Protec
A Bosch Company

Australian Product Catalogue

ADDRESSING SAFETY SYSTEMS WITH INTELLIGENCE

A PROUD BRITISH MANUFACTURER

Celebrating 50 Years of Business

1968 - 2018

Contents

Protec Fire Detection plc

Protec Fire Detection Plc, is the UK's largest privately owned fire detection company and was formed from our shareholders partnership company 'Protec Fire Alarms' dating back to September 1968. With over six decades of experience in our industry, we have a reputation for providing innovative products and superior services that meet with our clients ever more demanding expectations.

We continually invest a very significant portion of our revenue into our Research and Design Centre, where we employ Physicists, Electronic Hardware and Software engineers. Our unique products are then produced in our own quality controlled manufacturing unit equipped with the latest automated processes.

Products & Services Offered

- Fire Detection
- Aspirating Fire Detection
- Emergency Lighting
- Public Address / Voice Evacuation
- Disabled Refuge & Fire Telephone
- Intruder Detection, CCTV & Access Control
- Fixed Fire Suppression & Portable Fire Extinguishers
- Sprinklers & Water Mist

We are able to offer Clients the choice of services to suit their needs:

- Planning and System Design
- Equipment Supply
- Installation & Project Management
- System Testing and Commissioning
- Regular Preventative Maintenance

Supply, Install, Commission & Project Management

Protec provides practical and highly effective solutions to meet specific client requirements and has the resources to plan and prepare concepts and detailed drawings for the most complex of integrated systems. This is supported by a national network of dedicated Sales Engineers, complimented by our internal Customer Service teams, responsible for the progressing of customer orders through to equipment supply, installation, commissioning and after-sales service.

A British Manufacturer

A British Manufacturer

We are a very proud British manufacturer, all our products are designed and manufactured in the UK, we offer our partners training and we have an extensive capability to support our products around the world.
Our Open Protocol products are designed to enable our partners the ability to edit programs, add and delete devices, commission, maintain and support our systems worldwide.

Protec Fire Detection (Pty Ltd Australia)

Welcome to Protec's Australian Division, Providing to the Australian region

- Conventional Fire Detection
- Digital Addressable Systems
- Aspirating Fire and Smoke Detection
- Gas Suppression Systems
- Building Output Warning Systems

Protec's extensive range of fire safety related systems are currently distributed to many countries around the world. A network of experienced system design, installation, commissioning and maintenance companies that can offer clients a superior service.

Protec's Fire Detection Systems can be found in prestigious projects around the world, including:

- Airports
- Hospitals
- Hotels
- Commercial Towers
- Shopping Centres
- Power Stations

Protec's Australian Support Services

- Comprehensive training
- Design and commissioning advice to our distributors, ensuring compliance with our own rigorous installation standards
- UK manufactured products designed to meet the demanding approval requirements of many countries
- Efficient order processing and dispatch ensuring prompt delivery to customers

Trusted all over the world.....

6100 Digital Addressable Fire Control System

Features & Benefits

- **Cost Effective Single Loop Panel -** Interactive digital addressable fire detection and alarm system ideally suited for small and medium sized buildings.
- **High Capacity Loop - 192 Addresses -** Equipped with a high capacity Algo-Tec™ digital addressable data loop, with up to 192 addresses.
- **Surface and Recessed Mounting -** The control panel is suitable for surface or recessed mounting with a moulded polycarbonate enclosure finished in storm grey.
- **Easy to Install -** An extensive range comprising Loop Powered Alarm Sounders, Beacons, Interfaces, Manual Call Points and Sensors can all be connected to the nearest control panel using a single 2-core cable for a high capacity Loop, accommodating up to 192 devices.

System Features

The Protec Algo-TecTM 6100 is an interactive digital addressable fire detection and alarm system ideally suited for small and medium sized buildings such as shops, hotels and offices. The control panel is designed and manufactured by Protec to comply with AS7240 pt2&4. The control panel is suitable for surface or recessed mounting with a moulded polycarbonate enclosure finished in storm grey. To Meet the Australian AS1670 requirement an AS4428 pt3 2010 compliant Fire Brigade Panel Interface is provided.

Loop
The 6100 control panel is equipped with a high capacity Algo-TecTM digital addressable data loop, with up to 192 addresses. In addition to the Algo-TecTM 6000PLUS sensors, interfaces and manual call points the loop can also support loop powered SOUNDERS, VISUAL ALARM DEVICES and OPTICAL BEAM DETECTORS. Additionally a 6300 Loop Powered Repeat Display can be connected directly to this loop, resulting in reduced cabling requirements, simplified installation and associated cost savings.

Controls and Display
All the functions of the modern styled Control Panel are accessed by entering the user access code. The controls are SILENCE, SOUND ALARMS, RESET and ACCEPT plus navigation push buttons to enable access to the user menu facilities. The control panel display consists of a 4x20 character liquid crystal display, twin common fire LED indicators, 16 separate zonal fire LED's, power on, pre-alarm, system fault, common fault, test and disablement LEDs.
The optional AS4428 pt3 2010 Fire Brigade Panel interface is operated via a 003 key switch and provides the following controls: Silence Buzzer, Silence Alarm, Reset and Disable. All controls operate as per the requirement of the standard.

Liquid Crystal Display
The 80 character liquid crystal display will under normal quiescent conditions display the current date and time with the option to also display a 40-character user's message such as site name. In an alarm or fault condition the LCD will display the device, address and zone number and up to 20 characters of user definable location text, programmable on site using Protec 6100 windows based software.

Alarms
In addition to loop powered sounders and Visual Alarm Devices (VAD's), 2 fully monitored alarm outputs are provided at the panel for alternative
wiring arrangements.

Auxiliary Contacts
One set of global fire, and one set of fault changeover contacts.

Device Location Text
Windows based text software is supplied free of charge to our clients to enable you to enter the location text on to the disk supplied and hand to our commissioning engineer for loading into the panel during commissioning. This simple process allows you more flexibility enabling you to make any last minute changes and speed up the entire process.

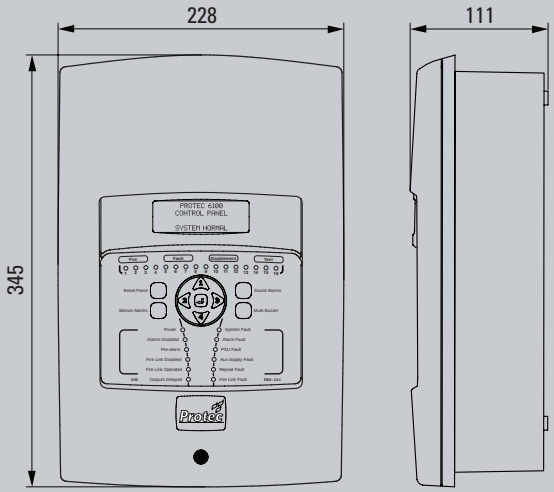
Power Supply
The 6100 control panel is supplied with an integral 1A dc switch mode charger and accommodates two 12V 3.3 Ah sealed lead acid battery.

On Site Programming
The Protec Algo-Tec™ 6100 system is on site programmable. All of the commissioning configuration data can be entered and/or backed up using the Protec 6100 windows based programming software via a PC. This feature enables the system to be re-configured and checked prior to attending site simplifying commissioning works on site, enabling text amendments to be carried out whilst on site and providing an invaluable remote backup should the need arise.

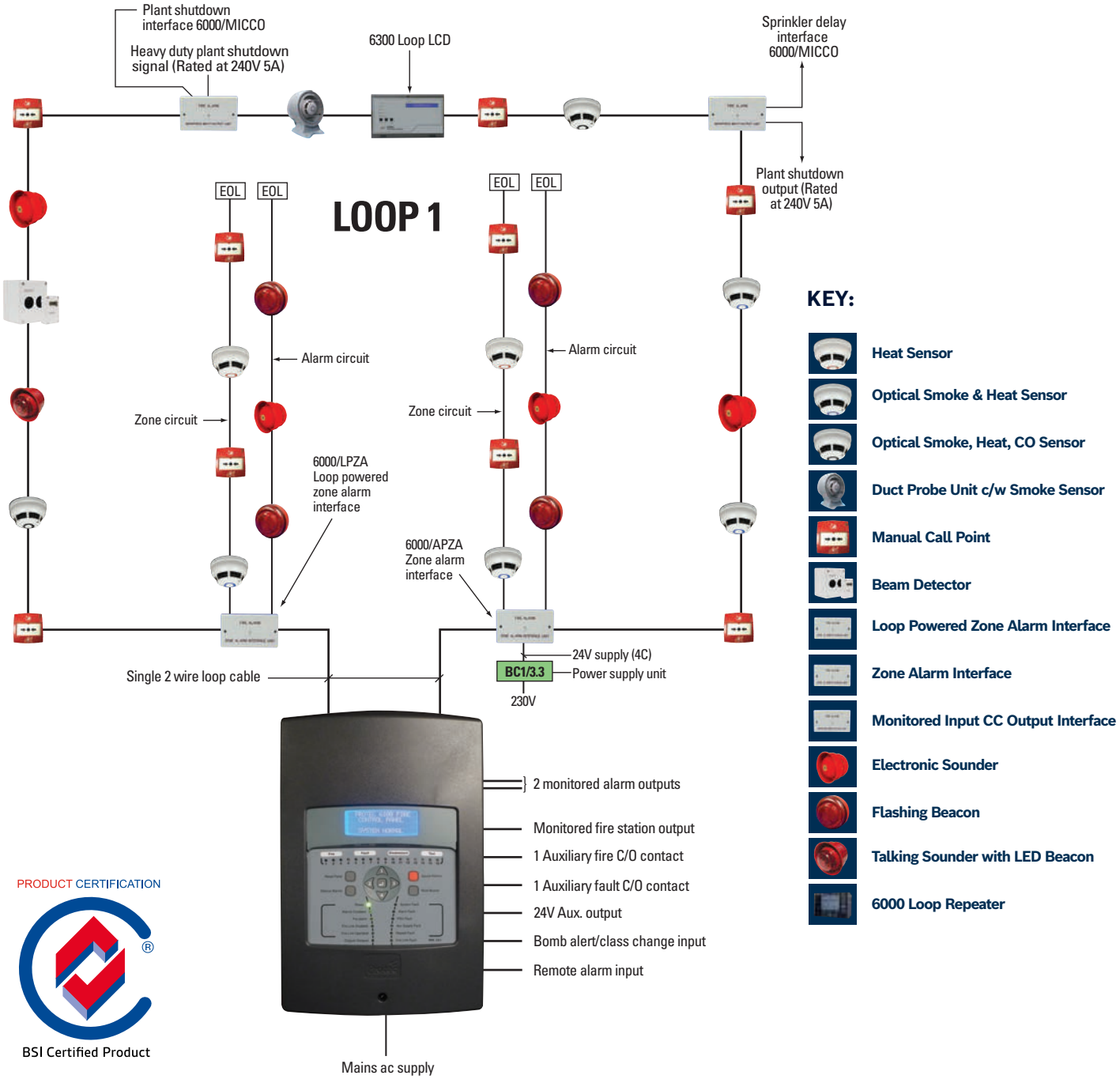
For Technical Data - See Table 1, Page 32

- **Reduced False Alarms** - The Protec Algo-Tec™ 6000 interactive fire sensors utilise advanced discriminating algorithms for maximum reliability and immunity to false alarms.
- **Enhanced Performance** - The Protec Algo-Tec™ 6000 sensors learn from their environment, applying interactive decision making algorithms to provide stability, threshold compensation and optimised performance.
- **On Site Flexibility** - Configuration of all system functions is fully site programmable.
- **Algo-Tec™ 6000PLUS Protocol**
- **Approved to the latest AS7240 Part 2&4 and AS4428 Part 3**
- **Open Protocol**

Dimensions (mm)



Typcial 6100 Schematic



KEY:

- Heat Sensor
- Optical Smoke & Heat Sensor
- Optical Smoke, Heat, CO Sensor
- Duct Probe Unit c/w Smoke Sensor
- Manual Call Point
- Beam Detector
- Loop Powered Zone Alarm Interface
- Zone Alarm Interface
- Monitored Input CC Output Interface
- Electronic Sounder
- Flashing Beacon
- Talking Sounder with LED Beacon
- 6000 Loop Repeater

PRODUCT CERTIFICATION

BSI Certified Product

6500 Digital Addressable Fire Control System

Features & Benefits

- **Next Generation Technology -** High specification, feature rich, economical, interactive digital addressable fire detection and alarm system for medium and large sized buildings and sites.
- **Easy to Install -** An extensive range comprising Loop Powered Alarm Sounders, Loop Powered Talking Sounders, Visual Alarm Devices, Interfaces, Manual Call Points and Multi Criteria Sensors can all be connected to the nearest control panel using a single 2-core cable for each of the high capacity Loops (up to 4 loops), accommodating up to 200 devices per Loop, 800 maximum per panel, 51,200 addressable devices network wide.
- **Design Flexibility -** Scalable, the 6500 system offers tailor made engineered solutions for all applications, from single panel systems (6500E) to large multi panel networks.

System Features

The Protec Algo-Tec™ 6500 is a high specification, feature rich, economical, interactive digital addressable fire detection and alarm system ideally suited for small, medium and large sized buildings and sites. The control panel is designed and manufactured by Protec and complies to the latest EN54-2 & EN54-4. The control panel is available for surface or recess mounting with an aesthetically pleasing moulded polycarbonate hinged door finished in storm grey.
Scalable in every aspect, the 6500 system offers tailor made engineered solutions for all applications, from single panel systems to large multi panel networks. Modular design backed by powerful cause and effect programming enables 6500 systems to be configured exactly to the needs of any commercial or industrial site.

Secure Network - The innovative redundant peer to peer network is a high speed data transfer, fail safe, fault tolerant communication channel allowing up to 160 Algo-Tec™ 6500 Fire alarm panels to operate as though they are a single distributed fire system and complies with BS5839-1.
No single network fault can disable the system and in the event of multiple faults, each panel will function independently. The network can be wired using copper or fibre optic connections.

Loops - Each 6500 control panel is equipped with 1, 2 or 4 high capacity Algo-Tec™ 6000PLUS digital addressable data loops, with up to 200 addresses per loop, totalling 800 addressable devices per panel, 128,000 addressable devices network wide and compliant with EN54 pt2 clause 13.7.

Interactive - The Algo-Tec™ 6000PLUS protocol evaluates the data of each fire sensor and is able to learn from the information received. This may simply be to recognise that a sensor is becoming contaminated or in a dirty environment and to automatically adjust the alarm threshold to compensate for the background levels (Threshold Compensation).

More complex Algo-Tec™ functions include the ability to discriminate between certain fire and non-fire conditions, filtering out certain environmental stimuli, such as steam from a hotel bathroom, and increasing the sensitivity of a sensor when an increase in temperature is detected.
The net effect of the interaction between the sensors and the Algo-Tec™ decision making is enhanced performance, through immunity to false alarms and more responsive fire detection.

