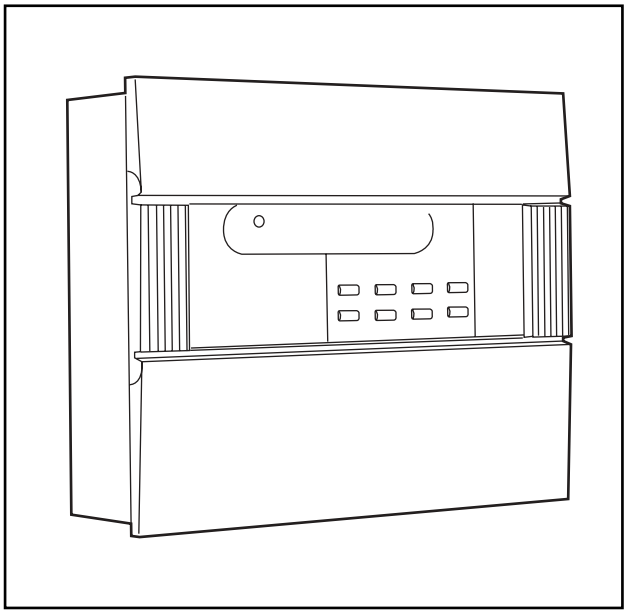
Menvier Fire System

MF9300

One, two and four zone control panels



Installation and User Instructions and Systems Log

MENVIER

IMPORTANT

THIS MENVIER FIRE PANEL IS DESIGNED TO BE USED WITH POLARISED AND SUPPRESSED BELLS. DO NOT USE WITH UNSUPPRESSED BELLS, UNSUPPRESSED RELAYS OR NON-POLARISED SOUNDERS OR STROBES ETC. DO NOT CONNECT 230V MAINS DIRECTLY TO THE PCB. ELECTRICAL INSULATION TESTS SHOULD NOT BE CARRIED OUT WITH THE CABLES CONNECTED TO THE PANEL OR DETECTORS OR SOUNDERS.

BEFORE MOUNTING THE PANEL PLEASE CARRY OUT THE FOLLOWING TEST:

CONNECT ALL END OF LINE RESISTORS TO ZONE AND ALARM LINE TERMINALS. CONNECT A MAINS SUPPLY AND THE BATTERY ONLY AND CHECK THAT ALL LIGHTS EXTINGUISH EXCEPT THE POWER ON LIGHT. SELECT LAMP TEST AND CHECK THAT ALL LAMPS LIGHT AND THE INTERNAL BUZZER SOUNDS. IF ANY FAULT EXISTS THEN PLEASE CONTACT THE MENVIER SALES OFFICE.

ACCESSORIES

MBG913	Flush Mounting Call Points
MBG914	Surface Mounting Call Points
MBG917	Weatherproof Call Points
MMT760	Medium Response Heat Detector
MHT790	High Temp. Response Heat Detector
MFR730	Fast Response Heat Detector
MID710	Ionisation Smoke Detector
MDP720	Photoelectric Smoke Detector
MDB700	Common Detector Base
MBB244	4ins (100mm) Bell
MBM246	6ins (150mm) Bell
MBM248	8ins (200mm) Bell
MWB824	8ins (200mm) Weatherproof Bell
MDS724	Ceiling Sounder
MFS324	Flush Sounder
MWS424/DB	Weatherproof Sounder - Deep Base
MWS424/SB	Sounder - Shallow Base
MCD524/DB	Combined Sounder/Beacon - Deep Base
MCD524/SD	Combined Sounder/Beacon - Shallow Base
MXB124/DB	Xenon Beacon - Deep Base (1W)
MXB124/SB	Xenon Beacon - Shallow Base (1W)
MXB224/DB	Xenon Beacon - Deep Base (2W)
MXB224/SB	Xenon Beacon - Shallow Base (2W)
MAS175	Discrete Sounder/Indicator
MAR724	Heavy Duty Replay

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OVERVIEW
This document gives details of how to install, test, use and maintain operation of your MF9300 fire alarm panel.

SYSTEM OPERATION

What To Do At A Glance

The following information tells you what the various indicators, visible on the front panel, mean and how you should react to them.

