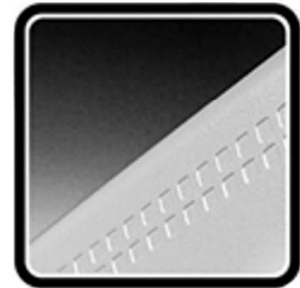# Sigma XT
Extinguishant Control Panel

Conventional Fire Control Panel with Extinguishant Control Unit for Aerosol Release

Operation and Maintenance Manual

Available in 2 Zone, 8 Zone, Single risk or dual risk.

Contents

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1. Introduction

<div style="background-color:red; color:white; text-align:center">

IMPORTANT

AC mains power supply 230V (+10%/-15%), 50/60Hz

Operational temp -5⁰C (±3) and +40⁰C (±2) max relative humidity of 95%

Operation outside these parameters will lead to premature failure.

</div>

The FirePro SIGMA XT-A, conventional fire alarm control panel with Extinguishant Control Unit and Aerosol Agent Controller, is designed to comply with AS7240-2, AS7240-4 Fire Detection and Fire Alarm Systems - Control and Indicating Equipment, and AS ISO 14520.1 2009 Gaseous Fire Extinguishant Systems.

The control equipment is a combined fire alarm control panel and extinguishant system with up to eight detection zones, and up to two extinguishant flooding areas. It has an integral, mains powered battery charger and power supply designed in accordance with the requirements of AS7240-4.

In addition to the requirements of AS7240-2 the control panel has the following facilities:

- *Test condition* to allow the automatic resetting of zones in alarm for testing purposes.
- Delay *of the actioning* of fire alarm devices (sounders) so that an alarm may be verified before evacuation.
- Voltage free relays for fire and local fire which operate upon fire condition.

Mounting of Control Panel

This equipment is designed to be operated from 230V 50Hz mains supplies and is of class 1 construction. As such it **must** be connected to earth conductor in the fixed wiring of the installation and a readily accessible double pole disconnect device which disconnects live and neutral simultaneously shall be incorporated in the fixed wiring.

Failure to ensure that all conductive accessible parts of this equipment are adequately bonded to earth will render the equipment unsafe.

This control panel is designed for indoor use only and at temperatures between -5⁰C (+/- 3) and +40⁰C (+/-2) and with a maximum relative humidity of 95%. Standard panels are rated to IP30 and suitable for mounting indoors.

MOUNTING - The control panel should be mounted on a dry, flat surface, at eye height to the display and in a level position.

Cables should be connected using cable glands fitted to the knockouts. If additional entry points are required, all swarf and debris caused by drilling of additional cable entries must be cleared before power is applied.
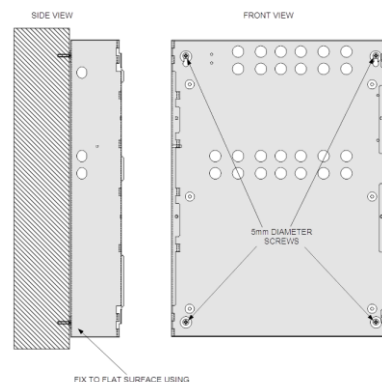
DIMENSIONS: **M3 Cabinet: 195 x 300 x 50**   **Warning Sign: 195 x 300 x 50**   **LCS: 135 x 186 x 50**

Mounting of Warning Signs

Internal Signs	External Signs
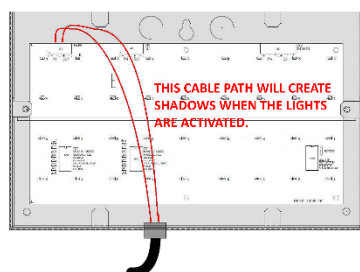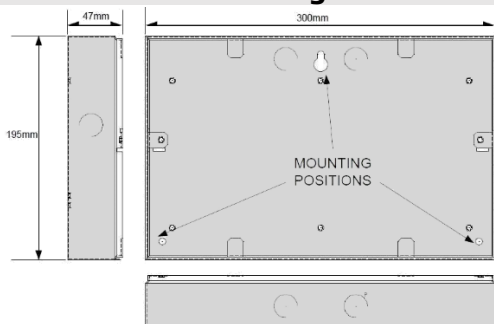
Allow enough length on cable to route cable around the edge of sign

1. Mount Sunshade.
2. Remove cover and Internal circuit board.
3. Mount using suitable fixings ONLY Mount to sunshade surface – if the enclosure is twisted on mounting it will crack over time.
4. Use silicon for securing the lower half of sign.
5. Cable entry must have cable gland fitted. Preferred entry though base of sign with drip loop in cable.
6. Leave enough tail on cable to ensure the cable will not interfere with operation of sign.

2. Access Levels & General Fault Codes

For more information on Access Levels, please see Section 7 - Panel operation – Access levels 1 and 2.

Access Levels 1 and 2

The cabinet door has 3 locks:

The centre lock opens the display window,
  allowing for operation of the controls.

The display window contains a door switch.
Operation of this door switch places the panel in Access Level 2.

The top and bottom locks will open the complete cabinet front allowing for full access to the panel. The alarm module will show when the door is open.
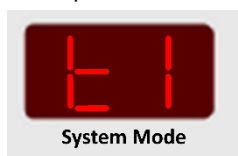
System Mode

Door Switch in Access Level 1

Door Switch in Access Level 2

Access Level 3 – Slide Switches.

ALARM MODULE

Normal – The Slide Switch is to the Left

To Access Level 3 – Slide Switch to the Right

Level 3 – Slide Switch is to the Right

A General Fault will occur on the ALARM MODULE if the Slide Switch is in the Access Level 3 position, and the Door Switch is returned to Access Level 1.

○ General Fault

EXTINGUISHING MODULE - Configuration

Normal – The Slide Switch is to the Right

To Access Level 3 – Slide Switch to the Left

Level 3 – Slide Switch is to the Left

A "CONFIG WP" Fault will occur if the Slide Switch is in the Access Level 3 position, and the Door Switch is returned to Access Level 1.

EXTINGUISHING MODULE - Faults

Any FAULT on the EXTINGUISHANT MODULE will display on the LCD screen on the Extinguishant Module and will also display on the ALARM MODULE as system Mode [image] and a General Fault

General System Status

○ **Fire**   ○ Power Fault
○ Power On   ○ Sounder Fault Disablement
○ Delay on   ● General Fault

Fire in Zone

○   ○   ○   ○
1   2   3   4
○   ○   ○   ○
Zone Fault / Test / Disablement

Fire in Zone

System Mode

3. Connecting to the Control Panel

The Panel has 2 major components

- Alarm Module
- Extinguishant Module
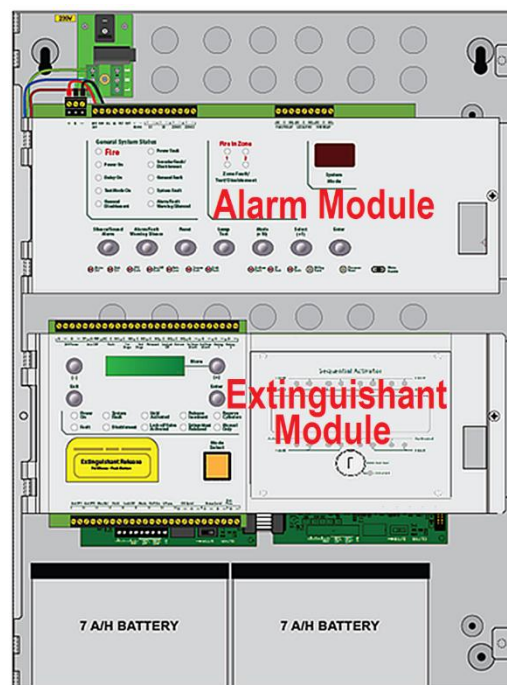
Software revision number

SOFTWARE VERSION LABEL
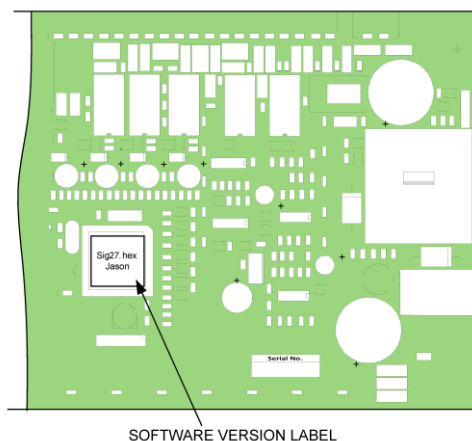
New features may be added to Sigma CP fire control panels from time to time and when this is done the operating software of the unit is updated.

The software revision can be located on the main processor by removing the plate holding the PCB from the enclosure and turning it over.

The software version will have a number such as "216.hex" and it is this number which will determine which features the panel has installed and its compatibility with Sigma CP ancillary board, sounders boards, repeaters etc.

The connections for the power cables are to a pluggable terminal block which may be pulled off of the board to remove power from the PCB assembly. Remove this pluggable terminal only with MAINS POWER **OFF**.

Cabling must comply with the Australian Standards. The resistance of any cable must not exceed 25 ohms.

Terminals are capable of accepting wires of up to 2.5mm^2. Wiring must not go across the front of the circuit board plate or between the plate and the circuit board. If cable entries need to be in positions other than at the knockouts provided, wiring must be fed behind and well away from the surface of the circuit board.

The space at the bottom of the enclosure is largely occupied by the batteries so this must be borne in mind when considering cable entries.

General System Status

Fire

○ Power On

○ Power Fault

○ Delay on

○ Sounder Fault Disablement

○ Test Mode On

○ General Fault

○ General Disablement

○ System Fault

○ Alarm / Fault Warning Silenced

Fire in Zone

	Fire in Zone	
○ 1	○ 2	○ 3
○ 5	○ 6	○ 7

Zone Fault / Test / Disablement

○ 1   ○ 2   ○ 3   ○ 4
○ 5   ○ 6   ○ 7   ○ 8

Zone Fault / Test / Disablement

System Mode

Silence / Sound Alarm

Alarm / Fault Warning Silence

Reset

Lamp Test

Mode (+10)

Select (+1)

Enter

● Mains Fail
● Batt. Fail
● CPU Fault
● Aux.24 Fault
● Batt. Low
● Comms Fault
● Earth Fault
● Sys.Fuse Fault
● S1 Fault
● S2 Fault
○ W/Dog Reset
○ Processor Reset

Write Enable

+ E − 24V

AUX ROV SIL AL FLT RST

RS485

S1   S2   ZONE 1   ZONE 2   ZONE 3   ZONE 4   ZONE 5   ZONE 6   ZONE 7   ZONE 8   FAULT RELAY   LOCAL FIRE   FIRE RELAY

Aux 24v Output

REMOTE INPUTS
Silence
Evacuate
Fault
Reset

CIE Serial Output

Sounder 1

Sounder 2

Det Zone 1

Det Zone 2

Det Zone 3

Det Zone 4

Det Zone 5

Det Zone 6

Det Zone 7

Det Zone 8

FAULT Relay Contacts

Local Fire Contacts

Fire Relay Contacts

EOL Resistors

EOL Detection Circuits   **6K8**   **EOL Sounder Circuits**   **10K**
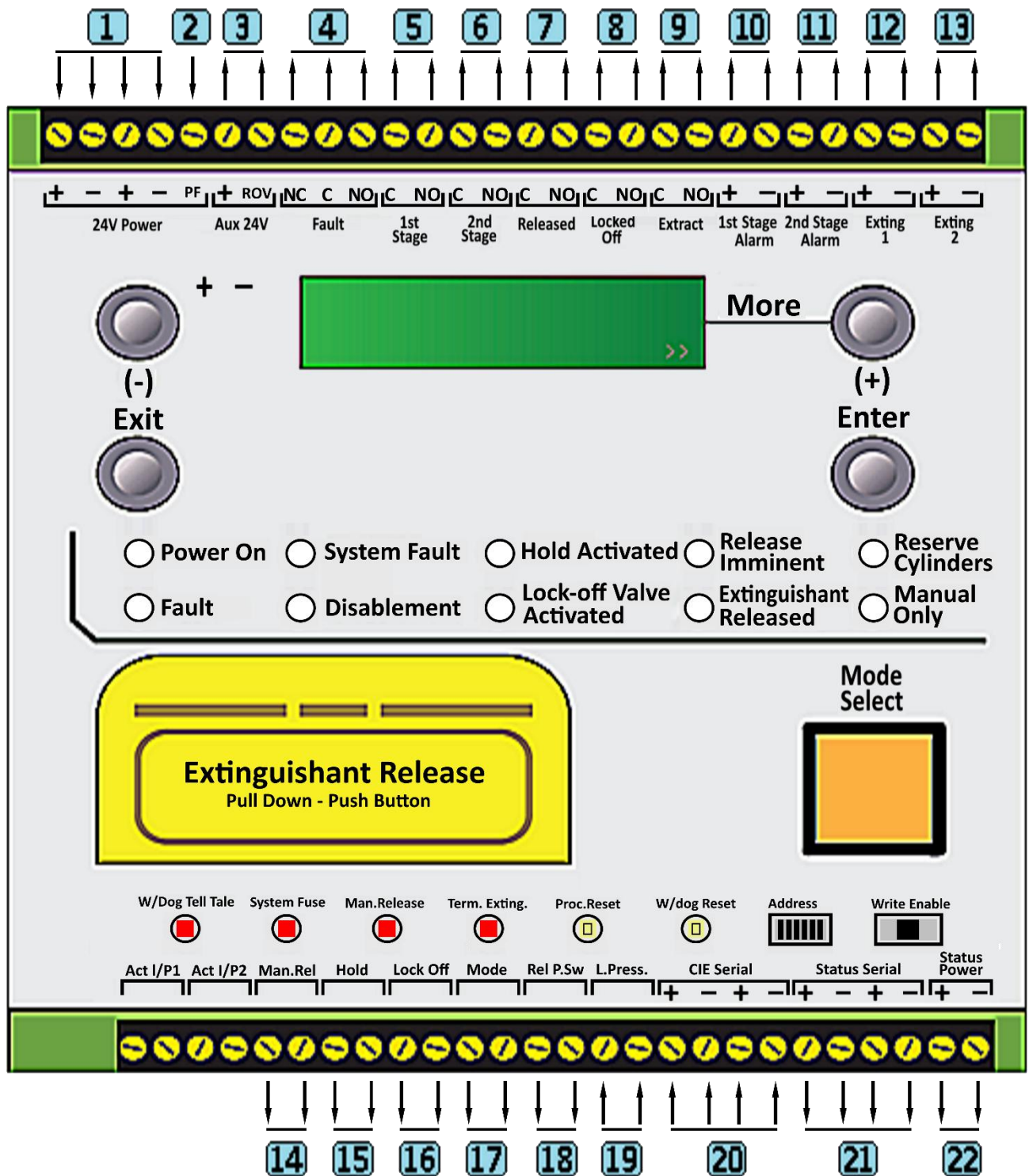
1	24vDC Input from PSU	
2	PF Input from PSU	
3	Aux 24vDC Output	
4	Fault relay Contact	
5	Stop Air Conditioning	
6	Shutdown Power	
7	Released Relay Contact	
8	Aborted Relay Contact	
9	Extract Fan Power	
10	Ist Stage Sounders	EOL 10K
11	2nd Stage Sounders	EOL 10K
12	Releasing Solenoid	1N4004 Diode
13	Releasing Solenoid	1N4004 Diode
14	Remote Manual Release Switch	EOL 6K8
15	Remote Hold Switch	EOL 6K8
16	Remote Abort Switch	EOL 6K8
17	Remote Auto/Manual Select Switch	EOL 6K8
18	Exting Release Pressure Switch	EOL 6K8
19	Exting Low Pressure Switch	EOL 6K8
20	Internal Connection from Panel	
21	Serial data to Status Units	
22	Power to Status Units	

