EFBW series - BiWire Flexi control panel



BiWire Flexi combines two technologies to provide a truly versatile fire safety solution.

The panel can be configured to allow either two-wire or conventional devices to work on a zone. Each zone is individually configurable so a mixture of types can therefore be installed on the same system. This provides you with the flexibility to utilise all the time-saving benefits of a two-wire system with the ability to use a wide range of conventional devices, where required.

Flexi relieves the pressure of system selection. It is the perfect solution for electrical installers and distributors as it takes complexity out of the decision when specifying a fire system. It can be wired to meet the requirements of a variety of applications and is well suited to extend an existing fire system.

It shares the same straightforward, intuitive interface as the BiWire Ultra and EFCV8Zone conventional panels, providing a proven solution for simple programming and maintenance.

The BiWire Flexi fire alarm system is certified to EN54 part2 and part 4 and is designed to meet the recommendations of BS5839.

Features

- Configure zone wiring to work as either a conventional or two-wire system
- Available in 2, 4 and 8 zone variants
- Allows the connection of an existing conventional system to a BiWire system
- Compatible with two-wire and conventional EN 54-23 certified visual alarm devices (VADs)

Benefits

- Reduces stock-holding and enables the fire system to adapt to the demands of the customer or application
- Simple to sell and specify, Flexi can be used in a wide variety of applications and is very simple to install
- Save time, money and effort when undertaking system extensions and upgrades
- Up-to-date with latest regulations

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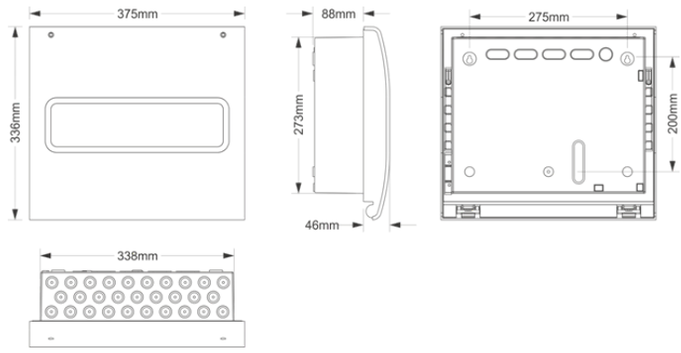
Specifier's guide

4.2 Control panels and repeater panels

Technical specification

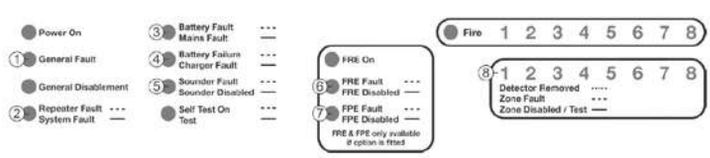
Reference	EFBW2Z-FLEXI	EFBW4Z-FLEXI	EFBW8Z-FLEXI
Description	2 zone panel	4 zone panel	8 zone panel
Power Specification (2x MB512 batteries required. Batteries not included).			
Input Voltage Range	18.75-30.7V		
Maximum Current Drawn From Battery	2.7A		
Zone Circuits			
Number of Zones	2	4	8
Devices Per Zone	• BiWire Mode: Max of 32 BiWire Detectors and Manual Call Points, total loading including BiWire sounders cannot exceed 200mA in alarm • Conventional Mode: Max 32 Conventional Detectors and Manual Call Points • Intrinsically Safe Conventional Mode: Max of 10 intrinsically Safe Detectors and Manual Call Point		
Maximum Loading per Zone	200mA		
Standby Zone Voltage	Vmin 19V dc		
	Vmax 23V dc		
Alarm Zone Voltage	Vmin 31V dc		
	Vmax 33V dc		
Fuse Protection Per Zone	250mA PTC		
End of Line Termination	BiWire Zones = EOLM-3 Only Standard Conventional Zones = EOLM-1 Only Intrinsically Safe Zones = 6K8 resistor		
Conventional Sounder Circuits			
Number of Sounder Circuit	• BiWire Flexi 2 & 4 zone panels have 2 conventional sounder circuits • BiWire Flexi 8 zone panel has no conventional sounder circuits if all zones are in BiWire mode • BiWire Flexi 8 zone panel has 2 conventional sounder circuits if up to 4 zones are in conventional mode • BiWire Flexi 8 zone panel has 4 conventional sounder circuits if 5 or more zones are in conventional mode		
Maximum Loading Per Circuit	500mA		
Fuse Protection Per Circuit	500mA PTC		
End of Line Termination	6K8 Resistor		
Unmonitored Outputs			
Fire, Fault, Interlink Relay	Type	Volt-Free, Single Pole Double Throw	
	Rating	30V DC, 1A	
	Fuse	500mA PTC	
Auxiliary Output	V	18.15-30.7V	
	Imax	50mA	
	Fuse	50mA PTC	
Unmonitored Inputs			
Class Change	Type	Open Circuit = Normal Panel Operation Short Circuit = Activate All Sounders	
Communications Ports			
Repeater Port (use of this port is outside the scope of EN54)	Type	RS485	
	Nodes	1	
Environmental			
Operating Temperature	-5°C to +40°C		
Relative Humidity	93% +/-3% non-condensing		
IP Rating	IP30		
Mechanical			
Weight (excluding batteries)	2.25kg		
Materials	PC ABS Front and Rear		
Cabling			
Cable Access	29 x 20mm drill positions - Slots for rear cable entry		
Cable Type	Firetuf FT120 / FP200		
	Cable type 2 core 1.5mm, screened fire rated cable, 500m (Max per zone)		
Compliance			
Standards	EN54 Part 2 CIE & Part 4 PSE, BS5839-pt1		

Dimensions



Description	Height (mm)	Width (mm)	Depth (mm)
Complete Panel	336	375	134
Back-box	273	338	88

Status indication



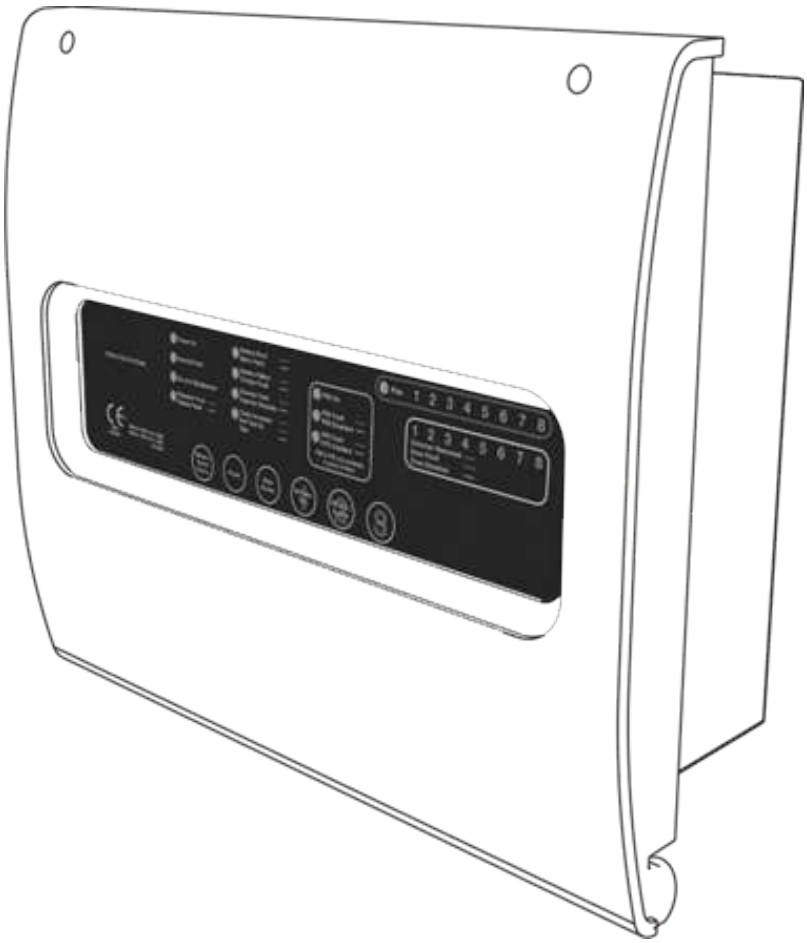
1. When the fire panel enters a fault condition it will turn on the General Fault indicator and the appropriate fault indicator (refer to 8 for more details). The panel buzzer will sound a slow pulsing tone.
2. System Fault – Severe failure of the panel, the service company must be contacted immediately.
   Repeater Fault – Communication with a repeater panel has been lost
3. Battery Fault – Battery voltage missing
   Mains Fault – Mains supply missing
4. Battery Failure – Battery impedance failure
   Charger Fault – Charger voltage missing
5. Sounder Fault – Short circuit or open circuit condition detected on the sounder circuit will prevent the activation of sounders if fitted on that sounder circuit
6. FRE Fault – Short circuit or open circuit condition detected on the FRE output
7. FPE Fault – Short circuit or open circuit condition detected on the FPE output
8. Zone Fault – Short circuit or open circuit condition detected on the zone.

Catalogue numbers

Description	Code
2 zone BiWire Flexi panel	EFBW2ZFLEXI
4 zone BiWire Flexi panel	EFBW4ZFLEXI
8 zone BiWire Flexi panel	EFBW8ZFLEXI
2 zone relays + FRE/FPE	BWOB2Z
4 zone relays + FRE/FPE	BWOB4Z
8 zone relays + FRE/FPE	BWOB8Z
BiWire End of line module	BWEOLM-3
Conventional End of line module	EOLM-1
12V, 5Ah battery (1pc*) *2 required	MB512

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BiWire Flexi Fire Panel
EFBW8ZONE-FLEXI / EFBW4ZONE-FLEXI / EFBW2ZONEFLEXI
Installation Manual



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1. Introduction

1.1 Purpose

This manual is intended as a guide for the installation and commissioning of the BiWire Flexi 2/4/8 Zone Control panel. Content within this guide is for general application and does not specify the Fire Alarm System design and the guide assumes the reader already has attained competency with this type of system.

The installation of this system can only be carried out by a competent person with relevant current training and experience, with access to requisite tools, equipment and information (as stipulated by BS5839).

The design has been carried out in accordance with a quality management system, which incorporates a set of rules for the design of all elements of the CIE and PSE.

The components of the CIE and PSE have been selected for the intended purpose, and are expected to operate within their specification when the environmental conditions outside the cabinet of the CIE / PSE comply with class 3k5 of EN 60721-3-3:1995.

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2. The BiWire Flexi Fire Detection & Alarm System

The BiWire Flexi fire alarm system is a highly adaptable and intelligent product designed with the simplicity of a conventional fire alarm system, enhanced to provide multi-function fire detection and condition indication capability. The Fire panel supports switchable zones that can be configured for BiWire Mode that has detectors, call points, sounders, and Visual Alarm Devices (VAD) combined on the zone, or Conventional Mode (Standard or Intrinsically Safe Mode) that only allows detectors and call points on the zone. BiWire Mode eliminates the requirement to have separate sounder circuits as with standard conventional systems, but the BiWire Flexi also comes with conventional sounder circuits to provide a purely conventional solution or a configurable retro-fit solution.

The BiWire Flexi fire alarm system is certified to EN54 part 2 and part 4 and is designed to meet the recommendations in BS5839.

The panels have the following optional features as standard:

- FIRE ALARM DEVICES: (EN54 part 2 clause 7.8)
- TEST CONDITION: (EN54 part 2 clause 10)
- Control of fire alarm routing equipment (EN54 part 2 clause 7.9.1)
- Output to fire protection equipment (EN54 part 2 clause 7.10.1)

The components of the BiWire Flexi Fire System are as follows:

- The Fire Panel is available to support 2, 4, and 8 Detection Zones. Each zone can be configured with up to 32 input devices (including detectors and manual call points) and 20 output devices connected via a single 2-core screened cable.
- The Fire Panel is available to support 4 conventional sounder circuits (see technical specification for loading characteristics) that can be used regardless of whether the zones are configured for BiWire or Conventional modes.
- The integrated EN54 part 4 compliant power supply charges and monitors two 12V 5Ah batteries. The power supply is capable of providing up to 24-hour standby depending on the system loading (further information on this can be found in the Technical information section of this document).
- When a zone is configured as BiWire mode, each zone must be terminated with an intelligent end of line monitoring module called the EOLM-3™. When a zone is configured for Conventional mode, each zone must be terminated with an EOLM-1 (for backward compatibility). Both EOLM modules need to be located with the last device on the zone.
- The Fire alarm system has an options interface board to provide outputs to Fire Protection Equipment (FPE), Fire Routing Equipment (FRE) and zonal relays. This interface and the relevant conformance requirements are further described within this guide.
- The BiWire Flexi panel is only compatible with BiWire Ultra range of devices for zones configured for BiWire mode, and is also compatible with the standard Eaton range of conventional devices on both conventional zones and sounder circuits. When a conventional zone is configured for Intrinsically Safe mode then intrinsically safe detectors can be fitted in conjunction with an isolation barrier (see technical specifications for more details).

2.1 Control and Indication Equipment (CIE)

The BiWire Flexi Fire Panel is designed as an Analogue non-addressable system. The panel enclosure is constructed from PC ABS components.

The front cover is hinged at the bottom and is secured at the top of the panel by two retaining screws. On the in-side of the panel a sliding PCB tray makes it easy to remove the tray without touching the PCB. The back box houses the PSE, the stand-by batteries and has 29 x 20mm cable access points. Terminal blocks are positioned to enable ease of connection.

The Fire Panel comes in 2, 4 & 8 Zone variants. Each of these variants will operate in the same manner only with a limited number of zones. Each zone can be independently configured with a variety of compatible BiWire Ultra devices or conventional devices (depending on the zone mode) up to a maximum load of 200mA per zone. BiWire and Conventional devices cannot be mixed together on a zone; each zone must either have a full complement of BiWire devices or conventional devices as per the zone mode setting. A maximum of 32 inputs devices (detectors and/or manual call points) and 20 output devices is possible as one BiWire configuration example; a loading calculator is available to assist with zone configuration.

The panel continuously monitors the state of each zone for Fire and Fault conditions which are only indicated on the affected zone. Once a Fire condition is detected on a zone then the panel turns on the Fire indicators for the zone in fire and triggers the fire alarm devices across all zones. All remaining zones will continue to monitor for secondary fires or fault conditions even though the sounders are operating.

The panel also continuously monitors the state of each conventional sounder circuit and will report any fault condition detected on the sounder fault LED.

The panel has multiple non-monitored outputs such as Auxiliary Output, Fire Relay, Fault Relay, and an Interlink Relay. These outputs are extended with the option board that provides additional monitored FRE and FPE outputs, and a non-monitored relay per zone circuit. The fire panel also has a monitored input called Class Change. Further information is contained within this guide.

