

Veritas 2

2 & 4 zone conventional

Fire Alarm Control Panel

Installation
&
User Instructions



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DESCRIPTION OF THE SYSTEM

The Veritas 2 two & four zone control panels are compact EN54-2 conventional fire alarm control panels with an integrated EN54-4 power supply system.

Technical Data

Power supply Specifications

Main supply	230VAC -15% +10% - 50/60Hz
Secondary supply	2 x 12v batteries 2.1 to 2.3 Ah
Mains protection	1A time-lag fuse
Secondary protection	1A PolySwitch PPTC
Minimum current	24 mA
Maximum current	1.2 A
Rated voltage	28.5 V
Battery disconnection/ Load-limiting device	21.5 V +/- 10%
Final voltage battery	21 V +1- 10%
Panel Quiescent load	30mA

Charger

Voltage stability (temperature controlled)	27.3VDC at 20°C
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Zones (2 or 4)

Zone voltage	21V +/- 2%
Number of points per zone	32 maximum per line
End of line unit	24V TVS diode (P6KE24CA)
Zone Alarm current	Limited to 100mA
Zone fault current	Limited to 18mA
Max zone wiring	1,000 meters (1.5mm) / 120 ohms

Relays, Inputs & Outputs

Fire Relay	Change over contacts rated at 24v 3A
Fault Relay	Normally Closed relay rated at 24v 3A
Programmable Relay	Change over contacts rated at 24v 3A
Auxiliary 24vDC supply	Maximum 100mA at 24 V
Repeater Panel	Maximum 4 repeaters (1000m total wiring)
Programmable Input	Requires normally open input to select.
Sounder Circuits	2 circuits each rated at 24V 500mA

Dimensions & Weights

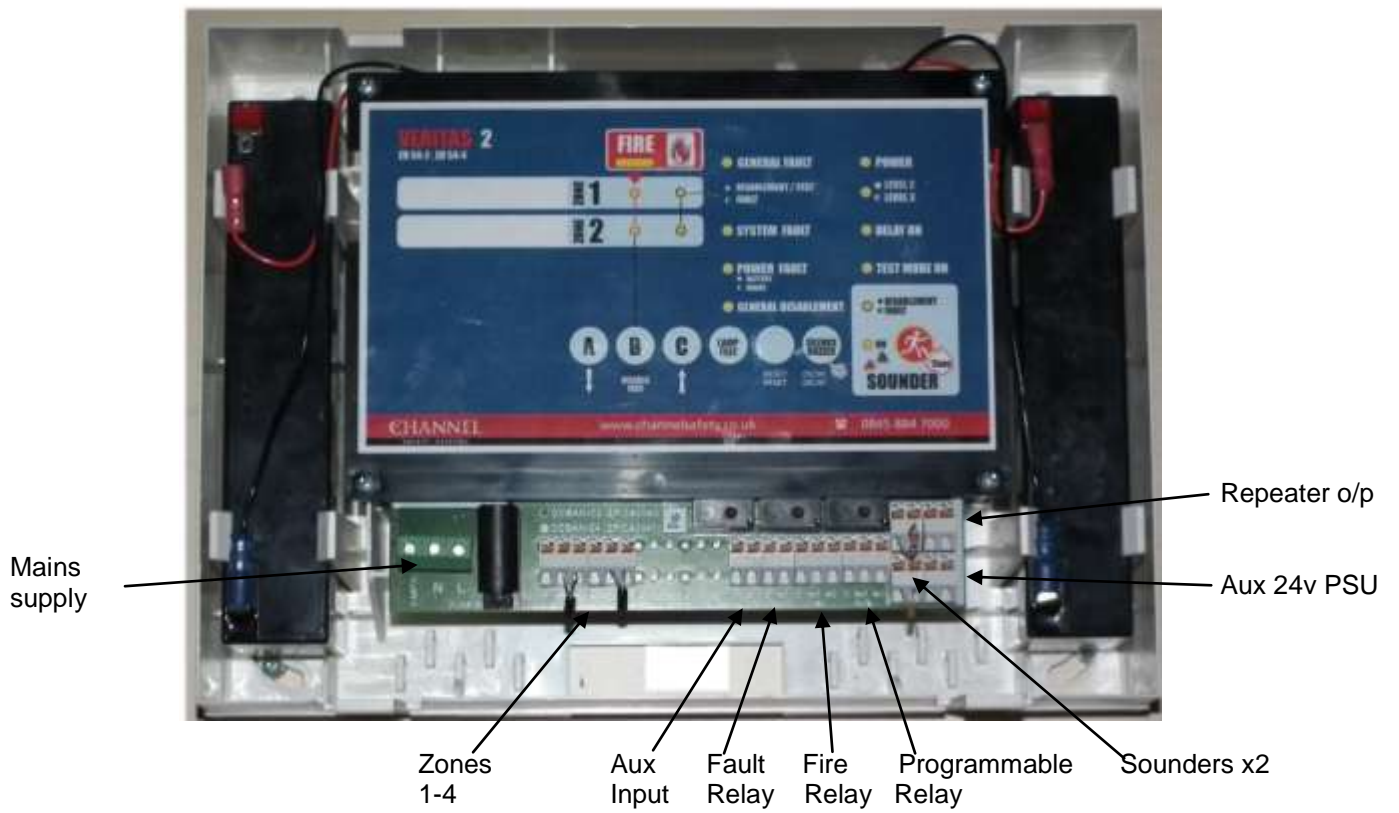
Dimensions	W370mm x H295mm x D90mm
Weight (with batteries)	2.8Kg