6500 Network options:

Secure Local Network - The Algo-Tec™ 6500 control panels can be interconnected in a loop configuration alongside other Algo-Tec™ 6500 control panels to create a Secure Local Network up to a certain number of panels:

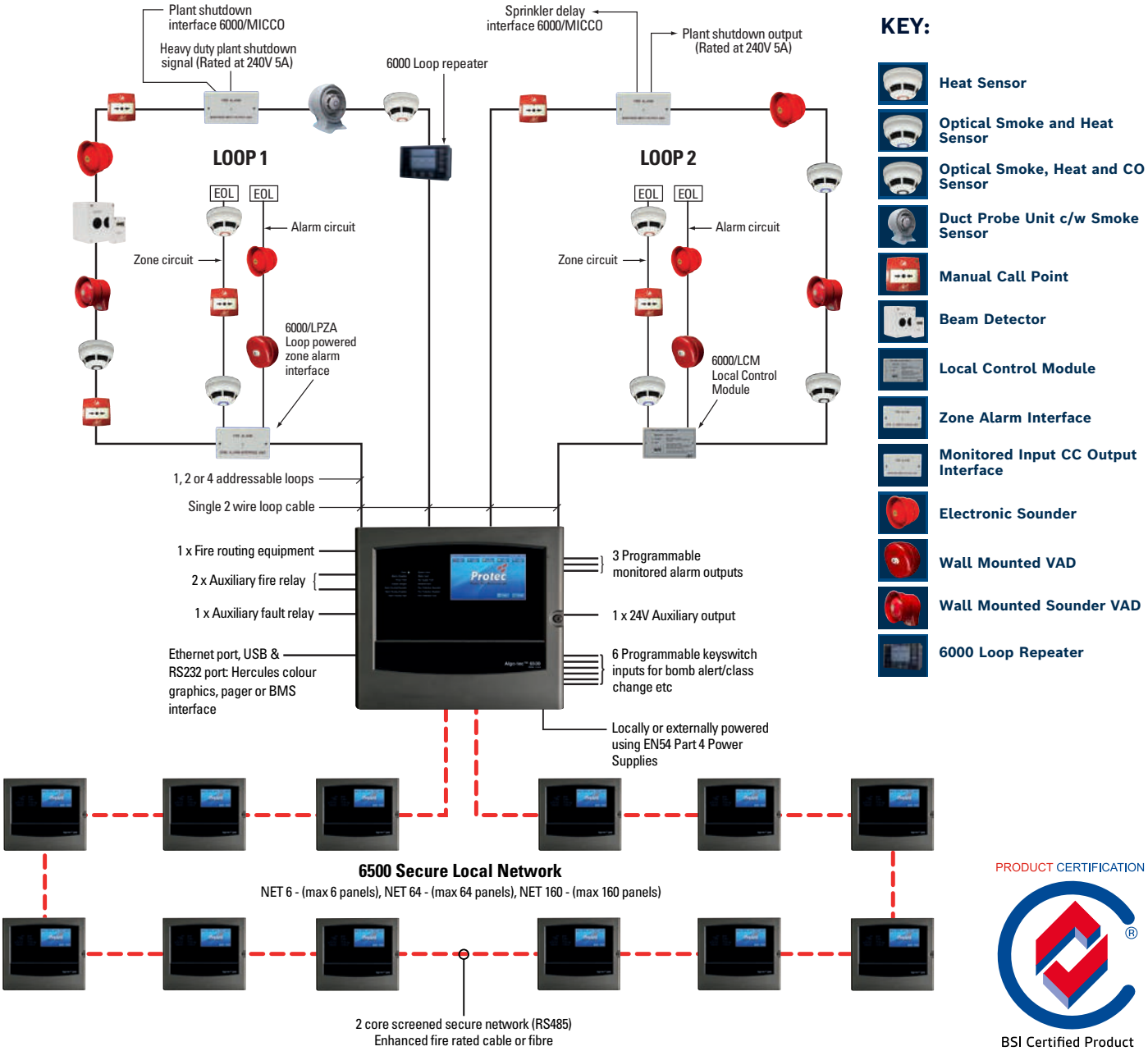
- 6 Panel Secure Local Network - up to 6 panels (NET6), giving an address capacity of 4,800 devices
- 64 Panel Secure Local Network - up to 64 panels (NET64), giving a total address capacity of 51,200 devices.
- 160 Panel Secure Local Network - up to 160 panels (NET160), giving a total address capacity of 128,000 devices.

640 Loops, 128,000 Addressable Devices Network Wide - An extensive range comprising Loop Powered Alarm Sounders, Loop Powered Talking Sounders, Visual Alarm Devices, Interfaces, Manual Call Points and Multi Criteria Sensors can all be connected to the nearest control panel using a single 2-core cable for each of the high capacity Loops (up to 4 per panel). With up to 200 devices per Loop, and 4 loops and 800 addressable devices per panel, the overall capacity of the system is 640 loops and 128,000 addressable devices network wide.

For Technical Data - See Table 1, Page 33

- **Enhanced Performance -** The Protec Algo-Tec™ 6000PLUS sensors learn from their environment, applying interactive decision making algorithms to provide stability, threshold compensation and optimised performance.
- **Secure Local Network -** Up to 6 (NET6) or 64 (NET64) Algo-Tec™ 6500 control panels, repeaters and illuminated zonal mimics can be interconnected in a loop configuration to create a secure local network. NET6 - Local NET6 network card allows up to 6 panels to be networked. NET64 - Local NET64 network card allows up to 64 panels to be networked.
- **Easy to Address -** 'FAST' addressing (Firmware Addressed Secure Technology) ELIMINATES troublesome and time consuming setting of address cards and DIL switches.
- **On Site Flexibility -** Configuration of all system functions is fully site programmable.
- **Devices Display Address Number -** 'RVAV' Remote Visual Address Verification. Confirmation of the correct location of each device can be easily identified, using the devices in-built LED to indicate the device address number.
- **Simple to Operate -** Accessing information is easy using the large colour versatile touch screen interface.
- **Reduced Maintenance Costs -** Early indication and reporting of sensors approaching contamination level reduce false alarms and enable dirty sensors to be cleaned or replaced.
- **RS232 & Ethernet Ports -** Typically used to connect to a colour graphics system, pager system or BMS interface.
- **Approved to the latest EN 54-2 & 4 supporting up to 800 devices**
(in compliance with Clause 13-7 of EN54 pt2).

Typical 6500 Schematic



PRODUCT CERTIFICATION

BSI Certified Product

System Overview

Controls and Display (LCD) - All the functions of the Control Panel are accessed via a full colour 7" touch screen graphical display. Under normal quiescent conditions the display shows the current date, time and a programmable logo. In an alarm or fault condition the graphical touch screen will display the following:

- Device Address
- Loop number
- Zone number
- 60 characters of user definable device location text
- 40 characters of device alarm text
- 20 characters of panel text
- 20 characters of device loop text

All text is fully programmable on site.

The touch screen provides a simple select and touch programming aid for engineer configuration and end user operation. The panel is also equipped with 40 or 100 separate zonal fire LED's (expandable to 10,000) and 18 system LED's for mandatory requirements and information purposes. An optional integral low noise thermal printer is also available.

Device Location Text - Windows based text software is available to download from our website to enable the location text to be prepared in advance and then handed to the commissioning engineer for loading into the panel during commissioning. This simple process allows you more flexibility enabling you to make any last minute changes & speed up the entire process.

Power Supply - The range of 6500 control panels can be supplied with an integral 3A dc switch mode charger and 2 x 12V 12Ah sealed lead acid batteries. The system is also suitable for use with Protec 9300EN and 9800EN range remote power supplies with an extensive range of battery and charger sizes.

Printer - The optional integral printer is a 40-character low noise thermal printer. In operation the printer will provide on demand real time data of fire and fault conditions including time and date of events along with the device number and location text. By accessing the appropriate function from the user menu facility a variety of reports can be printed including the previous 5000 fire events and 5000 non fire events from the event log, the system device configuration and programming matrix, devices nearing their contamination limit and the current status of all devices.

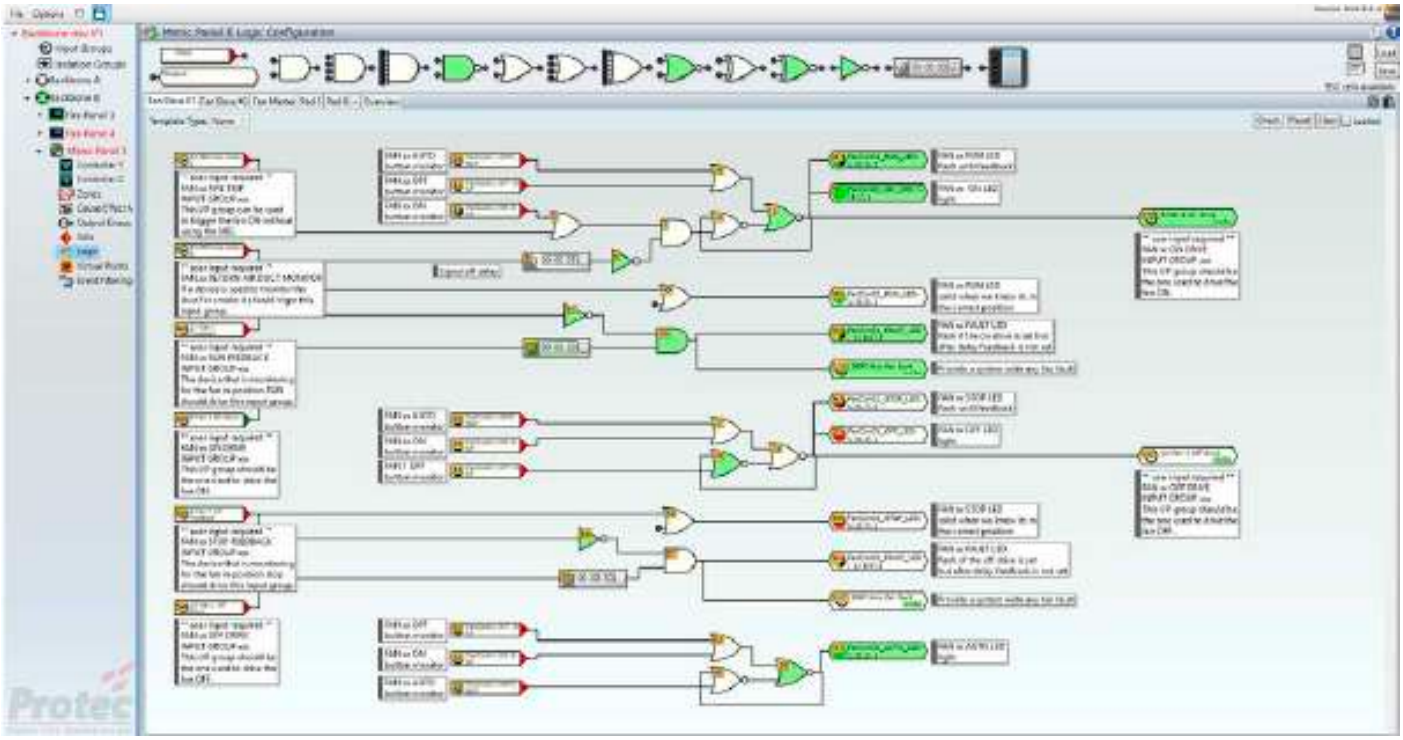
On Site Programming - The Protec Algo-Tec™ 6500 system is on site programmable. All of the commissioning configuration data can be entered and/or backed up using the Protec 6500/WINPROG windows based programming software via a PC. This feature enables the system to be re-configured and checked prior to attending site simplifying commissioning works on site, enabling text amendments to be carried out whilst on site and providing an invaluable remote backup should the need arise.

Logic Programming - The Protec 6500 software enables engineers to program the panel using standard cause and effect programming and/or logic programming. The logic programming uses standard, 'AND', 'OR' etc type logic gates. The software is very easy to use and has some powerful features, including;

- Up to 8 input groups per device
- 4,000 input groups per system
- 255 output groups per panels
- Staged input groups and timers
- T1/T2 delays
- All panels can be programmed from one location
- Inbuilt loop loading calculators

See screen shot below of typical logic programming example.

Typical Logic Programming



6500 19” Rack Enclosures

Features & Benefits

- Robust metal construction with powder coated finish
- Various door options available
- Various optional hinged ancillary plates
- 13U and 16U sizes available
- IP30 Environmental rating
- Fits standard 19” peripherals
- Ideally suited to Deluge, Sprinkler, Damper, Fireman’s control panels, Fan controls, MEI Interface and BOWS

System Overview

The Protec 19” rack mount enclosure system has been primarily designed to be compatible with the Protec range of Fire Control and Indicating Equipment.

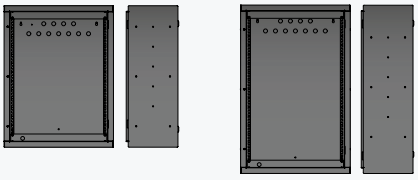
The enclosures meet the dimensional requirements for 19” rack systems and can therefore accommodate non Protec 19” equipment, however, due consideration must be given to the relevant dimensions of the enclosure to ensure equipment fits correctly.

The system is available with two rear enclosure size (13U and 16U), and two basic door options (New Zealand and Australian) the main differences being the functions available on the door.

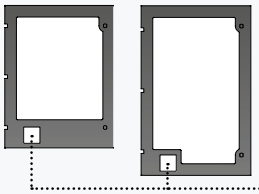
Also available are a range of internal hinged plates and blanking plates designed to give an extensive range of options.

