

# ***Context Plus Fire Catalogue***

**Context**  
*Plus*

***Analogue Addressable Fire Alarm Equipment***  
***Conventional Fire Alarm Equipment***



## INTRODUCING THE

**Context**  
Plus**RANGE OF ANALOGUE ADDRESSABLE  
FIRE ALARM EQUIPMENT**

The primary purpose of a fire alarm system is to provide an early warning of a fire so that people can be evacuated and action taken to stop the fire as soon as possible – all to a predetermined plan.

**Context Plus Analogue Addressable Fire Alarm Equipment**

Unlike conventional fire alarm systems, Context Plus analogue addressable systems use 'intelligent' detectors, sounders and call points that communicate constantly with the control panel, reporting a vast amount of data almost 'invisibly'. This sophisticated communication system allows a degree of control and reporting unattainable with conventional systems. Very accurate control and monitoring of many parameters is easily achievable, without the need for expensive and complex wiring schemes.

One of the main advantages of an analogue system over a four wire conventional system is that a total of 126 addressable detection and output devices can be wired in a single loop configuration.

Key features of the Context Plus range of analogue addressable fire alarm equipment include:

- A wide choice of fire alarm control panels (including the XFP range of 1-2 loop panels, the IFP range of 2-8 loop touchscreen-controlled panels and the FirePlus range of 4-32 loop panels)
- A powerful panel networking facility
- Digital protocol for error-free transmission
- A choice of DIL switch or 'XPERT' card addressed smoke and heat detectors
- A wide range of sounders, beacons and sounder/beacons
- The ability to carry out many additional functions (switch monitoring, etc) via a comprehensive range of compatible interface units.

**Context Plus Conventional Fire Alarm Equipment**

Context Plus Limited also offers a range of conventional fire alarm equipment including 1-28 zone conventional fire panels, wired and wireless conventional smoke and heat detectors, automatic extinguisher panels, power supplies and more.

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Fire alarm system design is beyond the scope of this document.

Contact the Fire Officer concerned with the property at an early stage in case he or she has any special requirements and always read the installation instructions provided with each Context Plus device.

We strongly recommend that a suitably qualified and competent person is consulted in connection with the design of the fire alarm system and that the system is commissioned and serviced in accordance with the laid down specification and national standards.

Errors and omissions excepted.

No responsibility can be accepted by the manufacturer or distributors of this range of equipment for any errors or omissions or for any misinterpretation of any information published in this brochure.

We reserve the right to alter product specifications at our discretion and without prior notice.

# XFP 1-2 LOOP NETWORKABLE ANALOGUE ADDRESSABLE FIRE PANELS

Fully approved to EN54 parts 2 & 4 by the Loss Prevention Certification Board, the XFP Range of networkable analogue addressable fire alarm control panels offers high performance at a competitive price. Available in two different versions (a cost-effective single loop 16 zone panel supplied in a plastic enclosure and a robust 1 or 2 loop 32 zone metal panel), the range offers an array of user and installer-friendly features.



XFP Single Loop 16 Zone Panel



XFP 1 or 2 Loop 32 Zone Panel

## Key Features



- ▶ Third-party certified to EN54 parts 2 and 4 by the LPCB.
- ▶ Full compatibility with the Context Plus range of smoke and heat detectors, call points, sounders and control modules.
- ▶ Three access levels - 1 (general), 2 (authorised user) and 3 (engineer)
- ▶ Combined keypad/keyswitch entry to access levels 2 and 3
- ▶ The ability to interconnect up to eight XFP main panels (any variant) plus an additional four XFP repeater panels per main onto a two wire RS485 network.
- ▶ Two independently programmable conventional sounder circuits.
- ▶ Two programmable inputs.
- ▶ A fault output relay and three programmable relay outputs with voltage free changeover contacts.
- ▶ Three zone dependency functions (A, B & C to EN54-2 Clause 7.12)
- ▶ A day/night (building occupied/unoccupied) function.
- ▶ An investigation delay period function.
- ▶ Individual sensitivity settings for each device.
- ▶ A phased evacuation and delays to outputs facility (to EN54-2 Clause 7.11)
- ▶ An alarm counter that records the number of times the panel has been in an alarm state (to EN54-2 Clause 7.13).
- ▶ Powerful short circuit protected loop drivers, capable of supporting up to 40 loop powered 10mA sounders per loop.
- ▶ An integral EN54 switch mode PSU rated @ 185-260V a.c. 50/60Hz (3A on 32 zone panel, 1.4A on 16 zone panel).
- ▶ Adjustable contamination levels.
- ▶ Earth fault monitoring.
- ▶ Push button access code or keyswitch entry to Access Levels 2 and 3 (depending on model purchased).
- ▶ An easy to read, 80 character back-lit display.
- ▶ 40 characters of custom text per device.
- ▶ 999 event monitoring.
- ▶ Comprehensive test facilities (to EN54-2 Clause 10) and a wide range of maintenance and commissioning functions including auto-learn loops, monitor a point, test outputs, one man walk test and loop continuity test).
- ▶ An intuitive Windows based upload-download PC program that allows the system to be programmed quickly and easily.

## WHY LPCB?



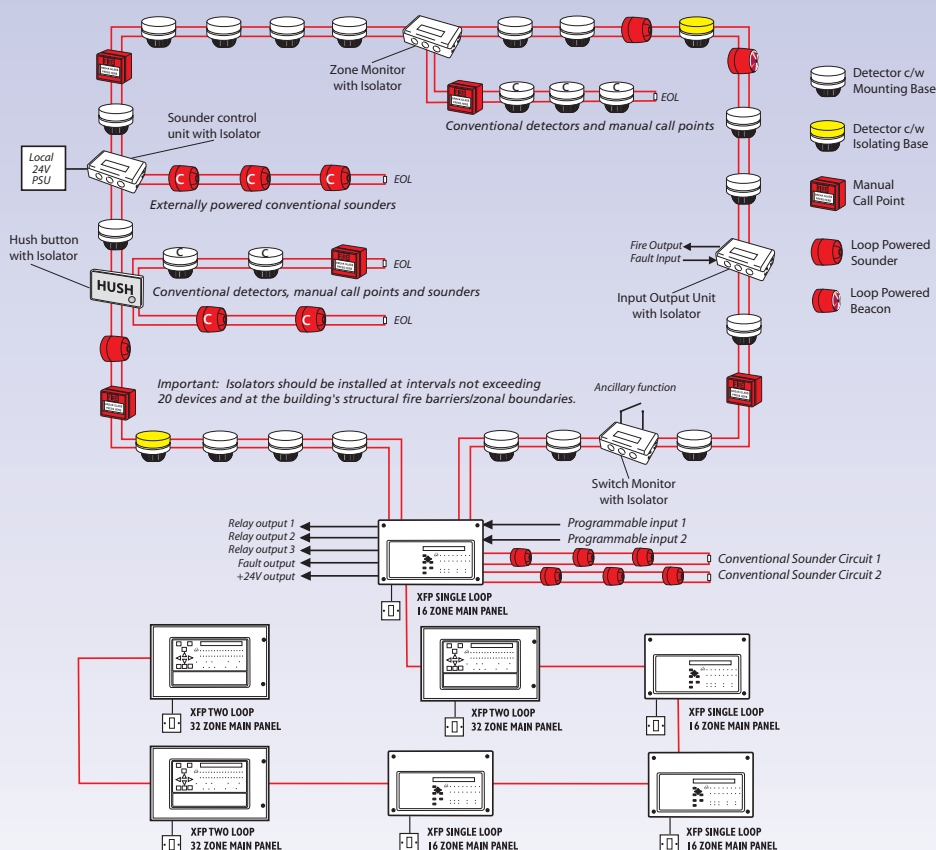
The LPCB stamp of approval is recognised worldwide and demonstrates that the XFP has been tested and certified as being compliant with EN54 parts 2 and 4 by the Loss Prevention Certification Board.

# XFP 1-2 LOOP NETWORKABLE ANALOGUE ADDRESSABLE FIRE PANELS

**Context  
Plus**

## A TYPICAL XFP ANALOGUE ADDRESSABLE LOOP / XFP NETWORKING DETAILS

Below is a diagram of a typical Context Plus analogue addressable loop fitted with a selection of detectors, loop powered sounders, modules and isolators, all connected to an XFP single loop 16 zone panel. The diagram also illustrates how a series of XFP main panels can be networked using the range's powerful RS485 network.



This diagram is provided for illustration purposes only and you should always refer to the relevant XFP panel/device instructions as appropriate before installation. Note that the descriptions and availability of the devices shown may not be applicable to all manufacturer's protocols.

## KEY FEATURES OF THE XFP'S NETWORK PROTOCOL

The XFP's network protocol allows the interconnection of up to eight XFP main panels (any mix) over a two-wire RS485 network. Alternatively, the network can be used to connect up to eight XFP repeaters to one XFP main panel. It is not possible to mix XFP main panels and repeaters on the same network.

### Key features of the XFP's network protocol when used for interconnecting XFP main panels:

- ▶ Allows the interconnection of up to eight XFP main panels (any mix of single loop 16 zone XFPs and 1 and 2 loop 32 zone XFPs)
- ▶ Up to 1 km of cable may be fitted to an XFP main panel network.
- ▶ Each networked XFP main panel can be programmed to accept Fires, Faults and Control actions such as Silence Alarm Sounders and Control Panel Reset from other main panels. They will also Accept Disablement commands for zones, sounders and output sets from other main panels.
- ▶ All panels monitor all other panels for network wiring faults.
- ▶ Fires on remote panels are displayed on local panels including the point description of the alarm's origin.
- ▶ Faults on remote panels are displayed on local panels including the point description of detectors.
- ▶ Cause and effects can be programmed into local panels dependent on which remote panel is in alarm.
- ▶ The network supports the programming of site data into remote panels from a PC at a local panel.
- ▶ Time and date is common to all panels throughout the network.
- ▶ All networked main panels require a network communication card

### Key features of the XFP's network protocol when used for connecting XFP repeaters

- ▶ Allows the connection of up to eight XFP repeaters to one non-networked main panel. The XFP main panel must have a network communication card fitted.
- ▶ Up to 500m of cable may be fitted to an XFP repeater network.
- ▶ Each XFP repeater offers all the functions and controls of an XFP main panel.

## XFP ORDER CODES

### XFP SINGLE LOOP 16 ZONE FIRE PANELS - LPCB approved to EN54-2/4

Communication protocol = Apollo XP95/Discovery

XFP501E/CON XFP Networkable single loop 16 zone panel  
Keypad/keyswitch entry, c/w 1.4A psu, plastic enclosure

### XFP 1 LOOP 32 ZONE FIRE PANELS - LPCB approved to EN54-2/4

Communication protocol = Apollo XP95/Discovery

XFP501/CON XFP Networkable one loop 32 zone panel  
Keypad/keyswitch entry, c/w 3A psu, metal enclosure

### XFP 2 LOOP 32 ZONE FIRE PANELS - LPCB approved to EN54-2/4

Communication protocol = Apollo XP95/Discovery

XFP502/CON XFP Networkable two loop 32 zone panel  
Keypad/keyswitch entry, c/w 3A psu, metal enclosure

### XFP NETWORK COMMUNICATION CARDS\*

CFP761 XFP network communication card for XFP 16 zone main panels

AFP711 XFP network communication card for XFP 32 zone main panels

(One network communication card is required per networked main panel. Note that repeater panels are supplied with a network communication card already fitted).

### XFP REPEATERS\*

XFP510-16 XFP Networkable repeater panel, 16 zones  
Keypad/keyswitch entry, c/w psu, plastic enclosure

XFP510-32 XFP Networkable repeater panel, 32 zones  
Keypad/keyswitch entry, c/w psu, metal enclosure

### XFP BEZELS & ENCLOSURES

AFP385 Flush mount bezel (for XFP 32 zone main & repeater panels)

BF359/3S Stainless steel glazed enclosure for XFP 32 zone panels, requires BF359/3CL or BF359/3SL lock kit

BF359/3CL Cam lock kit for BF359/3S enclosure

BF359/3SL Electromagnetic solenoid lock kit for BF359/3S enclosure

Note XFP 16 zone panels can be semi-flush mounted without the need for a bezel

### XFP PROGRAMMING SOFTWARE\*

XFP507 XFP Upload download software kit (all protocols)  
Windows 98, 2000, XP. Includes programming lead

SAF7070000 2m Programming lead ONLY

### XFP PRINTER KITS\*

AFP709 XFP off-board printer kit

\* Repeaters, bezels, network communication cards, programming software and printer kits are not included within the scope of the XFP's LPCB approval

# XFP 1-2 LOOP NETWORKABLE ANALOGUE ADDRESSABLE FIRE PANELS

## XFP Technical Specifications

### Power Supply Specification

|                                                   | SINGLE LOOP 16 ZONE XFP PANELS<br>XFP501E/CON  | ONE OR TWO LOOP 32 ZONE XFP PANELS<br>XFP501/CON<br>XFP502/CON |
|---------------------------------------------------|------------------------------------------------|----------------------------------------------------------------|
| Mains supply                                      | 230V a.c. $\pm$ 10% 50/60Hz. Max current 350mA | 230V a.c. $\pm$ 10% 50/60Hz. Max current 680mA                 |
| Internal power supply                             | 27V d.c Nominal                                | 27V d.c Nominal                                                |
| Total output current limited to                   | 1.4A @ 230V a.c.                               | 3A @ 230 V a.c.                                                |
| Supply and battery charger monitored for failure  | Yes                                            | Yes                                                            |
| Batteries monitored for disconnection and failure | Yes                                            | Yes                                                            |
| Batteries protected against deep discharge        | Yes                                            | Yes                                                            |
| Max. battery size and type                        | 3.2 Ahr VRLA                                   | 7.0 Ahr VRLA                                                   |
| Specified batteries for LPCB approved systems     | 2 x Yuasa NP3.2-12                             | 2 x Yuasa NP7-12                                               |
| Quiescent current drain (1 loop unloaded)         | < 50mA                                         | < 80mA                                                         |
| Quiescent current drain (2 loop unloaded)         | not applicable                                 | <100mA                                                         |
| Earth fault monitoring                            | Yes (any conductor)                            | Yes (any conductor)                                            |

### Loop Driver Specification

|                                                        |                                   |                                   |
|--------------------------------------------------------|-----------------------------------|-----------------------------------|
| Temperature compensated charging                       | Yes                               | Yes                               |
| Number of loop drivers                                 | 1                                 | 1 (XFP501/CON)<br>2 (XFP502/CON)  |
| Line monitored for open and short circuit faults       | Yes                               | Yes                               |
| Onboard loop isolators with LED indication when active | Yes                               | Yes                               |
| Auto-polling from each loop end                        | Yes                               | Yes                               |
| Max. loop output current                               | 500mA (Voltage: 25V min, 34V max) | 500mA (Voltage: 25V min, 34V max) |
| Max. number of addressable devices per loop            | 126                               | 126                               |
| Max. number of loop powered sounders per loop @ 10mA   | 40                                | 40                                |
| Number of programmable sounder groups                  | 16                                | 16                                |

### Conventional Sounder Circuit Specification

|                                                  |                              |                              |
|--------------------------------------------------|------------------------------|------------------------------|
| Number of programmable output sets               | 16                           | 16                           |
| Number of programmable circuits                  | 2                            | 2                            |
| End of line resistor value                       | 6800 $\Omega$ 5% Tol. 0.25 W | 6800 $\Omega$ 5% Tol. 0.25 W |
| Line monitored for open and short circuit faults | Yes                          | Yes                          |
| Outputs fused at                                 | 400mA                        | 400mA                        |

### Auxiliary Outputs

|                                |                                           |    |
|--------------------------------|-------------------------------------------|----|
| Max. number of sounders @ 20mA | 40                                        | 80 |
| Type                           | Relay voltage free single pole changeover |    |
| Max switching current          | 1A                                        |    |
| Max switching voltage          | 30 V d.c                                  |    |
| Relay 1                        | Programmed from cause and effect          |    |
| Relay 2                        | Programmed from cause and effect          |    |
| Relay 3                        | Programmed from cause and effect          |    |
| Fault                          | Active when no faults are present         |    |

### Auxiliary Inputs

|                        |                                                                                                          |
|------------------------|----------------------------------------------------------------------------------------------------------|
| '24V' Aux Power Output | 19.5V min, 28V max. Max current 100mA. Protected by resettable overload circuit                          |
| Input 1                | Connect to 0V to trigger. Max input voltage 27V d.c. (non-latching). Programmable from cause and effect. |

### Fuses (to IEC - EN60127 Pt2)

|            |                                                                                                          |                     |
|------------|----------------------------------------------------------------------------------------------------------|---------------------|
| Input 2    | Connect to 0V to trigger. Max input voltage 27V d.c. (non-latching). Programmable from cause and effect. |                     |
| Mains Fuse | 1A HRC Ceramic 20mm                                                                                      | 1A HRC Ceramic 20mm |

### Panel Indicators and Controls

|                                                          |                                                                                                  |              |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------|
| Battery Fuse - limits the current drawn from the battery | 1.6A F 20mm                                                                                      | 3.15A F 20mm |
| Control buttons                                          | Silence, Reset, Resound, Investigate; More Information; Menu                                     |              |
| Event scrolling and menu access buttons                  | Up (1); Down (2); Accept (3); Abort (4)                                                          |              |
| Liquid Crystal Display                                   | Two lines x 40 characters, backlit                                                               |              |
| Number of Zonal LED indicators                           | 16                                                                                               | 32           |
| Other LED indicators                                     | General Fire, System Energised; Pre-Alarm; Remote Output Activated; Menus Accessed; Disablement; |              |

### Physical Dimensions

|                                            |                                                                                                                     |                                                     |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Approx. dimensions of back box (W x H x D) | Test; Remote Output Disabled; Silenced; General Fault; System Fault;<br>380 x 235 x 77mm (plastic). Includes 'lip'. |                                                     |
| Approx. dimensions of lid (W x H x D)      | 380 x 235 x 16mm (plastic)                                                                                          | 410 x 250 x 80mm (metal)<br>439 x 274 x 7mm (metal) |

### Cabling Requirements

|                                                |                                                                    |       |
|------------------------------------------------|--------------------------------------------------------------------|-------|
| Approx. weight (without batteries)             | 1.9Kg                                                              | 4.5kg |
| Type of cable                                  | Fire resistant screened cable, minimum size 1mm <sup>2</sup>       |       |
| Max. cable length per loop                     | 1km                                                                |       |
| Connector blocks                               | Plug-on type, largest acceptable conductor size 1.5mm <sup>2</sup> |       |
| Max. allowable loop impedance (each conductor) | 20 $\Omega$                                                        |       |

### Network Specification

|                                                   |                                                     |                                                     |
|---------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|
| Max. cable capacitance                            | .27 $\mu$ F                                         |                                                     |
| Connection                                        | Via CFP761 network driver card fitted at main panel | Via AFP711 network driver card fitted at main panel |
| Max. no. of main panels per network               | 8                                                   | 8                                                   |
| Max. no of repeaters per non-networked main panel | 8                                                   | 8                                                   |

### PC/Printer Interface

|                               |                                                                                                     |
|-------------------------------|-----------------------------------------------------------------------------------------------------|
| Max. cable length per network | 1km (main panel network); 500m (repeater network) 1km (main panel network); 500m (repeater network) |
| PC connection                 | Via main panel RS232 molex connector (lead supplied in XFP507 upload/download software kit)         |

### Operating conditions

The components are selected to operate within their specification when the environmental conditions outside the enclosure comply with class 3k5 of IEC 721-3-3 : 1978. Temperature range:- 5 to +40°C. Maximum relative humidity: 95%

# IFP 2-8 LOOP NETWORKABLE ANALOGUE ADDRESSABLE FIRE PANELS

**Context**  
Plus

Introducing the new IFP Range of intelligent touchscreen-controlled 2-8 loop fire panels from Context Plus - due for release Quarter 4, 2011



IFP 2 TO 4 LOOP PANEL  
(STANDARD CABINET)



IFP 2, 4, 6, 8 LOOP PANEL  
(MEDIUM CABINET)



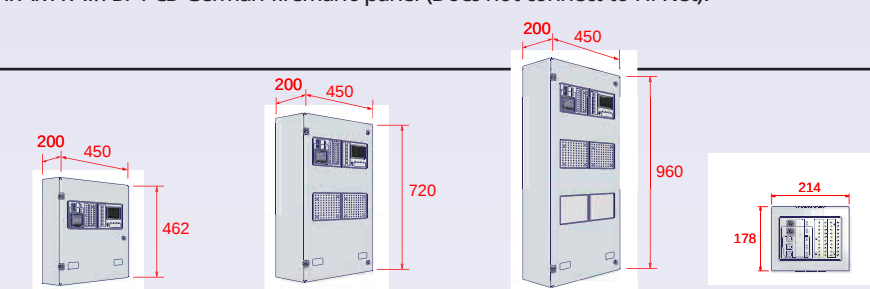
IFP COMPACT CONTROLLER

## Preliminary Features

- ▶ Designed to comply with the latest versions of EN54 parts 2, 4 and 13
- ▶ Communication protocol - Apollo XP95/Discovery
- ▶ Three cabinet sizes - standard (2 or 4 loops), medium (2, 4, 6 or 8 loops) and large (2, 4, 6 or 8 loops)
- ▶ 3A or 5A full EN54-4/A2 PSU and battery charger included
- ▶ Onboard mini-USB connection to connect a PC running programming software
- ▶ Two RS 232 ports - one dedicated to a 40 column thermal printer (optional), one for ancillary devices such as ESPA protocol alphanumeric pagers / DECT telephone systems
- ▶ 4.3 inch, 472 x 248 pixel, 24 Bit, 16 M colour, resistive LCD touchscreen (larger touchscreen available to special order)
- ▶ 40 characters of custom text per device
- ▶ Separate distinct LEDs for mandatory EN54 indications plus programmable LEDs
- ▶ Real time clock with built in and automatic daylight saving time/backup PSU
- ▶ Standard upload download software includes facility to upload company logos - even from a simple .jpg file from a camera
- ▶ Secure fault tolerant network as standard (needs separate network driver PCB)
- ▶ Full on-screen QWERTY keyboard
- ▶ Day/night sensitivity
- ▶ Three access levels - general, authorised user and engineer
- ▶ Four programmable 1A sounder circuits (3A max total)
- ▶ Directly connects to DIN standard fireman's Interface (IFAM-FAT/FBF). Interface for Keybox units and ATU.
- ▶ Up to 200 separate LEDs per panel, programmable as Fire Zonal LEDs or other
- ▶ Up to 64 eight loop peer to peer panel network capacity (max. distance between each 'node' = 1KM)
- ▶ Fault tolerant network drivers (Hi-Net)
- ▶ Flush and surface 'Compact Controllers'
- ▶ Up to 10,000 programmable and indicatable system zones
- ▶ Greater than 100,000 addressable device system capacity
- ▶ 20,000 event memory of all fire and fault and system events - all filterable
- ▶ Selectable Language
- ▶ 'Slide In' label system on custom moulded bezels for customizable language labels/custom description of zones and programmable LEDs. Common word processor templates available with software
- ▶ Isolated internal/external RS485 peripheral bus for connection of ancillary peripheral PCBs (15 PCBs max per panel)
- ▶ Up to 16 GB (2 GB as standard) internal SD card memory (removable micro SD card). SD card can be programmed off site if required
- ▶ Dedicated port for Ethernet connection (requires plug on TCP/IP PCB) to allow for Internet control and monitoring
- ▶ Onboard printer option
- ▶ Modular Construction
- ▶ Up to 18 Ah batteries in standard cabinet, up to 38 Ah in larger cabinets

Panel appearance and specifications subject to confirmation and/or change without prior notice. Please contact our sales desk for an up-to-date list of panel features, part numbers and release dates.