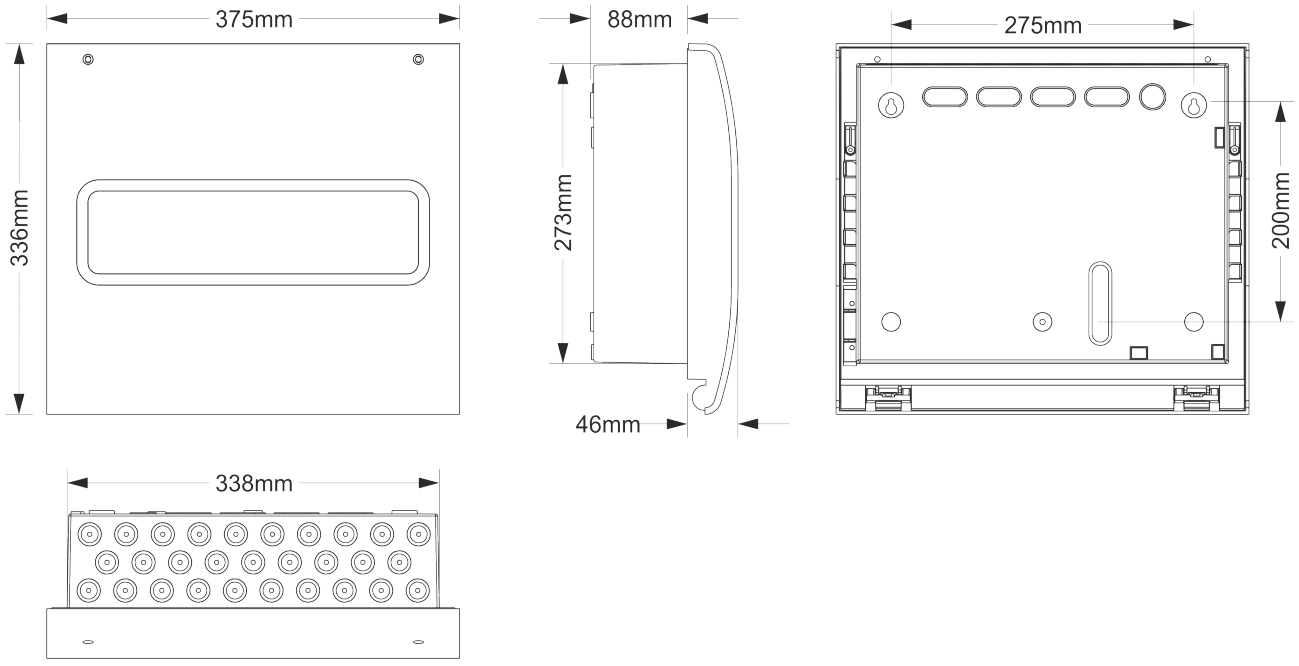


Figure 1: BiWire Flexi Fire Panel Dimensions

2.2 Power Supply Equipment (PSE)

The PSE has been specifically designed to operate the BiWire Flexi Fire Panel and may not be substituted for any other power source. The PSE is a Switch Mode Power Supply located within the Fire Panel cabinet as shown below. A dedicated 230V AC mains supply is required as the primary source; the supply is fused on the PCB by a 10 amp anti-surge fuse. In the event of mains failure the PSE will automatically switched over to the standby battery power source until the main power source is restored.

The PSE maintains the charge for the two 12V 5Ah sealed lead acid batteries in a fully charged state. On initial power up the batteries will charge over a 24 hour period. Dependent on the charge of the installed battery the system may initially shows a charger or battery fault.

The Supply should be clearly labelled 'FIRE ALARM: DO NOT SWITCH OFF' at all isolation points.

PSE faults originating from the following are indicated by the panel:

- The loss of either power source
- Failure of the charger circuit
- High internal resistance of the battery

The image shows the location of power supply.

(Further technical data for the PSE can be found in section 7.2).

Note that the charging circuit will be in its high impedance state (approximately 3V DC) if no batteries, faulty batteries, or only one battery is connected. The full 27V DC (nominal) charging voltage should be present if the correct batteries are connected.

In order to test for correct operation of the batteries, remove the mains 230V AC fuse and allow the batteries to settle from their charging voltage for approximately 5 minutes. The battery voltage should then be measured using an electronic test meter and a voltage greater than 24V DC should be seen.

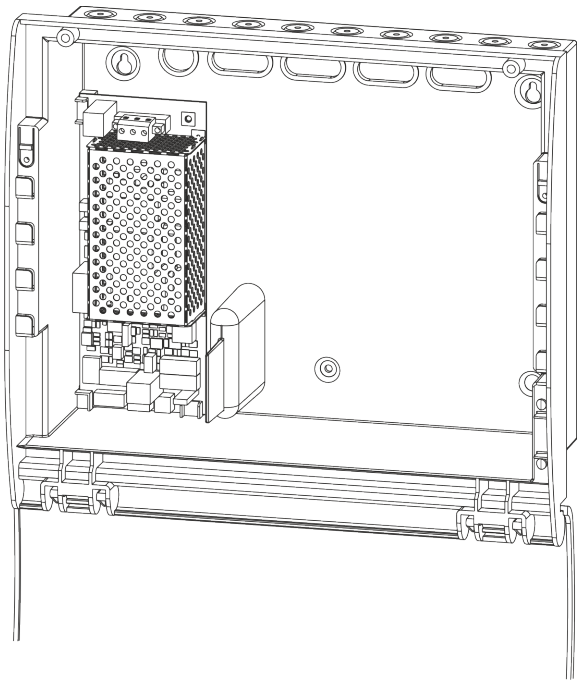


Figure 2: BiWire Flexi Power Supply Equipment

BATTERY DISPOSAL INSTRUCTIONS

⚠ WARNING

CAUTION: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE

This product contains batteries and they must be disposed of in accordance with current waste disposal and pollution legislation and in particular The Environmental Protection Act 1990, Special Waste Regulation 1996. It is recommended that the following authorities are contacted before any attempt is made to dispose of batteries; Environment Agency Local office, Local Authority Environmental Health or Waste Handling department.

An improperly disposed battery can be harmful to the environment and human health.



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2.3 EOLM-3

Each Zone on the panel that is configured for BiWire mode must have the intelligent end of line module (EOLM-3™) fitted to continually monitor each zone for the presence of fault conditions such as detector head removal, open or short circuit and for end of line failures even when in a Fire condition.

For new installations, any Zone on the panel that is configured for Conventional mode can use the intelligent end of line module (EOLM-3™) to terminate the zone but the panel will be limited to only detecting the presence of open or short circuit conditions to make it backward compatible with the EOLM-1. All detector head removals will be seen as an open circuit condition.

The EOLM-3™ module can be placed into the base of the last manual call point or detector base.



Figure 3: BiWire Flexi EOLM-3 Module

2.4 EOLM-1

Each Zone on the panel that is configured for Standard Conventional mode must have the intelligent end of line module (EOLM-1™) fitted to continually monitor each zone for the presence of fault conditions such as detector head removal, open or short circuit and for end of line failures even when in a Fire condition.

The EOLM-1™ module can be placed into the base of the last manual call point or detector base.



Figure 4: BiWire Flexi EOLM-1 Module

⚠ CAUTION

RISK OF DAMAGE TO EOLM-3 IF CORRECT WIRING POLARITY IS NOT OBSERVED

2.5 EOLR

Each Zone on the panel that is configured for Intrinsically Safe Conventional mode must separate the intrinsically safe devices from the panel using the intrinsically safe barrier MTL5561. The last device on the zone must be terminated with a 5K1 End of Line Resistor to ensure proper fault and fire monitoring of the zone.

Any Sounder Circuit on the panel that is being used for Intrinsically Safe Sounders must separate the intrinsically safe alarm devices from the panel using the intrinsically Safe Barrier MTL7778ac. The last alarm device on the sounder output must be terminated with a 6K8 End of Line Resistor to ensure proper fault monitoring of the circuit.

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2.6 System Wiring

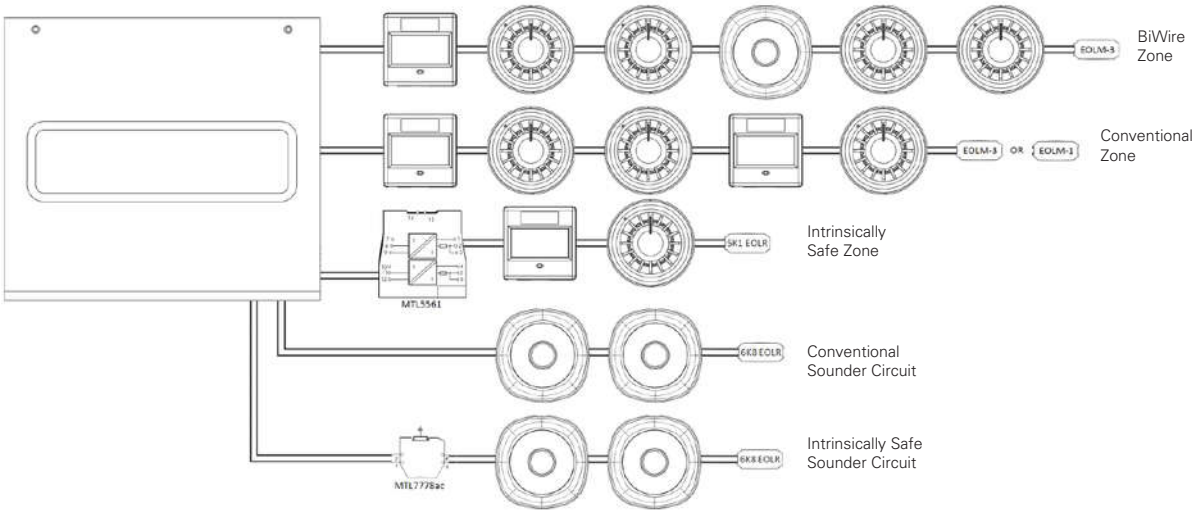


Figure 5: System Wiring Diagram

For zones configured in BiWire mode the zone can be wired for both BiWire detection (detectors and call points) and BiWire alarm (wall/base sounders, VADs and I/Os) devices terminated with an EOLM-3 embedded in the last device. Intrinsically safe and standard conventional detection and alarm devices cannot be wired onto a BiWire zone.

For zones configured in Conventional mode the zone is wired for Conventional detection (detectors and call points) devices only and must be terminated with an EOLM-1 or EOLM-3 embedded in the last device. Intrinsically safe conventional and BiWire detection and alarm devices cannot be wired onto a conventional zone.

For zones configured in Intrinsically Safe Conventional mode the zone is wired into the MTL5561 intrinsically safe barrier and all Intrinsically Safe Conventional detection (detectors and call points) devices are wired into the barrier with a 5K1 EOLR embedded in the last device. Standard conventional and BiWire detection and alarm devices cannot be wired onto an intrinsically safe conventional zone.

For sounder outputs used with standard conventional alarm (wall/base sounders, VADs and I/Os) devices the circuit must be terminated with 6K8 EOLR embedded in the last device. Intrinsically safe alarm devices cannot be mixed with standard conventional alarm devices as an intrinsically safe barrier must be used (see below). BiWire alarm devices cannot be wired to a conventional sounder output.

For sounder outputs used with Intrinsically Safe alarm devices the circuit must be wired into the MTL7778ac intrinsically safe barrier and all Intrinsically Safe Conventional alarm (wall/base sounders, VADs and I/Os) devices are wired into the barrier with a 6K8 EOLR embedded in the last device. Standard conventional alarm devices cannot be mixed with intrinsically safe alarm devices. BiWire alarm devices cannot be wired to a conventional sounder output.

For zones configured as Standard or Conventional mode the zone can be wired for detection (detectors and call points) devices terminated with an EOLM-1 and alarm (wall/ base sounders, VADs and I/Os) devices on separate circuits, as illustrated below.

2.7 Status Indications

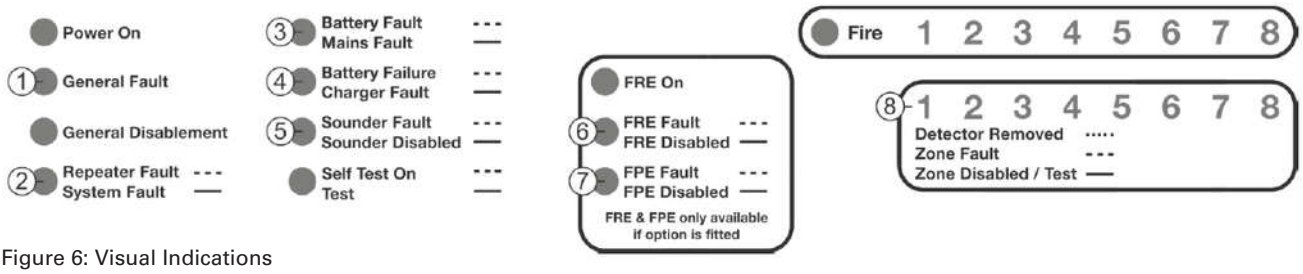


Figure 6: Visual Indications

KEY

ON (——)	Indicator lit
OFF	Indicator unlit
SLOW (- - - -)	Indicator slow flashing, buzzer slow pulsing
FAST (- - - - -)	Indicator fast flashing, buzzer fast pulsing
SILENT	Sounders off, buzzer off
CONT	Sounders on, buzzers continuous
	Any condition could be indicated

	Visual Indications														Audiable Indications		
Condition	**Power ON**	**General Fault**	**General Disable**	**Repeater Fault / System fault**	**Battery Fault / Mains Fault**	**Battery Failure / Charger Fault**	**Sounder Fault / Sounder Disabled**	**Self Test On \ Test**	**FRE On**	**FRE Fault / FRE Disabled**	**FPE Fault \ FPE Disabled**	**General Fire**	**Zone Fire (1-8)**	**Detector Removed \ Zone Fault \ Zone Disabled**	**Fire Alarm Devices**	**Panel Buzzer**	**Comments**
Normal Condition	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Normal condition and at access level 1
Access Level 2	ON															FAST	Access level 2 pass code accepted
Fire Condition	ON								ON			ON	ON		CONT	CONT	Only the zone in fire will have its zone fire indicator lit
System Fault	ON	ON		ON												SLOW	Severe fault condition with the panel
Repeater Fault	ON	ON		SLOW												SLOW	There is a problem with the link between panel and repeater
Battery Fault	ON	ON			SLOW											SLOW	No battery voltage or battery voltage too low
Mains Fault	ON	ON			ON											SLOW	Mains voltage has been lost
Battery Failure	ON	ON				SLOW										SLOW	Battery impedance fault
Charger Fault	ON	ON				ON										SLOW	Charger voltage fault
Sounder Fault	ON	ON					SLOW									SLOW	Short or Open circuit condition on the sounder circuit
FRE Fault	ON	ON								SLOW						SLOW	Short or Open circuit condition on the FRE
FPE Fault	ON	ON									SLOW					SLOW	Short or Open circuit condition on the FPE
Zone Fault	ON	ON												SLOW		SLOW	Short or Open circuit condition or head removal on the zone
Detector Removed	ON	ON												FAST		SLOW	BiWire Zones Only can detect when a Detector head has been removed
Sounder Disabled	ON		ON				ON										ALL fire alarm devices on ALL zones disabled
FRE Disabled	ON		ON							ON							FRE disabled
FPE Disabled	ON		ON								ON						FPE disabled
Zone Disabled	ON		ON												ON		Zone is disabled from fire detection
Individual Zone Test Active	ON							ON							ON	SLOW	An individual zone is in test mode and awaiting a fire activation

