A PROUD BRITISH MANUFACTURER
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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**

We are a very proud British manufacturer, all our products are designed and manufactured in the UK, we offer our partners free training and we have an extensive capability to support our products around the world.

Our products are designed to enable our partners the ability to edit programs, add and delete devices, commission, maintain and support our systems worldwide.
Welcome to Protec’s Export Division, Providing to the Global Market

- Fire Detection Systems, Addressable, Conventional and Air Sampling
- Public Address and Voice Evacuation Systems
- Fire Telephone Systems
- Smoke Control
- Gaseous Extinguishing 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 Export 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 despatch ensuring prompt delivery to customers

......Trusted all over the world
Project References

Dublin Airport New Terminal (T2)
Location: Dublin, Ireland
- 54 Networked Fire Control Panels
- 9000 Fire Alarm Devices
- 120 Aspirating Detection Systems
- Graphics Package

Media City, BBC Headquarters
Location: Manchester, England
- 64 Networked Fire Control Panels
- 9200 Fire Alarm Devices
- 60 Aspirating Detection Systems
- 137 loops
- 4 Graphics Packages

London 2012 - Olympic Stadium
Location: London, England
- 18 Fire Control Panels
- 2500 Fire Alarm Devices
- 6 Aspirating Detection Systems
- 48 Loops
- 2 Graphics Packages
- Networked Fire Telephone System
- IP Addressed Fibre Optic PAVA System

London 2012 - Aquatics Centre
Location: London, England
- 4 Fire Control Panels
- 500 Fire Alarm Devices
- 6 Aspirating Detection Systems
- 48 Loops
- 2 Graphics Packages
- Networked Fire Telephone System
- Gas Suppression Systems
Dalma & Yassat Towers
Location: Dubai, United Arab Emirates
• Supplied and commissioned locally by our export partners
• 6400 Fire Detection System
• 45 Networked Fire Control Panels
• 20,000 Addressable Devices
• 160 Loops
• Colour Graphics Package

Mazaya Towers Office Complex
Location: Dubai, United Arab Emirates
• Supplied and commissioned locally by our export partners
• 6400 Fire Detection System
• 30 Networked Fire Control Panels
• 7,500 Addressable Devices
• 72 Loops
• Colour Graphics Package

Manchester United Football Club
Location: Manchester, England
• 26 Fire Control Panels
• 3700 Fire Alarm Devices
• 4 Aspirating Detection Systems
• 1 Graphic Package

Cardinal Place Office and Shopping Complex
Location: London, England
• 42 Fire Control Panels
• 3500 Fire Alarm Devices
• 10 Aspirating Detection Systems
• 55 Loops
• 2 Graphics Packages
• 40 Integrated PAVA Rack Systems
Project References

**Manchester Airport**
*Location: Manchester, England*

- 215 Networked Fire Control Panels
- 3 Networks
- 16,500 Fire Alarm Devices
- 80+ Cirrus Pro Aspirating Systems
- 3 Colour Graphics Packages
- Interfacing with PA/VA, HVAC, Heat Sensing Cable, Smoke Dampers and Security Systems

**Queen Elizabeth Hospital**
*Location: Birmingham, England*

- Fire Alarm
- Integrated Smoke Dampers
- Aspirating Fire Detection
- Voice Alarms / Public Address
- Loop Induction

**Alder Hey Childrens Hospital**
*Location: Liverpool, England*

- 24 Networked Fire Control Panels
- 7130 Fire Alarm Devices
- 2 Aspirating Detection Systems
- 92 Loops
- Disabled Refuge System
- Induction Loop Systems
- 1 Colour Graphics Package with Dampers

**Meadowhall Shopping Centre**
*Location: Sheffield, England*

- 25 Networked Fire Control Panels
- 70 Loops
- 3,215 Fire Detection Devices
- 269 Shop Unit Fire Alarm Systems
- 22 Air Sampling Systems
- Voice Alarm/Public Address
- 8 Networked Racks
Ferrybridge Power Station
Location: West Yorkshire, England
- Fire Detection (industrial enclosures)
- Sprinklers
- Hydrant
- Fire Pump
- Foam system for Fuel tanks
- Water canons
- Fire video system
- Aspirating fire detection
- Gas Extinguishing (FM200)

Belmarsh Prison
Location: London, England
- Fire Alarm
- In Cell Detection (Anti Ligature)
- General Alarm
- Night Watchman’s Pegging
- Tamper Alarm
- Fibre Optics
- High Pressure Water Mist

Hotel Groups
Location: Nationwide, England
- IHG Hotels - In excess of 200 in the UK
- Premier Inns - Over 800 in the UK
- Hilton Hotels - 25 in the UK
- We have contracts to supply, install test and commission many hotel groups with 24hr callout service
- Utilising the Protec Algo-Tec devices to significantly reduce unwanted alarms due to bathroom steam and aerosols

Sheraton Park Lane Hotel
Location: London, England
- 11 Networked Fire Control Panels
- 1200 Fire Alarm Devices
- 20 Loops
- Disabled Toilet System
- Vibrating Pillow System
- Induction Loop System
- Voice Alarm System
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

**System Features**
The Protec Algo-Tec™ 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 EN 54-2 & 4. The control panel is suitable for surface or recessed mounting with a moulded polycarbonate enclosure finished in storm grey.

