WHICH SYSTEM

SYSTEM OVERVIEW

Once the need for an automatic fire detection and alarm system has been identified, it becomes necessary to select the system type. Very small premises will normally require the lowest cost system that is available, and this will normally be a conventional system. For very large premises the choice will normally be analogue addressable because the reduced installation and maintenance costs easily offset the increased equipment cost, and in addition increased system sophistication generally provides enhanced performance and reliability.
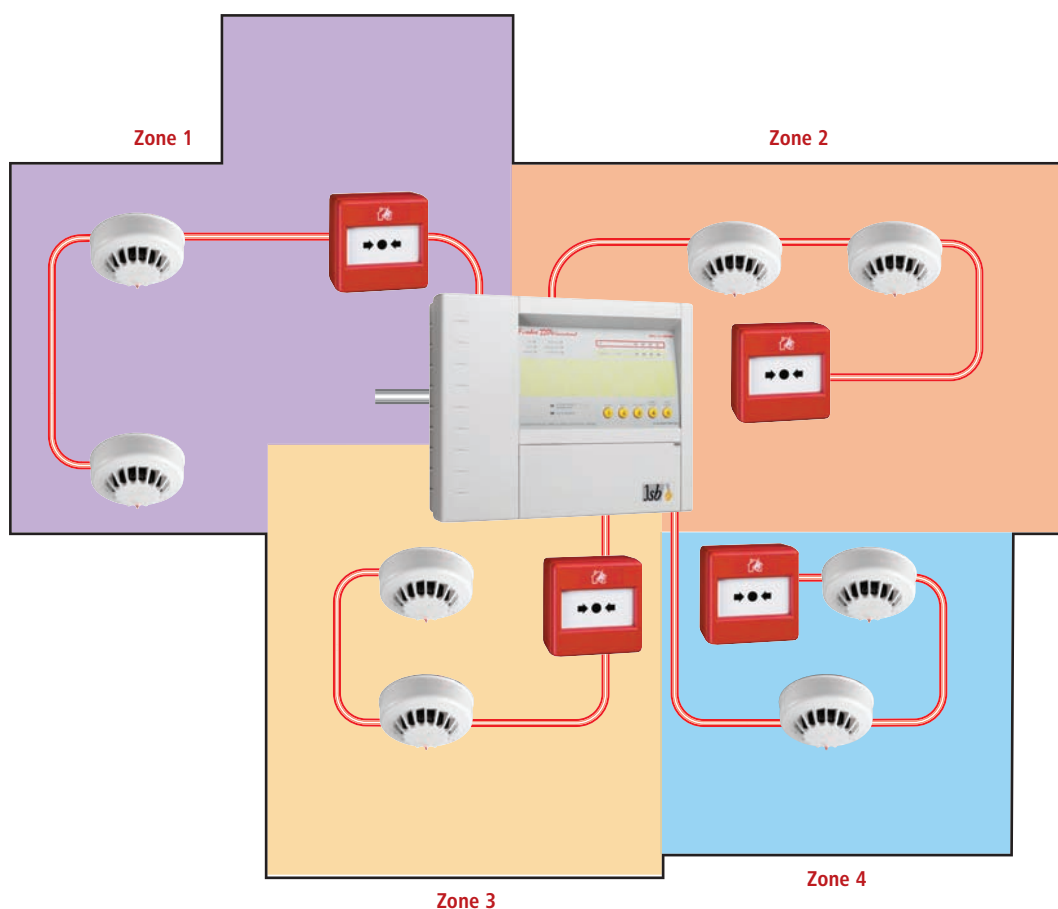
For systems between these two extremes, the choice may be less straightforward, this section of the design handbook aims to describe the benefits of each system so as to aid the decision process.

There is a vast array of fire detection systems and devices on the market today, ranging from the relatively simple to the most technically sophisticated. Modern automatic fire detection systems are available in two types, conventional and analogue - which, broadly speaking, tend to be used in smaller and larger installations respectively.

CONVENTIONAL SYSTEMS

The philosophy of a conventional system revolves around dividing the building into a number of areas called zones, the detectors and callpoints within each zone are then wired on dedicated circuits. In the event of a detector or callpoint being triggered, the panel is able to identify which circuit contains the triggered device and thereby indicate which zone the fire alarm has come from.

It is then necessary to manually search the indicated zone to pinpoint the exact cause of the fire alarm.

Zone 1

Zone 2

Zone 3

Zone 4

UNWANTED ALARMS

Because most conventional detectors are simple two state devices they can only be in either a normal or fire condition.
Although modern components and good system design can go some way to reducing potential problems, it is not uncommon for conventional systems to generate unwanted alarms due to certain operating conditions or transient environmental conditions such as the presence of steam near to a smoke detector.

A key development aimed at reducing such unwanted alarms has been the multi-criteria detector. Traditionally, detectors were designed to respond to particular fire phenomena such as heat or the presence of smoke. However, Cooper Lighting and Security now offer multi-criteria devices, which contain both a smoke sensing element and a thermal sensing element.

The fire alarm decision is taken by analysis of the responses from both elements, resulting in improved detection performance as well as greatly enhanced false alarm suppression.
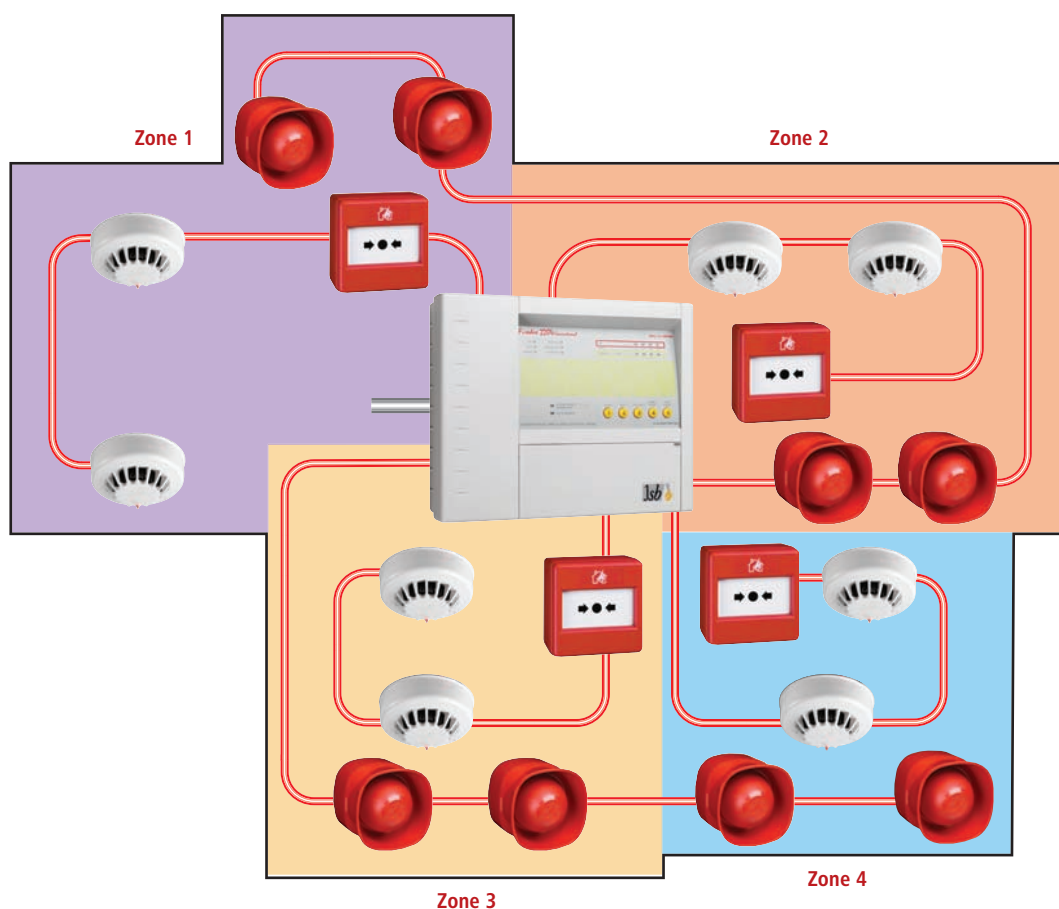
SOUNDER CIRCUITS

In addition to the detection circuits, there is also a need for separate circuits of alarm annunciation devices such as sounders and beacons to signal the existence of a fire alarm condition to the building users. For sounder circuit continuity monitoring to function effectively, sounder circuits have to be wired in a single radial circuit, spurs and tees are not permitted.

Almost every conventional fire panel will have facilities for more than one sounder circuit and generally the higher the specification of the panel or the higher the number of detection zones provided, the more sounder circuits will be provided.

Normally however there will be less sounder circuits than detection zone circuits so it will be necessary for a sounder circuit to provide cover for more than one zone (see below)

This increases installation complexity by forcing the sounder wiring to follow different routes to that of the detector wiring.
When designing a conventional system it is important to ensure that the panel has adequate zone capacity for the size and complexity of the building and that the panel can support the intended sounder circuit wiring and loading.