2.8 Control Panel Inputs and Outputs

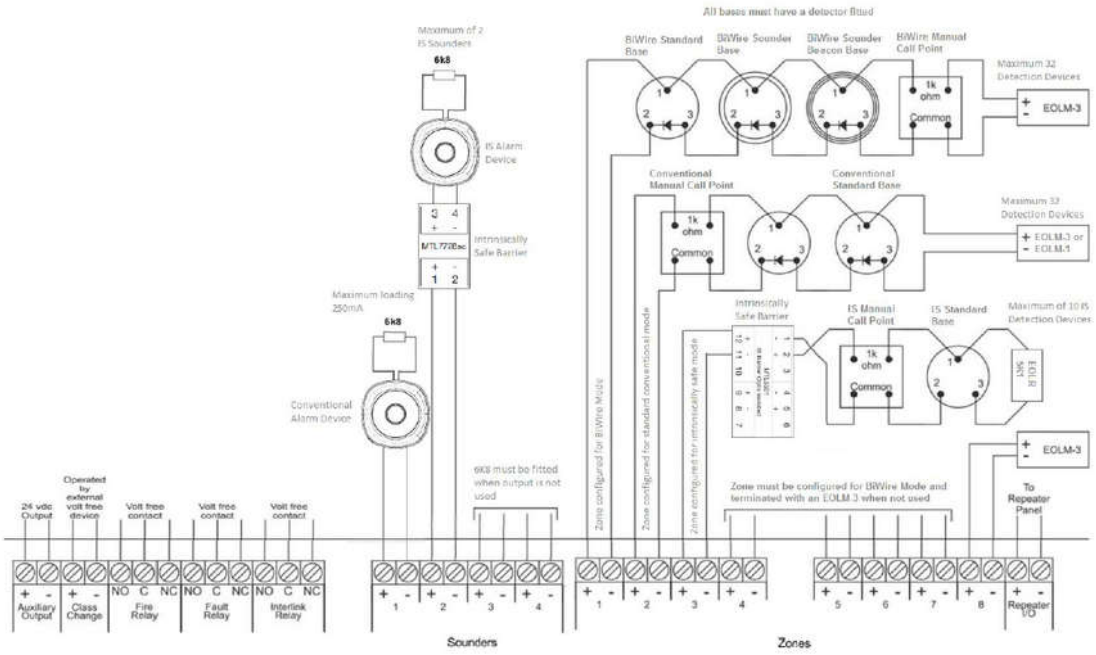


Figure 7: Panel Wiring Diagram

Auxiliary Output

The Auxiliary Output is a 30V DC output provided at the panel to power ancillary equipment. The current consumed by this output must be considered when calculating battery standby times. The contacts are not monitored.

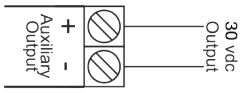


Figure 8: Auxiliary Output Terminal

Class Change

The sounders can be operated by an external volt free contact. A short circuit at this terminal will activate non-latching sounders (no indication will show on the fire alarm panel). The sounders will automatically silence when the short circuit is removed. This is sometimes used for schools at class change times.

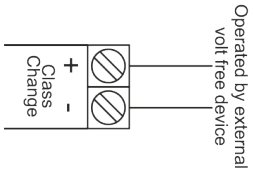


Figure 9: Class Change Input Terminal

⚠ WARNING

NO VOLTAGE SHOULD BE APPLIED TO THIS INPUT

Fire Relay

The fire relay provides a set of fused volt free changeover contacts, which operate in the event of a fire condition, these contacts are not monitored. The fire relay can be used as Fire Alarm Routing Equipment or Fire Protection Equipment outputs.

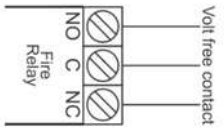


Figure 10: Fire Relay Terminals

Fault Relay

The fault relay provides a set of fused volt free changeover contacts, which operate in the event of a fault condition, these contacts are not monitored. This relay has been configured to be in fail safe mode, so in the event of total power loss the relay contacts will be active.

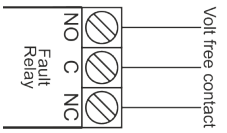


Figure 11: Fault Relay Terminals

Fault Relay reporting:

- Battery fault
- Mains fault
- Charger fault
- Impedance fault
- Zone faults:
  - Open circuit
  - Short circuit
  - Detector removal
- Sounder fault
- Repeater fault
- FRE fault
- FPE fault

Interlink Relay

The Interlink Relay in conjunction with a non-latching zone can be used to link two BiWire Flexi fire panels together (Figure 12) or to link a BiWire Flexi to a BiWire Ultra panel. It is recommended to use a non-latching zone in the BiWire mode and fit the EOLM-3 at the interlink relay of each panel.

⚠ WARNING

WHEN A ZONE IS BEING USED FOR INTERLINKING PANELS, NO OTHER DEVICES ARE PERMITTED ON THAT ZONE.

When an alarm is activated on one of the panels, the appropriate zone will indicate on the panel detecting fire and the interlink relay will activate. This is turn will activate the non-latching zone on the other panel and both panels will be in fire and all sounders on both panels will be activated.

To reset both panels, one of the panels would be manually soft reset, which would cause the non-latching zone on the other panel to reset as well. This would reset both panels.

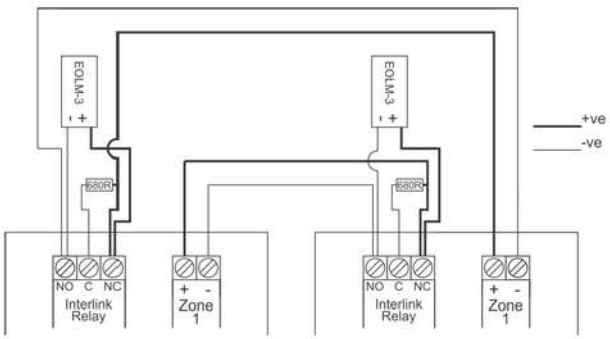


Figure 12: Interlink Connections

Detector Zone Inputs

Each zone is configured by default to BiWire mode and is provided with an EOLM-3 fitted inside panel.

For zones that need to be in BiWire mode the EOLM-3 must be removed from the panel and fitted to the last device on each zone (Figure 7). Any unused BiWire zones must be terminated inside the panel by the EOLM-3 otherwise the zone will go into fault condition.

For zones that need to be in Standard Conventional mode then for new installs the EOLM-3 must be removed from the panel and fitted to the last device on each zone (Figure 7), for retro-fit installs that already has an EOLM-1 fitted at the end of the zone then the EOLM-3 needs to be removed from the panel and not used, for retro-fit installs without an EOLM-1 then the EOLM-3 must be removed from the panel and used to replace the termination in the last device on the zone. Any unused standard conventional zone must be terminated with either an EOLM-3 or EOLM-1.

For zones to be configured in Intrinsically Safe Conventional mode the EOLM-3 must be removed and replaced by a 5K1 resistor (not supplied) and fitted in the last device at the end of zone after the intrinsically safe barrier. Any unused intrinsically safe zone must be terminated by the 5K1 end-of-line resistor.

It is recommended that any zone that is not in use should remain in the factory default configuration of BiWire mode with the EOLM-3 fitted in the panel.

Conventional Sounder Circuits

For 2 and 4 zone panels the following sounder circuit rules apply:

- All Zones in BiWire Mode = 2 Sounder Outputs Available
- Half Zones in BiWire and Half in Conventional Mode = 2 Sounder Outputs Available

For 8 zone panels the following sounder circuits apply:

- 8 BiWire Zones = 0 Sounder Outputs Available
- 1-4 Conventional Zones = 2 Sounder Outputs Available
- 5-8 Conventional Zones = 4 Sounder Outputs Available

Each sounder circuit must be terminated by a 6K8 resistor whether the alarm devices are standard or intrinsically safe in order for the panel to detect Short and Open circuit faults. Even if the conventional sounder circuits are not in use they must be terminated by the 6K8 resistors inside the panel.

Repeater I/O

Each repeater has its own mains supply and standby battery. The repeater output is designed to connect to another panel configured as a repeater using the RS485 protocol. The repeater would follow the indication of the main Panel showing faults, fires and disablements (Figure 13).

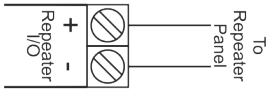


Figure 13: Repeater Panel Connection

2.9 Option Board (FRE/FPE/Zonal Relays)

The options board is an additional daughter card that provides outputs to Fire Protection Equipment (FPE), Fire Alarm Routing Equipment (FRE) and Zonal Relays.

Fire Alarm Routing Equipment (FRE)

The FRE output is designed to activate during a fire event and is connected to phone diallers and/or Building Management Systems. When the FRE option board is fitted SW12-1 dip switch is set to Fitted. See figure 6. The output complies with EN54-2 clause:

- Outputs to fire alarm routing equipment (option with requirements)

Fire Protection Equipment (FPE)

The FPE output is designed to activate during a fire event and when connected to external devices drive door release mechanisms, fire screens, sprinkler systems, and gas release systems. When FPE option board is fitted SW12-1 dip switch is set to Fitted. The output complies with EN54-2 clause:

- 7 .10.1 Outputs to fire protection equipment (Type A)

Zonal Relay Contacts

Zonal relay contacts are volt free and do not provide any voltage. The relays are selectable to be either set to C/NO or C/NC. The zonal relays are designed to follow the fire condition of the associated zone circuit on the Main board.

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3. Installation Instructions

This section of this guide explains in detail how the panel should be installed and configured to function properly. Please ensure you have fully understood the components of the system and how they operate before proceeding with this section. Take notice of the warnings and cautions as they are to prevent damage to your equipment.

3.1 Before you begin

⚠ CAUTION

ENSURE ANTI-STATIC PRECAUTIONS ARE TAKEN WHEN HANDLING ELECTRONIC COMPONENTS OF THE SYSTEM. DO NOT USE EXCESSIVE FORCE WHEN TIGHTENING THE TERMINAL BLOCKS.

⚠ NOTE

WHEN INSTALLED THIS EQUIPMENT IS SUBJECT TO THE EMC DIRECTIVE 2004/108/EC. TO MAINTAIN EMC COMPLIANCE THE FIRE ALARM SYSTEM MUST BE INSTALLED AS INSTRUCTED. THE INSTALLER WILL BE RESPONSIBLE FOR ANY EMC PROBLEMS THAT MAY OCCUR EITHER TO THE FIRE ALARM SYSTEM OR TO ANY OTHER EQUIPMENT AFFECTED BY THE INSTALLATION IF THERE IS ANY DEVIATION FROM THIS GUIDE.

⚠ NOTE

INSTALLATION & MAINTENANCE MUST BE PERFORMED BY AN APPROPRIATELY QUALIFIED PERSON. THE EQUIPMENT CARRIES NO WARRANTY UNLESS THE SYSTEM HAS BEEN INSTALLED AND COMMISSIONED AND SUBSEQUENTLY MAINTAINED BY APPROPRIATELY QUALIFIED PERSONS OR ORGANISATIONS. DO NOT ATTEMPT TO INSTALL THIS EQUIPMENT UNTIL YOU HAVE FULLY READ AND UNDERSTOOD THE OPERATION AS DESCRIBED WITHIN THIS MANUAL, FAILURE TO DO SO MAY RESULT IN DAMAGE TO THE EQUIPMENT AND COULD INVALIDATE YOUR WARRANTY.

⚠ WARNING

WHEN INSTALLING THE BIWIRE FLEXI FIRE SYSTEM CARE SHOULD BE TAKEN TO ENSURE THAT THE INSTALLATION LOCATION DOES NOT SUBJECT THE PANEL TO ENVIRONMENTAL FACTOR IN EXCESS OF THE LIMITS OUTLINED IN THE TECHNICAL SPECIFICATION CONTAINED WITHIN THIS GUIDE.

3.2 Cabling Routing & Device Installation

Route the fire rated cabling (for example FP200) between device locations in accordance with the zone map (and any other external equipment) and back to the panel location as indicated in the system design drawings. Each cable should be clearly labelled with their function, i.e. Zone 1 etc.

The bases of all fire devices should be fixed (refer to the installation guide supplied with each device) in the locations specified in the system design drawings.

The cabling to devices should be screwed into the terminals of the base or device (refer to the installation guide supplied with each device). The correct polarity should be observed along the cable routing.

The correct EOLM must be fitted at the end of each zone in (EOLM-3 for BiWire, EOLM-1 for Conventional).

The 6K8 resistor must be fitted at the end of each conventional sounder circuit.

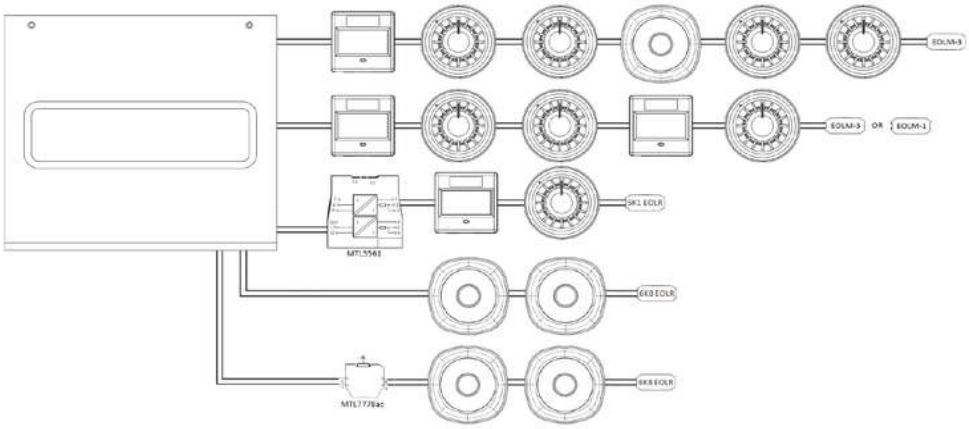


Figure 12: System Cabling

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3.3 Panel Installation

⚠ NOTE

THE FOLLOWING INSTRUCTIONS MUST BE FOLLOWED WITH MAINS AND BATTERY SUPPLIES DISCONNECTED UNLESS OTHERWISE STATED.