INDICATOR	STATUS	ACTION
GENERAL FIRE	ON	Fire detected alarms not sounded.
	FLASHING	Fire detected alarms sounded.
ALARM LINE DELAY	ON	No action. Alarm line delays are set up.
	FLASHING	Fire has been detected. Alarm delay is in action, check for fire.
SYSTEM FAULT	ON	Refer to service provider (see front of this manual for telephone number)
DISABLEMENT	FLASHING	No action. Zone(s) disabled.
TEST	FLASHING	Zone in test. If service provider is on site take no action. Else refer to service provider (see front of this manual for telephone number).
REMOTE SIGNAL ISOLATE	ON	No action. Remote signal output is isolated.
SUPERVISOR MODE	ON	No action - you are in Supervisor mode - see section on `Operating The Panel`.
	FLASHING	No action. System is self-checking. Indicator should go out within 25 seconds.
GENERAL FAULT	FLASHING	Refer to Appendix B

OPERATING THE PANEL

General

The panel operates in 1 of 2 modes - Normal mode of Supervisor mode. In Normal mode the Supervisor mode LED is extinguished. In Supervisor mode the Supervisor LED is continuously ON.

Control of the facilities at the panel is available via the keyboard. A key press is acknowledged by a blip of the internal panel buzzer. All keys that are active in the Normal mode have their legend actually on the key itself, whereas all those facilities that are active once in the Supervisor mode have their legends above the corresponding key. For example, in Normal mode pressing the SILENCE BUZZER key will silence the internal panel buzzer. However, if in the Supervisor mode pressing the same key will perform a Lamp Test.

Normal Mode

This is the condition the panel is generally to be found in. From the Normal mode the user may:

Silence Buzzer:

> The user can silence the panel buzzer by pressing the SILENCE BUZZER button on the keyboard. The buzzer will then only sound approximately once every 10 seconds. NOTE that this does not silence any alarms, only the buzzer within the panel.

Entering the Supervisor mode:

> By entering a 4 digit access code the user may get into the Supervisor mode. The access code for this panel is 2214. By pressing the numbered keys in the correct order, and then by hitting the ENTER key, the user will see the Supervisor mode indicator come on. Note that the buzzer will sound when it has recognised each key press. You are then in the Supervisor mode and may carry out additional facilities at the panel (see below).

Supervisor Mode

When in this mode a number of extra features are available to the user.

Silence/Resound Alarms:

> When in the Supervisor mode this key can be used to either turn the alarms on or to silence them. It is a toggle action. So for example, to initiate an evacuation of a site you could press the Silence/resound alarm button to cause the alarms to sound. You could then silence the alarm at a later time by pressing the same button again. Note that if the alarms are silenced but there is still a Fire condition then the internal panel buzzer will buzz every 10 seconds. Also, if the alarms are silenced then this will not prevent subsequent new fire conditions from automatically resounding the alarms.

Reset:

This facility allows you to reset the panel. When hit, all panel indicators will light and the internal panel buzzer will sound. On the MF9304 the Fault relay output will also activate. On releasing the button the lights will extinguish, the buzzer will silence and the relay output will deactivate. For a period of approximately 25 seconds after pressing the Reset button the Supervisor mode indicator will flash. This is indicating that the panel is 'self testing'. Once the panel is ready the Supervisor mode indicator will extinguish and you can continue using the panel as you like.

Disable/Enable:

The panel allows a supervisor to disable individual zones and/or the alarm lines. A zonewhich has been disabled will not be monitored for faults or for fires. Similarly, If the alarm lines are put into disablement then they will not be monitored for faults, nor would they be activated in a fire condition on a zone. (Note that either both alarm lines are disabled at the same time or neither are disabled).

To actually disable zone/alarm lines you have to be in the Supervisor mode. Once there, press the Right Arrow key and a flashing 'cursor' will appear in the Alarm Line indicators. By repeatedly pressing the Right Arrow key you can step this 'cursor' through the Alarm Line indicators, onto the Zone Fault indicators. Keep pressing the same key and you will step through the zones, one at a time, until eventually it returns to the Alarm line indicators, and so on. When the indicator is at the zone or alarm lines that you wish to disable/re-enable then by simply pressing the Disable/Enable button in zone/alarm lines will be toggled accordingly. The Disablement indicator will flash, the internal buzzer will sound every 10 seconds and the corresponding Fault indicator(s) will light continuously for any zone or alarm line that is disabled. You may then use the Right Arrow key to move on and disable/re-enable further zones/alarm lines as required.

Note that a disablement is not cancelled by a reset or a removal of power to the panel.

Test:

The fire panel will allow the supervisor to put any zone into a test mode. To do this go into the Supervisor mode. Then press the Right Arrow key once and a flashing 'cursor' will appear in the Alarm indicators. Continue pressing the Right Arrow key until the 'cursor' reaches the zone that you want to put into test. Then press the Test button. The Test indicator will begin to flash, the internal panel buzzer will buzz at 10 second intervals and the Fault indicator of the zone concerned will light continuously. That particular zone is now in the Test mode.