ACCESS CODES

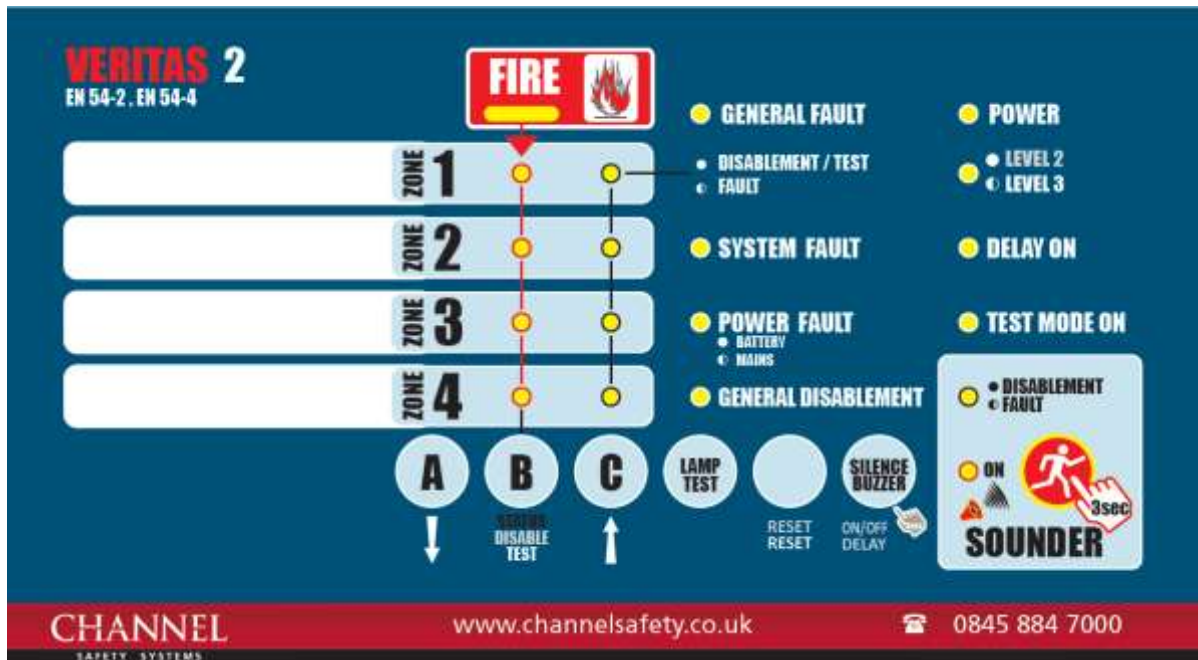
Level 2 User Code **AABC** **Level 2 LED Illuminates** (used for everyday operation)