Enclosure Options

1: Containment (13U & 16U)



2: Door Options (13 & 16U)



3: Door Additions

New Zealand Keyswitch Plate

Australian MCP

4: Hinged Plate Options

5U Display Panel

5U Expansion Plate

8U Display Panel with Printer

MEI Blanking Plate

5U MEI Plate

5: Blanking Plates

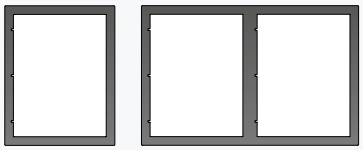
1U Blanking Plate

5U Blanking Plate

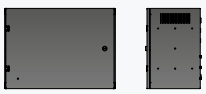
2U Blanking Plate

3U Blanking Plate

6: Optional Items



Single Bezel & Twin Bezel



40Ah Battery (3 or 8 Amp)

For Technical Data - See Table 11-14, Page 37

6500 Modular Expansion Interface (MEI)

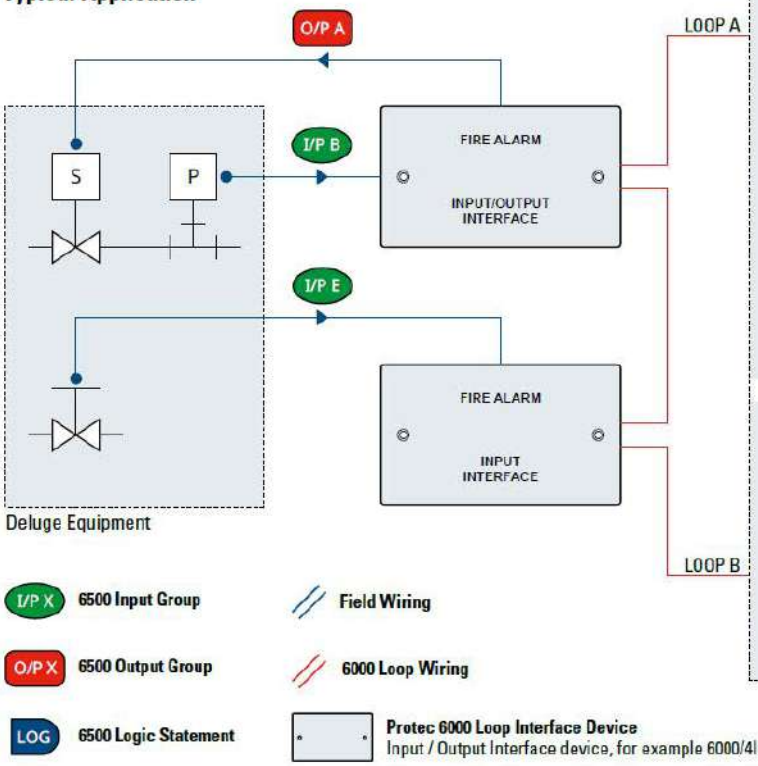
Features & Benefits

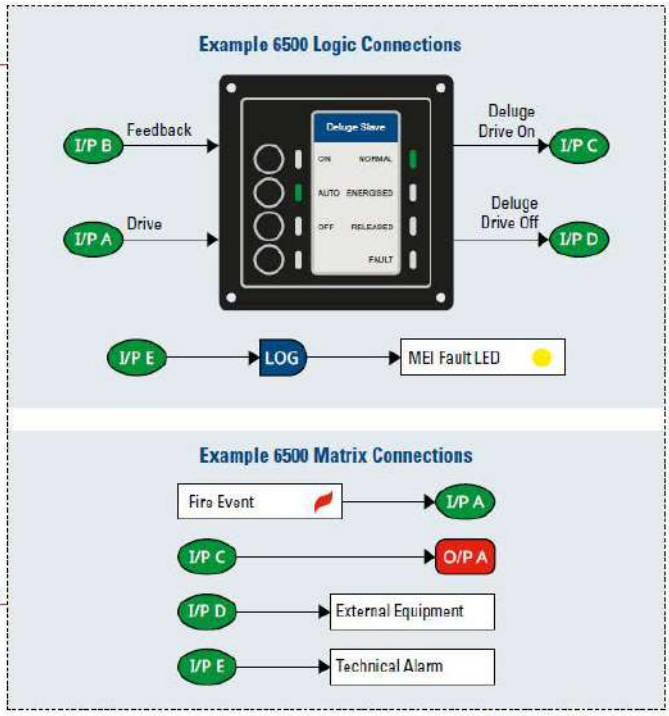
- 4 Inputs per MEI
- Clear LED Status Indication per Input.
- Up to 60 MEI's per Panel
- Up to 240 programmable MEI Inputs per Panel
- Configured via 6500 software.
- Customisable labels.
- Compatible with 6500 Control Panel

6500 Modular Expansion Interface (MEI)

Multiple modular interfaces can be added to the 19" rack mounted version of the 6500 panels. The MEI consists of 4 programmable push buttons and 8 programmable LED indicators and a drop in 'customisable' label. All controls and indicators are fully programmable, integrating fully with this site wide network of panels and devices.

Typical Application





Protec 6500 Equipment

I/P X 6500 Input Group

O/P X 6500 Output Group

LOG 6500 Logic Statement

Field Wiring

6000 Loop Wiring

Protec 6000 Loop Interface Device
Input / Output Interface device, for example 6000/410

I/P A Initial drive signal to start the deluge release process. This input group can be driven by a fire event. The process can be delayed if required by using the 6500 "Investigation Time" feature.

I/P B Feedback from the deluge system flow pressure sensor. Used to monitor if the system is in the correct state. Failure to activate within the programmed time period will generate a fault.

I/P C Signal from the Deluge Slave to energise the deluge release valve through O/P A.

I/P D Optional signal from the Deluge Slave to interface to external / third party equipment. This input group is triggered when the deluge drive is off.

I/P E Optional feedback from the deluge manual isolation valve. When the valve is isolated a Technical Alarm, as programmed through the commissioning software, is generate and the Deluge Slave reports a fault condition.

O/P A Output from a 6000 Loop Output Interface used to drive the deluge solenoid valve.

6000/FCU Fan Control Unit

Features & Benefits

- AS1668 Compliant
- Controls up to 4 Fans per Unit
- Loop Powered
- Simplified Programming Logic
- Inter-changeable Fan Labelling
- Compatible with 6500 Control Panel

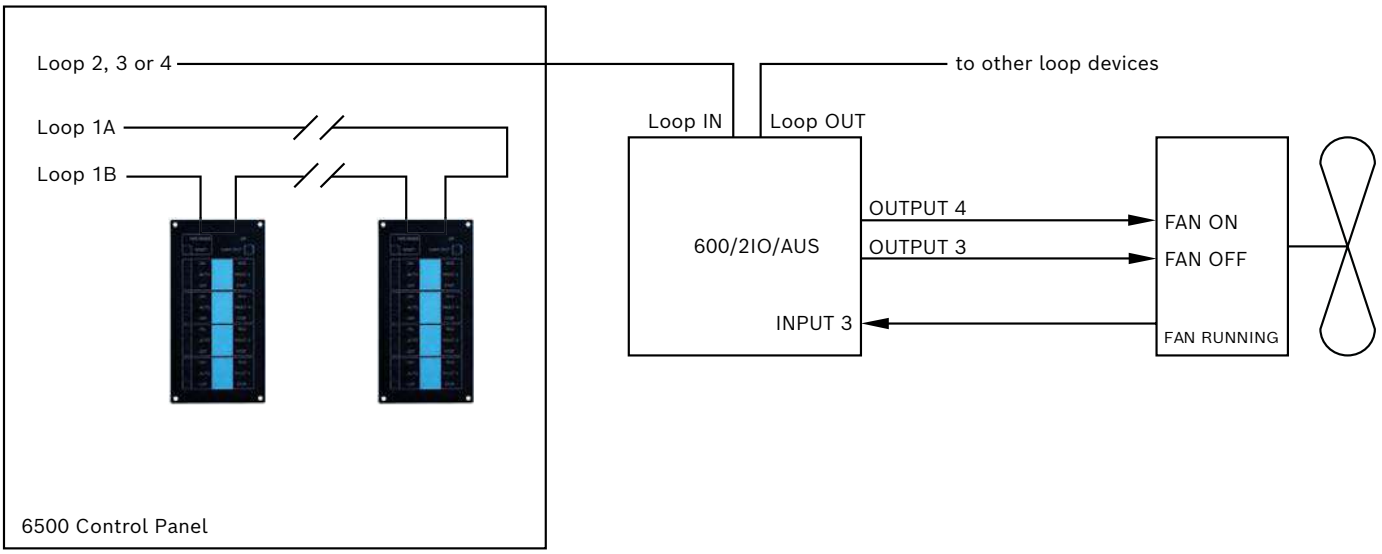
System Overview

The 6000/FCU Fan Control Unit is designed to work with the 6500 Digital Addressable Fire Control Panel, providing the ability to control and monitor the status of Fire and Smoke Control Fans in accordance with AS1668.1 2015.

Each 6000/FCU is connected to the 6500 Fire Control Panel via the Digital Addressable comms loop and is loop powered, whilst providing the ability to control up to 4 Fans (1 Fan per channel, 4 channels per 6000/FCU).

In accordance with AS1668.1 2015, each Fan Control Unit provides a separate and independent Fire Mode Indication and Reset control function. Utilising the X600 Laptop Programming Software Tool each channel can be individually configured via the Logic to control a 6000/2IO-AU input and output field device.

Loop Connection Diagram



PRODUCT CERTIFICATION

BSI Certified Product

Additional Products

6000 Loop Repeater

The 6000/LOOP/REPEATER can be connected directly to the local Algo-Tec™ digital addressable data loop and takes up just one address. Events from the main panel are displayed on the repeater's large LCD display, providing system indication of any loop connected location on site. The low power consumption allows numerous repeat devices to be fitted, greatly increasing system visibility.
The power consumption of the repeater has been minimised through energy efficient design, preserving loop current and capacity. Quiescent 1.6mA, Alarm 12.7mA.
The repeater can be surface or flush mounted as standard, allowing gland or conduit entrance through the rear, top or bottom of the enclosure. The device only requires a loop connection to provide both power and data, no network cabling, or external power supply is required.

6000/LOOP/REPEATER

6500 Repeat Panel

The Protec 6500 repeat panel can be connected to the secure local network. The repeat panel has an identical display to the control panel including a full colour 7" touch screen graphical display, zonal fire LED's and system LED's for information purposes and mandatory functions.
The repeat panel is available as surface or recessed mounted with a moulded polycarbonate hinged door finished in storm grey, or optionally with polished solid brass or brushed stainless steel finish for recess mounting only.

6500 Repeat Panel

6500 Illuminated Zonal Mimic

The Protec Network Mimic Panel provides a flexible platform for system indication and control solutions. A Mimic Panel can be configured for zonal indication, plant shutdown, fan control, damper control or other custom solutions.
The Mimic Panel is connected to the 6500 fault tolerant, redundant peer to peer network as part of a single distributed fire system, representing a single node. Multiple Mimic Panels can be placed on the network. Custom panel graphics are produced using industry standard graphical design software. Coloured architectural drawings, plans and custom logos can be directly imported.
A single Mimic Panel can support up to 1,000 RGB LEDs, 500 key/push/rotary switches and 5 clean contact outputs. The intensity of the LED outputs can be controlled by an ambient light sensor and each indicator is fault monitored.
An in-built setup feature of the Standard 6500 Windows based Commissioning Software is used to configure the Mimic Panel (allocating the system input/outputs to an LED indicator). The Software significantly reduces configuration time, increases information integrity and simplifies ongoing changes. The Commissioning Software provides a fully interactive graphical representation of Mimic Panel setup.

Zonal Mimic

6500 Illuminated Mimic Kit

We also offer Mimics in kit format, the circuit boards are mounted on a chassis plate so it can be housed in third party enclosures. The Mimic Kit comprises of: a Terminal board, Controller/Driver board, Modular Mimic drivers (64, 128, 192, 256, 320 LED's), LED light fibres cut to variable lengths (includes cutting tool) and a network card.

Mimic Kit

Hercules 6 PC Software

Features & Benefits

- Simple and clear user interface
- Fully configurable
- Secure system
- Multiple users
- Event and alarm history
- Programmable to suit any application
- Displays the precise location of events
- Compatible with most Protec products

Overview

The Protec Hercules PC software is a powerful alarm management tool and graphical user interface designed to work with Protec Intelligent Addressable Fire Systems, Cirrus-Pro Aspirating Fire Detectors or DigiLite® Emergency Lighting Test and Monitoring System.

The software provides a cost effective solution for all types of installation, and is suitable for use with single panel to multi-site applications.

Hercules 6 allows the users to manage their fire alarm, aspirating or emergency lighting system efficiently from one or more convenient locations. Each workstation provides full control of the system, whether connected to a single panel or multi-panel network. All current and historical event information is available with the click of a mouse. Users can monitor and interrogate their systems to ensure alarms are detected and dealt with quickly and efficiently.

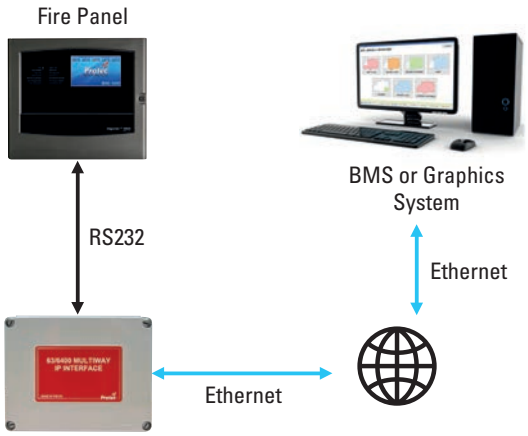
The system is monitored such a way that if any connection failures between the alarm panel and the PC are detected both systems will show fault. Connections to CirrusPro and DigiLite Systems are purely Ethernet based and require local network access.

The Hercules 6 software not only delivers alarm information, it also records system events and faults, allowing the generation of detailed reports.

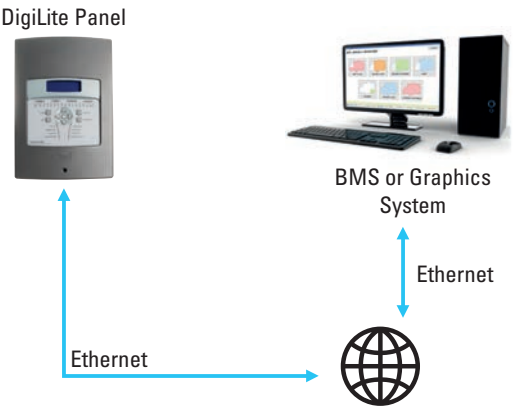
A series of graphics screens show the position of all addressable devices and provide a visual indication of their status. An easily used selection system permits rapid selection of a particular screen. To help locate particular devices large areas are broken down into a series of sub screens. The location of a device during an alarm, fault, disablement or test condition is further enhanced by flashing cross-hatched sections indicating the area containing the active device.

