

CB200^e Extinguishing Control Panel

Installation and Commissioning Manual

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1. Introduction

Thank you for purchasing the CB200^e conventional extinguishing control panel. This panel is manufactured to meet the highest standards of reliability and will provide the user with many years of reliable service.

NOTE: You must read and understand this manual before commencing installation. Failure to correctly follow the instructions given in this manual could result in damage to the control panel and/or accidental discharge of extinguishant.

USER CONTROLS ACCESS CODE:

5 1 4

ENGINEER'S ACCESS CODE:

5 3 2 4

SEE SECTION 8. ACCESS CODE Functions FOR DETAILS

1.1 A Guided Tour of the Product

1.1.1 Exploded View

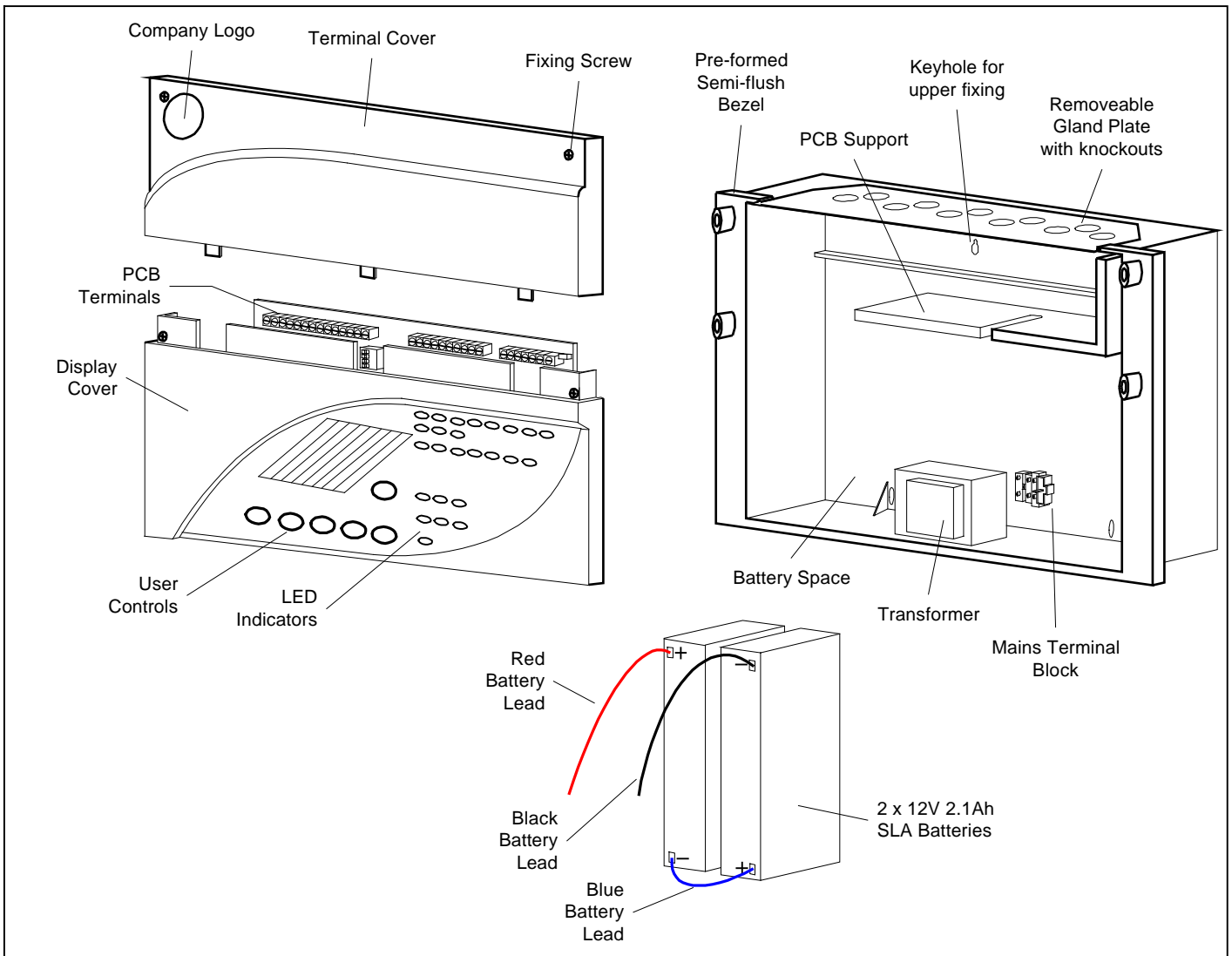


Figure 1 – Exploded View

1.1.2 Panel Display and Explanatory Notes

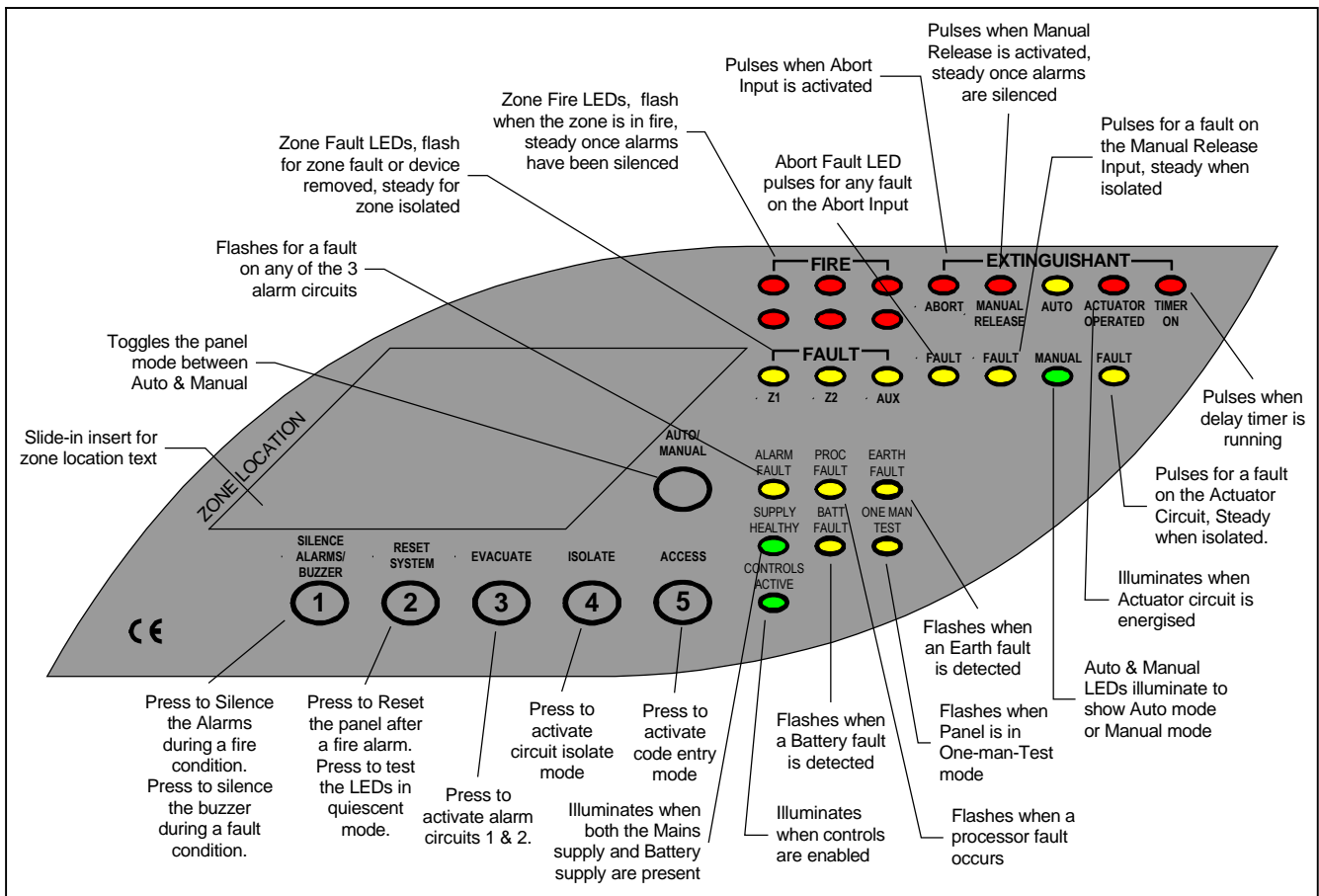


Figure 2 – Display Layout

1.1.3 Typical Terminal Wiring Schematic

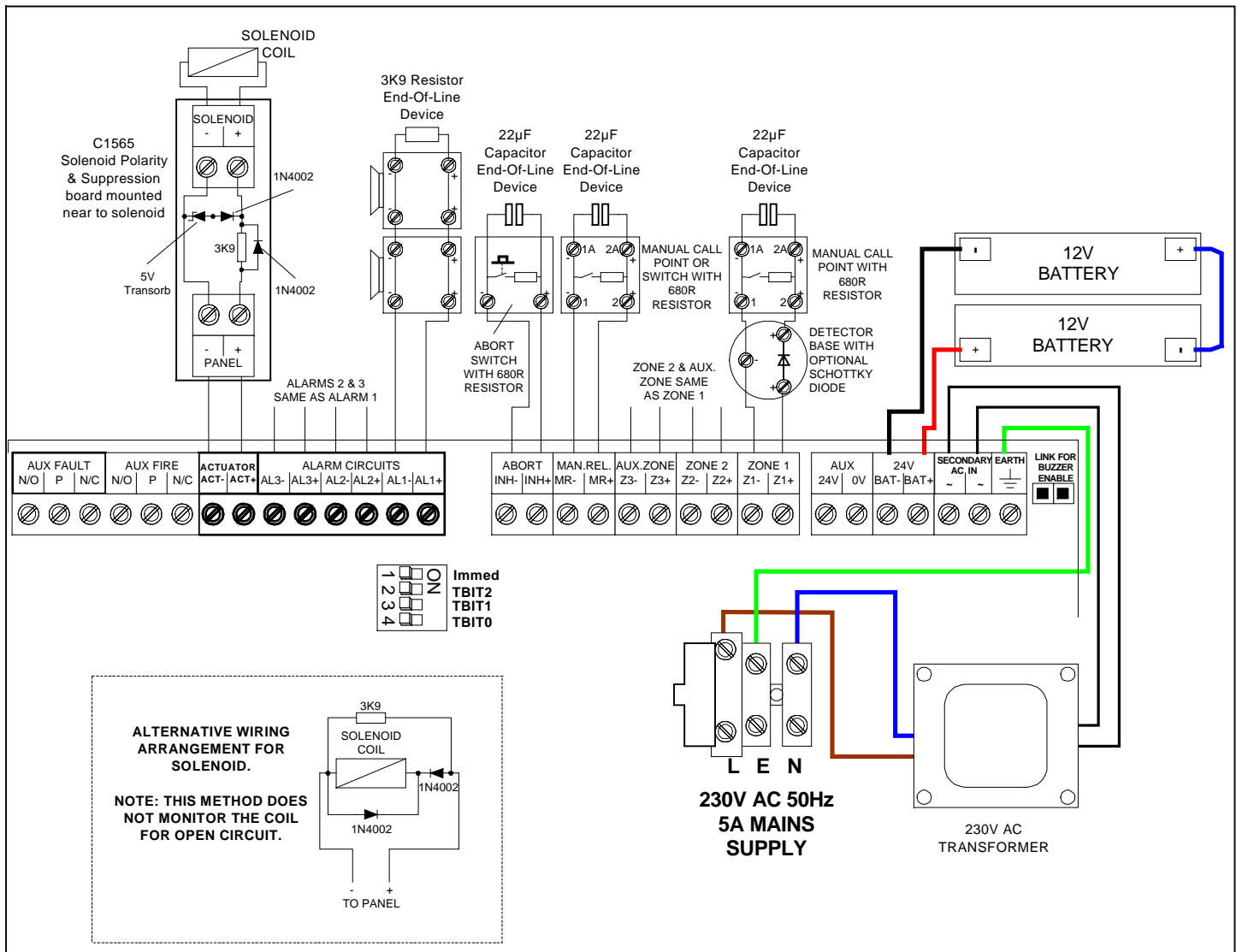


Figure 3 – Wiring Schematic

Notes:

The C1565 Solenoid Polarity & Suppression Board is not supplied with the panel and can be ordered as a separate item. It allows the solenoid coil to be monitored for open circuit faults. It contains all the components necessary for suppression of the coil, polarisation of the coil and the end-of-line resistor.