Level 3 User Code **AACC** **Level 3 LED flashes** (used for 'end user' programming)

Internal View



Front view



Indicators

Indicator	Colour	Access Level	State	Indicates	
Power	Green	-	Steady	System on	
Level 2/3	Yellow	CONFIG	Steady	Aux PSU in Reset Mode	
Delay active	Yellow	CONFIG	Steady	Delay Active	
Test Mode on	Yellow	CONFIG	Steady	Sounder Active	
Sounder disabled/Fault	Yellow	CONFIG	Steady	Sounders Isolated	
		CONFIG OUTPUTS	Flashing	Delay – Number of flashes Indicates minutes	
Sounder on	Red		Steady	CONFIG OUTPUT menu level	
			Off	CONFIG menu level	
General Fault	Yellow		CONFIG	Steady	24v aux resets
			CONFIG OUTPUTS	Steady	New alarm restarts buzzer
			CONFIG	Off	Permanent 24v aux
System fault	Yellow		Flashing	Panel is in CONFIG mode	
Power fault	Yellow		Steady		
			Flashing		
General disablement	Yellow		Steady	The Aux relay is linked to zones	
Fire	Red		Steady		
Zone – Fire	Red		CONFIG	Steady	Type B alarm mode
			CONFIG OUTPUTS		Sounders etc Delayed
			CONFIG	Flashing	Type A alarm mode
			CONFIG	Off	STANDARD MODE (Default)
			CONFIG OUTPUTS		No Delays active
Zone - Fault	Yellow		Flashing	Menu Selector Position	

Buzzer Operation

Pulsing sound: a fault has been detected.

Continuous sound: an alarm has been operated by

An automatic detector

A manual fire alarm activation

An evacuation manual control

1 beep: = key pressed

5 beeps: = validation of programming

Keys	Access level	Duration of press	Functions
A	2/3	Short	Scroll selection
		Long	Change Access Level
B	1	Continuous	Enter Diagnostics mode
B	2	Short	Activate selected mode. Toggle & Validate selection
B	3	Short	Activate selected mode. Toggle & Validate Test mode
C	2/3	Short	Scroll selection
Lamp Test	1/2/3	Continuous	Test LEDs & buzzer
Reset	2/3	Short	Reset System
Silence Buzzer	1/2/3	Short	Silence buzzer
	2	Long (3 seconds)	Enable delays
Sounder	1	Long (3 Seconds)	Activate sounders (evacuate)
	2	Short	Silence or re-sound sounders

Access levels

Access levels enable trained personnel to operate the panel at the appropriate level.

Access Codes & programming Modes

Access Level	User Type
1	Available to all
2	Trained users, able to silence & reset
3	Trained users, able to silence, reset & test the system
CONFIG	Engineers level, used to programme the control panel and set up special functions

Level 2 User Code **AABC** **Level 2 LED Illuminates**

Level 3 User Code **AACC** **Level 3 LED flashes**

To enter programming modes:

CONFIG With panel depowered, switch hold A & C, apply power & hold for 5 seconds. Buzzer will confirm by beeping 5 times

CONFIG OUTPUT Once in the CONFIG mode press red Sounder button. Red 'sounder on' LED illuminates

Stand-By Battery Calculation

The capacity of the standby batteries in the fire alarm panel once the mains has failed depends on the quiescent load of the panel, the alarm load on the panel. To determine the capacity of batteries required for any given stand-by period, this formula should be used:-

$$\text{Standby Time in Ahr} = 1.25 \times ((T \times A) + H \times (P + Z))$$

The multiplier 1.25 is present to account for lost capacity over the life of the batteries.