Zone 1

Zone 2

Zone 3

Zone 4

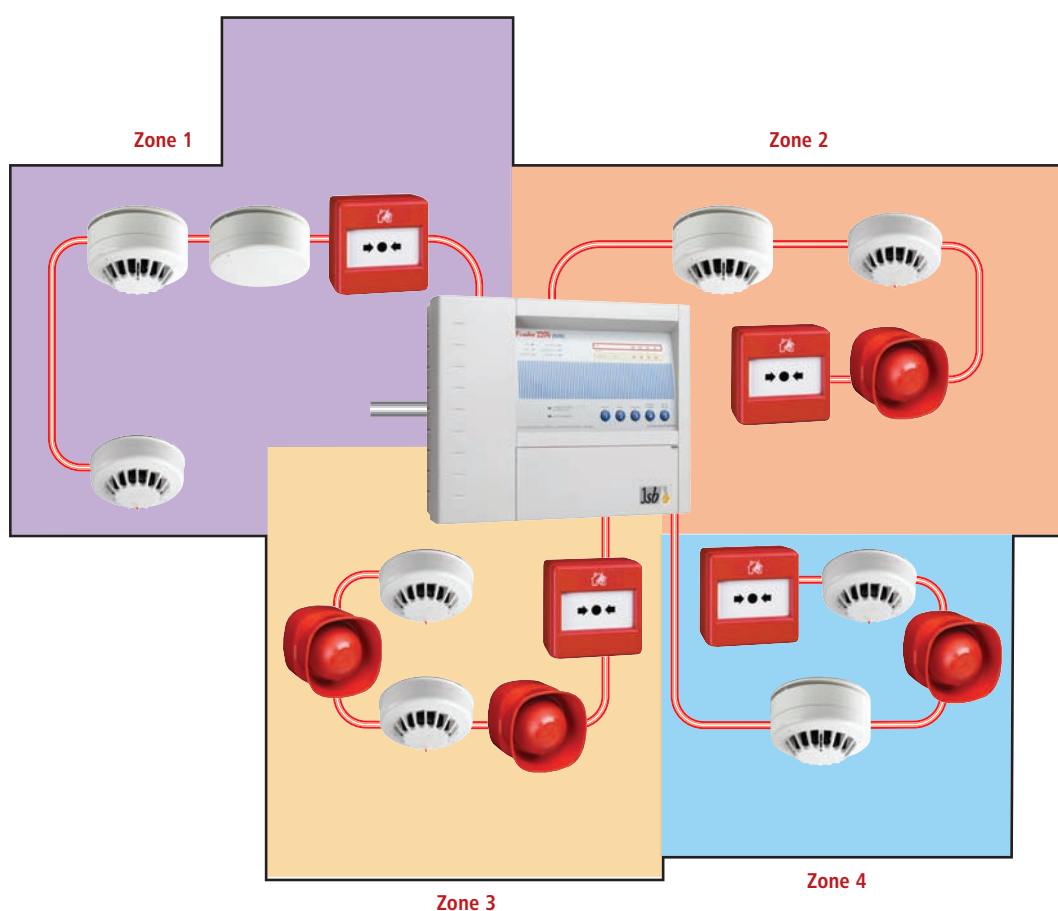WHICH SYSTEM

WHICH SYSTEM

Bi wire systems

Bi wire systems are based on standard conventional system technology, but in addition incorporate additional functionality to enable the callpoints, detectors and the sounders for each separate zone to be wired on a single common circuit.

This enables the control panel to use a single circuit per zone both for detection and to power the sounders.

Even though the panel continually powers the sounders, control functionality incorporated within the sounders enables them to only be activated in the event of a fire alarm condition.

By combining both the detection and the alarm annunciation wiring into a single circuit, considerable savings in installation time and cabling can be achieved.
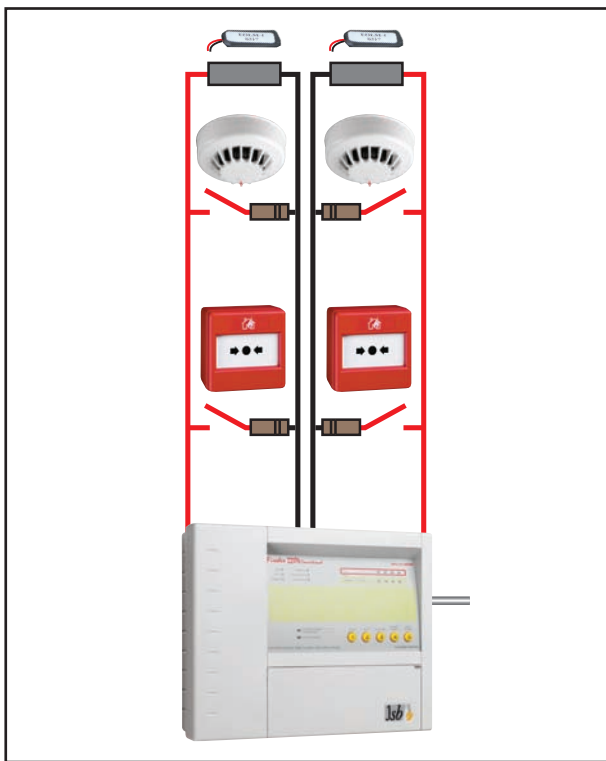
Although adding Bi wire technology to the detectors and the sounders does slightly increase the equipment costs this is normally more than offset by savings in installation cost.

Zone 1

Zone 2

Zone 3

Zone 4

Analogue addressable systems

Both Bi wire and standard conventional systems utilise simple two state detectors, which simply provide a switch type signal to the conventional control panel.

To enable the source of the alarm to be identified, each zone must be wired using a separate circuit, furthermore in the event of a fire alarm being triggered, the panel can only identify which zone contains the triggered device, it is then necessary to manually search the affected zone to discover the actual cause of the alarm.
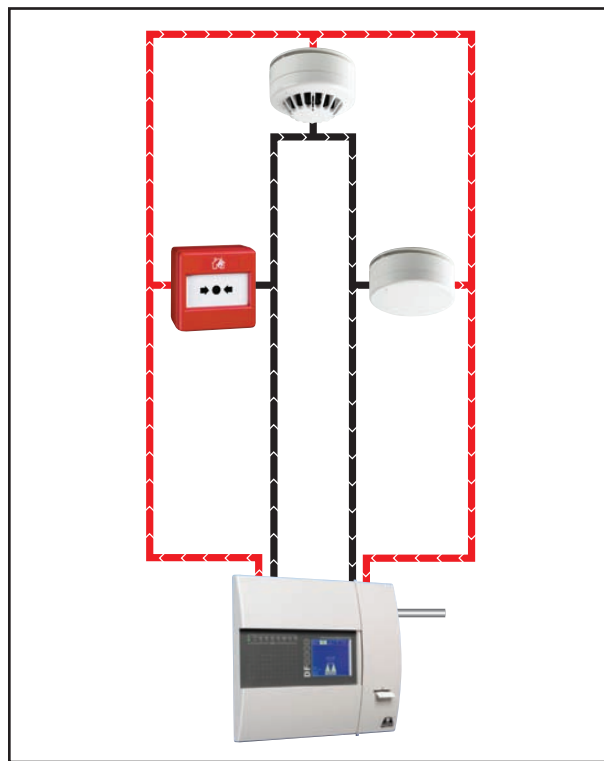

Typical conventional system where detectors and callpoints function as simple switches

With an analogue system detectors and callpoints are sensors which constantly communicate with control panel providing data

Analogue addressable systems overcome these limitations, each fire detecting sensor or call point is electronically coded with a unique identification or 'address' which is programmed into the device during installation.

The control panel is then able to conduct two way communication with any of the addressable devices connected to the system by using the unique address number to define which device it wishes to communicate with. This operates in a similar manner to that of a telephone number enabling communication between specific telephones.

Under normal conditions the control panel continuously interrogates each device in sequence using a low power digitally pulsed signal, and analyses the reply to determine the status of the sensor or callpoint.
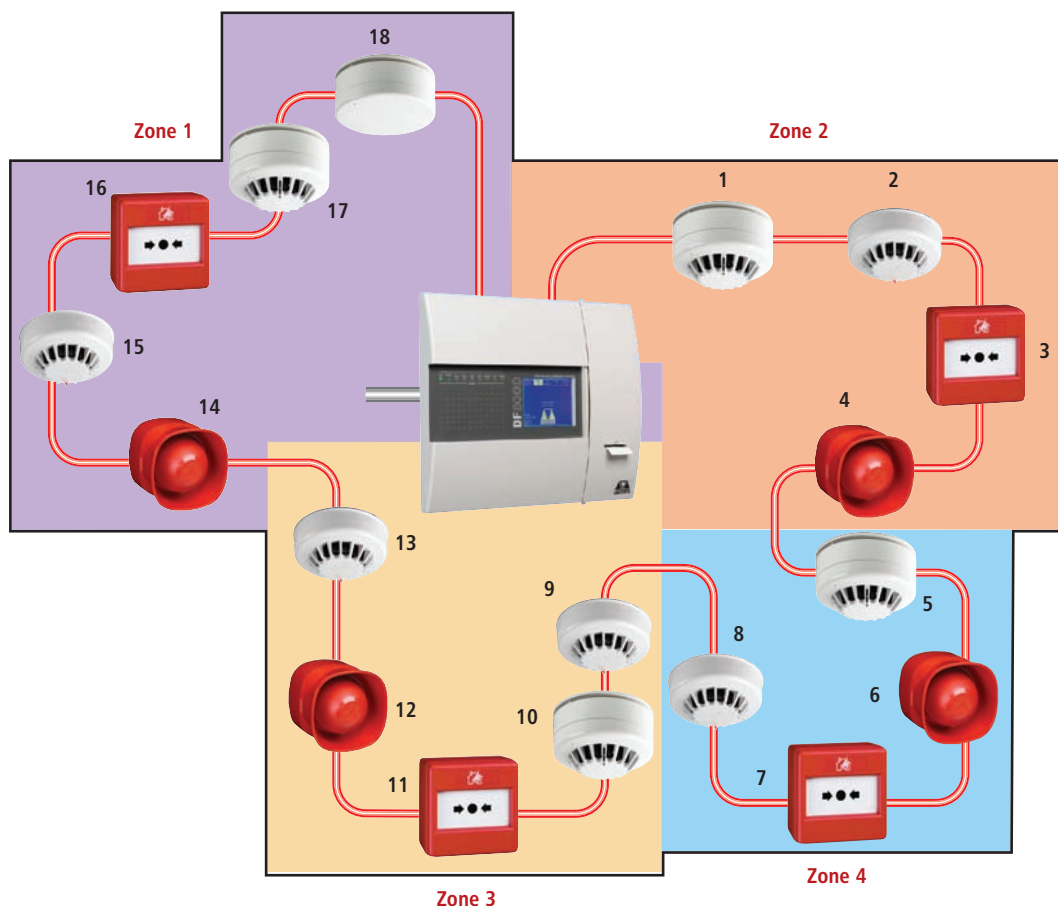
In this manner, the panel can ascertain whether each device is functioning correctly and also discover the amount of smoke or heat that the device is currently sensing.