An alternative monitoring arrangement is shown in the above diagram but this does not monitor the solenoid coil for open circuit fault. (Note: 1N4002 diodes are not supplied with the panel.)

2. Cabinet Installation

WARNING: *Read this section completely before commencing installation.*



Prior to commencing installation of the control panel, ensure that adequate precautions are taken to prevent damage to the sensitive electronic components on the control board due to electrostatic discharge. You should discharge any static electricity you may have accumulated by touching a convenient earthed object such as an unpainted copper radiator pipe. You should repeat the process at regular intervals during the installation process, especially if you are required to walk over carpets.

The panel must be located in a clean, dry position, which is not subject to shock or vibration and at least 2 metres away from pager systems or any other radio transmitting equipment. The operating temperature range is 0°C to 40°C; maximum humidity is 95%.

IMPORTANT NOTES ON SEALED LEAD ACID BATTERIES:



DANGER: Batteries are electrically live at all times, take great care never to short circuit the battery terminals.



WARNING: Batteries are often heavy; take care when lifting and transporting batteries. For weights above 24 Kg, lifting aids should be used.



DANGER: DO NOT attempt to remove the battery lid or tamper with the internal workings of the battery. Electrolyte is a highly corrosive substance, and presents significant danger to yourself and to anything else it touches. In case of accidental skin or eye contact, flush the affected area with plenty of clean, fresh water and seek immediate medical attention.

Valve Regulated Lead Acid (VRLA) batteries are “low maintenance”, requiring no electrolyte top-up or measurement of specific gravity.



WARNING: Only clean the battery case with a cloth that has been soaked or dampened with distilled water. Do not use organic solvents (such as petrol, paint thinner, benzene or mineral spirits) or other materials that can substantially weaken the case. Do not use a dry cloth as this will generate static electricity, which in turn may lead to an explosion.



WARNING: Avoid operating temperatures outside the range of -15°C/5°F to +50°C/122°F for float/standby applications.

The recommended normal operating temperature is 20°C.

HIGH TEMPERATURE will reduce battery service life. In extreme cases this can cause Thermal Runaway, resulting in high oxygen/hydrogen gas production and battery swelling. Batteries are irrecoverable from this condition and should be replaced.

LOW TEMPERATURE will prolong battery life but reduce output capacity.



DANGER: Do not incinerate batteries. If placed in a fire, the batteries may rupture, with the potential to release hazardous gases and electrolyte. VRLA batteries contain substances harmful to the environment.