# IFP 2-8 LOOP NETWORKABLE ANALOGUE ADDRESSABLE FIRE PANELS

|                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROCESSOR TECHNOLOGY                                                                                                                                                                                                                                                                                                                                              | Dual processor, flash based.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| POWER SUPPLY                                                                                                                                                                                                                                                                                                                                                      | 230v 50-60Hz 5A EN 54-4/A2 inc temperature compensated charger.<br>1 x 24V 0.5A Aux PSU output.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| MEMORY                                                                                                                                                                                                                                                                                                                                                            | 512 Mb onboard flash – firmware.<br>16 Mb DRAM.<br>2Gb removable on board micro SD card (16Gb max).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| DISPLAY                                                                                                                                                                                                                                                                                                                                                           | 4.3 inch, 472 x 248 pixel, 24 Bit, 16 M colour, resistive LCD touch screen<br>(larger sizes available to special order)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| EXTRA INDICATION - MAIN DISPLAY CARD                                                                                                                                                                                                                                                                                                                              | 16 Programmable main panel mounted LEDs (1 Green, 3 Red and 13 Yellow).<br>These are the EN 54 Mandatory LEDs + a minimum of 6 user definable & programmable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| CONTROLS                                                                                                                                                                                                                                                                                                                                                          | Multiple controls via virtual touch screen buttons. User definable & programmable options.<br>Multiple panel mounted keyswitch/ordinary switches panel mounted and programmable (needs extra serial I/O card).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| ON BOARD I/O                                                                                                                                                                                                                                                                                                                                                      | 4 x Programmable 1A sounder circuits (3A max. total) – Monitored<br>3 x Programmable relays volt free outputs.<br>2 x Programmable on board monitored inputs.<br>1 x Earth fault monitor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| PANEL CAPACITY                                                                                                                                                                                                                                                                                                                                                    | 2 or 4 loops in standard cabinet<br>2, 4, 6 or 8 loops in medium or large size cabinets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| COMMUNICATION BUSES                                                                                                                                                                                                                                                                                                                                               | 2-8 Proprietary protocol loop drivers. Available as 2-loop PCBs.<br>1 x RS232 dedicated to onboard printer (optional).<br>1 x RS232 for connection of e.g. Alphanumeric Paging Transmitter (including ESPA) or DECT Phones.<br>1 x Serial I/O bus (for panel mounted auxiliary LEDs, switches etc).<br>1 x RS485 A-Bus. Peripheral bus to peripheral PCBs (e.g. relay drivers, I/O PCBs, Aux Sounder PCBs, Conventional zone PCBs, mimic drivers etc).<br>Max 15 per panel.<br>1 x RS485 Fault tolerant network driver output (needs isolated fault tolerant network PCB).<br>1 x RS485 (needs TCP/IP plug on PCB for connection to LAN and Internet).<br>1 x RS485 Fireman's interface connection (needs proprietary driver PCB e.g. IFAM). |
| SERIAL ANCILLARY CARDS (EXTRA)<br>• Max 3 Indication/Switch Modules per control module.<br>• Two modules per enclosure window.                                                                                                                                                                                                                                    | 20-zone Indication Module, name slots & space for 5 switches* & 10 LEDs.<br>20-zone Indication Module, name slots, printer* & space for 2 switches* & 4 LEDs.<br>40-zone Indication Module with name slots.<br>40-zone Indication Module with space for 5 switches* & 10 LEDs.<br>40-zone Indication Module with printer* & space for 2 switches* & 4 LEDs.<br>100-zone Indication Module, numbered 1-100.<br>100-zone Indication Module, numbered 101-200.<br>Blank Module.<br>* Key switches and Push buttons extra.                                                                                                                                                                                                                       |
| A-BUS PERIPHERAL PCBs<br>• Connect to Main 2-Loop PCB or Hi-Net+ PCB.<br>• Cabling is 2 core + screen plus 2-core for power supply, which may be local.<br>• Up to 15 per Network PCB per A bus.<br>• Powered from Main 2-Loop PCB or other EN 54-4 PSUs.<br>• Normally only used within the cabinet(s) but may be extended up to 1 km for non EN 54-2 functions. | 4 relay PCB (half-size).<br>8 relay PCB.<br>8 I/O PCB (half-size).<br>16 I/O PCB.<br>4 Sounder PCB with PSU monitoring - 4 x 1A 6K8 monitored sounder circuits (3A limit).<br>4 zone PCB (conv) with 2 sounder circuits & PSU monitoring - 2 x 1A 6K8 monitored sounder circuits.<br>Mimic Interface PCB (will use light guides).<br>German key box interface PCB.<br>IFAM FAT/FBF PCB German fireman's panel (Does not connect to Hi-Net).                                                                                                                                                                                                                                                                                                  |
| CABINETS (W X H X D mm)                                                                                                                                                                                                                                                                                                                                           |  <p>Standard (2-4 loop) (18Ahr Batteries)    Medium (2-4-6-8 loop) (7-18Ahr Batteries)    Large (2-4-6-8 loop) (12-38Ahr Batteries)    Compact Controller</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| STANDARDS COMPLIANCE                                                                                                                                                                                                                                                                                                                                              | EN 54-2/4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

All of the above preliminary features are subject to confirmation and/or change without prior notice. Please contact our sales desk for an up-to-date list of panel features, part numbers and release dates.

# FIREPLUS 4-32 LOOP NETWORKABLE ANALOGUE ADDRESSABLE FIRE PANELS

**Context  
Plus**

Introducing the FirePlus range of feature-rich 4 to 32 loop networkable analogue addressable fire alarm panels.

Options such as single point network programming, remote diagnostics via modem and a powerful 'Smartgraphics' package, combine to make FirePlus one of the most flexible networkable fire panels in the world.



FirePlus SP1M Panel



FirePlus SP8 Panel

## Key Features:-

- Communication protocol = Apollo XP95/Discovery
- Designed to comply with EN54-2/4 and Australian standard AS 4428.1
- Front panel & laptop programmable
- Self learn
- Modem connection capability
- Remote upload/download of software
- Remote interrogation of system
- Password protection
- Day/night sensitivity settings
- Event log
- Network capabilities
- Operation of all inputs/outputs via keypad
- Brigade output interrogation
- Pre-alarm level available
- Digital voltage readout
- Readout of detector analogue count
- Printer connection capability
- Service information displayed on LCD
- S.P.O.T. - Single Person Operation Test
- Modular expansion capabilities
- Graphics display and control capabilities
- Max no. of repeaters = 30
- Display provides 8 lines of up to 40 characters
- 34 characters of custom text per device
- Three access levels
- System programmable via front panel or PC
- Mod bus or ASCII output for connection to optional BMS, paging or graphic system
- 200 events in the fire event log

## Overview

The heart of each FirePlus panel comprises two boards collectively known as the Controller. The boards are the Main Board and the CPU Board. Combining these two boards with a front panel forms the basis for a FirePlus FACP. A single FirePlus Controller has the capacity to interface to four (4) Slave CPU's. Each of these Slave CPU's can interface to a 16 Zone Conventional Termination Board, a Loop Termination Board and or Input/Output Boards.

The Main Board includes the first Slave CPU and the provision for the plug in mounting of up to three additional Slave CPU's. Each Slave CPU has the same software installed and the manner in which they operate is automatically determined by the type of termination or interface board connection.

## Keypad Features

Using the keypad and the LCD display the status of the system can be displayed. Users can allocate descriptions to inputs and outputs, identify inputs and outputs by their location and conduct pre-commissioning tests using the unique input / output testing feature. Other key features include adding, deleting or editing devices, displaying the status of the brigade output, day / night sensitivities, changing of brigade functions, displaying the status of devices and the event log.

## Self Learn

The ability to self-learn devices connected on each analogue loop and downloading configuration information of these devices, is incorporated in the FirePlus. FirePlus also takes this feature of self learn one step further as it has the ability to automatically configure system hardware. With the latest software enhancements FirePlus now treats each input of a multi-input device as a unique entity although only one address is required. The FirePlus uses special 'sub-addressing' techniques that allows each input to be zoned and have a descriptor assigned separately.

## Serial Interfacing

The FirePlus has 2 internal serial bus that provide the interfacing to (1) the Brigade PSU Monitor Board and if required up to eight Sounder Boards; and (2) ancillary boards for the control and or monitoring of field plant and equipment.

## Networking a System

Where system design exceeds the capacity of one SP series FirePlus then other FirePlus panels can be networked together to provide an expanded system with a maximum of 100 loops or 1000 zones.

## Networking Features

- A Master / Slave (Main/Sub) FACP arrangement
- A true Peer to Peer System
- Use of Data Gathering Panels (DGP's)
- SmartTerminal Repeater Panels
- SmartGraphics

## SmartGraphics

The Graphics system transforms the FirePlus into a powerful, flexible and integrated graphics based fire and or building management system.

## Config Manager Software

ConfigManager is a Windows based software programming package used to configure the FirePlus operational characteristics to the functional design of an installation.

## LineManager

Line Manager is a software tool for local or remote upload and/or download of software; establish the status of devices, interrogate the FirePlus; download single events from the event log file.

# FIREPLUS 4-32 LOOP NETWORKABLE ANALOGUE ADDRESSABLE FIRE PANELS



FirePlus SP1M Panel



FirePlus SP8 Panel

## Front Panel Layout & Controls



**SOUNDER SILENCE:** Silences any bells or sounders connected to the fire panel that have been activated by an Alarm or Evacuate

**EVACUATE:** Activates the Sounders and Bells.

**PREVIOUS:** Scrolls backwards through displayed alarms, faults or disables.

**NEXT:** Scrolls forwards through displayed alarms, faults or disables.

**BUZZER SILENCE:** Silences the panel buzzer

**RESET:** Resets the panel by clearing any recognised alarms. Uncleared faults or disabled devices will continue to show.

**SOUNDER DISABLE:** Disable Sounders & Bells until released

**DEVICE DISABLE/ENABLE:** Disables selected detectors, devices or zones.

**F.W.R.E FAULT/DISABLE:** Disables the FWRE relay on the Brigade PSU Monitor Board.

**F.A.R.E FAULT/DISABLE:** Disables the FARE relay on the Brigade PSU Monitor Board.

**OUTPUT DELAY ACTIVE:** Activates the delay of an Alarm output (AIF).

**LOOP:** Allows selection of the loop to be accessed.

**DEVICE:** Allows selection of the device to be accessed.

**ZONE:** Allows selection of the zone to be accessed.

**DISPLAY:** Displays the state of the device/s selected.

**1 ABC, 2 DEF, 3 GHI, etc:** The Alphanumeric characters are used to edit text and/or for the selection of components on the system.

**TO:** Allows access to a range of devices. Eg. 1 TO 8

**ENTER:** Confirms the entry of data onto the system.

**CANCEL ENTRY:** Deletes data or returns to the previously displayed menu.

Moves the cursor back and forth when entering data in a field.

Used to move between fields when entering data.

**MENU -** Displays the main menu on the LCD.

**FUNCTION -** Displays the function menu on the LCD.

## Part numbers

### SP4 AS4428 Range (SP1M)

Expandable upto 4 loops, 32 Zone LEDS PSU rated at 2.6 amps  
3 alarm circuits; Enclosure dimensions 500H x 400W x 140D

|                                                       |           |
|-------------------------------------------------------|-----------|
| SP1M 4 loop panel (formerly SP4 112-0027)             | 8580-4200 |
| SP1M 4 loop panel & printer (formerly SP4 112-0027/P) | 8580-4300 |

### SP4 Range (SP1M)

Expandable from 5 loops to 8 loops, 32 zone LEDS PSU rated at 5.6 amps 3 alarm circuits; Enclosure dimensions 500H x 400W x 140D; 64 zone LEDS available on SP4 (SP1M) panels 5 loops and above; Note: An SP1M ancillary cabinet (850-9003) may be required for standby batteries

|                       |           |
|-----------------------|-----------|
| SP1M Five Loop panel  | 8580-5200 |
| SP1M Six Loop panel   | 8580-6200 |
| SP1M Seven Loop panel | 8580-7200 |
| SP1M Eight Loop panel | 8580-8200 |

### SP8 AS4428 Range

Expandable upto 8 loops, 64 Zone LEDS, PSU rated at 5.6 amps, 3 alarm circuits; Enclosure dimensions 840H x 515W x 140D

|                                          |           |
|------------------------------------------|-----------|
| SP8 Four loop panel (formerly 112-0032)  | 8580-4700 |
| SP8 Five loop panel (formerly 112-0033)  | 8580-5700 |
| SP8 Six loop panel (formerly 112-0034)   | 8580-6700 |
| SP8 Seven loop panel (formerly 112-0035) | 8580-7700 |
| SP8 Eight loop panel (formerly 112-0036) | 8580-8700 |

### SP16 AS4428 Range

Expandable upto 16 loops, 64 Zone LEDS, PSU rated at 5.6 amps, 3 alarm circuits; Enclosure Dimensions 1200H x 625W x 240D

|                                           |           |
|-------------------------------------------|-----------|
| SP16 Nine loop panel (formerly SP16-09)   | 8580-9809 |
| SP16 Ten loop panel (formerly SP16-10)    | 8580-9810 |
| SP16 Eleven loop panel (formerly SP16-11) | 8580-9811 |

|                                             |           |
|---------------------------------------------|-----------|
| SP16 Twelve loop panel (formerly SP16-12)   | 580-9812  |
| SP16 Thirteen loop panel (formerly SP16-13) | 8580-9813 |
| SP16 Fourteen loop panel (formerly SP16-14) | 8580-9814 |
| SP16 Fifteen loop panel (formerly SP16-15)  | 8580-9815 |
| SP16 Sixteen loop panel (formerly SP16-16)  | 8580-9816 |

### Internal accessories for Fireplus

|                                                   |          |
|---------------------------------------------------|----------|
| 8 x 3A Serial Relay output kit                    | 159-0072 |
| Panel Printer SP1M, SP8, SP16 (Formerly 159-0016) | 159-0110 |
| Network interface board, V6 (Formerly 159-0053)   | 159-0223 |
| Modbus Com Card, CIC (controller interface card)  | 159-0054 |
| 4 plus 4 bell monitor board                       | 159-0069 |
| 8 way bell monitor board                          | 159-0071 |
| Paper for 159-0110, 10 rolls (Formerly 326-0008)  | MIS1981  |
| 32 zone LED Alarm & Fault Indicator board         | 159-0075 |

### FireFinder bezels, cabinets and ancillaries

|                             |           |
|-----------------------------|-----------|
| SP8 Flush mount bezel       | 158-0033  |
| SP1M/SP1X Flush mount bezel | ENC1798-F |

### FireFinder Smart Graphics and Software

|                                                                                        |          |
|----------------------------------------------------------------------------------------|----------|
| Smart Graphics Windows based graphics package (includes dongle) - requires Modbus Card | 159-0073 |
| FireFinder laptop comms cable                                                          | 322-0008 |
| FireFinder laptop comms cable & USB adaptor                                            | 1150     |
| ConfigManager Program kit, dongle & USB adaptor                                        | 1151     |

### FireFinder Repeaters and mimics

|                                                    |           |
|----------------------------------------------------|-----------|
| LCD SmartTerminal repeater* - without PSU          | 4380-0001 |
| LCD SmartTerminal repeater* - with 2 Amp PSU       | 4380-0002 |
| LCD SmartTerminal Slim Line repeater* - no PSU     | 4380-0003 |
| *Requires driver PCB 159-0129 in the control panel |           |
| LCD repeater driver PCB                            | 159-0129  |

## CHOOSING A CONTEXT PLUS DETECTOR

Your choice of detector(s) from the Context Plus range should always follow the well established principles of system design. That is, the optimum detector type will depend on the type of fire risk and fire load, and the type of environment in which the detector is sited.

For general use, smoke detectors (ionisation, optical or multisensor) are recommended since these give the highest level of protection. It is generally accepted that ionisation types have a high sensitivity to flaming fires whereas optical types have high sensitivity to smouldering fires. These general principles apply to all Context Plus detectors although the availability of a multisensor offers more choice to the system designer. The multisensor is basically an optical smoke detector combined with a heat detector. It therefore responds well to smoke from smouldering fires and its temperature sensitivity allows it to give a response to fast burning (flaming) fires, which is similar to that of an ionisation detector. The multisensor can therefore be used as an alternative to an ionisation detector.

Where the environment is smoky or dirty under normal conditions, a heat detector may be more appropriate. It must be recognised, however, that any heat detector will respond only when the fire is well established and generating a high heat output.

Each Context Plus device responds to interrogation and command from central Context Plus control equipment. It communicates to the panel information on status, command bits, type, location, and other

information that allows an alarm to be raised even when the device is not itself being interrogated. Message error checking is also provided.

Context Plus detectors provide an alarm facility that automatically puts an alarm code on the data stream and reports its address when the pre-set EN54 thresholds are exceeded. The devices provide great flexibility in system design with the control equipment determining the characteristics of the system.

All Context Plus detectors are designed to be connected to a two wire loop circuit carrying both data and a 17V to 28V dc supply. The detectors are connected to the incoming and outgoing supply via terminals L1 and L2 in the mounting base. A remote LED indicator requiring not more than 4mA at 5V may be connected between +R and -R terminals. An earth connection terminal is also provided.

The Context Plus range now includes two distinct ranges of detectors, our XPERT Card addressed range and our DIL switch addressed range. (Our DIL Switch range includes optical and temperature detectors only).

### APPROVALS

Context Plus addressable detectors comply with EN54-5: 2001 (heat) and EN54-7: 2001 (smoke). Detectors also comply with EMC Directive 2004/108/EC and are CE marked. Each detector type is designed to be approved by approval and regulatory bodies worldwide, including the LPCB in the UK.