This technology allows the panel to make intelligent decisions as to the appropriate action to take based on the information it receives from the individual sensors.

This has many advantages, for example very slow build up of apparent smoke density seen by a sensor can cause a warning or pre alarm condition to be triggered by the alarm panel prior to the situation becoming serious enough to warrant a full alarm.

Which System

WHICH SYSTEM

WHICH SYSTEM

Zone 1

18

16

17

15

14

Zone 2

1

2

3

4

Zone 3

13

12

11

10

9

8

7

5

6

Zone 4

A typical practical benefit of this technology is the situation whereby airbourne dust particles enter smoke detectors and mimic the appearance of smoke, over time the concentration of dust can increase to a point where it can cause the detector to falsely trigger an alarm condition. With an analogue system, a pre alarm condition will normally be triggered rather than a full alarm giving the building operator the opportunity to clean or replace the sensor rather than suffer the disruption of an unwanted false alarm.

If whilst continually interrogating the smoke and heat sensors, the panel determines that the data gathered from a specific device is appropriate to instigate either a fire, fault or pre alarm condition, it uses the unique identifying number or address to determine which device is involved. Consequently the panel can pinpoint and identify precisely which device has triggered the fire, fault or pre alarm condition.

This level of sophistication removes the need for each zone of the building to be wired as a separate circuit. For this reason analogue addressable system components are typically connected to the panel using a small number of large loops thus greatly simplifying the installation of the system and reducing the installation cost.

Detectors instead of being simple two state devices now function as sensors continually communicating with the control panel and providing information regarding the temperature or concentration of smoke in their local environment.

Which System

For fire protection applications demanding both high reliability and performance, the more technically sophisticated and versatile analogue systems provide a clear advantage, despite a higher initial equipment cost.

For the largest sites, several systems can be linked to form a complete network providing total coverage. As well as dramatically reducing false alarms from transients or faulty circuitry, analogue addressable fire alarm systems can provide a far higher and more versatile degree of protection. Detectors can often be individually programmed for sensitivity or automatically switched between high and low alarm thresholds, or even different detection modes - e.g. for night or day protection.

Sophisticated analogue systems can be interfaced with building management systems, and can also be used to interact with other services such as ventilation or warden call systems.

In addition to providing simplified installation, enhanced suppression of unwanted alarms and precise location of any incidents, analogue technology also allows greater control of the response of the system to a fire alarm being triggered.

Because each sounder also has a unique individual address, specific sounders can be activated in response to specific triggers. High specification systems such as DF6000 and DF6100 have the ability to support highly complex sounder ringing pattern requirements, for example, if a single detector is triggered, the system can be programmed such that the sounder nearest to the detector operates immediately and continuously, while the remaining sounders in the affected zone operate in a pulsed mode, and the other sounders delay for a selectable period to allow the cause of the alarm to be investigated before global ringing commences.

The sounder programming capability is very flexible, enabling the response to a condition to be precisely tailored to the building, providing maximum safety for building users whilst at the same time minimizing the disruption to building users from false alarms or localised incidents a considerable distance from particular parts of the building.

Ultimately the decision as to the most suitable equipment will depend upon specifier preferences, application details and performance objectives.

Our technical support is available to provide any possible assistance to guide the choice of system choice if required (Tel 01302 303350)

WHICH SYSTEM

ANALOGUE CONTROL PANELS

DF6100	PG 24

REPEATER PANEL	PG 36

DF6000	PG 28

DF6100

- **Large versatile touch screen display**
- **Competitive single or two loop system**
- **Spur tolerant soft addressing**
- **Large selection of compatible ancillaries**
- **Full network capability**
- **Integral battery and power supply**
- **150 address capacity per loop**

The Menvier DF6100 is a high specification single or two loop analogue fire system, which combines sophisticated functionality with simple operation. The simplicity of operation, powerful cause and effect programming capability, and competitive pricing make the system suitable for a wide range of small to medium sized projects. DF6100 uses soft addressing to minimise installation time and remove the potential for error associated with manual addressing.

Analogue Control Panels

MENVIER

SYSTEM OVERVIEW

- Analogue addressable panel with a wide range of compatible detectors, callpoints, sounders, beacons, repeater panels and interfaces
- Panels can operate on their own or can be networked with DF6000 panels or other DF6100 panels (additional network card required)
- Panel has integral power supply and battery, battery is supplied with the panel as standard
- Each DF6100 external device (callpoints, detectors, sounders interfaces etc) incorporates an integral short circuit isolator to provide maximum protection against short circuits on the external loop
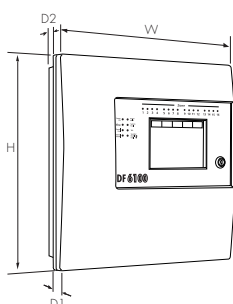
USER INTERFACE

- The main element of the user interface with DF6100 is a large (120mm x 90mm visible area) touch screen display, which provides comprehensive user information and also acts as a multifunctional keypad. With other more basic systems, the user is limited to a small number of dedicated pushbuttons and consequently system interaction is restricted and complicated
- Comprehensive context sensitive help information is provided throughout the menus to assist unfamiliar users with system operation
- The DF6100 touch screen display automatically reconfigures to suit the selected function, for example, if the change device text menu option is selected, the touch screen is automatically formatted as a full QWERTY keyboard to enable fast and simple text entry
- Audible buzzer with mute facility
- As well as a large format LCD display providing full system status information, the panel incorporates 16 traditional zone indication LED's to provide clear information about the status and spread of a fire even to a user who is completely unfamiliar with the operation of the system. In addition there are a number of system status LED's designed to give clear status information to non technical users
- Hinged lockable door provides access to all internal wiring and components

DETECTION CAPACITY

- Up to 150 addresses per loop which can be a mixture of callpoints, detectors, interfaces or loop sounders
- DF6100 panels can be networked with other DF6000/DF6100 panels

DIMENSIONS

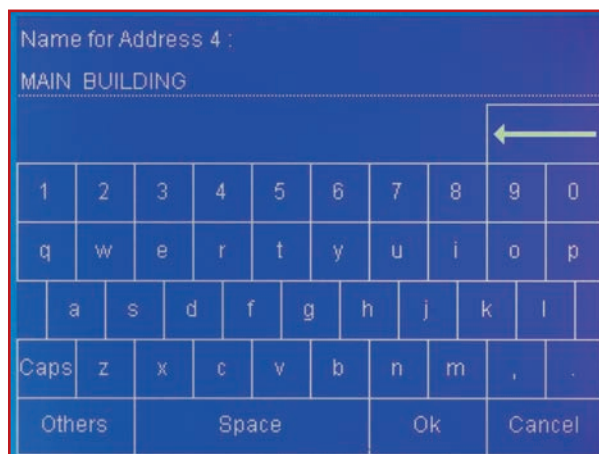| H (mm)	W (mm)	D1 (mm)	D2 (mm)
375	357	50	45

ALARM CAPACITY

- Up to 80 loop powered sounders, beacons or output interfaces per loop
- 3 stages of cause and effect programming per output device
- 0.8A of panel connected conventional sounders
- Additional conventional sounders can be connected via MPU424 units

Simply touch screen to select required function

Analogue Control Panels

DF6100

DF6100

SYSTEM FUNCTIONALITY

- Panel has 3 modes of operation, normal mode, user maintenance mode and engineer mode
- User maintenance and engineer modes can only be accessed by entering relevant pass codes
- Maintenance mode allows access to system test functions, enable and disable menus, view analogue level menus and functions such as evacuate, silence alarms and reset
- Engineer mode allows alteration of system configuration and programming of site specific data such as device text and sounder programming
- Engineer mode also allows adding and removal of devices and alteration of existing text
- DF6100 is designed to ensure simplicity of future expansion. If an additional device is added after the system has been programmed, the DF6100 will allocate the next available address, it will not alter any of the existing address number allocation thus enabling simple updating of 'as fitted' drawings etc. Similarly if a device is removed, the relevant address is saved as a spare address for future use, the addresses of the remaining devices are not affected
- All devices are soft addressed during commissioning however once allocated, addresses are locked until manually altered thus enabling simple system additions and deletions without affecting other addresses
- In event of an external short circuit occurring, short circuit isolators on output of devices nearest to each side of the short circuit open thus isolating the short circuit
- The panel then drives communication from both ends of the loop thus maintaining full communication with all devices