DANGER
Harmful fumes

Exhausted batteries must be recycled. Return them to the battery manufacturer or take them to your Council waste disposal site for appropriate disposal.

ELECTRICAL SAFETY:

The volt-free relay contacts provided within the panel must not be used to directly switch any voltage that exceeds 50VAC or 75VDC. (Please also refer to relay rating data).

This equipment requires a 230V AC supply. All installation work should be carried out in accordance with the recommendations of BS5839 Part 1 and the current edition of the IEE regulations by suitably qualified and trained personnel.

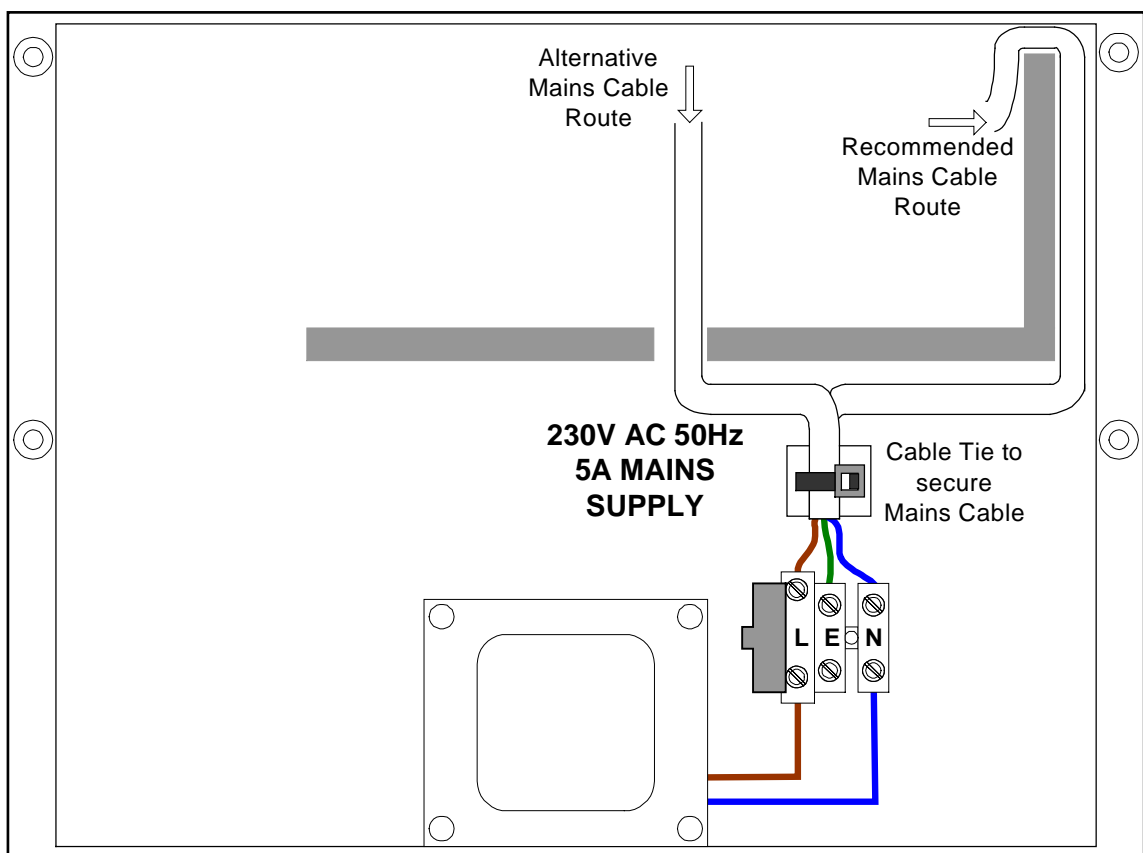


THIS PANEL MUST BE EARTHED

2.1 Installation Sequence

1. Unpack the control panel and locate the small plastic bag containing the following installation spares:
 - i) End of line capacitors (22 μ F 35/40 volts – for Zone circuits, Manual Release & Abort Input only)
 - ii) End of line resistors (3k9 Ohms – for alarm & actuator circuits only)
 - iii) Spare mains fuse
 - iv) A set of battery leads (RED - positive, Black – negative, Blue - jumper lead)
2. Remove the Terminal Cover and Display Cover by means of the fixing screws. Place both covers carefully to one side (ideally inside the original packing box). Note that the A.C. secondary leads from the mains transformer and the Earth lead from the mains terminal block will need to be disconnected from the terminals on the control board in order to remove the display cover with the attached control board.
3. Position the empty enclosure against the wall, mark and fix using fixings suitable for the weight.
4. Connect the 230V AC mains cable to the mains terminal block provided inside the enclosure, ensuring that the mains supply is isolated at the source. See diagram below for cable routing recommendations. The cable must be secured via the Cable Tie (supplied).

The cable must be protected by a 5A fuse at the source.



NOTE 1 – MAINS ISOLATION:

An appropriate lockable double-pole disconnect device shall be provided as part of the building installation.