**Loop**
The 6100 control panel is equipped with a high capacity Algo-Tec™ digital addressable data loop, with up to 192 addresses. In addition to the Algo-Tec™600PLUS sensors, interfaces and manual call points the loop can also support loop powered SOUNDERS, BEACONS 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.

**Alarms**
In addition to loop powered sounders and beacons, 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.

**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.

**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.

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 47

6100 System Additional Products

6300/LOOP/LCD Display
The 6300/LOOP/LCD can be connected directly to the local Algo-Tec™ digital addressable data loop and takes up just one address. The facia displays power, fire, fault, disablement and more alarms. Fire and fault events are displayed on the 2 x 40 character LCD display and automatically scroll. A backlight ensures that the events can be read in all lighting situations. Fire events have highest priority and inhibit the display of fault events. A new event initiates the internal buzzer and a mute button allows the internal buzzer to be muted.

**Dimensions (mm):**
- **360(W) x 215(H) x 47(D)**

**Loop Standby Load:**
- 35mA

**Loop Alarm Load:**
- 40mA
• **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 EN 54-2 & 4**

• **Open Protocol**

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**Typical 6100 Schematic**

- **Plant shutdown interface 6000/MICCO**
- **Heavy duty plant shutdown signal (Rated at 240V 5A)**
- **Single 2 wire loop cable**
- **Mains ac supply**
- **2 monitored alarm outputs**
- **1 Auxiliary fire CO contact**
- **1 Auxiliary fault CO contact**
- **24V Aux. output**
- **Bomb alert/class change input**
- **Remote alarm input**
- **Sprinkler delay interface 6000/MICCO**
- **Plant shutdown output (Rated at 240V 5A)**

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**KEY:**

- **Heat Sensor**
- **Optical Smoke and Heat Sensor**
- **Optical Smoke, Heat and 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**
- **6300 Loop LCD Display**

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**Dimensions (mm):**

- Length: 228 mm
- Width: 111 mm
- Height: 395 mm

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**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 EN 54-2 & 4**

**Open Protocol**
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.

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### 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 64 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™ 6000/PLUS digital addressable data loops, with up to 200 addresses per loop, totalling 800 addressable devices per panel, 51,200 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.
• **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**

**KEY:**
- Heat Sensor
- Optical Smoke and Heat Sensor
- Optical Smoke, Heat and CO Sensor
- Duct Probe Unit c/w Smoke Sensor
- Manual Call Point
- Beam Detector
- Local Control Module
- Zone Alarm Interface
- Monitored Input CC Output Interface
- Electronic Sounder
- Wall Mounted VAD
- Wall Mounted Sounder VAD
- 6000 Loop Repeater

For Technical Data - See Table 1, Page 47
 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.

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.

Power Supply - The range of 6500 and 6600 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.

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.
The Protec Algo-Tec™ 6600 Network Bridging Panel has all the functionality, features and benefits of the Protec Algo-Tec™ 6500 Panel and can be configured to operate alongside the Algo-Tec™ 6500 control panels on the same Secure Local Network of up to 64 panels. However, the Algo-Tec™ 6600 panel is also equipped with a Secure Bridging Network which enables up to 5 Algo-Tec™ 6500 local network systems to be interconnecting and interact as a fully integrated system of up to 160 network panels.

Features & Benefits in addition to the 6500 System

- **64 Panel Secure Local Network** - The Algo-Tec™ 6600 control panels can be interconnected in a loop configuration alongside the Algo-Tec™ 6500 control panels to create a Secure Local Network of up to 64 panels (NET64).

- **160 Panel Integrated System** - Scalable, the Algo-Tec™ 6600 control panels offers the flexibility to bridge up to five 6500 Secure Local Networks to create an integrated system of up to 160 panels. The innovative redundant peer to peer RS485 network is a high speed data transfer, fail safe, dual channel fault tolerant communication channel, no single fault will affect the system. System cause and effects configuration operates across the entire system networks. An optional dual path 6600 network bridging panel can be added to each local network to further enhance the system integrity.

- **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.

- **Secure Bridging Network** - The Algo-Tec™ 6600 control panels incorporate an additional network card, this is used to create a backbone network loop of 6600 panels, which enables the Secure Local Networks to be interconnected. This is referred to as the Secure Bridging Network. Up to 5 Secure Local Networks can be integrated via the Secure Bridging Network.

**6600 Bridging Overview**

For Technical Data - See Table 1, Page 47
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 Repeat Panel
The Protec 6600 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.

6600 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 6600 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 6600 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.
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.

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

Typical Schematic

For Addressable Fire Systems

![Typical Schematic for Addressable Fire Systems]

For Cirrus Pro and Emergency Lighting Systems

![Typical Schematic for Cirrus Pro and Emergency Lighting Systems]
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.

Cirrus Pro Aspirating Fire Detectors

Cirrus Pro detectors are the only ‘cloud chamber’ based aspirating detectors on the global market. The cloud chamber detection principle ensures this aspirating detector CANNOT 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 have no false alarm effects on the detector operation. Therefore the use of Cirrus Pro detectors in industrial application is very common.

ProPointPlus Aspirating Smoke Detectors

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 detectors are the next generation of aspirating detectors and are unique in 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 Pro 200 - EN54 Part 20

Features & Benefits

• Cloud Chamber Detection Principle
• Up to 200 mtrs Sampling Pipe
• Programmable ‘Pre-Alarm’ warning condition
• 3 Programmable ‘Fire’ warning conditions
• Vast Sensitivity Range (incipient to conflagrating)
• Latching / non latching alarm contacts
• ‘Fault Diagnostic’ feature
• Immune to dust, humidity & temperature changes
• Approved to EN54 Part 20

Overview

The ‘sensitivity range’ is the key feature that makes the Cirrus Pro Series Fire Detector the world’s most versatile fire detection device.