⚠ NOTE

THE PANEL SHOULD BE INSTALLED IN A CLEAN, DRY, REASONABLY WELL VENTILATED PLACE, AND NOT IN DIRECT SUNLIGHT. TEMPERATURES IN EXCESS OF 40°C AND BELOW 5°C MAY CAUSE PROBLEMS, IF IN DOUBT CONSULT EATON FIRE SYSTEMS. THE PANEL SHOULD BE LOCATED AWAY FROM ANY POTENTIAL HAZARD, IN A POSITION WHERE IT IS READILY ACCESSIBLE TO AUTHORISED STAFF, AND THE FIRESERVICES, IDEALLY ON THE PERIMETER OF A BUILDING NEAR A PERMANENT ENTRANCE

Mounting the Panel

- To remove the front cover of the panel, unscrew the two retraining screws located at the top corners of the panel, see Figure 13.
- It is recommended to remove the PCB shelf and the PSE from the back box before drilling the holes.
- To remove the PCB shelf push the clips down (1), then push the shelf towards the top of the back box and then lift forwards (2), see Figure 14.
- To remove the PSE PCB from the back box unplug the cables from the main board as shown in Figure 15, then simply remove the screw and push the PCB up, to the right and forwards as shown in Figure 16.

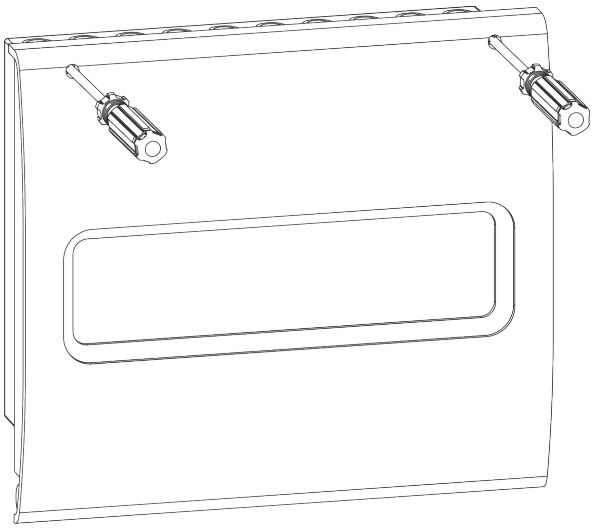


Figure 13: Removing the Front Cover

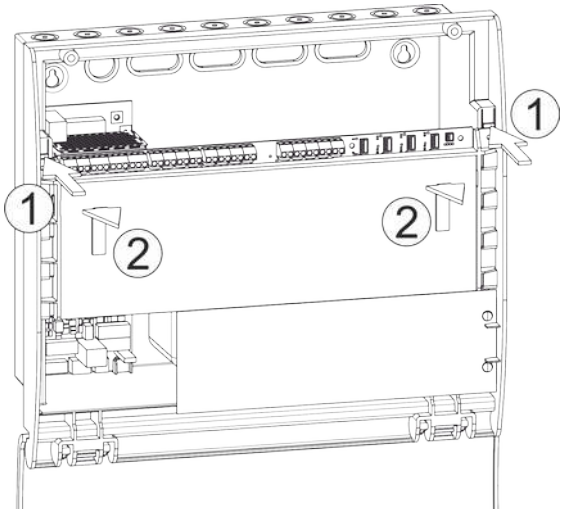


Figure 14: Removing the PCB Shelf

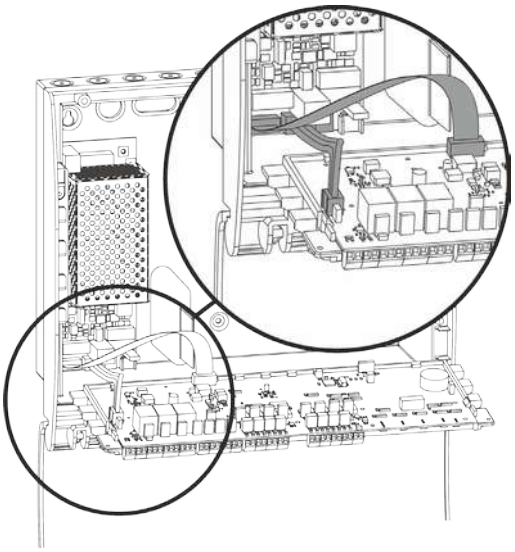


Figure 15: Disconnecting the PSE

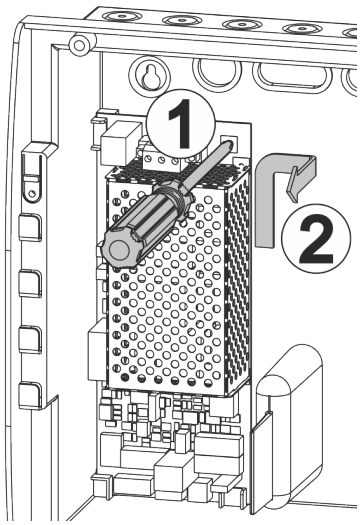


Figure 16: Removing the PSE

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- Once the cable entry holes have been cut then fit the cable glands to the back box.
- If the panel is being flush mounted, then insert the panel into the recess feeding the cables through the rear cable entry points.
- If the panel is being wall mounted then cut out the required number of cable entry holes in the back using a 20mm hole saw with pilot drill bit as shown in Figure 19. Fit the glands to the back box and pull through the required cables.

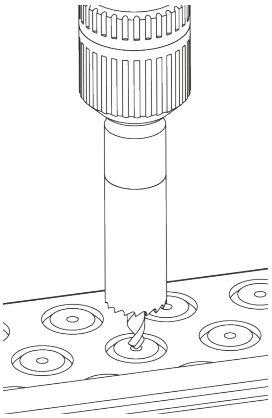


Figure 17: Cutting Cable Entry Holes

- Using the mounting holes in the back box, drill holes into the wall and insert wall plugs and secure the panel to the wall as shown in Figure 17. Ensure any dust is cleaned from the back box.
- Secure the PSE PCB back into the back box by following the reverse instructions in Figure 16.
- Fit the PCB shelf and cables by following the reverse instructions in Figure 14 and Figure 15.
- Fit the door back onto the back box by following the reverse instructions in Figure 13

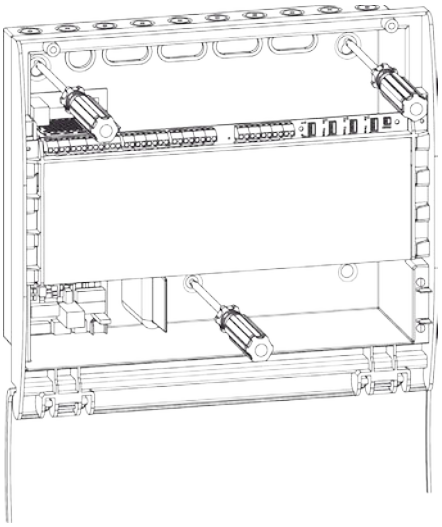


Figure 18: Securing the Panel to the Wall

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Connecting the Mains Supply

The mains supply should be exclusive to the fire alarm as detailed in BS5839. A plug and socket is not satisfactory. We recommend that a switched double pole fused spur unit is used for the sole use of the fire alarm system and should be clearly marked with:

FIRE ALARM DO NOT SWITCH OFF

Before connecting the fused spur to the PSE, slide the ferrite core (supplied with the panel) over the cable as shown in Figure 19.

Connect the fused spur to the input marked MAINS on the PSE, observing correct wiring regulations (see Figure 16).

⚠ NOTE

OBEY VOLT DROP LIMITATION WHEN SIZING CABLES.

⚠ NOTE

USE ONLY APPROVED CABLE TYPES.

⚠ NOTE

DO NOT TIGHTEN TERMINAL CONNECTOR SCREWS TOO TIGHT.

⚠ NOTE

KEEP POLARITY THROUGHOUT. NON COLOURED CONDUCTORS SHOULD BE PERMANENTLY MARKED.

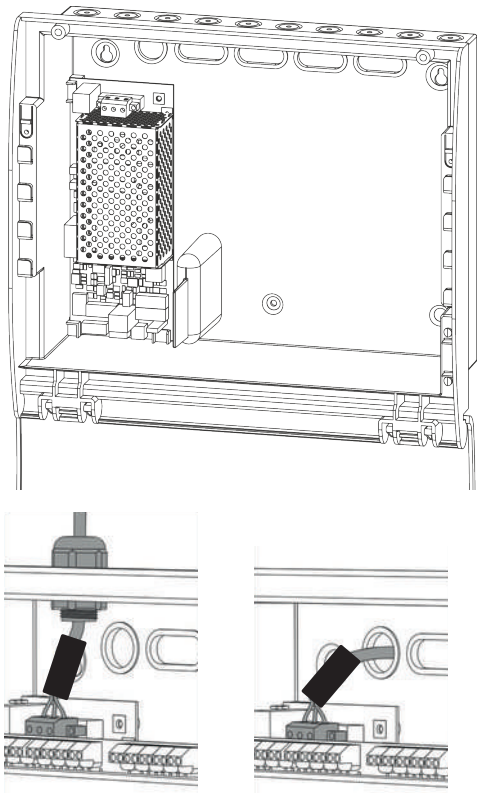


Figure 19: Mains Supply Connection to PSE

Connecting the Battery Supply

A Battery cover is supplied to prevent accidental contact with the battery terminals and gives additional useful information. The battery cover can be moved out of the way as indicated in Figure 20.

Connect the spade connectors of the two wire battery cable and the single wire battery cable as illustrated in Figure 19.

Do not connect the plastic socket end of the battery cable to the PSE until all installation actions in this guide have been completed and the system is ready for testing.

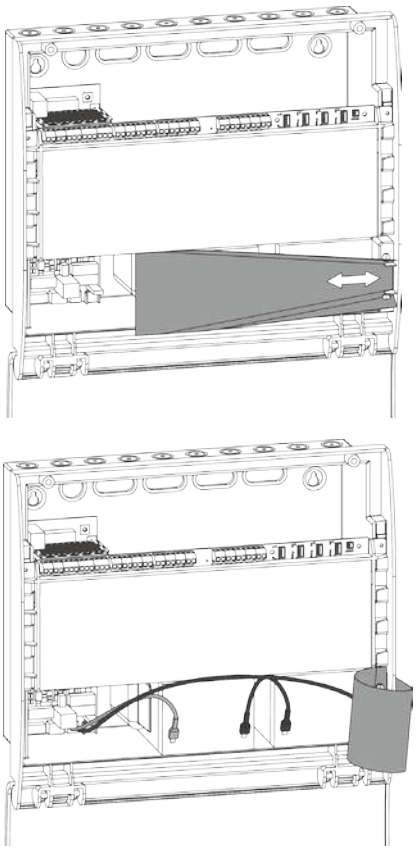


Figure 20: Battery Cover Removal

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Battery Connections

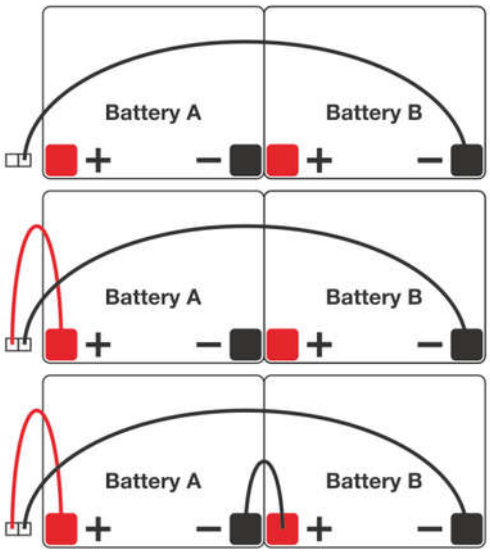


Figure 21: Battery Connection

Battery Connections:-

1. Connect the **BLACK** battery wire to the **BLACK (-)** battery terminal of battery **B**

2. Connect the **RED** battery wire to the **RED (+)** battery terminal of battery A

3. Connect the link cable between the two remaining terminals

Connecting the Zone Cables

Connect the cables (clearly labelled with the zone numbers) to the appropriate zone +/- terminals, observing the correct polarity (see Figure 21).

If any of the zones are not used then the EOLM-3 must remain fitted to the terminals of that zone to ensure the system remains fault free.

⚠ CAUTION

DO NOT USE A HIGH VOLTAGE INSULATION TESTER

⚠ NOTE

IT IS IMPORTANT THAT ZONE CABLING IS CONNECTED TO THE CORRECT ZONE INPUT OTHERWISE ANY FIRE OR FAULT INDICATION ON THE PANEL WILL NOT MATCH THE ZONE MAP OF THE SITE, AND WILL NOT BE COMPLIANT TO BS5839.

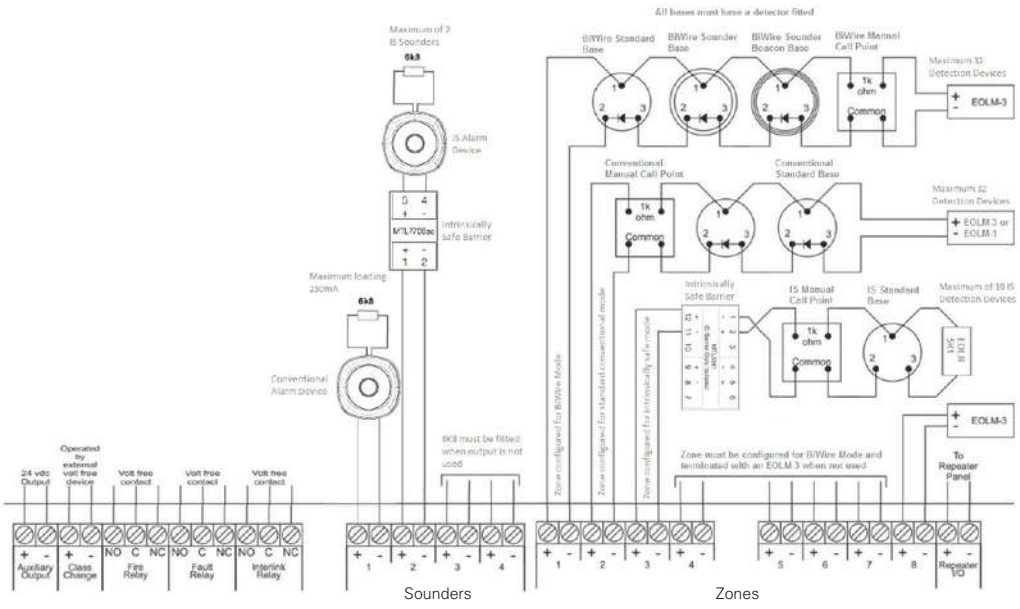


Figure 22: Panel Wiring Diagram

Connecting the Input/Output Cables

Connect the cables (clearly labelled with the external equipment reference) to the appropriate input or output terminals, observing the correct polarity where applicable.

⚠ CAUTION

MAKE SURE TO FOLLOW THE INSTALLATION GUIDES OF ANY EXTERNAL EQUIPMENT AND CHECK THE CORRECT WIRING POLARITY AND THAT THE EQUIPMENT IS COMPATIBLE WITH THE BIWIRE FLEXI PANEL BEFORE POWERING UP THE SYSTEM.