### Context Plus XP95 Device Response

|                                | Ionisation    | Optical   | Temp. (Heat)  | Multisensor   |
|--------------------------------|---------------|-----------|---------------|---------------|
| Overheating/thermal combustion | Poor          | Very Good | Very Poor     | Very Good     |
| Smouldering/glowing combustion | Moderate/Good | Good      | Very Poor     | Good          |
| Flaming combustion             | Very Good     | Good      | Poor          | Good          |
| Flaming with high heat output  | Very Good     | Good      | Moderate/Good | Very Good     |
| Flaming - clean burning        | Poor          | Very Poor | Moderate/Good | Moderate/Good |

## NOTES ON SHORT-CIRCUIT ISOLATION

### THE REQUIREMENT FOR ISOLATION

Analogue addressable fire detection systems are usually designed as loops, with the connecting wires starting and finishing at the control panel. Detectors and interfaces are connected at intervals along the cables. Depending on local regulations, manual call points and sounders are connected either to the same loop or to other, dedicated loops. Spurs may be connected at any point of the loop, either directly from the loop wires or from an interface such as a Zone Monitor.

Short circuits do not occur very often but, when they do, the consequences can be serious, possibly making the affected loop entirely inoperative. It is for this reason that isolating circuits have been designed and incorporated into various devices that are connected to the loop. The purpose of these isolating circuits is to protect the loop in the event of a short circuit by disconnecting the part of the loop where the short circuit has occurred. When the short circuit fault has been rectified, the isolating circuitry reconnects the affected section of the loop. Normally an isolator should be included on every wiring transition between zones, thus ensuring that a single short circuit fault only affects one zone only or part thereof.

### FEATURES OF ISOLATING CIRCUITS

Isolating circuits are delivered as stand-alone isolators with their own mounting bases or as printed circuit boards in a version of the detector mounting bases known as 'isolating bases'. Isolating circuits are also fitted

to interfaces such as Input/Output Units or Sounder Control Units. They are polarity sensitive, normally switch the negative line of the loop and allow the connection of between one and twenty detectors or the equivalent load between isolators. Detectors fitted to isolating bases and interfaces with built-in isolating circuits remain operative when an adjacent loop section is in the isolated state.

### OPERATING PRINCIPLES

Under normal operating conditions the isolating circuit provides a low resistance of 0.2Ω or lower in either direction. If the loop voltage falls to 14±0.4V the isolator will switch from the closed state to the open state in order to isolate the loop 'in' and 'out' lines. The isolated section is tested every four seconds with a current pulse and is automatically re-connected when the load resistance is 175Ω or greater. The current pulses are drawn from the loop and it is important for correct operation of the system that the pulse load be included in the loop calculation made for any system.

### LOAD CALCULATION

Up to 20 detectors or the equivalent load may be connected between two isolating circuits. Interfaces and sounders are counted as one detector for every milliampere of switch-on surge current. Interfaces with integral isolation can be powered from either side of the isolator. The switch-on surge current is counted as one detector for every milliampere of switch-on surge current and must be included with the calculation for each of the adjacent sections of the loop. Context Plus offers a software program with which the viability of a design can be checked. For a copy of the program, entitled LoopCalc, contact our sales desk.

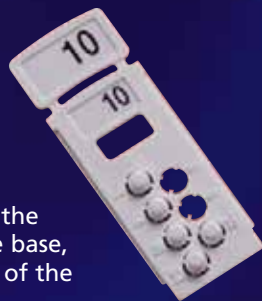


## **CONTEXT PLUS 'XPERT' CARD ADDRESSED DETECTORS & BASES**

Our XPERT Card addressed detectors utilise a unique addressing method where the address is held in the base and not the detector head. This means the address remains the same regardless of how many times a detector is replaced and allows different types of detecting heads to be swapped without the need for reprogramming.

The XPERT card is a plastic, coded card containing seven 'pips'.

The address is set by removing the 'pips' with a screwdriver and inserting the card into the side of the base. When the detector head is rotated into the base, the remaining 'pips' on the card operate the address buttons on the base of the detector and the address is read by the detector electronics.



**IONISATION SMOKE DETECTOR** XPERT CARD ADDRESSED

Part Number 55000-500IMC

**DEVICE RESPONSE****Type:** Flaming combustion**Response:** Very good**Type:** Flaming with high heat output**Response:** Very good**Type:** Smouldering/glowing combustion**Response:** Moderate/Good**Type:** Overheating/thermal combustion**Response:** Poor**Type:** Flaming - clean burning**Response:** Poor**Ionisation Smoke Detector, XPERT style, 55000-500IMC**

The Context Plus XP95 ionisation smoke detector has a moulded self-extinguishing white polycarbonate case with wind resistant smoke inlets. Stainless steel wiper contacts connect the detector to the terminals in the mounting base. Inside the detector case is a printed circuit board that has the ionisation chamber mounted on one side and the address capture, signal processing and communications electronics on the other.

The ionisation chamber system is an inner reference chamber contained inside an outer smoke chamber. The outer smoke chamber has smoke inlet apertures that are fitted with an insect resistant mesh.

The radioactive source holder and the outer smoke chamber are the positive and negative electrodes respectively. An Americium 241 radioactive source mounted within the inner reference chamber irradiates the air in both chambers to produce positive and negative ions. On applying a voltage across these electrodes an electric field is formed. The ions are attracted to the electrode of the opposite sign, some ions collide and recombine, but the net result is that a small electric current flows between the electrodes. At the junction between the reference and smoke chambers is the sensing electrode that is used to convert variations in the chamber currents into a voltage. When smoke particles enter the ionisation chamber, ions become attached to them with the result that the current flowing through the chamber decreases. This effect is greater in the smoke chamber than in the reference chamber and the imbalance causes the sensing electrode to go more positive.



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**Technical Data**

Specifications are typical and given at 23°C & 50% relative humidity unless stated.

**Communication protocol:** Apollo XP95 pulse 5-9V

**Detector Type:** Products of combustion (smoke)

**Detection Principle:** Ionisation Chamber

**Chamber Configuration:** Twin compensating chambers using one single sided ionising radiation source

**Radioactive Isotope:** Americium 241

**Activity:** 33.3k Becquerels, 0.9μ Curie

**Sampling Frequency:** Continuous

**Supply Wiring:** Two wire supply, polarity insensitive

**Terminal Functions:**

L1&L2 supply in and out connections (polarity insensitive)

+R remote indicator positive connection (internal 2.2kΩ resistance to supply +ve)

-R remote indicator negative connection (internal 2.2kΩ resistance to supply - ve)

**Supply Voltage:** 17 to 28 Volts dc

**Modulation Voltage at Detector:** 5 to 9 Volts peak to peak.

**Quiescent Current:** 280μA average, 500μA peak

**Power-up Surge Current:** 1mA

**Duration of Power-up Surge Current:** 0.3 seconds

**Maximum Power-up Time:**

4 seconds for communications (measured from application of power and protocol); 10 seconds to exceed 10 counts; 15 seconds for stable clean air value

**Storage Temp:** -30°C to +80°C

**Operating Temp:** -20°C to +70°C

**Clean Air Analogue Value:** 25±7 counts

**Alarm Level 55 Counts:** EN54 y value of 0.7

**Alarm Indicator:** Red light emitting diode (LED)

**Alarm LED Current:** 2mA

**Remote LED Current:** 4mA at 5V (measured across remote load)

**Type Code:** (210 43) 011 00

**Sensitivity:** Nominal threshold y value of 0.7 to EN54 Pt 7 2001; (BS 5445 Pt 7 2001)

**Guaranteed Temperature Range (no condensation or icing):** -20°C to +60°C

**Humidity (No condensation or icing):** 0% to 95% relative humidity

**Wind Speed:** 10m/s maximum

**Atmospheric Pressure:**

Automatic compensation by dual chambers to maintain sensitivity up to a height of 2000m above sea level

**Vibration, Impact & Shock:** To EN54 Pt 7 1984 (BS5445 Pt 7 2001)

**IP Rating:** 23D

**Dimensions:** (diameter x height)

Detector: 100mm x 42mm

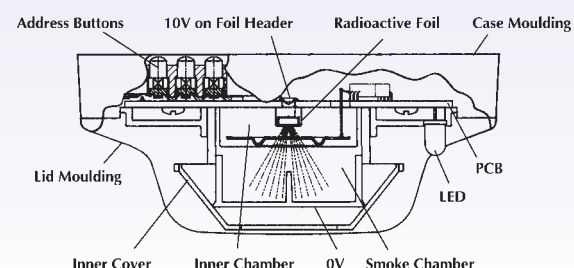
Detector in Base: 100mm x 50mm

**Weights:** Detector: 105g; Detector in Base: 161g

**Materials:** Detector Housing:

White polycarbonate V-0 rated to UL 94; Terminals: Stainless Steel

The Context Plus ionisation detector, like all ionisation detectors, has some sensitivity to air movement (wind). The extent to which the analogue value will change depends on the wind speed and on the orientation of the detector relative to the wind direction. Relatively small changes in wind direction can cause significant changes in analogue value.



Sectional view - Ionisation Smoke Detector

# OPTICAL SMOKE DETECTOR XPERT CARD ADDRESSED



Part Number 55000-600IMC

## DEVICE RESPONSE

Type: Overheating/thermal combustion  
Response: Very good

Type: Smouldering/glowing combustion  
Response: Good

Type: Flaming combustion  
Response: Good

Type: Flaming with high heat output  
Response: Good

Type: Flaming - clean burning  
Response: Very poor

## Optical Smoke Detector, XPERT style, 55000-600IMC

The Context Plus XP95 optical detector uses the same outer case as the ionisation smoke detector and is distinguished by the indicator LED which is clear in standby and red in alarm.

Within the case is a printed circuit board which, on one side, has the light proof labyrinth chamber with integral gauze surrounding the optical measuring system and, on the other, the address capture, signal processing and communications electronics.

An infrared light emitting diode within its collimator is arranged at an obtuse angle to the photo-diode. The photo-diode has an integral daylight-blocking filter.

The IR LED emits a burst of collimated light every second. In clear air the photo-diode receives no light directly from the IR LED because of the angular arrangement and the dual mask. When smoke enters the chamber it scatters photons from the emitter IR LED onto the photo-diode in an amount related to the smoke characteristics and density.



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## Technical Data

Specifications are typical and given at 23°C and 50% relative humidity unless stated.

**Communication protocol:** Apollo XP95 pulse 5-9V

**Detector Type:** Products of combustion (smoke) detector

**Detection Principles:** Photo-electric detection of light scattered in a forward direction by smoke particles

**Chamber Configuration:** Horizontal optical bench housing an infrared emitter and sensor arranged radially to detect scattered light

**Sensor:** Silicon PIN photo-diode

**Emitter:** GaAs Infra-red light emitting diode

**Sampling Frequency:** 1 second

**Supply Wiring:** Two wire supply, polarity insensitive

**Terminal Functions:**

L1&L2 supply in and out connections (polarity insensitive)

+R remote indicator positive connection (internal 2.2kΩ resistance to supply +ve)

-R remote indicator negative connection (internal 2.2kΩ resistance to supply -ve)

**Supply Voltage:** 17 to 28 Volts dc

**Quiescent Current:** 340μA average, 600μA peak

**Power-up Surge Current:** 1mA

**Duration of Power-up Surge Current:** 0.3 seconds

### Maximum Power-up Time:

4 seconds for communications (measured from application of power and protocol) 10 seconds to exceed 10 counts 35 seconds for stable clean air value

**Storage Temp:** -30°C to +80°C

**Operating Temp:** -20°C to +60°C

**Alarm Level Analogue Value:** 55

**Clean Air Analogue Value:** 25±7 counts

**Alarm Indicator:** Clear light emitting diode (LED) emitting red light

**Alarm LED Current:** 4mA

**Remote LED Current:** 4mA at 5V (measured across remote load)

**Type Code:** (210 43) 101 00

**Sensitivity:** Nominal threshold of 2.4% light grey smoke obscuration per metre

**Guaranteed Temperature Range (No condensation or icing):** -20°C to +60°C

**Humidity (No condensation or icing):** 0% to 95% relative humidity

**Wind Speed:** Unaffected by wind

**Atmospheric Pressure:** Unaffected

**Vibration, Impact & Shock:** To EN54 Pt 7 2001 (BS5445 Pt 7 2001)

**IP Rating:** 43

**Dimensions:** (diameter x height)

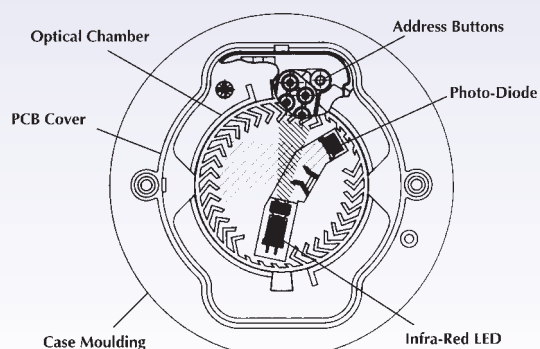
Detector: 100mm x 42mm

Detector in Base:

100mm x 50mm

**Weights:** Detector: 105g Detector in Base: 157g

**Materials:** Detector Housing: White polycarbonate V-0 rated to UL 94 Terminals: Stainless Steel



Top section view - Optical Smoke Detector

# TEMPERATURE DETECTORS XPERT CARD ADDRESSED

**Context**  
Plus



Part Number 55000-400IMC  
Standard Temperature Detector



Part Number 55000-401IMC  
High Temperature Detector

## DEVICE RESPONSE

**Type:** Flaming with high heat output  
**Response:** Moderate/good

**Type:** Flaming - clean burning  
**Response:** Moderate/good

**Type:** Flaming combustion  
**Response:** Poor

**Type:** Overheating/thermal combustion  
**Response:** Very poor

**Type:** Smouldering/glowing combustion  
**Response:** Very poor

## Standard Temperature Detector, XPERT style, 55000-400IMC High Temperature Detector, XPERT style, 55000-401IMC

Context Plus XP95 temperature (heat) detectors have a common profile with ionisation and optical smoke detectors but have a low air flow resistance case made of self-extinguishing white polycarbonate. They monitor temperature by using a single thermistor network which provides a voltage output proportional to the external air temperature.

The response to temperature increases of the standard temperature detector (part no: 55000-400IMC) enables the detector to be utilised as an EN54 Grade 2 heat detector.

To provide a device for use in ambient temperatures of up to 55°C, a high temperature detector (part no: 55000-401IMC) is also available. This has similar characteristics to the standard temperature detector at 25°C but reaches a 55 count (alarm) at 90°C.



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## Technical Data

### Standard temperature detector Detector Part No 55000-400 IMC

Specifications are typical and given at 23°C and 50% relative humidity unless stated.

**Communication protocol:** Apollo XP95 pulse 5-9V

**Detector Type:** Fixed Temperature Heat Detector (software algorithm may be used for Grade 1 response)

**Detector Principle:** Linear approximation over temperature range 25°C to 90°C

**Sensor:** Single NTC Thermistor

**Sampling Frequency:** Continuous

**Supply Wiring:** Two wire supply, polarity insensitive

#### Terminal Functions:

- L1&L2 supply in and out connections (polarity insensitive)
- +R remote indicator positive connection (internal 2.2k $\Omega$  resistance to supply +ve)
- R remote indicator negative connection (internal 2.2k $\Omega$  resistance to supply - ve)

**Supply Voltage:** 17 to 28 Volts dc

**Modulation Voltage at Detector:** 5 to 9 Volts peak to peak

**Quiescent Current:** 250 $\mu$ A average, 500 $\mu$ A peak

**Power-up Surge Current:** 1mA

**Duration of Power-up Surge Current:** 0.3 seconds

**Maximum Power-up Time:** 4 secs

**Storage Temp:** -30°C to +80°C

**Operating Temp:** -20°C to +70°C

**Analogue Value at 25°C** 25 $\pm$  5 counts

**Alarm Level 55 Counts:** 55°C

**Alarm Indicator:** Red light emitting diode (LED)

**Alarm LED Current:** 2mA

**Remote LED Current:** 4mA at 5V (measured across remote load)

**Type Code:** (210 43) 110 00

**Sensitivity:** 25°C to 90°C: 1°C/Count. -20°C returns 8 counts

**Guaranteed Temp. Range (No condensation or icing):** -20°C to +70°C

**Humidity (No condensation):** 0% to 95% relative humidity

**Wind Speed:** Unaffected in fixed temperature use

**Atmospheric Pressure:** Unaffected

**Vibration, Impact & Shock:** To EN54 Pt 5 2001 (BS5445 Pt 5 2001)

**IP Rating:** 53

**Dimensions:** (diameter x height)

Detector: 100mm x 42mm  
Detector in Base: 100mm x 50mm  
**Weights:** Detector: 105g; Detector in Base: 157g

**Materials:** Detector Housing: White polycarbonate V-0 rated to UL 94; Terminals: Stainless Steel

### High Temperature Detector Detector Part No: 55000-401 IMC

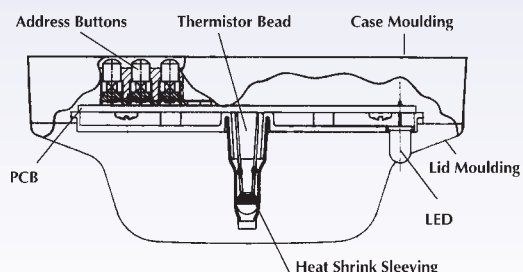
*Specifications are the same as those for the standard temperature detector described above, apart from the following points:*

**Detector Type:** Fixed Temperature

**Detector Principles:** Linear approximation designed to give 25 counts at 25°C and 55 counts at 90°C

**Guaranteed Temp. Range (No condensation or icing):** -20°C to +120°C

**Sensitivity:** 25°C to 90°C: 2-17°C / Count -20°C returns 20 counts



Sectional view - Temperature (Heat) Detector

# MULTISENSOR DETECTOR XPERT CARD ADDRESSED



Part Number 55000-885IMC

## DEVICE RESPONSE

**Type:** Overheating/thermal combustion  
**Response:** Very good

**Type:** Flaming with high heat output  
**Response:** Very good

**Type:** Smouldering/glowing combustion  
**Response:** Good

**Type:** Flaming combustion  
**Response:** Good

**Type:** Flaming - clean burning  
**Response:** Moderate/good

## Multisensor Detector, XPERT style, 55000-885IMC

The Context Plus XP95 multisensor detector contains an optical smoke sensor and a thermistor temperature sensor whose outputs are combined to give the final analogue value.

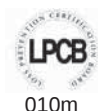
The multisensor construction is similar to that of the optical detector but uses a different lid and optical mouldings to accommodate the thermistor temperature sensor. The sectional view (below) shows the arrangement of the optical chamber and thermistor.

The signals from the optical smoke sensing element and the temperature sensor are independent, and represent the smoke level and the air temperature respectively in the vicinity of the detector. The detector's microcontroller processes the two signals. The temperature signal processing extracts only rate of rise information for combination with the optical signal. The detector will not respond to a slow temperature increase - even if the temperature reaches a high level. A large sudden change in temperature can, however, cause an alarm without the presence of smoke, if sustained for 20 seconds.

The processing algorithms in the multisensor incorporate drift compensation. The control panel must not have a drift compensation algorithm enabled.

The sensitivity of the detector is considered the optimum for most general applications since it offers good response to both smouldering and flaming fires.

Note: In situ testing of the multisensor should be carried out as for smoke detectors.



## Technical Data

Specifications are typical and given at 23°C and 50% relative humidity unless stated.