3.1. Warning Sign and Status Unit Connection
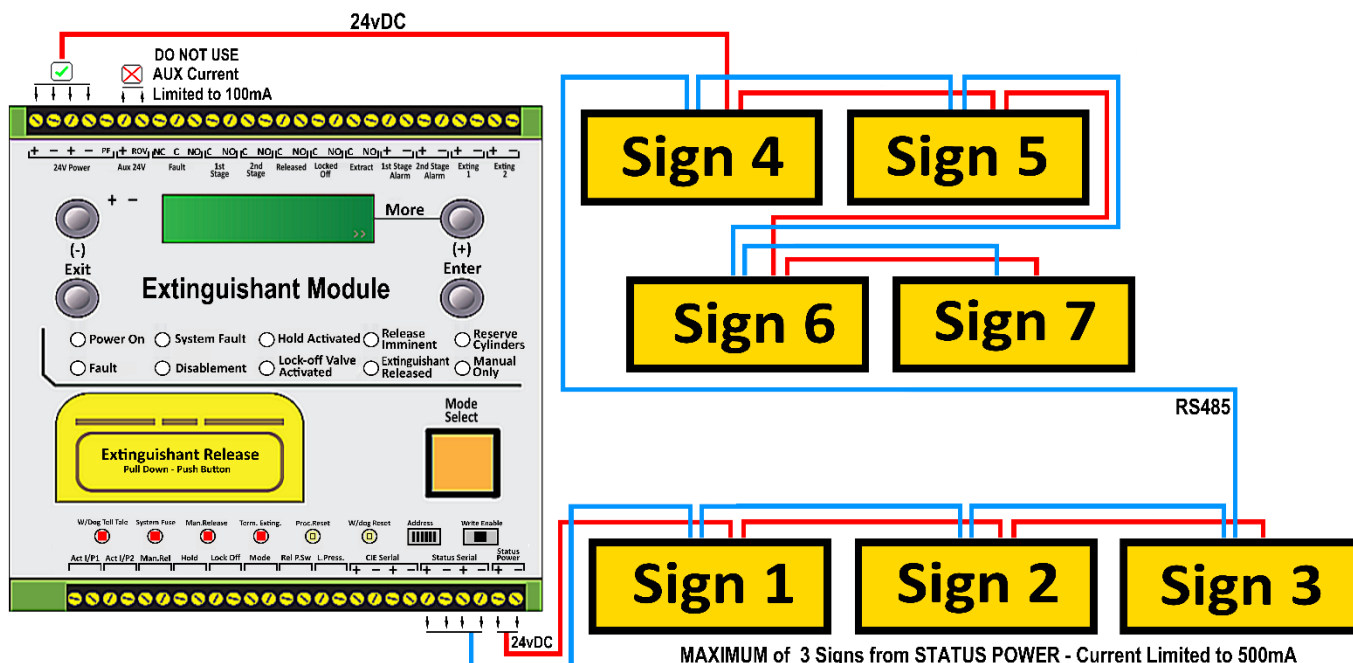
Each Sign requires BOTH 24v POWER and RS485 connections as shown. MAXIMUM devices 7.

Individual addresses required for each Sign. The address switch is located on the bottom left hand corner of the status unit. The address is only read when the boards are first powered, so address switches should not be altered on a system that has power applied, as changes will not be recognised. Units with the same address will cause intermittent fault to be displayed. More details on Addresses in 9.2.7.

3.1.1. Adding - Removing Status units -Electronic Signs – Local Control Stations

PANEL SHOULD BE POWERED DOWN before any changes are made to status units. Status units include Electronic Signs (DNE-EVAC-Sys InOp) and Local Control Stations When the system is first powered on, it will search for connected status units connected to extinguishant module. If status units are connected correctly and detected by the control panel, the LCD will display:

```
X FAULTS
Enter TO VIEW
```

Open the *Display* Window and Press *Enter* on the module to which the status units are connected. Use the "+" button on the module to view the faults. If status units are detected the LCD will display, X = the address of the status unit found.

```
STATUS UNIT X
FAULT
```

To accept the status units found, **slide the WRITE ENABLE switch**, on the module to which the status units or ancillary boards are connected to write mode. The LCD will then display, X= the address of the status unit found.

```
STATUS UNIT X
Enter TO ACCEPT
```

Then press the *Enter* button, the selected status unit or ancillary board will be added to the system and the next unit to be added will be displayed. Press the *Enter* button on the extinguishant module until all of the units have been accepted then slide the *Write Enable* switch to enable mode.

All of the status units found module have now been added and disconnection of any of them will be displayed as a fault on the module and on the detection part of the system. If any status units are disconnected, a Lock Off activated indication will also be displayed at the extinguishant module and all ancillary boards or status units that remain connected. With the *Display Window* Closed, the LCD will display:

```
REMOTE BUS
FAULT
```

The Status units which are disconnected will have all their indicators flashing. When additional status units are added, these will be shown on the LCD when the system is powered up.

3.1.2. Alternative Configuration of RS485 Circuit.
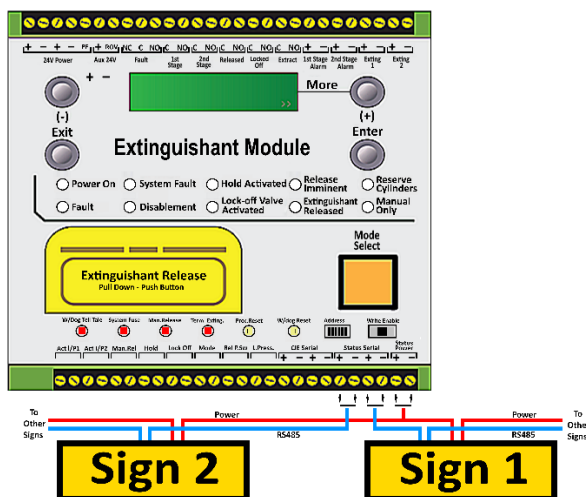
The Panel is normally configured with only1 RS485 cable from the panel. It is possible to have 2 separate cables for the RS485 circuit with the panel effectively in the middle of the circuit rather than at one end.

Where this configuration is required the link LK2 must be removed or positioned over 1 pin only.

PANEL MUST BE POWERED DOWN BEFORE ANY CHANGES TO SIGNS. If process is done with power connected the is a possibility that a short could occur and damage the panel.
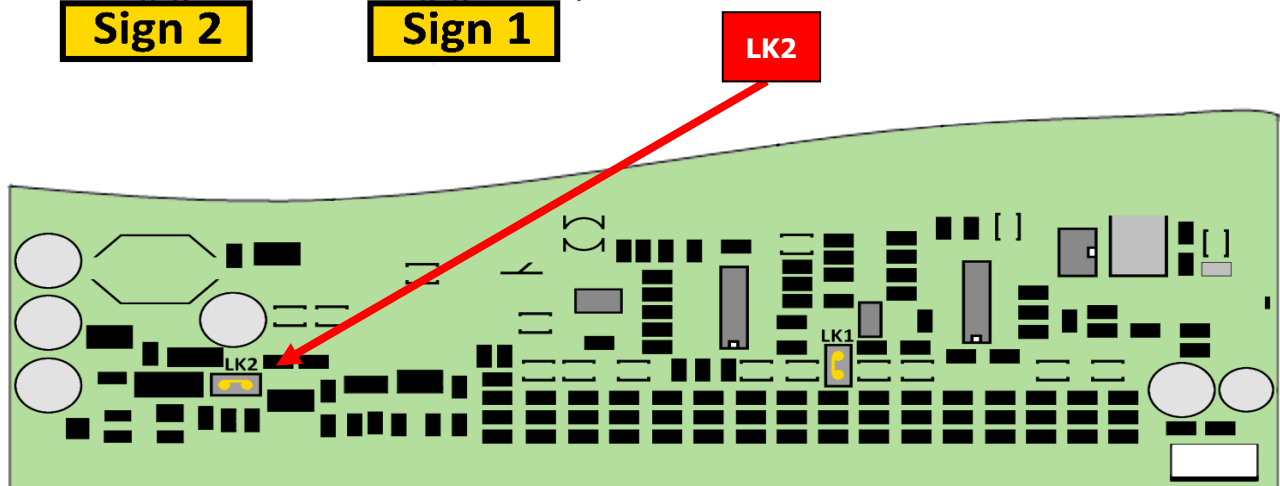
Rear view of Extinguishing Module Circuit Card

3.2. Detection zone wiring

The detection zones provide a nominal 24V DC to power compatible conventional detectors and call points.

The wiring is monitored for open and short circuit fault conditions. Detection zone circuits must be wired as a single, radial circuit with no spurs or T junctions to enable the monitoring circuit to work correctly.
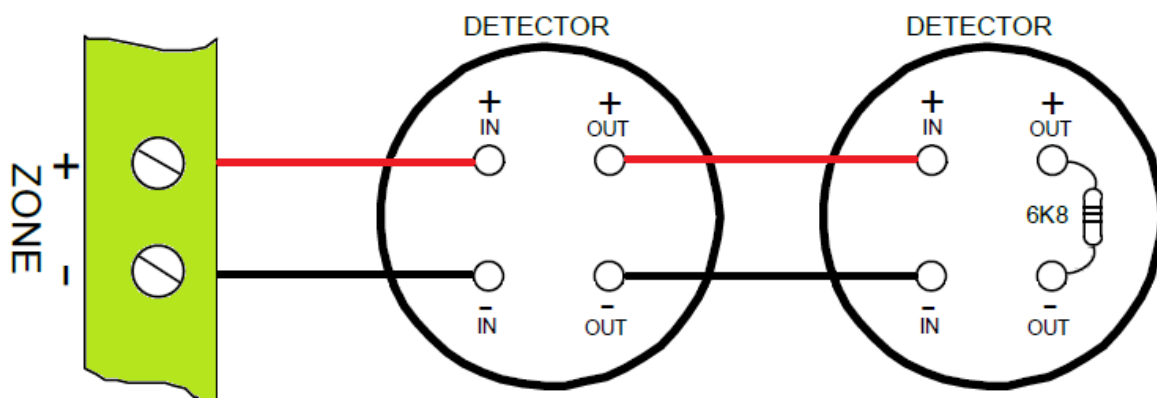
3.3. Sounder circuit wiring

All sounders must be of the polarised type. Sounder circuits are monitored for open and short circuit faults by placing a 10K end of line monitoring resistor across the last device on the circuit.

Sounder circuits must be wired as a single, radial circuit to enable the monitoring circuit to work correctly. A maximum of 1.6 Amps is available for powering sounders with a maximum load of 0.41 Amps on any one circuit.
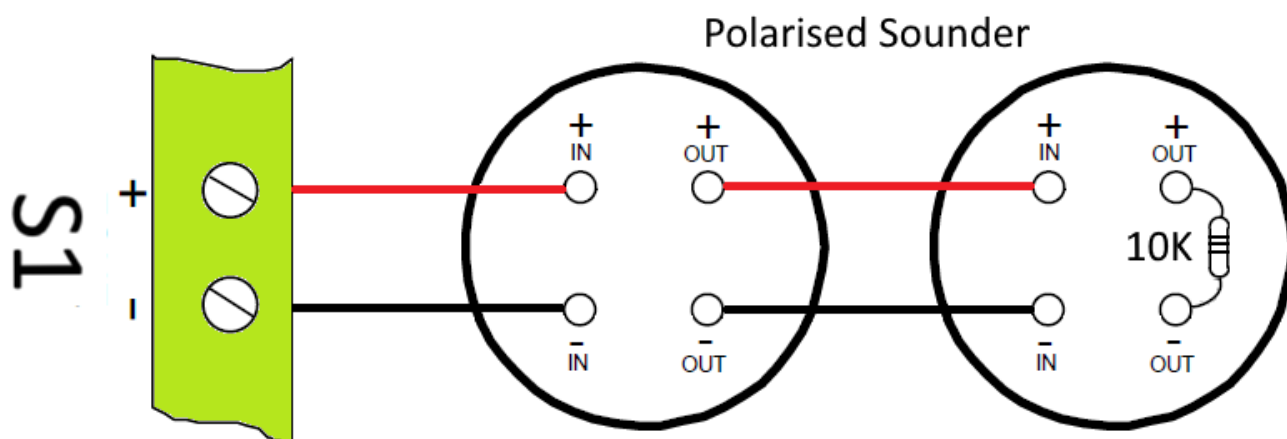
3.4. Thermal Fuse Mounting

The thermal fuse is required by AS-4487 as an indicator that the system has activated. The thermal fuse should be mounted on the most convenient – or closet FirePro unit to the Control Panel. Only one thermal fuse is required in each system. The fuse is mounted in a stainless steel enclosure, and this is rated to IP65. It designed for use at temperatures between -5^{0}C (+/- 3) and +40^{0}C (+/-2) and with a maximum relative humidity of 95%. The fuse is a means of indicating to the FIP that the system has operated. It has no ability to activate the system.

