary functions of the unit in each zone.
- It should visually inspect the unit to detect any increase in humidity or any other type of damage.
- Determine whether any structural change has been made to the system that may impair its normal operation.

7.2.2. Yearly checks. Every year, it should check:

- That each zone, detector and manual call point complies with the current local regulations.
- The unit's connections and their attachment, to verify that they have not been damaged.
- The condition of the batteries and, if necessary, it should replace them. We recommend replacing the batteries every 4 years, even if they are OK.

8. Troubleshooting

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PROBLEM	DIAGNOSIS	SOLUTION
The service indicator light is not lit.	POWER SUPPLY: There is no power supply.	<ul style="list-style-type: none"> • Check the mains supply (230 VAC). • Check the mains fuse. • Check the battery. • Check the battery fuse.
The general fault and supply fault indicators are lit, the buzzer is sounding intermittently.	POWER SUPPLY: Failure of a fuse	<ul style="list-style-type: none"> • Check the mains supply (230 VAC). • Check the mains fuse. • Check the battery connection. • Check the battery fuse. • Check the voltage of the batteries ($V_{bat} > 24 \text{ VDC}$).
The general fault and out of service indicators are lit, the buzzer is sounding intermittently.	POWER SUPPLY: Out of service	<ul style="list-style-type: none"> • Disconnect the battery until it is possible to restore the mains power supply or install charged batteries.
The general fault indicator and one of the zone fault indicators are flashing, the buzzer is sounding intermittently.	ZONES: Fault in zone	<ul style="list-style-type: none"> • Check the zone's end-of-line resistor (4K7 ohms). • Make sure that there are no crossed wires or breaks in that zone's line. • Make sure that none of the detectors are inverted. • Make sure that none of the manual call points are activated without a resistor.
The general fault and sounder output fault indicators are flashing, the buzzer is sounding intermittently	SOUNDER OUTPUT: Fault in a sounder output	<ul style="list-style-type: none"> • Check the sounder's end-of-line resistor (4K7 ohms). • Make sure that there are no crossed wires or breaks in the sounder output lines. • Make sure that none of the sounders are inverted.

9. Characteristics

Mechanical characteristics

Dimensions (height/width/depth)	282 x 240 x 102 mm
Material	ABS

Environmental characteristics

Operating temperature	Between -5°C and 40°C
Relative humidity	Maximum 95%, non-condensing
Protection rating (according to EN54-2 Sect. 12.3.1)	IP30
Environmental conditions	For Class 3K5 EN60721-3-3:1995

Zone characteristics

Models:	CCD-020	2 zones
	CCD-040	4 zones
Maximum number of elements per zone	32 detectors or 32 manual call points	
Output voltage per zone	18 VDC/29 VDC	
Maximum current per zone	84 mA	
Maximum length of the zone line	2 km	
Maximum capacity of the zone line	500 nF	
Recommended cable	2 x 1.5 mm ² twisted pair	
Maximum resistance of the zone line	44 ohms	
End-of-line resistor of the zone	4K7 ohms 1/4 W	

Alarm relay output characteristics

Voltage-free relay	1 relay with C, NO, NC contacts
Maximum switching power	2 A to 30 VDC

Fault relay output characteristics

Voltage-free relay	1 relay with C, NO, NC contacts
Maximum switching power	2 A to 30 VDC
On standby	Energised

Sounder output characteristics	
Supervised sounder outputs	2
Output voltage on standby	-5 VDC/-9 VDC
Activated output voltage	18 VDC/29 VDC
Maximum activated output current	450 mA per sounder output
Recommended cable	2 x 1.5 mm ² twisted pair
End-of-line resistor of sounders	4K7 ohms 1/4 W
SND1 and SND2 fuse	500 mA 5x20 (Fast-Acting)
24 V auxiliary output characteristics	
Output voltage	18 VDC/29 VDC
Maximum current	450 mA
Recommended cable	2 x 1.5 mm ² twisted pair
24 V aux fuse	500 mA 5x20 (Fast-Acting)
Power supply characteristics	
Mains voltage	90 VAC/264 VAC
Output voltage	Maximum 24 VDC
Mains fuse	250 VAC - 4 A 5x20 (Fast-Acting)
Maximum current	1.5 A
Battery charger characteristics	
Rated voltage	27.6 VDC at 20°C
Compensation	3 mV/°C x °C
Maximum charging current	350 mA
Rimax resistance	2.3 ohms
Battery fuse	2 A 5x20 (Fast-Acting)
Optional requirements EN54-2	
Fire alarm device(s)	Section 7.8
Output delay	Section 7.11
Dependency on more than one alarm signal	Section 7.12
Fault signals from points	Section 8.3
Total loss of power supply	Section 8.4
Fault warning transmission equipment	Section 8.9
Test condition	Section 10