When in test mode a detector/manual call point can be put into fire on that particular zone. The panel will recognise the fire condition and sound the alarms for 2 seconds. Then the panel will automatically reset the zone, in order to try and clear the fire condition. If the zone resets successfully then the alarms will sound again for 2 seconds. You can then go on and test the next detector/manual call point on the zone. If the zone fails to reset successfully, maybe due to a faulty detector or such like, then the panel will keep on trying to reset the zone for 2 minutes. If it has still failed at the end of this period then that zone immediately goes into fire.

Note that the alarm lines cannot be put into the test condition.

The fact that a zone is in test will not prevent the panel from recognising and acting upon fires or faults in other zones.

To take a zone out of the test mode you must go into the Supervisor mode and then press Reset.

Remote Signal Isolate:

This feature is only available on MF9304 panels. To isolate the Remote Signal output press the Remote Signal Isolate button, whilst in Supervisor mode. The Remote Signal Isolate indicator will light, the Disablement indicator will flash and the internal panel buzzer will buzz every 10 seconds. To re-enable the Remote signal again at a later time simply press the Remote Signal Isolate button again. The corresponding indicators will extinguish and the panel buzzer will silence itself. Note that the remote signal isolate facility is not cancelled by a system reset.

Lamp Test Facility:

It is possible to test the indicators and the internal panel buzzer manually. To do this from within the Supervisor mode the Lamp Test button should be pressed. For the period that the button is kept depressed all panel indicators should light and the internal buzzer should sound. Once the button is released the panel will return to the condition it was in prior to the lamp test.

Exiting from the Supervisor Mode:

This mode will automatically exit if no key press is detected for a period of greater than 15 seconds. Alternatively, if you have finished in the Supervisor mode you may simply press ENTER. In either case the Supervisor mode indicator will extinguish and the panel will be back in the Normal mode.

SPECIALISED OPTIONS

Certain additional features may be set up by the service provider at the commissioning stage. They are as follow:

Non-latching Zone (available on MF9302 and MF9304 panels):

This feature is available on zone 1 of the MF9302 and MF9304 panels. It is selectable at commissioning by use of a switch in the panel (see Appendix C for selecting this feature). Note that this facility is additional to the requirements of EN54.

When activated any fire condition on zone 1 will not be latched i.e. once the condition has cleared, by whatever means, at the detecting device, the panel will automatically come out of the fire state for zone 1 - no user intervention would be required at the panel.

Further details of this interface are available on request.

Coincidence Detection (available on MF9304 panels):

This feature is available on zone2 of the MF9304 panel. It is selectable at commissioning by use of a switch in the panel (see Appendix C for selecting this feature).

On the first detector going into fire the panel indicates the event by sounding the buzzer and by having a double flash followed by a pause on the zonal fire indicator. Once the second detector goes into fire the full fire condition is initiated by the panel.

Using coincidence detection on zone 2 does not affect the way in which fires are recognised or acted upon from other zones in the system.

Note also that a manual call point pressed on any zone will put the panel into the fire condition immediately, irrespective of whether coincidence detection is active.

Alarm Line Delays (available on MF9304 panels):

Delays can be introduced between the panel recognising a detector fire signal and the alarms being sounded. That delay is selectable at commissioning by use of switches in the panel (see Appendix C). The length of the delay can be set anywhere between 0 minutes i.e. no delay, and 7 minutes, in 1 minute intervals.

When the panel has alarm line delays set up the ALARM LINE DELAY indicator will be permanently ON. When a fire is detected on a zone the ALARM LINE DELAY indicator will flash, the buzzer will sound intermittently and the appropriate zonal fire indicator will flash. After the set delay period the panel will switch the alarms ON, unless the panel is reset.

Note that, delays do not affect fire signals from manual call points. These signals are acted upon immediately.

NOTE: AUX contacts are also delayed when this facility is active.

FIRE ALARM SYSTEM LOG - PHOTOCOPY THIS SHEET **APPENDIX A**

It is recommended that this book is maintained by a responsible executive and that every ‘event’ affecting the installation should be recorded. An ‘event’ should include false alarms, failures, tests, temporary disconnections, the dates of installing engineer’s visits and a note of any outstanding work or conditions.

Date	Zone	Event	Action required	Signed

Date	Zone	Event	Action required	Signed

Date	Zone	Event	Action required	Signed

Date	Zone	Event	Action required	Signed

Date	Zone	Event	Action required	Signed

Date	Zone	Event	Action required	Signed

DETAILS OF INSTALLATION

Zone No.	No. of Call Points	No. of Smoke Detectors	No. of Heat Detectors	Location
1				
2				
3				
4				
TOTAL				

		CURRENT
No. OF SOUNDER BELLS		
ELECTRONIC		
OTHER		

TOTAL ALARM LOAD:

OTHER DETAILS OF EQUIPMENT:

THIS SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF EN54

SIGNED ..... DATE .....

FOR .....