SINGLE USE ONLY – CANNOT BE RESET
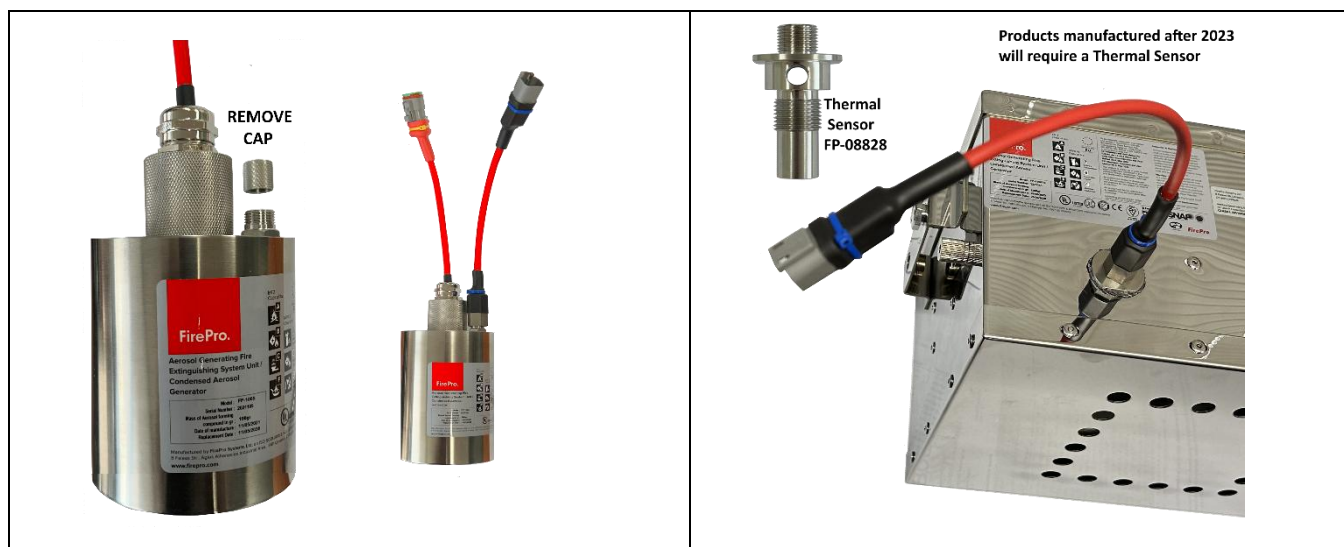
3.5. Thermal Fuse Connection
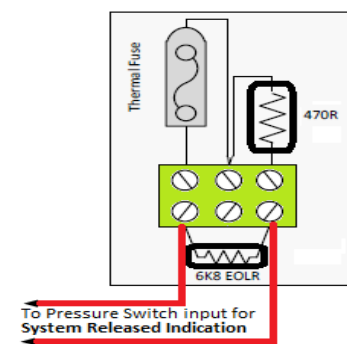
A Thermal Fuse to be connected to the ONE of the FirePro Aerosol Generators has activated. It should be installed in accordance with the instructions included in the relevant FirePro document.

Menu setting in the XT card allows for a normally closed (inverted) input to be used (**see manual 6.2.12**).

Cables connected using 3 Pin Deutsch Plugs

> **Connect Thermal Fuse to Rel.P Switch**

Thermal Fuse connection when 2 Thermal Fuses installed
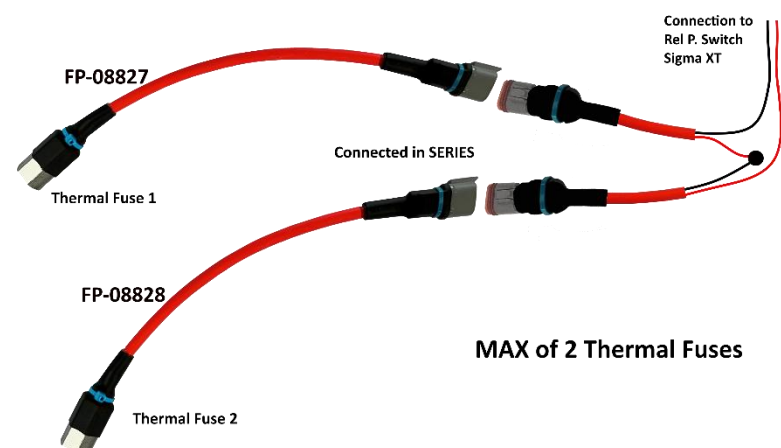
When Using FP-C2 sub FIP with Sigma XT panel. This configuration is used. This uses 2 thermal fuse assemblies.

MULTIPLE Thermal Fuses
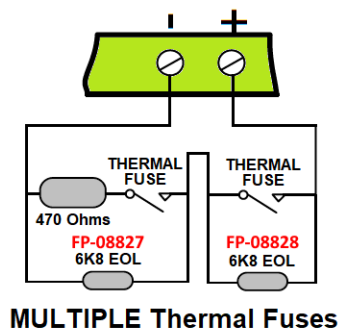
4. Multiway Sequential Activator (FirePro Units)

4.1. Overview

Sequential Activator enables connection of actuator devices. Multiple boards can be connected together to provide control and supervision of up to 40 igniting actuator devices from a single extinguishing control panel circuit.

Where multiple boards are connected, the system comprises one Master board connected to up to 4 Slave boards.

MSA boards provide "Activated" and "Fault" indications and optional display boards can be connected to provide indications. A master "Isolate" control with indication of the isolated status is also available Master display boards.

All outputs can be isolated such that the system can be tested by observing the "Activated" and "Fault" indications with no danger of operating the igniting actuators. Isolation can be performed via the slide switch mounted on the Master MSA board, or a key switch mounted to the panel.

On activation from the control panel, the outputs on each MSA board and subsequent MSA boards operate sequentially such that only one pair of actuator outputs are operated at a time in sequence.
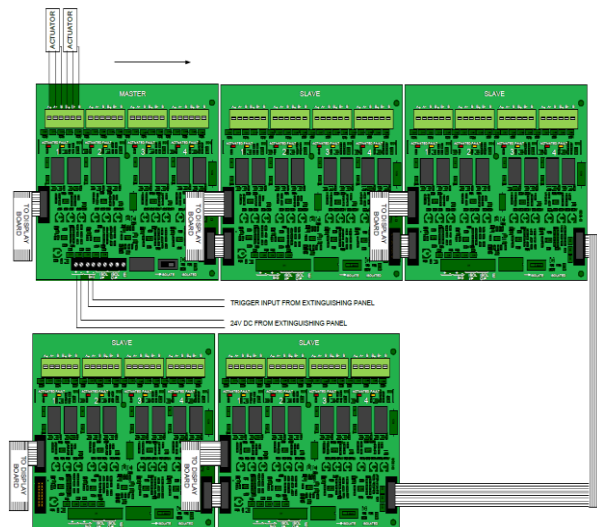
TECHNICAL PARAMETERS

Ext Input Signal	21-29vDC – Supervised for open and short circuits
Power required	21-29vDC, 100 milliamps
Actuator cable resistance	7 ohms max(A+ to B-)
Actuator resistance	2.6 ohms max per actuator
Actuator output voltage	Follows input voltage – 21-29V
Quiescent current	Avge 10 milliamps per MSA board
Output active time	2.5 to 3 seconds
EOL device	1N4004 diode (Master MSA board, no additional device needed)
Operating temperature	-4C to +40C
Master and Slave size	150mm x 150mm

4.2. Installation

MSA boards must be mounted on metal pillars to a chassis or enclosure that is securely bonded to the earth of the fixed installation in all five mounting positions.

All cabling to the boards should be segregated from any mains cables and wiring to the actuators must be secured to the MSA board with cables ties using the slots provided. Only cables of 2.5mm^2 or smaller can be connected to the terminals.

Cable resistance can reduce the current available to actuators on long runs. Actuator cable resistance should not exceed the maximum value specified in the technical parameters.
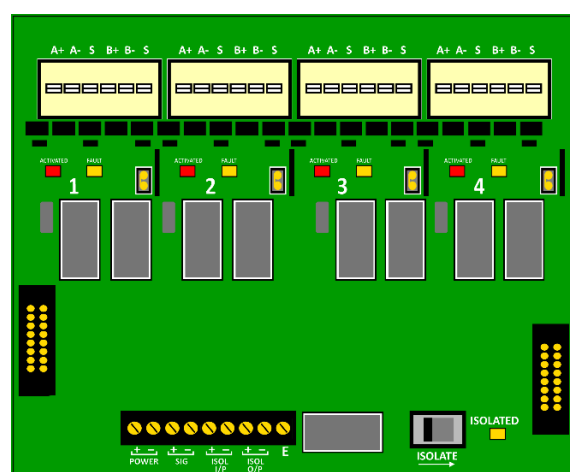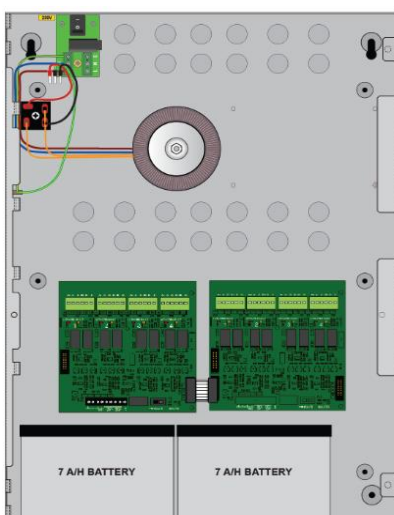
Jumpers are located for each block of terminals. Marked as LK2-5.

These are to be positioned to one PIN only when that block is not being used.

This will indicate that this block is not to be included in the monitored circuit.

(Master shown here)

The signal line from the extinguishing control panel is terminated by a 1N4004 diode which is taken out of circuit when any actuators are disconnected thus signalling a fault condition at the controlling extinguishing panel. A maximum of 4 Slave MSA boards can be connected to a Master MSA board.

4.3. Connection of Aerosol Units to Activation circuit

Quick disconnect terminals are provided in 4 groups of 6 for the connection of actuator devices. To connect the wiring push on the white button on top of the terminal block and insert wire into the aperture making sure that the wire is pushed to the full depth of the aperture. A firm tug on the wire will confirm that it is seated correctly.
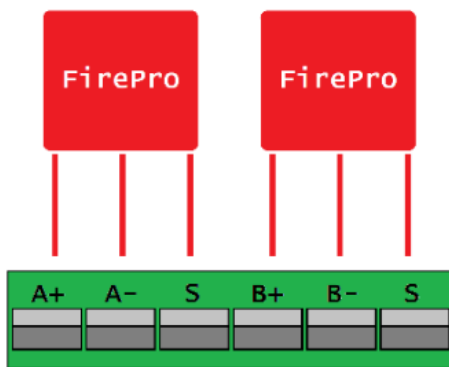
Each FirePro unit is connected directly back to the Sequential Activator as shown. The units are NOT polarity sensitive. ENSURE that earth shield cable is terminated in the terminal marked "S".

Where only one FirePro is required on a circuit a 2R2 3W Wire Wound Surge Resistor must be placed across the other circuit as shown.
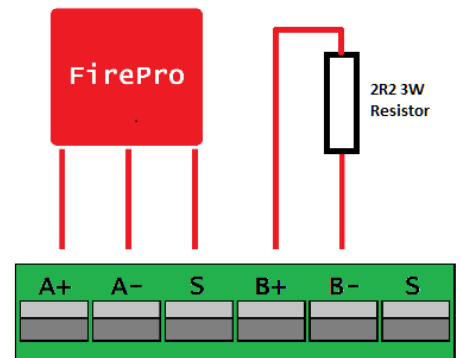
Connections using Splitter Leads

More efficient field wiring may be achieved using Splitter Leads. This allows for a single activation cable to for up to each group of max 4 FirePro units.

The splitter lead is built with a transorb installed which allows for current to be passed for activation under all circumstances.

MAX of 4 FirePro units for each activation Cable. This would require 3 splitter leads.
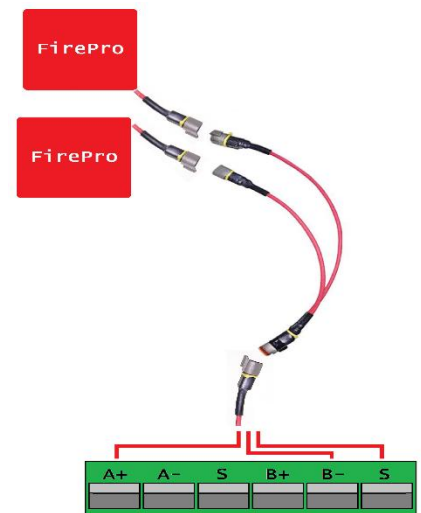
4.4. Connection to FirePro Units

When constructing leads to the FirePro units the supplied Deutsch Plugs must be used to ensure water-proof connections are made throughout the installation.

1. Cut cable to required length and strip outer insulation to approximately 50mm.
2. Strip inner insulation to approx. 6mm and using a Deutsch Crimping tool, fix pins to the exposed ends of the cable, including the earth.
3. Place heat shrink or rubber boot over the end of the cable. Identify correct socket on plug by the numbers/letter on the side of the plug and push through the gasket at the bottom of the plug until a click is heard and the pin is locked in place.
4. Place the locking wedge inside the plug to ensure pins remain secure. (Male plugs the locking wedge is orange. Female plugs the locking wedge is green)
5. Using the heat shrink and rubber boot, seal the back of the plug.

Deutsch Plug 3 Pin
Male/Female

A - Active (Red)
B - Neutral (Black)
C - Earth/Shield
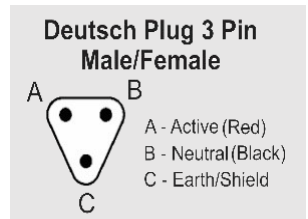
4.5. Input connections

Standard screw terminal connections are provided for connection of the input cables from an extinguishing control panel. These are duplicated to allow the extinguishing circuit to be continued on to other devices if required. A fault will be indicated at the extinguishing control panel if either the trigger input wiring or the 24V power wiring is disconnected from the MSA master board.