For over 20 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 Pro Series Detectors have a vast sensitivity range capable of being even more sensitive than previous versions. In addition, the detector may now be configured to be installed in heavily contaminated environments, such as polluted production and warehousing facilities.

Almost Unlimited Applications

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

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


Technical Details

Dimensions (mm)

For Technical Data - See Table 11, Page 51

Additional Product

Cirrus Pro Locator

The Cirrus Pro Locator is the industry’s 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.
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 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 combined ‘optical/enhanced CO’ detectors for small single room applications. 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.

Technical Details

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 Historic 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)

For Technical Data - See Table 11, Page 51
Cirrus HYBRID

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 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.

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 greater 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.

Technical Details

Application Guide

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

Class B - Enhanced Sensitivity Applications include:- Historic 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)

For Technical Data - See Table 11, Page 51
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.

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.

Features & Benefits

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

Overview

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

- Bedroom Mode
  - Steam from Bathroom
  - Aerosols in Bedroom
- Office Mode (high Performance)
  - Cigarette Smoke
  - Computer Fire
- Clean Mode (Extra High Performance)
  - Computer Room Fire
- Day/Night Mode
  - Offices
  - Factory Loading Bay
- Night Mode: Smoke & Heat detection

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 6000PLUS/OPHT.
RVAV™
Remote Visual Address Verification
Easily identifies installed device address numbers.

FAST™ Addressing & RVAV™

**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.

Add Address No

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.
6000PLUS Sensor Range

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 6000PLUS sensor, 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
**Sensor Variants**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Colour</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>600PLUSHT</td>
<td>Heat Sensor</td>
<td>●</td>
<td>Part 5</td>
</tr>
<tr>
<td>600PLUSHT/S</td>
<td>Heat Sensor c/w Sounder</td>
<td>● ●</td>
<td>Part 3, 5, 17</td>
</tr>
<tr>
<td>600PLUSHT/SVAD</td>
<td>Heat Sensor c/w Sounder and VAD</td>
<td>● ● ●</td>
<td>Part 3, 5, 17, 23</td>
</tr>
<tr>
<td>600PLUSHT/TSVAD</td>
<td>Heat Sensor c/w Talking Sounder and VAD</td>
<td>● ● ●</td>
<td>Part 3, 5, 17, 23</td>
</tr>
<tr>
<td>600PLUSOP</td>
<td>Optical Smoke Sensor</td>
<td>●</td>
<td>Part 7</td>
</tr>
<tr>
<td>600PLUSOP/S</td>
<td>Optical Smoke Sensor c/w Sounder</td>
<td>● ●</td>
<td>Part 3, 7, 17</td>
</tr>
<tr>
<td>600PLUSOPHT</td>
<td>Optical Heat Sensor</td>
<td>●</td>
<td>Part 5, 7</td>
</tr>
<tr>
<td>600PLUSOPHT/I</td>
<td>Optical Heat Sensor with Isolator</td>
<td>●</td>
<td>Part 5, 7, 17</td>
</tr>
<tr>
<td>600PLUSOPHT/S</td>
<td>Optical Heat Sensor c/w Sounder</td>
<td>● ●</td>
<td>Part 3, 5, 7, 17</td>
</tr>
<tr>
<td>600PLUSOPHT/VAD</td>
<td>Optical Heat Sensor c/w VAD</td>
<td>● ●</td>
<td>Part 5, 7, 17, 23</td>
</tr>
<tr>
<td>600PLUSOPHT/SVAD</td>
<td>Optical Heat Sensor c/w Sounder and VAD</td>
<td>● ● ●</td>
<td>Part 3, 5, 7, 17, 23</td>
</tr>
<tr>
<td>600PLUSOPHT/TS</td>
<td>Optical Heat Sensor c/w Talking Sounder</td>
<td>● ●</td>
<td>Part 3, 5, 7, 17</td>
</tr>
<tr>
<td>600PLUSOPHTCO</td>
<td>Optical Heat CO Sensor</td>
<td>●</td>
<td>Part 5, 7, 17</td>
</tr>
<tr>
<td>600PLUSOPHTCO/S</td>
<td>Optical Heat CO Sensor c/w Sounder</td>
<td>● ●</td>
<td>Part 3, 5, 7, 17</td>
</tr>
<tr>
<td>600PLUSOPHTCO/VAD</td>
<td>Optical Heat CO Sensor c/w VAD</td>
<td>● ●</td>
<td>Part 5, 7, 17, 23</td>
</tr>
<tr>
<td>600PLUSOPHTCO/SVAD</td>
<td>Optical Heat CO Sensor c/w Sounder and VAD</td>
<td>● ● ●</td>
<td>Part 3, 5, 7, 17, 23</td>
</tr>
<tr>
<td>600PLUSOPHTCO/TSVAD</td>
<td>Optical Heat CO Sensor c/w Talking Sounder and VAD</td>
<td>● ● ●</td>
<td>Part 3, 5, 7, 17, 23</td>
</tr>
</tbody>
</table>