THIS SYSTEM HAS BEEN COMMISSIONED IN ACCORDANCE WITH THE REQUIREMENTS OF EN54

SIGNED ..... DATE .....

FOR .....

DETAILS OF MODIFICATIONS/ADDITIONS TO SYSTEM

DETAILS	DATE

NOTES

OTHER REFERENCE DRAWING/PLANS TO BE USED WITH THIS LOG

APPENDIX B

Faults - How To Recognise Them And What Action To Take

All fault conditions on the fire alarm panel will be indicated by the flashing of the general fault indicator (positioned immediately below the large red fire indicator) and the activation of at least one other fault-specific indicator. By determining which fault-specific indicator is active and by referring to the table shown you can decide on what action to take.

INDICATOR ACTIVE	FLASH RATE COMPARED TO GENERAL FAULT INDICATOR (G.F.I.)	CONDITION	ACTION
POWER FAULT flashing	Faster than G.F.I.	Battery Fault.	Refer to service provider.
	Short flash, long pause.	Mains fail.	Check mains supply to panel is switched on.
ZONAL FAULT Flashing	Slower than G.F.I.	Zone open circuit.	Refer to service provider.
	Faster than G.F.I.	Zone short circuit.	Refer to service provider.
	Same as G.F.I.	Detector removed from base	Check detectors in zone are correctly fitted in their bases.
ALARM FAULT flashing	Slower than G.F.I.	Alarm open circuit	Refer to service provider.
	Faster than G.F.I.	Alarm short circuit.	Refer to service provider.
EARTH FAULT on		Earth Fault in System	Refer to service provider
SYSTEM FAULT on		System fault occurred	Refer to service provider

APPENDIX C

Installation Of The MF9300 Control Panels

General Points:

Before actually installing your MF9300 panel please note the following points about the system:

The wiring for each of the zones and alarm lines is to be a 2 core parallel circuit with the end of line resistor fitted to the end of the circuit. No 'spurs' or 'tee offs' are permitted. The wiring diagram (Fig.3) gives more details.

If a zone is not to be used at all then the end of line resistor must be left in the relevant zone terminal blocks in the panel.

All equipment sued must be of the open circuit type.

Manual call points used in the system (MBG913/MBG914) are polarised. Use the connection details accompanying the manual call points in order to ensure that the correct polarity of connections is observed at all times. Also, **make sure that the 'MF9300' terminals are used on the manual call points.**

All cables should be tested for Earth fault before connection to the panel. Do not use a MEGGER on any cable after connection to any equipment including the fire panel.

The maximum load permitted on each of the 2 alarm sounder circuits is specified in the Technical Specification (Appendix D, fig.4). The load should be spread equally across the circuits. All sounders must be polarised, with the correct polarity of connections being observed at all times. Refer to the wiring diagram (Appendix D, fig.3) and the instructions with the relevant sounders for the appropriate connection details.

All cables entering or leaving the panels must do so via the 'knock-out' positions provided.

Installing The Panel:

Follow the steps shown here in conjunction with the assembly diagram shown on the following page of this manual (Fig.1):

1. Remove the unassembled panel components from the packaging (do not however, remove the central section from its plastic bag just yet).

Take the moulded back box and remove/drill any knockouts that are to be used, either on the top or rear of the enclosure. **Note that specific knockout positions should be used for the AC mains supply.** These positions are indicated both on the back box itself and on the assembly diagram (Fig.1). **Note also that cables should only enter or leave the enclosure via positions indicated by the knockouts.** Do not drill additional holes in the enclosure.

Fix the moulded back box to the wall. Use the 3 fixing holes in the back of the enclosure if it is to be mounted proud of the wall. Alternatively, for flush fixing, use the 5mm mounting holes (6 off) around the lip of the rear enclosure to mount the panel.

2. Connect the batteries together using the battery connectors contained in the accessories bag - note the polarity of the connections on the assembly diagram (Fig.1). Fit the batteries into the battery compartment of the rear enclosure.

3. Using the packing piece(s) provided ensure that the batteries cannot move within the battery compartment. For the MF9301 panel 3 packing pieces are used - their positions and orientations are shown in Fig.1. For the MF9302 and MF9304 panels only a single packing piece is used - again, see Fig.1 for details.

4. Ensure that all external wiring that is to be used is available within the back box. Wire the AC mains input to the mains terminal block within the rear enclosure. Check that the low voltage AC supply is available at the mains connector. Remove the central section from its plastic bag. Connect the battery connector to the PCB (ensure that the clip on the connector socket fits with the catch on the connector plug on the PCB). A small spark may be seen at the connector when this is done - this is quite normal. The internal buzzer should sound and the green POWER LED should flash (other LEDs may also be lit - this too is quite normal at this stage). Connect the low voltage mains connector to the PCB (ensure that the clip on the connector socket fits with the catch on the connector plug on the PCB). If all is well the green POWER LED should now be permanently ON. Fix the central section to the rear enclosure using the 3mm screws provided (4 off). Complete the wiring of the external circuits to the PCB terminal blocks as appropriate. Note that 1 of 2 Earth leads, hanging from the right hand end of the metal conduit entry plate, has no connector on the end of it. This wire MUST be wired up to the Earth terminal block. The other lead should pass down into the battery compartment in order to be fixed to the battery cover plate.