TRIGGER INPUT FROM EXTINGUISHING CONTROL PANEL
(EXH1 or EXH2 Output Circuit)

24V DC FROM EXTINGUISHING PANEL

ISOL I/P   ISOL O/P   E
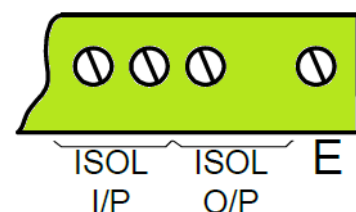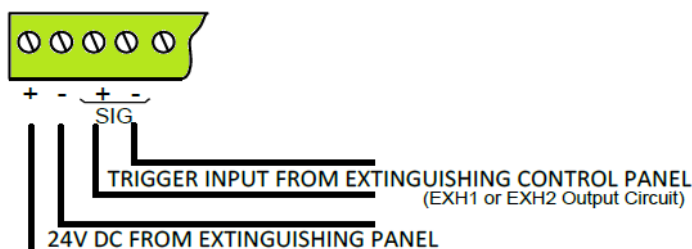
Standard screw terminals are provided for the connection of a remote Isolate switch and indicator. Closing a volt free contact across the ISOL I/P terminals will isolate all outputs. The Isolated condition can be indicated at a remote location via the ISOL O/P volt free terminals.

4.6. Indications

Actuator outputs are supervised for circuit faults and a yellow Fault indicator is provided for each of the 4 dual actuator outputs. This indication is extended to the optional display board.

Activation of each of the 4 dual actuator outputs is indicated by a red Activated indicator which will illuminate as soon as the output operates and remain illuminated until the triggering extinguishing signal is removed. The yellow Fault indicator will illuminate along with the red Activated indicator. This indication is extended to the optional display board. Upon initial power up and after activation Fault LEDs may be illumined for a few seconds while the system stabilises.

A yellow Isolated indicator is provided which will illuminate upon operation of the onboard Isolate slide switch or the front panel mounted Isolate keyswitch or the ISOL input at the terminal block on the Master MSA.

4.7. Jumper links

End of line monitoring. All boards are supplied with jumper links fitted at position LK1 in the bottom right hand corner of the PCB.

This jumper should be removed and placed on one pin of the 2 pin header only on all boards except the last one fitted to the line. If only one board is fitted the jumper can remain in place. This ensures that the ribbon cable connecting multiple boards is supervised for disconnection and a fault is announced at the extinguishing control panel.
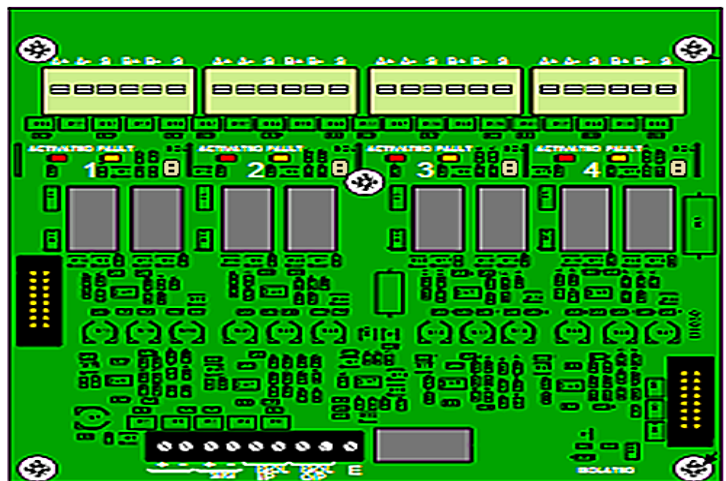
(Slave shown here)

4.8. Fault monitoring links

All boards are supplied with LK2 to LK5 fitted. These links must be fitted to allow the actuator outputs to be supervised. If any of the actuator outputs are not being used the link associated with that actuator output can be removed and placed on one pin of the 2-pin header only.

4.9. Isolate slide switch

As well as the optional front panel key switch or a remote isolate switch connected to the screw terminals, Master MSA boards have a slide switch which can be used to isolate all outputs.

Operation of the Isolate switch is accompanied by a yellow LED and allows testing to be performed by activating the control panels releasing output and observing the indicators on the MSA boards illuminating in sequence.
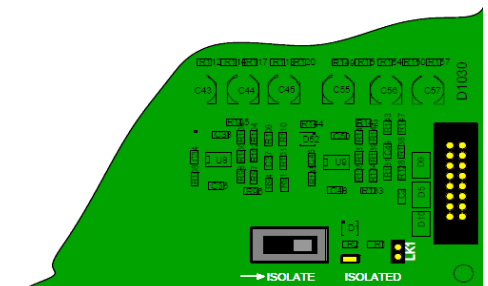
4.10. Display boards

MSA Master and MSA Slave boards have the option for front panel mounted display boards which indicate the Activated and Fault status of the board to which they are connected. The master display board also has an Isolate key switch and Isolated indicator which can be used to isolate all outputs.

The mounting plate for the display board has the facility for a slide in label which can be used to provide a location reference for each of the outputs.

MASTER MSA DISPLAY BOARD   SLAVE MSA DISPLAY BOARD
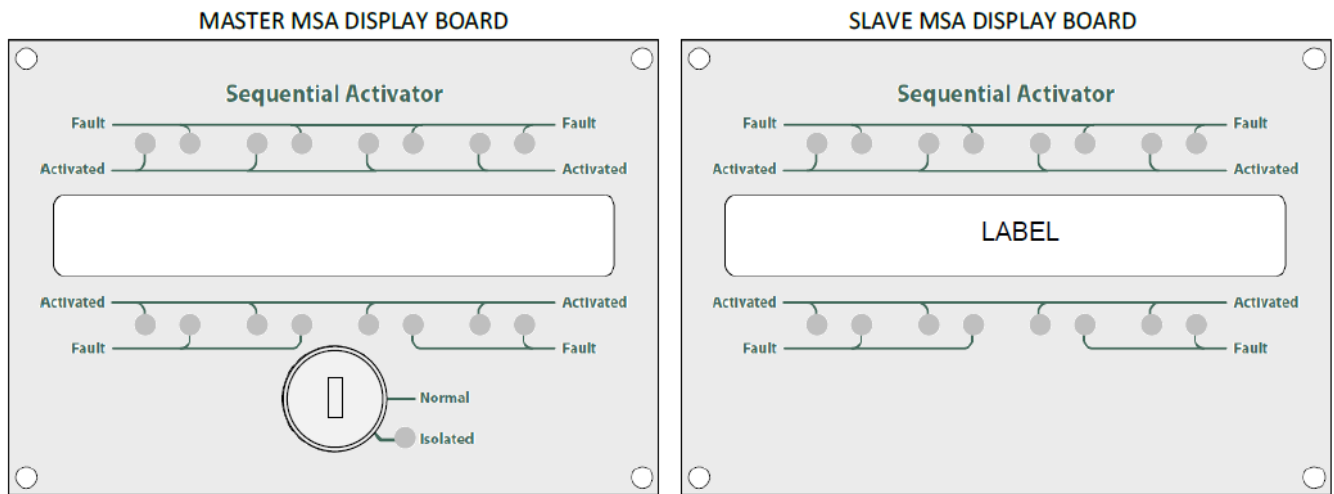
MSA display boards mount to standard MP301TLGT carrier plates and into M2, M3 or M4 enclosures. All display boards have indicators for two MSA boards and connect to the MSA boards via 16 way ribbon cables.

4.11. Setting up extinguishant monitoring circuit

The extinguishant outputs monitor actuator releasing devices. This requires that the outputs be calibrated with the releasing device and the cable to it, fitted as it will be in the working system. The extinguishant monitoring level will be set at approximately 206 but may be between 204 and 208.

Before calibrating the extinguishant outputs ensure that the releasing device is fitted to the cable as shown in section 11.

To change, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module then press the "-" button until the display shows:

If the parameters of the extinguishant output change e.g. by replacing an actuator, then the extinguishant output monitoring level will need to be "learned". To do this, open the *display window* to put the system into access level 2. The LCD will show:

Enter menu until the LCD displays:

The XXX displayed here is the previous (factory) level to which the monitoring level had been set. Press the *Enter* button. The LCD will now show:

| EXTING. O/P 1 |
| LEVEL = XXX |

The XXX shown here is the current monitoring level detected on the extinguishant output. Press *Enter* button accept the monitoring level.

| EXTING. O/P 1 |
| LEVEL = XXX   ? |

Set the monitoring level for output 2 in the same way if it is being used, otherwise switch the *Write Enable* slide switch to the right (off) position and check that an open or short circuit fault on the extinguishant output(s) is detected and shown on the control panel.

NOTE: Value of 255 means that the output is OPEN CIRCUIT. This must be corrected and the circuit re-calibrated.

5. Other Connections

5.1. Connection to remote control terminals (not normally used)

Some functions of the control panel can be controlled externally from the panel. These are on the terminals block as follows:

Remote 0V supply – R0V   Silence Alarm – SIL

Sound Alarm – AL   Fault – FLT

Reset – RST

To activate these inputs, the remote 0 Volt (R0V) supply must be connected to the input via a normally open switch or contact and via a resistance of no greater than 100 ohms. All of the remote-control inputs are non-latching.
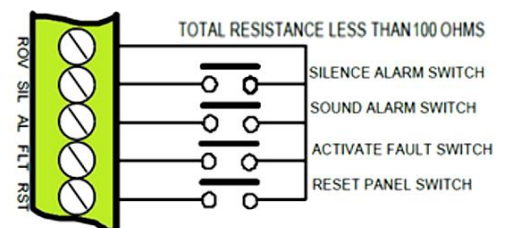
5.2. Aux 24V DC supply

An auxiliary 24V DC supply is provided to enable local signalling or control of ancillary systems such as door release controllers. The terminals for the Aux 24V supply are labelled Aux 24V and ROV. The ROV terminal is the negative terminal and is the same terminal that should be used to switch the remote-control terminals.

It is possible to make the ROV terminal pulsing so that by connecting it to the AL terminal via a remote volt-free contact, it can be used to pulse the dedicated sounder circuits in response to a signal from another system for example to give an alert. See programming code 24.

The supply is fitted with an electronic self-resetting fuse to protect the control panel's 24V supply.

Any standing load on the Aux 24V supply must be considered when calculating battery standby times as standby time will be significantly affected by even modest standing loads. It is recommended that the Aux24V output is **not** used to power standing loads and not used to supply loads of greater than 500 milliamps.

Where the Aux 24V supply is used to power electromechanical devices such as relays or door retainers it is imperative that a suppression diode is fitted across the coil of the electromechanical device to prevent the generation of high voltage transients back to the control panels power supply.

<mark>The Aux 24V DC Supply is not suitable for powering Sigma CP sounder boards or status units</mark>.

5.3. Connection to relay contacts

Volt free changeover relay contacts are provided for local control and signalling if required. These contacts are rated for switching signalling circuits only and the maximum ratings listed in Table 1 MUST not be exceeded.

5.3.1. Fault relay (Alarm Module)

The *Fault Relay* is normally energised and will de-energise upon any fault condition on the detection part or the extinguishant part of the control panel including total loss of power.

The marking on the fault relay contacts is in accordance with standards (based on the relay being de-energised) as this relay is normally energised in this panel the NO condition is NORMALLY CLOSED and NC is Normally Open. The relay changes state when a fault condition arises.

5.3.2. Fault relay (Extinguishant Module)

These fault relays are normally energised and will de-energise upon any fault condition on the extinguishant module or total loss of power. These relays provide individual fault outputs.

5.3.3. Local fire relay (Alarm Module)

The *Local Fire Relay* will energise upon activation of a fire condition on any of the zones or pressing of the *Sound Alarm* Button on the front panel. The relay will remain activated until the alarm is silenced or the panel is reset. This relay will not operate upon activation of the remote AL input or when a fire condition is triggered on a zone that is in test mode.

5.3.4. Fire relay (Alarm Module)

The *Fire Relay* will energise upon activation of a fire condition on any of the zones. The relay will remain activated until the control panel is reset. This relay will *NOT* operate upon activation of the remote AL input. Individual zones can be configured not to operate the Fire relay by setting configuration options E1 to E8.

5.3.5. First stage alarm relay (Extinguishant Module)

The *First Stage Alarm Relay* will operate upon activation of a zone that has been configured to contribute to the extinguishant release and will de-activate only when the panel has been reset.

This relay will also operate upon activation of the panel mounted or a remote manual release switch. The stage 1 relay output can be disabled at access level 2 via the menus on the Sigma XT module.

5.3.6. Second stage alarm relay (Extinguishant Module)

The *Second Stage Alarm Relay* will operate when the panel is in the activated condition (i.e. the release countdown timer has started) and will de-activate only when the panel has been reset from the released condition.

The stage 2 relay output can be disabled at access level 2 via the menus on the Sigma XT module.

5.3.7. Released relay (Extinguishant Module)

The *Released Relay* on the extinguishant module will operate when the module is in the released condition.

The Released output can be disabled at access level 2 via the menus on the Sigma XT module.

5.3.8. Aborted relay (Extinguishant Module)

The *Aborted Relay* will operate when the panel is in the aborted condition via an abort switch input.

5.3.9. Extract relay (Extinguishant Module)

This provides a means to vent a room of extinguishant gases but prevents the gases from being vented during a discharge. To switch on *Extract Relay*, pen the *display window* press *Enter*. The LCD will show:

Press "-" until the LCD shows:

```
TURN OFF
EXTRACT OUTPUT
```

```
TURN ON
EXTRACT OUTPUT
```

Press *Enter* to turn ON the *Extract* output and the LCD will show:

5.4. Shutdown Isolation Switch
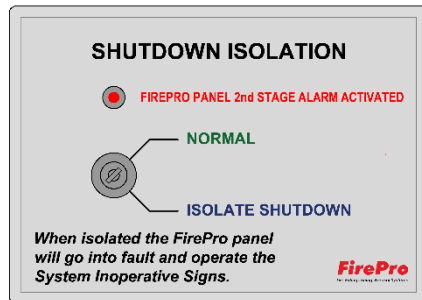
This switch can be installed to "isolate" or disable the shutdown of devices that are connected to the panel. Devices such as Air Conditioners or Sensitive computer devices which are required to be shutdown in a fire, but are not required to be shutdown for Monthly testing purposes. The switch when "isolated" will activate the System Inoperative sign and stop the shutdown signal to the connected devices. This is a powered output to drive a relay.