**Communication protocol:** Apollo XP95 pulse 5-9V

**Detector type/principle:**

**Smoke:** Photoelectric detection of light scattered by smoke particles

**Heat:** Temperature sensitive resistance

**Type code:**

Bits: (2 1 0 4 3) 1 0 1 1 1

**Supply wiring:** Two-wire supply, polarity insensitive

**Terminal functions:** L1&L2 supply in and out connections (polarity insensitive)

+R remote indicator positive connection (internal 2.2kΩ resistance to positive remote indicator negative connection)

-R remote indicator negative connection (internal 2.2kΩ resistance to negative)

**Operating voltage:** 17-28V DC

**Communications protocol:** 5-9V peak to peak

**Quiescent current:** 500μA average 750μA peak

**Power-up surge current:** 1mA

**Maximum power-up time:** 10s

**Alarm LED current:** 3.5mA

**Remote LED current:** 4mA at 5V (measured across remote load)

**Clean air analogue value:** 23 +4/-0

**Alarm level analogue value:** 55

**Alarm indicator:** 2 colourless Light Emitting Diodes (LEDs); illuminated

red in alarm, optional remote LED

**Temperature range:**

Max. continuous operating: +60°C

Min. continuous operating: 0°C

Min. operating (no condensation / icing): -20°C

**Storage:** -30°C to +80°C

**Humidity (No condensation):** 0 to 95% relative humidity

**Effect of temperature on optical detector:** Less than 15% change in sensitivity over rated range. Slow changes in ambient conditions will automatically be compensated and will not affect sensitivity

**Effect of atmospheric pressure on optical sensor:** None

**Effect of wind on optical sensor:** None

**Vibration, Impact and Shock:** To prEN54-7

**IP rating:** 43

**Dimensions:** 100mm diameter; 50mm height; 58mm (in base)

**Weight:** Detector: 105g; Detector in base: 160g

**Materials:** Housing: White polycarbonate V-0 rated to UL94; Terminals: Nickel plated s/steel

**Smoke element only:**

**Chamber configuration:**

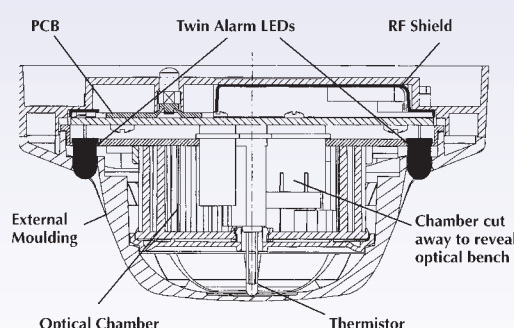
Horizontal optical bench housing infrared emitter and sensor, arranged radially to detect forward scattered light

**Sensor:** Silicon PIN photo-diode

**Emitter:** GaAlAs infra-red light emitting diode

**Sampling frequency:** 1 per sec

**WARNING:** If the control panel incorporates a drift compensation algorithm, this should be disabled when polling the Context Plus Multisensor detector.



Sectional view - Multisensor Detector

# XPert CARD MOUNTING BASES & ISOLATORS

**Context**  
Plus



Part Number 45681-210IMC



Part Number 45681-321IMC  
or 45681-284IMC



BF318 Remote LED Indicator

## Intelligent Mounting Base, XPert style, 45681-210IMC

Accepts all Context Plus Xpert card style smoke and heat detectors. It is a zero insertion force base with dual finger receptacles of stainless steel into which the detector terminals slide. Cable connections of up to 2.5mm diameter are made via captive cable clamps.

Includes four double terminals (L1 = - line IN and OUT; L2 = + line IN and OUT; +R = remote LED positive supply; -R = remote LED negative supply) and one isolated single terminal that can be used to provide continuity of an earth or shield.

XPert cards, are supplied with all bases. Consult the coding guide to determine which pips are to be removed. Pre-printed and pre-punched address cards that save time and increase accuracy during commissioning are available in sets (part number: 45682-127).

The base has a 'one way only' fit and detectors can be locked into the base by a grub screw with the aid of a 1.5mm hexagonal driver.

## 20D Isolating Base, XPert style, 45681-321IMC or 45681-284IMC

The Context Plus XP95 20D isolating base senses and isolates short circuit faults on loops and spurs. The base is loop powered, polarity sensitive and accepts the XPert card to set the associated device address.



In short circuit conditions, the integral yellow LED is illuminated. The detector associated with the base remains active under short circuit conditions. Power and signals to the affected section are restored automatically when the fault is cleared. Under normal operating conditions, a low impedance is present between the - IN and - OUT terminals of the base, so that power and signals pass to the next base in the line.

If a short circuit or abnormally low impedance occurs, the fall in voltage is sensed and the base isolates the negative supply in the direction of the fault.

In applications where it is not necessary to use an isolating base for each detector, up to twenty devices (detectors and interfaces) may be installed between isolating bases, provided that their total switch-on surge current does not exceed 20mA.

Circuits may include spurs, which should be connected between the spare -OUT terminal and the base L1 terminal. Spurs connected in this way appear directly across the loop on the output side of the isolating base. Short-circuit faults on the spur therefore short circuit the loop and vice versa. The effect of such short circuits must be taken into account in the system design and may require the use of extra isolating bases.

## Technical Data

Device Part No: 45681-321IMC or 45681-284IMC  
Maximum Loop Operating Voltage: 28V DC plus 9V protocol pulses  
Minimum Normal Loop Operating Voltage: 17V DC  
Power-up time: >10ms  
Isolation time, 2Ω load at 28V: 20μs  
Isolation Voltage: 14V  
Isolation Indicator: Yellow LED, lit continually in isolation condition  
Current Consumption at 18V: 23μA  
Current Consumption at 28V: 43μA

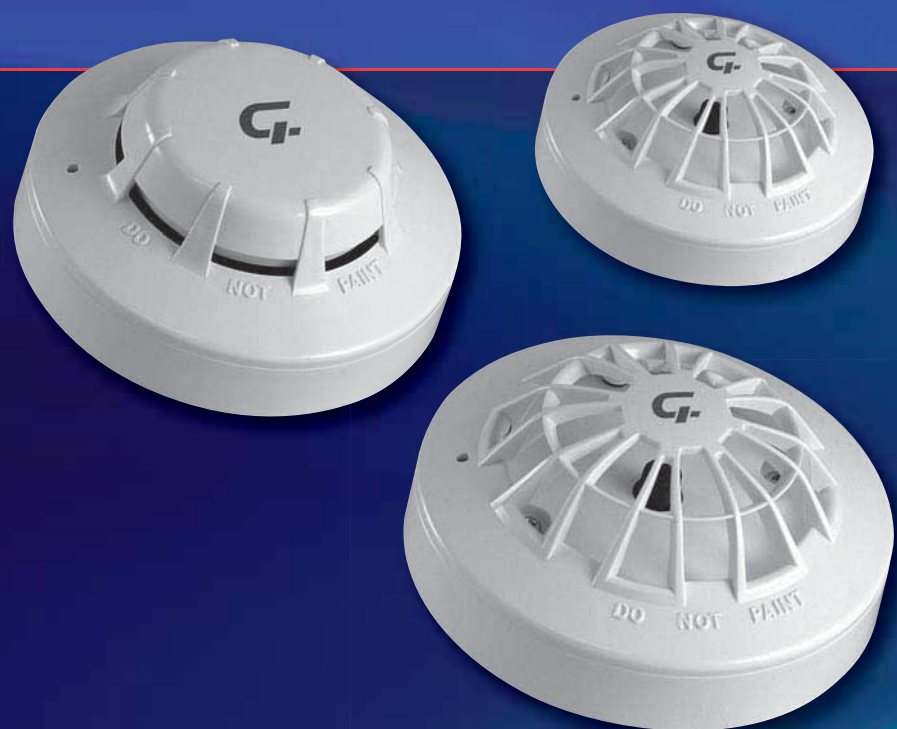
Current Consumption at 18V & adjacent sector isolated: 4mA  
Maximum Line Current  
Non-isolating continuous: 1.0A;  
Transition into isolation: 3.0A  
On Resistance: <0.2Ω  
Device Reset Resistance: 300Ω  
Operating Temperature: -20°C to +60°C  
Storage Temperature: -30°C to +80°C  
Relative Humidity (no condensation/icing): 0% to 95%  
Dimensions: 100mm (diam) x 24mm (H); Weight: 100g

## BF318 Remote LED Indicator

The BF318 is a high quality LED indicator specifically designed for use in fire alarm systems. It incorporates a high-intensity wide-angle red LED which is clearly visible from the front of the plate when active. Its primary use is to indicate the activation of hidden or out-of-sight fire detectors. The front label includes a white 'write on' panel allowing installers to add their own personalised text such as equipment locations. The unit will fit on 16mm deep flush or surface mount back boxes. If connecting the BF318 to a smoke or heat detector, always refer to the detector manufacturers' instructions prior to installation to verify the connections. As the detector head's outputs will already be current limited, to ensure maximum brightness and visibility they should be connected directly to the Remote LED via its 'OV' and 'LED only' terminals.

### TECHNICAL SPECIFICATION

Current rating using 'OV' & 'LED only' terminals: This is dependent on the type/make of detector used.  
Current rating using 'OV' & '+30V Max' terminals: 10mA @ 30V d.c. (Max); 1.3mA @ 6V d.c. (Min).



## **CONTEXT PLUS DIL SWITCH ADDRESSED DETECTORS & BASES**

Our DIL switch addressed range of optical and heat (temperature) detectors are manufactured in the UK and approved to the relevant standards by the LPCB. Their addresses are set using a DIL switch located on their underside using a small screwdriver or similar tool (see right).

The address should be written on the label for reference purposes and then sealed. The detectors use the same protocol as our ContextPlus XPERT card detectors (Apollo XP95 protocol, pulses 5-9V) and are fully compatible with our entire range of ContextPlus addressable control equipment.



# OPTICAL SMOKE DETECTOR DIL SWITCH ADDRESSED

**Context**  
Plus


Part Number 55000-665IMC

## DEVICE RESPONSE

**Type:** Overheating/thermal combustion  
**Response:** Very good

**Type:** Smouldering/glowing combustion  
**Response:** Good

**Type:** Flaming combustion  
**Response:** Good

**Type:** Flaming with high heat output  
**Response:** Good

**Type:** Flaming - clean burning  
**Response:** Very poor

## Optical Smoke Detector, DIL style, 55000-665IMC

Our DIL Switch Addressed (DSA) Context Plus optical detector has a moulded self extinguishing white polycarbonate case designed to allow free entry of smoke while minimising the effects of dust contamination. Stainless steel wiper contacts connect the detector to the terminals in the mounting base. Within the case is a printed circuit board which on one side has the light proof labyrinth chamber with integral gauze surrounding the optical measuring system. The other side has the address capture, signal processing and communications electronics. An infra-red light emitting diode (IR LED) within the optical chamber is arranged at an obtuse angle to a photodiode. The photo-diode has an integral daylight-blocking filter. The IR LED emits a burst of collimated light every second. In clear air the photo-diode receives no light directly from the IR LED. When smoke enters the chamber it scatters light from the IR LED onto the photodiode in an amount related to the smoke characteristics and density. The photodiode signal is processed by the optical ASIC and passed to the A/D converter on the communications ASIC ready for transmission when the device is interrogated.

The address of the DSA Context Plus detectors is set using the DIL switch located on the underside of the device. All segments are set to 0 (ON) or 1 (OFF), using a small screwdriver or similar tool. The address should be written on the label and the rear of the detector sealed.



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## Technical Data

**Detector Part No 55000-665IMC**  
**Base Part No: 45681-200**

Specifications are typical and given at 23°C and 50% relative humidity unless stated.

**Communication protocol:** Apollo XP95 pulse 5-9V

**Address range:** 1 to 126

**Detector Type:** Products of combustion (smoke) detector

**Detection Principles:** Photo-electric detection of light scattered in a forward direction by smoke particles

**Chamber Configuration:** Horizontal optical bench housing an infrared emitter and sensor arranged radially to detect scattered light

**Sensor:** Silicon PIN photo-diode

**Emitter:** GaAlAs Infra-red light emitting diode

**Sampling Frequency:** 1 second

**Supply Wiring:** Two wire supply, polarity insensitive

### Terminal Functions:

Supply positive and negative in and out connections (polarity sensitive). Remote indicator connection to LED driver base

**Supply Voltage:** 17 to 28 Volts dc

**Quiescent Current:** 340µA

**Duration of Power-up Surge Current:** 1 second

### Maximum Power-up Time:

4 seconds for communications (measured from application of power and protocol) 10 seconds to

exceed 10 counts 35 seconds for stable clean air value

**Storage Temp:** -30°C to +80°C

**Operating Temp:** -20°C to +60°C

**Alarm Level Analogue Value:** 55

**Clean Air Analogue Value:** 25±7 counts

**Alarm Indicator:** Red Light Emitting Diode (LED)

**Alarm LED Current:** 2mA

**Remote LED Current:** 4mA at 5V (measured across remote load)

**Type Code:** (210 43) 101 00

**Sensitivity:** Nominal threshold of 2.4% light grey smoke obscuration per metre

**Humidity (No condensation or icing):** 0% to 95% relative humidity

**Wind Speed:** Unaffected by wind

**Atmospheric Pressure:** unaffected

**Vibration, Impact & Shock:** To EN54-7:2001 CE marked.

**IP Rating:** 43

**Dimensions:** (diameter x height)

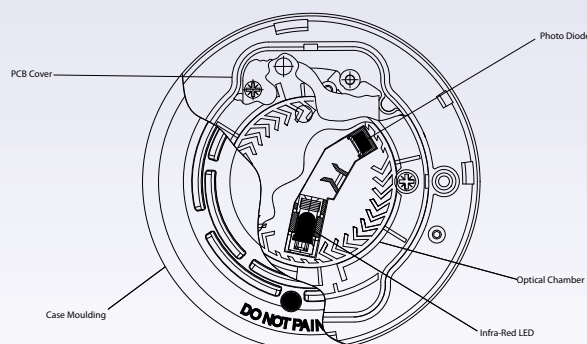
Detector: 100mm x 39mm

Detector in Base:

100mm x 47mm

**Weights:** Detector: 100g Detector in Base: 157g

**Materials:** Detector Housing: White polycarbonate V-0 rated to UL 94 Terminals: Stainless Steel



Top section view - Optical Smoke Detector

# TEMPERATURE DETECTOR DIL SWITCH ADDRESSED



Part Number 55000-465IMC  
Standard Temperature Detector



Part Number 55000-475IMC  
High Temperature Detector

## DEVICE RESPONSE

**Type:** Flaming with high heat output  
**Response:** Moderate/good

**Type:** Flaming - clean burning  
**Response:** Moderate/good

**Type:** Flaming combustion  
**Response:** Poor

**Type:** Overheating/thermal combustion  
**Response:** Very poor

**Type:** Smouldering/glowing combustion  
**Response:** Very poor

**Standard Temperature Detector, DIL style, 55000-465IMC**  
**High Temperature Detector, DIL style, 55000-475IMC**



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Our DIL Switch Addressed (DSA) Context Plus temperature detectors have a low air flow resistance case made of self-extinguishing white polycarbonate. The devices monitor temperature by using a single thermistor network which provides a voltage output proportional to the external air temperature.

The response to heat increases of the standard temperature detector enables the detector to be utilised as an EN54-5:2000 A2S heat detector, which is equivalent to an EN54-5:1984 Grade 2 detector. A high temperature detector, which has similar characteristics at 25°C but reaches a 55 count at 90°C, is available for use in normal ambient temperatures of up to 55°C. This detector meets the requirements for a CS detector in EN54-5:2000.

The address of DSA Context Plus temperature detectors is set using the DIL switch located on the underside of the device. All segments are set to 0 (ON) or 1 (OFF), using a small screwdriver or similar tool. The address should be written on the label and the rear of the detector sealed.

## Technical Data

**Standard temperature detector**  
**Detector Part No 55000-465IMC**  
**Base Part No 45681-200**

Specifications are typical and given at 23°C and 50% relative humidity unless stated.

**Communication protocol:** Apollo XP95 pulse 5-9V

**Address range:** 1 to 126

**Detector Type:** Fixed Temperature Heat

**Detector Principle:** Temperature sensitive resistance

**Sensor:** Single NTC Thermistor

**Sampling Frequency:** Continuous

**Supply Wiring:** Two wire supply, polarity insensitive

**Terminal Functions:**

Supply positive and negative in and out connections (polarity sensitive); remote indicator connection to LED driver base

**Supply Voltage:** 17 to 28 Volts dc

**Quiescent Current:** 300µA @ 24V

**Power-up Surge Current:** 1mA

**Duration of Power-up Surge Current:** 1 second

**Maximum Power-up Time:** 4 secs

**Storage Temp:** -30°C to +80°C

**Min Continuous Operating Temperature:** -0°C

**Application Temperature:** Class EN54-5:2001 A2S typical 25°C, max 50°C

**Static Response Temperature °C:** Min 54 Type 58 Max 62

**Alarm Level Analogue Value:** 55

**Alarm Indicator:** Red Light Emitting Diode (LED)

**Alarm LED Current:** 2mA

**Type Code:** (210 43) 110 00

**Sensitivity:** 25°C to 90°C:  
1°C/Count ; -20°C returns 8 counts

**Humidity:** (No condensation or icing) 0% to 95% relative humidity

**Wind Speed:** Unaffected

**Atmospheric Pressure:** Unaffected

**Vibration, Impact & Shock:** To EN54-5:2000 marked.

**IP Rating:** 53

**Dimensions:** (diameter x height)

Detector: 100mm x 39mm

Detector in Base: 100mm x 47mm

**Weights:** Detector: 100g; Detector in Base: 157g

**Materials:** Detector Housing:

White polycarbonate V-0 rated to UL 94; Terminals: Stainless Steel

**High Temperature Detector**  
**Detector Part No: 55000-475IMC**  
**Base Part No 45681-200**

**Specifications are the same as those for the standard temperature detector described above, apart from the following points:**

**Detector Principle:** Temperature sensitive resistance. Linear approximation designed to give 26 counts at 25°C and 55 counts at 90°C

**Type Code:** (210 43) 110 01

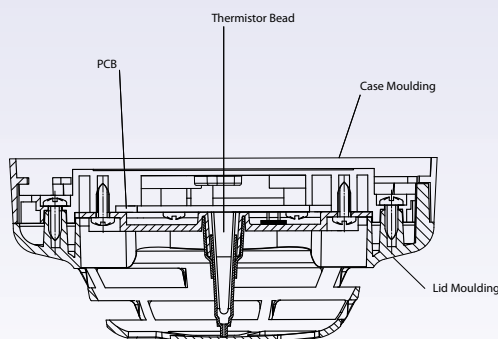
**Application Temperature:**

Class EN54-5:2001 CS typical 55°C, max 80°C

**Static Response Temperature °C:** Min 84 Type 90 Max 96

**Sensitivity:** 25°C to 90°C:

2-17°C/Count -20°C returns 20 counts



Sectional view - Temperature (Heat) Detector

# DIL SWITCH MOUNTING BASES & ISOLATORS

**Context**  
Plus



Part Number 45681-200IMC



Part Number 45681-505IMC



Part Number 45681-504IMC



Part Number 55000-720

## Context Plus Common Base, 45681-200IMC

The Context Plus Common Base is designed to accept DIL switch addressed smoke Optical and Temperature detectors. Polarity must be observed as indicated. A self adhesive label is provided with each base to mark the detector address. This base will not support remote LED indication.

## Context Plus Negative Switching Isolating Base, 45681-505IMC

Designed to sense and isolate short-circuits on Context Plus loops, the Context Plus Negative Switching Isolating base can be used in place of standard bases. Under normal operating conditions the isolating circuit provides a low resistance of 0.2 ohm in either direction. If the loop voltage falls to  $14 \pm 0.4V$  the isolator will switch from the closed state to the open state in order to isolate the loop 'in' and 'out' lines. The isolated section is tested every four seconds and is automatically re- connected when the load resistance is 175 or greater. Up to 20 detectors or the equivalent load may be connected between two isolating circuits. Interfaces and sounders are counted as one detector for every milliampere of switch-on surge current. Isolating bases are loop powered and polarity sensitive and can be damaged if connected in reverse polarity. It is important to note the polarity is indicated at the wiring terminal. All wiring terminals will accept solid or stranded cables up to 2.5mm<sup>2</sup>. A Yellow LED illuminates if a short-circuit is detected either side of the isolator. Complies with EN54-17 (2005). This base will not support remote LED indication



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### Technical Data

Negative switching Isolator Base  
Base Part No 45681-505IMC

Min. loop operating voltage in normal conditions: 17V dc

Maximum loop operating voltage: 28V dc

Minimum protocol pulse: 5V

Power-up time: <10ms

Operating current (quiescent): 23uA @ 18V; 35uA @ 24V; 43uA @ 28V

Operating current (isolated): 4mA @ 18V; 5.4mA @ 24V; 6.4mA @ 28V;

Maximum loop current: 1A continuous; 3A short-circuit switching

Maximum load: 20 XP95 detectors or equivalent

Maximum 'on' resistance: 0.2 Ohm

Isolation indication: yellow LED

Isolation voltage (isolator open):  $14 \pm 0.4V$

Reconnection voltage:  $15.8 \pm 0.4V$

Reconnection resistance: 75

Isolation time: 50 s

Operating humidity: 0-95%RH non-condensing

Operating temperature: -20 to +60°C

Storage temperature: -30 to +80°C

Design environment: indoor use only

## Context Plus Addressable Relay Base, 45681-504IMC

Our Addressable Relay Base features a set of volt-free, form C (change-over) contacts controlled and powered by the remote output of a detector. Low power operation and high maximum operating frequency are achieved by using a latching relay coupled to an efficient drive circuit. **Warning:** This base must not be connected to the mains supply. The maximum voltage applied to the relay contact terminals must not exceed the Extra Low Voltage limits of 50V ac and 75V dc. It is important to recognise that the relay cannot be controlled unless the base is fitted with a fully functional Context Plus DIL switch addressed detector. Removal of the detector or disconnection of its supply will cause an energised relay to reset. Under no circumstances connect an LED or any other device to the base terminals marked -R r.