INSTALLATION NOTES

- Panel is designed for surface or recessed mounting (without the need for an additional bezel)
- Cable entry is by means of top entry knockouts in the metal back box, along with a substantial rear entry cutout
- Panels are wall mounted via keyhole/slot mounting holes on back of housing
- Key operated hinged lockable door provides access to all internal wiring
- Cable entry can either be top or rear
- Mains input protection is provided by integral fuse
- All external wiring should be in accordance with relevant section of of latest edition of BS5839-1
- Comprehensive installation and operation manual provided with each system

OPTIONS

- Panels can operate in stand alone mode or can be networked
- Passive repeater available see page 36

INTERFACE OPTIONS

- Day night mode override via timer or external switched signal
- Monitored output to fire routing equipment
- Monitored output to fire protection equipment
- Monitored output to fault monitoring equipment
- Multiple Programmable remote inputs can be set for:
- Override of day night mode setting
  - Photo-thermal detectors go to thermal only
  - Rate of rise detectors go to fixed high temperature mode
  - High temperature heat detectors go to rate of rise mode
  - Disablement of pre assigned group of addresses
- Class change
- Non latching zone input
- Evacuate
- Zone monitor units can be used to connect zones of suitable conventional detectors or loop powered beam detectors
- Sounder circuit controllers can be used to provide additional conventional sounder circuits without wiring back to main panel
- Mains rated input/output unit available
- 3 way 24V rated input/output unit available
- Spur isolator available to allow spurs of analogue addressable devices
- Compact input and output modules available
- Shop unit interface allows the connection of a conventional detection zone along with a power supply and 2 conventional sounder circuits, ideal for linking small self contained units onto a main addressable panel
- 2 Conventional sounder circuits provided as standard

SYSTEM ANCILLARIES

Callpoints
Page 78

Interfaces
Page 40

Beam detector
Page 94

Detectors
Page 90

Conventional sounders
Page 75

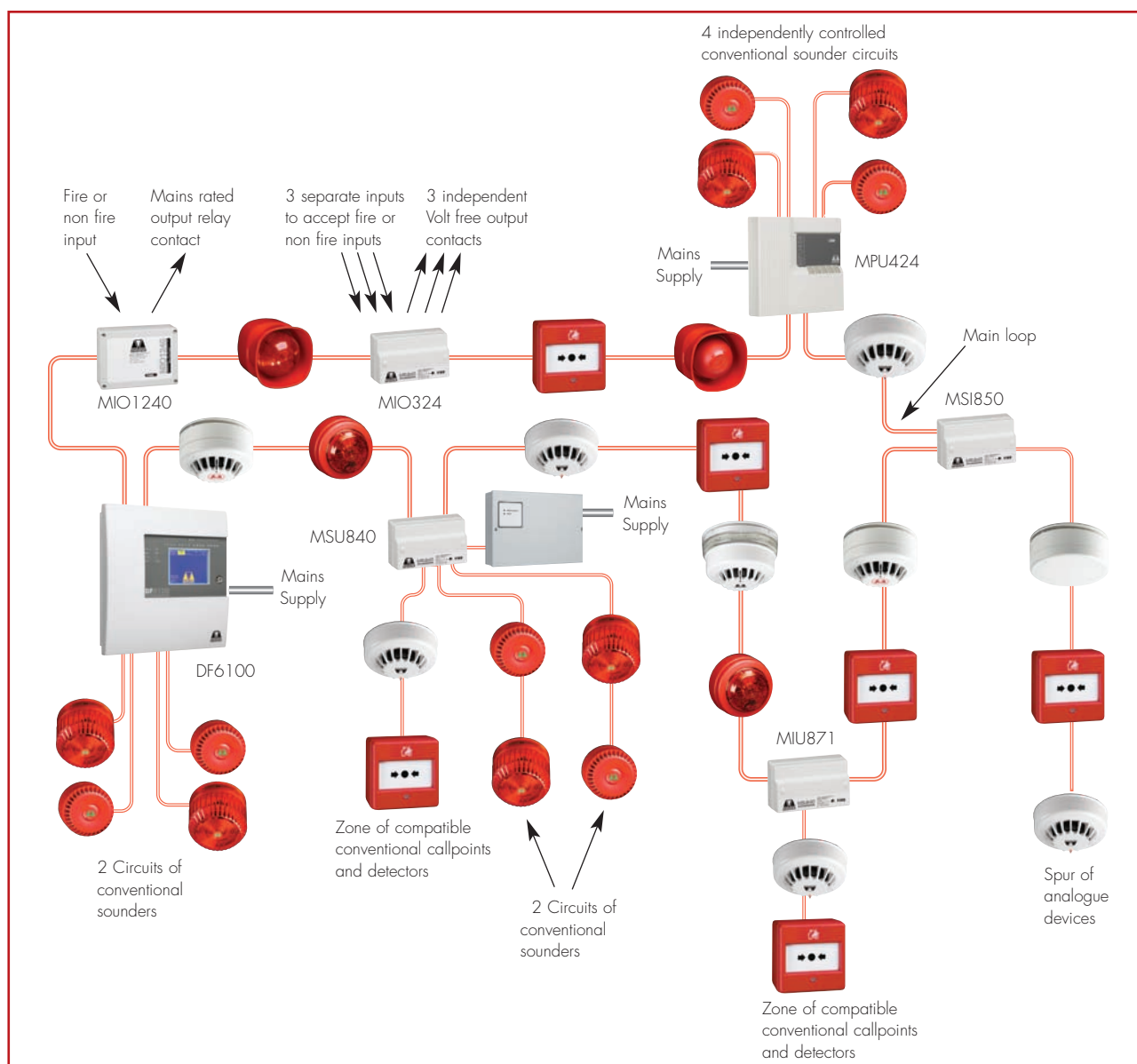**Loop powered sounders/beacons**
Page 97

Repeater panel
Page 36

Analogue Control Panels

TECHNICAL SPECIFICATION

Standards	EN54:2 1998 & EN54:4 1998, EN50130-4
Number of loops	1 or 2
Maximum number of addresses per loop	150
Number of conventional sounder circuits	2 monitored for open and short circuit
Auxiliary fire routing equipment output	(Monitored) 24V 30mA max
Auxiliary fire protection equipment output	(Monitored) 24V 30mA max
Auxiliary fault routing equipment output	(Monitored) 12V 30mA max
Nominal system operating voltage	24V
Mains input supply	230V AC +10% / -15%
Class change facility	Terminals for connection of external contacts, can also be instigated via input interface
Auxiliary Relay	1 set of changeover contacts operate in event of fire condition
Output ports	RS485,RS232 for connection of repeaters etc
Standby duration	Dependant on loop loading and battery configuration
Battery	2 x 7AH
Cable entries	Top entry cable knockouts (20mm) plus rear cable aperture
Environmental rating	IP30. -5°C to +40°C. Humidity 75% max (non-condensing)
System networking	Fully networkable up to 63 panels (requires additional network card)

CATALOGUE NUMBER

Cat. No.	Description	Weight (kg)
DF6100	1 Loop DF6100 analogue addressable fire panel	8
DF61002	2 Loop DF6100 analogue addressable fire panel	8

4 independently controlled
conventional sounder circuits

Fire or non fire input

Mains rated output relay contact

3 separate inputs to accept fire or non fire inputs

3 independent Volt free output contacts

Mains Supply

MPU424

MIO1240

MIO324

Main loop

MSI850

Mains Supply

MSU840

Mains Supply

DF6100

Zone of compatible conventional callpoints and detectors

2 Circuits of conventional sounders

2 Circuits of conventional sounders

MIU871

Spur of analogue devices

Zone of compatible conventional callpoints and detectors

Analogue Control Panels

DF6100

DF6000

- **EN54 approved**
- **Single two and four loop versions**
- **Spur tolerant soft addressing**
- **Large selection of compatible ancillaries**
- **Full network capability**
- **Optional integral printer**
- **Integral battery and power supply**
- **150 addresses per loop**

The Menvier DF6000 is a high specification analogue fire system available in various loop configurations. It combines sophisticated functionality with simple operation and a very aesthetically pleasing design. The large capacity, ability to support complex cause and effect programming and wide range of user controllable functions make the system suitable for a diverse range of projects from sheltered housing to large office developments and industrial applications. DF6000 uses soft addressing to minimise installation time and remove the potential for error associated with manual addressing

Each of the DF6000 system components has been specifically designed to operate as part of a DF6000 system, this provides an assurance that the panel, the detectors, the interfaces and the ancillaries are all fully compatible with each other and that the full range of system functionality is supported by each device.