To install this switch connections as follows:

The *Second Stage Alarm Output MUST* be configured to be steady when using this switch. The factory default for the second stage alarm is pulsing.

To change, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module then press the "+" button until the display shows:

> PULSED
> ACTIV. ALARMS

To change to steady second stage alarms, press *Enter* . To save, slide the *Write Enable* switch to the right.

The *Second Stage Alarm Output* will now be steady when the module is activated.

> STEADY
> ACTIV. ALARMS ?

6. Configuring the panel

6.1. Alarm Module

The Alarm Module has 2 or 8 detection zones and has several configuration options which can be set at the time of commissioning to suit the requirements of the installation. The configuration options are only available at access level 3 which is accessed by operating the *Write Enable* switch to the **RIGHT** as shown below. When the panel is at access level 3, the buzzer will "pip" three times every few seconds as an indication that it is at this access level.

Configuration options are simple to *Enter* using the codes the table below. When the control panel is at access level 3, the sub-text of the *Mode* and *Select* buttons is used to *Enter* a number using tens (+10) and units (+1).

When the required code number is displayed, pressing the *Enter* button will cause the dot on the units seven segment display to flash. This indicates that a configuration option has been set.

To review which configuration options have been set previously, simply scroll through numbers 1 to 99, A1 to A8, C1 to C8 and E1 to E8 and those with a flashing dot indicate which options have been set.
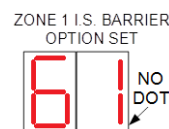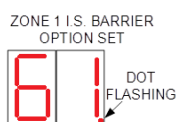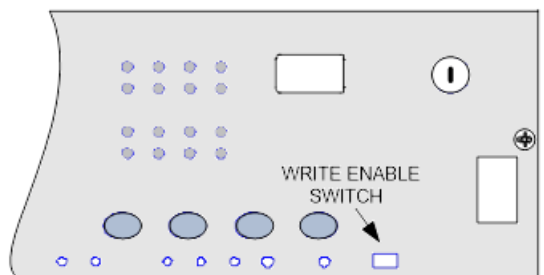
6.2. Extinguishant Module

6.2.1. General Settings

LINKS - The Sigma XT module contains 3 Links.

> LK1 CIE Serial Terminator – This terminates the RS485 comms from the control section
>
> LK2 Status Serial Terminator – This terminates the RS485 comms to the Status units and Warning Signs
>
> LK3 PF Input Inversion – Removing this jumper inverts the PF input so that it must be normally connected to 0V for no fault to be present.

PF INPUT - is used to signal a power failure to the XT Module and id active (power fail mode) when connected to 0V. The function of this input can be inverted by the removal of LK3 on the rear of the board.

6.2.2. Language Selection

The module is capable of displaying two languages if factory programmed to do so. The first access level 3 option is to select the local language or the default language (English)

6.2.3. Extinguishant Output mode

The Sigma XT module has two extinguishant outputs. These can be configured to operate together at the same time (common) or be configured as main and reserve outputs. The factory default setting is common.

To change, open the *Display Window* and slide the *Write Enable* switch the left. Press the *Enter* button. The LCD will show:

```
EXTING. O/P MODE
= COMMON
```

Press the *Enter* button the LCD will show:

Press the Enter button to select main/reserve.

```
EXTING O/P MODE
MAIN / RESERVE  ?
```

To save, slide the *Write Enable* switch to the right. When the extinguishant module is activated, only extinguishant output 1 will switch on. There will also be an additional menu item at access level 2 to allow the reserve extinguishant output to be selected.

6.2.4. Configuring the Activation Mode

It is possible to configure the extinguishant modules to be activated by coincidence (any 2 zones in a range of zones) or a single zone in a range of zones. The activation mode is factory set to coincidence.

```
ACTIVATION MODE
= COINCIDENCE
```

To change, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module then press the "+" button. The LCD will show:

```
ACTIVATION MODE
= SINGLE
```

Press the *Enter* button The LCD will show:

6.2.5. User Output Mode

The clean contact User output can be programmed to be activated either when a First Stage Alarm occurs, or the Hold Input is activated. It is usual for this relay to be used as a First Stage Alarm.

```
USER OUTPUT.
= STAGE 1
```

To change this, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button then press the "+" button.

```
USER OUTPUT.
= HOLD
```

Press the *Enter* button The LCD will show:

The OUTPUT is now set to HOLD. If the *Enter* button is pressed again The LCD will show:

```
USER OUTPUT.
STAGE 1  ?
```

Press the *Enter* button and the LCD will show. The output is set to Stage 1

```
USER OUTPUT.
STAGE 1
```

To save the settings, slide the *Write Enable* switch gently to the right. Operation of either a STAGE 1 alarm or the HOLD input, as set above, will result in the activation of the User Output relay.

6.2.6. Configuring the Activation Zones

The extinguishant modules are factory set to be activated by coincidence activation.

This means that on an 8 zone, 4 extinguishant area panel for instance, zones 1 and 2 will be set to activate the extinguishant module at address 1, zones 3 and 4 will be set to activate the extinguishant module at address 2 and so on. This can be changed if required so that any zones can activate the extinguishant module.

To change, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module and then the "+" button until the display shows, X will be the number of the zone selected to be the first activation zone.

```
FIRST ACTIV.
ZONE = X
```

```
FIRST ACTIV.
ZONE = X  ?
```

To change use the "+" and "-" buttons to select the required zone number. When the required zone is displayed, press the *Enter* button. The display will show the first activation zone.

Press the *Enter* button and then the "+" button. The display will then show, X will be the last activation zone.

```
LAST ACTIV.
ZONE = X
```

```
LAST ACTIV.
ZONE = X  ?
```

To change use the "+" and "-" buttons to select the require zone number. When the required zone is displayed, press the *Enter* button.

6.2.7. Reset Inhibit Time

This setting can be used to inhibit the reset of the system after it has been activated until there is a signal representing the end of the discharge (a released input) or for an adjustable time period of up to 30 minutes. The factory default for the reset inhibit time is 0.

```
RESET INHIBIT
TIME = 0  ?
```

```
RESET INHIBIT
TIME = 0
```

To change, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module then press the "+" button until the display shows:

Press the *Enter* button and the display shows. To change, press the "+" or "-" buttons until the time required is displayed and then press *Enter*. To save, slide the *Write Enable* switch to the right.

6.2.8. Pre-Release Delay Time

This setting allows for a time delay to be set from activation of the extinguishant module to operation of the extinguishant release output. This time may be between 0 and 30 seconds with a maximum of 5 second steps.

The factory default time delay on the Sigma XT extinguishant modules is 30 seconds.

To change, open the *Display window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module then press the "+" button until the display shows:

Press the *Enter* button and the display will show. To change, press the "+" or "-" buttons until the time required is displayed and then press *Enter*.

```
PRE-REL DELAY
TIME = 30 SEC
```

```
PRE-REL DELAY
TIME = 30   ?
```

6.2.9. Output 2 Delay Time

This setting allows for the EXT 2 output to be fired a short period after EXT 1. This allows for a 'top-up' Extinguishant dump if it is needed.

This time may be between 0 and 10 minutes, available in 1 minute steps.

The factory default setting 0 minutes, meaning that the EXT 2 output fires at the same time as the EXT 1 output.

The Extinguishant Output Mode must be set to Common.

To change, open the *Display window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module then press the "+" button until the display shows:

Press the *Enter* button and the display will show. To change, press the "+" or "-" buttons until the time required is displayed and then press *Enter*.

To save, slide the *Write Enable* switch to the right.

```
OUTPUT 2 DELAY
TIME = 0 MIN
```

```
OUTPUT 2 DELAY
TIME = 5 MIN   ?
```

6.2.10. Extinguishant Release Time

The time that the extinguishant output is active for can be set between 60 and 300 seconds. The factory default time for this is 60 seconds. It is also possible to disable this timer such that the extinguishant outputs remain active until the module is reset. See Release timer menu option section 6.2.15.

To change the *Extinguishant Release Time*, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button then press the "+" button until the display shows:

Press the *Enter* button and the display will show. To change, press the "+" or "-" buttons until the time required is shown then press *Enter*.

```
EXTING. RELEASE
TIME = 60 SEC
```

```
EXTING. RELEASE
TIME = 60   ?
```

6.2.11. Second stage alarm - Pulsing/Continuous

The *Second Stage Alarm Output* can be configured to be steady or pulsing at about 1 second on, 1 second off to suit the desired application. The factory default for the second stage alarm is pulsing.

To change, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module then press the "+" button until the display shows:

To change to steady second stage alarms, press *Enter* . To save, slide the *Write Enable* switch to the right.

MUST be set to STEADY when using Shutdown Isolation Switch

```
PULSED
ACTIV. ALARMS
```

```
STEADY
ACTIV. ALARMS   ?
```

6.2.12. Released Indication

It is possible to select whether the released indication on a module is operated at the same time as the extinguishant release outputs operate or by operation of a thermal fuse connected to the released thermal fuse input.

AS require indication to be via Thermal Fuse which is factory default.

To change, open the *Display Window* and slide the *Write Enable* switch on the module to be configured gently to the right. Press the *Enter* button on the extinguishant module then press the "+" button until the display shows:

To change press *Enter*. To save, slide the *Write Enable* switch to the right.

```
RELEASE IND ON
RELEASED INPUT
```

```
RELEASED IND ON
EXTING. REL   ?
```

6.2.13. Delay on manual release

The factory default setting for this is for the manual release to have a delay time the same as the pre-release delay.

| DELAY ON |
| MANUAL RELEASE |

To change to have no delay when a manual release is operated, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module then press the "+" button until the display shows:

| NO DELAY ON |
| MANUAL RELEASE ? |

Press the *Enter* button and the display will show. To change press *Enter*.

To save, slide the *Write Enable* switch to the right. Operation of a manual release will now operate the extinguishant outputs immediately with no delay.

6.2.14. Pre-Release Delay – Reset/Disable

Once activated, an extinguishant module cannot be reset until after the reset inhibit time has expired and the extinguishant release timer has expired. It is possible to configure the module such that it can be reset during the pre-release delay.

Open the *Display Window* and slide the *Write Enable* switch, on the module to be configured, gently to the left. Press the *Enter* button on the extinguishant module then press the "+" button until the display shows:

| PRE-RELEASE DELAY |
| RESET DISABLED |

Press the *Enter* button to change press *Enter*.

| PRE-RELEASE DELAY |
| RESET ENABLED |

To save, slide the *Write Enable* switch to the right. It will now be possible to reset the module during the pre-release delay but not while the extinguishant outputs have operated until after the expiry on the reset inhibit time.

Note: Disabling the Pre-release delay reset may not comply with the requirements of Australian Standards.

6.2.15. Release timer (infinite extinguishant duration)

The release timer can be disabled such that once the extinguishant outputs have operated; they remain operated until the system is reset.

| RELEASE TIMER |
| ENABLED |

To disable, open the *Display Window* and slide the *Write Enable* switch on the module to be configured gently to the left. Press the *Enter* button then press the "-" button until the display shows:

| RELEASE TIMER |
| DISABLED ? |

Press the *Enter* button to change to this. To save, slide the *Write Enable* switch to the right. With the release timer disabled, the extinguishant outputs will remain operated until the system is reset.

6.2.16. R0V Removed on System Reset

This setting should not be changed and should never be set.

6.2.17. Earth Fault Monitoring – Enable/Disable

The factory default setting is for the earth fault monitoring facility to be enabled.

| EARTH FAULT |
| ENABLED |

To disable the earth fault monitoring, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module then press the "-" button until the display shows:

| EARTH FAULT |
| DISABLED ? |

Press the *Enter* button to change to this. To save the settings, slide the *Write Enable* switch to the right.

Once disabled, the Aux 24V output will be removed for a few seconds when the reset button is pressed.

6.2.18. Fault Ouput – Enable/Disable

The factory default setting is for the fault output relay to be enabled.

| FAULT OUTPUT |
| ENABLED |

Open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button then press the "-" button until the display shows:

| FAULT OUTPUT |
| DISABLED ? |

Press the *Enter* button to change. To save, slide the *Write Enable* switch. The fault output relay on the module will now be disabled.

Note: Disabling the fault output does not comply with AS7240-2.

6.2.19. Low Pressure Switch – Normal/Invert

To enable low pressure switches to be used which have normally closed rather than normally open contacts, it is possible to invert the input. The default setting is for the low-pressure switch input to use a normally open contact.

To invert the low-pressure switch input, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module then press the "-" button until the display shows:

Press the *Enter* button to change to this.

To save, slide the *Write Enable* switch to the right. The low-pressure switch input will now require a normally closed contact via a 470R trigger resistor and 6K8 end of line resistor for correct supervision.

> LOW PRESS I/P
> MODE = NORMAL

> LOW PRESS. I/P
> MODE = INVERTED ?

6.2.20.   Release Pressure Switch – Normal/Invert

To enable released pressure switches to be used which have normally closed rather than normally open contacts, it is possible to invert the released pressure switch input. The factory default setting is for the pressure switch input to use a normally open contact.

To invert, open the *Display Window* and slide the *Write Enable* switch to the left. Press the *Enter* button on the extinguishant module then press the "-" button until the display shows:

Press the *Enter* button to change to this. The released pressure switch input needs to be disconnected to bring it into fault before changing from Normal to Inverted or back in order to prevent the input from activating.

> RELEASED INPUT
> MODE = NORMAL

> RELEASED INPUT
> MODE – INVERTED ?

To save, slide the *Write Enable* switch to the right. The released pressure switch input will now require a normally closed contact via a 470R trigger resistor and 6K8 end of line resistor for correct supervision.

7. Panel operation – Access levels 1 and 2

7.1. Normal condition

Under normal conditions and with all modules in Manual & Auto mode, control panels will have only the green, *Power On* LED lit on the Sigma XT detection part and on each of the extinguishing modules. With the *display window* closed, the display on the detection part of the panel will be blank and, the LCDs on the extinguishing modules will show:

Any modules that are in Manual Only mode with have an additional, Manual Only yellow LED lit and their display will show:

> AUTO & MANUAL

> MANUAL MODE

The Manual Only LED on the module or ECU/LCS which placed the system in manual mode will be flashing.