5. Connect the remaining Earth strap, coming down from the metal conduit entry plate, to the battery cover plate. Fix the battery cover plate to the rear enclosure using the 3mm screws provided (6 off).

6. Fit the lower door.

7. Carry out the testing of the system. **NOTE** that all manual call points (MBG913/MBG914) used in the system must be individually tested for correct operation. Then when satisfied that all is working correctly fit the upper door - ensure that the door clicks into place and locks there.

WARNING: Operating up of a panel after installation should only be carried out by a suitably qualified/trained person. Live parts are exposed by this operation so ensure that the mains supply is switched off before attempting to service any of the parts inside the panel.

Routine testing of the system should be carried out as recommended in BS5839 part 1: 1988 (Clause 29).

Using The Panel Interfaces:

The panels provide the following interfaces options. Fig.2 shows the location of the interface terminal blocks on the circuit board. Note that these features are in addition to the requirements of EN54.

Auxiliary DC Output
(applicable to MF9302 and MF9304 panels)

A 24 VDC output is provided. This output may be switched via the auxiliary relays or used to drive external relays via the auxiliary zone/common outputs. This output is fused to protect against wiring faults but is UNMONITORED by the panel i.e. if this fuse ruptures the panel will not register a fault.

Class Change
(applicable to MF9302 and MF9304 panels)

A pair of contacts are provided for a class change facility. By short circuiting these contacts via a switch, pulse unit, time clock or by other means, the alarms will sound without illuminating the fire lights. The alarms will cancel when the short circuit is removed. No voltage should be applied to these terminals.

Auxiliary Common Output
(applicable to MF9302 and MF9304 panels)

This is a 'solid state' semiconductor switch which operates on the activation of a fire on any latching zone by 'pulling down' this output to 'zero volts' (Note, the activation does not occur for fires on non-latching zones). This makes the output suitable for driving an external 24V relay with a coil current of 10mA, maximum, which can be used for operating door release units etc. This output is not activated by Sound Alarms or Class Change.

Auxiliary Fault Relay
(applicable to MF9304 panels)

A 1 Amp (max), 24 VDC (resistive) voltage free single pole changeover relay is provided. The relay will operate on the activation of any fault registered by the panel. 240V MUST NOT BE SWITCHED WITH THIS RELAY.

Remote Signal Relay
A 1 Amp (max), 24VDC (resistive) voltage free single pole changeover relay isprovided, operating on the activation of any zone, after any delays are taken into account on that zone. The relay is for signalling to a remote location, of for operation of an autodialler. Where it is required to signal to a control station an interface unit, supplied by the control station operator, will be required. This relay is not activated during Sound Alarms, nor during Class Change. 240V MUST NOT BE SWITCHED WITH THIS RELAY.

An isolate facility is provided to enable the panel to be tested without operating the remote signal relay. This facility is available in the supervisor mode from the front panel. When pushed the Remote Signal Isolate LED will light and the internal buzzer will sound every 10 seconds. Note that doing a system Reset will not cancel the isolate facility.

Repeater Output
(applicable to MF9304 panels)

A 2 wire serial link interface is provided for connecting to a repeater panel. Further details of this interface are available on request.

Do not exceed the maximum output current rating stated in the Technical Specification (Appendix D)

Setting System Parameters

Certain facilities that can be set up by the service provider at commissioning. They are as follows:

Non-latching Zone (available on MF9302 and MF9304):

To enable this facility gain access to the service area of the panel and push the Non-latching zone switch down (Fig.2). Then press the SYSTEM RESET switch. The panel will reset and the non-latching zone feature will be available on zone 1.

Coincidence Detection (available on MF9304):

To enable this facility gain access to the service area of the panel. On the bit-switch (see Fig.2) move switch 4 to the ON position. Then press the SYSTEM RESET button. The panel will reset and the coincidence detection feature will then be available for use on zone 2.

Alarm Line Delays (available on MF9304):

Again, to enable alarm line delays gain access to the service area. The delay period is set by adjusting the positions of the bit switches (see Fig.2) as follows:

	SWITCH POSITION		
	1	2	3
DELAY (MINS)			
0	OFF	OFF	OFF
1	ON	OFF	OFF
2	OFF	ON	OFF
3	ON	OFF	ON
4	OFF	OFF	ON
5	ON	OFF	ON
6	OFF	ON	ON
7	ON	ON	ON

After the delay period is selected press the SYSTEM RESET switch. The panel will reset, the ALARM LINE DELAY indicator will light and the delays will be used when appropriate.