Typical Schematic

For Addressable Fire Systems

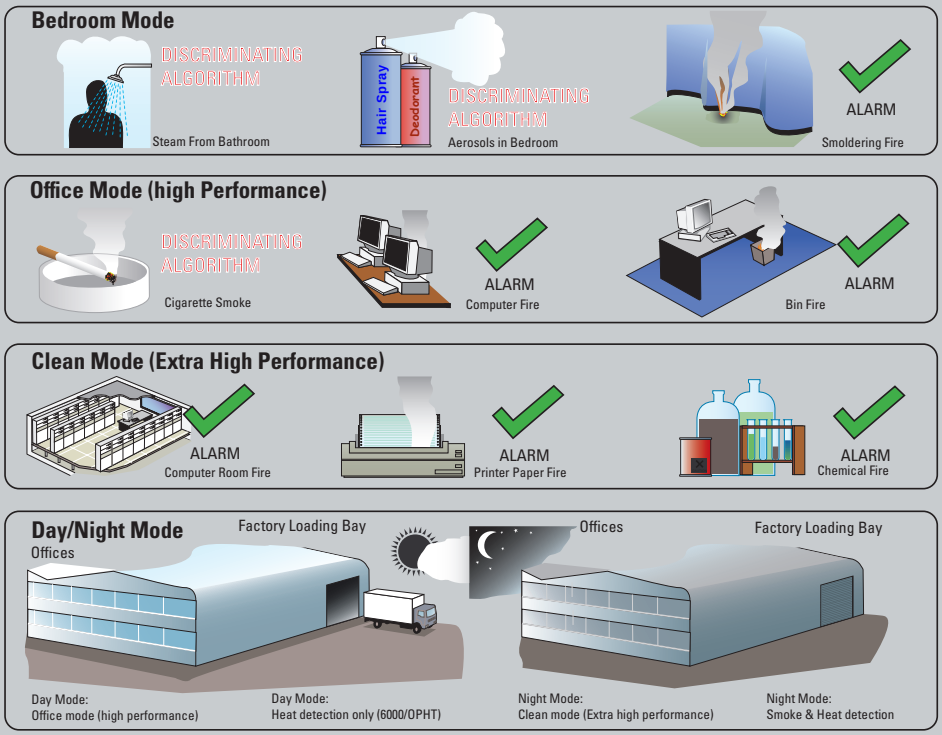


For Cirrus Pro and Emergency Lighting Systems



Algo-Tec™ 6000PLUS Protocol

Algo-Tec™ 6000*PLUS* Interactive Decision Making Algorithms - Typical Applications



NOTE: The above examples give an indication of system reaction to intermittent contaminants and typical fire sources in a correctly designed BS5839 system . They by no means detail the full complexity of the systems decision making algorithms. Examples are for 6000*PLUS*/OPHT.

Features & Benefits

- Reduced False Alarms
- Enhanced Performance
- Easy to Address
- Easy to Install
- On Site Flexibility
- Devices Display Address Number
- Reduced Maintenance Costs
- Digital Signalling
- Wide Range of Sensors and Interfaces

The Protec Algo-Tec™ 6000PLUS Interactive Digital Addressable System unwrapped:
The Protec Algo-Tec™ 6000PLUS protocol developed by Protec's in-house Research and Development team is utilised by the Protec Algo-Tec™ 6100, 6300 and 6400 interactive digital addressable fire control systems. Immunity to false alarms, more responsive fire detection, and ease of use have all been improved to develop one of the most reliable systems available.

Protec Algo-Tec™ 6000PLUS
The name Algo-Tec™ is a derivative of Protec algorithms. Algorithms are logical mathematical procedures for solving problems. Protec have developed fire detection algorithms coupled with fuzzy logic specifically designed to reduce unwanted fire alarms and to enhance the sensitivity of the system to true fire phenomenon.
The Algo-Tec™ algorithms are exclusively utilised by the Protec Algo-Tec™ 6100, 6300 and 6400 Interactive Digital Addressable Fire Control Systems.

Interactive
Algo-Tec™ evaluates the data of each fire sensor and is able to learn from the information received. This may simply be to recognise that a sensor is becoming contaminated or in a dirty environment and to automatically increase the alarm threshold to compensate for the background levels (Threshold Compensation).

More complex Algo-Tec™ functions include the ability to discriminate between certain fire and non-fire conditions, filtering out certain environmental stimuli, such as steam from a hotel bathroom, and increasing the sensitivity of a sensor when an increase in temperature is detected.

The net effect of the interaction between the sensors and the Algo-Tec™ decision making is enhanced performance, through immunity to false alarms and more responsive fire detection.

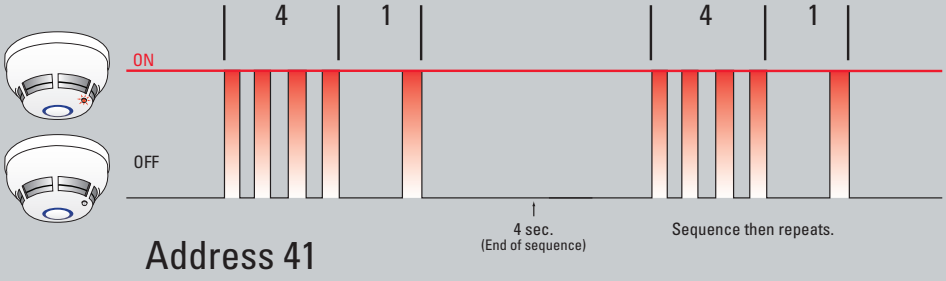
Digital Addressable
The data communication between the sensors and the control equipment is Digital. The Algo-Tec™ protocol utilised by the 6000PLUS system enables high levels of data to be transferred, providing far more detailed information than was previously achievable with analogue addressable systems. It should however be noted that many analogue addressable systems use digital communication but do not transfer the high levels of data associated with the Algo-Tec™ protocol.
Speed, stability, excellent EMC and security all serve to enhance the Algo-Tec™ Digital signalling. Why go analogue addressable? when you can now choose Algo-Tec™ Digital Addressable.

RVAV™

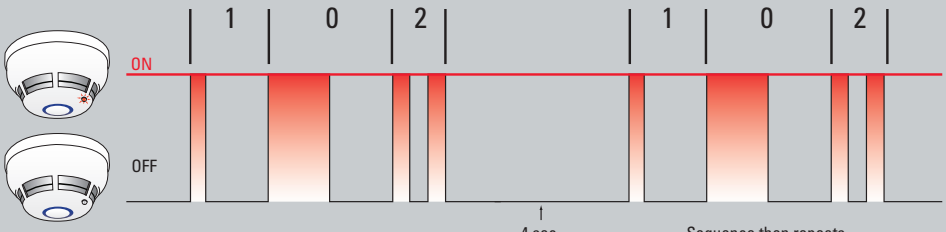
Remote Visual Address Verification

Easily identifies installed device address numbers.

Algo-Tec™ sensors can be set into RVAV™ mode from the control panel. Each device displays their address number via the LED indicator. The address is shown by a flash sequence, examples of which are shown here.



Address 41



Address 102

FAST™ Addressing

FAST™ (Firmware Addressed Secure Technology). Each Algo-Tec™ 6000PLUS device is manufactured with a unique serial number factory programmed (firmware embedded) and device label. The label includes the serial number on 3 bar-coded segments, 2 of which are removable by the installer (one is a spare).

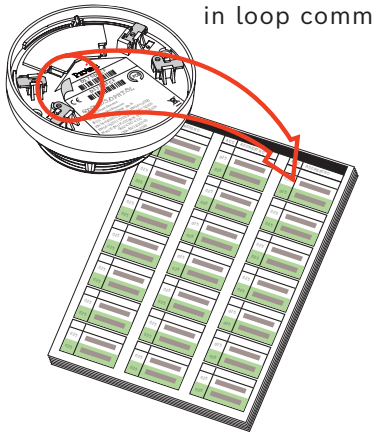
The label is attached to an address location booklet, which is handed to the engineer prior to commissioning. During commissioning the engineer scans the address location booklet to download the loop, address and serial number details. The downloaded data is then checked and stored within the secure non-volatile memory of the control panel and the addressing is complete. FAST™ and easy eliminating troublesome and time consuming setting of address cards and DIL switches. FAST™ addressing is more secure than 'SOFT ADDRESSING' and easier to extend or amend, allowing greater flexibility and reduced costs.

RVAV™

RVAV™ (Remote Visual Address Verification). Once the system has been FAST™ addressed the correct location of each Algo-Tec™ device can be easily identified, using the devices in-built LED to indicate the device address number. The LED has a simple coded pulse making it quick and easy to count.

Because the control panel sends the RVAV™ signal to each device, the RVAV™ walk test is confirming that the devices are correctly addressed and correctly communicating. As-fitted Drawings and device labels can also be checked during RVAV™ walk test, without the disruption of activating devices commonly associated with other manufactures of system.

Peel off barcode address and place in loop commissioning manual



Features & Benefits

- Voice Enhanced 'Talking' Sounder with Selectable Messages
- High Intensity Visual Alarm Device
- Electronic Sounder
- Multi Criteria High Performance Optical Smoke, Heat and CO Sensor
- Dual Technology High Performance Optical Smoke and Heat Sensor
- Optical Smoke Sensor
- Heat Sensor
- Protec Algo-Tec™ 6000PLUS Protocol
- Devices Display Address Number
- FAST™ Addressing
- Reduced False Alarms

Overview

The Protec Algo-Tec™ 6000PLUS sensor range has been developed to incorporate advanced fire sensing technology, electronic sounders, high intensity LED warning beacons and speech enhanced talking sounder capability, all integrated within the sensor head and powered from the loop.

Sensors - The Protec Algo-Tec™ 6000PLUS interactive fire sensors form a range of elegantly designed, aesthetic, low profile detectors that blend unobtrusively into modern working environments. All sensors are interchangeable with a common mounting base. All sensors incorporate a discrete anti-tamper security screw and latching 'FIRE' LED indicator with the facility to activate a remote indicator unit.

The Protec Algo-Tec™ 6000PLUS intelligent fire sensors utilise advanced discriminating algorithms for maximum reliability and immunity to false alarms. The Protec Algo-Tec™ 6000PLUS sensors learn from their environment, applying interactive decision making algorithms to provide stability, threshold compensation and optimised performance.

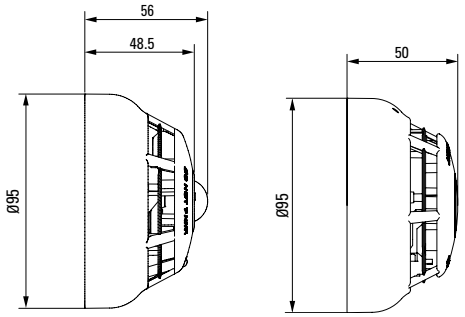
The sensor range includes heat, optical smoke, dual technology high performance optical smoke and heat, and multi criteria high performance dual optical smoke, heat and carbon monoxide multi-sensors.

Sensor Talking Sounder Beacon - For the ultimate method of alerting building occupants of the incidence of an emergency, the Protec Algo-Tec™ 6000PLUS sensor can be equipped with an integrated voice enhanced sounder. The talking sounder is capable of delivering synchronised alert and evacuate messages around a building, removing any ambiguity, particularly for anyone unfamiliar with the building alert and evacuation strategy, enabling a more prompt and safe building evacuation. When combined with the LED beacons and multi-sensor fire detection technology, we are able to provide the ultimate and most innovative fire detection PLUS alarm system for buildings.

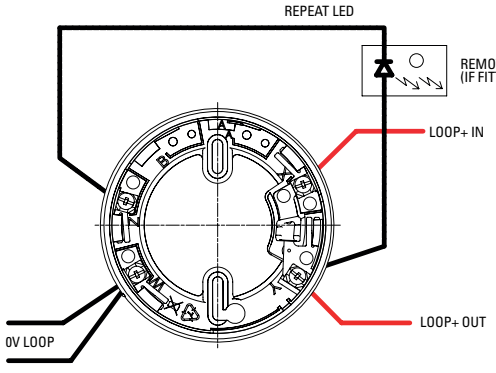
Sensor Sounder - The Protec Algo-Tec™ 6000PLUS sensors can also be equipped with an integrated loop powered electronic sounder with three programmable sounder tone options, constant, pulse or warble selectable by the control panel along with adjustable volume control. A loop short circuit isolator is also incorporated within the head. The sensor sounder tones are compatible with the full range of Protec 6000 electronic sounders.

Sensor VAD - Compliance with DDA legislation is assisted by the addition of the Protec visual alarm device (VAD) to the 6000PLUSensor, to warn those with hearing impairments or in noisy environments. The VAD utilises a high intensity LED with lower power consumption and increased reliability when compared to alternative indicators.
The VAD is located in the centre of the sensor, so can be viewed from all angles. Suitable for ceiling mounting the VAD distributes light in a cylindrical pattern to achieve the required minimum illumination of 0.4lux over the entire coverage area in accordance with EN54-23.
The maximum mounting height is 3m with a coverage diameter of 7.5m.
For smaller areas the device can be programmed on-site for coverage diameter of 3m or 5m at reduced power.

Dimensions (mm)



Typical Wiring using 6000PLUS/BASE



PRODUCT CERTIFICATION

BSI Certified Product

Sensor Variants

Code	Description	Colour Code	Standards
6000PLUS/HT	Heat Sensor	●	AS7240 Part 5
6KPAUS/HT/S	Heat Sensor c/w Sounder	● ●	AS7240 Part 5
6KPAUS/HT/SVAD	Heat Sensor c/w Sounder and VAD	● ● ●	AS7240 Part 5 & 23
6KPAUS/HT/TSVAD	Heat Sensor c/w Talking Sounder and VAD	● ● ●	AS7240 Part 5 & 23
6000PLUS/OP	Optical Smoke Sensor	●	AS7240 Part 7
6KPAUS/OP/S	Optical Smoke Sensor c/w Sounder	● ●	AS7240 Part 7
6000PLUS/OPHT	Optical Heat Sensor	●	AS7240 Part 15 (5&7)
6000PLUS/OPHT/I	Optical Heat Sensor with Isolator	●	AS7240 Part 15 (5&7)
6000PLUS/OPHT/S	Optical Heat Sensor c/w Sounder	● ●	AS7240 Part 15 (5&7)
6KPAUS/OPHT/VAD	Optical Heat Sensor c/w VAD	● ●	AS7240 Part 15 (5&7) & 23
6KPAUS/OPHT/SVAD	Optical Heat Sensor c/w Sounder and VAD	● ● ●	AS7240 Part 15 (5&7) & 23
6KPAUS/OPHT/TS	Optical Heat Sensor c/w Talking Sounder	● ●	AS7240 Part 15 (5&7)
6KPAUS/OPHT/TSVAD	Optical Heat Sensor c/w Talking Sounder and VAD	● ● ●	AS7240 Part 15 (5&7) & 23
6000PLUS/OPHTCO	Optical Heat CO Sensor	●	AS7240 Part 15 (5&7)
6KPAUS/OPHTCO/S	Optical Heat CO Sensor c/w Sounder	● ●	AS7240 Part 15 (5&7)
6KPAUS/OPHTCO/VAD	Optical Heat CO Sensor c/w VAD	● ●	AS7240 Part 15 (5&7) & 23
6KPAUS/OPHTCO/SVAD	Optical Heat CO Sensor c/w Sounder and VAD	● ● ●	AS7240 Part 15 (5&7) & 23
6KPAUS/OPHTCO/TSVAD	Optical Heat CO Sensor c/w Talking Sounder and VAD	● ● ●	AS7240 Part 15 (5&7) & 23

Talking Sounder Message Set

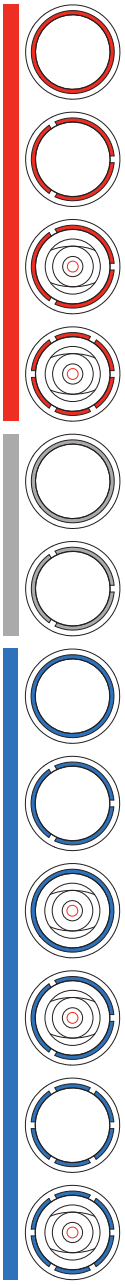
Message No	Description	Preamble Tone	Duration(s)	Message Text
0	Off			
1	Female evacuation	AUS Evacuation Tone	7.5	Attention, attention. This is an emergency. Please Evacuate Now by the nearest available exit
2	Female alert	AUS Alert Tone	7.5	May I have your attention please, an incident has been reported in the building please listen for further instructions
3	Female evacuation V2	AUS Evacuation Tone	7.5	Attention, attention. This is an emergency. Please leave the building by the nearest available exit
4	Female test	AUS Evacuation Tone	3.5	This is a test message, no action is required
5	Male evacuation	AUS Evacuation Tone	7.5	Attention, attention. This is an emergency. Please Evacuate Now by the nearest available exit
6	Male alert	AUS Alert Tone	8.1	May I have your attention please, an incident has been reported in the building please listen for further instructions
7	Male test	AUS Evacuation Tone	4	This is a test message, no action is required
8	Bell (accessed via msg 14/15)	None	Until Stopped	None
9	No tone or message	None	0	Used by control panel to allow user to ‘turn off’ sounder part of a talking sounder beacon
10	Unused, defaults to msg 1	AUS Evacuation Tone	Until Stopped	None
11	Warble electronic tone	None	Until Stopped	None
12	Pulsed electronic tone	None	Until Stopped	None
13	Continuous electronic tone	None	Until Stopped	None
14	Pulsed bell	None	Until Stopped	None
15	Continious bell	None	Until Stopped	None

Base Options

6000PLUS/BASE - Low profile common mounting base
6000PLUS/FFBASE - Fast fixing semi recessed base

Note - base options above are included in the product approval.