### Technical Data

Addressable Relay Base: Part No 45681-504IMC

Environment: Indoor, non-icing, non-condensing

Temp Range: -30 to +70°C storage; -20 to +70°C operating

Humidity: 0 TO 95% RH

Base Material: White Polycarbonate V-O to UL94

Supply Voltage: 17 to 28V dc (polarised)

Supply Current: <1.0mA

RELAY RATINGS

Max switching power: 30W, 50VA

Max switching current: 1A (resistive load)

Max switching voltage: 50V AC, 75V dc

Drop out voltage: <14V dc

## Stand alone Isolator, 55000-720; Isolator Base, 45681-211

Designed to be placed at intervals on the loop to ensure that, in the case of a short-circuit, only the section between the isolators is affected. When the short-circuit is removed, the isolators automatically restore power and data to the isolated section. The equivalent of up to 20 smoke detectors may be installed between isolators. 20mA start up current.



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### Technical Data

Device Part No: 55000-720

Min. loop operating voltage in normal conditions: 17V DC

Maximum loop operating voltage: 28V DC

Minimum protocol pulse: 5V

Power-up time: <10ms

Quiescent current: 18V = 23uA; 24V = 35uA; 28V = 43uA

Current in isolated state: 18V = 4.0mA; 24V = 5.4mA; 28V = 6.4mA

Max. loop current: 1A continuous; 3A short-circuit switching

Max. load : 20 Context Plus XP95 detectors or equivalent

Maximum 'on' resistance: 0.2Ω

Isolation indication: Yellow LED

Isolation voltage (isolator opens):  $14 \pm 0.4V$

Reconnection voltage:  $15.8 \pm 0.4V$

Reconnection resistance: 175Ω

Isolation time: 50µs

Operating humidity: 0-95%RH non-condensing

Operating temperature: -20 to +60°C

Storage temperature: -30 to +80°C

# MANUAL CALL POINTS



Part Number 55100-908IMC



Part Number 58100-951

## Manual Call Point with isolator, 55100-908IMC

The Context Plus XP95 Manual Call Point is intended for indoor applications and incorporates a short circuit isolator which will ensure its operation in the event of a short circuit fault on the loop.

The Call Point is surface mountable and has an easily resettable element rather than a break glass. It also features a unique 'Plug and Play' installation concept designed specifically to reduce installation time. The call point utilises a terminal block, where all installation cabling is terminated.

Its address is set at the commissioning stage by means of a seven-segment DIL switch. A single bi-coloured alarm LED is provided which is controlled independently of the call point by the control panel. The LED is illuminated red when the call point has been activated and amber/yellow to indicate a short circuit.

Once activated, the Call Point can be reset by inserting the test key into the bottom of the unit until the key clicks into position, next remove the test key and push the front cover up until it clicks home.



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## Waterproof Manual Call Point with isolator, 58100-951

The Context Plus Waterproof Manual Call Point has an IP67 rating and is intended for outdoor applications or areas where water and dirt are a problem. It incorporates a short circuit isolator which will ensure its operation in the event of a short circuit fault on the loop.

The Call Point is surface mountable and has an easily resettable element rather than a break glass. It also features a unique 'Plug and Play' installation concept designed specifically to reduce installation time. The call point utilises a terminal block, where all installation cabling is terminated.

Its address is set at the commissioning stage by means of a seven-segment DIL switch. A single bi-coloured alarm LED is provided which is controlled independently of the call point by the control panel. The LED is illuminated red when the call point has been activated and amber/yellow to indicate a short circuit.

Once activated, the Call Point can be reset by inserting the test key into the bottom of the unit until the key clicks into position, next remove the test key and push the front cover up until it clicks home.

A version without an isolator (58100-950) is also available.



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## Technical Data

**Communication protocol:** Apollo XP95 pulse 5-9V

**Call Point Type:** Deformable element

**Call Point Principle:** Operation of a switch

**Alarm Indicator:** Red Light Emitting Diode (LED)

**Fault Indicator:** Amber/yellow Light Emitting Diode (LED)

**Type Code:**  
(2 1 0 4 3) 1 1 1 1 1

**Supply Wiring:** Two-wire supply, polarity insensitive

**Loop connections L1/L2:** Terminal block

**Operating Voltage:** 17V-28V dc

**Communication Protocol:** 5V-9V peak to peak

**Quiescent Current:** 100µA

**Power-up Surge Current:** 1mA

**Maximum Power-up Time:** 1 sec

**Alarm Current, LED illuminated:** 4mA

**Normal Analogue Value:** 16

**Alarm State Value:** 64

**Temperature Range:**

Max. continuous operating: +60°C

Min. continuous operating: 0°C

Min. operating (no condensation/icing): -20°C

Storage: -30°C to +80°C

**Humidity: (No condensation)**  
0 to 95% relative humidity

**Compliance standard:**  
EN54-11:2001 and EN54-17:2005 (isolated version)

EMC directive 2004/108/EC

**IP Rating of indoor version:** 24.

**IP Rating of waterproof version:** 67

**Dimensions of indoor version:**  
93mm x 89mm x 59.9mm

**Dimensions of waterproof version:**  
93mm x 97.5mm x 71mm. Cable gland size = M20

**Materials:** Housing: Red self-coloured Polycarbonate/ABS.

# SPECIALIST DETECTORS

**Context**  
Plus



Part Number 55000-280



Part Number 55000-020



Part Number 55000-022

Part Number 55000-023

Part Number 55000-024

## Intelligent Dual IR² Flame Detector, 55000-280

Designed for use in areas where flaming fires may be expected. The detector has two sensors which respond to different IR wavelengths to discriminate between flames and spurious sources of radiation. Applications include aircraft hangars, coal handling and paper manufacturing plants and woodworking environments.



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- Sensitive to flickering IR radiation
- Detects through films of oil, dust, water and ice
- Responds to flickering flames, including those invisible to the naked eye
- Remote optical self-test function
- 90° field of view and up to 40m coverage
- Optional mounting bracket (two-axis adjustable) and weather shield also available

Intelligent IR2 Flame Detector, order code 55000-280

Intelligent Flameproof IR2, order code 55000-295

Flame Detector Bracket, order code 29600-203

Flame Detector Weather Shield, order code 29600-206

## Intelligent Triple IR³ Flame Detector, 55000-020

Designed to protect areas where open flaming fires may be expected. It is sensitive to low-frequency, flickering infra-red radiation emitted by flames during combustion.



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- Loop-powered
- Sensitive to flickering IR radiation
- Detects through films of oil, dust, water and ice
- Responds to flickering flames, including those invisible to the naked eye
- False alarms due to lighting or flickering sunlight are minimised
- Optional mounting bracket (two-axis adjustable) and weather shield also available

Intelligent IR3 Flame Detector, order code 55000-020

Intelligent Flameproof IR3 Flame, order code 55000-021

Flame Detector Bracket, order code 29600-203

Flame Detector Weather Shield, order code 29600-206

## Intelligent Base Mounted UV Flame Detector, 55000-022

Designed to protect internal areas where open fires may be expected. The detector has a single UV sensor with a narrow spectral response in order to discriminate between flames and most spurious sources of radiation. Complies with EN54-10 (2002).



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- Responds to stationary flames with no flicker
- Sensitive to UV radiation emitted by flames during combustion
- Compact flame detector which can fit into Context Plus XP95 bases

Intelligent Base Mounted UV Flame Detector, order code 55000-022

Base Mounted Flame Detector Bracket, order code 29600-458

## Intelligent Base Mounted UV IR² Flame Detector, 55000-023

Designed to protect areas where open flaming fires may be expected. The detector has a UV and dual IR sensors responding to different wavelengths in order to discriminate between flames and spurious sources of radiation. Complies with EN54-10 (2002).



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- Responds to stationary flames with no flicker
- Sensitive to UV and low-frequency flickering IR radiation emitted by flames during combustion
- Compact flame detector which can fit into Context Plus XP95 bases
- False alarms due to electrical discharges from lightning or arc welding, etc., are minimised

Intelligent Base Mounted UV IR2 Flame Detector 55000-023

Base Mounted Flame Detector Bracket 29600-458

## Intelligent Base Mounted IR³ Flame Detector, 55000-024

Designed to protect areas where open flaming fires may be expected. The detector has three IR sensors that respond to different IR wavelengths in order to discriminate between flames and spurious sources of radiation. Complies with EN54-10 (2002).



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- Responds to stationary flames with no flicker
- Sensitive to low-frequency flickering IR radiation emitted by flames during combustion.
- Compact flame detector which can fit into Context Plus XP95 bases
- False alarms due to factors such as flickering sunlight are avoided by a combination of filters and signal processing techniques.
- EN54-10 (2002) compliant

Intelligent Base Mounted IR3 Flame Detector 55000-024

Base Mounted Flame Detector Bracket 29600-458

## SPECIALIST DETECTORS



Part Number 55000-268



Part Number 53546-022



Part Number 58000-300

### Intelligent Reflective Beam Detector, 55000-268

The Intelligent Reflective Beam Detector differs from a traditional beam detector in that it is a single unit which houses a transmitter, a receiver and the control electronics. The beam detector is available in two versions: a single reflector model for distances of 5-50m and a four-reflector unit for distances of 50-100m.



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- Loop-powered
- Incorporates a short-circuit isolator
- Automatic drift compensation
- Automatic reset following alarm or fault condition
- Surface/flush back box also available for easy first fix

Intelligent Reflective Beam Detector 5-50m 55000-268

Intelligent Reflective Beam Detector 50-100m 55000-273

Reflective Beam Detector Backbox 29600-241

### Intelligent Duct Smoke Detector, 53546-022

Provides early detection of smoke in the air moving through heating and ventilation (HVAC) ducts in commercial and industrial premises. Its purpose is to prevent the re-circulation of smoke from an area on fire to areas unaffected by the fire.

- Operates in air speeds of 0.5m/s to 20m/s
- Transparent cover to view detector head LED
- Integral smoke test port

Intelligent Duct Smoke Detector 53546-022

300-750mm Extension Tube, 53541-170

750-1500mm Extension Tube, 53541-171

1500-3000mm Extension Tube, 53541-172

### Carbon Monoxide Detector, 58000-300

Our carbon monoxide (CO) detector is good at detecting deep-seated fires. Please note however that CO detectors do not detect smoke particles or heat and are not designed as universal replacements for smoke detectors.

- Enhanced detection capability
- Early response to hot fires
- Ideal for smoldering fires
- Less susceptible to false alarms caused by steam than smoke alarms
- Five response modes

# SOUNDERS, BEACONS & SOUNDER/BEACONS



Part Number BF330CTB  
(pictured with BF330CTLIDW cap)

## Addressable Sounder Beacon Base, BF330CTB

An attractively-designed, highly efficient and easy to install addressable sounder/beacon base offering low current consumption, high sound output, ultra-bright light, 7 volume levels and 15 selectable tone pairs.

- Includes a built-in flashing multi-LED beacon and short-circuit loop isolator
- DIL switch addressable
- Designed for use as part of a sounder/beacon/detector base combination - requires a separately available smoke/heat detector and detector base (spur wires provided)
- Can also be used as a stand-alone unit - requires a separately available lockable white cap, part no. BF330CTLIDW or red cap, part no. BF330CTLIDR)
- 92dB(A) sound output @ 1m
- 700uA quiescent current
- 8mA typical alarm current @24V (beacon lit and sounder at max. volume)
- 15 selectable industry-standard tone pairs and 7 volume levels (selectable at panel)
- Group addressing facility allows multiple sounders to be operated simultaneously (programmable at panel)
- Beacon and Sounder can be set to operate independently of each other
- Large cable entry hole (located away from fixing points) for ease of installation
- Fixing points arranged to fit all popular electrical accessory boxes and conduit
- Visual indication of short circuit faults via a yellow LED (illuminates if a short circuit fault appears between the sounder/beacon and a neighbouring device)
- IP21D rated (with cap or detector fitted)
- Designed to comply with EN54-3 (2001) and EN54-23 (2010)
- Suitable for use with all Context Plus detector/base combinations



Part Number BF330CT  
(pictured with BF330CTLIDW cap)

## Addressable Base Sounder, BF330CT

An attractively-designed base sounder offering low current consumption, high sound output, 7 volume levels and 15 selectable tone pairs.

- Includes a short-circuit loop isolator
- DIL switch addressable
- Designed for use as part of a sounder/detector base combination - requires a separately available smoke/heat detector and detector base (spur wires provided)
- Can also be used as a stand-alone unit - requires a separately available lockable white cap, part no. BF330CTLIDW or red cap, part no. BF330CTLIDR)
- 92dB(A) sound output @ 1m
- 700uA quiescent current
- 5.5mA typical alarm current @24V
- 15 selectable industry-standard tone pairs and 7 volume levels (selectable at panel)
- Group addressing facility allows multiple sounders to be operated simultaneously (programmable at panel)
- Large cable entry hole (located away from fixing points) for ease of installation
- Fixing points arranged to fit all popular electrical accessory boxes and conduit
- Visual indication of short circuit faults via a yellow LED (illuminates if a short circuit fault appears between the sounder/beacon and a neighbouring device)
- IP21D rated (with cap or detector fitted)
- Designed to comply with EN54-3 (2001)
- Suitable for use with all Context Plus detector/base combinations

# SOUNDERS, BEACONS & SOUNDER/BEACONS



Part Number BF330CTSR (shallow)  
BF330CTDR (deep)



Part Number BF333CTSR (shallow)  
BF333CTDR (deep)



Part Number BF340CTSR (shallow)  
BF340CTDR (deep)

## Addressable Wall Sounder, shallow version, BF330CTSR (formerly BF330CASR)

## Addressable Wall Sounder, deep version, BF330CTDR (formerly BF330CADR)

An attractively-designed wall sounder offering low current consumption, high sound output, 7 volume levels and 15 selectable tone pairs.

- Includes a built-in short-circuit loop isolator
- DIP switch addressable
- Excellent lateral sound distribution
- 92dB(A) sound output @ 1m
- 700µA quiescent current
- 5.5mA typical alarm current @24V (sounder at max. volume)
- 15 selectable industry-standard tone pairs and 7 volume levels (selectable at panel)
- Group addressing facility allows multiple sounders to be operated simultaneously (programmable at panel)
- Locking system offers full compliance with BS5839 Part 1 2002 Clause 12.2.2
- IP43 rated shallow base has a wide access hole for cable entry; IP65 rated deep base allows wiring access through top and side
- Designed to comply with EN54-3 (2001)
- Dimensions: 94mm diameter x 83mm (BF330CTSR); 94mm diameter x 101mm (BF330CTDR)
- White versions also available

## Addressable Sounder/Beacon, shallow version, BF333CTSR (formerly BF333CASR)

## Addressable Sounder/Beacon, deep version, BF333CTDR (formerly BF333CADR)

An attractively-designed, highly efficient and easy to install addressable sounder/beacon base offering low current consumption, high sound output, ultra-bright light, 7 volume levels and 15 selectable tone pairs.

- Includes a built-in short-circuit loop isolator
- DIP switch addressable
- Excellent lateral sound distribution
- 92dB(A) sound output @ 1m
- 700µA quiescent current
- 8mA typical alarm current @24V (beacon lit and sounder at max. volume)
- 15 selectable industry-standard tone pairs and 7 volume levels (selectable at panel)
- Group addressing facility allows multiple sounders to be operated simultaneously (programmable at panel)
- Locking system offers full compliance with BS5839 Part 1 2002 Clause 12.2.2
- Beacon and Sounder can be set to operate independently of each other
- IP43 rated shallow base has a wide access hole for cable entry; IP65 rated deep base allows wiring access through top and side
- Designed to comply with EN54-3 (2001) and EN54-23 (2010)
- Dimensions: 94mm diameter x 89mm (BF333CTSR); 94mm diameter x 106mm (BF333CTDR)
- White versions also available

## Addressable Wall Beacon Only, shallow version, BF340CTSR (formerly BF340CASR)

## Addressable Wall Beacon Only, deep version, BF340CTDR (formerly BF340CADR)

Utilises the latest developments in surface mount LED technology to provide a cost-effective beacon that is big on visibility but low on current consumption.

- Includes a built-in short-circuit loop isolator
- Attractive low profile design
- DIP switch addressable
- 700µA quiescent current
- 3.5mA typical alarm current @24V
- Group addressing facility allows multiple sounders to be operated simultaneously (programmable at panel)
- Locking system offers full compliance with BS5839 Part 1 2002 Clause 12.2.2
- IP43 rated shallow and IP65 rated deep base versions available.
- Dimensions: 94mm diameter x 61mm (BF340CTSR); 94mm diameter x 78mm (BF340CTDR)
- Designed to comply with EN54-3 (2001) and EN54-23 (2010)

# SOUNDERS, BEACONS & SOUNDER/BEACONS

**Context**  
Plus



Part Number 55000-001

## Intelligent Open Area sounder, 55000-001

The Intelligent Open-Area Sounder is designed for use in open areas and includes the following features

- Loop-powered
- Self-test fault monitoring
- Choice of tones
- IP65 rated
- Group addressing and synchronisation of alarm
- Comes with an isolating base as standard
- Output is 100dB(A) at 90o
- Complies with EN54-3 (2001)



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Part Number 55000-009

## Intelligent Open Area beacon, red lens 55000-009

The Intelligent Open-Area Beacon is designed for use in situations where there is a risk that sounders will not be heard. It is weatherproof, can be used outside and includes the following features. A version with a clear lens is also available (55000-010)

- Loop-powered
- Self-test fault monitoring
- IP65 rated
- Group addressing and synchronisation of alarm
- Comes with an isolating base as standard
- Complies with EN54-3 (2001)



010ak



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Part Number 55000-005

## Intelligent Open Area sounder beacon, red lens, 55000-005

The Intelligent Open-Area Sounder Beacon is designed for use in open areas and includes the following features. A version with a clear lens is also available (55000-006)

- Loop-powered
- Gives two functions at one point
- Self-test fault monitoring
- Choice of tones
- IP65 rated
- Group addressing and synchronisation of alarm
- Comes with an isolating base as standard
- Complies with EN54-3 (2001)



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Part Number 45681-278

## Integrated Base Sounder, 45681-278

The Integrated Base Sounder comprises a base sounder with integral mounting base which is suitable for use only with our XPERT-card addressed detectors or as a stand-alone unit if using our 45681-292 cap. A version is also available with a built-in isolator (45681-277).

- Loop-powered
- Two tone ranges
- Synchronisation of Alert and Evacuate tones
- Integrated base
- Individual and group addressing
- Unique acoustic self-test
- Complies with EN54-3 (2001)



0832



Part Number 45681-276

## Ancillary Base Sounder, 45681-276

The Ancillary Base Sounder is a local-area sounder designed for indoor use. Suitable for use only with our XPERT-card addressed detectors.

- Guaranteed sound output of 85db(A) at 1 metre
- Current consumption only 3mA
- Loop powered
- Responds to signals from the associated detector - does not have an address of its own
- Adjustable volume control



0832

# SWITCH MONITORS



Part Number 55000-843IMC



Part Number 55000-760

## Switch Monitor with Isolator, 55000-843IMC

The Context Plus XP95 Switch Monitor is designed to monitor the state of one or more single pole, volt-free contacts connected on a single pair of cables and to report the status to Context Plus compatible control equipment.



### FEATURES

The Switch Monitor provides four input states to the control equipment: 'Normal', 'Fault', 'Pre-alarm' and 'Alarm'. The Switch Monitor has a red LED to indicate an alarm and two yellow LEDs to indicate a switch input wiring fault or a loop short-circuit wiring fault.

The Switch Monitor is fitted with a bi-directional short-circuit isolator and will be unaffected by a single short-circuit on either loop input or output.

### ELECTRICAL CONSIDERATIONS

The Switch Monitor is loop powered and operates at 17–28V DC with protocol voltage pulses of 5–9V. It is designed to accept a maximum line resistance of 50Ω. The end-of-line resistor required is 20kΩ.

### MECHANICAL CONSTRUCTION

The Switch Monitor is supplied with a back box for surface mounting and is intended for indoor use only.

Three LEDs, one red and two yellow, are visible through the front cover of the enclosure.

The red LED can be illuminated under CIE control in the event of an alarm being detected.

One yellow LED is illuminated in the event of a fault condition being detected in the monitoring circuit and cannot be controlled by the CIE.

The other LED is illuminated whenever the built-in isolator has sensed a short-circuit loop fault.