Connecting a Repeater Panel

Connect the cables from the repeater panel to the Repeater terminals on the main board of the fire alarm panel, observing the correct polarity (see Figure 22).

To enable the repeater output switch 2 of SW12 on the panel main board must be changed to the "Repeater Output On" setting (see Figure 23).

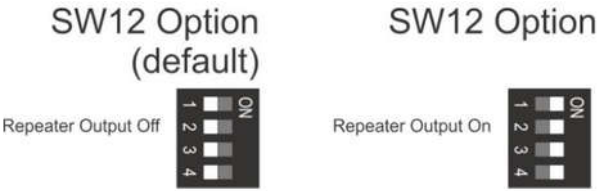


Figure 23: Repeater Out Setting

Interlinking Two Panels

Wire the two panels together as shown in Figure 26.

The EOLM-3 must be fitted for the zone circuits on both panels to be monitored for fault conditions.

The 680ohm resistor must be fitted so that the zone input will detect the fire condition and activate its fire alarm devices.

In order for the Interlink to operate correctly the zone inputs on both panels being used for interlinking must be set to unlatched, therefore the associated switch on SW4 must be set to the "Unlatched Zone x" setting (see Figure 25).

⚠ NOTE

NO OTHER DEVICES ARE TO BE CONNECTED TO A ZONE CONFIGURED FOR INTERLINKING.

⚠ WARNING

THE UNLATCHING SETTING IS NOT TO BE USED WITH DETECTION ZONES AS THIS WILL MAKE THE PANEL NON-COMPLIANT.

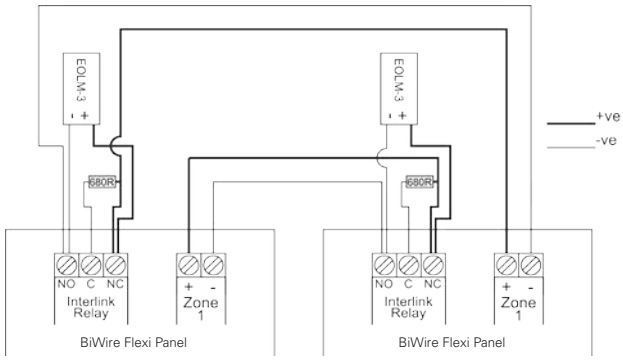


Figure 24: Interlink Wiring Diagram

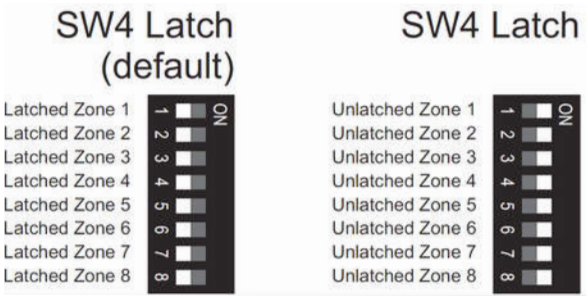


Figure 25: Interlink Settings

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3.4 Option Board

Connecting the FRE and FPE Outputs

Connect the cabling from the fire alarm routing equipment and fire protection equipment to the relevant terminals on the option board.

As these outputs are monitored for short circuit and open circuit faults conditions, the 6K8 resistor supplied should be installed at the external equipment and not at the option board terminals.

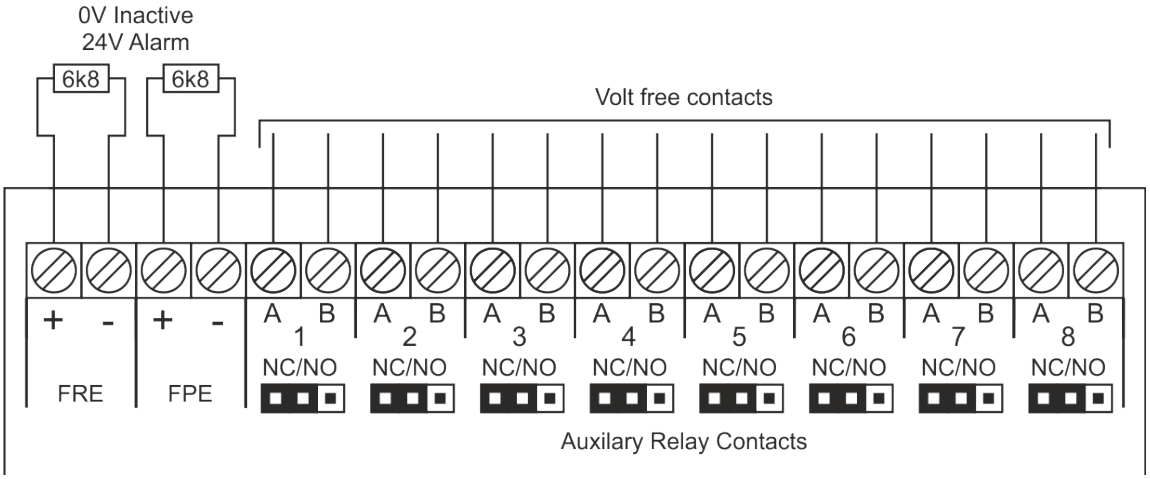


Figure 26: Option Board Wiring Diagram

⚠ NOTE

IF EITHER THE FRE OR FPE IS NOT BEING USED THEN THE 6K8 RESISTOR SHOULD BE FITTED AT THE APPROPRIATE TERMINAL ON THE OPTION BOARD. THIS PREVENTS ERRONEOUS FAULTS CONDITIONS BEING DISPLAYED ON THE PANEL.

Connecting the Zonal Outputs

Connect the cabling from the external equipment to the relevant zone terminals on the option board.

These outputs are not monitored so there is no need for a 6K8 termination resistor.

Change the jumpers on the zonal relays to get them to operate in either normally open or normally closed during a fire alarm condition.

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3.5 Panel Configuration

Silence Mode Disabled

With switch 3 of SW12 on the panel main board set to "Silence Mode Disabled" the panel will re-sound all fire alarm devices after the panel has been silenced with any new fire conditions detected.

Silence Mode Enabled

With switch 3 of SW12 on the panel main board set to "Silence Mode Enabled" the panel will NOT re-sound the fire alarm devices after the panel has been silenced regardless of any new fire conditions detected.

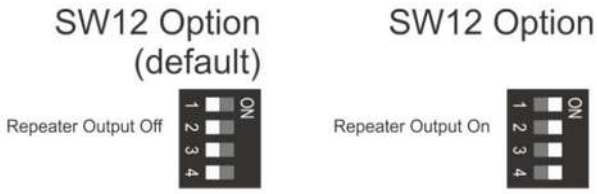


Figure 27: Silence Mode Setting

3.6 Zone Configuration

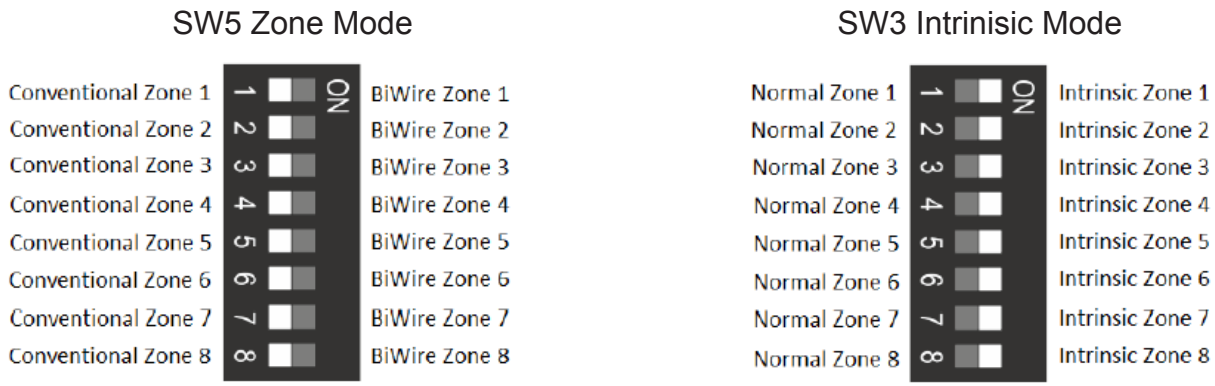


Figure 28: Zone Mode Setting

Zone #	BiWire Mode	Standard Conventional	IS Conventional
1	SW3.1 = N/A	SW3.1 = OFF	SW3.1 = ON
	SW5.1 = ON	SW5.1 = OFF	SW5.1 = OFF
2	SW3.2 = N/A	SW3.2 = OFF	SW3.2 = ON
	SW5.2 = ON	SW5.2 = OFF	SW5.2 = OFF
3	SW3.3 = N/A	SW3.3 = OFF	SW3.3 = ON
	SW5.3 = ON	SW5.3 = OFF	SW5.3 = OFF
4	SW3.4 = N/A	SW3.4 = OFF	SW3.4 = ON
	SW5.4 = ON	SW5.4 = OFF	SW5.4 = OFF
5	SW3.5 = N/A	SW3.5 = OFF	SW3.5 = ON
	SW5.5 = ON	SW5.5 = OFF	SW5.5 = OFF
6	SW3.6 = N/A	SW3.6 = OFF	SW3.6 = ON
	SW5.6 = ON	SW5.6 = OFF	SW5.6 = OFF
7	SW3.7 = N/A	SW3.7 = OFF	SW3.7 = ON
	SW5.7 = ON	SW5.7 = OFF	SW5.7 = OFF
8	SW3.8 = N/A	SW3.8 = OFF	SW3.8 = ON
	SW5.8 = ON	SW5.8 = OFF	SW5.8 = OFF

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3.7 Detector Fitting

All detector heads should now be fitted to the bases (following the device installation guide), prior to the installation being tested.

The BiWire detectors can be configured for either latched or non-latching fire condition.

When the detectors are configured for latched mode then care must be taken that before any zone is re-enabled that a walk round of the zone is carried out to check that all detectors and manual call points are not latched in the fire condition.

If there are no detectors or manual call points showing the fire condition then the zone can be re-enabled at the panel.

⚠ WARNING

FAILURE TO FOLLOW THE INSTRUCTIONS ABOVE WILL RESULT IN THE PANEL ENTERING A FULL ALARM CONDITION WHICH WILL EVACUATE THE SITE AND ACTIVATE ANY OTHER EQUIPMENT ATTACHED TO THE FIRE ALARM SYSTEM.

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3.8 Installation Testing

Initial Power-up Check

Power up the panel by engaging the fuse spur to supply mains, then connect the white socket of the battery cable to the power supply (see Figure 22).

Check that all indicators turn on in turn momentarily and turn off again.

Only the power on indicator should be lit afterwards.

Any fault indications should be investigated and corrective actions taken before continuing with the installation tests (see section 2.7 for fault indications). All corrective actions should be undertaken with the panel powered off.

If there are detectors or manual call points showing the fire condition then the panel should be reset to clear the fire condition before the zone is re-enabled. Check that the following outputs are in the correct state:

- Auxillary Output (30V)
- Fire Relay (C/NC)
- Fault Relay (C/NO)
- Interlink Relay (C/NC)
- FRE (0V, if fitted)
- FPE (0V, if fitted)

⚠ WARNING

DO NOT FIX ANY FAULT CONDITIONS WITH THE SYSTEM STILL POWERED UP, THIS IS PARTICULARY IMPORTANT WITH SHORT CIRCUIT FAULTS ON ZONES AS THE PTC FUSE NEEDS TIME TO RECOVER.

Zone Fire Detection Check

Repeat the following per zone:

- Place the individual zone into Zone Test mode (see section 6.7).
- Activate a manual call point (or a detector if there is no call point on the zone) in that zone and then check the following:
  - General fire indicator (red) is on.
  - Correct zone fire indicator (red) is on.
  - All fire alarm devices are sounding.
- After approximately 3 seconds the system will automatically silence and the fire indication will clear.
- Take the zone out of Zone Test mode (see section 6.7).

Reset the system to clear all fire indications.

Zone Fault Detection Check

Repeat the following per zone:

- Disconnect the last detector head on the zone then check the following
  - General fault indicator (amber) is on.
  - Correct zone fault/disable indicator (amber) is fast flashing for detector removed fault.
  - Fault relay has switched over to C/NC.

Connect the detector back on its base then check the following

- General fault indicator (amber) is off.
- Zone fault/disable indicator (amber) is off.
- Fault relay has switched back to C/NO.

Press button 5 “Mute Buzzer” to silence the panel buzzer.

Battery Fault Detection Check

Disconnect the battery.

After about 20 seconds check the following:

- General fault indicator (amber) is on.
- Battery/Mains fault indicator (amber) is flashing for battery fault.
- Battery/Charger fault indicator (amber) is on for charger fault.

Connect the battery.

After about 4 seconds check the following:

- General fault indicator is off.
- Battery/Mains fault indicator is off.
- Battery/Charger fault indicator is off.

Press button 5 “Mute Buzzer” to silence the panel buzzer.

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Fire Outputs & Battery Check

⚠ WARNING

THIS TEST WILL ACTIVATE ANY EXTERNAL EQUIPMENT CONNECTED TO THE FRE, FPE OR FIRERELAYS. IF THE ACTIVATION OF THE EQUIPMENT ISNOT DESIRED THEN THE EQUIPMENT MUST BE DISABLED, DISCONNECTED OR POWERED OFF DURING THIS TEST AND RESTORED ONCE THE TEST IS COMPLETE.

Measure the battery charger voltage, this should be around 27.6V.

Disconnect the mains supply and check the following:

- Power On (green) indicator is still on.
- General fault (amber) indication is on.
- Battery/Mains fault indication is on for mains fault.

The panel should not lose power during the following test.

Activate a call point in any zone.

Check the following on the panel:

- General fire indicator (red) is on.
- Correct zone fire indicator (red) is on.
- FRE On indicator (red) is on.
- FRE output has switched to 24V (if fitted).
- FPE output has switched to 24V (if fitted).
- Fire relay has switched over to C/NO.
- All fire alarm devices are sounding.

Check the following on the interlinked panel (if installed):

- General fire indicator (red) is on.
- FRE On indicator (red) is on.
- FRE output has switched to 24V (if fitted).
- FPE output has switched to 24V (if fitted).
- Fire relay has switched over to C/NO.
- All fire alarm devices are sounding.

Perform a soft reset and then check that the panel and interlinked panel have returned to the normal condition with mains fault.

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4. Commissioning & System Handover

4.1 Commissioning

The walk test feature (see 6.10 for more details) has been provided to facilitate the commissioning of the BiWire Flexi system.

The commissioning of the system should be conducted in accordance to BS5839 part 1 Annex H.

The commissioning certificate must be completed and any variances noted.

The system configuration and variances should be recorded on the log book.