6000PLUS Sensor / VAD Recognition Chart



6000PLUS/HT
Heat Sensor

6000PLUS/HT/S
Heat Sensor c/w Sounder

6000PLUS/HT/SVAD
Heat Sensor c/w Sounder and VAD

6000PLUS/HT/TSVAD
Heat Sensor c/w Talking Sounder and VAD

6000PLUS/OP
Optical Smoke Sensor

6000PLUS/OP/S
Optical Smoke Sensor c/w Sounder

6000PLUS/OPHT & 6000PLUS/OPHT/I
Optical Heat Sensor & Optical Heat Sensor c/w Isolator

6000PLUS/OPHT/S
Optical Heat Sensor c/w Sounder

6000PLUS/OPHT/VAD
Optical Heat Sensor c/w VAD

6000PLUS/OPHT/SVAD
Optical Heat Sensor c/w Sounder and VAD

6000PLUS/OPHT/TS
Optical Heat Sensor c/w Talking Sounder

6000PLUS/OPHT/TSVAD
Optical Heat Sensor c/w Talking Sounder and VAD

6000PLUS/OPHTCO
Optical Heat CO Sensor

6000PLUS/OPHTCO/S
Optical Heat CO Sensor c/w Sounder

6000PLUS/OPHTCO/VAD
Optical Heat CO Sensor c/w VAD

6000PLUS/OPHTCO/SVAD
Optical Heat CO Sensor c/w Sounder and VAD

6000PLUS/OPHTCO/TSVAD
Optical Heat CO Sensor c/w Talking Sounder and VAD

The Protec range of Algo-Tec ™ 6000PLUS detectors are identifiable by colour coded rings, the colour coding is:

Red – Temperature Sensor
Grey – Optical Detector
Blue – Optical / Heat
Black – Optical / Heat / CO

Additionally we have identification for sounders, talking sounders and LED indicators, as shown.

For Technical Data on:

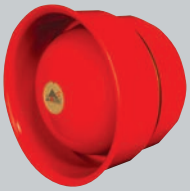
6000PLUS/HT Variants -
See Table 2, 3 and 4, Page 32, 34

6000PLUS/OP Variants -
See Table 2, 3 and 4, Page 32, 34

6000PLUS/OPHT Variants -
See Table 2, 3 and 4, Page 32, 33, 34

6000PLUS/OPHTCO Variants -
See Table 2, 3 and 4, Page 32, 33, 34

PRODUCT CERTIFICATION
BSI Certified Product



6000/SSR2

6000/LED

6000/VAD/W

6000/VAD/C

6000/SSR/VAD

6000/MCP

6000/MCP/WP

Overview

Protec have a complete range of sounder, talking sounders, beacons, sounder beacon and Visual Alarm devices (VADs). The range are all loop powered, high output low current devices and Include short circuit Isolators. The range Includes the following:

6000/SSR2/AUS

The 6000/SSR2/AUS is an addressable loop powered, high output sounder utilising Piezo drivers' delivering high sound output 100dB(A) output with very low current consumption. The sounder volume can be programmed high (100dB), Medium (95dB) and low (75dB). The sounder Incorporates a short circuit Isolator and Is available in both red and white and has an IP rating of IP65. Approved to EN54 Part 3 and 17.

6000/LED

The 6000LED Is a loop powered, high Intensity LED beacon. The beacon Is a low current device, available in a choice of coloured lens and back boxes, the beacon Is IP65 making It suitable for both Internal and external use. The 6000LED has 18 high Intensity with a flash rate of 1Hz and Is complete with a short circuit Isolator.

For Technical Data - See Table 6, Page 35

6000/VAD/W & 6000/VAD/C

The Protec 6000/VAD/W Addressable wall mounted Visual Alarm Device (VAD) and 6000/VAD/C Addressable ceiling mounted visual alarm device are loop driven, addressable high Intensity VAD's designed to EN54 Pt23. The wall VAD Is categorised for Installation at a height of up to 2.4m and coverage of 7.5m x 7.5m, W-2.4-7.5, and the ceiling VAD at a height of 3m and coverage diameter of 7.5m C-3-7.5. For smaller areas these devices can be switched down from 7.5m to 5m or 3.5m thus reducing power consumption and maximising the number of devices on a loop. The low power modes are software programmable. Both units have unique lens that distributes the white light, for the wall VAD a cuboid shape and for the ceiling VAD a cylindrical shape to achieve the required Illumination of 0.4lux over the entire coverage are in accordance with EN54-Pt23.

6000/SSR/VAD/AUS

The Protec 6000/SSR/VAD/AUS Is a loop driven, addressable high Intensity Visual Alarm Device (VAD) with up to 7m x 7m room coverage and a high output electronic sounder with up to 100dB(A) at 1m. Combining the two functions in one concept in one compact high efficiency design Improves the aesthetic appearance and simplifies the Installation of the device. By utilising the Protec Algo-Tec 6000 protocol, the 6000/SSR/VAD offers best in class performance in terms of flexibility, power consumption, sound output and visual Indication. The device Is categorised for Installation at a height of 2.4m and coverage of 7m x 7m W-2.4-7 adjustable down to 5m and 3m for smaller room coverage. Similarly, the tone and volume options are selectable by the control panel. The product has a unique lens that

distributes the white light in a cuboid shape to achieve the required Illumination of 0.4lux over the entire area in accordance with EN54 Part 23. The unit Is IP65 rating making It suitable mounting Internally or externally.

For Technical Data - See Table 5, Page 34

6000/MCP

Installation efficiency, flexibility and full compliance with the latest standards are at the heart of the 6000/MCP indoor call point. It provides a unique 'plug and play' concept designed specifically to reduce installation time. The 6000/MCP uses a re-settable break glass element and offer anti-tamper facility. The unit Is complete with a Integral short circuit Isolator, approved the EN54 Part 11 and 17.

6000/MCP/WP

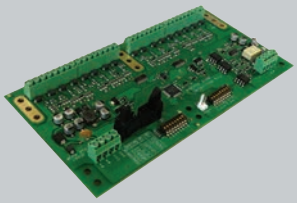
This is an IP67 sealed manual call point product. The enhanced environmental protection allows the unit to be installed in many external environments where water and dirt are likely to be present, making it a true waterproof and outdoor product.

For Technical Data - See Table 7, Page 35

6000/2IO, 6000/4IO, 6000/2LPZA,

6000/CCO

6000/MIP



6000/16WAY

6000/MICCO

6000/LPZA & 6000/APZA

6000/LCM

Overviews

6000/2IO
The Protec dual input/output interface is a loop powered input / output device providing 2 monitored inputs and two volt free changeover contacts. The contacts may be used to connect Protec addressable loops to ancillary equipment.

6000/4IO
The Protec 4 way input/output interface is a loop powered input / output device providing 2 local zones of conventional detection, 2 monitored inputs, 2 local monitored alarm outputs and two volt free changeover contacts. The contacts may be used to connect Protec addressable loops to ancillary equipment.

6000/2LPZA
The Protec dual zone alarm interface is a loop powered input / output device providing 2 local zones of conventional detection and 2 local monitored alarm outputs.

6000/2APZA
The Protec dual zone alarm interface is an auxiliary powered input / output device providing 2 local zones of conventional detection and 2 local monitored alarm outputs.

6000/LPZA
The Protec Zone Alarm Interface allows the Protec 6000 series addressable loop to interface to a zone of conventional detection and a conventional sounder circuit. The device is fully loop powered and drives the zone and alarm circuits without the requirement of a separate 24V supply.

6000/APZA
The Protec Zone Alarm Interface allows the Protec 6000 series addressable loop to interface to a zone of conventional detection and a conventional sounder circuit. The device requires an auxiliary 24V supply to power the zone and alarm circuits.

6000/CCO
The Protec Clean Contact Interface (CCO) is a loop powered output device providing a set of volt free changeover contacts that are controlled by the host control panel. The contacts may be used to interface Protec addressable loops to any form of ancillary equipment.

6000/MIP
The Protec Monitored Input Interface (MIP) is a loop powered input device which reports back the state of a monitored input to the fire alarm control panel.

6000/MICCO
The Protec Monitored Output Clean Contact Interface (MICCO) is a loop powered input / output device providing a monitored input and a set of volt free changeover contacts. The contacts may be used to connect Protec addressable loops to ancillary equipment.

6000/LCM
The Protec 6000 Local Control Module has been designed to allow easy integration of Protec Addressable Fire Detection systems into Houses of Multiple Occupancy and offers novel features to reduce false and nuisance alarms. The interface drives a zone of conventional devices and provides a supply to a local alarm circuit.

6000/16WAY
The Protec 16 way interface is a 24V auxiliary powered device which interfaces up to 16 zones of conventional detection and 16 monitored alarm outputs to a Protec series 6000 addressable loop.

For Technical Data - See Table 10, Page 36

6000PLUS/UG4 Ventilation Duct Smoke Detector

Features & Benefits

- 6000PLUS/UG4DP for use with Protec Algo-TecTM 6000 interactive Digital Addressable Fire Detection Systems
- One-Pipe Air Sampling System
- Patented Venturi Pipe and Duct Housing Test Hole on Cover
- Simple Installation
- Sensitive Flow Indicator
- Filter for Dusty Environments
- Foolproof Installtion of Venturi pipe

Overview

The duct smoke detector provides early detection of smoke and products of combustion present in air moving through an HVAC duct. The assembly requires 6000/OP or 6000PLUS/OP digital addressable head.

The unit has been specially constructed to allow optimum airflow through the smoke detector's chamber.

A revolutionary 'one pipe system', the Venturi Principle, is achieved by the use of a single pipe with two built-in channels which directs the airflow smoothly through the detector's chamber and returns the air back into the duct. An airflow indicator confirms airflow through the unit itself when the airflow is above 0.75 m/sec.

The 'one pipe system' and in-built connection block for termination of cables makes the unit far easier to install than it's competitors. The duct probe is supplied with full fixing instructions and a mounting template.

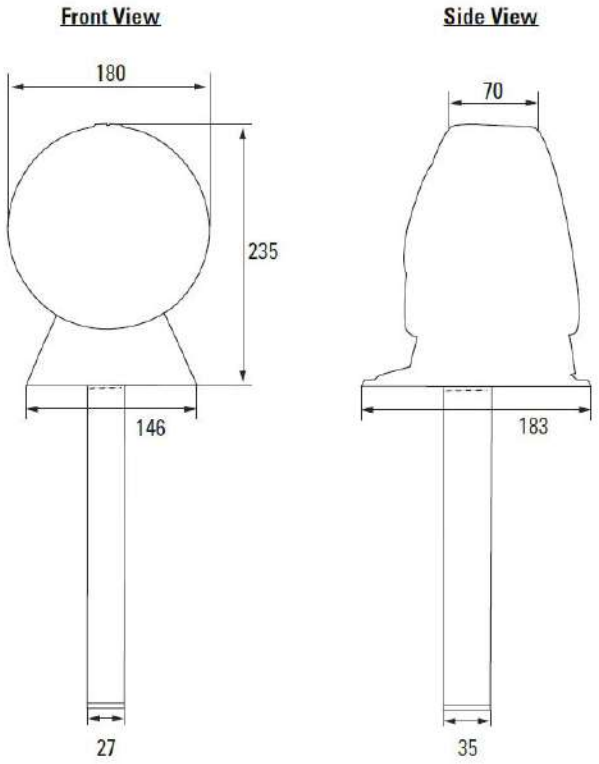
The air sampling tube is provided in three standard lengths to suit the HVAC duct.

Model Reference

Product Code	Options
6000PLUS/ UG4DP6	Duct assembly c/w 600mm sampling tube for 150 mm to 800 mm duct diameter
6000PLUS/ UG4DP15	Duct assembly c/w 1500mm sampling tube for 600mm to1300mm duct diameter
6000PLUS/ UG4DP28	Duct assembly c/w 2800mm sampling tube for 1300mm to 2600mm duct diameter

Dimensions (mm)

180(W) x 235(H) x 183(D)



Optional Mounting Bracket

For mounting of duct smoke detector, on circular or insulated flat ducts.

Stock code: UG4DP/MB

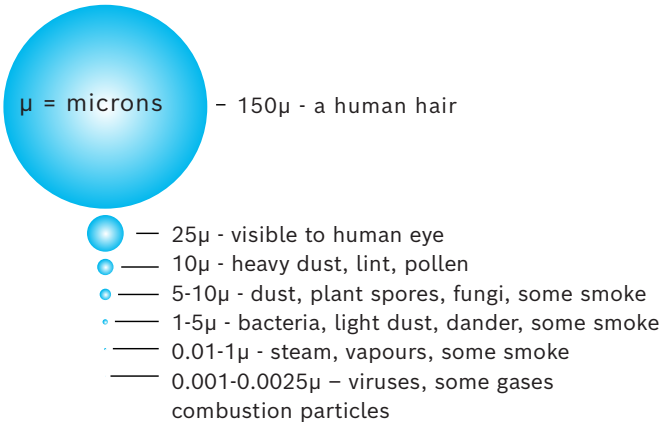
For Technical Data - See Table 8, Page 35

Overview

Firstly, it's important to understand how a fire starts. Combustible material has a normal operating temperature (i.e. when it's not on fire), however when this material is subjected to ever increasing temperatures it can reach ignition point. Once ignition point is reached flames and heat are generated. Generally, before ignition point, the combustible material may well initially produce small amounts of visible smoke. These visible smoke particles can be detected early, with optical aspirating smoke detectors; as more smoke is produced, detection can be provided by regular point type smoke detectors and beam detectors. However, what is not always obvious, is that before smoke is produced the combustible material starts to thermally 'break down'. This is known as the Thermal Particulate Point. At this point billions of INVISIBLE carbon particles (Thermal/ Fire Particulates) are emitted.