## Technical Data

Minimum loop operating voltage in normal conditions: 17V DC

Maximum loop operating voltage: 28V DC

Maximum current consumption at 24V:

Switch-on surge, max 150ms: 3.5mA

Quiescent, 20kΩ EOL fitted: 1.25mA

LED off, switch input closed: 1.5mA

LED on, switch input closed: 3.5mA

LED on, switch input s/c: 3.6mA

Maximum continuous current: 1A

Maximum switching current: 3A

On resistance: 0.2Ω

Switch input monitoring voltage: 9–11V DC

Maximum cable resistance: 50Ω

Operating temperature: –20°C to +70°C

Humidity (no condensation): 0–95%RH

Shock, vibration and impact: to GEI 1-052

IP rating: 54

Radiated and conducted RF emissions to: BS EN50081-1 & 2

Radiated and conducted RF immunity to: BS EN50130-4

Dimensions of switch Monitor (surface mount): 150 x 90 x 48mm

Weight: 240g

## Mini-Switch Monitor with isolator, 55000-760

Our new Context Plus Mini Switch Monitor is an interface within an entirely new housing which is ideal for use in areas where space is limited. Its compact design allows the unit to be fitted onto a standard 35mm DIN-Rail (using a twist-click motion) or to be mounted within an enclosure, for example a manual call point. It is designed to monitor the state of one or more single pole, volt-free contacts connected on a single pair of cables and to report the status to Context Plus compatible addressable control equipment. The unit includes three coloured status LEDs.



# INPUT/OUTPUT UNIT WITH ISOLATOR

**Context**  
Plus



Part Number 55000-847IMC

## Input/output unit with isolator, 55000-847IMC

The Context Plus XP95 input/output unit provides two voltage-free, single pole, change-over relay outputs, a single monitored switch input and an unmonitored, non-polarised opto-coupled input.

### FEATURES

Compliant with EN54-17 & 18 (2005), the Input/Output Unit supervises one or more normally-open switches connected to a single pair of cables.

It is set to return an analogue value of 4 in the event of an open or short-circuit fault and 16 during normal operation. The status of the inputs is reported by means of two input bits. The change-over contacts are operated by an output bit.

The Input/Output unit is fitted with a bi-directional short-circuit isolator and will be unaffected by loop short-circuits on either loop input or output.

### ELECTRICAL CONSIDERATIONS

The unit operates at 17-28V DC with protocol voltage pulses of 5-9V. No electrical supply greater than 50V AC rms or 75V DC should be connected to any terminal.

Designed for indoor use only it includes four LEDs, two red and two yellow, which are visible through the front cover of the enclosure. One red LED is illuminated to indicate that the relay is set. The second red LED is illuminated to indicate that the switch input is closed. One yellow LED is illuminated whenever a fault condition (open or short circuit) has been detected. The other LED is illuminated whenever the built-in isolator has sensed a short-circuit loop fault.

The enclosure is moulded from white self-extinguishing polycarbonate.



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## Technical Data

Minimum loop operating voltage in normal conditions: 17V DC

Maximum loop operating voltage: 28V DC

Max. current consumption at 24V DC no protocol

Switch-on surge, max 150ms: 3.5mA

Quiescent, 20k $\Omega$  EOL fitted: 1.25mA

Switch input closed 'switch closed' LED on: 2.5mA

Switch input closed (LED disabled): 1.5mA

Any other condition (max 2 LEDs on): 3.5mA

Relay operated: 2mA

Switch input monitoring voltage (open-circuit condition): 9-11V DC

Maximum cable resistance: 50 $\Omega$

Opto-coupled input

Maximum voltage: 35V DC

Impedance: 10k $\Omega$

Relay output contact rating at 30V AC or DC (inductive or resistive): 1A

Relay output wetting current at 10mV DC: 10 $\mu$ A

On resistance 0.2 $\Omega$

Maximum continuous current: 1A

Maximum switching current: 3A

Maximum load: 20 Context Plus detectors

Operating temperature: -20°C to +70°C

Humidity (no condensation): 0-95% RH

Shock, vibration and impact: to GEI 1-052

IP rating: 54

Radiated and conducted RF emissions to: BS EN 50081-1 & 2

Radiated and conducted RF immunity to: BS EN 50130-4

Dimensions of Input/Output Unit (surface mount): 150 x 90 x 48mm; Weight: 240g

## Also available:

### Three Channel Input/Output Unit, order code 55000-588

Provides three voltage-free, single pole, change-over relay outputs and three monitored switch inputs.

Supervises one or more normally-open switches on each of the three inputs. Capable of switching up to 30V at 1A on each of the three outputs



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### Mains Switching Input/Output Unit, order code 55000-875

Provides a voltage-free, single pole change-over relay output and a monitored switch input. Supervises one or more normally-open switches connected to a single pair of cables. Capable of switching 250V AC at up to 5A



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### Output Unit, order code 55000-849

Provides a voltage-free single pole, change-over relay output. It is a simplified version of the Input/Output unit without circuitry for monitoring inputs. Capable of switching up to 30V at 1A



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# ZONE MONITOR WITH ISOLATOR



Part Number 55000-845IMC

## Zone Monitor with Isolator, order code 55000-845IMC

The Context Plus XP95 Zone Monitor powers and controls the operation of a zone of up to 20 Series 65 conventional fire detectors from a loop of Context Plus analogue addressable detectors and interfaces.



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## FEATURES

The Zone Monitor is factory preset to return an analogue value of 16 when all detectors on the zone are in quiescent state and 64 when a detector changes to the alarm state. The Zone Monitor latches in the alarm state.

5.1k $\Omega$  end-of-line resistor is fitted to detector cables for open- and short-circuit faults. Alternatively, an active end-of-line monitor may be used in conjunction with diode bases and a capacitor of up to 50 $\mu$ F fitted at the Zone Monitor wiring terminals.

In either case an analogue value of 4 is transmitted during open- or short-circuit faults. The Zone Monitor is fitted with a bi-directional short circuit isolator and will be unaffected by loop short circuits on either the loop input or loop output.

## ELECTRICAL CONSIDERATIONS

The Zone Monitor is loop powered and operates at 17–28V DC with protocol pulses of 5–9V.

## MECHANICAL CONSTRUCTION

The Zone Monitor is supplied with a backbox for surface mounting, and is also available without the backbox for flush mounting. Both versions are for indoor use only.

Two LEDs, one red and one yellow, are visible through the front cover of the enclosure.

The red LED is illuminated to indicate that a fire alarm condition has been detected on the zone wiring.

The yellow LED is illuminated whenever the built-in isolator has sensed a short circuit loop fault.

## NOTES ON USE

1. Zone voltage is regulated to  $19 \pm 1V$  for any loop voltage greater than 22V. If the loop voltage falls below 22V, the zone voltage is approximately 1.5V below the loop voltage. It is important to ensure that under worst-case conditions, the zone voltage is above the minimum operating voltage for the conventional detectors.

2. Alarm conditions are latched internally by the Zone Monitor. It is therefore necessary to reset the alarm even if non-latching conventional detectors are used.

3. Manual call points can be located at any point in the zone wiring if active end-of-line monitoring with diode detector bases is used. If a 5.1k $\Omega$  resistor is used for monitoring, manual call points must be connected between the Zone Monitor and the first detector.

## Technical Data

Context Plus line voltage: 17V–28V DC

Zone voltage (loop voltage  $\geq 22V$ ):  $19V \pm 1V$

Zone voltage (loop voltage  $< 22V$ ): Loop voltage -1.5V

Maximum current consumption at 24V (5.1k $\Omega$  EOL):

Switch-on surge, max 150ms: 3.5mA

Quiescent: 4mA + detector load

Alarm: 11mA (19mA when increased current enabled)

Short circuit: 11mA

End of line resistor value: 5.1k $\Omega \pm 5\%$  1/3W

Stabilisation time on power up: 4 seconds

Maximum capacitor on zone terminals: 5 $\mu$ F

Operating temperature:  $-20^{\circ}C$  to  $+70^{\circ}C$

Humidity (no condensation): 0–95%RH

Shock, vibration and impact: to GEI 1-052

IP rating: 54

Radiated and conducted RF emissions to: BS EN50081-1 & 2

Radiated and conducted RF immunity to: BS EN50130-4

Dimensions of Zone Monitor (surface mount): 150 x 90 x 48mm

Weight: 230g

# SOUNDER CONTROL UNIT WITH ISOLATOR

**Context**  
Plus



Part Number 55000-852IMC

## MECHANICAL CONSTRUCTION

The Sounder Control Unit is normally supplied with a backbox for surface mounting. It is also available without the backbox for flush mounting. The mouldings are made from polycarbonate material. Both versions are for indoor use only.

Three LEDs, one red, two yellow, are visible through the front cover of the enclosure. The red one pulses or is illuminated continuously to indicate that the sounders are, respectively, pulsed or switched on continuously.

One yellow LED is illuminated whenever a fault has been detected. The other LED is illuminated whenever the built-in isolator has sensed a short-circuit loop fault.

## FAULT MONITORING

In addition to the monitoring of open and short circuit faults on the sounder wiring, the Unit has a facility to monitor the presence and polarity of the external PSU. This is achieved by a fault monitoring circuit which also includes an input to monitor a volt-free contact (such as a fault relay in the external PSU). A three-way terminal block is provided for connection of normally-open or normally-closed fault contacts to this fault input. Note that a wire link must be fitted between the 'COM' and 'N/C' terminals if the fault input is not used or if a normally-open contact is monitored.

## Sounder control unit with isolator, 55000-852IMC

The Context Plus XP95 Sounder Control Unit is used to control the operation of a zone of externally powered sounders and to report their status to Context Plus-compatible control equipment.



## FEATURES

The Sounder Control Unit allows sounders to be operated continuously or pulsed, 1 second on, 1 second off. Sounders may be operated individually or in groups and, whichever address mode has been applied, may be synchronised when in pulsed operation.

An opto-coupled input is provided to monitor the state of the external power supply. In normal operation the Sounder Control Unit returns a pre-set analogue value of 16, but in the event of an open or short-circuit fault or of a fault in the external power supply, the unit returns a pre-set analogue value of 4.

The Sounder Control Unit is fitted with a bi-directional short-circuit isolator and will be unaffected by loop short-circuits on either loop input or output.

## ELECTRICAL CONSIDERATIONS

The Sounder Control Unit is line powered and operates at 17–28V DC. It requires a local power supply of 9–32V DC to power the external load, which may be up to 1.25A. A polarising diode is required with each alarm device, as sounders are operated by voltage reversal, provided by a double-pole change-over relay. The sounder circuit is protected by a miniature (TR5) fuse rated at 1A.

## ADDRESSING

The Sounder Control Unit responds to its own individual address set with a 7-segment DIL switch. It also responds both to a group address, set by means of a 4-segment DIL switch, and to a pulsed-mode synchronisation address which is embedded in the unit.

Addresses 1 to 111 are used exclusively for individual addresses (if "0" is selected on the DIL switch, the Sounder Control Unit will return a pre-set analogue value of 4 to signal a fault); addresses 112 to 126 are used for group addressing, while the synchronisation address, to which all units respond, is "0". Any Sounder Control Unit on a loop may be freely assigned to a group. The address for any group must be chosen from the range 112–126.

Addresses 112 to 126 may be used as individual addresses but only if the 4-segment DIL switch is set to 127 – group addressing is then disabled. If the 4-segment DIL switch were set to any number other than 127, a pre-set analogue value of 4 would be transmitted to indicate a fault.

## Technical Data

Minimum loop operating voltage in normal conditions : 17V DC

Maximum loop operating voltage: 28V DC

Sounder Control Data

Current consumption, loop, at 24V:

Switch-on surge, max 100ms: 2.6mA

Quiescent, 10k $\Omega$  EOL fitted : 1.95mA

Sounders operated: 1.7mA

Fault (yellow LED on): 3.6mA

Sounder line short circuit: 2.8mA

Current consumption, external supply:

Relay off: 1mA at 9V; 3mA at 32V

Sounders and red LED on: 44mA at 9V (+ sounder load); 47mA at 32V (+ sounder load)

Sounder output monitoring voltage (open-circuit condition): 9–11V DC

Maximum sounder circuit voltage: 32V DC

Maximum sounder circuit current (inductive or resistive): 1A at 30V DC

On resistance: 0.2 $\Omega$

Maximum continuous current: 1A

Maximum switching current: 3A

Maximum load: 20 Context Plus detectors

Operating temperature: –20°C to +70°C

Humidity (no condensation) : 0–95%RH

Shock, vibration and impact: to GEI 1–052

IP rating: 54

Radiated and conducted RF emissions to: BS EN 50081–1 & 2

Radiated and conducted RF immunity to: BS EN 50130–4

Dimensions of Sounder Control Unit (surface mount): 150 x 90 x 48mm

Weight: 240g

# HUSH BUTTON



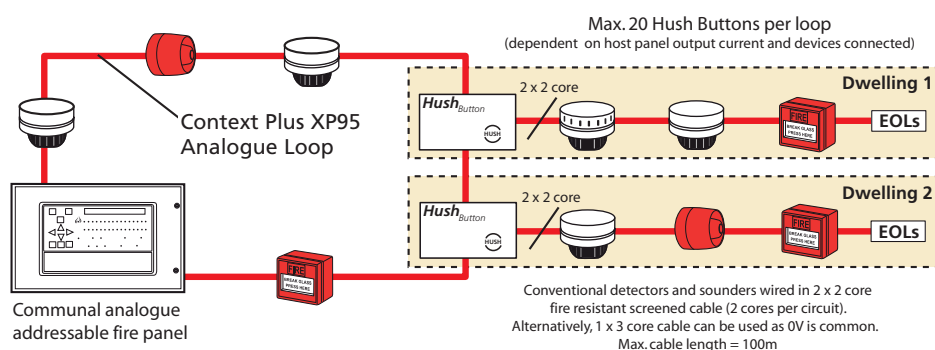
Part Number XFP508X

## Hush Button, order code XFP508X

Most deaths and injuries from fire occur in dwellings and nowhere is the risk greater than in houses of multiple occupation (flats, apartments, etc.) where a fire in one 'dwelling' can quickly spread to another. Unfortunately, an increased risk of fire means an increased risk of false alarms. Failure to reduce false alarms can lead to unnecessary building evacuations, irate tenants, system vandalism and true alarm signals being ignored. The Context Plus Hush Button fire alarm solution tackles all of these issues head on. Designed to work with the Context Plus XP95 protocol, it provides reliable, fully monitored fire detection, alarm and silencing facilities INSIDE each individual flat or apartment.

## How does the system work?

Each Hush Button can be looked upon as a miniature fully monitored, self-powered single zone fire alarm panel that sits and is addressed on an analogue loop (see diagram) with the ability to communicate its status back to the host fire panel.



Typically one double gang Hush Button is fitted in each HMO dwelling complete with conventional detectors and sounders to provide occupants with a simple, cost-effective means of invoking two types of 'hushed' period.

The whole system is geared towards reducing unwanted alarms by putting HMO occupants firmly in control of their own fire detection systems without losing sight of the fact its primary purpose is to protect life and property.

Moreover, the fact each Hush Button and its local cabling is monitored means any open circuit, short circuit or tampering fault is relayed to building management via the analogue loop and host fire panel for appropriate remedial action.

## Summary / key features

- Provides each individual dwelling with a two-minute silence facility and a 15-minute isolate facility to British Standard BS 5839 Part 6 clause 12.
- Reduces the likelihood of unnecessary building evacuations, system vandalism and the possibility of a true alarm signal being ignored
- Fully monitored for open and short circuit faults
- Logging facilities at the main communal panel give full traceability of any problems
- Can be operated by building occupants whilst standing at floor level

## Technical Data

Max. no of hush buttons per analogue loop: 20 (dependent on output current of host panel and devices connected). Note each Hush Button requires 2 addresses)

Onboard loop isolator: Yes

Max. no. of conv. detectors per hush button: 10

Max. no. of manual call points per hush button: 10

Max. sounder circuit load per hush button: 30mA

Operating voltage: 17-40Vdc

Quiescent current: 5mA

Max. cable length of hush button detector circuit: 100m

Max. cable length of hush button sounder circuit: 100m

Line monitored for open and short circuit faults: Yes

User indicators: Supply present; local alarm and hushed LEDs; Buzzer sounds when hushed period due to expire

Engineer Indicators: Open/short circuit fault (also shown at host panel)

Control buttons: Hush

Dimensions (WxHxD) in mm: 144 x 84 x 37. Mounts on a 25mm

# THE AVAC VOICE ALARM SYSTEM



The AVAC Voice Alarm System

AVAC is a new low-cost, high-quality modular voice alarm system designed to simplify the provision of a BS5839 part 8 compliant voice alarm system.

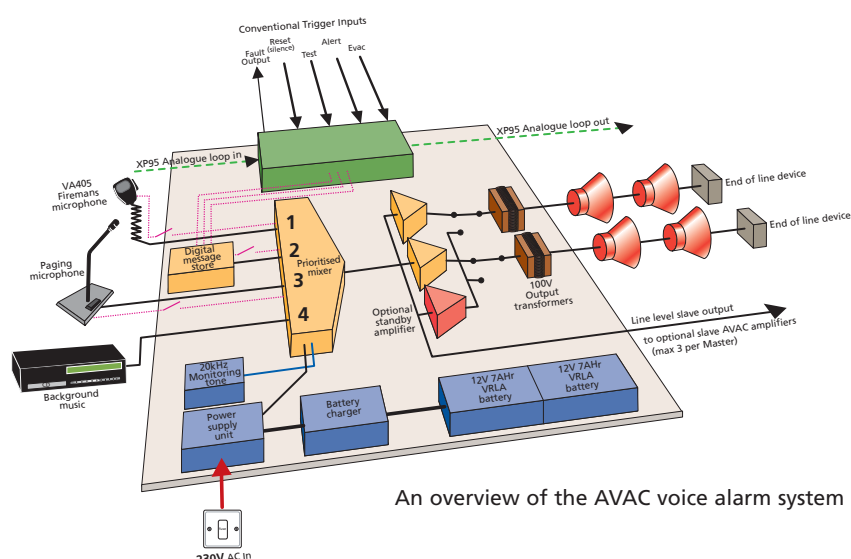
The fact that multiple AVACs (and slaves) can be connected to a fire detection system makes AVAC ideal not just for simple one zone installations but for virtually all small to medium sized applications, including phased evacuation projects.

With high quality pre-recorded digital messages, near CD-quality sound and ancillary connections for optional emergency microphones, public address and background music equipment, AVAC is particularly suited for factories, office blocks, shopping centres, hotels and leisure centres.

AVAC is suitable for category V1 and V2 systems complying with BS5839-8 (2008).

**In one compact wall-mountable enclosure, the AVAC comprises:-**

- A Context Plus XP95 specific interface for direct connection to a Context Plus fire alarm loop
- A straightforward fire alarm interface that can be connected to any analogue addressable fire alarm system via a series of input/output units on the loop
- A high-quality digital message store containing programmable Evacuate, Alert and Test messages
- A prioritised mixer
- Two x 60-Watt continuous average power Class D amplifiers (plus an optional standby amplifier)
- An EN54-4 compliant switch mode power supply and battery charger
- Three balanced line level inputs for the (optional) connection of an emergency microphone, paging/public address microphone(s) and a background music source
- Space for 2 x 7Ah VRLA batteries typically providing at least 24 hours standby and 30 minutes alarm running time
- A slave line level output allowing the connection of up to 26 slave AVAC amplifiers to extend loudspeaker coverage and allow greater flexibility over public address paging and background music distribution (as they have their own paging and background music inputs)



An overview of the AVAC voice alarm system

# THE AVAC VOICE ALARM SYSTEM

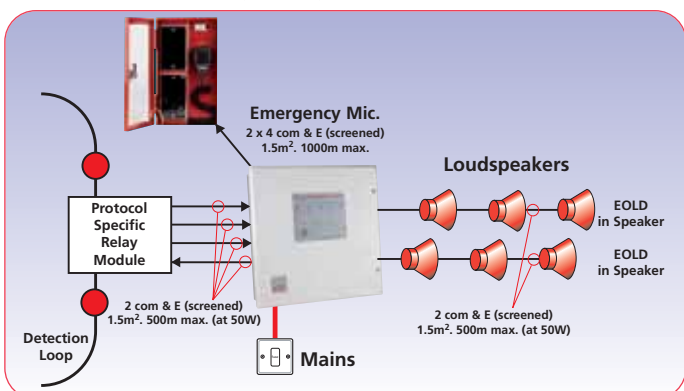
## OPERATION

The principal function of AVAC is to generate clear voice messages to alert people to the presence of fire, normally under the control of a fire detection system. When AVAC receives a message trigger from the fire detection system, it responds by playing an appropriate message (Evacuate, Alert or Test) from its digital message store. This message is amplified and broadcast around the site via the system's loudspeakers. Three balanced line-level audio inputs are also provided for the connection of optional equipment such as an emergency microphone (to allow live directive announcements by the emergency services), public address paging equipment and a background music (BGM) source such as a CD player or radio tuner. The level of all four audio channels (digital message store, emergency mic., paging and BGM) can be set using four internal level controls. If multiple inputs and/or digital message triggers are active at the same time, AVAC's prioritized mixer ensures that only the most urgent audio signal is broadcast, as indicated below:-

| Priority | Description                                                                         |
|----------|-------------------------------------------------------------------------------------|
| 1        | Emergency microphone                                                                |
| 2        | Evacuate, Alert or Test message<br>(Evacuate overrides Alert, Alert overrides Test) |
| 3        | Paging / public address microphone(s)                                               |
| 4        | Background music source(s)                                                          |

## AVAC'S FIRE ALARM INTERFACE

The host fire detection system can be connected to AVAC via three polarized, opto-isolated trigger inputs. These inputs are designed to control AVAC's digital message store and will activate when a steady voltage of 24V DC is applied to them.