NOTE 2 – MAINS CABLES:

Use only mains cable compliant to BS6004, BS6500, or equivalent, within the following limits:

	Cable Diameter	Conductor Diameter
Minimum Dimensions	4.0mm	1.0mm (0.8mm ²)
Maximum Dimensions	8.0mm	2.25mm (4.0mm ²)

5. Gland the installation wiring into the enclosure using the cable entry holes provided. Leave the knock-outs or plastic protection plugs in any unused holes.
6. Fill in the zone identification card (supplied) and insert it into the slot in the rear of the display cover. The zone text should be clearly visible through the display window.
7. Fit batteries into the space provided. Only connect the blue battery link, **do not** connect the red and black battery leads to the batteries at this time.
8. Re-attach the display cover, ensuring that the A.C. secondary leads from the mains transformer and the earth lead from the mains terminal block pass through the cable channel to the upper section of the enclosure.
9. Re-connect the A.C. secondary leads to the “AC IN” terminals. Re-connect the earth lead from the mains terminal block to the “EARTH” terminal. Ensure that the earth lead to the gland plate is re-connected correctly.

3. Panel Check

1. Ensure the mains supply has been inspected and tested in line with BS5839 Part 1 and the current IEE regulations and that the system is correctly earthed.
2. Leave all resistors and capacitors in the terminals and switch on the 230 volts AC mains only. The control panel should react as follows:
 - i) The GREEN “SUPPLY HEALTHY” LED illuminates
 - ii) The GREEN “CONTROLS ACTIVE” LED illuminates
 - iii) After 5 seconds the yellow “AUTO” LED illuminates
3. No other indications should be present at this time. If there are, identify the fault and rectify it by checking that the end-of-line devices are connected correctly in the terminals on each zone, manual release input, abort input, alarm circuit, actuator circuit and battery terminals. Also check that all four DIL switches are in the OFF position.
4. Remove the resistor from the battery terminals on the control panel. The panel should react as follows:
 - i) The AMBER “BATT FAULT” LED illuminates
 - ii) The control panel internal buzzer pulses
 - iii) The Fault Relay output operates and the GREEN “SUPPLY HEALTHY” LED is extinguished
5. Connect the Red battery lead to the [BAT+] terminal on the panel and connect the Black battery lead to the [BAT-] terminal on the panel.

6. Connect the shrouded end of the Red battery lead to the Red (+) terminal on one battery and connect the shrouded end of the Black battery lead to the Black (-) terminal on the other battery. The control panel should react as follows:
 - i) The buzzer silences and the fault indications are extinguished
 - ii) The GREEN "SUPPLY HEALTHY" LED re-illuminates
7. Press and hold the "RESET SYSTEM" button (also operates as Test Lamps) on the display and check that the control panel reacts as follows:
 - i) All LEDs on the display illuminate whilst the button is operated
 - ii) The internal buzzer sounds
8. Release the "RESET SYSTEM" button and observe that the panel returns to its previous state.
9. Press the "EVACUATE" button on the display and check that the control panel reacts as follows:
 - i) The panel buzzer operates
 - ii) 28VDC can be measured across the terminals of Alarm circuits 1 & 2.
10. Press the "EVACUATE" button again to return the panel to normal.
11. Switch off the 230V AC supply to the control panel and check that the control panel reacts as follows:
 - i) The "SUPPLY HEALTHY" LED flashes
 - ii) The internal buzzer in the control panel sounds
 - iii) The Fault Relay output operates
12. Re-instate the 230V AC supply and check that the panel returns to normal.
13. Check that the zone detection circuits are monitoring the wiring for faults correctly, as follows:
 - i) Open circuit (simulate a break in the zone circuit wiring) – disconnect the zone capacitor
 - ii) Short circuit (simulate a short between cores) – insert a wire link into the zone terminals (do not reconnect the capacitor at this stage, as a short circuit across the capacitor will generate an electrical spark.)
 - iii) Remove the wire link and reconnect the capacitor to return the panel to normal.

Simulate the faults described above and check that the control panel reacts as follows:

- i) The appropriate AMBER "FAULT" LED pulses
 - ii) The internal buzzer on the control panel sounds
 - iii) The fault relay operates
14. Repeat step 13 for the Manual Release circuit.
 15. Repeat step 13 for the Abort Input circuit. Note that the Abort Active LED will also pulse and remain pulsing until the RESET SYSTEM button is pressed.
 16. Check that alarm circuits 1, 2 & 3 and the actuator circuit are monitoring the wiring for faults correctly, as follows:
 - i) Open circuit (simulate a break in the circuit wiring) – remove the end-of-line resistor
 - ii) Short circuit (simulate a short between cores) – replace the resistor & short circuit the alarm circuit terminals

Simulate the faults described above for each circuit in turn and check that the control panel reacts as follows:

- i) The “Alarm Fault” or “Actuator Fault” LED illuminates
- ii) The internal buzzer in the control panel sounds
- iii) The fault relay operates

4. Panel Configuration

WARNING: The “LINK FOR BUZZER ENABLE” jumper link, located at the top right-hand corner of the control board, is a non-monitored buzzer disable/enable facility. It is provided **ONLY** to allow the commissioning engineer to disable the internal buzzer should the engineer find this necessary during commissioning. **DO NOT** remove this link unless there are unavoidable circumstances, and **ALWAYS** check that it is in place before closing the cover.