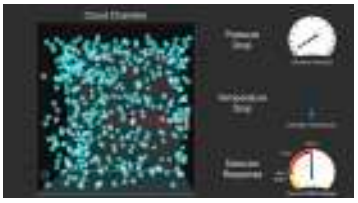
Our primary detection technology uses the "cloud chamber" to detect these fire particles which are 0.0025 Microns in size. Although invisible to optical measuring technologies, these particles may often create an odour, hence the phrase "you can sometimes smell a fire, without seeing smoke".

Scaling of Visible and Invisible Particulate



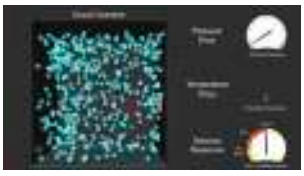
Cloud Chamber Science

Within the humid environment of the cloud chamber, a significant change in chamber pressure creates a dramatic drop of the sample temperature, which by reaction forms a cloud. The cloud density is then measured optically and is directly proportional to the amount of initially invisible particles.
i.e. More invisible particles measured, more cloud density, more signal generated, more fire!



Aspirating FIRE Detection - the Cloud Chamber detector identifies invisible sub-micron particles generated during the combustion process when a material begins to over-heat. The cloud chamber measurement scale is in particles per cm^3 ($PPCC^3$).


Cirrus CCD


Cloud Chamber 'Fire' sensor

Cirrus CCD Display

Aspirating SMOKE Detection - Protec ProPointPlus aspirating smoke sensors utilise 'optical' LED Scatter Chamber Detectors (SCD's) within each of the four individual aspirator sampling ports. The SCD smoke sensor identifies small amounts of the visible smoke particles generated as material continues to over-heat. The smoke measurement scale is percentage obscuration per metre (%obs/m).

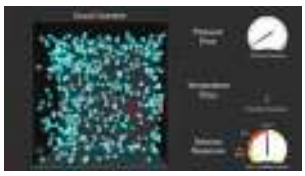

ProPoint PLUS


'Optical' SCD (Scatter Chamber Detector) 'Smoke' sensor

ProPointPlus Display

Aspirating FIRE & SMOKE Detection - Protec Cirrus HYBRID aspirating detectors contain two separate detection elements to detect two different phenomenon associated with fire (fire particles and smoke particles). The Cirrus HYBRID detector includes as its primary sensor, a 'Cloud Chamber' fire sensor which is supplemented by high sensitivity 'Optical' sensors.
Cirrus HYBRID detectors indicate these two separate detection element scales ($PPCC^3$ & %Obs/m) individually, however as its primary display these two scales are combined and integrated on a bespoke scale refered to as a 'Combined Fire and Smoke' signal.


Cirrus HYBRID


Cloud Chamber 'Fire' sensor

&


'Optical' SCD (Scatter Chamber Detector) 'Smoke' sensor

=

Cirrus HYBRID Display

Stage 1

The earliest stages of a fire (Incipient stage) is when a combustible material overheats. This produces a very high quantity of invisible 'fire' particles. These particles may have an odour but cannot be seen, only cloud chamber based detectors can detect this stage of a fire.

Stage 2

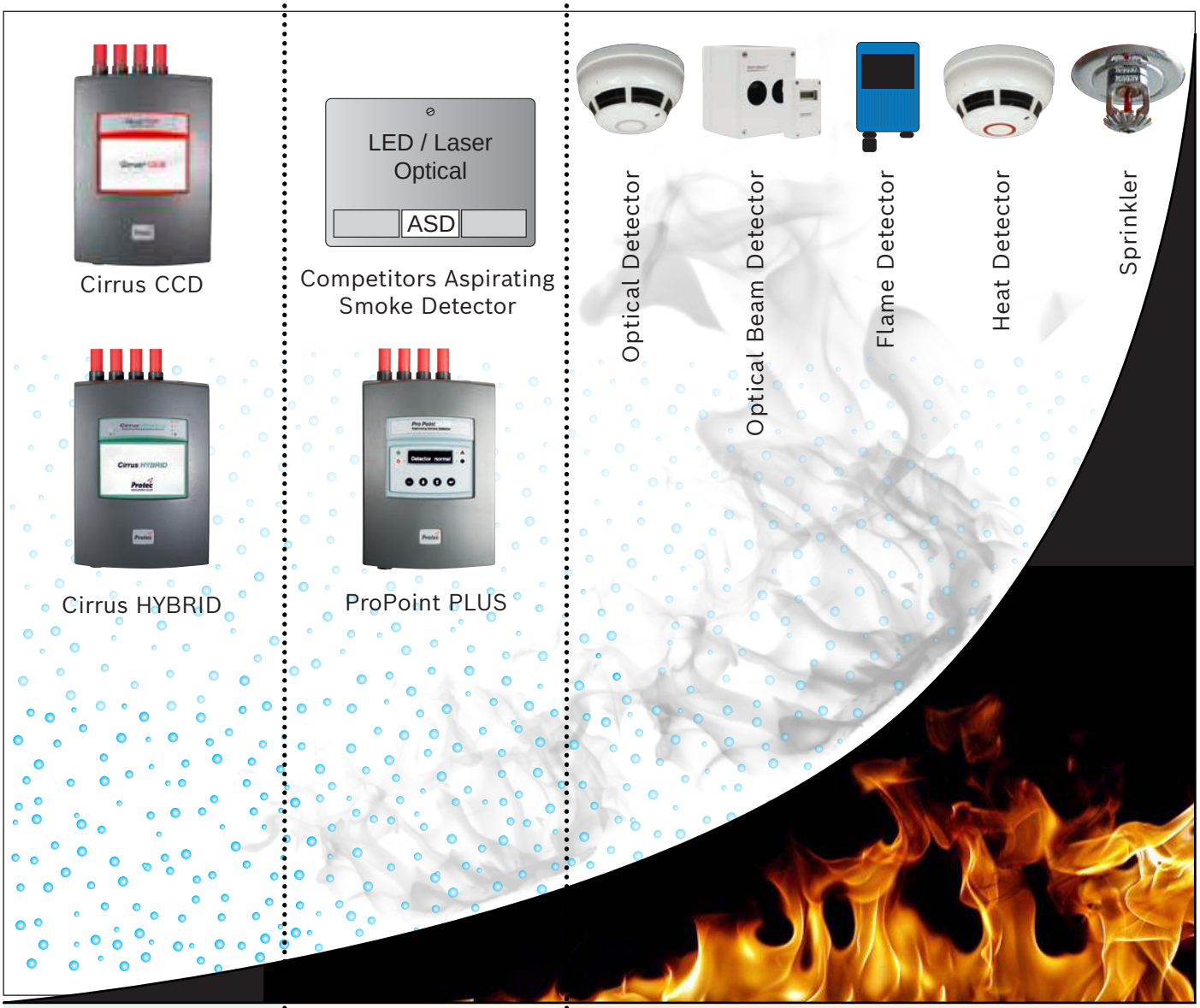
As the fire develops small amounts of visible smoke particles are generated. These particles can be detected by high sensitive 'optical' (LED or laser technology) aspirating 'smoke' detectors.

Stages 3, 4 & 5

Through further progression of the combustion process the 'fire condition' develops and allows other technologies to then identify the event.

Conventional point type smoke detectors and optical beam detectors respond to greater levels of visible smoke. Subject to the actual material that is burning these are often followed by flame detectors.

Conventional point type heat detectors respond to an ever increasing material temperature, as do sprinkler heads.



Stage 1 Stage 2 Stages 3, 4 & 5

NOTE: Protec Cirrus HYBRID aspirating detectors contain a cloud chamber as their primary 'fire' sensor and can provide the earliest warning of material overheat conditions, providing time to allow corrective action to take place to limit damage and loss. Uniquely, the Cirrus HYBRID detector also contains up to four separate optical 'smoke' sensors, thereby allowing meaningful alarm condition warnings to be provided as the event continues. This can be a major advantage on restricted access and unmanned sites. Alarm thresholds from Cirrus HYBRID detectors may be configured to allow condition warnings in each of the 5 fire stages shown above.

PROTEC ASPIRATING DETECTION SYSTEM SOLUTIONS

Overview

Aspirating detection is now a recognised solution for so many different fire detection applications. Protec Fire Detection have the most extensive range of aspirating detector technologies and options available on the global market. From low cost single pipe aspirating 'Smoke' detectors to multi-pipe, multi-technology aspirating 'Fire & Smoke' detectors.

CCD Aspirating Fire Detectors

Cirrus Pro Cloud Chamber 'Fire' detection

Cirrus CCD is the latest enhancement of 'cloud chamber' based aspirating detectors and has been re-designed to complement the new style and housing of other recent Protec aspirating detectors.
The new CCD will replace our previous Cirrus Pro range and enhance our aspirating detector range in the market going forward.
The cloud chamber detection principle ensures this aspirating detector does not false alarm from dust and other pollutants, unlike standard 'optical' aspirating detectors. Sampling from environments with high airflow, high humidity levels and extreme temperatures also generally have little effect on the detector operation. Therefore Cirrus CCD Cloud Chamber detectors can be installed in many different and difficult applications.

ProPointPlus Aspirating Smoke Detectors

ProPointPlus Optical 'Smoke' and 'Smoke/CO' detection

ProPointPlus contains up to four separate detectors within a common aspirator enclosure. This provides four separately identifiable areas from a single aspirating unit. ProPointPlus utilises LED 'optics' for verification of smoke levels and can be configured without the need for a laptop connection. Detector set-up for Class A, Class B and Class C settings are achieved through very simple multi-function, multi-lingual menu functions.

Cirrus HYBRID Aspirating Fire & Smoke Detectors

Cirrus HYBRID Cloud Chamber 'Fire' & 'Optical' smoke detection

Cirrus HYBRID detectors are the next generation of aspirating detectors and are unique within the aspirating world. By utilising the best forms of aspirating system technologies; Cloud Chamber Detection (CCD) and Early Warning Smoke Detection (EWSD) in one detector, we have created a single detector able to detect fire & smoke over the largest range of fire types. The result of this synergy of technologies is a device that can verify true alarm conditions and are resistant to unwanted or false alarms.

Cirrus CCD - Cloud Chamber Detector

Features & Benefits

- The only 'Cloud Chamber' based Aspirating Fire Detector available
- Resistant to unwanted alarms from dust, humidity & temperature changes
- Programmable 'Pre-alarm' warning
- 3 x Programmable 'Fire' alarm warnings (Fire 1, Fire 2 & Fire 3)
- Vast sensitivity range
- Airflow monitoring per pipe
- 7" full colour multi-function touch screen LCD display
- Live camera stream from up to 6 IP colour cameras
- In-built IP interface

Overview

The 'sensitivity range' is the key feature that makes the Cirrus CCD Series Fire Detector a most versatile fire detection device.

For over 30 years Cloud Chamber detectors have been known as the most sensitive fire detection device, able to detect at the true incipient stage of a developing fire.

The New Cirrus CCD Detectors have a vast sensitivity range capable of being even more sensitive than previous versions.

Cirrus CCD detectors can be installed in dusty, humid and high & low temperature applications. In these harsh environment applications design and installation consideration must be given to the complete installation to ensure the sampling pipes, sampling holes and detector remain operational.

Dimensions (mm)

250(W) x 349(H) x 137(D)

Note: Dimensions are detector size only.
Height excludes the pipes at the top of the detector.

For Technical Data - See Table 10, Page 36

Application Guide

High Sensitivity Applications include:-
Computer Rooms, Clean Rooms, Control Rooms, Data Centres, Valve Halls, Archive Storage, Anechoic Chambers, EDP areas, Flight Simulators.

General Sensitivity Applications include:-
Heritage Buildings, Museums, Hospitals, Cathedrals, Theatres, Art Galleries, Clean Warehouses, Atria, Indoor Stadiums.

Harsh Environment Applications include:- Cold Storage Facilities, Specialist Production Facilities, Food Industry Facilities, Paper Production Facilities, Transportation Terminals, Aircraft Hangers, Prisons, Warehouses, Simulators, Aircraft Hangers, Inaccessible Voids, Dirty Warehouses.

The Cirrus CCD is currently being tested to EN54 Part 20 and we are expecting approval very soon!

PRODUCT CERTIFICATION
BSI Certified Product

Cirrus Pro Locator - Portable Aspirating Detector

Overview

The Cirrus Pro Locator is the industries first handheld portable air sampling detector that can help guide you to an impending fire threat.

Cirrus Pro Locator is part of the Cirrus Pro Series range of aspirating fire detectors which utilise the unique cloud chamber detection principle.

Dimensions (mm)

350(W) x 120(H) x 260(D)

ProPointPlus - Aspirating Smoke Detector

Features & Benefits

- 1 - 4 Individual detectors per aspirator (providing up to 4 separately identifiable areas)
- High performance optical 'Scatter Chamber Detectors' (SCD) and enhanced CO detection
- Multiple language, multi-function LCD display
- Simple install and commission process without the need for a laptop connection
- Simple Class A, Class B, Class C and Prison sensitivity configuration set up
- Inbuilt algorithm to avoid unwanted alarms
- Approved to EN54 Part 17 & 20, AS 7240 Part 20

Overview

ProPointPlus Optical 'Smoke' and 'Smoke/CO' detection -

Aspirating detection is now a recognised solution for many different fire detection applications. ProPointPlus provides up to four separate detectors within a common aspirator enclosure and therefore, provides four individually identifiable areas of detection per aspirator.

Each of the four plug-in 'Scatter Chamber Detectors' (SCD) modules can be either 'optical' only or for small single room applications combined 'optical/enhanced CO' detectors. Independent and integrated alarm decision making through the use of complex algorithms extend the range of particle detection, confirm genuine alarms and reduce unwanted alarms.

Installation, configuration and commissioning of the ProPointPlus detector is very simple and installer friendly. Configuration to either Class A, Class B or Class C sensitivity options is achieved through a multi-language and multi-function LCD display without the need for a laptop connection.

Detector set up allows the installer to configure the detector sensitivity to exactly the same equivalent as a known number of point type smoke detectors for each Class A, Class B and Class C system. This ensures the system specifier, designer, installer and commissioning engineer configure the ProPointPlus SCD's to the correct sensitivity for the particular application.

Aspirator fan speed and airflow configuration is a also a very simple process allowing ProPointPlus aspirating detectors to be installed in a variety of applications with short and relatively long pipe runs.

Application Guide

Class A - High Sensitivity Applications include:- Small Computer Rooms, Cleanrooms, Data Centres, Control Rooms, Archive Storage & EDP areas.