All inputs are prioritized according to the type of messages they trigger. AVAC can also be connected directly to any Apollo protocol XP95, Discovery or Xplorer analogue addressable fire alarm loop via its LOOP input. When connected in this way, AVAC emulates an Apollo sounder control module and must be addressed as such. Once addressed, AVAC responds to a fire panel's commands by activating its Evacuate message when it receives a continuous sounders command and its Alert message when it receives an intermittent sounders command. It also reports any fault conditions back to the analogue loop as a general fault allowing the fire detection system to annunciate the fault location accordingly.

## MONITORING

In order to comply with current life safety standards, AVAC's loudspeaker lines, PSU, batteries, emergency microphone and digital message store are all monitored for short circuits, open circuits, earth faults, discharge, disconnection and data corruption as appropriate. Non-critical inputs such as public address paging and background music are not monitored and, in the event of Mains failure, are automatically cut off to conserve battery life. This contributes to AVAC's efficient standby time - typically 24 hours (plus 30 minutes running time) using 2 x 7 Ah VRLA batteries. Provided the system is wired as recommended, an AVAC fault condition will be reported as a sounder fault on the fire detection system, with more detailed fault indication provided on the front of AVAC.

## DIGITAL MESSAGE SELECTION

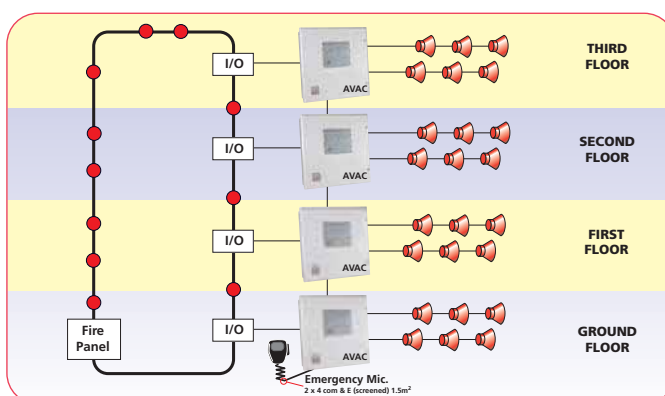
AVAC's digital messages are stored in MP3 format on a monitored, non-volatile memory card. The content of these can be adjusted to suit the application using a series of internal links. For example, the Evacuate message can be configured to state that 'a situation has arisen' or 'a fire has been reported' and to warn people - if appropriate - not to use the building's lifts.

## AMPLIFIER AND LOUDSPEAKER CIRCUITS

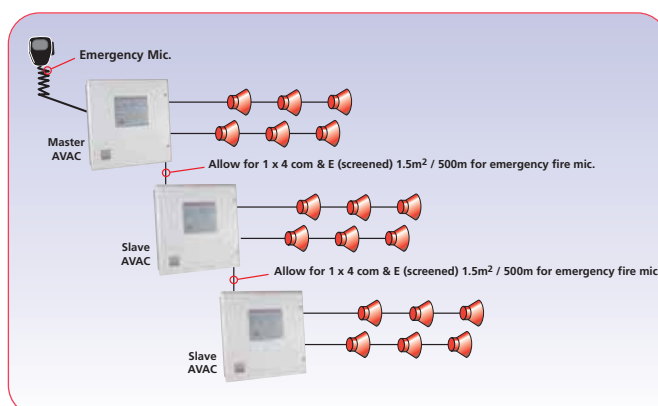
AVAC is supplied with a minimum of two separate 60-Watt continuous average power Class D amplifiers. These are designed to drive AVAC's two loudspeaker circuits, each of which will accommodate up to 60 Watts of loudspeaker load (although 50 Watts is recommended to allow for system changes), through 100V line transformers, which step up the voltage for distribution around the site. An end-of-line device must be connected across the terminals of the last loudspeaker on each circuit and both circuits must be calibrated at commissioning using AVAC's calibrate button to ensure correct monitoring. Some AVACs feature an additional standby amplifier that will switch in if either of AVAC's regular amplifiers fail, a requirement of some life safety voice alarm specifications.

## MULTIPLE AVACs AND SLAVE AMPLIFIERS

There is no limit to the number of master AVACs that can be used per system but the VA405 emergency microphone can be daisy-chained to a maximum of 26 master AVACs. For systems requiring more than one emergency microphone, up to four VA407 emergency microphones can be connected to a system. However this will reduce the number of AVAC masters that can be interlinked to 20 (for systems with two VA407s), 10 (for systems with three VA407s) and 6 (for systems with four VA407s).



To increase audio coverage in large areas, up to 26 slave AVACs can be connected to one master AVAC. Slave AVACs repeat all emergency microphone and digital message broadcasts that are made at the master. They also feature their own paging and background music inputs meaning localized paging and background music can be easily implemented, a particularly useful feature for tenanted office block applications, etc.



# SIGTEL FIRE TELEPHONE / DISABLED REFUGE SYSTEM

**Context**  
Plus



SigTEL ECU-8 Master Controller



EVC301RPO Fire Telephone Outstation



EVC302GS Disabled Refuge Outstation

Our SigTEL emergency voice communication system is ideal for use in all fire telephone and disabled refuge applications.

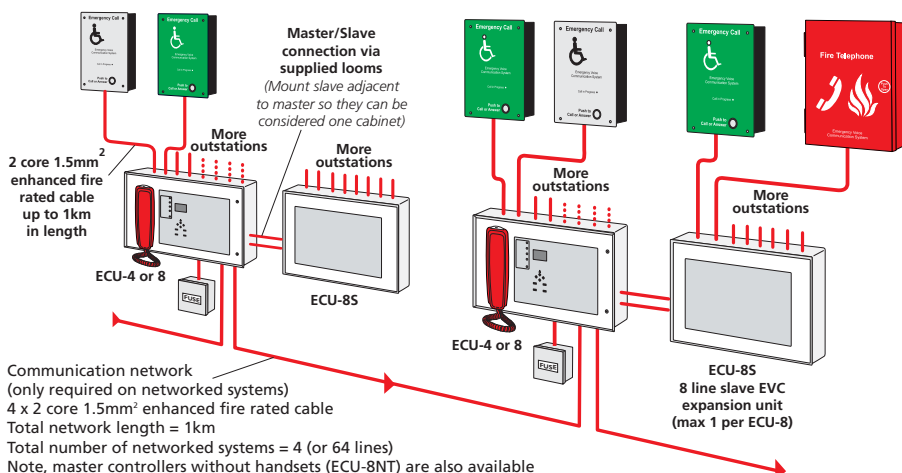
In fire telephone applications, it allows building management, the emergency services and fire marshals to communicate with each other before, during and after a fire. In disabled refuge applications, it allows people who cannot easily evacuate a building to communicate with a central control point during a fire emergency.

Incredibly easy to use and offering true duplex speech, SigTEL meets and exceeds the requirements of standards such as BS 5839 part 9 and is hugely cost-effective in comparison to other systems on the market.

## Key features

- ▶ Ideal for all disabled refuge, fire telephone and stadium marshalling applications
- ▶ Compact 4 or 8 line wall-mounting master controllers save valuable space in crowded control rooms
- ▶ 8 line expansion unit allows a 4 or 8 line master controller to be easily expanded to 12 or 16 lines
- ▶ Powerful networking facility allows up to four master controllers (plus any expansion units) to be interlinked allowing systems of up to 64 lines to be easily implemented
- ▶ Optional anti-tamper enclosures available for controllers located in areas accessible to the public
- ▶ 'Fire Telephone' (Type A) outstations available in locking or non-locking red steel cabinets
- ▶ 'Disabled Refuge' (Type B) outstations available in stainless steel or green steel (flush, surface or weatherproof options available)
- ▶ All outstations offer true duplex speech and can be mixed and matched to suit the application
- ▶ Unique 'auto-learn' facility allows fast system set up
- ▶ All extensions can be named with user-defined text of up to 15 characters
- ▶ Fully monitored hardware and software
- ▶ System operates at 24 VDC. In the event of mains failure, operation can be maintained for 24 hours (standby) and 3 hours (in use) using 2 x 12V 7 Ahr batteries
- ▶ Optional FiTT line tester allows cable faults to be checked prior to equipment connection
- ▶ Can be easily interfaced to disabled persons toilet alarm systems, audio-frequency induction loop systems, strobes, beacons or CCTV activation relays
- ▶ Ideal for hotels, shopping malls, office blocks, transport terminals, banks, sports stadiums, entertainment complexes, etc.

## Wiring overview



Ask our sales desk for copies of our SigTEL design guide.

Note 64-128 line SigTEL systems are also available

# CONVENTIONAL DETECTORS



55000-226IMC



55000-326IMC



55000-139 / 55000-145IMC



45681-200IMC

Our Context Plus Series 65A range of conventional fire detectors incorporates well-proven sensing technologies including an IC based on that used in our Context Plus XP95 analogue addressable detectors. The range consists of ionization, integrating ionization and photo-electric smoke detectors, two grades of thermal detector and a standard base. Each type of detector has an LED which flashes continuously in stand-by mode.

**The range is tested and approved to the following standards:**

**UL268-smoke detectors (file S24127) and UL521-thermal detectors (file S24128).**

## Context Plus Ionization Smoke Detector, 55000-226IMC

The sensing part of the detector consists of two chambers - an open outer chamber and a semi-sealed reference chamber within. Mounted in the reference chamber is a low activity radioactive foil of Americium 241 which enables current to flow between the inner and outer chambers when the detector is powered up. As smoke enters the detector, it causes a reduction of the current flow in the outer chamber and hence an increase in voltage measured at the junction between the two chambers. The voltage increase is monitored by the electronic circuitry which triggers the detector into the alarm state at a preset threshold. An externally visible red LED lights up when in alarm. IP rating = IP23D

Features: Flashing LED; Alarm indication: Red LED; Supply voltage: 9 to 33V

Average stand-by current at 24V: 45uA; Average stand-by current at 9V: 21uA

Alarm current at 24V: 52mA; Alarm current at 9V: 17mA

Ambient temperature: 32 to 158°F; Max wind continuous: 2,000ft/min

Remote output (R-) characteristics: Current sink to -ve line, limited to 17mA. Note: when using a remote indicator a current-limiting series resistor may be required.



## Context Plus Photo-electric Smoke Detector, 55000-326IMC

Photo-electric smoke detectors incorporate a pulsing LED located in a chamber within the housing of the detector. The chamber is designed to exclude light from any external source. At an angle to the LED is a photo-diode which normally does not register the column of light emitted by the LED. In the event of smoke from a fire entering the chamber, the light pulse from the LED will be scattered and hence registered by the photo-diode. If the photo-diode "sees" smoke on the two following pulses, the detector changes into the alarm state and the indicator LED lights up. IP rating = IP23D

Features: Flashing LED; Alarm indication: Clear LED, Red in alarm; Supply voltage: 9 to 33V

Average stand-by current at 24V: 45uA; Average stand-by current at 9V: 40uA

Alarm current at 24V: 52mA; Alarm current at 9V: 17mA

Ambient temperature: 32 to 100°F; Max wind continuous: not affected

Remote output (R-) characteristics: Current sink to -ve line, limited to 17mA. Note: when using a remote indicator a current-limiting series resistor may be required.



## Context Plus Thermal Detector, Ordinary, 55000-139IMC

## Context Plus Thermal Detector, Intermediate, 55000-145IMC

Thermal detectors operate by using a matched pair of thermistors to sense heat. One thermistor is exposed to the ambient temperature, the other is sealed. In normal conditions the two thermistors register similar temperatures, but, on the development of a fire, the temperature recorded by the exposed thermistor will increase rapidly, resulting in an imbalance, causing the detector to change into the alarm state. Rate-of-rise detectors are designed to detect a fire as the temperature increases, but they also have a fixed upper limit at which the detector will go into alarm if the rate of temperature increase has been too slow to trigger the detector earlier. Externally, the thermal detectors have wide openings to the surrounding atmosphere to allow good movement of air around the external thermistor. IP rating = IP23D

Features: Flashing LED; Alarm indication: Red LED; Supply voltage: 9 to 33V 9 to 33V

Average stand-by current at 24V: 55uA; Average stand-by current at 9V: 50uA

Alarm current at 24V: 52mA; Alarm current at 9V: 17mA

Ambient temperature: 32 to 100°F; Max wind continuous: not affected

Remote output (R-) : Current sink to -ve line, limited to 17mA. Note: when using a remote indicator a current-limiting series resistor may be required.

Alarm upper limit: 135°F for 55000-139IMC; 200°F for 55000-145IMC



## Context Plus Base, 45681-200IMC

Designed to enable detectors to be plugged in without any need for force - particularly useful when fitting to suspended ceilings. As well as being lockable it contains no electronic parts which could be damaged during installation.



Supply voltage: 9 to 33V; Normal operating temp (no condensation or icing): 32 to 100°F

# CONVENTIONAL FIRE ALARM ACCESSORIES



BF370MER



BF336D



BF334C/4103R



BF330ER

## RESETTABLE CONVENTIONAL FIRE ALARM CALL POINT, BF370MER

The BF370MER's simple 'RESET' mechanism comprises tough ABS plastic elements that simulate break glass activation. It is instantly reusable without the environmental hazard caused by fragments of broken glass making it ideal for use in food processing plants, schools, shopping malls and other high traffic areas. Finished in red, the unit is flush or surface mountable and has alternate terminals for open and closed circuits. When wired for open circuit operation, the circuit closes instantly when activated.

The BF370MER also meets the requirements of BS5839 Part 2 and EN54 Part 11.

- Double terminal wire connectors for independent input and output connections
- No glass elements to break, lose or incorrectly fit when installing.
- Complete functional test with every activation.
- Preopened conduit entries from top, bottom and the back

Options include a transparent polycarbonate lift-up protection cover and different casing colours. Specific languages or custom imprints also available on request.

Size (H x W x D): 88 x 88 x 53 mm (Surface Mount) 88 x 88 x 20 mm (Flush Mount)

Net/Gross Weight: 160/184g. Connections: Terminal, max 2.5mm<sup>2</sup> cable

Current Ratings : 12/24V DC 10A; 48V DC 3A; 250V AC 10A; IP rating = IP24D

## MOTOR DRIVEN CONVENTIONAL DOME BELL, BF336D

The BF336D 24V 6" (150mm) bell is designed to meet the special requirements of fire alarm systems where low power consumption and high sound output is essential. The unit's heavy duty micro-motor with built-in varistor suppression ensures reliability and long life. Designed to meet the requirements of EN54-3:2001.

- Interchangeable base suitable for surface mounting
- Zero standby current and low current consumption
- Louder mechanical Resonant Tone

Amps = 0.03A; Decibel rating at 1m = 95dB; Weight = 812g; IP rating = IP23

## CONVENTIONAL 4 TONE SPATIAL SOUNDER, BF334C/4103R

Designed for areas where low current consumption relative to sound output is required, our conventional spatial sounder requires only 11mA @ 24V d.c to provide an output of 103 dBA @ 1 metre. With an operating frequency of 800 to 1000Hz, it provides sound within the frequency range specified by BS5839. Tones are available by selecting either warble, sweep or pips via the jumper fitted to the sounder's PCB. By using three wires, a second stage alarm may be switched so that the continuous tone overrides the selected tone.

Output @ 1 metre 24Vdc: 103dBA; Current @ 24V dc: c.11mA

Voltage Range: 8-35V dc; Number of Tones: 4; Volume control: -30dBA; IP Rating: IP65

Temperature Range: -20°C to + 70°C; Weight (per unit unpacked): 200g

Approx. dimensions 105mm diameter x 85mm deep

## ELECTRONIC SOUNDER, BF330ER

The BF330ER is a versatile and compact electronic sounder ideal for fire, security and hazard warning applications. Flush or surface mountable, it is IP54 rated and designed to meet the requirements of BS5839-1.

Operating Current: Max 35mA at 24V DC; Operating Voltage: 12V-24V DC

Operating Frequency 2.5KHz ±30%; Sound Output Level 100± 3db at 24V DC (@1m)

Operating Temperature -10°C min to +60°C max; Approximate Weight: 144g

Protection Classification: IP 54; Terminal Capacity: 2 x 1.5mm<sup>2</sup> Conductors

Dimensions: (H x W x D) 88 x 88 x 43 mm (75mm with base)

## Also available



### 32 TONE SPATIAL SOUNDERS

Shallow (BF330CSR) and deep (BF330CDR) versions available



### 32 TONE SPATIAL SOUNDER/BEACONS

Shallow (BF333CSR) and deep (BF333CDR) versions available



### XENON BEACONS

1W (BF340C/1), 2W (BF340/2) & 5W (BF340C/5) versions available

# CONVENTIONAL FIRE PANELS



CFP RANGE

## CFP 2-8 Zone Conventional Fire Panel to EN54-2/4



- LPCB approved to the latest versions of EN54 Parts 2 and 4 (Amendment 2)
- Keyswitch or keypad entry to a wide range of engineering functions including zone test, zone delay, coincidence and non-latching zones
- Two on-board relays (Fire and Fault) and two open-collector outputs (Remote & Reset)
- Available with 2, 4 or 8 zone circuits
- Four conventional sounder circuits
- 'Class Change' and Alert inputs
- Attractive flush or surface mountable plastic lid and enclosure
- Integral 1.5A EN54-4/A2 switch mode PSU
- Ancillary connections provided for up to eight two-wire repeaters (one CFP761 network driver card required per system) & optional relay boards.
- Space available for two x 12V 3.3Ah VRLA batteries
- Fully compatible with the Context Plus UL-listed Series 65A range of conventional detectors and with the Ei range of wireless detectors and ancillaries.
- Economy version also available - contact our sales desk for details

### Technical Data

MAINS SUPPLY VOLTAGE: 230 Va.c.  $\pm 10\%$  50/60Hz  
 TOTAL OUTPUT CURRENT LIMITED TO: 1.5A  
 NUMBER OF ZONE CIRCUITS: 2, 4 or 8  
 MAX. NUMBER OF SMOKE DETECTORS PER ZONE: 25  
 MAX. NUMBER OF COMBINED DETECTORS & MANUAL CALL POINTS PER ZONE: 32  
 NUMBER OF SOUNDER CIRCUITS: 4  
 MAX. NO OF BELLS @ 25 mA: 32  
 MAX. NO OF ELECTRONIC SOUNDERS @ 20 mA: 40  
 SOUNDER CIRCUIT FUSES (1 PER CIRCUIT) : 200mA min hold current, 400mA max trip current, 50mA when tripped  
 ENCLOSURE (WxHxD): 380 x 235 x 96mm approx  
 WEIGHT (WITHOUT BATTERIES): 1.75KG



FP RANGE

## FP 1-14 Zone Conventional Fire Panel to BS5839-4



- Fully compliant with BS 5839 Part 4
- Lift-off lid for easy first fix and maintenance
- Two conventional sounder circuits.
- Built-in 24V power supply and battery charger
- Optional head removal monitoring facility
- Separate indicators for open and short circuit fault, sounder fault and battery/power supply fault
- Non-latching 'class change' sounder input, latching fire and non-latching fault outputs (available via optional expansion loom)
- Fault buzzer mute facility
- Space available for the rated capacity of VRLA batteries
- Short circuit = fire facility (pre-1980 BS, no resistors in call points), selectable on a zone by zone basis - ideal for retro-installations
- One man walk test and zone isolate facility (not on EFP1)
- Ancillary connections for repeater panels and other add-ons including fault relay modules, fire relay modules, sounder delay relay modules, sounder extender kits, etc (not on EFP1)
- Fully compatible with the Context Plus UL-listed Series 65A range of conventional detectors and with the Ei range of wireless detectors and ancillaries.