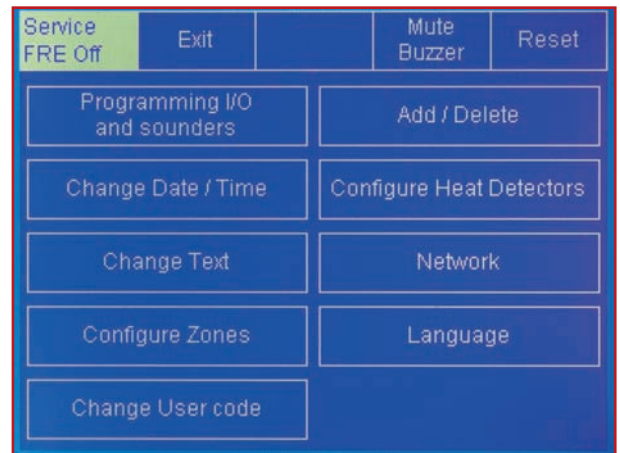MENVIER

DF6000

SYSTEM OVERVIEW

- Panels can operate as stand alone panels or as part of a networked system
- Powerful programming options allow configurable control over whether messages from specific panels are transmitted around the network or remain local
- The range consists of single, two and four loop panels and a wide range of compatible detectors, callpoints, sounders, beacons, repeater panels and interfaces
- Panels are available in a choice of colours (standard light grey and graphite)
- Available with or without a built in printer
- Clear hinged lockable cover is also available to provide additional resilience where required
- All panels have integral power supplies and batteries, both are supplied with the panel as standard
- For heavily loaded systems or systems requiring extended autonomy in the event of a mains failure, versions are available with extended battery capacity
- Each of the DF6000 external devices (callpoints, detectors, sounders interfaces etc) incorporates an integral short circuit isolator to provide maximum protection against short circuits on the external loops

USER INTERFACE

- The main element of the user interface with DF6000 is a large (120mm x 90mm visible area) touch screen display, which provides comprehensive user information and also acts as a multifunctional keypad. With other more basic systems, the user is limited to a small number of dedicated pushbuttons and consequently system interaction is restricted and complicated
- Comprehensive context sensitive help information is provided throughout the menus to assist unfamiliar users with system operation
- The DF6000 touch screen display automatically reconfigures to suit the selected function, for example, if the change device text menu option is selected, the touch screen is automatically formatted as a full QWERTY keyboard to enable fast and simple text entry (see page 25)

DF6000 in graphite with hinged cover

Simply touch screen to select required function

Standard light grey finish

Large screen provides clear comprehensive system information

USER INTERFACE (cont'd)

- As well as a large format liquid crystal display providing full system status information, the panel incorporates 96 traditional zone indication LED's to provide clear information about the status and spread of a fire even to a user who is completely unfamiliar with the operation of the system. In addition there are a number of system status LED's designed to provide status information to non technical users
- Access to printer (when fitted) is via separate locked access door. Paper can be changed by non skilled personnel without exposure to any live components
- The printer can either be set to print on demand or to automatically print all system events as they occur

- The hinged front door provides simple access to all internal components and wiring
- The panel door cannot be opened without the use of a special key (supplied with panel)
- For applications requiring a high level of resilience, a clear hinged lockable front cover is available that still allows full system visibility but prevents unauthorized access to the touch screen

Optional integral printer

Blanking plug fitted if printer not required

Simple paper loading

DF6000

DETECTION CAPACITY

- Up to 150 addresses per loop which can be a mixture of callpoints, detectors, interfaces, loop sounders or repeaters
- To comply with EN54 requirements no more than 512 addresses should be connected to a single panel
- Panels are available with up to 4 detection loops, up to 63 panels can be networked together giving a total system capacity of over 32,000 devices

ALARM CAPACITY

- Up to 80 loop powered sounders, beacons or interfaces per loop
- 3 stages of cause and effect programming per output device
- 1.5A of panel connected conventional sounders
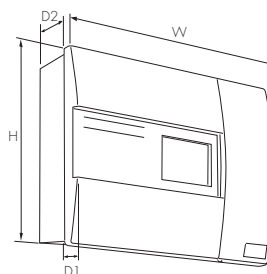- Additional conventional sounders can be connected to MPU424 units

SYSTEM FUNCTIONALITY

- Panel has 3 modes of operation, normal mode, user maintenance mode and engineer mode
- User, maintenance and engineer modes can only be accessed by entering the relevant pass codes
- Maintenance mode allows access to system test functions, enable and disable menus, view analogue level menus and functions such as evacuate, silence alarms and reset
- Engineer mode allows alteration of system configuration and programming of site specific data such as device text and sounder programming
- Engineer mode also allows adding and removal of devices and alteration of existing text
- DF6000 is designed to ensure simplicity of future expansion. If an additional device is added after the system has been programmed, the DF6000 will allocate the next available address, it will not alter any of the existing address number allocation thus enabling simple updating of 'as fitted' drawings etc. Similarly if a device is removed, the relevant address is saved as a spare address for future use, the addresses of the remaining devices are not affected
- All devices are soft addressed during commissioning however once allocated, addresses are locked until manually altered thus enabling simple system additions and deletions without affecting other addresses
- In event of an external short circuit occurring, short circuit isolators on output of devices nearest to each side of the short circuit open thus isolating the short circuit
- The panel then drives communication from both ends of the loop thus maintaining full communication with all devices
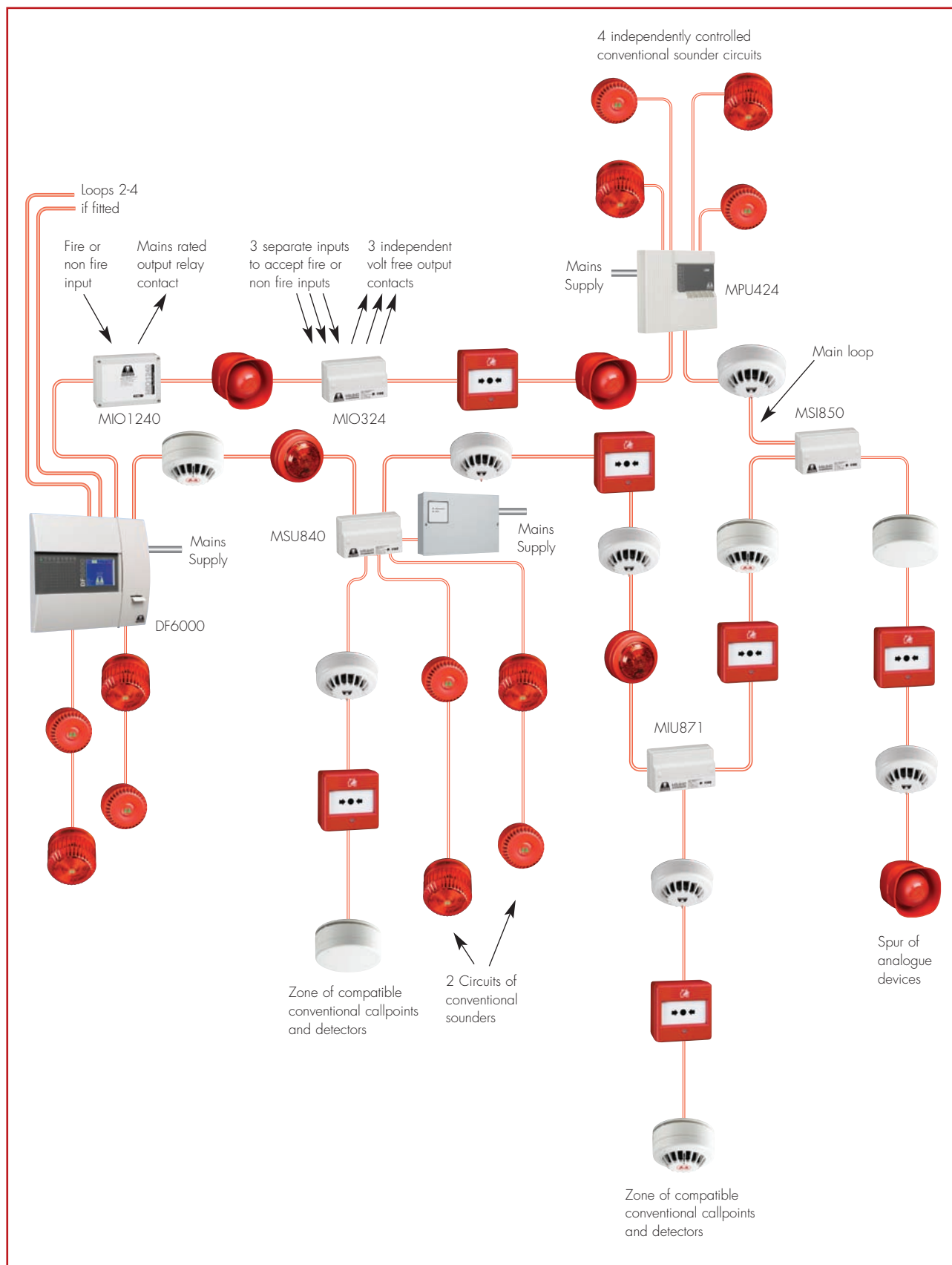
INTERFACE OPTIONS

- Monitored output to fire routing equipment
- Monitored output to fire protection equipment
- Monitored output to fault monitoring equipment
- Multiple Programmable remote inputs (up to 180 per panel) can be set for:
  - Override of day night mode setting
  - Photo-thermal detectors go to thermal only
  - Rate of rise detectors go to fixed high temperature mode
  - High temperature heat detectors go to rate of rise mode
  - Disablement of pre assigned group of addresses
- Class change
- Non latching zone input
- Evacuate
- Zone monitor units can be used to connect zones of suitable conventional detectors or loop powered beam detectors.
- Sounder circuit controllers can be used to provide additional conventional sounder circuits without wiring back to main panel
- Mains rated input/output unit available
- 3 way 24V rated input/output unit available
- Spur isolator available to allow spurs of analogue addressable devices
- Shop unit interface allows the connection of a conventional detection zone along with a power supply and 2 conventional sounder circuits, ideal for linking small self contained units onto a main addressable panel
- 4 Conventional sounder circuits provided as standard

DIMENSIONS

	H (mm)	W (mm)	D1 (mm)	D2 (mm)	Cut-out (mm)
Standard	395	495	55	125	472W x 366H
Extended battery	395	495	55	225	472W x 366H

4 independently controlled
conventional sounder circuits

Loops 2-4
if fitted

Fire or
non fire
input

Mains rated
output relay
contact

3 separate inputs
to accept fire or
non fire inputs

3 independent
volt free output
contacts

Mains
Supply

MPU424

Main loop

MIO1240

MIO324

MSI850

Mains
Supply

MSU840

Mains
Supply

DF6000

MIU871

Spur of
analogue
devices

Zone of compatible
conventional callpoints
and detectors

2 Circuits of
conventional
sounders

Zone of compatible
conventional callpoints
and detectors

Analogue Control Panels

DF6000

DF6000

SYSTEM NETWORKING

DF6000 and DF6100 systems can both be networked together. Up to sixty three DF6000 panels, DF6100 panels and low cost repeaters can be networked together to operate as a single networked system. To achieve this each panel must be fitted with a network card (supplied at additional cost). When operating as a networked system all fire and fault event information can be displayed at every panel. Panels can be cofigured by service engineers to control whether fire and fault information from each panel is transmitted around the network or not. Silencing and resetting of alarms can also be carried out from any panel on a networked system.