H = Number of hours standby required

P = The quiescent current of the Panel = 0.030A

This figure is with the Mains failed, buzzer operating and the Power Supply and General Fault indicators lit. If there other quiescent loads are taken from the panel these should be added.

Z = The total quiescent current of all zone devices

As a guideline, the quiescent current of most modern detectors is typically 0.00005A (50µA), and that of manual call points is zero. To obtain accurate figures please contact the manufacturer or Channel Safety Systems.

A = The total alarm current on the sounder circuits

T = The amount of time in hours required for the sounder circuits to operate (usually 30 mins (0.5)).

Example

The panel has 70 detectors each consuming 50uA each, 20 Sounders at 20mA each, the required standby time is 24 Hours, and the required alarm time is 0.5 Hours.

$$Z = 70 \times 0.00005 = 0.0035A$$

$$P = 0.030A$$

$$A = 20 \times 0.02 = 0.4A$$

$$H = 24$$

$$T = 0.5$$

$$\text{Standby Time in Ahr} = 1.25 \times ((0.5 \times 0.4) + 24 \times (0.030 + 0.0035)) = 1.1Ahr$$

Therefore, batteries with at least 1.1Ahr capacity are required.

Installation

Overall dimensions 370mm x 296mmH x 105mmD

Cable entry is via 20mm conduit knockouts

Fix the main control panel to a fixed surface using the 4 slots in the corners of the back box.

Terminals

Sets of Terminals	Use	Specification
T1	Mains Supply	230Vac 50Hz – 1A time-lag fuse
T2	Zones Zone 1	21VDC 32 devices max per zone
T3	Zone 2	Cable 1.5mm 2 core + earth fire resistant type
T4*	Zone 3	Max length 1000m
T5*	Zone 4	EOL Device Diode 24v P6KE24CA
T6	Programmable input	
T7	Fault relay	Normally closed – 3A 24V
T8	Fire Relay	Change over - 3A 24V
T9	Programmable Relay	Change over - 3A 24V
T10	Sounder circuit 1	24v 500mA Max - EOL Device 10K ohm Resistor
T11	Sounder Circuit 2	24v 500mA Max - EOL Device 10K ohm Resistor
T12	Aux 24v DC supply	24VDC 100mA Max
T13	Repeater outputs	

The « E » terminal is provided for the screen connection.

Connect the wiring to the appropriate terminals. Note the terminal blocks are removable

Ensure the polarity is correct (+/-)

Ensure that termination within ancillary devices is correct.

* 4 zone panel only

Mains Supply

Cable types and limitations

Consult Clause 26 of BS 5839: Pt 1: 2002 Fire Detection and Alarm Systems for Buildings (Code of Practice for System Design, Installation, Commissioning and Maintenance) for detailed information on cables, wiring and other interconnections. To comply with EMC (Electro Magnetic Compatibility) regulations and to reduce the risk of electrical interference in the system wiring, fire-resistant screened cables must be used throughout the installation. Correct use of cable glands is essential.

Mains Supply

The requirement for the mains supply to the fire alarm panel is fixed wiring, using three core cable (Minimum dia 1.5mm²) or a suitable three conductor system, fed from an isolating switched fused spur, fused at 3A. This should be secure from unauthorised operation and be marked '**FIRE ALARM: DO NOT SWITCH OFF**'
The mains supply must be exclusive to the fire panel.
(As an alternative to a switched fused spur, a double pole isolating device may be used