### Technical Data

MAINS SUPPLY VOLTAGE: 230 Va.c.  $\pm 10\%$  50/60Hz  
 TOTAL OUTPUT CURRENT LIMITED TO: 400mA (EFP1); 800mA (FP2/2E); 1.4A (FP4/6/8E); 3A (FP8/10/12/14)  
 NUMBER OF ZONE CIRCUITS: 1, 2, 4, 6, 8, 10, 12 or 14  
 MAX. NUMBER OF SMOKE DETECTORS PER ZONE: 20  
 MAX. NUMBER OF MANUAL CALL POINTS PER ZONE: No Limit  
 NUMBER OF SOUNDER CIRCUITS: 2  
 MAX. NO OF BELLS @ 25 mA: 16 (EFP1); 32 (FP2/2E); 56 (FP4/6/8E); 120 (FP8/10/12/14)  
 MAX. NO OF ELECTRONIC SOUNDERS @ 20 mA: 20 (EFP1); 40 (FP2/2E); 70 (FP4/6/8E); 150 (FP8/10/12/14)  
 SOUNDER OUTPUTS EACH FUSED AT: 400mA (EFP1); 1A (FP2/2E/4/6/8E); 1.6A (FP8/10/12/14)  
 ENCLOSURE (WxHxD): 271x200x70 (EFP1); 322x267x92 (FP2/2E); 405x267x92 (FP4/6/8E); 521x334x140 (FP8/10/12/14)  
 WEIGHT (WITHOUT BATTERIES): 2.3KG (EFP1); 4.3KG (FP2/2E); 5KG (FP4/6/8E); 9.2KG (FP8/10/12/14)

# CONVENTIONAL FIRE PANELS

Context  
Plus



MFP RANGE

## MFP 4-28 Zone Conventional Fire Panel to BS5839-4



- Fully compliant with BS 5839 Part 4
- Robust metal lid and metal back box with heavy-duty base connections
- Four sounder circuits and head out (detector removed) fault indication provided as standard
- Expandable from 4 to 28 zones in 4 zone steps
- End of line units included (one per zone)
- Separate indication of open circuit, short circuit, head out, sounder and battery/PSU faults
- Non-latching 'class change' sounder input, latching fire & non-latching fault outputs (via MFPX loom)
- Fault buzzer mute facility
- Short circuit = fire facility (pre-1980 BS, no resistors in call points), selectable on a zone by zone basis for retro-installations
- Non-latching zones facility for cross connection to other panels
- Wide range of engineer facilities including one man detector test, sounder walk test, sounder isolate, sounder delay and auxiliary isolate
- Up to eight two-wire repeaters with full external control (except isolate) per system (requires one FF596T Repeater Transmitter PCB fitted at the main panel).
- Fully compatible with the Context Plus UL-listed Series 65A range of conventional detectors and with the Ei range of wireless detectors and ancillaries.

### Technical Data

MAINS SUPPLY VOLTAGE: 230 Va.c.  $\pm 10\%$  50/60Hz  
 TOTAL OUTPUT CURRENT LIMITED TO: 1.4 A (MFP 4-12), 3A (MFP16-28)  
 NUMBER OF ZONE CIRCUITS: 4, 8, 12, 16, 20, 24 or 28  
 MAX. NO OF SMOKE DETECTORS PER ZONE: 20  
 MAX. NO OF MANUAL CALL POINTS PER ZONE: No Limit  
 NUMBER OF SOUNDER CIRCUITS: 4  
 MAX. NO OF BELLS @ 25 mA: 56 (MFP 4-12); 120 (MFP16-28)  
 MAX. NO OF ELECTRONIC SOUNDERS @ 20 mA: 70 (MFP 4-12); 150 (MFP16-28)  
 SOUNDER OUTPUTS EACH FUSED AT: 1A (MFP 4-12); 1.6A (MFP16-28)  
 ENCLOSURE (W x H x D): 405x267x29mm (MFP 4-12); 521x334x140 (MFP16-28)  
 WEIGHT (WITHOUT BATTERIES): 5KG (MFP 4-12); 9.5KG (MFP16-28)

## EP203 Extinguisher Panel to EN12094-1 & EN54-2/4



- LPCB approved to EN12094 part 1 and EN54 parts 2 and 4
- Functions as a standard three zone conventional fire panel with additional circuitry for controlling the release of fire-suppressing gas into protected areas
- Unique 128 x 64 pixel graphical display facilitates straightforward system programming
- Any combination of activated zones can be programmed to automatically start the panel's extinguishant release sequence
- Includes a pull-down front-panel manual release button and two keyswitches for accessing the panel's functions and toggling between auto/manual mode
- Three conventional sounder circuits (two x 1st stage, one x 2nd stage)
- Powerful 3A EN54-4 compliant switch mode PSU
- Wide range of monitored inputs and auxiliary outputs
- Abort and hold inputs allow the panel's release sequence to be cancelled or suspended at any time
- Time-stamped event log
- RS485 connections for up to eight EP210 remote status units.
- Optional EP211 economy status units, EP212 relay expansion boards, EP215 abort/hold buttons and BF372 extinguishant release call points also available.
- Ideal for use in computer rooms, telecommunication centres, archive storage areas, etc..



EP203

### Technical Data

MAINS SUPPLY VOLTAGE: 230 Va.c.  $\pm 10\%$  50/60Hz  
 TOTAL OUTPUT CURRENT LIMITED TO: 3A  
 NUMBER OF ZONE CIRCUITS: 3  
 MAX. NO OF SMOKE DETECTORS PER ZONE: 20  
 MAX. NUMBER OF COMBINED DETECTORS & MANUAL CALL POINTS PER ZONE: 32  
 NUMBER OF SOUNDER CIRCUITS: 3 (two x 1st stage, one x 2nd stage)  
 MAX. NO OF ELECTRONIC SOUNDERS @ 20 mA: 10  
 SOUNDER OUTPUTS EACH FUSED AT: 200mA  
 AUXILIARY OUTPUTS: 6 (Fire, Local Fire, Extract Fan, 1st Stage, 2nd Stage, Fault)  
 EXTINGUISHANT RELEASE OUTPUTS: Exting. release, release time delay, release duration, flooding time, output EOL  
 MONITORED INPUTS: 6 (Manual release, flow switch, low pressure, mode, hold, abort)  
 ENCLOSURE (W x H x D): Back box = 439 x 276 x 70; Lid = 467 x 293 x 29mm; WEIGHT: 4.65KG

# WIRELESS CONVENTIONAL DETECTORS & ANCILLARIES



Ei605 Series



Ei603 Series



Ei413



Ei407

Our Ei range of RadioLINK wireless conventional detectors are BSI kitemarked / VDS approved to BS EN14604:2005.

All devices have built-in circuitry to aid suppression of voltage transients and RF interference (devices operate at RF frequency 868,499MHz).

## Wireless zones - why?

- Eliminates expensive cable for detectors and sounders
- Difficult or impossible to run cable
- Hard to reach voids
- Listed and protected buildings
- Renovations and refurbishments
- Integrated detectors and sounders
- Up to 12 x RF alarms and 8 x ancillaries (e.g. MCP) per zone
- Multi-repeater and multi-path robust connectivity

## RadioLINK Wireless Professional Battery Powered Smoke Alarms (Ei605 Series)

- Smoke Alarm - Optical Sensor
- RadioLINK interconnect & remote control
- Loud Alarm - 85dB (A) at 3 metres
- Large Test & Hush Button
- Easy Installation with twist-on base
- Model Ei605WRF - Replaceable Battery
- Model Ei605TYWRF - 10 Year Lithium Battery
- Certified to VdS EN 14604:2005
- 5 Year Guarantee

## RadioLINK Wireless Professional Battery Powered Heat Alarms (Ei603 Series)

- Heat Alarm - Type A1 Sensor
- RadioLINK interconnect & remote control
- Loud Alarm - 85dB (A) at 3 metres
- Large Test Button
- Easy Installation with twist-on base
- Model Ei603CRF - Replaceable Battery
- Model Ei603TYCRF - 10 Year Lithium Battery
- Certified to BS 5446-2:2003
- 5 Year Guarantee

## RadioLINK Wireless Interface Module to conventional fire panel (Ei413)

- RadioLINK Interface Module to conventional fire panels
- Signals to panel
  - Fire Alarm
  - Low battery fault
  - Smoke chamber fault
- 10 - 30V power from panel
- Works with Ei Electronics 600 Series RadioLINK Alarms & Accessories
- Contact input from panel to sound all alarms in zone
- 1 x Ei413 required for each Wireless Zone
- 5 Year Guarantee

## RadioLINK Wireless Manual Call Point (Ei407)

- Wall mounted Manual Call Point
- Fully resettable
- Powered by 10 Year Battery
- Triggers all wireless alarms in the selected zone
- Triggers the Ei413 interface module to alert panel
- 5 Year Guarantee

# WIRELESS CONVENTIONAL DETECTORS & ANCILLARIES



Ei411H



Ei410



Ei428



Ei408

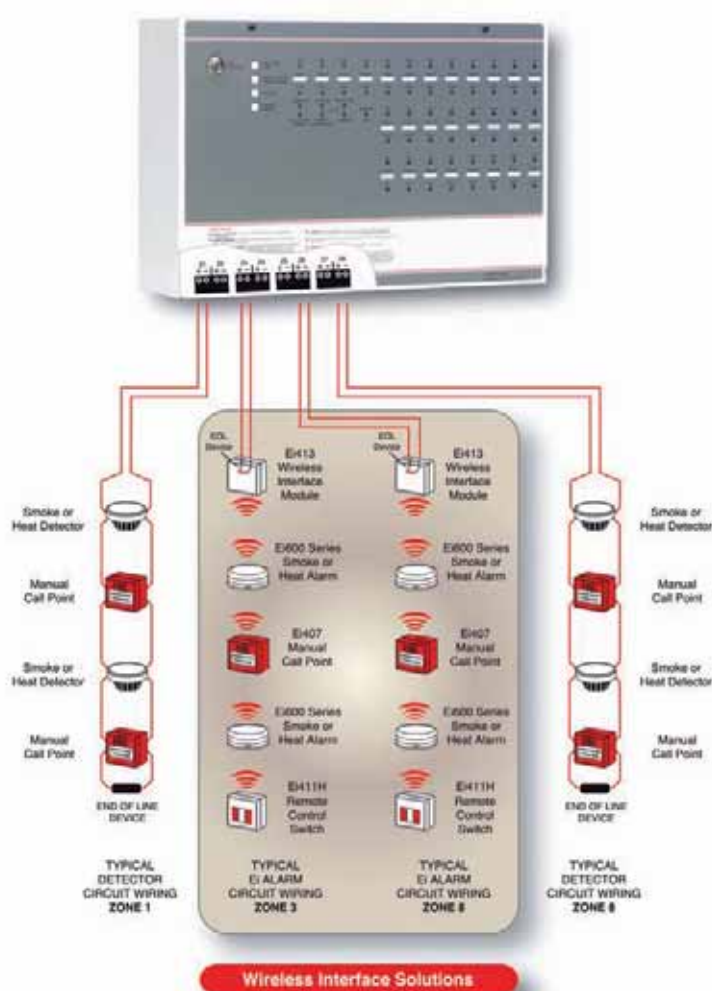
## RadioLINK Wireless Remote Control Switches (Ei411H / Ei410)

- Ei411H - 10 Year Lithium Battery
- Ei410 - Replaceable Lithium Battery
- Test Button - sounds all wireless alarms in the selected zone
- Locate Button - identifies which alarm has triggered the zone
- Hush Button - silences all alarms in the zone for a period of 10 minutes
- Memory - records previous alarm conditions
- 5 Year Guarantee

## RadioLINK Wireless Relay Modules (Ei428 / Ei408)

- Mains powered relay output module
- Triggered by RadioLINK fire signal
- NO /NC voltage free contact outputs
- Activates external circuit, e.g. strobes, sirens, magnetic door holders, etc
- Mains powered switched input module
- Triggered by voltage free contact inputs
- Transmits RadioLINK fire signal to activate smoke alarm sounders

## Typical mixed wireless & hard wired conventional panel system



## 24V POWER SUPPLIES



BF360-12 12V 2A PSU

BF360-24 24V 1.5A PSU



BF362-1 24V 1.5A PSU

BF362-3 24V 3A PSU

BF362-5 24V 5A PSU

Introducing our new range of continuously rated third-party approved EN54-4/A2 switch-mode power supplies - ideal for powering beam detectors, auto dial units, aspirating smoke detectors, fail secure door systems, digital communicators, auxiliary sounder systems and more.

Five versions are available - a 12V 2A model (with optional STU mounting plate for use in auto-dial applications) and four 24V supplies rated at 1.5A (two variants), 3A and 5A. All models offer low current consumption, a single pole volt free relay and link-selectable battery charging capacity.

Key features of our EN54-4 power supply range

- Third-party approved to EN54-4/A2:2006 by the VdS or LPCB
- Low current consumption
- Deep discharge battery protection and EN54 compliant flagging of battery impedance faults
- Single-pole volt-free changeover relay that switches for any fault condition
- Three LED indicators - supply present, general fault and auxiliary fault (for optional connection to third-party equipment)
- Link selectable battery charging capacity
- Optional STU mounting plate (for 12V 2A model only)
- Optional high-temperature output activates when internal box temperature reaches 55°C, for connection to ventilation fans, etc.
- Chassis only power supplies available for OEMs
- Power supplies with a higher battery charging capacity available to special order (minimum quantities apply).

Order codes and descriptions

### BF360-24 24V 1.5A EN54-4 Switch Mode Power Supply

Max. physical battery size: 2 x 12V 3 Ah  
 Standard battery charging capacity: 2 Ah to 12 Ah  
 Output option A: 1.3A DC current, 0.2A charge current  
 Output option B: 0.8A DC current, 0.7A charge current  
 Enclosure size (WxHxD): 380 x 235 x 96mm  
 Physical attributes: Plastic lid and base



### BF362-1 24V 1.5A EN54-4 Switch Mode Power Supply

Max. physical battery size: 2 x 12V 19 Ah  
 Standard battery charging capacity: 2.5 Ah to 19 Ah  
 Output option A: 1A DC current, 0.5A charge current  
 Output option B: 0.5A DC current, 1A charge current  
 Enclosure size (WxHxD): 404 x 404 x 110mm  
 Physical attributes: Metal lid and base



### BF362-3 24V 3A EN54-4 Switch Mode Power Supply

Max. physical battery size: 2 x 12V 12 Ah  
 Standard battery charging capacity: 7 Ah to 12 Ah  
 Output: 2.3A DC current, 0.7A charge current  
 Enclosure size (WxHxD): 404 x 404 x 110mm  
 Physical attributes: Metal lid and base



### BF362-5 24V 5A EN54-4 Switch Mode Power Supply

Max. physical battery size: 2 x 12V 18 Ah  
 Standard battery charging capacity: 7 Ah to 18 Ah  
 Output: 4A DC current, 1A charge current  
 Enclosure size (WxHxD): 404 x 404 x 110mm  
 Physical attributes: Metal lid and base



### BF360-12 12V 2A EN54-4 Switch Mode Power Supply

Max. physical battery size (with STU plate): 1 x 12V 3 Ah  
 Max. physical battery size (no STU plate): 1 x 12V 7 Ah  
 Standard battery charging capacity: 2 Ah to 12 Ah  
 Output option A: 1.8A DC current, 0.2A charge current  
 Output option B: 1.3A DC current, 0.7A charge current  
 Enclosure size (WxHxD): 380 x 235 x 96mm  
 Physical attributes: Plastic lid and base



**FIRE ALARM ANCILLARIES****STANDARD FIRE PERFORMANCE CABLE****Context  
Plus**

Context Plus 'Standard' Fire Performance Cable has been independently tested and approved by the LPCB to meet BS 5839-1:2002+A2:2008 Clause 26.2d Standard, BS EN 50200:2006+Annex E 30 minutes, and BS EN 50200:2006 PH120 - under fire conditions.

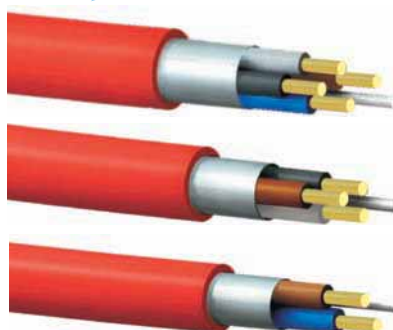
Materials and processes are recorded and tracked throughout manufacture to ensure consistent reliability and quality.

Cable cores are twisted during manufacture to provide the highest level of data protection, ideal for long cable runs and analogue addressable fire systems.



Context Plus Standard Fire Cable

- Manufactured in the United Kingdom with a ten year warranty.
- Low Smoke Zero Halogen emissions under fire conditions.
- Easy to install and superb working flexibility
- Reduced installation time and costs
- All in one - easy to strip outer sheath
- No separate foil or additional fibre wraps
- No mica tape on conductors
- No additional core separators to remove
- Available in a variety of multi-core combinations all with CPC (circuit protection conductor)
- 100m, 200m and 500m reels (other special lengths available to order)
- Approved to meet a 3 hours only fire duration at 950°C & 2 hours fire and mechanical shock duration at 830°C.
- Retains continuity for 30 mins under fire conditions at 830°C including 15 mins under fire & water conditions and with a mechanical shock applied every 5 minutes during the full 30 minute test.
- Approved and Certified to meet
  - BS 5839-1:2002+A2:2008 - 'Standard' Fire Cable
  - BS EN 50200:2006+Annex E 30 mins - Fire Resistance Standard
  - BS EN 50200:2006 PH120 - Fire Resistance Standard
  - BS 7629-1:2008 - Fire Resistance Standard
  - BS 6387:1994 Clause 11 CWZ - Fire Resistance Standard
  - BS EN 50267-2-1:1999 - Halogen Emission Standard
  - BS EN 61034-2:2005 - Low Smoke Standard
- Also suitable for
  - Emergency Lighting Standard - BS 5266-1:2005
  - Voice Alarm Systems Standard - BS 5839-8:2008
  - Voice Communication Standard - BS 5839-9:2003
  - (Risk Assessment May Demand Mechanical Protection)



LPCB  
Certificate No.  
682a-(cl-3)

**PART NUMBERS**

|                    | 2 Cores    | 3 Cores   | 4 Cores   |
|--------------------|------------|-----------|-----------|
| Red                |            |           |           |
| 1.0mm <sup>2</sup> | FPS-210ER  | FPS-310ER | FPS-410ER |
| 1.5mm <sup>2</sup> | FPS-215ER  | FPS-315ER | FPS-415ER |
| 2.5mm <sup>2</sup> | FPS-225ER  | FPS-325ER | FPS-425ER |
| 4.0mm <sup>2</sup> | FPS-S240ER |           |           |
| White              |            |           |           |
| 1.0mm <sup>2</sup> | FPS-210EW  | FPS-310EW | FPS-410EW |
| 1.5mm <sup>2</sup> | FPS-215EW  | FPS-315EW | FPS-415EW |
| 2.5mm <sup>2</sup> | FPS-225EW  | FPS-325EW | FPS-425EW |
| 4.0mm <sup>2</sup> | FPS-S240EW |           |           |
| Black              |            |           |           |
| 1.5mm <sup>2</sup> | FPS-215EBK |           | FPS-415BK |
| 2.5mm <sup>2</sup> | FPS-225EBK |           |           |

\*All above are solid core except FPS-S240ER which is stranded.

**Technical Data**

**Recommended metal clip spacing:** 300mm Horizontal or 400mm Vertical

**Minimum installation Temperature:** 0°C

**Maximum installation Temperature:** 70°C

**Operating Temperature:** Min -40°C to Max +90°C.

The cable should not be flexed or bent when either the cable or operating temperature is outside the recommended installation temperatures.

**Minimum Bend Radius:** 6 x Diameter

Plastic clips or ties must not be used as the sole means of support for fire cable.

**Materials**

**CPC (Earth):** Tinned Annealed Copper

**Conductors:** Plain Annealed Copper

**Core Installation:** Fire Resistant Silicone

**Screening:** Aluminium Foil

**Outer Sheath:** Low Smoke Halogen Free Thermoplastic

**Working Voltage:** Core to Core = 500V; Core to CPC = 300V

**Outer Sheath Colours:** Red, White or Black

**Number of Cores:** 2, 3 & 4 Core

**Inner Cores CSA:** 1.0, 1.5, 2.5 & 4.0mm CSA

**Resistance:**

**1.0mm CSA:** 18.1 Ohms / 1Km

**2.5mm CSA:** 7.41 Ohms / 1Km

**1.5mm CSA:** 12.1 Ohms / 1Km

**4.0mm CSA:** 4.61 Ohms / 1Km

**Current rating:**

1.0mm Cable clipped (DC or single phase AC) = 15A

1.5mm Cable clipped (DC or single phase AC) = 19.5A

2.5mm Cable clipped (DC or single phase AC) = 27A

4.0mm Cable clipped (DC or single phase AC) = 36A

1.0mm Enclosed (DC or single phase AC) = 13A

1.5mm Enclosed (DC or single phase AC) = 16.5A

2.5mm Enclosed (DC or single phase AC) = 23A

4.0mm Enclosed (DC or single phase AC) = 30A

Ratings listed are at 30°C, refer to BS7671/EE wiring refs for de-rating factor





**Context**  
Plus

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