**Talking Sounder Message Set**

<table>
<thead>
<tr>
<th>Message No</th>
<th>Description</th>
<th>Preamble Tone</th>
<th>Duration(s)</th>
<th>Message Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Female evacuation V1</td>
<td>Warble</td>
<td>9.4</td>
<td>Attention please, attention please. Fire has been reported in the building, please leave the building immediately by the nearest exit</td>
</tr>
<tr>
<td>2</td>
<td>Female alert</td>
<td>Pulse</td>
<td>7.5</td>
<td>May I have your attention please, an incident has been reported in the building please listen for further instructions</td>
</tr>
<tr>
<td>3</td>
<td>Female test</td>
<td>Warble</td>
<td>7.5</td>
<td>Attention, attention. This is an emergency. Please leave the building by the nearest available exit</td>
</tr>
<tr>
<td>4</td>
<td>Female evacuation V2</td>
<td>Warble</td>
<td>3.5</td>
<td>This is a test message, no action is required</td>
</tr>
<tr>
<td>5</td>
<td>Male evacuation V2</td>
<td>Warble</td>
<td>8</td>
<td>Attention, attention. This is an emergency. Please leave the building by the nearest available exit</td>
</tr>
<tr>
<td>6</td>
<td>Male alert</td>
<td>Pulse</td>
<td>8.1</td>
<td>May I have your attention please, an incident has been reported in the building. Please listen for further instructions</td>
</tr>
<tr>
<td>7</td>
<td>Male test</td>
<td>Warble</td>
<td>4</td>
<td>This is a test message, no action is required</td>
</tr>
<tr>
<td>8</td>
<td>Bell (accessed via msg 14/15)</td>
<td>None</td>
<td>Until Stopped</td>
<td>None</td>
</tr>
<tr>
<td>9</td>
<td>No tone or message</td>
<td>None</td>
<td>0</td>
<td>Used by control panel to allow user to ‘turn off’ sounder part of a talking sounder beacon</td>
</tr>
<tr>
<td>10</td>
<td>Bespoke message</td>
<td>W, P or C</td>
<td>max 10 sec</td>
<td>Client defined (must be stated when ordering sounder) additional cost</td>
</tr>
<tr>
<td>11</td>
<td>Warble electronic tone</td>
<td>None</td>
<td>Until Stopped</td>
<td>None</td>
</tr>
<tr>
<td>12</td>
<td>Pulsed electronic tone</td>
<td>None</td>
<td>Until Stopped</td>
<td>None</td>
</tr>
<tr>
<td>13</td>
<td>Continuous electronic tone</td>
<td>None</td>
<td>Until Stopped</td>
<td>None</td>
</tr>
<tr>
<td>14</td>
<td>Pulsed bell</td>
<td>None</td>
<td>Until Stopped</td>
<td>None</td>
</tr>
<tr>
<td>15</td>
<td>Continuous bell</td>
<td>None</td>
<td>Until Stopped</td>
<td>None</td>
</tr>
</tbody>
</table>

**BASE Options:**

- **600PLUS/BASE** - Low profile common mounting base
- **600PLUS/FFBASE** - Fast fixing semi recessed base

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

For Technical Data on:
- 600PLUS/HT Variants - See Table 2, 3 and 4, Page 47, 49
- 600PLUS/OP Variants - See Table 2 and 3, Page 47, 49
- 600PLUS/OPHT Variants - See Table 2, 3 and 4, Page 48, 49
- 600PLUS/OPHTCO Variants - See Table 2, 3 and 4, Page 48, 49
6000PLUS Sensor Range continued......

6000PLUS Sensor / VAD Recognition Chart

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 47, 49
6000PLUS/OP Variants - See Table 2 and 3, Page 47, 49
6000PLUS/OPHT Variants - See Table 2, 3 and 4, Page 48, 49
6000PLUS/OPHTCO Variants - See Table 2, 3 and 4, Page 48, 49

Design Guidance
Protec VAD’s have been approved to BS EN 54-23 and use the rating codes below:

C-\(x\)-y (eg C-3-7.5)
Where:
- C is Ceiling Mounted
- \(x\) is the Maximum Height (M)
- y is the illumination diameter for the cylindrical volume (M)

<table>
<thead>
<tr>
<th>BS EN54-23 Rating</th>
<th>Direct Viewing</th>
<th>Indirect Viewing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting Position</td>
<td>Ceiling</td>
<td>Ceiling</td>
</tr>
<tr>
<td>Less than 100 lux</td>
<td>21dia</td>
<td>9.8dia</td>
</tr>
<tr>
<td>100 - 200 lux</td>
<td>18dia</td>
<td>9dia</td>
</tr>
<tr>
<td>200 - 300 lux</td>
<td>14.3dia</td>
<td>7.5dia</td>
</tr>
<tr>
<td>300 - 400 lux</td>
<td>10.5dia</td>
<td>6dia</td>
</tr>
<tr>
<td>400 - 500 lux</td>
<td>8.3dia</td>
<td>4.5dia</td>
</tr>
<tr>
<td>500 - 600 lux</td>
<td>6.8dia</td>
<td>3.8dia</td>
</tr>
<tr>
<td>600 - 700 lux</td>
<td>5.3dia</td>
<td>*</td>
</tr>
<tr>
<td>700 - 800 lux</td>
<td>3.8dia</td>
<td>*</td>
</tr>
</tbody>
</table>

Coverage volumes height, diameter, length and width dimensions are in metres.
* Where ambient light levels may, at any time, exceed 600 lux, direct viewing is preferred (CoP 001 clause 4.6.9.4)
Overview

The 6000/SSR2 addressable loop powered high output electronic sounder designed by Protec in house developers, utilises a Piezo driver unit to enable high sound output and very low current consumption. With two base options and improved aesthetic appearance the 6000/SSR2 simplifies the installation of the device.