Networked panels are connected using a loop topology as illustrated.

Mains Supply   Mains Supply   Mains Supply

INSTALLATION NOTES

- Standard panel is suitable for flush or surface mounting, without the need for a separate bezel or trim
- Cable entry can be top or rear and is by means of knockouts in the metal back box.12 rear entry knockouts and 31 top entry knockouts are provided
- Panels are wall mounted via keyhole slot mounting holes on back of housing
- Front cover retained by screws, accessed after opening the printer bay door
- Flush mounting requires suitable aperture and fixings
- Mains input protection is provided by a polyswitch
- All external wiring should be in accordance with relevant section of latest edition of BS5839:1
- Comprehensive installation and operation manual provided with each system
- Contact technical sales department for details of recommended network cable type
- Maximum length of network cable loop is 1500 metres, beyond this distance or where cables pass between buildings, boosters are required

OPTIONS

- Choice of one, two or four loop panels
- Optional integral printer
- Light grey or graphite finish
- Optional hinged lockable cover (can be retro-fitted)
- Panels can operate in stand alone mode or can be networked
- Passive repeater available see page 36

TECHNICAL SPECIFICATION

Standards	EN54:2 1998 & EN54:4 1998 EN50130-4
Number of loops	1 - DF60001 2 - DF60002 4 - DF60004
Maximum number of addresses per loop	150
Number of conventional sounder circuits	4 (programmable in pairs)
Auxiliary fire routing equipment output	(Monitored) 24V 30mA max
Auxiliary fire protection equipment output	(Monitored) 24V 30mA max
Auxiliary fault routing equipment output	(Monitored) 12V 30mA max
Nominal system operating voltage	24V
Mains input supply	230V AC +10% / -15%
Class change facility	Terminals for connection of external contacts, can also be instigated via input interface
Auxiliary relay	1 set of changeover contacts operate in event of fire condition
Output ports	RS485,RS232 for connection of repeaters etc
Standby duration	Dependant on loop loading and battery configuration
Battery	2 x 12A/H - standard versions 4 x 12A/H - /EB versions
Cable entries	31 Top entry cable knockouts (20mm) 12 rear cable knockouts (20mm)
Environmental rating	IP30. -5°C to +40°C. Humidity 75% max (non-condensing)

SYSTEM ANCILLARIES

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Detectors
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Conventional sounders
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Loop powered sounders/beacons
Page 97

Repeater panel
Page 36

CATALOGUE NUMBERS

Cat. No.	Description	Weight (kg)
DF60001	1 Loop DF6000 panel	18
DF60002	2 Loop DF6000 panel	18
DF60004	4 Loop DF6000 panel	18
DF60001P	1 Loop DF6000 panel c/w integral printer	18
DF60002P	2 Loop DF6000 panel c/w integral printer	18
DF60004P	4 Loop DF6000 panel c/w integral printer	18
DF60001G	1 Loop DF6000 panel graphite finish	18
DF60002G	2 Loop DF6000 panel graphite finish	18
DF60004G	4 Loop DF6000 panel graphite finish	18
DF60001PG	1 Loop DF6000 panel c/w integral printer graphite finish	18
DF60002PG	2 Loop DF6000 panel c/w integral printer graphite finish	18
DF60004PG	4 Loop DF6000 panel c/w integral printer graphite finish	18
DF60002EB	2 Loop DF6000 panel extended battery	27
DF60004EB	4 Loop DF6000 panel extended battery	27
DF60002PEB	2 Loop DF6000 panel extended battery & integral printer	27
DF60004PEB	4 Loop DF6000 panel extended battery & integral printer	27
DF60002GEB	2 Loop DF6000 panel graphite finish, extended battery	27
DF60004GEB	4 Loop DF6000 panel graphite finish, extended battery	27
DF60002PGEB	2 Loop DF6000 panel graphite finish extended battery & integral printer	27
DF60004PGEB	4 Loop DF6000 panel graphite finish extended battery & integral printer	27
DF6000COV	Hinged protective cover kit	0.2
DF6000PR	Passive repeater for DF6000	3.6

Analogue Control Panels

DF6000

REPEATER PANEL

- **Can be connected to detection loop or network**
- **Compact size**
- **Backlit LCD display**
- **Comprehensive system status LED's**

The Menvier DF6000PR passive repeater is designed to act as a low cost repeater connected to a DF6000 or DF6100 fire system. Compact and easy to operate the passive repeater includes an integral battery and power supply to simplify installation. The repeater would be used wherever there is a need to relay status information to multiple points to inform key personnel such as nurse stations within hospitals.
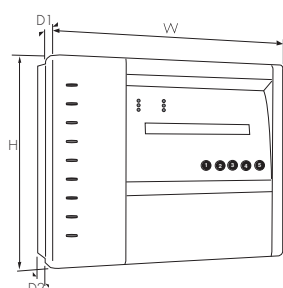
MENVIER

DEVICE OVERVIEW

- Panel can be connected to either the detection loop of a single panel or to a network as part of a networked system
- Supplied with integral power supply and standby battery

SYSTEM FUNCTIONALITY

- Panel operates in either normal, supervisor or engineer mode
- Supervisor and engineer modes are accessed via 4 digit pass codes
- Supervisor mode allows silence, evacuate and reset commands to be sent to host panel (loop connected) or to network (network connected)
- Engineer mode enables password to be changed if required and allows access to text download menu
- When connected to network, all text is transmitted via network, changes to other network panels update automatically
- When connected to a detector loop, text for host is downloaded to repeater and updated manually as required
- Zonal fire and fault indication is by means of 2 line LCD display

DIMENSIONS

H (mm)	W (mm)	D1 (mm)	D2 (mm)
270	332	45	47

INTERFACE OPTIONS

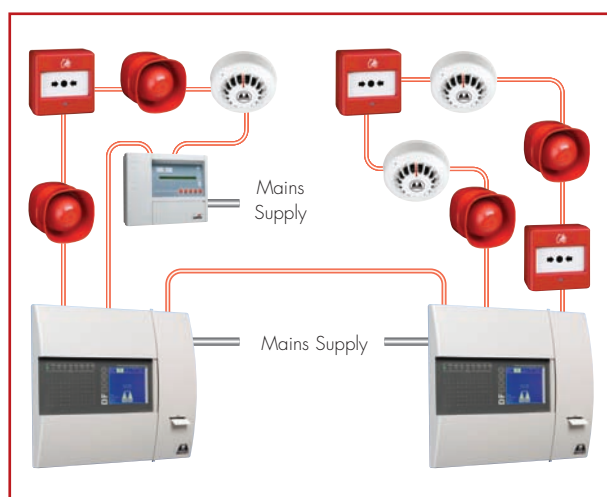- Can be connected to Menvier DF6000 or DF6100

INSTALLATION NOTES

- Wall mounted by means of 4 fixing screws
- Cable entry at top or back
- 12 top entry gland holes with push out blanking plugs
- 4 separate rear access cable entry facilities
- Local mains supply required
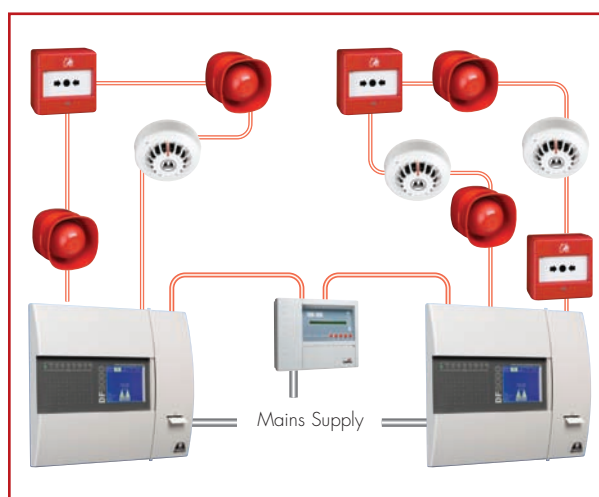
TECHNICAL SPECIFICATION

Compatibility	DF6000 & DF6100
Display	2 line 40 character backlit LCD
System indicators	Power-on, Fire, Fault, Test, Disable, Scroll
Operating Voltage	230V AC, 50Hz, +10%, -15%
Standby battery	12V 3.2A/H
Standby	24 Hours + 30 min alarm
Mechanical	PC/ABS, rating - UL94V0
Weight	3.6 KG incl. Battery
IP rating	IP30
Temperature	0°C to +25°C
RS232 Port	Minimum cable for text download - twisted pair

CATALOGUE NUMBER

Cat. No.	Description
DF6000PR	Passive repeater for DF6000 and DF6100

Repeater connected to detection loop

Repeater connected to network

REPEATER PANEL

COMPATIBILITIES

Section 11.1 of BS5839:1 2002 confirms the requirement for the system designer to ensure that all fire alarm system components are fully compatible with each other. One of the benefits of sourcing a fire system from a single manufacturer is that the specifier can be confident that the system components have been specifically designed and tested to ensure that they are fully compatible with each other.