Battery Specification

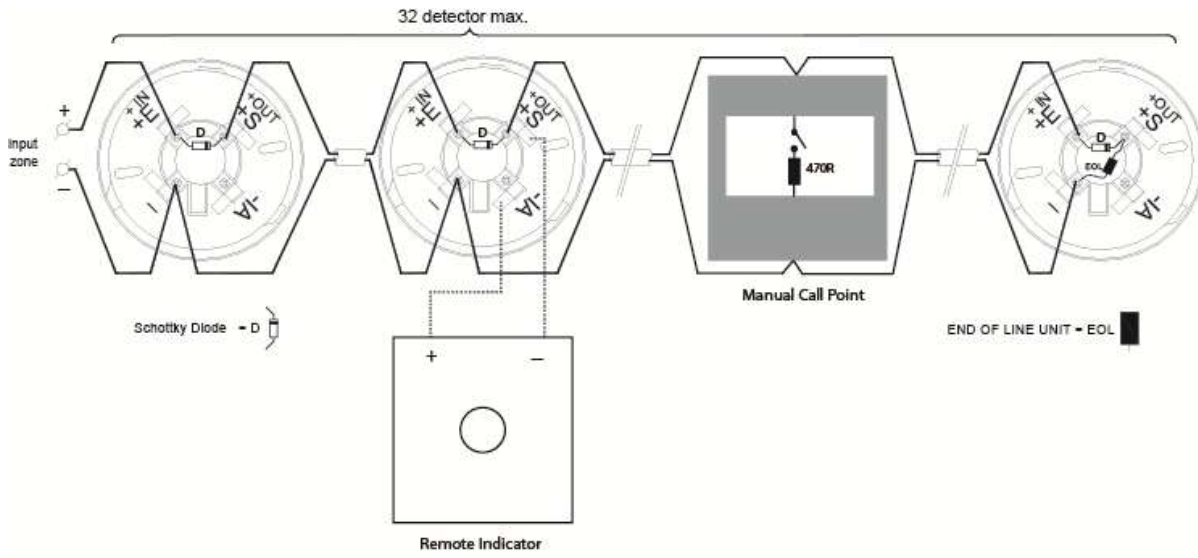
Battery: 2x 12V capacity: 2.1 Ah

Protection: 1A Polyswitch

Ensure battery polarity is correct

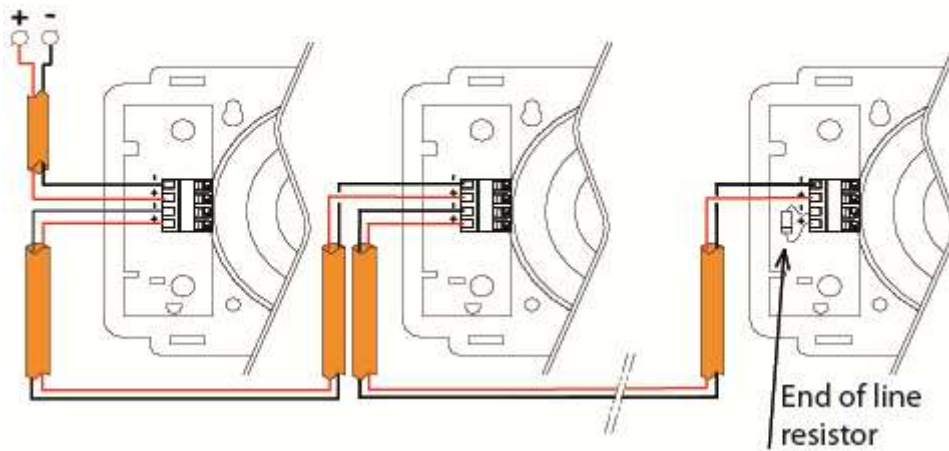
Battery charging time: 24 hours when first installed or from total discharge

Zone Wiring



Sounder Circuit wiring

Sounder Circuit in Control Panel



System programming

ACCESS CODES

Level 2 User Code **AABC** **Level 2 LED Illuminates**

Level 3 User Code **AACC** **Level 3 LED flashes**

Most systems will not require any special programming

There are two programming menus, CONFIG & CONFIG OUTPUTS

To access the **CONFIG** mode, with panel depowered, switch hold down the A & C buttons, apply power & hold for 5 seconds. Buzzer will confirm by beeping 5 times

Once in the CONFIG mode you can access the **CONFIG OUTPUTS** menu by pressing the red sounder button.