The 6000/SSR2 is a low current loop powered addressable device utilising the Protec Algo-Tec 6000 protocol. With typical sound output of 100dB(A) at 1m the sounder has 3 different tones (warble, continuous and pulse) selectable at the control panel. Volume can be adjusted between 100, 95 and 75 dB(A), again at the control panel. The 6000/SSR2 incorporates a loop short circuit isolator to enhance the system integrity and is designed to comply to all relevant CE and LVD standards.

Available in either Red or White body colours, the 6000/SSR2 has an IP65 rating making the product suitable for mounting internally or externally. An optional deep base allows surface mounted cable to be terminated directly into the sounder.

The 6000/SSR2 is an ideal addition to any fire alarm system providing a clear audible indication of a fire alarm.

Technical Details

Dimensions (mm)

<table>
<thead>
<tr>
<th></th>
<th>Standard Base</th>
<th>Deep Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width (mm)</td>
<td>54.2</td>
<td>55.5</td>
</tr>
<tr>
<td>Height (mm)</td>
<td>11.2</td>
<td>17</td>
</tr>
</tbody>
</table>

Features & Benefits

- Protec Algo-Tec™ 6000 Protocol
- Loop Powered
- High Output Electronic Sounder
- Low Current Consumption
- Integral Short Circuit Isolator
- Weatherproof to IP65
- Choice of Colours
- Approved to EN54 Part 3 & 17

Model References

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Colour Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000/SSR2</td>
<td>Addressable Red Sounder &amp; Base</td>
</tr>
<tr>
<td>6000/SSW2</td>
<td>Addressable White Sounder &amp; Base</td>
</tr>
</tbody>
</table>

NOTE: All the Model References above are loop powered addressable devices, supplied with a low profile base. An optional deep base (below) can be purchased separately to allow surface wiring to be terminated directly into the base.

<table>
<thead>
<tr>
<th>No</th>
<th>Tone Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Warble 990Hz 250ms 665Hz 250ms</td>
</tr>
<tr>
<td>2</td>
<td>Continuous Tone at 990Hz</td>
</tr>
<tr>
<td>3</td>
<td>Pulse Tone 990Hz 500ms Silence 500ms</td>
</tr>
</tbody>
</table>

For Technical Data - See Table 6, Page 50

Loop Wiring

PCB Connection Details Rear View (Gland Box Removed)

Overview panel with dimensions and features.

Model References table with product codes and colour options.

Technical Details section with dimensions for standard and deep bases.

Features & Benefits list with key features.

Model References table with product codes and colour options.

No Tone Options table with tone options and their specifications.

For Technical Data reference.
Overview

The unique Protec 6000/LED utilises a high intensity flashing beacon array. This arrangement simplifies installation and considerably improves the aesthetic appearance compared to the more costly and cumbersome alternatives. The 6000/LED is the latest addition to the range of audio/visual devices offered by Protec.

The 6000/LED has 18 high intensity LEDs, and due to the low current design, is addressable and loop powered, utilising the Protec Algo-Tec™ 6000 Protocol. The flash rate is 1Hz. The 6000/LED incorporates a loop short circuit isolator to enhance the system integrity.

The 6000/LED is available in a choice of lens and backbox colours and has an IP65 rating making the product suitable for mounting internally or externally.

The 6000/LED/RED is an ideal addition to our fire alarm system providing a clear indication of a fire alarm, for users with hearing impairment.

Technical Details

<table>
<thead>
<tr>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Base</td>
</tr>
<tr>
<td>Deep Base</td>
</tr>
<tr>
<td>63.3</td>
</tr>
<tr>
<td>55.5</td>
</tr>
</tbody>
</table>

Features & Benefits

- Protec Algo-Tec™ 6000 Protocol
- Loop Powered
- High Intensity LEDs
- Extremely Long Service Life
- Integral Short Circuit Isolator
- Ultra Low Current Consumption
- Weatherproof to IP65
- Choice of Colours

Typical Wiring

Model References

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Colour Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000/LED/RED</td>
<td>Red Lens (Red Base)</td>
</tr>
<tr>
<td>6000/LED/CLEAR*</td>
<td>Clear Lens (White Base)</td>
</tr>
<tr>
<td>6000/LED/AMBER</td>
<td>Amber Lens (White Base)</td>
</tr>
<tr>
<td>6000/LED/BLUE</td>
<td>Blue Lens (White Base)</td>
</tr>
<tr>
<td>6000/LED/GREEN</td>
<td>Green Lens (White Base)</td>
</tr>
</tbody>
</table>

*This unit will flash red.

29-982-75 Red Deep Base
29-983-76 White Deep Base

For Technical Data - See Table 6, Page 50
Overview

The 6000/SSR/LED comprises a high output electronic sounder and high intensity flashing beacon array. Combining the two functions in one compact design, improves the aesthetic appearance and simplifies the installation of the device.

The 6000/SSR/LED is a low current loop powered addressable device utilising the Protec Algo-Tec™ 6000 protocol. With typical sound output of 100dB(A) at 1m, the tone and volume options are selectable by the control panel. The beacon has an array of high intensity LED’s with a flash rate of 1Hz. The Sounder and beacon activate together. The 6000/SSR/LED incorporates a loop short circuit isolator to enhance the system integrity. Designed to comply to all relevant CE and LVD standards.