APPENDIX D

Assembly drawing for MF9301, MF9302 & MF9304

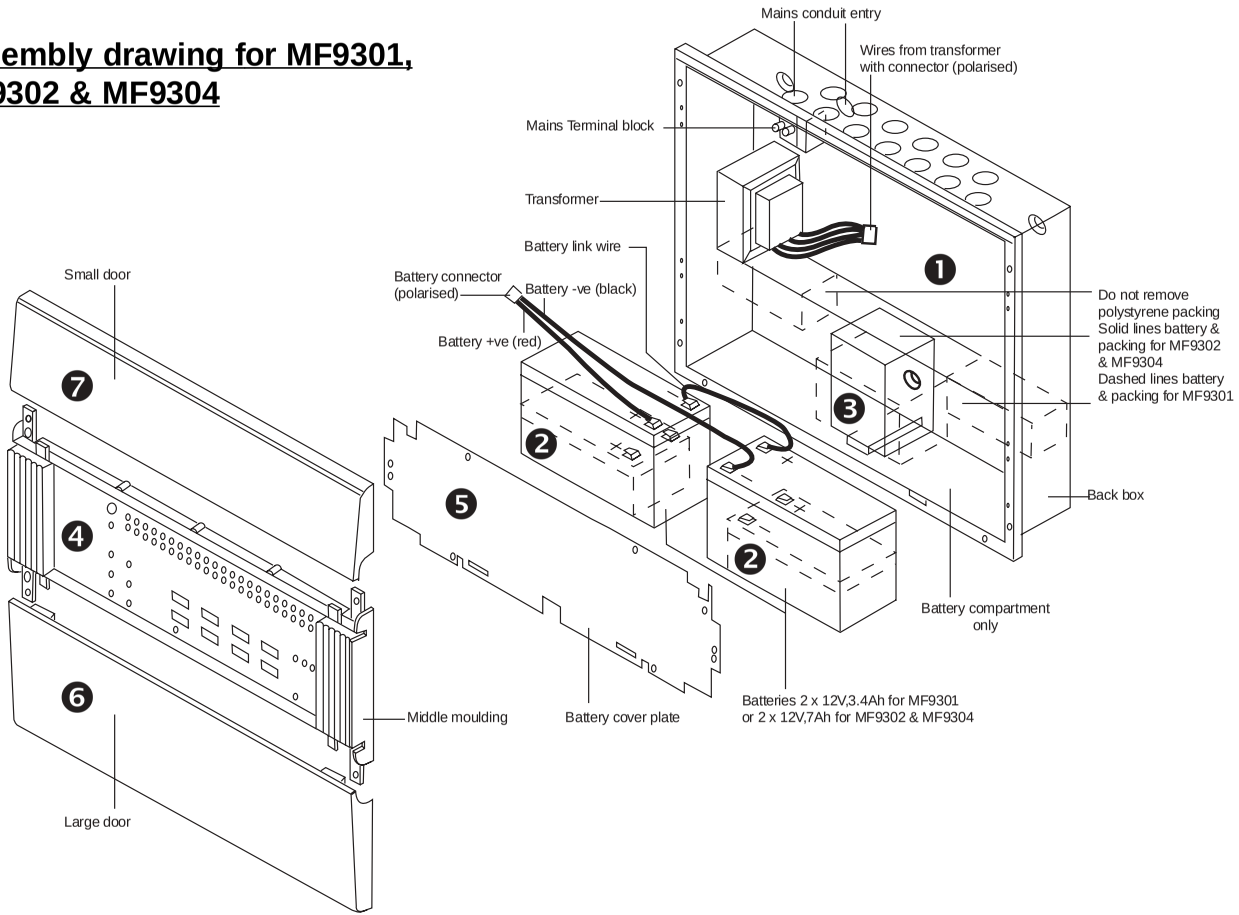


FIG 1