Class B - Enhanced Sensitivity Applications include:- Small Heritage Buildings, Museums, Theatres, Galleries, High Ceiling Areas, Small Clean Warehouses & Small Atria Areas

Class C - Normal Sensitivity and Harsh Environment Applications include:- Lift/Elevator Shafts, Small Cold Storage Facilities, Clean Warehouses, Atria, Inaccessible Voids & Up to 4 x separately identifiable Prison Cells per aspirator.

Dimensions (mm)

250(W) x 349(H) x 137(D)

Note: Dimensions are detector size only.
Height excludes the pipes at the top of the detector.

For Technical Data - See Table 10, Page 36

PRODUCT CERTIFICATION

BSI Certified Product

Cirrus HYBRID - Aspirating Fire & Smoke Detector

Features & Benefits

- The first and only 'Combined Fire & Smoke' Aspirating Detector
- Unique 'Cloud Chamber Detection' (CCD) - primary detection technology
- Optical 'Scatter Chamber Detectors' (SCD) - secondary detection technology
- The largest sensitivity range aspirating detector Zero% obs/m to 20% obs/m
- HYBRID 'Smart Signal' to verify alarms and discriminate false alarms
- 7" full colour multi-function touchscreen LCD display
- Live camera stream from up to 6 IP colour cameras
- Approved to EN54 Part 17 & 20, AS 7240 Part 20

Overview

Combined Cloud Chamber 'Fire' and optical 'Smoke' detection

History tells us that in reality there are really only two types of aspirating detector technology. These technologies are 'Cloud Chamber' aspirating detection identifying optically invisible fire particulate, and laser or LED 'Optical' aspirating detection identifying small amounts of visible smoke.

Cirrus HYBRID is the only aspirating detector available to identify the optically invisible fire particulate by utilising the unique 'Cloud Chamber Detection' (CCD) technology, thereby providing the earliest warning of a potential fire threat.

Depending on the materials burning, particularly in the many modern applications for aspirating detection systems, some fires burn with only a small amount of visible smoke, whereas others burn with greater volumes of visible smoke.

Cirrus HYBRID is able to detect those fires with differing volumes of smoke. Early Warning Smoke Detection (EWSD) is provided using high performance optical 'Scatter Chamber Detectors' (SCD) that identify both small and larger smoke particles entering the detector.

By utilising the two most effective methods of aspirating system technologies (CCD and EWSD) in a single detector the Cirrus HYBRID detector provides a device able to detect fire and smoke over the largest range of fire types.

However, what makes this totally new and genuinely unique concept in aspirating fire and smoke detection technology so different is that these two technologies work both independently from each other, and through the use of complex algorithms also interact together, to provide true intelligent alarm decision making. The result of this synergy of technologies is a device that can verify true alarm conditions across the largest range of fire types. A further and equally as important result of this synergy of technologies, is the discrimination of unwanted or false alarms which have historically and still continue to plague so many optical only aspirating detectors.

Application Guide

Class A - High Sensitivity Applications include:- Computer rooms, Cleanrooms, Data Centres, Control Rooms, Valve Halls, Archive Storage, Anechoic Chambers & EDP areas.

Class B - Enhanced Sensitivity Applications include:- Heritage Buildings, Museums, Hospitals, Airports, Cathedrals, Theatres, Art Galleries, Clean Warehouses, Atria & Indoor Stadiums.

Class C - Normal Sensitivity and Harsh Environment Applications include:- Cold Storage Facilities, Specialist Production Facilities, Food Processing Areas, Paper Production Facilities, Transportation Terminals, Inaccessible Voids & General Warehousing.

Dimensions (mm)

250(W) x 349(H) x 137(D)

Note: Dimensions are detector size only.
Height excludes the pipes at the top of the detector.

For Technical Data - See Table 10, Page 36

PRODUCT CERTIFICATION
BSI Certified Product

3500 Fire Alarm Control Panel

Features & Benefits

- Available in 2, 4 and 8 Zone Models
- Attractive Surface or Recessed Mounting
- Comprehensive Range of Engineering Functions
- Zone Disablements
- Ability to Differentiate Between Manual Call Point or Automatic Detector Alarm
- Programmable Sounders for Automatic and/or Manual Activation 72 Hour Standby as Standard
- Approved to the latest AS7240-2 & 4 and AS4428-3 Standards

Overview

The Protec 3500 range of conventional control panels has been designed to provide a simple, user-friendly, highly cost effective option with inbuilt flexibility previously only found in more complex addressable systems.

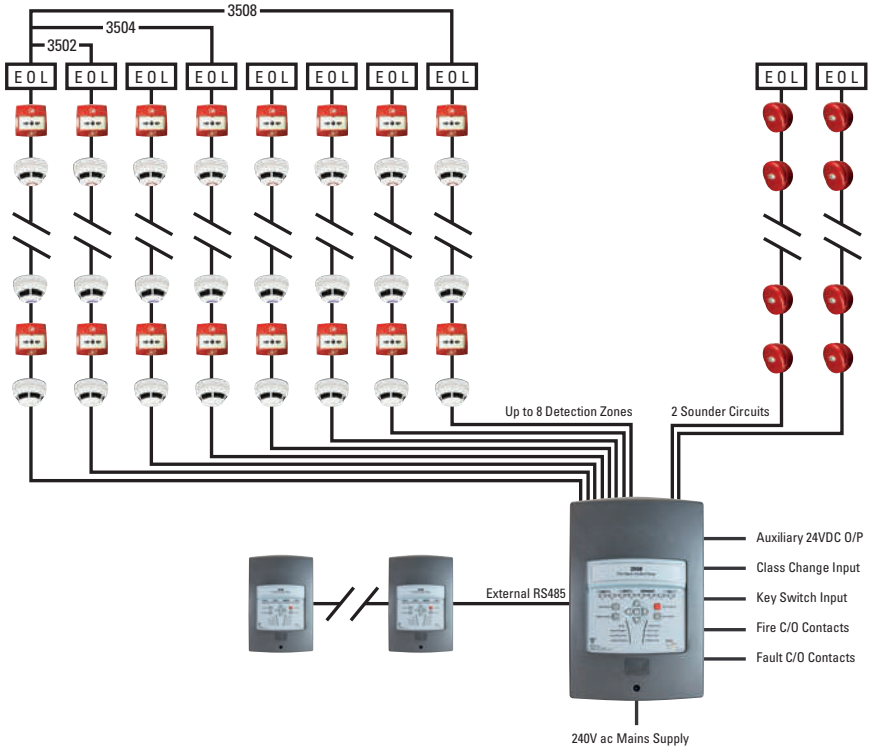
With up to 8 detection zones the 3500 range of Fire Alarm control panels are ideal for small to medium sized buildings such as industrial units, retail units, shops and schools.

The panels can be either surface or recessed mounted, with the controls and indications protected from unauthorised access by entering a user access code. These panels have the ability to identify if a 'FIRE' signal has been generated manually by a person activating a Manual Call Point (MCP) or automatically from a detector.

This knowledge enables an appropriate cause and effect sequence to be implemented (time delays, for example) to allow for alarm verification for automatic detectors, but immediate alarms from MCPs. Cause and effect functions include coincidence detection, zone delays, pulsing sounders and fire relay. Interconnection with other systems is simplified as zones can be configured as 'nonlatching', and there is a dedicated 'class change input' terminal. The 3500 range of control panels are third party approved to the latest European standard and meets all the requirements of BS5839 pt1.

The 3500RPT Repeat Indicator Panel has been designed to connect to the 3500 panel serial data output. The 3500RPT mimics all the main panel display functions but does not have any control functions. Up to five 3500RPT panels may be connected to a 3500 main panel.

Typical 3500 Schematic



Dimensions (mm)

228 (W) x 345 (H) x 111 (D)

KEY


3000PLUS/HT


3000PLUS/OP


3000PLUS/OPHT


3000/MCP


3000/VAD/W

3000 Device Range

3000PLUS/OP

3000PLUS/OPHT

3000PLUS/TEMP

3000/MCP/EXP

3000/MCP/WP

3000/VAD/W

3000/VAD/C

Overview

The Protec 3000PLUS range has been developed to incorporate advanced fire sensing technology, certified to AS7240 - 5 & 7 and compliments our new range of conventional devices.

3000PLUS/OP
This low profile conventional optical smoke detector provides efficient reliable detection utilising the light scatter sensing principle with rapid response to a fire signal. The detector incorporates alarm verification functions, designed to
give maximum sensitivity to smoke detection, with high resistance to false alarms due to high air velocity, insects, dust and R.F. interference.

3000PLUS/OPHT
This thermally enhanced detector provides efficient, reliable detection utilising combined light scatter and heat sensing principles, permitting the device to detect types traditionally more suited to ionisation detectors, providing the fastest response to a fire, whilst drastically reducing common false alarm problems to which optical only detectors may be susceptible.

3000PLUS/TEMP56
This fast response heat detector incorporates dual sensing elements which are tuned to provide sensitive rate of rise and 56˚C fixed temperature response. Suitable for applications where smoke detection is unsuitable but require a high sensitivity heat detector.

3000PLUS/TEMP64
This multi-purpose heat detector is calibrated to a 64˚C fixed temperature limit, to provide a stable response for the majority of applications especially where sudden temperature changes could occur such as laundries and ventilated areas.

3000/MCP/EXP
Installation efficiency, flexibility and full compliance with the latest standards are at the heart of the 3000/MCP indoor call point. It provides a unique 'plug and play' concept designed specifically to reduce installation time.

3000/MCP/WP
Thia is an IP67 sealed manual call point product. The enhanced environmental protection allows the unit to be installed in many external environments where water and dirt are likely to be present, making it a true waterproof and outdoor product.

3000/VAD/W
The Protec 3000/VAD/W is a conventional ceiling mounted beacon is a high intensity beacon with up to 7.5m room coverage. The device is designed for installation at a height of up to 2.4m and adjustable from 7.5 to 2.4m room coverage to suit all applications.

3000/VAD/C
The Protec 3000/VAD/C is a conventional ceiling mounted beacon is a high intensity beacon with up to 7.5m room coverage. The device is designed for installation at a height of up to 3m and adjustable from 7.5 to 3m room coverage to suit all applications.

PRODUCT CERTIFICATION
BSI Certified Product

Special Products

Protec have over 40 years of experience in providing bespoke solutions to the fire alarm industry. We have many clients who request us to provide ‘special’ products, this can range from a simple keyswitch and label on a control panel, to special metalwork to house inbuilt mimic panel/graphics, damper control, integrated public address / voice evacuation and fire telephone solutions.

- Our specials department have produced, and not limited to the following:
- Special metalwork
- Special paint finishes
- Keyswitches
- Weatherproof / Industrial enclosures

Integrated Packages:

- Public Address / Voice Alarm
- Fire Telephone
- Fireman’s control units
- Evacuation control
- Smoke Damper / Fan Control Units
- Mimic Panels, Graphics Package
- Sprinkler Status Panel
- Fully integrated Fire/PAVA/Graphic/Security
- Termination units and special input/output interface enclosures
- Purge units for aspirating

Digital Addressable Products	
Product Name	Part Code
6100 Fire Alarm Control Panel	62-807-AUS
6500 Fire Alarm Control Panel	6520-301-AUS
19” Rack Enclosure	13U and 3A charger - 6020-361, 16U and 3A charger - 6020-851
Hercules 6 PC Software	WSP266463-FA
Cirrus CCD	TBC
ProPointPlus	PPP1 Pipe - 61-986-106, PPP2 Pipe - 61-986-103, PPP4 Pipe - 61-986-104, PPP OP/CO SCD Module - SF-51-433-00
Cirrus Hybrid	H1 Pipe - 61-986-H2, H4 Pipe - 61-986-H4, H2 Pipe Scanner - 61-986-H2S, H4 Pipe Scanner - 61-986-H4S, Hybrid OP SCD Module - SF-51-432-00
Heat Sensor	6000PLUS/HT
Heat Sensor c/w Sounder	6KPAUS/HT/S
Heat Sensor c/w Sounder and VAD	6KPAUS/HT/SVAD
Heat Sensor c/w Talking Sounder and VAD	6KPAUS/HT/TSVAD
Optical Smoke Sensor	6000PLUS/OP
Optical Smoke Sensor c/w Sounder	6KPAUS/OP/S
Optical Heat Sensor	6000PLUS/OPHT
Optical Heat Sensor with Isolator	6000PLUS/OPHT/I
Optical Heat Sensor c/w Sounder	6000PLUS/OPHT/S
Optical Heat Sensor c/w VAD	6KPAUS/OPHT/VAD
Optical Heat Sensor c/w Sounder and VAD	6KPAUS/OPHT/SVAD
Optical Heat Sensor c/w Talking Sounder	6KPAUS/OPHT/TS
Optical Heat Sensor c/w Talking Sounder and VAD	6KPAUS/OPHT/TSVAD
Optical Heat CO Sensor	6000PLUS/OPHTCO
Optical Heat CO Sensor c/w Sounder	6KPAUS/OPHTCO/S
Optical Heat CO Sensor c/w VAD	6KPAUS/OPHTCO/VAD
Optical Heat CO Sensor c/w Sounder and VAD	6KPAUS/OPHTCO/SVAD
Optical Heat CO Sensor c/w Talking Sounder and VAD	6KPAUS/OPHTCO/TSVAD
Red Electronic Sounder c/w Standard Base	6000/SSR2/AUS
White Electronic Sounder c/w Standard Base	6000/SSW2/AUS
High Intensity Flashing Beacon	6000/LED
Wall Mounted VAD	6000/VAD/W
Ceiling Mounted VAD	6000/VAD/C
Red Wall Mounted Sounder VAD	6000/SSR/VAD/AUS
White Wall Mounted Sounder VAD	6000/SSW/VAD/AUS
Manual Call Point c/w Isolator	6000/MCP/EXP
Weatherproof Manual Call Point	6000/MCP/WP
Ventilation Duct Smoke Detector	6000PLUS/UG4
Conventional Products	
3502 Fire Alarm Control Panel	62-807-AUS
3504 Fire Alarm Control Panel	62-808-AUS
3508 Fire Alarm Control Panel	62-809-AUS
3500 Repeat Fire Alarm Control Panel	62-826-AUS
Optical Smoke Detector	3000PLUS/OP
56ºC Fixed Temperature Detector	3000PLUS/TEMP56
64ºC Fixed Temperature Detector	3000PLUS/TEMP64
Optical / Heat Detector	3000PLUS/OPHT
Manual Call Point c/w Isolator	3000/MCP/EXP
Weatherproof Manual Call Point	3000/MCP/WP
Ceiling Mounted VAD	3000/VAD/C
Wall Mounted VAD	3000/VAD/W