Available in a choice of lens and body colours, the 6000/SSR/LED has an IP65 rating making the product suitable for mounting internally or externally.

The 6000/SSR/LED/RED is an ideal addition to any fire alarm system providing a clear audible and visual indication of fire alarm, for users with hearing or visual impairment.

Technical Details

Dimensions (mm)

<table>
<thead>
<tr>
<th></th>
<th>Standard Base</th>
<th>Deep Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>54.2mm</td>
<td></td>
<td>55.5</td>
</tr>
<tr>
<td>17</td>
<td></td>
<td>11.2mm</td>
</tr>
</tbody>
</table>

Features & Benefits

- Protec Algo-Tec™ 6000 Protocol
- Loop Powered
- High Output Electronic Sounder
- High Intensity LED Beacon
- Low Current Consumption
- Integral Short Circuit Isolator
- Weatherproof to IP65
- Choice of Colours

Loop Wiring

PCB Connection Details Rear View (Gland Box Removed)

Model References

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Colour Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000/SSR/LED/RED</td>
<td>Red Lens (Red Body/Base)</td>
</tr>
<tr>
<td>6000/SSW/LED/RED</td>
<td>Red Lens (White Body/Base)</td>
</tr>
<tr>
<td>6000/SSW/LED/CLEAR*</td>
<td>Clear Lens (White Body/Base)</td>
</tr>
<tr>
<td>6000/SSW/LED/AMBER</td>
<td>Amber Lens (White Body/Base)</td>
</tr>
<tr>
<td>6000/SSW/LED/BLUE</td>
<td>Blue Lens (White Body/Base)</td>
</tr>
<tr>
<td>6000/SSW/LED/GREEN</td>
<td>Green Lens (White Body/Base)</td>
</tr>
</tbody>
</table>

*This unit will flash red.

No Tone Options

<table>
<thead>
<tr>
<th>No.</th>
<th>Tone Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Warble 990Hz 250ms 665Hz 250ms</td>
</tr>
<tr>
<td>2</td>
<td>Continuous Tone at 990Hz</td>
</tr>
<tr>
<td>3</td>
<td>Pulse Tone 990Hz 500ms Silence 500ms</td>
</tr>
</tbody>
</table>

For Technical Data - See Table 6, Page 50
6000/VAD/W & 6000/VAD/C Addressable Mounted VAD’s

Features & Benefits

- Protec Algo-Tec™ 6000 Protocol
- Fast™ Addressing
- Integral Short Circuit Isolator
- Loop Powered
- Adjustable from 7.5 to 3m Room Coverage Volume
- 2.4 metres (m) Mounting Height (Wall Mounted VAD)
- 3 metres (m) Mounting Height (Ceiling VAD)
- Adjustable Flash Rate
- Approved to EN54 Part 17 & 23

Overview

The Protec 6000/VAD/W Addressable wall mounted visual alarm device and 6000/VAD/C Addressable ceiling mounted visual alarm device are loop driven, addressable high intensity VAD’s designed to EN54-23.

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 height of up to 3m and coverage diameter of 7.5m C-3-7.5.

For smaller areas, these devices can be switched down from 7.5m to 3m thus reducing power consumption and maximising the number of devices on the loop. The low power modes are software programmable.

They have a unique lens that distributes the white light, for the wall VAD in a cuboid shape and the ceiling VAD in a cylindrical shape to achieve the required illumination of 0.4lux over the entire coverage area in accordance with EN54-23.

The design is based on LED technology for long life, reliability and low power consumption.

Compliant with DDA legislation, these high intensity led VAD’s warns those with hearing impairments or in noisy environments.

These devices is available in a white or red housing with a white flash rate of 1 or 0.5Hz.

Technical Details

Model References

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Colour Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000/VAD/W/RED</td>
<td>Wall VAD Red Body (White Flash)</td>
</tr>
<tr>
<td>6000/VAD/W/WHITE</td>
<td>Wall VAD White Body (White Flash)</td>
</tr>
<tr>
<td>6000/VAD/C/RED</td>
<td>Ceiling VAD Red Body (White Flash)</td>
</tr>
<tr>
<td>6000/VAD/C/WHITE</td>
<td>Ceiling VAD White Body (White Flash)</td>
</tr>
</tbody>
</table>

NOTE: All the Model References are loop powered addressable LED VAD’s, supplied with a low profile base. An optional deep base can be purchased separately to allow surface wiring to be terminated directly into the base.

- 29-982-75 Red Deep Base
- 29-983-76 White Deep Base

For VAD Design Guidance - See Page 31
For Technical Data - See Table 5, Page 49
6000/SSR/VAD Addressable Wall Mounted Sounder VAD

Features & Benefits
- LED Technology for Long Service Life
- Quick and Simple to Install
- FAST™ Addressing
- Loop Powered and Integral Short Circuit Isolator
- High Output Electronic Sounder
- 2.4 Metres (m) Mounting Height
- Adjustable 3m to 7m Room Coverage Volume
- Approved to EN54 Part 3, 17 & 23

Overview

The Protec 6000/SSR/VAD 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 100dBA at 1m. Combining the two functions 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 up to 2.4m and coverage of 7m x 7m W-2.4-7 adjustable down to 3m for smaller room coverage. Similarly the tone and volume options are also selectable by the control panel.