Positional layout of components for MF9300 series panels

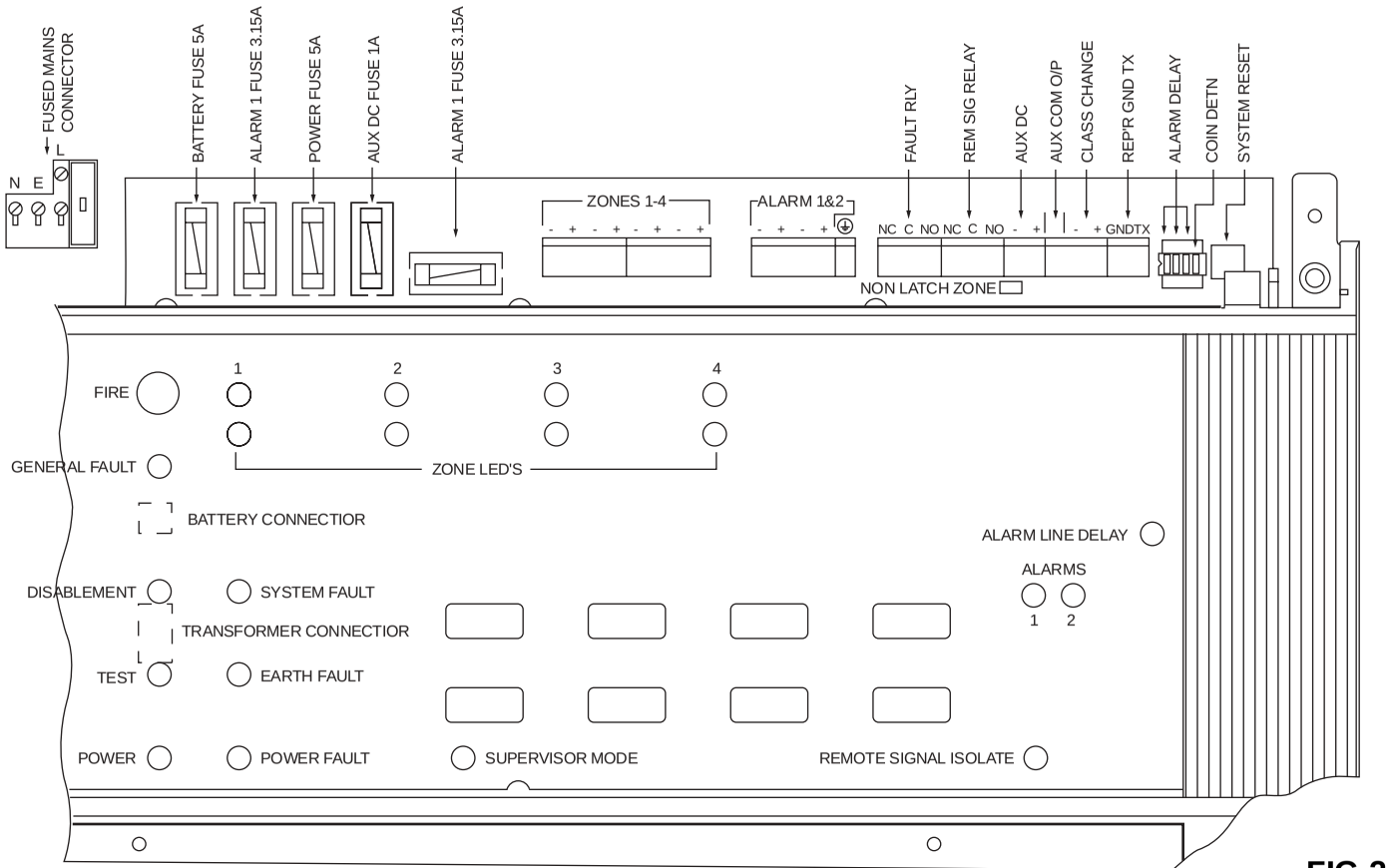
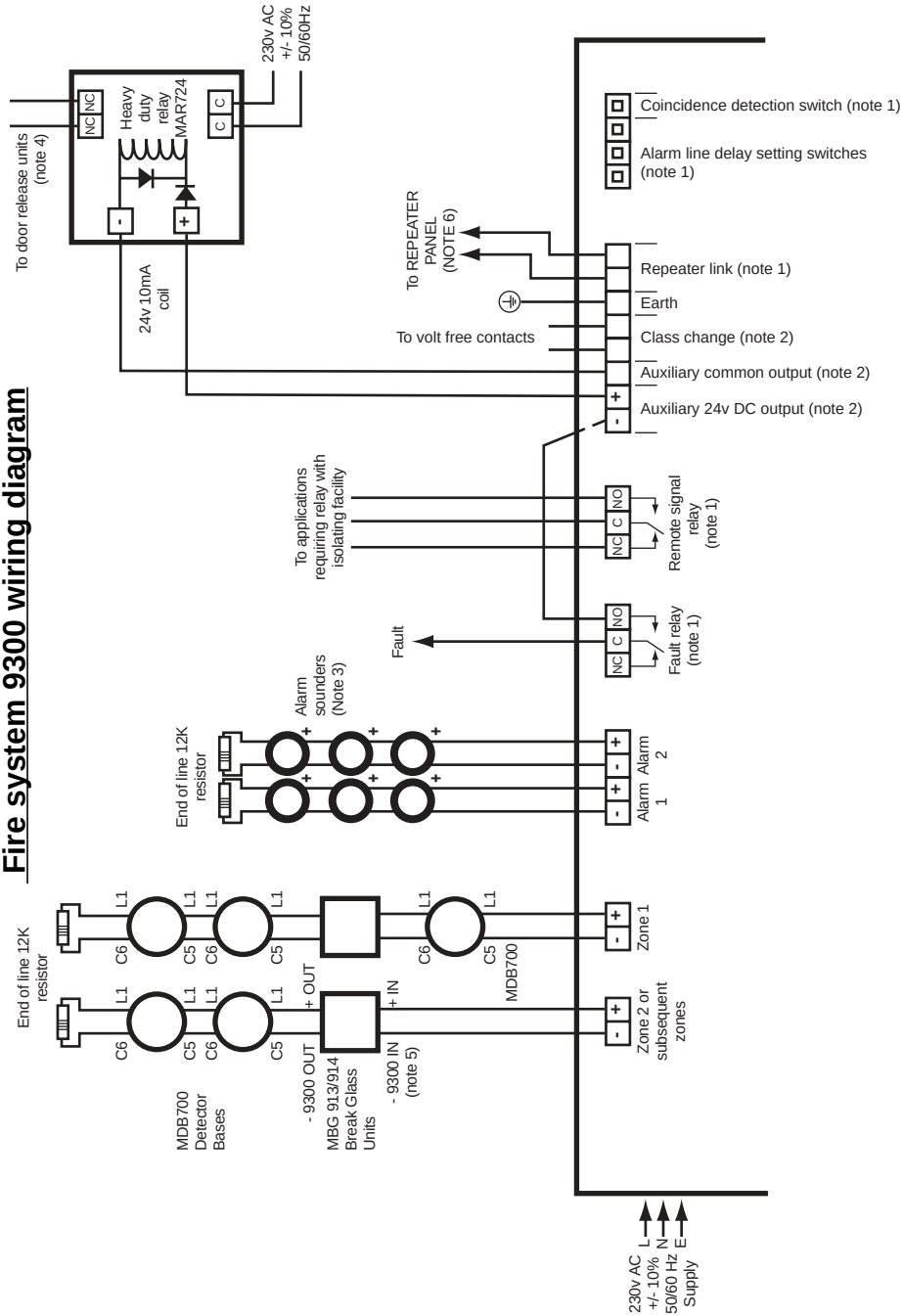