The control panel has 3 access levels. Access level 1 is available at all times and allows operation of the *Alarm/Fault Warning Silence* and *Lamp Test* buttons on the detection part of the panel only. Access level 2 is enabled after opening the display window and Access level 3 allows configuration options to be set on both the detection part of the panel and the extinguishant modules following operation of their *respective Write Enable* switches at access level 2 (*the display window is open*).

When the *display window is open* (Access level 2) the display on the detection part of the control panel will show ⊢ | and the LCDs on the extinguishing modules will show:

> ACCESS LEVEL 2
> MANUAL MODE

7.2. Alarm Module – Access level 2.

7.2.1.   Test mode

It is possible to put one or more zones into Test mode. When a zone is in test mode it will self-reset after a few seconds. This enables the system to be tested without having to return to the control panel to reset between each device activation on the zone that is being tested.

To put a zone into test mode, open the *Display Window*.

The 7-segment display ⊢ | will show

 (Test zone 1). To put zone 1 into test mode, press the *Enter* button on the Sigma XT detection part.

The display will now show a flashing dot next to the ⊢ | and the yellow Test LED will be lit.

To select further zones to put into test mode, press the *Select* button and then the *Enter* button so that the flashing dot appears next to the selected display e.g., ⊢⊐.

To remove test mode from a zone, press the *Select* button to reveal any zones that have a flashing dot and then press the *Enter* button to take that zone out of test mode. Once all zones have been taken out of test mode, the yellow, *Test* LED will go off.

7.2.2.   Disable zones

It is possible to disable one or more zones. When a zone is disabled it will not report fire or fault conditions. This enables the system to be worked on without false fire or fault conditions being announced.

To disable one or more zones, open the *Display Window*. The 7-segment display will show ┠ ┃ (test zone 1)

Press the *Mode* button and the display will show ┌┤ ┃. To disable zone 1 press the *Enter* button. The display will show ┌┤ ┃ and the yellow *Disablement* LED will be lit.

To select further zones to disable, press the *Select* button and then the *Enter* button so that the flashing dot appears next to the selected display e.g. ┌┤2

To remove disablements, press the *Select* button to reveal any zones that have a flashing dot next to the displayed zone number and then press the *Enter* button. Once all zones have been enabled, the yellow, Disabled LED will go off.

7.2.3.   Disable sounder outputs

The sounder outputs on the detection part of the panel can be disabled if required.

To disable the panel sounder outputs, open the *Display Window*.

The 7 segment display will show ┠ ┃ (test zone 1). Press the *Mode* button until the display shows ┌┤b

Press the *Enter* button. The display will now show ┌┤b the yellow *Disablement* and *Sounder Fault* LEDs will be lit.

To enable the sounder outputs, press the *Mode* button while at Access level 2 (*Display Window open*) and scroll with the mode button until ┌┤b is displayed. Press the *Enter* button. The display will change to ┌┤b and the *Sounder Fault* and *Disablement* LEDs will go OFF if there are no other disablements active on the panel.

7.2.4.   Activate delays

It is possible to set delays before sounder outputs will operate (see section 6.1). Before these time delays become effective it is necessary to turn on the *Activate Delays* function.

To do this, open the *Display Window*. The 7-segment display will show ┠ ┃ (test zone 1)

Press the *Mode* button until the display shows ┌┤┌┤. Press the *Enter* button, the display will now show ┌┤┌┤ and the yellow *Alarm Delay* and *Disablement* LEDs will be lit.

To switch off the delay, press the *Mode* button while at Access level 2 (*Display Window* open) and scroll with the *Mode* button until ┌┤┌┤ is displayed. Press the *Enter* button. The display will change to ┌┤┌┤ and the *Alarm Delay* and *Disablement* LEDs will go off if there are no other disablements active on the panel.

7.3. Extinguishant modules

7.3.1.   Extinguishant System Service Isolate

An Extinguishant System Service Isolate keyswitch is provided on each risk and physically disconnects both contacts of firing line to the extinguishant solenoid or detonator. This minimises the chance of an accidental release of the extinguishant during testing or maintenance, thus allowing the system to be fully functionally tested.

Turning the Extinguishant System Service Isolate key switch clockwise will isolate the extinguishant circuit, and a fault is generated and the *Service Isolated* LED is lit.

7.3.2.   Extinguishant modules – Menu Access

With the *Display Window* open, all extinguishant modules will display:

> **ACCESS LEVEL 2**
> **ENTER FOR MENU**

7.3.3.   Extinguishant release outputs.

Extinguishant release outputs, press the "+" button on the module while at access level 2. The display will show:

> **DISABLE**
> **EXTING. RELEASE   ?**

> **ENABLE**
> **EXTING. RELEASE   ?**

Press the *Enter* button to select this function. The display will show *Disabled* and the Disabled LED will be lit.

Close the *Display Window* to leave the disablement active.

7.3.4. Manual release

Manual release inputs (front panel mounted and remotely connected), press the "+" button on the module while at access level 2 until the module displays:

> DISABLE
> MANUAL RELEASE ?

> ENABLE
> MANUAL RELEASE ?

Press the *Enter* button to select this function. The LCD shows *Disabled* and the Disabled LED will be lit.

Close the *Display Window* to leave the disablement active.

7.3.5. Disable Stage 1 output

To disable the First Stage relay output, press the "+" button on the module while at access level 2 until the display shows:

> DISABLE
> STAGE 1 OUTPUT ?

> ENABLE
> STAGE 1 OUTPUT ?

Press the *Enter* button to select this function. The display will show, and the yellow *Disabled* LED will be lit.

Close the *Display Window* to leave the disablement active.

7.3.6. Disable Stage 2 output

To disable the Second Stage relay output, press the "+" button on the module while at access level 2 until the display shows:

> DISABLE
> STAGE 2 OUTPUT ?

> ENABLE
> STAGE 2 OUTPUT ?

Press the *Enter* button to select this function. The LCD will show, and the yellow *Disabled* LED will be lit.

Close the *Display Window* to leave the disablement active.

7.3.7. Disable Released output

To disable the Released relay output, press the "+" button on the module while at access level 2 until the display shows:

> DISABLE1
> RELEASED OUTPUT ?

> ENABLE
> RELEASED OUTPUT ?

Press the *Enter* button to select this function. The LCD will show, and the yellow *Disabled* LED will be lit.

Close the *Display Window* to leave the disablement active

7.3.8. Extract output

To disable Extract relay output, press the "+" button on the module while at access level 2 until the display shows:

> DISABLE
> EXTRACT OUTPUT ?

Press the *Enter* button to select this function. The LCD will show and the yellow *Disabled* LED will be lit.

> ENABLE
> EXTRACT OUTPUT ?

Close the *Display Window* to leave the disablement active.

To turn on the extract relay output, press the "-" button on the module while at access level 2 until the display shows:

> TURN ON
> EXTRACT OUTPUT ?

Press *Enter* to turn ON the *Extract* output. The display will show. Pressing *Enter* again will turn OFF the *Extract* output

> TURN OFF
> EXTRACT OUTPUT ?

Close the *Display Window* to leave the Extract output active Note: the extract output does not turn off when the module is reset.

7.3.9. Select Reserve Solenoid Output (Configuration Option)

If the extinguishing module is configured for Main/Reserve solenoid operation (See section 15.2.1) then an additional menu option is given to select which output is used.

To turn on the Reserve Solenoid output, press the "+" button on the module while at access level 2 until the display shows:

> SELECT RESERVE
> EXTING. OUTPUT

Press the *Enter* button to select this function. The display will show:

> SELECT MAIN
> EXTING. OUTPUT ?

The yellow *Reserve Cylinders* LED indicator on the module will be lit.

Note: This menu option is not shown if the panel is configured to Common Solenoid mode.

7.4. Single Zone and Double Zone Fire Conditions

7.4.1. Single zone Fire condition

Upon receipt of a fire condition by activation of a detector or call point, the *Common Fire* indicator on the detection section will light, the fire buzzer will sound and the zonal *Fire* indicator(s) will flash at around 2Hz.

The fire and local fire relays will also operate and signal any systems to which they are connected.

Any sounders connected to the sounder circuits S1 & S2 on the detection section will operate. These sounders may be silenced by operation of the silence alarm button with the enable key switch operated such that the panel is at access level 2.

If the zone that has activated is contributing to the extinguishant release sequence on an extinguishant module and the module is configured for coincidence activation, the *Activated* LED on the module will flash, the *First Stage* relay contact will operate, the *First Stage* sounder output will operate and the display will show:

> **PREACTIVATED**

Pressing the *Silence Alarm* button on the detection section will turn off the sounder outputs on the detection section and the *First Stage Alarm* outputs on the extinguishant module.

7.4.2. Double zone Fire condition

Upon receipt of a second fire condition that contributes to extinguishant release on modules that are switched to Automatic and Manual mode with their Lock Off inputs not active and the Disable Extinguishant function has not been invoked, the detection section will respond as above and extinguishant modules will respond as listed below:

a) The second stage alarm output will operate. (Sounder circuit S3)
b) The Second stage contact will operate.
c) The Activated indicator will operate
d) The display will indicate ACTIVATED and show the time remaining until release in seconds.
e) The extinguishant output will operate after the configured delay time and for the configured duration.
f) The display will show ACTIVATED DISCHARGING for the duration of the release time.

When detection zones have activated, and the activated condition is reached (i.e. the *Activated* indicator is lit) it shall not be possible to reset the extinguishant section of the panel until the Reset Inhibit timer has elapsed.

7.5. Silence/sound alarms

The *Silence/Sound alarm* button can only be operated at access level 2. (*Enable Control* key switch operated).

To silence the sounders, insert the Enable Control key, turn to the right and press the *Silence/Sound alarm* button. When the sounders have been silenced, the Zone Fire LEDs will change from flashing to a steady state.

Pressing the *Silence/Sound alarm* button whilst the control panel is in this silenced condition will cause the sounders to operate again.

The sounders can be toggled on and off with the *Silence/Sound alarm* button as required.

7.6. Reset

To reset the panel, operate the *Enable Control* key switch, then press the *Reset* button. The extinguishant section will reset only after the Reset Inhibit timer has expired once the activated condition has been established.

7.7. Fault Indicators

7.7.1. Detection Zone fault

Removal of a detector from its base or a fault on any of the zone wiring will cause the *Fault* LED and *Zone Fault* LEDs to flash, indicating the zone in which the fault has occurred.

7.7.2. Sounder fault

A fault on the wiring to the detection section sounder circuits will cause the Fault LED to light and the Sounder Fault LED to flash. A fault on the sounder circuits of extinguishant modules *(alarm devices as required by AS7240-1)* will light the Fault LED on the detection section and on the extinguishant module. The extinguishant module will display:

> **STAGE 1 ALARMS FAULT**   or   **STAGE 2 ALARMS FAULT**

7.7.3. Other Faults

POWER - Failure of the mains power or disconnection of the standby battery will cause the *Fault* and *Power Fault* LEDs to light on the detection section indicating an abnormality in the power supply to the control panel. There will be no indication of this condition on the extinguishant modules. Power fault is non-latching and will automatically reset once the fault has been rectified.

SYSTEM FAULT – DETECTION MODULE - The System Fault and general fault LEDs will light if the configuration memory has not been set or has become corrupted. System fault is non-latching and will automatically reset once the configuration has been rectified.

SYSTEM FAULT – EXTINGUISING MODULE - The System Fault and general fault LEDs will light if the configuration memory has not been set or has become corrupted. System fault is non-latching and will automatically reset once the configuration has been rectified.

GENERAL FAULT - The General fault LED will be illuminated under any fault condition. This LED will also light if the *Write Enable* switch has been left in the access level 3 position and the *Display Window is closed (Access Level 1)*.

CONFIG WP FAULT – EXTINGUISHING MODULE - The *Write Enable* switch on the Extinguishant Module has been left in the access level 3 position and the *Display Window is closed (Access Level 1)*.

7.8. Lamp test

All LED indicators on the panel can be tested at any time by pressing the *Lamp Test* button on the Detection part. Indicators on individual extinguishant modules can be lamp tested by holding down the *Exit* button for more than 2 seconds.

7.9. Lock Off condition

Activation of the Lock Off input or a fault on the monitored wiring of the Lock Off circuit on a module or at a remotely mounted status unit will cause the Lock Off Activated indicator to light on the module and on any status units or ancillary boards connected to it.

If the extinguishant module is in the Activated condition and the pre-release timer is running then the extinguishant release sequence will be halted and the pulsing, Second stage sounders shall change to 1 second on, 2 seconds off.

Release of the Lock Off input will re-start the pre-release timer from maximum.

7.10. Released condition

The released pressure switch input will be connected to a thermal fuse mounted on one the aerosol generator(s) which operates when the extinguishant has been released. This will activate the released indicator on the control panel. If the extinguishant has been released by mechanical means i.e. the control panel is not in the activated condition, operation of the thermal fuse input will establish the Released condition. (See 7.6 & 13.3.12)

7.11. Low pressure switch

This is not used in a FirePro Aerosol Suppression System. The low-pressure switch input will be connected to a pressure switch on the extinguishant cylinder which will operate if the pressure in the cylinder falls below a set point. This will happen after the extinguishant has been released but may happen before release through a leak. The fault LED will light, and the buzzer will sound when this input is operated.

7.12. Manual only mode

The mode of the system can be toggled between Manual Only and Automatic & Manual by operating the Mode Select pushbutton on the modules. The safety cap must be lifted upwards before the pushbutton can be operated.

When a module is in Manual Only mode, the extinguishant cannot be released by the operation of automatic detectors.

The mode can also be changed to manual by the external mode select input or a Mode Select pushbutton on a status unit. Any mode select input that is switched to Manual only mode will override any modules switched to Automatic and Manual mode. All inputs must be switched to Manual and Automatic mode for a module to be in Automatic and Manual mode.

7.13. Manual Release

Extinguishant modules may be activated by Manual release inputs via the manual release control on the front of each module, a remotely mounted Manual release control connected the monitored manual release inputs or by a manual release control mounted on a status unit.