4.1 The One-Man-Test Facility

Engineer’s Access Code: 5-3-2-4.

1. Enter the engineer’s access code (**5324**), the “Controls Active” LED will flash. To exit engineer’s mode, press 5. If no controls are operated for 10 seconds the panel will automatically exit engineer’s mode.
2. **One-man-Test Mode** – with the engineer’s controls active, press button **1** to enable One-Man-Test. Check that the control panel reacts as follows:
 - i) The “ONE MAN TEST” LED flashes
 - ii) The fault buzzer sounds intermittently

Press button **1** again to exit the One-Man-Test mode.

NOTE:The control panel will automatically de-select the one-man-test mode after 10 minutes of inactivity.

4.2 Earth Fault Enable/Disable

With engineer’s controls active, press button **2** to enable/disable earth fault monitoring. In engineer’s mode, the “EARTH FAULT” LED will illuminate when earth fault monitoring is enabled (factory default).

4.3 Processor Fault Indication

If the processor on the control board fails to function correctly, the processor will be re-started automatically and the “PROC FAULT” LED will pulse. To clear the LED indication, first enter the engineer’s code (**5324**) and then press **3**.

4.4 Zone Circuit, Manual Release Circuit & Actuator Circuit Isolation

Enter the User access code (**514**), the “Controls Active” LED will illuminate, then follow the instructions below. Isolated circuits are indicated by a steady amber fault LED.

- i) With controls active, press “ISOLATE”. The Zone 1 Fault LED will pulse rapidly every 2 seconds (flashing cursor mode).
- ii) Press “ACCESS” (button 5) to move the cursor to the fault LED of the required circuit.
- iii) Press “ISOLATE” to isolate or de-isolate the required circuit.
- iv) Repeat (ii) and (iii) for any further circuits.

- v) Press "RESET" to clear the flashing cursor mode.

Each Isolated circuit will be indicated by illuminating the corresponding fault LED steady.

5. Commissioning

5.1 Introduction

The following equipment should be available where possible to minimise the commissioning period:

- i) VHF/UHF Two-Way Radio System (for two engineers)
- ii) Multi-meter capable of measuring voltages and resistances

5.2 Checklist

Before commissioning, the engineer should check the following:

- i) All field wiring has been inspected and tested in accordance with manufacturer's wiring recommendations, BS5839 part 1 and current IEE wiring regulations.
- ii) All field cables are routed into the control panel cabinet through suitable cable glands.
- iii) Detector bases are linked through but detector heads are not fitted (place a link across Schottky diodes if fitted). Any devices with electronic components are not fitted. Terminations to devices with electronic components should be linked through to maintain cable continuity.
- iv) Manual Call points are not connected but the cable is linked through to maintain continuity.
- v) No end-of-line devices are fitted.

The following information should be available to the commissioning team:

- i) Zone detection layout drawings
- ii) Wiring schematic diagram
- iii) Installation manuals for all equipment connected to the system

Tracing wiring faults on long circuits that are routed through risers etc. can be difficult without prior knowledge of the wiring route.

It is recommended that the electrical installer is available until basic wiring integrity is proven. A minimum of 2 persons (e.g. engineer & mate) is recommended for efficient commissioning.

5.3 An Overview of the Commissioning Procedure

The approach to be used when commissioning a fire alarm system is to check each circuit and function in turn to ensure correct operation of the entire system. In this way any faults may be located quickly and accurately. The general procedure is as follows:

1. Alarm circuits should be checked first. The operation of each sounder should be checked for correct audibility as specified in BS5839 pt 1, using the panel's "EVACUATE" facility.
2. Detection circuits should be commissioned next. The requirement is to verify the correct operation of each device and correct indication at the control panel.
3. Finally, any auxiliary circuits should be tested.

WARNING: Before testing, the engineer must be fully aware of the operation of all devices fitted to the actuator circuit and auxiliary circuits and of the consequences of their operation. It is recommended that the solenoid not be connected during commissioning in order to avoid accidental discharge of the extinguishing agent. A 24VDC relay may be used in place of the solenoid in order to verify correct operation of the actuator circuit.

5.4 Pre-Commissioning Wiring Check

NOTE: This pre-commissioning wiring check procedure should be followed in order to test all wiring prior to specific commissioning of any detection, alarm and auxiliary circuits.

The following assumes that the control panel has been installed in accordance with the installation procedure and is powered with only the “Supply Healthy” and “Controls Active” LEDs illuminated. **Do not** connect field wiring at this stage.