FIG 2

Fire system 9300 wiring diagram



TECHNICAL SPECIFICATIONS

	MF9301	MF9302	MF9304
No. of zones	1	2	4
No. of alarm circuits	2	2	2
Mains input voltage	230 VAC +/- 10% 50Hz		
System operating voltage	24 VDC		
Monitoring Zones Alarms	Open, short circuit and detector removed Open, short circuit		
End of line elements Zones Alarms	12K resistor supplied with panel 12K resistor supplied with panel		
Maximum loadings Zones (per zone)	Break glass units, heat detectors and smoke detectors (Combined max - 32)		
Alarm lines	300mA total	500mA/line (1A max)	
User controls	8 key keypad providing Access level 1 and Access level 2 control - entry to Access level 2 by 4 digit keycode		
Fault indications Power	Mains fail, battery disconnected, battery low/short circuit		
Zone	Open, short circuit and detector removed		
Alarm	Open/short circuit		
Earth fault	Earth fault in system		
System fault	Controller error, code/data/comms error etc		
Fire indicators	Large common fire LED plus individual zonal LED's		
Auxilliary DC output	NOT FITTED	24V DC 100mA maximum (fused but unmonitored)	
Auxilliary fault relay	NOT FITTED		1A 24VDC resistive Single pole c/o contacts
Remote signal relay	NOT FITTED		1A 24VDC resistive Singlepole c/o contacts - isolate facility available
Auxilliary common output	NOT FITTED	Active pull-down to 0V	
Repeater drive capacity	NOT FITTED		1 repeater via 2 wire serial link
Class change facility	NOT FITTED	1 pair terminals - short to sound alarms	
Terminal conductor capacity	0.5mm sq. to 2.5mm sq. maximum		
Integral charger (mA)	0.4	0.7	0.7
Battery capacity (AH)	3.4	7	7
Battery type	2 x 12V Sealed Lead Acid (Supplied) Recommended replacement period 4 years		
Standby on mains failure	72 Hours backup operating in the normal mode followed by 1/2 hr in the fire condition		
Recharge period	24 hours		
Dimensions	393mm (W) x 344mm (H) x 95mm (D)		

NOTES

For service please call:	Tel:					
Service agreement number						

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