Activation of any of these Manual release controls will immediately activate the extinguishant module and begin the pre-release timer if the module is configured to have a time delay for Manual release inputs.

7.14. Abort input

Each module has the facility for connection of an Abort control. Operation of the Abort input or a fault on the monitored wiring of the Abort circuit during the pre-release delay time or before activation will light the Abort indicator on the module and the extinguishant release timer will be cancelled i.e. the extinguishant will not be released. The module can be immediately reset from this condition.

8. FPC-2 Sub Panel

The FPC-2 Panel enables monitoring detection and automatic extinguishing of a fire in various detection systems on one zone. This Panel is to be used in unmanned spaces only and can report events back to a FIP.

The panel will support up to 4 FirePro® generators. All circuits are monitored. The FPC-2 requires a 24V DC power supply from FIP. There is a single detection Zone and the FPC-2 has automatic activation of extinguishing agent.

Detailed information for connection of FPC-2 is shown in FPC-2 Manual.
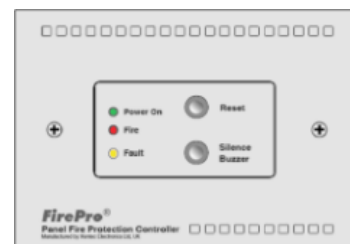
9. Internal Controls and Fault Indicators (Troubleshooting)

9.1. Fire Alarm Module

9.1.1. Numerical Display – Detection and Alarm Panel

Under normal operation, this display will indicate the address of the remote board when a fault occurs on that board, or when a board goes missing.

The first section is the board type and the second is its address.

X represents the address 1 to 7

'oX' – Fault on Output board (Relay or AIM module)

'vX' – Fault on Extinguishant module. Refer to Extinguishant module display.

9.1.2. Indicators – Detection and Alarm Panel

MAINS FAIL - Indicates that the 230V AC supply is not present and the system is running on standby batteries. If there is not a power cut, check the panels mains fuse.

BATT FAIL - Indicates that the standby battery has become disconnected or that the charging circuit of the control panel has a high resistance or has failed. Check that both batteries are connected and linked together. Test the battery. Disconnect the battery and ensure that 28 Volts can be measured on battery charger leads.

CPU FAULT - Indicates that the central processor unit has failed to correctly execute code and has been re-started by the system watchdog. The *Watchdog Reset* switch must be pressed to clear the *CPU Fault* condition. If system does not return to normal after the *Watchdog Reset* switch is pressed then the panel is probably damaged and the circuit board needs replacing.

AUX 24V FAULT - The Aux 24V and R0V terminals provide a 500 milliamp, 24V DC power supply for power fire alarm ancillary equipment. This LED indicates that fuse protecting the R0V output has operated and the rating of this output has been exceeded. The fuse is a self-resetting type and the supply will resume when the fault condition is removed.

BATT LOW - Illuminates when the system is running on batteries and the battery voltage is lower than 21V +/- 2% (the minimum battery voltage).

COMMS FAULT - Indicates that communication has been lost with an extinguishant module. Check for comms fault at all extinguishant modules identify the source of the problem.

EARTH FAULT - Indicates that part of the system wiring is connected to earth. Remove all system wiring and re-connect cables one at a time until the earth fault returns.

SYS FUSE FAULT - Indicates that the total power rating of the power supply has been exceeded and that the system fuse has come into operation. Remove and review all loads and re-connect one at a time until over rated circuit trips fuse to identify troublesome circuit.

S1 FAULT and S2 FAULT - Indicates a short or open circuit on sounder outputs. Remove wiring and refit end of line resistors. Check sounder circuit wiring.

9.1.3. Watchdog reset

If for any reason the microprocessor in the Fire Alarm Module of the control panel fails to carry out its operation correctly it will attempt to restart. This process is called a "watchdog" and the control panel must record and indicate these events. If a watchdog event occurs, the fire alarm module will show the Fault and System Fault LEDs on the front panel, the CPU fault LED inside the panel will light and the buzzer will sound. This fault can only be cleared by pressing the Watchdog Reset button on the PCB inside the control panel. The control panel buzzer will continue to sound until the watchdog activation is reset.
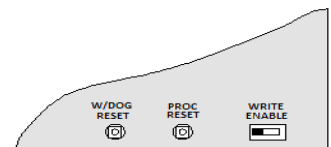
9.1.4. Processor reset

Once started, the microprocessor controlling the fire alarm module of the panel should continue to run continuously without interruption. If the microprocessor fails to run correctly it can be reset by pressing the Processor Reset button on the PCB inside the control panel.

This should not normally be necessary but should be done as a matter of course if the system is behaving abnormally. The system should resume normal operation within a couple of seconds of pressing the processor reset button. It will be necessary to press the Watchdog Reset button a few seconds after pressing the Processor Reset button to clear the Watchdog indication and buzzer.

9.1.5. Write enable switch

To protect the configuration memory of the panel while it is running normally the *Write Enable* switch is provided. The memory *Write Enable* switch must be switched on before any changes can be made to the configuration. The *Write Enable* switch is quite fragile and should be operated with care.

9.2. Extinguishant Module

9.2.1. Indicators - Extinguishant modules

WATCHDOG - Indicates that the processor has failed to correctly execute code and has been re-started by the watchdog circuit. The watchdog reset switch must be pressed to clear the Watchdog fault condition. If system does not return to normal, then the module is probably damaged and needs the circuit board replacing.

SYSTEM FUSE - Indicates that the modules main fuse has been overloaded and the module is shut down. Remove and review all loads then re-connect one at a time.

MAN. RELEASE - Indicates that either the front panel mounted or a remotely connected Manual release control has been operated. This indication can only be cleared by power cycling the module.

REMOTE BUS FAULT (on display) - Indicates that one or more devices on the remote serial bus is not responding either through a disconnection or failure. Any disconnected status unit will have all indicators and LED displays flashing 88. Any disconnected ancillary board will have its COMMS LED illuminated.

First place to check are the warning signs and LCS modules. Make sure that addresses are different, and that status cabling is correct.

OUTPUT UNIT FAULT (on display) - On panel initialisation after power up or a processor reset indicates that a warning sign or ancillary board has been added or removed from the communications bus. During normal operation indicates that a warning sign or ancillary board has had a processor failure.

STATUS UNIT FAULT (on display) - On panel initialisation after power up or a processor reset indicates that a status unit has been added or removed from the communications bus. During normal operation indicates that a status unit has had a processor failure.

9.2.2. Watchdog reset

If the microprocessor on an extinguishant module fails to carry out its operation correctly it will attempt to restart. If a watchdog event occurs, the Extinguishant module will show *Fault* and *System Fault* LEDs on the front panel, the detection part of the panel will show a fault and the buzzer will sound and the display on the Extinguishant module will show CPU fault.

This fault can only be cleared by pressing the Watchdog Reset button on the Extinguishant module. The control panel buzzer will continue to sound until the watchdog activation is reset.

9.2.3. Watchdog reset switch

If for any reason the microprocessor in the control panel fails to carry out its operation correctly it will attempt to restart itself. This process is called a "watchdog" and the control panel must record and indicate these events. If a watchdog event occurs, the control panel will show the *Fault* and *System Fault* LEDs on the front panel, the *CPU Fault* LED inside the panel. This fault can only be cleared by pressing the *Watchdog Reset* button on the PCB inside the control panel. The control panel buzzer cannot be silenced and will continue to sound until the watchdog activation is reset.

9.2.4.   Processor reset

If the microprocessor on an Extinguishant module fails to run correctly it can be reset by pressing the Processor Reset button on the PCB inside the control panel. This should not normally be necessary but should be done as a matter of course if the system is behaving abnormally. The system should resume normal operation within a couple of seconds of pressing the processor reset button.

9.2.5.   Processor reset switch

Once started, the microprocessor controlling the panel should continue to run continuously without interruption. If the microprocessor fails to run correctly it can be reset by pressing the *Processor Reset* button on the PCB inside the control panel. This should not normally be necessary but should be done as a matter of course if the system is behaving abnormally. The system should resume normal operation within a couple of seconds of pressing the *Processor Reset* button. Note: A *Watchdog Reset* should always be performed following a *Processor Reset*.

9.2.6.   Terminate extinguishant

Once the extinguishant outputs have been operated they cannot be switched off until after the reset inhibit timer has elapsed. For test purposes a terminate extinguishant button is provided which will terminate operation of the extinguishant outputs and allow the system to be reset.

9.2.7.   Addresses

The 485 Bus on the Sigma XT runs several separate address systems.

Alarm Module Top Card in Panel	**7 Addresses** for connection to this module. Eg. extinguishing module, relay cards
Extinguishant Module Bottom Card in Panel	**7 Addresses** for connections of "Output Cards". Eg. Signs, relay cards
	7 Addresses for inuyare available for "Status Units" - Local Control Stations.

Each of these systems is isolated from each other, so that the seven addresses do not create a conflict.

9.2.8.   Address switch

Extinguishant modules are connected to the serial bus of the Sigma XT detection part of the control panel and each module must be allocated an address between 1 and 7 using the binary coded DIP switch.
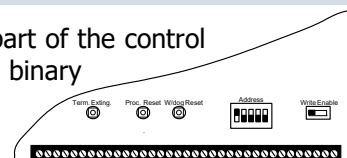
10. Power Supply & Batteries

10.1.   Main Supply

To power up the panel 230vAC Main Supply must be connected. Following power up the panel will maintain all functions via the internal Backup Batteries. The panel has a monitoring function over the condition of the batteries – when due for replacement a batteries fault is displayed.

The panel requires a 230vAC (+10%/-15%), 50/60Hz, power connected to the fused terminal block labelled "230V".

The maximum loading on the power supply must be carefully considered when connecting externally powered equipment.
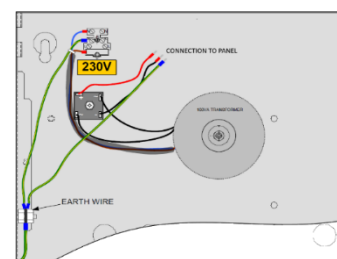
Fuses	**3A power supply** - 20mm, F1.6A L250V	**4A power supply** - 20mm T2A L250V.

Current in milliamps	SIGMA-2 Zone		SIGMA-8 Zone	
	Quiesant	**Alarm**	**Quiesant**	**Alarm**
Alarm Module	65 mA	100 mA	90 mA	150 mA
Extinguishing Module	54 mA	105 mA	54 mA	105 mA
Sequential Activator – FirePro Systems	10 mA	100 mA	10 mA	100 mA
Warning Signs	20 mA	140 mA	20 mA	140 mA
Local Control Stations	60 mA	70 mA	60 mA	70 mA

The output voltage of the power supply is 18-30V depending on mains and battery condition and the total current rating depends on the model. The incoming mains cable should be routed away from other lower voltage wiring by a distance of at least 50mm. Mains wiring MUST include an earth conductor, which is securely bonded to the building earth and should enter the enclosure as close as possible to the mains terminal block.

10.2. Batteries

Batteries must be Sealed Lead Acid, 12vDC, which are connected in series to provide 24vDC supply. The amp hour rating is calculated based on the total system.

Maximum current drawn from the batteries when the main power source is disconnected is 3 Amps. When the batteries are discharged to a level at which a low battery indication is given, the *Batt Fail* indicator will also be lit.

WRONGLY CONNECTED BATTERIES COULD CAUSE DAMAGE TO THE CONTROL PANEL.

Battery leads are supplied wired to the power supply along with a link to connect the two batteries together. It is most important that the polarity of the batteries is carefully observed when connecting

When the battery voltage drops below 18vDC the panel disconnects from the batteries to ensure that the batteries do not go flat. On resumption of mains power a battery fault will indicate until the battery voltage reaches 21V +/-2% (the minimum battery voltage).
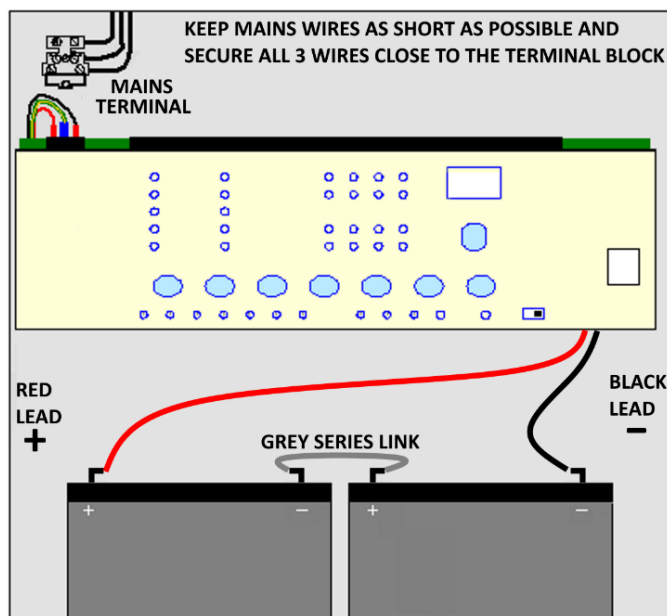
11. Maintenance

Sigma XT control panels do not require any specific maintenance, should the control panel become dirty it can be wiped over with a damp cloth and should then be dried with a dry, lint free cloth. Detergents or solvents should not be used to clean the panel and care must be taken that water does not *Enter* the enclosure.

The control panel contains sealed lead acid batteries to provide standby power in the event of a mains failure. Batteries have a life expectancy of around 2 years

Testing of the extinguishant system should only be carried out by trained personnel and must be done with appropriate isolation measures in place to ensure that accidental discharge of the extinguishant agent is avoided and any malfunction should be reported to the fire alarm maintenance company immediately.

12. Replacement of Circuit Cards

When replacing the Alarm Module the 485 configuration of the extinguishing module needs to be "learnt". Once the new module is installed and the panel is powered – the Alarm Module will display a general fault – with the code ⊓ |.