1. Ensure that no devices are connected to the zone circuits, manual release circuit, abort input, actuator circuit and alarm circuits but the cables are linked through at the device locations to achieve a continuous circuit.
2. Ensure that resistance of all cables to earth and between cores is more than 1M Ω . Check the following:
 - i) Positive to earth resistance is greater than 1M Ω
 - ii) Negative to earth resistance is greater than 1M Ω
 - iii) Positive to negative resistance is greater than 1M Ω
 - iv) Connect a wire link as the end-of-line device on each of the zone, manual release, abort input, actuator and alarm circuits. At the panel end, measure the resistance across the positive & negative ends of the cables for each of the circuits; ensuring the value does not exceed 20 Ω . Remember to remove the wire links after the tests.
3. Correct polarity throughout all circuits must be maintained. Rectify any faults.
4. All bells/sounders, detector heads and call points should now be connected and the correct end-of-line devices fitted. Use the spare end-of-line devices supplied and leave the EOL devices in the panel terminals at this stage. Remember to remove any links fitted to detector bases. Be very careful to maintain correct polarity at each device.
5. For the actuator circuit, use a 24VDC relay in place of the solenoid and either fit a C1565 polarity & suppression board (not supplied) or fit diodes (not supplied) and a resistor as shown in Figure 3 – Wiring Schematic.

5.5 Alarm and Actuator Circuits

After completion of the pre-commissioning wiring check, the following procedure should be followed:

1. Remove the resistor from the first alarm circuit terminal and connect the first alarm circuit wiring to the terminals, observing correct polarity. Check that any alarm fault indications clear after a few seconds.
2. Enter the access code to enable the controls and press the “Evacuate” button. Check that all sounders connected to the alarm circuit operate.
3. Press the “Evacuate” button again and check that the alarms silence.
4. Repeat steps 1 to 3 for the second alarm circuit.

5. Repeat step 1 for alarm circuit 3. This alarm circuit does not respond to the Evacuate button and can be checked as part of the zone commissioning process.
6. Repeat step 1 for the Actuator circuit. Operation of the Actuator circuit can be checked as part of the zone commissioning process.

5.6 Zone Circuits

NOTE: Remember to enable the controls using the access code before using any of the controls.

1. Configure the Actuator Delay time as required via the DIL switches as shown in section 9.
2. Remove the capacitor from the zone 1 terminals and connect the zone 1 circuit cables to the zone 1 terminals, observing the correct polarity. Check that any zone 1 fault indications clear after a few seconds.
3. Check that the zone detection circuits are monitoring the wiring for faults correctly by doing the following:
 - i) Open circuit – disconnect the EOL capacitor
 - ii) Short circuit – short circuit the EOL capacitor

Return the EOL capacitor to normal and check that the panel returns to normal.

4. Operate the first manual call point (BGU) on the zone and check the following:
 - i) The zone 1 fire LEDs pulse
 - ii) The internal buzzer sounds
 - iii) Alarm circuits 1 & 2 sound
 - iv) The auxiliary fire relay operates

Reset the manual call point to its normal condition. Press the “Silence Alarms” button and then the “Reset System” button on the panel and check that the control panel returns to the normal state.

5. Repeat step 4 for all manual call points on the zone.
6. Activate the first detector on the zone and check the following:
 - i) The zone 1 fire LEDs pulse
 - ii) The internal buzzer sounds
 - iii) The alarms sound
 - iv) The auxiliary fire relay operates
 - v) The LED on the detector illuminates

Press the “Silence Alarms” button and then the “Reset System” button on the panel and check that the control panel returns to the normal state.

7. Repeat step 6 for all detectors on the zone.
8. If line continuity diodes are NOT fitted to detector bases then skip to step 11.
9. Remove the first detector from zone 1 and observe the following:
 - i) The appropriate amber zone fault LED illuminates
 - ii) The internal buzzer sounds
 - iii) The fault relay operates

Operate a manual call point between the detector that has been removed and the EOL capacitor. Check that the panel reacts as described above for a fire condition. Refit the detector, reset the manual call point, press the “Silence

Alarms” button and then the “Reset System” button on the panel and check that the control panel returns to the normal state.

10. Repeat step 9 for all detectors on the zone.
11. Repeat steps 2 to 10 for zone 2 & the Auxiliary zone until all three zones are commissioned.
12. Any faults that are found must be traced and rectified before proceeding.

5.7 Manual Release Circuit

NOTE: Remember to enable the controls using the access code before using any of the controls.

1. Remove the capacitor from the Manual Release terminals and connect the Manual Release circuit cables to the Manual Release terminals, observing the correct polarity. Check that any Manual Release fault indications clear after a few seconds.
2. Check that the circuit is monitoring the wiring for faults correctly by doing the following:
 - i) Open circuit – disconnect the EOL capacitor
 - ii) Short circuit – short circuit the EOL capacitor

Return the EOL capacitor to normal and check that the panel returns to normal.

3. Operate the first manual release point and check the following:
 - i) The Manual Release Operated LED pulses
 - ii) The internal buzzer sounds
 - iii) Alarm circuit 3 pulses (to indicate discharge timer running)
 - iv) The Timer On LED pulses (to indicate discharge timer running)
 - v) The auxiliary fire relay operates

After the delay timer ends, check the following:

- i) The Timer On LED is OFF
- ii) The Actuator Operated LED is ON
- iii) Alarm circuit 3 changes to continuous
- iv) The Actuator circuit is energised

Reset the manual release point to its normal condition. Press the “Silence Alarms” button and then the “Reset System” button on the panel and check that the control panel returns to the normal state.