Overview

Table 1	6100
Rated Voltage	85-264Vac (50/60Hz)
Working Voltage	21.5 - 30Vdc
Temperature Range	-10° to +55° C
Humidity	5% to 95% RH (no condensation, or icing)
Standby Load (mains fail)	22mA
Alarm Load (mains fail)	56mA
Display Type	Backlit LCD 4 x 20 Characters
Number of Loops	1
Max Number of Addressable Devices Per Loop	192
Printer	n/a
Integral Charger / Remote Charger	Internal
Charger	1 Amp Switch mode charger, Temperature compensated
Maximum Battery size	2 x 12v 3.3Ah Valve regulated
Number of Zones	32 zones, 16 with LED
Number of Input Groups	32
Number of Output Groups	32
Auxiliary Fire Relay (Single pole change over contacts, rated 1A rated @ 24V resistive load)	1
Auxiliary Fault Relay (Single pole change over contacts, rated 1A rated @ 24V resistive load)	1
Fire Routing Equipment (monitored for open and short circuit wiring faults)	1
Fault Routing Equipment (monitored for open and short circuit wiring faults)	0
Programmable Alarm Outputs (monitored for open and short circuit wiring faults)	2
Auxiliary 24 Volts (maximum 150mA)	1
Clean contact outputs	0
Number of Keyswitch input(s)	0
Networkable	n/a
Nodes for Network	n/a
Communication Port(s)	USB
Dimensions (mm)	228(W) x 345 (H) x 111 (D)
Weight (Excluding batteries)	1.5kg
Device Zone Panel Text	1 line of 20 characters devices+zones text, 2 line of 20 Characters panel text
Approval (Standard)	AS7240 Part 2 & 4 and AS4428 Part 3 2010

Sensors

Table 2	6000PLUS/HT	6000PLUS/HT/S	6000PLUS/OP	6000PLUS/OP/S	6000PLUS/OPHT
Weight (Excluding Base)	90g	105g	90g	105g	90g
Loop Standby Load	0.2mA	0.4mA	0.2mA	0.4mA	0.2mA
Loop Alarm Load	0.2mA	5.4mA	0.2mA	5.4mA	0.2mA
Isolator	No	Yes	No	Yes	No
Beacon Flash Rate	N/A	N/A	N/A	N/A	N/A
Sounder Volume	N/A	85dB(A) (High), 75dB(A) (Mid), 65dB(A) (Low) (measured at one metre)	N/A	85dB(A) (High), 75dB(A) (Mid), 65dB(A) (Low) (measured at one metre)	N/A
Product Approvals	AS7240 Part 5	AS7240 Part 5	AS7240 Part 7	AS7240 Part 7	AS7240 Part 15 (5&7)

Standalone	Networked
6500E	**6500**
230Vac ± 10% - 15% (50/60Hz)	230Vac ± 10% - 15% (50/60Hz)
21.5 - 30Vdc	21.5 - 30Vdc
-10° to +55° C	-10° to +55° C
5% to 95% RH (no condensation, or icing)	5% to 95% RH (no condensation, or icing)
185mA (2 loop) 226mA (4 loop) [1]	215mA (2 loop) 256mA (4 loop) [1]
220mA (2 loop) 261mA (4 loop) [2]	250mA (2 loop) 291mA (4 loop) [2]
Full colour, 7" touch screen graphical display	Full colour, 7" touch screen graphical display
1, 2 or 4	1, 2 or 4
200	200
Optional	Optional
Both (Internal & External Charger)	Both (Internal & External Charger)
Internal Charger: 3 Amp	Internal Charger: 3 Amp
2 x 12v 12Ah Valve regulated	2 x 12v 12Ah Valve regulated
40	100 expandable to 10,000
4,000	4,000
255 per panel	255 per panel
2	2
1	1
1	1
None dedicated but a programmable alarm output may be configured for this function	
3	3
1	1
0	0
6 (3 terminal board & 3 display board)	6 (3 terminal board & 3 display board)
n/a	Yes
n/a	32 / 60
USB (for commissioning use only) / RS232	USB (for commissioning use only) / RS232
440(W) x 385(H) x 144(D)	440(W) x 385(H) x 144(D)
7Kg	7Kg
60 characters device location text, 20 characters device alarm text, 20 characters panel text, 20 characters device loop test	
AS7240 Part 2 & 4 and AS4428 Part 3 2010	AS7240 Part 2 & 4 and AS4428 Part 3 2010

6000PLUS/OPHT/I	6000PLUS/OPHT/S	6000PLUS/OPHT/TS	6000PLUS/OPHTCO/S	6000PLUS/OPHTCO
90g	105g	105g	105g	105g
0.2mA	0.4mA	0.4mA	0.45mA	0.45mA
0.2mA	5.4mA	8.4mA (10.4mA Bell Sound)	5.45mA	0.45mA
Yes	Yes	Yes	Yes	Yes
N/A	N/A	N/A	N/A	N/A
N/A	85dB(A) (High), 75dB(A) (Mid), 65dB(A) (Low) (measured at one metre)			N/A
EN54-5, 7 & 17	EN54-3, 5, 7 & 17	EN54-3, 5, 7 & 17	EN54-3, 5, 7 & 17	EN54-5, 7 & 17

Sensors continued.....

Table 3	Common Specification across all sensor variants
Loop Voltage	18 - 28V
Loop Powered	Yes
IP Rating	IP41
Environment	-10°C to +50°C (95% RH non condensing)
Standards	CE Marked
Device Protocol	Algo-Tec™ 6000PLUS

Sensor VAD's

Table 4	HT/SVAD	HT/TSVAD	OPHT/VAD	OPHT/SVAD	OPHT/TSVAD	OPHTCO/ VAD	OPHTCO/ SVAD	OPHTCO/ TSVAD
Environment	-10°C to +50°C (95% RH non condensing)							
IP Rating	IP41							
Weight (Excluding Base)	108.6g	109.46g	103.35g	109.52g	111.38g	105g	105g	105g
Loop Powered	Yes							
Loop Voltage	18 - 28V							
Loop Standby Load	0.55mA							
Peak Alarm Load	24mA	25mA	16.5mA	24mA	25mA	16.5mA	24mA	25mA
Mounting Height	3m							
Coverage	7.5m, 5m or 3m cylindrical diameter							
VAD Flash Rate	1Hz pr 0.5Hz white flash							
Isolator	Yes							
Device Protocol	Algo-Tec™ 6000PLUS							
Product Approval	AS7240 Part 5 & 23			AS7240 Part 15 (5&7) & 23				

Sounder VAD's

Table 5	6000/VAD/C	6000/VAD/W	6000/SSR/VAD
Environment	-10°C to 55°C, 95% R.H (non condensing or icing)		
IP Rating	AS7240-23 Type B Outdoor + IP65		
Weight (excluding base)	122g	125g	315g
Loop Powered	Yes		
Voltage	18 - 28V		
Loop Standby Load	0.8mA		0.7mA
Loop Peak Alarm Load	14.5mA	19mA	24mA
Mounting Height (x)	3 metres	2.4 metres	
Coverage (y)	7.5m configurable to 5m or 3m		7m configurable to 3m
Coverage Volume Code	C-3-7.5	W-2.4-7.5	W-2.4-7 (117.6m³)
Flash Rate	1 or 0.5Hz white flash		0.5Hz white flash
Isolator	Yes		
Mounting	Ceiling	Wall	

Sounders / Beacons

Table 6	6000/SSR2/AUS	6000/LED
Environment	-10°C to 55°C	
Humidity	0 to 85% RH non condensing	
IP Rating	IP65	
Loop Powered	Yes	
Loop Standby Load	700µA	500µA
Loop Alarm Load	5mA	5.5mA
Number of Addresses	1	
Loop Isolator	Yes	
Output Details	Piezo sounder. Sounder tone and volume selectable at the control panel	Array of 18 Red high intensity LED's Flash Rate 1Hz
Weight	244g	99g
Construction	ABS Base & Body	ABS Base/Polycarbonate LENS

Manual Call Points

Table 7	6000/MCP/EXP	6000/MCP/WP
Environment	-10°C to 55°C	
Humidity	0 to 95% RH non condensing	
IP Rating	IP24D	IP67
Operating Voltage	16 - 30V dc	
Loop Powered	Yes	
Loop Standby Load	450µA	
Loop Alarm Load	0.85mA	
LED Illuminated	4.5mA	
Weight	Flush - 93g, Surface - 144g	296g
Product Approval	AS7240 Part 11	AS7240 Part 11

Ventilation Duct Smoke Detector

Table 8	6000PLUS/UG4
Air Velocity	0.5m/s to 20m/s
Sampling Pipe	Aluminium
Operating Temperature	-10°C to +50°C
Humidity	95% non condensing
Weight	0.8Kg (approx)
Detector Heads	6000PLUS/OP

Interfaces

Table 9	Dimensions (mm)	Weight	Voltage	Quiescent Current	Alarm Current	DIN Rail	Loop Powered	Isolator
6000/2IO	146.5(W) x 39(H) x 118(D)	213g	18 - 28V	1.6mA	18mA	Yes	Yes	Yes
6000/4IO	146.5(W) x 40(H) x 118(D)	237g	18 - 28V	0.6mA	0.6mA	Yes	No	Yes
6000/2LPZA	146.5(W) x 42(H) x 118(D)	204g	18 - 28V	1.6mA	15mA + SNDR Current	Yes	Yes	Yes
6000/2APZA	146.5(W) x 40(H) x 118(D)	217g	18 - 28V	0.6mA	0.6mA	Yes	No	Yes
6000/APZA	146(W) x 86(H) x 25.5(D)	120g	18 - 28V	0.6mA	0.6mA	No	No	Yes
6000/LPZA	146(W) x 86(H) x 25.5(D)	120g	18 - 28V	3.8mA	7.5mA + SNDR Current	No	Yes	Yes
6000/MIP	45.5(W) x 41(H) x 82(D)	41g	18 - 28V	0.65mA	4mA	Yes	Yes	Yes
6000/CCO	45.5(W) x 41(H) x 82(D)	45g	18 - 28V	0.6mA	19mA	Yes	Yes	Yes
6000/MICCO	147.3(W) x 86.7(H) x 10(D)	109g	18 - 28V	0.55mA	2.2mA	No	Yes	Yes
6000/LCM	146.6(W) x 86.4(H) x 15.2(D)	110g	18 - 28V	3.7mA	67mA	No	Yes	Yes
16 Way	222(W) x 18.5(H) x 108(D)	144g	18 - 28V	7mA	7mA	No	No	Yes

Aspirating Fire Detectors

Table 10		Cirrus CCD	ProPointPlus	Cirrus HYBRID
Supply Voltage		20 - 29VDC		
Power Consumption		16.8 watts quiescent (24VDC 100% Fan Speed)	9.6 watts quiescent (24VDC 100% Fan Speed)	16.8 watts quiescent (24VDC 100% Fan Speed)
Current Consumption		500mA with blower @ 30% 700mA with blower @ 100%	300mA with blower @ 30% 400mA with blower @ 100%	500mA with blower @ 30% 700mA with blower @ 100%
Operating Conditions	**Detector Ambient**	0˚C to 38˚C (32˚F to 100˚F)		
	Tested To	0˚C to 55˚C (32˚F to 131˚F)		
	Sampled Air	-20˚C to 60˚C (-4˚F to 140˚F)		
	Humidity	10 - 95%RH, non-condensing		
IP Rating		IP30		
Cable Access		10 x 20mm knock outs		
Cable Termination		Screw terminal blocks (0.2 - 2.5mm², 30 - 12AWG)		
Sampling Network		Four inlet ports with combined sampling pipe length up to 630m (2,066ft) subject to'ProFlow' sampling pipe calculation program. Maximum transport time = 120 seconds.	Four inlet ports with combined sampling pipe length up to 200m (750ft) subject to'ProFlow' sampling pipe calculation program. Maximum transport time = 120 seconds	Four inlet ports with combined sampling pipe length up to 630m (2,066ft) subject to'ProFlow' sampling pipe calculation program. Maximum transport time = 120 seconds
Pipe ID		19 to 25mm (preferred OD 25mm)		
Alarm Indications		Pre-alarm, Fire 1, Fire 2, Fire 3	Pre-alarm warning and Fire per pipe	Pre-alarm, Fire 1, Fire 2, Fire 3
Other Indications		Supply Healthy, General Fault		
Sensitivity Range		10,000 PCC to 10 million PCC	n/a	20,000 PCC to 7 million PCC 0 - 1000CFS (Combined Fire & Smoke scale)
Programmable Inputs		3 monitored inputs that may be configured for Isolate, Reset, Silence, Day/Night, Battery Fault and Mains Fault	3 monitored inputs that may be configured for Isolate, Reset, Disable, Fault, Gain Set, Battery Fault and Mains Fault	
Programmable Output Relays		5 Relays rated 1A @ 30VDC (Volt-free change over contacts)		
Camera Inputs		6 x Protec specified IP cameras	n/a	6 x Protec specified IP cameras
Event Log / Data Retention		24,000 events stored on FIFO basis (alarms, actions, faults and data points)(Approx 30 day historical graph data)		
Variable Sensitivity Settings		7 day programmable settings with 2 time zones per day. Day-time/Night-time mode setting		
EN54 Approved Sensitivity Setting		n/a	Class A - 3 holes per detector (per pipe) Class B - 5 holes per detector (per pipe) Class C - 8 holes per detector (per pipe)	Class A - 36 holes @ 200CFS Class B - 44 holes @ 400CFS Class C - 44 holes @ 600CFS
Airflow Monitoring		'High Airflow' and 'Low Airflow' fault monitoring		
Weight		3.5kg (7.7lbs)	3kg (6.6lbs)	3.5kg (7.7lbs)
Dimensions (mm)		380(H) x 250(W) x 137(D)		
Approval (Standard)		Pending	EN54-20	EN54-20

19” Rack Enclosure Options

Table 11 - Door Options	External Dimensions including door (mm)			Available Internal Space (mm)		
	Width	Height	Depth	Width	Height	Depth
13U Door with Australian MCP or New Zealand Door	550	711	269.5	490	651	223
16U Door with Australian MCP or New Zealand Door	550	844.65	269.5	490	784.65	223

Table 12 - Hinged Plates, Blanking Plates & Bezels	Dimensions (mm)	
	Width	Height
5U Display Panel	483	221.5
8U Display Panel with Printer	483	354.6
5U 300 LED Zone Expansion Plate	483	221.5
5U MEI Plate	483	221.5
MEI Blanking Plate	88	88
1U Blanking Plate	483	44
2U Blanking Plate	483	88.5
3U Blanking Plate	483	132.5
5U Blanking Plate	483	221.5
13U Single Bezel	600	761
16U Single Bezel	600	894.7
13U Twin Bezel	1183.5	761
16U Twin Bezel	1183.5	894.7

Table 13 - Containment	Usable U (mm)	Dimensions (mm)		
		Width	Height	Depth
Enclosure 13U	577.85	550	711	264
Enclosure 16U	711.2	550	845	264

Table 14 - Battery Box	Dimensions (mm)		
	Width	Height	Depth
3 Amp	550	400	276.4
8 Amp	550	400	276.4

Protec Fire Detection ANZ
Bosch Security Systems Pty Ltd
Level 2, 21 Solent Circuit
Norwest NSW Australia

Tel: +61 2 9842 4700 Web: www.protecanz.com Email: Protecanz.Info@au.bosch.com