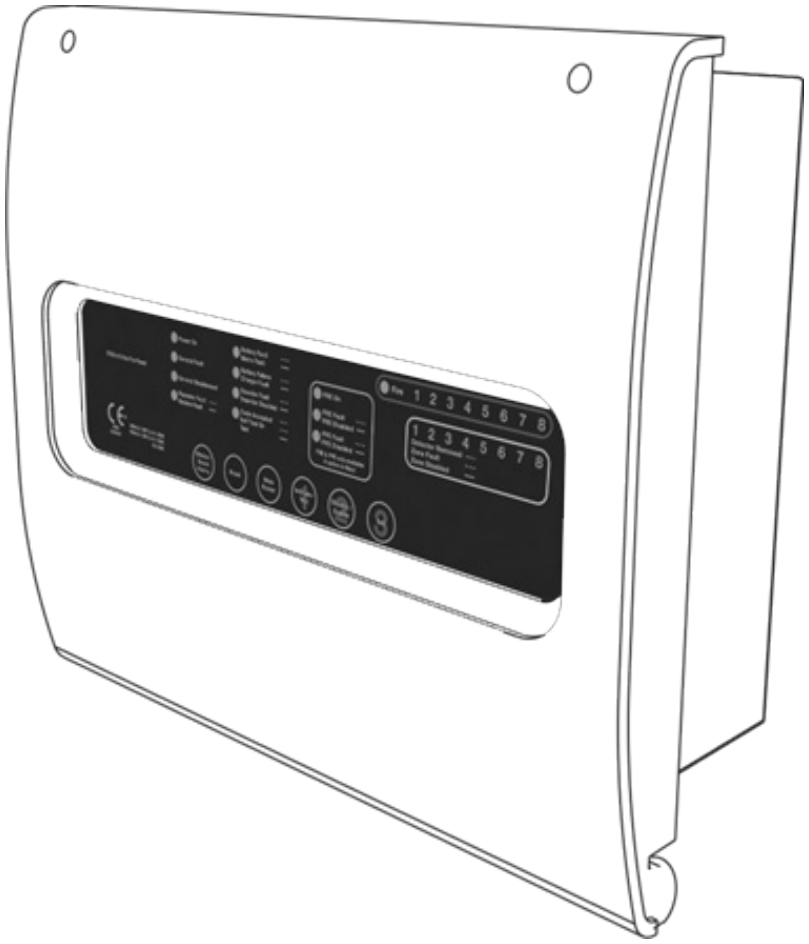
Conventional Fire System

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



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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.

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.

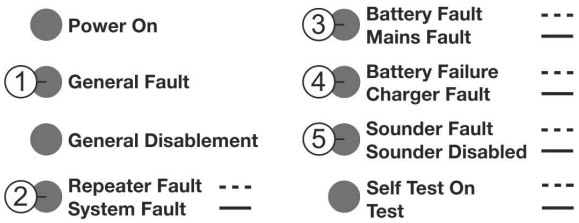
2.2 Fire Alarm Condition

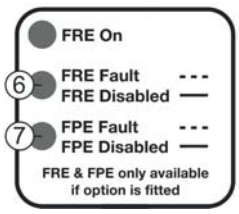
The fire panel will enter the fire alarm condition in 3 ways:

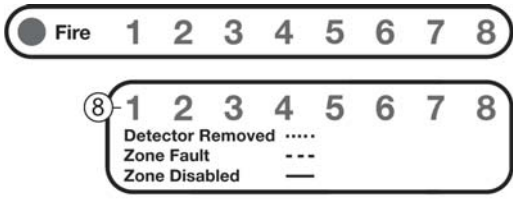
1. Fire/smoke has been detected by a fire detection device
2. A manual call point has been activated
3. An evacuation has been instigated by the Premises Management

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

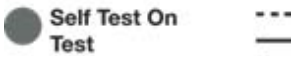
   Mains Fault – Mains supply missing
4. Battery Failure – Battery impedance failure

   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.

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.

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.

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.

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

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.

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.

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.

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.

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.

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

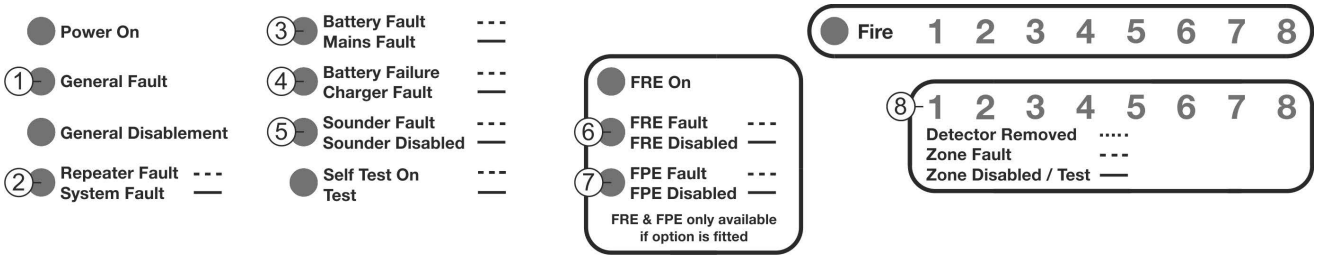
This table should be filled in by the Premises Management when the event occurs and further detail added by the Competent Person at a maintenance visit (if required)

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.

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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