The product has a unique lens that distributes the light in a cuboid shape to achieve the required illumination of 0.4lux over the entire area in accordance with EN54 Part 23. The design is based on LED technology for long life, reliability and low power consumption.

The 6000/SSR/VAD has a EN24-23 Type B (outdoor) + IP65 rating making the product suitable for mounting internally or externally.

Compliant with DDA legislation, this high intensity VAD warns those with hearing impairments or in noisy environments.

Technical Details

Dimensions (mm)

Tone Options
Continuous 990Hz, Warble 730Hz to 990Hz

NOTE: The tone and volume are selectable at the control panel. Volume options: High-100, Mid-95, Low-75 dB(A).

For VAD Design Guidance - See Page 31
For Technical Data - See Table 5, Page 49
VAD Design Guidance

Protec VAD’s have been approved to BS EN 54-23 and use the rating codes below:

\[
\text{W-x-y} \quad \text{(eg W-2.4-7)}, \quad \text{C-x-y} \quad \text{(eg C-3-7.5)}
\]

Where:
- \( W \) is wall mounted
- \( C \) is ceiling mounted
- \( x \) is the maximum height (M)
- \( y \) is the illumination diameter for the cylindrical volume (M)

BS EN 54-23 approved VAD’s are approved as ceiling mounted and must provide a minimum illumination level of 0.4 lux for the stated volume.

Table A: Direct Viewing Coverage volumes for various ambient light levels (lux)

<table>
<thead>
<tr>
<th>BS EN54-23 Rating</th>
<th>Wall VAD</th>
<th>Ceiling VAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 100 lux</td>
<td>36.4m x 36.4m</td>
<td>21dia</td>
</tr>
<tr>
<td>100 - 200 lux</td>
<td>30.8m x 30.8m</td>
<td>18dia</td>
</tr>
<tr>
<td>200 - 300 lux</td>
<td>22.4m x 22.4m</td>
<td>14.3dia</td>
</tr>
<tr>
<td>300 - 400 lux</td>
<td>16.1m x 16.1m</td>
<td>10.5dia</td>
</tr>
<tr>
<td>400 - 500 lux</td>
<td>12.6m x 12.6m</td>
<td>8.3dia</td>
</tr>
<tr>
<td>500 - 600 lux</td>
<td>9.1m x 9.1m</td>
<td>6.8dia</td>
</tr>
<tr>
<td>600 - 700 lux</td>
<td>7m x 7m</td>
<td>5.3dia</td>
</tr>
<tr>
<td>700 - 800 lux</td>
<td>4.9m x 4.9m</td>
<td>3.8dia</td>
</tr>
</tbody>
</table>

Table B: Indirect Viewing Coverage volumes for various ambient light levels (lux)

<table>
<thead>
<tr>
<th>BS EN54-23 Rating</th>
<th>Wall VAD</th>
<th>Ceiling VAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 100 lux</td>
<td>12.6m x 12.6m</td>
<td>9.8dia</td>
</tr>
<tr>
<td>100 - 200 lux</td>
<td>11.9m x 11.9m</td>
<td>9dia</td>
</tr>
<tr>
<td>200 - 300 lux</td>
<td>9.8m x 9.8m</td>
<td>7.5dia</td>
</tr>
<tr>
<td>300 - 400 lux</td>
<td>8.4m x 8.4m</td>
<td>6dia</td>
</tr>
<tr>
<td>400 - 500 lux</td>
<td>7m x 7m</td>
<td>4.5dia</td>
</tr>
<tr>
<td>500 - 600 lux</td>
<td>6.3m x 6.3m</td>
<td>3.8dia</td>
</tr>
<tr>
<td>600 - 700 lux</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>700 - 800 lux</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

Coverage volumes height, diameter length and width dimensions are in metres.

* Where ambient light levels may, at any time, exceed 600 lux, direct viewing is preferred (CoP 001 clause 4.6.9.4)
Overview

Installation efficiency, flexibility and full compliance with the latest standards are at the heart of the 6000/MCP indoor and 6000/MCP/WP outdoor call point.

The Manual Call Points (MCP's) utilise a special terminal block, where all initial installation cabling is terminated. This terminal block is then simply connected to the back of the MCP. Simple, but effective, with no re-termination required and no time wasted.

The indoor and outdoor MCP also helps to preserve the integrity of the overall system, as illegal removal of the product lid will result in the call point operating and the system going into alarm.

6000/MCP - Installation time and ultimately cost, are of paramount importance to any fire or security installer. The 6000/MCP range directly reflects this need by providing a simple connection concept designed specifically to reduce installation time.

6000/MCP/WP - The 6000/MCP/WP 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.

Technical Details

6000/MCP Typical Wiring

For Technical Data - See Table 7, Page 50
**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/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 51, 52*
Protec provide a complete range of fire detection and alarm system equipment to provide solutions for the vast majority of applications including protection within hazardous areas requiring Intrinsically Safe equipment.

As its name implies, Intrinsic Safety refers to equipment and wiring that is inherently safe, i.e., a system with energy levels so low they cannot cause an explosion.

This is typically achieved through the use of isolating barriers; either diode barriers or isolated barriers that limit energy to a hazardous (potentially flammable) area.