To learn requires access level 3 which is accessed by operating the *Write Enable* switch to the **RIGHT** as shown below. When the panel is at access level 3, the buzzer will "pip" three times every few seconds as an indication that it is at this access level. Leaving the write enable in the "write" position (right) Power down the unit – and then power up – and the 485 will have learnt the new card and the fault will clear.
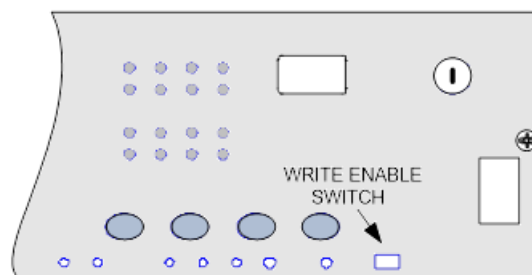
13. Technical specification

Electrical Specifications

Mains supply	230V AC +10% - 15% (100 Watts maximum)	
Mains supply fuse	1.6Amp (F1.6A L250V)	Replace only with similar type
Power supply rating	3 Amps total including battery charge 28V +/ 2V	
Maximum ripple current	1.5 Volts	
Output voltage	18.5 to 29V DC +/- 2%	
Imax a	400 milliamps	
Imax b	2.3 Amps	
Imin	0.065A	
Battery type (Yuasa NP)	Two 12 Volt sealed lead acid (7Ah maximum)	See Table 2 for capacities
Battery charge voltage	27.6VDC nominal (temperature compensated)	See Table 3
Battery charge current	0.7A maximum	
Battery lead fuse	20mm, 3.15A glass	Replace only with the same type
Battery high impedance warning (Rimax)	1.35 ohms max	
Low battery voltage indication	21V +/- 2%	
Low battery shut off voltage	18.5V +/- 2%	
Max current draw from batteries	3 Amps	With main power disconnected
R0V output	Fused with electronic fuse	
Dedicated sounder outputs	24V Fused at 500mA with electronic fuse	1.6 Amp total load over all circuits
Zonal sounder outputs		
Aux 24V output (detection module)	Fused at 500mA with electronic fuse	200 mA max continuous load
Aux 24V output (Extinguishant module)		18.5 to 30V DC
First and Second stage Sounder output	18 to 30V DC Fused at 1A with electronic fuse	1.0 Amp total load over all circuits Voltage reversing DC
Fault relay contact rating	30VDC 1A Amp maximum for each	Max ratings not to be exceeded
Fire relay contact rating		
Local fire relay contact rating		
First stage contact rating	5 to 30VDC 1A Amp maximum for each Volt free changeover contact	Max ratings not to be exceeded
Second stage contact rating		
Extract contact rating		
Zone quiescent current	1.6mA maximum	See Table 4 for detector types
Terminal capacity	0.5mm^2 to 2.5mm^2 solid or stranded wire	
Number of detectors per zone	> 20	Dependent on type
Number of sounders per circuit	Dependent on type and current consumption	See Table 6 for sounder types
Detection circuit end of line	6K8 5% ½ Watt resistor	
Monitored input end of line	6K8 +/- 5% ½ Watt resistor	Supplied in terminals
Sounder circuit end of line	10K 5% ¼ Watt resistor	
Extinguishant output end of line	1N4004 Diode	
No. of detection circuits		Dependent on model
No. of sounder outputs	2 (plus one per zone on T models)	
Extinguishant release output	18 to 30V DC. Fused at 1 Amp	1 A maximum load –for 5 minutes 3 A for 20 milliseconds
Extinguishant release delay	Adjustable 0 to 60 seconds (+/- 10%)	5 second steps
Extinguishant release duration	Adjustable 60 to 300 seconds	5 second steps
SIL, AL, FLT, RST inputs	Switched -ve, max resistance 100 Ohms	
Zone normal threshold	8K ohm TO 1K ohm	
Detector alarm threshold	999 ohms to 400 ohms	
Call point alarm threshold	399 ohms to 100 ohms	
Short circuit threshold	99 ohms to 0 ohms	
Head removal condition	15.5 to 17.5 volts	Zener clamp detector base to be used
Cabling	FP200 or equivalent (maximum capacitance 1uF maximum inductance 1 millihenry)	Metal cable glands must be used
Monitored inputs normal threshold (Allowable EOL)	10K ohm to 2K ohm	
Monitored inputs alarm threshold	2K ohms to 150 ohms +/- 5%	
Monitored inputs Short circuit threshold	140 ohms to 0 ohms +/- 5%	
Status unit/Ancillary board connection	Two wire RS485 (EIA-485 specification)	Max 7 units per area- RS485 cable.
Status unit power output	18 - 30V DC, Fused 500mA with electronic fuse	250 mA max load. Max 3 modules
Sequential Activator – FirePro Units	Normal Resistance for FP Unit 2.8R Nominal Short Circuit: 1R ± 25% 20 deg C Nominal Open Circuit: 13R +15% -5% 20 deg C	Min allowable FP resistance across temp to 40 deg C: 3R. When only one FP, a 2.2R 3W resistor in line.

Battery Charge versus Temperature					
Temp ^{0}C	Battery Charge	Temp ^{0}C	Battery Charge	Temp ^{0}C	Battery Charge
0	29.2V	10	28.56V	20	27.99V
		30	27.55V	40	27.13V

Compatible Detectors			
Model	Type	Manufacturer	Maximum Number per zone
SLV-AS	OPTICAL	HOCHIKI	40
DCD-A	HEAT	HOCHIKI	40
DCD-C	HEAT	HOCHIKI	35
DFJ-60B	HEAT	HOCHIKI	40
DFJ-90D	HEAT	HOCHIKI	35
DFG-60BLKJ	HEAT	HOCHIKI	40
DRD-AS	FLAME	HOCHIKI	25
SPC-AS	BEAM	HOCHIKI	6

14. Commissioning Instructions and Record of Configuration

When installed only the green Power On and the Automatic and Manual or Manual Only indicators lit. Record the changes set on the control panel for future reference.

ALARM MODULE			
CODE	FUNCTION	COMMENTS	SET
00	SOUNDER DELAY TIME = 30 SECONDS		
01	SOUNDER DELAY TIME = 1 MINUTE		
02	SOUNDER DELAY TIME = 2 MINUTES		
03	SOUNDER DELAY TIME = 3 MINUTES		
04	SOUNDER DELAY TIME = 4 MINUTES	Sets the time delay before sounders operate in combination with configuration codes 31 to 48 and access level 2 function AD.	
05	SOUNDER DELAY TIME = 5 MINUTES		
06	SOUNDER DELAY TIME = 6 MINUTES		
07	SOUNDER DELAY TIME = 7 MINUTES		
08	SOUNDER DELAY TIME = 8 MINUTES		
09	SOUNDER DELAY TIME = 9 MINUTES		
10	COMMON ALARM MODE	**All sounders operate upon any fire condition**	
11	TWO-STAGE ALARM MODE	Continuous sounders in activated zone, pulsing elsewhere	
12	ZONED ALARM MODE	Only sounders connected to zone in alarm operate	
21*	DISABLE FIRE BUZZER	Buzzer will not operate on fire condition	
22*	DISABLE FAULT OUTPUT	Fault relay will not operate except upon total power failure	
23	DISABLE EARTH FAULT MONITORING		
24	PULSED REMOTE CONTROL OUTPUT	Aux 24V supply pulses 1 sec on/1 sec off	
25	ENABLE Sounders on Detection CIRCUITS	WHERE two wire "T" series detectors and Sirens on same cables)	
26	DISABLE FIRE OUTPUT	Fire relay will not operate upon any alarm	
27	DO NOT CHANGE	Do not Change	
28	INDICATE CALL POINT ACTIVATION - Activation of a call point with a 270R resistance is indicated by a flashing zone indicator and "Pu" on the 7 segment display. Activation of a detector will be indicated by a steady zone indicator and nothing on the 7 segment display		
29	DONT RE-SOUND ALARMS From ANOTHER ZONE - Silenced sounders wont re-sound if further zone activate.		
31	ZONE 1 ALARM from DETECTOR DELAYED	Sounder outputs will be delayed by time set at options 0-9 when selected zone(s) triggered by detector only. **Note access level 2 function Ad must be set for this to take effect.**	
32	ZONE 2 ALARM from DETECTOR DELAYED		
33	ZONE 3 ALARM from DETECTOR DELAYED		
34	ZONE 4 ALARM from DETECTOR DELAYED		
35	ZONE 5 ALARM from DETECTOR DELAYED		
36	ZONE 6 ALARM from DETECTOR DELAYED		
37	ZONE 7 ALARM from DETECTOR DELAYED		
38	ZONE 8 ALARM from DETECTOR DELAYED		
41	ZONE 1 ALARM from CALL POINT DELAYED	Sounder outputs will be delayed by time set at options 0-9 when selected zone(s) triggered by call point only. **Note access level 2 function Ad must be set for this to take effect.**	
42	ZONE 2 ALARM from CALL POINT DELAYED		
43	ZONE 3 ALARM from CALL POINT DELAYED		
44	ZONE 4 ALARM from CALL POINT DELAYED		
45	ZONE 5 ALARM from CALL POINT DELAYED		
46	ZONE 6 ALARM from CALL POINT DELAYED		
47	ZONE 7 ALARM from CALL POINT DELAYED		
48	ZONE 8 ALARM from CALL POINT DELAYED		
51	COINCIDENCE ZONE 1	Zone contributes to ancillary board coincidence O/P. Any number of zones can be selected to contribute.	
52	COINCIDENCE ZONE 2		
53	COINCIDENCE ZONE 3		
54	COINCIDENCE ZONE 4		
55	COINCIDENCE ZONE 5		

56	COINCIDENCE ZONE 6		
57	COINCIDENCE ZONE 7		
58	COINCIDENCE ZONE 8		
61	CONFIGURE Z1 FOR I.S BARRIER	Detection threshold changed for use with IS barrier	
62	CONFIGURE Z2 FOR I.S BARRIER		
63	CONFIGURE Z3 FOR I.S BARRIER		
64	CONFIGURE Z4 FOR I.S BARRIER		
65	CONFIGURE Z5 FOR I.S BARRIER		
66	CONFIGURE Z6 FOR I.S BARRIER		
67	CONFIGURE Z7 FOR I.S BARRIER		
68	CONFIGURE Z8 FOR I.S BARRIER		
71*	ZONE 1 SHORT CIRCUIT INDICATES ALARM	Changes the trigger threshold of the zone so that the control panel can be used on older systems that had no short circuit monitoring. **DOES NOT COMPLY WITH AS7240.2** **THIS change required when connecting to FPC2 Module**	
72*	ZONE 2 SHORT CIRCUIT INDICATES ALARM		
73*	ZONE 3 SHORT CIRCUIT INDICATES ALARM		
74*	ZONE 4 SHORT CIRCUIT INDICATES ALARM		
75*	ZONE 5 SHORT CIRCUIT INDICATES ALARM		
76*	ZONE 6 SHORT CIRCUIT INDICATES ALARM		
77*	ZONE 7 SHORT CIRCUIT INDICATES ALARM		
78*	ZONE 8 SHORT CIRCUIT INDICATES ALARM		
81*	ZONE 1 NON-LATCHING	Sets the zone to self-resetting so can be used to receive signals from other systems and will reset when input is removed. Note: Can take up to 20 secs for zone to reset If when sounders are operating. **DOES NOT COMPLY WITH AS7240.2**	
82*	ZONE 2 NON-LATCHING		
83*	ZONE 3 NON-LATCHING		
84*	ZONE 4 NON-LATCHING		
85*	ZONE 5 NON-LATCHING		
86*	ZONE 6 NON-LATCHING		
87*	ZONE 7 NON-LATCHING		
88*	ZONE 8 NON-LATCHING		
91	ZONE 1 DOES NOT SOUND ALARMS	Prevents the zone from operating the two common sounder outputs.	
92	ZONE 2 DOES NOT SOUND ALARMS		
93	ZONE 3 DOES NOT SOUND ALARMS		
94	ZONE 4 DOES NOT SOUND ALARMS		
95	ZONE 5 DOES NOT SOUND ALARMS		
96	ZONE 6 DOES NOT SOUND ALARMS		
97	ZONE 7 DOES NOT SOUND ALARMS		
98	ZONE 8 DOES NOT SOUND ALARMS		
A1*	ZONE 1 ANY ALARM DELAYED	Zone needs to be triggered for 30 secs continuously before an alarm is generated. **DOES NOT COMPLY WITH AS7240.2**	
A2*	ZONE 2 ANY ALARM DELAYED		
A3*	ZONE 3 ANY ALARM DELAYED		
A4*	ZONE 4 ANY ALARM DELAYED		
A5*	ZONE 5 ANY ALARM DELAYED		
A6*	ZONE 6 ANY ALARM DELAYED		
A7*	ZONE 7 ANY ALARM DELAYED		
A8*	ZONE 8 ANY ALARM DELAYED		
C1	ZONE 1 SOUNDERS INHIBITED	**Not Used** Enables individual zones to be configured not to operate zonal sounders. On 2 wire "T" series panels this enables individual zones to be configured for use with conventional (non-savwire) detector bases.	
C2	ZONE 2 SOUNDERS INHIBITED		
C3	ZONE 3 SOUNDERS INHIBITED		
C4	ZONE 4 SOUNDERS INHIBITED		
C5	ZONE 5 SOUNDERS INHIBITED		
C6	ZONE 6 SOUNDERS INHIBITED		
C7	ZONE 7 SOUNDERS INHIBITED		
C8	ZONE 8 SOUNDERS INHIBITED		
E1*	ZONE 1 WILL NOT OPERATE FIRE RELAY	Enables individual zones to be selected to not operate the fire relay. This is sometimes combined with the non-latching function to prevent ring around on interconnected panels **DOES NOT COMPLY WITH AS7240.2**	
E2*	ZONE 2 WILL NOT OPERATE FIRE RELAY		
E3*	ZONE 3 WILL NOT OPERATE FIRE RELAY		
E4*	ZONE 4 WILL NOT OPERATE FIRE RELAY		
E5*	ZONE 5 WILL NOT OPERATE FIRE RELAY		
E6*	ZONE 6 WILL NOT OPERATE FIRE RELAY		
E7*	ZONE 7 WILL NOT OPERATE FIRE RELAY		
E8*	ZONE 8 WILL NOT OPERATE FIRE RELAY		

Extinguishant Module			
CONFIGURATION OPTION		**Exting. Module 1**	**Exting. Module 2**
PRE-REL.DELAY TIME =			
EXTING. RELEASE TIME =			
DELAY ON MANUAL RELEASE ?			
EXTING. O/P 1 LEVEL =			
EXTING. O/P 2 LEVEL =			