4.2 System Handover

The following documents must be handed over to the Premises Management of the installation:

- Zone map
- Commissioning certificate
- Log book
- User Manual

The Premises Management will be demonstrated the operation of the system and given basic training on the operation of the system and filling in the log book.

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5. Maintenance

5.1 Daily Testing

- To be conducted by the Premises Management.
- Check that the panel shows no fire or fault indications.
- If there are any fault conditions indicated then follow instructions in section 2.7.

5.2 Weekly Testing

- To be conducted by the Premises Management.
- Each week perform a Lamp Test to check that all visual and audible indicators on the panel are functioning correctly (refer to section 6.8).
- Each week a different zone should be tested. Testing with a manual call point is the simplest method as these can be easily triggered with the key provided. Testing with a fire detection device is more complex as it requires specialist equipment and may not be possible for all premises. At a minimum a different manual call point should be tested each week.
- Place the zone to be tested into test mode using the "Individual Zone Test" (refer to 6.7 for more details)
- Record the weekly test results in the log book.

5.3 Quarterly Testing

- To be conducted by the Competent Person.
- Check all previous log book entries and verify that any corrective actions had been taken.
- Carry out the weekly test and record the results in the log book.
- Visually inspect the batteries and their connections.
- Disconnect the mains supply and check that the fire system is capable of supplying the fire alarm devices by operating a call point.

5.4 Yearly Testing

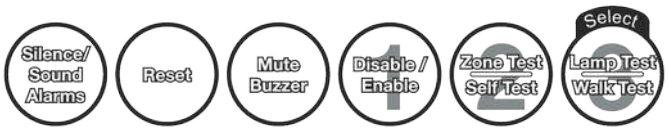
- To be conducted by the Competent Person.
- Carry out the weekly test and record the results in the log book.
- Carry out the Quarterly testing.
- Test **ALL** fire detection devices and manual call points.

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6. Operating Instructions

6.1 Multi-Function Buttons



The numerical value in the center of the button is used to enter access codes for level 2 and 3.

If the text in the center of the button appears above a line (or there is no line) then this function is applicable at access level 2. If the text in the c entre of the button appears below a line then this function is applicable at access level 3.

The text above button 3 indicates that this button is the "Select" button during "Disable/Enable" and "Individual Zone Test" functions.

6.2 Silence Fire Alarm Devices

- This function is only available at access level 2 and when the alarms are sounding.
- Enter the access code 3112.
- Press the "Silence/Sound Alarms" button.
- Only the fire alarm devices will stop sounding, the panel buzzer will continue sounding.
- This function will immediately exit back to Access Level 1.



6.3 Sound Fire Alarm Devices

- This function is only available at access level 2 and when the alarms are silent.
- Enter the access code 3112.
- Press the "Silence/Sound Alarms" button.
- Only the General Fire indicator will be lit, the panel buzzer will sound a continuous tone and all fire alarm devices will sound.
- This function will immediately exit back to Access Level 1.



6.4 Reset System

- This function is only available at access level 2.
- Enter the access code 3112.
- Press the "Reset" button.
- This will stop all fire alarm devices sounding, will stop the panel buzzer and will reset the panel.
- The panel will return to the normal condition after completing the indicator test routine which turns each indicator on in turn and then turns them off in turn.

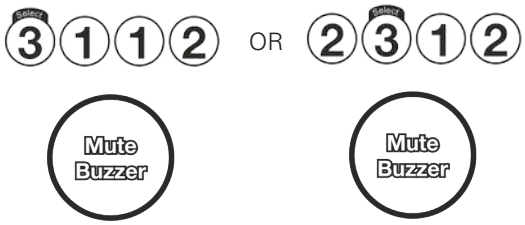
Note: When performing a reset, any test cases will be cleared



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6.5 Mute Buzzer



- This function is available at access level 1, 2 and 3.
- To silence the panel's internal buzzer at access level 1 just press the "Mute Buzzer" button.
- To silence the panel's internal buzzer at access level 2 enter the code 3112 and then press the "Mute Buzzer" button.
- To silence the panel's internal buzzer at access level 3 enter the code 2321 and then press the "Mute Buzzer" button.
- This function will immediately exit back to Access Level 1.

6.6 Enable/Disable



This function is only available at access level 2.

- Before re-enabling any zone that has latching detectors, a walk round of the zone in question should be carried out to check that all detectors and manual call points are not indicating a fire condition. Failure to do so will result in the panel entering a full alarm condition which will evacuate the site and activate any other equipment attached to the fire alarm system.
- This function will allow the following to be disabled:
  - Individual Zones
  - All fire alarm devices
  - FRE (if fitted)
  - FPE (if fitted)
- Enter the access code 3112.
- Press the "Disable/Enable" button (1).
- All previous disablements will have their associated disabled indicator lit and all enablements will have their associated disabled indicators unlit.
- The function always starts at Zone 1.
- When an item is selected for disablement its disable indicator will change from unlit to lit.
- Press the following button sequences for the required enablement/disablement:
- When an item is selected for enablement its disable indicator will change from lit to unlit.
- Pressing "Select" button (3) will accept the selected enablement/disablement and exit back to Access Level 1.

Item	2-Zone	4-Zone	8-Zone
Zone	3	3	3
Zone 2	1 + 3	1 + 3	1 + 3
Zone 3		1 (2 times) + 3	1 (2 times) + 3
Zone 4		1 (3 times) + 3	1 (3 times) + 3
Zone 5			1 (4 times) + 3
Zone 6			1 (5 times) + 3
Zone 7			1 (6 times) + 3
Zone 8			1 (7 times) + 3
Sounders	1 (2 times) + 3	1 (4 times) + 3	1 (8 times) + 3
FRE (if fitted)	1 (3 times) + 3	1 (5 times) + 3	1 (9 times) + 3
FPE (if fitted)	1 (4 times) + 3	1 (6 times) + 3	1 (10 times) + 3

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6.7 Individual Zone Test



- This function is only available at access level 2.
- This function will allow individual zones to be placed in the zone test mode.
- Enter the access code 3112
- Press "Test" button (2).
- The zone currently in test mode will have its associated disabled indicator lit and all zones not in test mode will have their associated disabled indicators unlit.
- The function always starts at Zone 1.
- When an item is selected for test mode its disable indicator will change from unlit to lit.
- When an item is selected for normal operation its disable indicator will change from lit to unlit.
- Press the following button sequences for the required test mode/normal operation:

Item	2-Zone	4-Zone	8-Zone
Zone 1	3	3	3
Zone 2	2 + 3	2 + 3	2 + 3
Zone 3		2 (2 times) + 3	2 (2 times) + 3
Zone 4		2 (3 times) + 3	2 (3 times) + 3
Zone 5			2 (4 times) + 3
Zone 6			2 (5 times) + 3
Zone 7			2 (6 times) + 3
Zone 8			2 (7 times) + 3

- Pressing "Select" button (3) will accept the selected test zone and exit back to Access Level 1. The Test indicator will remain lit and the zone disabled indicator will also remain lit.
- When a fire detection device or manual call point is activated in the zone under test it will sound all fire alarm devices for 3 seconds and then will automatically silence.
- Any fire condition detected in any other zone will place the system into full alarm condition and the fire alarm devices will activate continuously.
- To end the individual test mode the above selection instructions should be carried out and the zone disabled indicator changed to the unlit state.

6.8 Lamp Test



- This function is available at access level 2.
- Enter the access code 3112.
- Press "Indicator Test" button (3).
- Each indicator on the front of the panel will turn on in turn and then turn off in turn (excluding the Power On indicator).
- This function will immediately exit back to Access Level 1.

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6.9 Self-test Mode



- This function is only available at access level 3.
- Enter the access code 2321.
- Press the "Test" button (2).
- The Test indicator will slow flash and the buzzer will give a slow pulsing tone.
- The fire indicator on every detector head will turn on.
- This function is useful for checking that each head is fitted correctly as the fire indicator will not turn on.
- To end the self-test mode, enter the access code 2321 and press button 2.

6.10 Walk Test Mode



- This function is only available at access level 3.
- Enter the access code 2321
- Press "Indicator Test" button (3).
- The Test indicator will turn on and the buzzer will give a slow pulsing tone.
- This function places all zones in test mode and is used during commissioning to test every fire detection device on a zone.
- Repeat the following for each zone (with fire detection devices) in turn:
  - Activate the fire detection device or manual call point on the zone.
  - All fire alarm devices will sound on all zones for 3 seconds and then will automatically silence.
  - The fire panel will then reset the zone from the fire condition.
  - Repeat the above process until all fire detection device and manual call points on the zone have been tested.
- To end the walk test mode enter the access code 3112 or 2321 and press the "Reset" button.
- If no fire detection device or manual call point is triggered within 10 minutes of the walk test being started, the test mode will timeout and return back to access level 1/normal condition.

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7. Technical Specifications

7.1 Panel Specification

		BiWire Flexi Fire Panel		
		EFBW2ZONE-FLEXI	**EFBW4ZONE-FLEXI**	**EFBW8ZONE-FLEXI**
POWER SPECIFICATION				
Input Voltage Range		18.75-30.7V	18.75-30.7V	18.75-30.7V
Maximum current drawn from battery		2.7A	2.7A	2.7A
ZONE CIRCUITS				
Number of Zones		**2**	**4**	**8**
Devices Per Zone		BiWire Mode: Max of 32 BiWire Detectors and Manual Call Points, total loading including BiWire sounders cannot exceed 200mA in alarm Conventional Mode: Max 32 Conventional Detectors and Manual Call Points Intrinsically Safe Conventional Mode: Max of 10 Intrinsically Safe Detectors and Manual Call Point		
Maximum Loading Per Zone		200mA		
Standby Zone Voltage	Vmin	19V DC		
	Vmax	23V DC		
Alarm Zone Voltage	Vmin	31V DC		
	Vmax	33V DC		
Fuse Protection Per Zone		250mA PTC		
End of Line Termination		BiWire Zones = EOLM-3 Only Standard Conventional Zones = EOLM-1 Only Intrinsically Safe Zones = 6K8 resistor		
CONVENTIONAL SOUNDER CIRCUITS				
Number of Sounder Circuits		4		
Maximum Loading Per Circuit		500mA		
Fuse Protection Per Circuit		500mA PTC		
End of Line Termination		6K8 resistor		
UNMONITORED OUTPUTS				
Fire Relay	Type	Volt-Free, Single Pole Double Throw		
	Rating	30V DC, 1A		
	Fuse	500mA PTC		
Fault Relay	Type	Volt-Free, Single Pole Double Throw		
	Rating	30V DC, 1A		
	Fuse	500mA PTC		
Interlink Relay	Type	Volt-Free, Single Pole Double Throw		
	Rating	30V DC, 1A		
	Fuse	500mA PTC		

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Technical Specifications

Auxiliary Output	V	18.15-30.7V
	Imax	50mA
	Fuse	50mA PTC
UNMONITORED INTPUTS		
Class Change	Type	Open Circuit = Normal Panel Operation Short Circuit = Activate All Sounders
COMMUNICATION PORTS		
Repeater Port (use of this port is outside the scope of EN54 certification)	Type	RS485
	Nodes	1
ENVIRONMENTAL		
Operating temperature		-5 °C to +40°C
Relative Humidity		93% +/-3% non-condensing
IP Rating		IP30
MECHANICAL		
Dimensions		375mm Wide x 366mm Tall x 134mm Deep
Weight (excluding batteries)		2.25kg
Material		PC ABS Front and Rear
CABLING		
Cable Access		29 x 20mm drill positions - Slots for rear cable entry
Cable Type		Firetuf FT120 / FP200
		Cable type 2 core 1.5mm, 2 screened fire rated cable, 500m (max per zone)
COMPLIANCE		
Compliance to standards		EN54 Part 2 CIE & Part 4 PSE, BS5839-pt1

7.2 PSE Specification

	BiWire Flexi Fire Panel		
	EFBW2ZONE-FLEXI	**EFBW4ZONE-FLEXI**	**EFBW8ZONE-FLEXI**
POWER SPECIFICATION			
Mains Voltage	230V AC +10%/-15%, 50Hz		
Mains Fuse	1 Amp Anti Surge		
PSE RATINGS			
Number of Batteries	2		
Capacity	12V, 5Ah		
Recommended Battery	Yucell Y5-12 (Yuasa)		
Battery Fuse	6.3A Anti Surge		
Battery voltage (Charging Value)	27.3V DC @ 20°C		
Recommended period for battery replacement	5yrs		
PSE RATINGS			
Output Voltage	18.75-30.7V		
Maximum ripple voltage	425mVrms (1.2Vp-p)		
Imin	39mA		
Imax.A	2.1A		
Imax.B	2.6A		
Ri max	1Ω		
PSE FAULT OPTIONS			
MAINS OK (J4 pin4)	>=3V Mains present, <=3V Mains fault		
FAULT_CHARGER (J4 pin1)	>=3V for 1s pulsed at 0.2Hz Charger OK >=3V for 1s pulsed at 1Hz Charger fault Steady high/low (no pulsing) PSE Micro fault		
FAULT_BATTERY (J4 pin3)	=0.17*(Vbat-0.6) Volts		
0V (J4 pins2 and 10)	reference		

7.3 EOLM-3 Specification

	BiWire Flexi Fire Panel		
	EFBW2ZONE-FLEXI	**EFBW4ZONE-FLEXI**	**EFBW8ZONE-FLEXI**
POWER SPECIFICATION			
Operating Voltage	18.75-30.7V		
Nominal Current	1.7mA		

7.4 EOLM-1 Specification

	BiWire Flexi Fire Panel		
	EFBW2ZONE-FLEXI	**EFBW4ZONE-FLEXI**	**EFBW8ZONE-FLEXI**
POWER SPECIFICATION			
Operating Voltage	18.75-30.7V		
Nominal Current	1.4mA		

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7.5 Option Board Specification

		BiWire Flexi Fire Panel		
		EFBW2ZONE-FLEXI	**EFBW4ZONE-FLEXI**	**EFBW8ZONE-FLEXI**
Operating Voltage		18.75-30.7V		
FRE Output	Rating	24V, 50mA		
	Fuse	50mA PTC		
	EOLR	6.8KΩ		
FPE Output	Rating	24V, 50mA		
	Fuse	50mA PTC		
	EOLR	6.8KΩ		
Number of Auxiliary Relays		2	4	8
Auxiliary Relays (Un-monitored)	Type	Volt-Free, Single Pole Double Throw		
	Rating	30V DC, 50mA		
	Fuse	500mA PTC		

7.6 Cable Specification

Recommended Cable Size: 1-1.5mm²; Cable Type - Firetuf FT120 /FP200.



Manufacturer: Draka UK to Standard - suitable for all applications described in BS 5839-1:2013, 6, 8 & 9 and BS5266-1.