To quit the CONFIG level, press simultaneously the A and C keys until the validation buzzer sounds

The programming system consists of:

- Selecting the mode to ALARM condition, either immediate (default) or by type A or B
- Allocating the **auxiliary** relay to the ALARM condition in one or more zones
- Selecting the programmable input operating mode
- Selecting the auxiliary 24VDC supply mode
- Selecting the delay by zone (if any)
- Adjusting the delay time from 1 to 10 minutes
- Activate resound buzzer on new alarm

Alarm Mode

The default setting is as per BS5839 pt1 2002.

Note the following optional modes are a variation to the requirements of BS5839 pt1 2002

Type A - Pre- Alarm Mode gives the following function:-

Activation of any device on a zone will immediately start a 30 second timer, no sounders or relays will activate. Any subsequent alarms within the first 30 seconds will be ignored.

After 30 seconds, if the initiating detector remains in the fire condition or another device on the same zone activates then a full evacuation will take place.

The pre-alarm time is limited to two minutes. If an alarm is initiated after two minutes (from first initiation) the process starts again.

If a second alarm is not received within two minutes the control panel remains in the 'normal' state.

This mode is used to reduce unwanted alarms, typically in HMO's.

Type B – Double Knock mode gives the following function:-

Activation of any device on a zone will immediately indicate the appropriate zone on the control panel and start the panel buzzer, no sounders or relays will activate.

To initiate a full alarm activation the second paired zone must also be triggered.

The zones are paired as zone 1 & 2, and zone 3 & 4

Sounders and relays are only initiated on activation of the second zone.

How to program features:

All programming uses the following instructions

To enter **CONFIG mode**, with panel depowered, switch hold down the A & C buttons, apply power & hold for 5 seconds. Buzzer will confirm by beeping 5 times

Use button 'A' & 'C' to select the required zone (A up, C down)

The zone fault LED indicates which zone is being programmed

Once in the CONFIG mode you can access the **CONFIG OUTPUTS** menu by pressing the red sounder button.

To quit the CONFIG level, press simultaneously the A and C keys until the validation buzzer sounds

Mode Selection

See previous paragraphs for details of mode operation (page 10)

Use button 'B' to select the mode

The zone fire LED indicates the selection.

- Off is **DEFAULT**
- Flashing is **Mode A**
- Steady is **Mode B**

Programmable Auxiliary Relay

This relay can be linked to none, all or chosen zones.

In CONFIG mode.

Use 'Lamp Test' button to select on or off

The General Disablement LED indicates the selection.

- Off is not linked (default)
- On is linked

Auxiliary 24v PSU output

This output can be set to continuous or short break when the system is Reset.

In CONFIG mode.

Use 'Reset' button to select continuous or break

The General Fault LED indicates the selection.

- Off is continuous (default)
- On is 'break'

Programmable Input

This input can be set to, Reset or Activate delay or Class change or Isolate sounders.

In CONFIG mode.

Use 'Silence Buzzer' button to select chosen function.

Level 2/3 LED	Reset
Delay LED	Activate Delay
Test Mode LED	Class Change
Disablement/Fault LED	Isolate Sounders
No indication	No action

Delay Sounders and Relays by Zone

Sounders and auxiliary relays can be delayed between 1-10 minutes. Each zone can be set to enable the delay. The chosen time is applied to all selected zones.

Once the panel has been programmed the user can select to activate the delay or disable the delay.

Setting the zones to be delayed.

To enter **CONFIG** mode, with panel depowered, switch hold down the A & C buttons, apply power & hold for 5 seconds. Buzzer will confirm by beeping 5 times. Enter **CONFIG OUTPUTS** mode by pressing the red Sounder button. Red 'sounder on' LED illuminates.

Use button 'A' & 'C' to select the required zone (A up, C down). The zone fault LED indicates which zone is being programmed. Use button B to select if the chosen zone it to be delayed. Red zone LED on shows that the zone is delayed.

Setting the delay time.

When in the CONFIG OUTPUTS mode (see above) Once in the CONFIG mode illuminates.

Use the '**Silence Buzzer**' button to select the time delay. Each press will increment the delay by 1 minute. The flashing '**Disablement/Fault**' LED shows the selected time in minutes. (5 flashes = 5 minutes).