The table below shows which analogue devices are compatible with each of the three analogue addressable fire systems.

Product	To suit Menvier DF6000/DF6100	Please refer to page
Analogue addressable loop powered sounder base	MAS850	97
Analogue addressable loop powered wall sounder	MAS850LPS	100
Cover for MAS850 (pack of 5)	MASC	97
IP67 analogue addressable loop powered wall sounder	MAS850LPSWP	101
Analogue addressable loop powered LED beacon	MAB870	103
Analogue addressable loop powered wall sounder beacon	MASB860	102
IP66 Analogue addressable loop powered wall sounder beacon	MASB860WP	102
Analogue addressable loop powered base sounder beacon	MASB870	99
Analogue addressable loop powered callpoint surface	MBG813	78
Analogue addressable loop powered callpoint weatherproof	MBG817	78
1 Channel output unit (mains rated)	MIO1240	42
3 Channel I/O device	MIO324	43
Compact input module	MCIM	40
Compact output module	MCOM	41
Conventional zone monitor unit	MIU871	44
4 Way sounder circuit controller	MPU424	45
Spur isolator	MSI850	46
Shop unit interface	MSU840	47
Soft addressed analogue optical detector	MAP820	90
Soft addressed analogue heat detector	MAH830	90
Soft addressed analogue photo thermal detector	MAOH850	90
Pack of 10 analogue bases	MAB800*10	93
Single analogue detector mounting base	MAB800	93
Relay base	MAB800R	89

Analogue Control Panels

ANALOGUE INTERFACES

MCIM	PG 40

ZONE MONITOR UNIT	PG 44

MCOM	PG 41

SOUNDER CONTROLLER UNIT	PG 45

INPUT OUTPUT UNIT	PG 42

SPUR ISOLATOR	PG 46

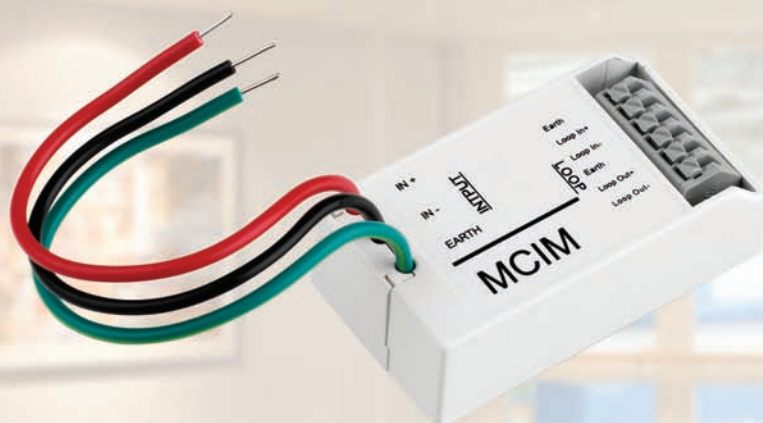| 3 WAY INPUT OUTPUT UNIT	PG 43

SHOP UNIT INTERFACE	PG 47

MCIM

- **Compact size**
- **Soft addressed**
- **Integral short circuit isolator**

The Menvier MCIM is a competitively priced input module, designed to enable a DF6000 or DF6100 panel to accept input signals from external devices such as key switches and sprinkler flow switches. It is extremely compact and therefore ideal for incorporation into other equipment.
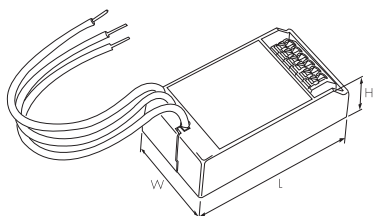
DEVICE OVERVIEW

- 2 versions are available, MCIM is configured to be recognised by the panel as an input module, MCIM-C is configured to be recognised as a callpoint, both devices have the same functionality.
- Input is monitored for open and short circuits
- Requires specific resistance to trigger input
- DF6000 software allows input to be configured to perform various different functions such as
  - Evacuate
  - Day/night mode setting
  - Group isolate

INSTALLATION NOTES

- Units are fixed into position via 2 fixing lugs on base of module (clips into suitable fixing holes.)
- Fixing hole drill template provided.
- Push in connectors for loop input and output.
- 130mm Flying leads for connection to input device (e.g. switch)

CATALOGUE NUMBERS
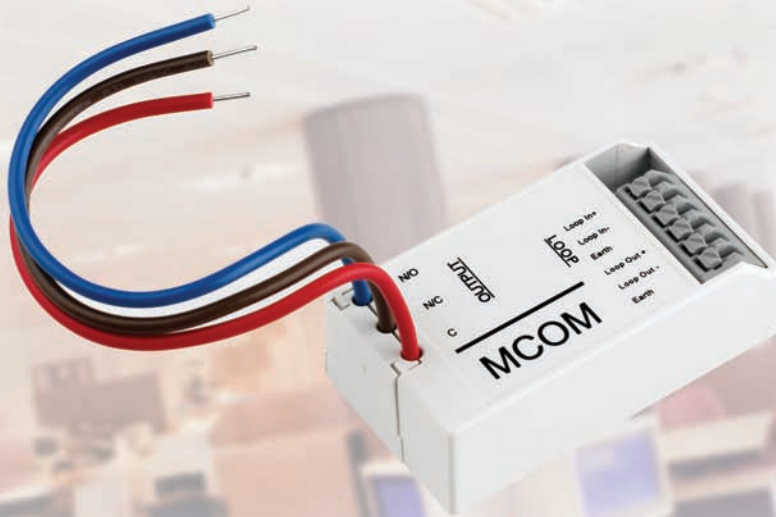
Cat. No.	Description
MCIM	Compact input module configured as a module
MCIM-C	Compact input module configured as a callpoint

DIMENSIONS

H (mm)	W (mm)	L (mm)
19	35	63

MENVIER

- **Compact size**
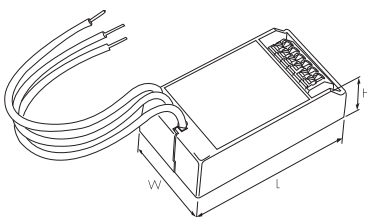- **Soft addressed**
- **Integral short circuit isolator**

The Menvier MCOM is a competitively priced output module, designed to enable a DF6000 or DF6100 panel control external devices such as door holders or access control systems. It is extremely compact and therefore ideal for incorporation into other equipment.

DEVICE OVERVIEW

- 2 versions are available, MCOM is configured to be recognised by the panel as an output module, MCOM-S is configured to be recognised as a sounder, both devices have the same functionality.

DIMENSIONS

H (mm)	W (mm)	D (mm)
19	35	63

INSTALLATION NOTES

- Units are fixed into position via 2 fixing lugs on base of module (clips into suitable fixing holes.)
- Fixing hole drill template provided.
- Push in connectors for loop input and output.
- 130mm Flying leads for connection to external device
- Relay is rated at 24V DC 1A.

CATALOGUE NUMBERS

Cat. No.	Description
MCOM	Compact output module configured as a module
MCOM-S	Compact output module configured as a sounder

MENVIER

Analogue Interfaces

INPUT OUTPUT UNIT

- **Separate input and output**
- **Only takes a single address**
- **Simple to install**
- **Input monitored for open and short circuits**
- **Soft addressed**
- **Integral short circuit isolator**

The mains rated input/output interface enables simple interfacing between the fire system and other equipment such as nurse call systems or access control systems. The ability of the output unit to switch mains also makes the unit ideal for plant control or mains powered door holders. The input is monitored for open and short circuits therefore can be used for fire input applications such as monitoring sprinkler flow switches.
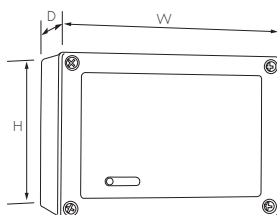
DEVICE OVERVIEW

- Input and output operate independently of each other
- Input is monitored for open and short circuits
- When used with DF6000 or DF6100 output can be programmed for:
  - Global triggering
  - Triggering by specific devices or zones
  - Delay before activation
  - Pulsing or continuous operation
- Input can be used to
  - Trigger a fire or fault
  - Trigger on evacuate
  - Control day/night mode
  - Isolate pre assigned group of addresses

INSTALLATION NOTES

- Mains rated input output unit is designed for surface fixing
- All connections are via heavy duty terminals
- Cable entry can be top, bottom or side
- Output relay contacts are rated at 230V AC 3A

Input output interface (mains rated output)	
Inputs	1
Outputs	1
Output rating	230V AC 3A
IP rating	IP40
Input fault monitoring	Open and short circuit monitored (Triggering requires specific resistance)

DIMENSIONS

H (mm)	W (mm)	D (mm)
130	180	60

CATALOGUE NUMBER

Cat. No.	Description
MIO1240	1 way input output interface (mains rated) to suit DF6000 & DF6100

3 WAY INPUT OUTPUT UNIT

- **3 separate inputs and 3 separate outputs**
- **Simple to install**
- **Inputs monitored for open and short circuits**
- **Soft addressed**
- **Integral short circuit isolator**

The three channel input/output interface enables simple interfacing between the fire system and other equipment such as nurse call systems or access control systems. The inputs are fully monitored for open and short circuits.