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8. Manufacturers Contact Details

CE
0359

Eaton Industries Manufacturing GmbH, Electrical Sector EMEA, Route de la Longeraie 7, 1110 Morges Switzerland

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DOP007

EN54-2

EFBW8ZONE-FLEXI, EFBW4ZONE-FLEXI, EFBW2ZONE-FLEXI

Intended for the use in fire detection and fire alarm systems in and around buildings

Essential Characteristics	Performance
Performance Under Fire Conditions	Pass
Response Delay (Response Time To Fire)	Pass
Durability Of Operational Reliability, Temperature Resistance	
Durability Of Operational Reliability, Vibration Resistance	Pass
Durability Of Operational Reliability, Electrical Stability	Pass
Durability Of Operational Reliability, Humidity Resistance	Pass

CE
0359

Eaton Industries Manufacturing GmbH, Electrical Sector EMEA, Route de la Longeraie 7, 1110 Morges Switzerland

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DOP007

EN54-4

EFBW8ZONE-FLEXI, EFBW4ZONE-FLEXI, EFBW2ZONE-FLEXI

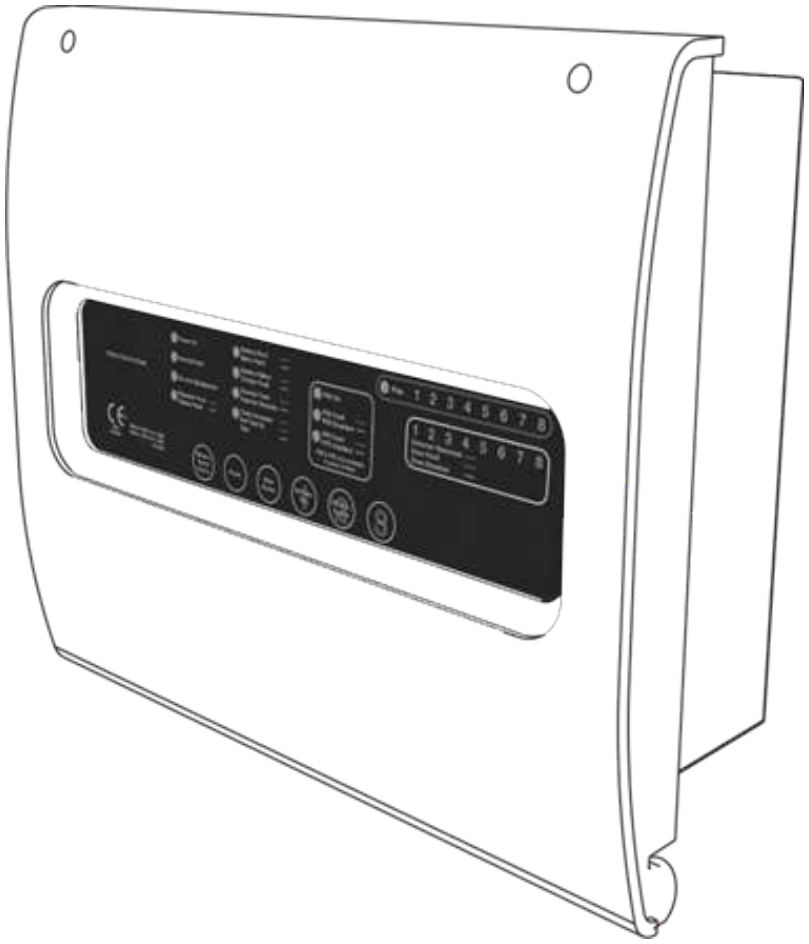
Intended for the use in fire detection and fire alarm systems in and around buildings

Essential Characteristics	Performance
Performance Under Fire Conditions	Pass
Response Delay (Response Time To Fire)	Pass
Durability Of Operational Reliability, Temperature Resistance	
Durability Of Operational Reliability, Vibration Resistance	Pass
Durability Of Operational Reliability, Electrical Stability	Pass
Durability Of Operational Reliability, Humidity Resistance	Pass

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Conventional Fire System

BiWire Flexi Fire Panel
EFBW8ZONE-FLEXI / EFBW4ZONE-FLEXI / EFBW2ZONEFLEXI
User Manual



Powering Business Worldwide

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1. Introduction

1.1 Purpose

This user manual is aimed at the Premises Management responsible for the fire alarm system and provides guidance on how to operate the system, undertake routine testing, and filling in the log book as required by BS5839 part 1.

After the system has been installed and commissioned by a Competent Person, the Premises Management for the site must ensure that all users of the system have read this manual and are trained on its use.

1.2 Definitions

Premises Management

Is a delegated person or persons with specialist knowledge and day-to-day control of the premises, the Fire System, and the implementation of the fire procedures.

Competent Person

Is a person with relevant current training and experience, and with access to the requisite tools, equipment and information, and capable of carrying out the defined task. A competent person is generally an employee from the manufacturer of the fire alarm system, an installer, or service engineer who is contracted to maintain the system.

1.3 About the BiWire Flexi System

What is BiWire Flexi?

Standard conventional panels have the fire detection devices and manual call points on zone circuits with separate circuits for activating fire alarm devices. Standard 2-wire panels (such as the BiWire Ultra) have the fire detection and fire alarm devices combined onto the zone circuits.

BiWire Flexi is switchable between conventional and BiWire zone circuits allowing a combination of zone type configurations to suit every application, along with separate conventional sounder circuits to provide a full conventional solution.

What are Zones?

The premises that the fire alarm system is providing coverage for is split into areas of fire detection called zones. The size of each zone is governed by BS5839 part 1 and will be calculated when the fire system is being specified prior to installation.

The number of zones required to provide coverage of the entire premises will govern the fire panel model required, 2, 4 or 8 zones are available in the BiWire Flexi range.

Under BS5839 part 1 a zone plan of the premises must be created and should be positioned on, adjacent to or in close proximity to the fire panel and repeater panels. The zone plan should have North at the top of the plan and should ideally be positioned on a North facing wall. This is to help the fire brigade locate a fire quickly.

⚠ IMPORTANT

IT IS THE RESPONSIBILITY OF THE PREMISES MANAGEMENT TO ENSURE THAT AN APPROPRIATE ZONE PLAN IS ISSUED BY THE INSTALLER WHEN THE SYSTEM IS HANDED OVER.

What are Sounder Circuits?

The sounder circuits allow for conventional only sounders, beacons or sounder beacons to be installed on the system. These will operate in a fire condition at the same time as any BiWire sounders/beacons on BiWire configured zones.

What is FRE?

FRE is an abbreviation for Fire Routing Equipment. Depending on the model of panel purchased, an optional FRE output may be provided. This optional output is generally used for connecting the fire alarm system to fire routing equipment such as auto diallers that will contact the fire brigade or an alarm receiving centre (ARC), etc. This type of output is fully monitored by the fire system for any fault condition.

What is FPE?

FPE is an abbreviation for Fire Protecting Equipment. Depending on the model of panel purchased, an optional FPE output may be provided. This optional output is generally used for connecting the fire alarm system to fire protection equipment such as sprinklers, door release systems, etc. This type of output is fully monitored by the fire system for any fault condition.

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2. General System Conditions

2.1 Normal Condition

In the normal condition only the POWER ON indicator should be lit. If there are any other indications on the panel then the actions outlined in section 2.3 should be followed. This is by default access level 1.

2.2 Fire Alarm Condition

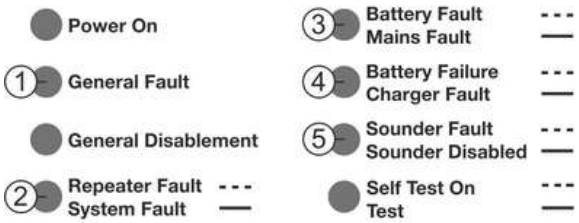


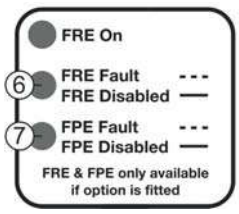
The fire panel will enter the fire alarm condition in 3 ways:

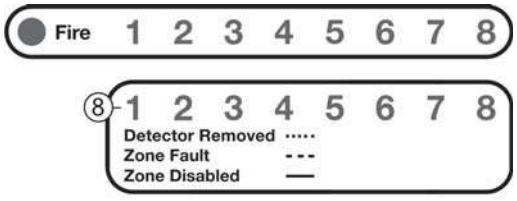
1. Fire/smoke has been detected by a fire detection device
2. A manual call point has been activated
3. An evacuation has been instigated by the Premises Management

When the fire panel enters the fire alarm condition it will turn on the General Fire indicator and the Fire indicator of the zone or zones that have detected fire. The fire alarm devices will start sounding and the panel buzzer will sound a continuous tone. If the FRE is fitted then the fire routing equipment will be activated (i.e. auto-dialler or alarm receiving centre (ARC)) and alerted to the fire condition. If the FPE is fitted then the fire protection equipment (i.e. sprinkler system, door release mechanism, etc.) will be activated.

2.3 Fault Condition







The fire panel will enter the fault condition when one or more of the following fault conditions are detected:

1. When the fire panel enters the fault condition it will turn on the General Fault indicator and the appropriate fault indicator (refer to 8 for more details). The panel buzzer will sound a slow pulsing tone.
2. System Fault – Severe failure of the panel, the service company must be contacted immediately.

   Repeater Fault – Communication with a repeater panel has been lost
3. Battery Fault – Battery voltage missing

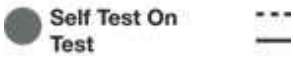
   Mains Fault – Mains supply missing
4. Battery Failure – Battery impedance failure

   Charger Fault – Charger voltage missing
5. Sounder Fault – Any zone configured for BiWire mode with a short circuit or open circuit condition present will indicate a sounder fault and will prevent the activation of sounders if fitted on that zone. Any fault condition present on the conventional sounder circuits will also indicate a sounder fault and will prevent the conventional sounder circuits activating.
6. FRE Fault – Short circuit or open circuit condition detected on the FRE output
7. FPE Fault – Short circuit or open circuit condition detected on the FPE output
8. Detector Removed Fault – A detector head has been removed

   Zone Fault – Short circuit or open circuit condition detected on the zone

2.4 Test Condition

The fire panel will enter the test condition when the individual zone test has been activated at access level 2. While the panel is in this condition the Test indicator will be lit along with the test LED of the zone under test condition.



⚠ NOTE

WHILE THE ZONE IS IN THE TEST CONDITION IT WILL NOT REACT TO FIRES IN THE NORMAL WAY. IT WILL ONLY REACT AS DEFINED IN THE TEST CONDITION (REFER TO 6.7 FOR MORE DETAILS).

ALL OTHER ZONE NOT IN THE TEST CONDITION WILL REACT TO FIRES UNDER NORMAL FIRE CONDITIONS.

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3. Access Levels

Regardless of the active access level the panel will continue to monitor for fire and fault conditions.

3.1 Access Level 1

This level of access is available to the general public and has the following functions available:

- Mute Buzzer

3.2 Access Level 2

This level of access is available to the Premises Management only and is protected by an access code. The following functions are available for this level:

- Silence Fire Alarm Devices (BiWire Zones and Conventional Sounder Circuits)
- Sound Fire Alarm Devices (BiWire Zones and Conventional Sounder Circuits)
- Reset System
- Mute Buzzer
- Enable/Disable Zones, Sounders & FRE/FPE (when fitted)
- Individual Zone Test
- Lamp Test

While the panel is at access level 2 the buzzer will give a fast pulsing tone. If no function is selected within 30 seconds the access level will time out and the panel will return to access level 1.

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4. What to Do Instructions

4.1 What to do in the Event of a Fire Alarm Condition

- CARRY OUT THE PREMISES DEFINED FIRE EVACUATION PROCEDURES
- When it is safe to do so silence the fire alarm devices and reset the system.
- Note the time the fire alarm occurred and log the fire event in the log book.
- If the fire alarm was a false activation (i.e. there was no fire) then this should be reported to the service company so appropriate corrective actions can be undertaken.

⚠ IMPORTANT

IT IS THE RESPONSIBILITY OF THE PREMISES MANAGEMENT TO DEFINE THE FIRE EVACUATION PROCEDURES AND ENSURE THAT ALL RELEVANT USERS ARE TRAINED AND THAT FIRE DRILLS ARE PEFORMED. IT IS ALSO THE RESPONSIBILITY OF THE PREMISES MANAGEMENT TO ENSURE THAT THERE IS NOTHING THAT CAN IMPEDE THE OPERATION OF THE FIRE SYSTEM AND PREVENT ANY OBSTRUCTIONS FROM BLOCKING THE FIRE DETECTION DEVICES OR MANUAL CALL POINTS.

4.2 What to do in the Event of a Fault Condition

- Note the indications on the front of the panel (refer to section 8 for more details).
- Note the time the fault was noticed and log the fault event in the log book.
- Notify the service company of the fault condition.

4.3 What to do When Re-Enabling Zones with Latching Detectors

- Before re-enabling any zone that has latching detectors, a walk round of the zone in question should be carried out to check that all detectors and manual call points are not indicating a fire condition.
- If there are no detectors or manual call points showing the fire condition then the zone can be re-enabled at the panel.
- If there are detectors or manual call points showing the fire condition then the panel should be reset to clear the fire condition before the zone is re-enabled.

⚠ WARNING

FAILURE TO FOLLOW THE INSTRUCTIONS ABOVE WILL RESULT IN THE PANEL ENTERING A FULL ALARM CONDITION WHICH WILL EVACUATE THE SITE AND ACTIVATE ANY OTHER EQUIPMENT ATTACHED TO THE FIRE ALARM SYSTEM.

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5. Routine Testing

Under BS5839 it is the responsibility of the Premises Management to undertake periodic tests to ensure the fire alarm system is operational. These tests are as follows:

5.1 Daily Testing (Premises Management)

- To be conducted by the Premises Management.
- Check that the panel shows no fire or fault indications.
- If there are any fault conditions indicated then follow instructions in section 2.3.

5.2 Weekly Testing (Premises Management)

- To be conducted by the Premises Management.
- Each week perform a Lamp Test to check that all visual and audible indicators on the panel are functioning correctly (refer to section 6.8).
- Each week a different zone should be tested. Testing with a manual call point is the simplest method as these can be easily triggered with the key provided. Testing with a fire detection device is more complex as it requires specialist equipment and may not be possible for all premises. At a minimum a different manual call point should be tested each week.
- Place the zone to be tested into test mode using "Individual Zone Test" (refer to 6.7 for more details)
- Record the weekly test results in the log book.

⚠ IMPORTANT

IT IS THE RESPONSIBILITY OF THE PREMISES MANAGEMENT TO DEFINE A FIXED DAY AND TIME OF WEEK THAT THE WEEKLY TEST IS PERFORMED. THIS MUST BE COMMUNICATED TO ALL OCCUPANTS OF THE PREMISES SO THEY KNOW NOT TO EVACUATE DURING A WEEKLY TEST. IF AN AUTO-DIALLER OR ALARM RECEIVING CENTRE (ARC) IS CONNECTED TO THE FIRE SYSTEM THEN THE WEEKLY TEST SCHEDULE MUST BE COMMUNICATED TO THEM AS WELL.