4. Repeat step 3 for all manual release points on the circuit.

5.8 Emergency Abort Input

NOTE: Remember to enable the controls using the access code before using any of the controls.

1. Remove the capacitor from the Abort input terminals and connect the Abort circuit cables to the Abort input terminals, observing the correct polarity. The Abort Active LED will pulse and the Abort Fault LED will pulse. Press the RESET button to clear the indication.
2. Check that the circuit is monitoring the wiring for faults correctly by doing the following:
 - i) Open circuit – disconnect the EOL capacitor
 - ii) Short circuit – short circuit the EOL capacitor

For each of the above faults check that the panel reacts as follows:

- i) The Abort Operated LED pulses
- ii) The Abort Fault LED pulses
- iii) The internal buzzer sounds intermittently
- iv) The auxiliary fault relay operates

For each of the above faults, return the EOL capacitor to normal, press the RESET button and check that the panel returns to normal.

3. Operate the first Emergency Abort switch and check the following:
 - i) The Abort Operated LED pulses
 - ii) The internal buzzer sounds intermittently
 - iii) The auxiliary fault relay operates

Reset the Emergency Abort switch to its normal condition, press the RESET button and check that the control panel returns to the normal state.

4. Repeat step 3 for all Emergency Abort switches on the circuit.

5.9 Actuator & Auxiliary Circuits

Once the above commissioning procedure has been successfully completed, remove any test equipment from the end of the Actuator Circuit (e.g. 24VDC relay used during commissioning). Ensure that the Actuator/Solenoid is mechanically isolated before connecting the Solenoid to the Actuator circuit and check that any fault indications clear after a few seconds. If any fault indications remain then trace the fault and rectify.

All auxiliary circuits or equipment that is not supplied as a standard part of the fire alarm panel is the responsibility of the installer and must be tested for safe and correct operation by the commissioning engineer.

After completion of the above commissioning procedure, the panel should be left on soak test for a minimum of 48 hours **WITH THE ACTUATOR/SOLENOID MECHANICALLY ISOLATED** and the system status set to **MANUAL**.

After the panel has been successfully soak-tested, check that the DIL switches are correctly set (see section 9. DIL switch Configuration), de-isolate the ACTUATOR/SOLENOID and set the system status to **AUTO**. The panel is now fully operational.

6. Technical Specifications

Maximum field equipment load:	800mA
Auxiliary 24VDC output	250mA
Mains failed current consumption:	40mA @24VDC
Integral battery charger output:	500mA @27.5VDC
Common fire relay:	Volt-free contacts - 1A, 30V DC max.
Common fault relay:	Volt-free contacts - 1A, 30V DC max.
Alarm circuit output:	3 at 500mA each @28VDC
Actuator circuit output:	1 at 500mA @28VDC
Battery size:	2 x 12V 2.1AH sealed lead acid
Weight (excluding batteries):	2.4kg

NOTE:

The total available current for field devices is 800mA at 28VDC. This current must be shared between the auxiliary 24VDC supply, the Actuator circuit and the three alarm circuits such that the total current drain across the five circuits does not exceed 800mA.



WARNING:

A fuse protects the internal mains transformer; always replace this with the correct type and rating:

T1AH 250V 20mm fuse, 1A, HBC, Anti-surge, approved to BS EN 60127 or equivalent.

7. Additional Available Documentation

CB200° Application Guide

CB200° User Instructions

8. ACCESS CODE Functions

The functions available at the USER and ENGINEER access levels are listed below.

USER ACCESS CODE: 5 1 4

USER CONTROLS:










1. Silence Buzzer
2. Silence Alarms
3. Manual Evacuate
4. System Reset
5. Zone Isolate/De-isolate
6. Manual Release Isolate/De-isolate
7. Actuator Isolate/De-isolate
8. System Auto/Manual

ENGINEER'S ACCESS CODE: 5 3 2 4

1. One-Man-Test ON/OFF (button 1)
2. Earth Fault Monitoring Enable/Disable (button 2)
3. Processor Fault Reset (button 3)

9. DIL switch Configuration

The DIL switches allow configuration of the Delay and Manual Release options.

DELAY TIME (Seconds)	DIL SWITCH				Immed TBIT2 TBIT1 TBIT0
	TBIT2	TBIT1	TBIT0		
0	OFF	OFF	OFF		Immed TBIT2 TBIT1 TBIT0
10	OFF	OFF	ON		Immed TBIT2 TBIT1 TBIT0
20	OFF	ON	OFF		Immed TBIT2 TBIT1 TBIT0
30	OFF	ON	ON		Immed TBIT2 TBIT1 TBIT0
40	ON	OFF	OFF		Immed TBIT2 TBIT1 TBIT0
50	ON	OFF	ON		Immed TBIT2 TBIT1 TBIT0
60	ON	ON	OFF		Immed TBIT2 TBIT1 TBIT0
	ON	ON	ON		Immed TBIT2 TBIT1 TBIT0

The DIL switch marked “Immed” allows the Manual Release input to either operate the actuator after the delay (DIL switch OFF) or immediately with no delay (DIL switch ON).