DEVICE OVERVIEW

- Available in two different versions, MIO324 & MIO324T
- MIO324 consumes a single address and accepts a single set of location text for the device
- MIO324T consumes 3 addresses and allows separate location text for each channel of the device
- All inputs and outputs operate independently of each other
- Inputs are monitored for open and short circuits
- When used with DF6000 or DF6100 outputs can be programmed for:
  - Global triggering
  - Triggering by specific devices or zones
  - Delay before activation
  - Pulsing or continuous operation
- Input can be used to
  - Trigger a fire or fault
  - Trigger on evacuate
  - Control day/night mode
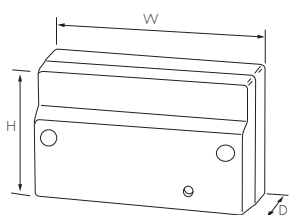 - Isolate pre assigned group of addresses

INSTALLATION NOTES

- 3 Channel input output unit is fixed to a deep double gang back box (supplied)
- All connections are via heavy duty terminals
- Cable entry can be top, bottom, side or rear
- Can be surface or semi recessed mounted
- Relay contacts are rated at 24V DC 1A

3 Channel input output monitor	
Inputs	3
Outputs	3
Output rating	24V DC 1A
IP rating	IP40
Input fault monitoring	Open and short circuit monitored (Triggering requires specific resistance)

DIMENSIONS

H (mm)	W (mm)	D (mm)
89	150	58

CATALOGUE NUMBER

Cat. No.	Description
MIO324	3 way input output interface to suit DF6000 & DF6100
MIO324T	3 way input output unit with separate text facilities

Analogue Interfaces

ZONE MONITOR UNIT

- **Monitors a zone of compatible conventional detectors**
- **Only takes a single address**
- **Simple to install**
- **Input monitored for open and short circuits**
- **Active end of line monitoring**

The MIU871 zone monitor unit allows a zone of compatible conventional detectors to be connected to a DF6000 or DF6100 system without the need for an external power supply.
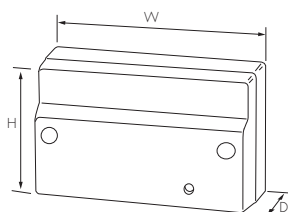
DEVICE OVERVIEW

- Uses active end of line monitoring to monitor zone wiring integrity
- Callpoints continue to function even if detectors are removed
- Has facilities to accept either mixed zone of callpoints and detectors or callpoints and detectors connected to separate circuits
- No additional power supply required

INSTALLATION NOTES

- Zone monitor unit is fixed to a deep double gang back box (supplied)
- All connections are via heavy duty terminals
- Cable entry can be top, bottom, side or rear
- Can be surface or semi recessed mounted
- Maximum 20 detectors plus and unlimited number of callpoints can be connected

DIMENSIONS

H (mm)	W (mm)	D (mm)
89	150	58

Zone monitor unit	
Inputs	2 - One suitable for detectors and callpoints, one for callpoints only
IP rating	IP40
Input monitoring	Open and short circuit monitored. (Triggering requires specific resistance)
Compatible with	Menvier or JSB conventional detectors connected via FXN520 bases

CATALOGUE NUMBER

Cat. No.	Description
MIU871	Zone monitor interface to suit DF6000 & DF6100

Analogue Interfaces

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SOUNDER CONTROLLER UNIT

- **Avoids the need to wire conventional sounders back to the main panel**
- **Four separate sounder circuits**
- **All outputs are independently programmable**
- **Battery backup via integral battery**

The sounder controller is a loop connected interface, which provides the facility to power and control four independent conventional sounder circuits. This greatly simplifies installation in applications where specialist sounders or beacons are required by avoiding the need to connect them directly to the analogue control panel. The unit only uses a single address yet each circuit can be independently controlled according to the required cause and effect programming.
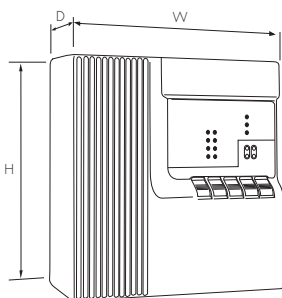
DEVICE OVERVIEW

- Avoids the need to wire conventional sounder circuits back to the panel
- When used with DF6000 or DF6100 outputs can be programmed for:
    - Global operation
    - Triggering by specific devices or zones
    - Delay before activation
    - Pulsing or continuous operation
- Sounder circuits are fully monitored
- Each sounder circuit can be individually programmed
- Integral battery ensures sounder operation in the event of mains failure
- Also includes additional output relay that operates in the event of fire

INSTALLATION NOTES

- The sounder controller interface requires a local unswitched 230V supply and incorporates a back up battery to maintain functionality under mains failure conditions
- Cable entry can be top or rear
- Top entry is via 20mm conduit entries (prefitted with blanking plugs for unused entries)
- Rear entry via substantial cable slot in metal back plate
- Top cover secured with tamper resistant screws

4 way sounder controller	
Number of sounder circuits	4
Number of output relays	1
Output relay rating	24V DC 1A max
Sounder circuit rating	1A per circuit, 2A max total
IP Rating	IP30
Sounder circuit monitoring	End of line resistor per circuit

DIMENSIONS

H (mm)	W (mm)	D (mm)
300	300	74

CATALOGUE NUMBER

Cat. No.	Description
MPU424	4 way sounder controller interface to suit DF6000 & DF6100

Analogue Interfaces

MENVIER

SPUR ISOLATOR

- **Allows a spur of analogue devices to be fed from the main loop**
- **Integral short circuit isolators for the loop and the spur**
- **Automatically controls addressing sequence**
- **Simple to install**

The spur isolator interface allows a spur of analogue devices to be connected to a main analogue loop, the device is designed to simplify installation of remote parts of buildings or for simple system extensions.
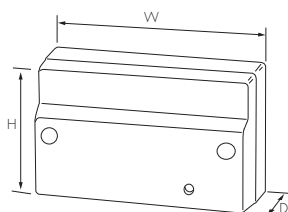
DEVICE OVERVIEW

- Spur isolator is connected to main loop allowing a spur of compatible analogue detectors
- During the addressing sequence, when the panel detects a spur isolator, it breaks from addressing the loop wired devices, addresses the devices on the spur in sequence and then continues to address the main loop
- Spur isolator also incorporates an additional short circuit isolator to protect the main detection loop in the event of a short circuit occurring on the spur

INSTALLATION NOTES

- Please refer to current edition of BS5839-1 for details of the maximum allowable area to be covered by a single zone
- Spur isolator interface is fixed to a deep double gang back box (supplied)
- All connections are via heavy duty terminals
- Cable entry can be top, bottom, side or rear
- Can be surface or semi recessed mounted

Spur isolator interface	
Maximum number of spurs	1
IP rating	IP40
Short circuit protection	Separate short circuit isolators for mains loop and spur

DIMENSIONS

H (mm)	W (mm)	D (mm)
89	150	58

CATALOGUE NUMBER

Cat. No.	Description
MSI850	Spur isolator interface to suit DF6000 & DF6100

SHOP UNIT INTERFACE

- **Accepts a zone of conventional detectors and callpoints**
- **Provides two conventional sounder circuits**
- **Includes output changeover relay**
- **Only takes a single address**
- **Simple to install**
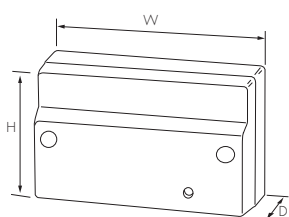- **Inputs monitored for open and short circuits**

This compact easy to install interface is designed to enable small units with conventional fire detection to be fully integrated with a main analogue addressable fire system. It is ideal for applications such as connecting individual shop units into a main shopping centre system.

DEVICE OVERVIEW

- Accepts a zone of up to 20 compatible conventional detectors plus an unlimited number of conventional callpoints
- Uses end of line monitoring to monitor zone wiring integrity
- Callpoints continue to function even if detectors are removed
- Has facilities to accept either mixed zone of callpoints and detectors or for callpoints and detectors to be connected to separate circuits
- Facilities for connection of a power supply which is then monitored for fault (P.S.U. requires fault contact)
- Includes programmable changeover relay which operates in the event of fire
- Incorporates two conventional sounder circuits powered under fire conditions via external monitored power supply

INSTALLATION NOTES

- Shop unit interface is fixed to a deep double gang back box (supplied)
- All connections are via heavy duty terminals
- Cable entry can be top, bottom, side or rear
- Can be surface or semi recessed mounted
- Can be used with a maximum of up to 20 Menvier or JSB detectors connected via FXN520 detectors

Shop unit interface	
Inputs	2 - One suitable for detectors and callpoints, one for callpoints only
Output relay rating	24V DC 1.0A max
Sounder circuit rating	400mA per circuit max
IP rating	IP40
Input fault monitoring	Open and short circuit monitored (Triggering requires specific resistance)
Power supply monitoring	Monitors external volt free fault contact

DIMENSIONS

H (mm)	W (mm)	D (mm)
89	150	58

CATALOGUE NUMBER

Cat. No.	Description
MSU840	Shop unit interface to suit DF6000 & DF6100

Analogue Interfaces

MENVIER

Reception