5.3 Quarterly Testing (Competent Person)

- To be conducted by the Competent Person. Included as reference for the Premises Management.
- Check all previous log book entries and verify that any corrective actions had been taken.
- Carry out the weekly test and record the results in the log book.
- Visually inspect the batteries and their connections.
- Disconnect the mains supply and check that the fire system is capable of supplying the fire alarm devices by operating a call point.

5.4 Yearly Testing (Competent Person)

- To be conducted by the Competent Person. Included as reference for the Premises Management.
- Carry out the weekly test and record the results in the log book.
- Carry out the Quarterly testing.
- Test ALL fire detection devices and manual call points.

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6. Operating Instructions

6.1 Multi-Function Buttons



The numerical value in the centre of the button is used to enter access codes for level 2 and 3.

If the text in the centre of the button appears above a line (or there is no line) then this function is applicable at access level 2. If the text in the c entre of the button appears below a line then this function is applicable at access level 3.

The text above button 3 indicates that this button is the "Select" button during "Disable/Enable" and "Individual Zone Test" functions.

6.2 Silence Fire Alarm Devices



- This function is only available at access level 2 and when the alarms are sounding.
- Enter the access code 3112.
- Press the "Silence/Sound Alarms" button.
- Only the fire alarm devices will stop sounding, the panel buzzer will continue sounding.
- This function will immediately exit back to Access Level 1.

6.3 Sound Fire Alarm Devices



- This function is only available at access level 2 and when the alarms are silent.
- Enter the access code 3112.
- Press the "Silence/Sound Alarms" button.
- Only the General Fire indicator will be lit, the panel buzzer will sound a continuous tone and all fire alarm devices will sound.
- This function will immediately exit back to Access Level 1.

6.4 Reset System



- This function is only available at access level 2.
- Enter the access code 3112.
- Press the "Reset" button.
- This will stop all fire alarm devices sounding, will stop the panel buzzer and will reset the panel.
- The panel will return to the normal condition after completing the indicator test routine which turns each indicator on in turn and then turns them off in turn.

  Note: When performing a reset, any test cases will be cleared

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6.5 Mute Buzzer



- This function is available at access level 1, 2 and 3.
- To silence the panel's internal buzzer at access level 1 just press the "Mute Buzzer" button.
- To silence the panel's internal buzzer at access level 2 enter the code 3112 and then press the "Mute Buzzer" button.
- This function will immediately exit back to Access Level 1.

6.6 Enable/Disable



- This function is only available at access level 2.
- Before using this function to re-enable a zone please refer to 4.3 for more details.
- This function will allow the following to be disabled:
  - Individual Zones
  - All fire alarm devices (On BiWire Zones and Conventional Sounder Circuits)
  - FRE (if fitted)
  - FPE (if fitted)
- Enter the access code 3112.
- Press the "Disable/Enable" button (1).
- All previous disablements will have their associated disabled indicator lit and all enablements will have their associated disabled indicators unlit.
- The function always starts at Zone 1.
- When an item is selected for disablement its disable indicator will change from unlit to lit.
- When an item is selected for enablement its disable indicator will change from lit to unlit.
- Press the following button sequences for the required enablement/disablement:

Item	2-Zone	4-Zone	8-Zone
Zone 1	3	3	3
Zone 2	1 + 3	1 + 3	1 + 3
Zone 3		1 (2 times) + 3	1 (2 times) + 3
Zone 4		1 (3 times) + 3	1 (3 times) + 3
Zone 5			1 (4 times) + 3
Zone 6			1 (5 times) + 3
Zone 7			1 (6 times) + 3
Zone 8			1 (7 times) + 3
Sounders	1 (2 times) + 3	1 (4 times) + 3	1 (8 times) + 3
FRE (if fitted)	1 (3 times) + 3	1 (5 times) + 3	1 (9 times) + 3
FPE (if fitted)	1 (4 times) + 3	1 (6 times) + 3	1 (10 times) + 3

- Pressing "Select" button (3) will accept the selected enablement/disablement and exit back to Access Level 1.

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6.7 Individual Zone Test



- This function is only available at access level 2.
- This function will allow individual zones to be placed in the zone test mode.
- Enter the access code 3112
- Press "Test" button (2).
- The zone currently in test mode will have its associated disabled indicator lit and all zones not in test mode will have their associated disabled indicators unlit.
- The function always starts at Zone 1.
- When an item is selected for test mode its disable indicator will change from unlit to lit.
- When an item is selected for normal operation its disable indicator will change from lit to unlit.
- Press the following button sequences for the required test mode/normal operation:

Item	2-Zone	4-Zone	8-Zone
Zone 1	3	3	3
Zone 2	2 + 3	2 + 3	2 + 3
Zone 3		2 (2 times) + 3	2 (2 times) + 3
Zone 4		2 (3 times) + 3	2 (3 times) + 3
Zone 5			2 (4 times) + 3
Zone 6			2 (5 times) + 3
Zone 7			2 (6 times) + 3
Zone 8			2 (7 times) + 3

- Pressing "Select" button (3) will accept the selected test zone and exit back to Access Level 1. The Test indicator will remain lit and the zone disabled indicator will also remain lit.
- When a fire detection device or manual call point is activated in the zone under test it will sound all fire alarm devices for 3 seconds and then will automatically silence.
- Any fire condition detected in any other zone will place the system into full alarm condition and the fire alarm devices will activate continuously.
- To end the individual test mode the above selection instructions should be carried out and the zone disabled indicator changed to the unlit state.

6.8 Lamp Test



- This function is available at access level 2.
- Enter the access code 3112.
- Press "Indicator Test" button (3).
- Each indicator on the front of the panel will turn on in turn and then turn off in turn (excluding the Power On indicator).
- This function will immediately exit back to Access Level 1.

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7. About the Log Book

All information contained within the tables below are fictional for example purposes only.

7.1 Fire System Summary

These sections of the log book must be completed by the Competent Person who installed the system. It is the responsibility of the Premises Management to ensure that this information is filled in at the fire alarm handover.

ZONE INFORMATION			DEVICE QUANTITIES					
Zone No.	**Zone Description**	**Zone Mode (BiWire/Conv)**	**MCP**	**Smoke Detectors**	**Heat Detectors**	**Sounders***	**VADs***	**I/O***
1	Reception	**BiWire**	2	1	0	2	2	0
2	Office 1	**BiWire**	1	0	2	0	2	0
3	Office 2	**Conv**	3	0	2	0	2	1
4	Kitchen	**Conv**	2	0	1	0	2	0
5								
6								
7								
8								



A brief description of where the zone is on the site and/or what rooms are in the zone



This defines the mode configuration of the zone which dictates the type of devices that can be fitted



Quantities of each device type will be entered here per zone. Wall and Base Sounders/VADs may be separated on the log book

*Only applicable to BiWire Zones

CONVENTIONAL SOUNDER INFORMATION (Only applicable if conventional zones are configured)		DEVICE QUANTITIES		
Circuit No.	**Description**	**Sounders**	**VADs**	**I/O**
1	Zone 1 & Zone 2	2	2	0
2	Zone 3 & Zone 4	0	2	0
3		0	0	0
4		0	0	0



A brief description of where the sounder circuits cover on the site



Quantities of each conventional device type will be entered here per circuit. Wall and Base Sounders/VADs may be added separated on the log book.

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OUTPUT ROUTING INFORMATION

Output Type	Connected	What Happens when Activated
Fire Relay	YES / NO	
Fault Relay	YES / NO	
Interlink Relay	YES / NO	
Auxiliary Output	YES / NO	
FRE Output	**YES** / NO	In the event of fire this output activates the auto-dialler and contacts the ARC
FPE Output	**YES** / NO	In the event of fire this output activates the sprinkler system
Auxiliary Relay 1	YES / NO	
Auxiliary Relay 2	YES / NO	
Auxiliary Relay 3	YES / NO	
Auxiliary Relay 4	YES / NO	
Auxiliary Relay 5	YES / NO	
Auxiliary Relay 6	YES / NO	
Auxiliary Relay 7	YES / NO	
Auxiliary Relay 8	YES / NO	

Circled if connected to external equipment

Explains what happens when these outputs are activated in the event of a fire condition or a fault condition.

ADDITIONAL INFORMATION / VARIATIONS

This will list any other additional information such as the implementation of the class change input, repeaters, and any major variations from BS5839 part 1.

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COMPLETED BY	
Name	Mr C. Person
Company	Fire Installation Ltd
Position	Installer
Date	07/09/2014

The Competent Person fills in their details here after completion of the system summary.

7.2 Fire Alarm Log Book

The Log Book must be maintained by the Premises Management, who should record every fire alarm condition (real or false), every weekly test performed, disablements, enablements, and site visits by engineers. Any unresolved issues should be identified and the log book should be available for inspection at any time.

The tables within this log book are maintenance work, false alarms (in accordance with BS5839 part 1) and any other event (this includes genuine fires and faults).

SITE DETAILS	
Premises Management Names	Mr P. Manager
Company	Name of Premises
Site Address	Address of Premises

INSTALLATION DETAILS	
System Designed By	System Design Company Name
System Installed By	System Installation Company Name
System Commissioned By	Mr S. Commissioner

MAINTENANCE DETAILS	
System Maintained By	Service Company Name
Contract No.	Contract: 1235456
Contract Expiry Date	07/09/2015
Contact Number (Working hours)	0123 4567890
Contact Number (Other Times)	0123 4567890

These sections should be filled in by the Premises Management and copied across to each new log book.

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MAINTENANCE WORK

Date	Time	Zone/Location	Reason for Work	Work Carried Out	Additional Work Required	Signed
06/09/14	08:00	Zone 1 / Reception	Fault shown on Zone 1	Faulty detector replaced	None	Mr C. Person
07/09/14	08:00	Zone 3 / Kitchen	Unwanted Fire on Zone 3	Detector type changed for Smoke	None	Mr C. Person



This table should be filled in by the Competent Person when they visit the site to perform maintenance on the system. This should include service visits as well as visits to correct faults or false fires on the system.

UNWANTED (FALSE) FIRES

Date	Time	Zone/ Location	Cause if Known	Maintenance Visit Needed (YES/NO)	Maintenance Findings	Category Further Alarm	Further Action Required	Signed
07/09/14	07:00	Zone 3 / Reception	Unknown	YES	Incorrect detector type fitted		None	Mr P. Manager



This table should be filled in by the Premises Management when the event occurs and further detail added by the Competent Person at a maintenance visit (if required)

ALL OTHER EVENTS (EXCLUDING MAINTENANCE AND FALSE FIRES)

Date	Time	Zone/Location	Details of Event	Action Required Out	Date Completed	Initials
05/09/14	08:00	Zone 1 / Reception	Weekly test, call point activation	None, sounders activated.	05/09/2014	PM
06/09/14	07:00	Zone 1 / Reception	Zone 1 fault indication	Service visit required	06/09/2014	PM

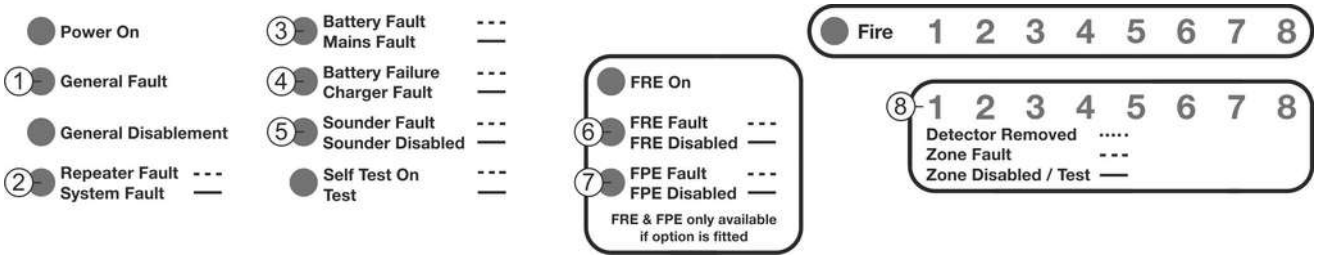


This table should be filled in by the Premises Management when a fault occurs; there is a disablement, enablement, a genuine fire condition, and weekly tests.

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8. Status Indications



KEY

ON (——)	Indicator lit
OFF	Indicator unlit
SLOW (- - - -)	Indicator slow flashing, buzzer slow pulsing
FAST (- - - - -)	Indicator fast flashing, buzzer fast pulsing
SILENT	Sounders off, buzzer off
CONT	Sounders on, buzzers continuous
	Any condition could be indicated

	Visual Indications															Audiable Indications		
Condition	**Power ON**	**General Fault**	**General Disable**	**Repeater Fault / System fault**	**Battery Fault / Mains Fault**	**Battery Failure / Charger Fault**	**Sounder Fault / Sounder Disabled**	**Self Test On \ Test**	**FRE On**	**FRE Fault / FRE Disabled**	**FPE Fault \ FPE Disabled**	**General Fire**	**Zone Fire (1-8)**	**Detector Removed \ Zone Fault \ Zone Disabled**	**Fire Alarm Devices**	**Panel Buzzer**	**Comments**
Normal Condition	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Normal condition and at access level 1
Access Level 2	ON															FAST	Access level 2 pass code accepted
Fire Condition	ON								ON		ON	ON			CONT	CONT	Only the zone in fire will have its zone fire indicator lit
System Fault	ON	ON		ON												SLOW	Severe fault condition with the panel
Repeater Fault	ON	ON		SLOW												SLOW	There is a problem with the link between panel and repeater
Battery Fault	ON	ON			SLOW											SLOW	No battery voltage or battery voltage too low
Mains Fault	ON	ON			ON											SLOW	Mains voltage has been lost
Battery Failure	ON	ON				SLOW										SLOW	Battery impedance fault
Charger Fault	ON	ON				ON										SLOW	Charger voltage fault
Sounder Fault	ON	ON					SLOW									SLOW	BiWire Zones: Short or Open circuit condition on the zone Conventional Sounders: Short or Open circuit condition on the sounder circuit
FRE Fault	ON	ON								SLOW						SLOW	Short or Open circuit condition on the FRE
FPE Fault	ON	ON									SLOW					SLOW	Short or Open circuit condition on the FPE
Zone Fault	ON	ON												SLOW		SLOW	BiWire Zones: Short or Open circuit condition on the zone Conventional Zones: Short or Open circuit and head removal condition on the zone
Detector Removed	ON	ON												FAST		SLOW	BiWire Zones Only can detect when a Detector head has been removed
Sounder Disabled	ON	ON					ON										ALL fire alarm devices on ALL zones disabled
FRE Disabled	ON	ON								ON							FRE disabled
FPE Disabled	ON	ON									ON						FPE disabled
Zone Disabled	ON	ON												ON			Zone is disabled from fire detection
Individual Zone Test Active	ON	ON						ON								SLOW	An individual zone is in test mode and awaiting a fire activation

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