To save the settings, exit the CONFIG/CONFIG OUTPUTS mode by pressing the A and C keys simultaneously until the validation buzzer sounds (5 seconds).

The selected delay is activated by entering user level 2.

To deactivate the delay, enter level 2 User Code, **AABC** Level 2 LED Illuminates. Press '**Silence Buzzer**' button for 3 seconds. Delay LED extinguishes.

User Instructions

Fire.

In the event of the alarm being triggered you must carry out the fire procedure as required for the premises.

Once the cause of the alarm has been investigated & when safe to do so carry out the following actions.

The appropriate red FIRE LED(s) will be lit to indicate which area(s) of the building are affected. The LED on the initiating detector or break glass will be illuminated.

To silence the sounders

Enter user code **AABC** - Level 2/3 LED illuminates continuously

Press the Red Sounder button

To silence the buzzer

Enter user code **AABC** (if not already entered) - Level 2/3 LED illuminates continuously

Press Silence Buzzer button

To reset the system

Enter user code **AABC** (if not already entered) - Level 2/3 LED illuminates continuously

Press Reset Button

Level 2/3 LED extinguishes

Evacuate or restart sounders

To operate all the sounders without the need to activate a break glass call point, or to restart them if they have been silenced.

Enter user code **AABC** - Level 2/3 LED illuminates continuously

Press red Sounder button for 3 seconds

All sounders will activate.

Auxiliary relays are not activated

Fault

The appropriate Fault LED(s) will be illuminated. Please note which ones are lit before proceeding.

To silence the buzzer

Press the Silence buzzer button

Reset

To reset the system

Enter user code **AABC** (if not already entered) - Level 2/3 LED illuminates continuously

Press Reset Button

Level 2/3 LED extinguishes

If the fault has not been corrected the panel will indicate fault again.

If you can not correct the fault please call Channel Safety Systems on 0845 884 7000.

Weekly Test ('One man test')

To select zones for test

Enter level 3 user code **AACC** Level 2/3 LED flashes

Zone 1 red fire LED is illuminated

Press button B to select mode. Test Mode LED illuminated shows zone is in 'one man test'

Use button 'A' & 'C' to select the required zone (A up, C down)

Press button B to select mode. Test Mode LED illuminated shows zone is in 'one man test'

Repeat for all required zones

Press Reset to save selection

When a device is triggered on a zone in the test mode, the sounders will operate for 0.5 seconds
The panel will automatically reset and will not allow further testing for 18 seconds.

To reactivate zones following 'One Man Test'

Enter level 3 user code **AACC** Level 2/3 LED flashes

Zone 1 red fire LED is illuminated

Press button B to select mode. Test Mode LED illuminated shows zone is in 'one man test'

Use button 'A' & 'C' to select the required zone (A up, C down)

Press button B to select mode. Test Mode LED extinguished shows zone is not in 'one man test'

Repeat for all required zones

Press Reset to save selection

Isolate a zone

Beware! Isolated zones will not activate the panel.

Enter user code **AABC** - Level 2/3 LED illuminates continuously.

Press button B, red fire LED flashes

Use button 'A' & 'C' to select the required zone (A up, C down)

The zone fault LED indicates which zone is being programmed

Press button B to isolate the zone. General Disablement LED illuminates continuously.

Repeat for all required zones.

Save selection by pressing RESET

Reactivate a zone following 'Isolation'

Enter user code **AABC** - Level 2/3 LED illuminates continuously.

Press button B, red fire LED flashes

Use button 'A' & 'C' to select the required zone (A up, C down)

The zone fault LED indicates which zone is being programmed

Press button B to reactivate the zone. General Disablement LED extinguishes.

Repeat for all required zones.

Save selection by pressing RESET

Activate/Deactivate Delays

Enter user code **AABC** - Level 2/3 LED illuminates continuously.

Press 'Silence Buzzer' for 3 seconds – Delay on LED illuminates.

To Deactivate repeat above process