Hazardous areas are classified into zones based on an assessment of the frequency of the occurrence and duration of an explosive gas atmosphere, as follows:

- Zone 0: An area in which explosive gas atmosphere is present continuously or for long periods.
- Zone 1: An area in which explosive gas atmosphere is likely to occur in normal operation.
- Zone 2: An area in which explosive gas atmosphere is not likely to occur in normal operation and, if it occurs, will only exist for a short time.

Barriers are a key component because they limit the energy to the hazardous area. Zener barriers provide a simple method for implementing intrinsic safety but their primary drawback is they must be connected to a dedicated Intrinsically Safe earth or ground, which may introduce problems such as electrical noise on the control signal and they may introduce earth monitoring faults.

By contrast, isolated barriers provide electrical isolation for anything connected to them, so there is no need for a dedicated earth / ground.

To overcome these issues correctly the following solutions have been provided to ensure correct application.

**Addressable Systems:**

Depending on the application different barriers (Galvanic isolation or Zener) can be used on a Protec addressable system. For applications where only IS detectors /call points are required as shown in Fig 1, then a galvanic isolation barrier driven from a Protec 6000/2LPZA can be used and no external power supply is required.

**Features & Benefits**

- Low cost solution, no need for expensive bespoke integration solution
- Uses existing infrastructure
- Easy to Integrate with other systems
- Seamless connection to the Protec Hercules Graphics System
- Will work on local or wide area connections (Internet)
- Easy to program and configure
- Meets interfacing requirements for large integrated projects
- Static addressing

![Protec Fire Detection plc](image)

**Intrinsically Safe Range of Devices**

**Overview**

For applications where IS sounders are required, a Zener barrier must be used in order for the sounder circuit to be fully monitored for short and open circuit faults as shown in Fig 2. The 6000/2APZA must be powered from a Protec EN54-4 compliant power supply.

**Conventional Systems:**

Fig 3 shows a typical schematic when IS devices are connected to a Protec 3500 Series conventional Fire alarm system.

![Figure 1: IS Devices Connected to Protec 3500 Series Fire Panels](image)

**Figure 1:** Application schematic of loop driven system interfacing to a range of conventional IS devices with no sounder and no external power supply.
BACnet Interface

Features & Benefits

- Low cost solution, no need for expensive bespoke integration solution
- Costs less to install
- Easy to integrate with other systems
- Provides list of points to the BMS system integrator
- Easier to Program
- Meets interfacing requirements for large integrated projects

Overview

Integrating Protec Intelligent addressable fire alarm systems with building management systems can result in many economic and operation benefits. Such integration requires communication standards and careful design practices like BACnet.

BACnet is an ANSI/ASHRAE standard that specifies a common communication protocol. This allows building systems to communicate with each other using a common language.

The BACnet interface supplied by Protec connects to the RS232 Graphics port on a Protec Fire Alarm Control Panel to get data from the fire alarm system. This data is adapted to the BACnet standard and is available from the interface as BACnet over Ethernet.

The graphics protocol from the fire alarm system provides change of state information for every device on the fire alarm network.

The BACnet interface has objects that are programmed for each required device to report the state of that device as a property of the object.

Objects (fire detection devices) take one of 4 mutually exclusive states:
- Quiet
- Fault
- Pre Alarm
- Alarm

The object can also be Blocked (disabled) at the panel, but when unblocked (normalised) revert to the current state.

The interface allows the BMS to subscribe to COV (change of value) for the objects; this will then send a COV message for any change of state.

The subscription is for a timed period that is set up with the subscribe request.

Technical Details

Typical Configuration

RS232

Protec Fire Detection System

BACnet

Over Ethernet
Multiway IP Interface

Overview

The Protec IP interface provides a high performance, reliable network infrastructure device for accessing Protec Intelligent Addressable Fire Alarm Systems over Ethernet.

The RS232 data from the fire alarm system is converted to Ethernet packets and sent via a local or wide area network for reception by a suitable data logger or graphics application.

This makes the whole system completely transparent to the fire alarm system and the receiving equipment.

It offers the ideal solution of integrating Protec Intelligent Addressable Fire Alarm Systems with building management systems which can result in many economic and operational benefits.

It allows access from the Internet over standard ADSL, or other, always on connection, making remote monitoring a cost effective solution.

Network settings are manually set up at each unit with static IP addresses. In server mode the PC will instigate the connection with knowledge of the remote IP unit, to ensure always on connection. In client mode the interface targets only specific PCs.

The connection is permanently monitored by the fire alarm system utilising handshaking protocols and can be monitored by the connected PC.

With a possible eight sockets the interface can connect to up to eight PCs anywhere on the network.

Features & Benefits

- Low cost solution, no need for expensive bespoke integration solution
- Uses existing infrastructure
- Easy to Integrate with other systems
- Seamless connection to the Protec Hercules Graphics System
- Will work on local or wide area connections (Internet)
- Easy to program and configure
- Meets interfacing requirements for large integrated projects
- Static addressing

Technical Details

Typical Configuration

RS232

Protec Fire Detection System

Network

Ethernet

BMS or Graphics System

Ethernet

Cloud
Overview

6000/FIREFEAM40 Optical Beam Smoke Detector - The Protec Algo-Tec™ 6000/FIREFEAM40 Addressable Loop Powered Reflective Optical Beam Smoke Detector includes a motorised head unit containing an infra-red transmitter and receiver, a ground level controller and prism reflector. Making use of the prism reflector the returned infrared beam is analysed for smoke contamination and registers a fire condition at a pre determined level.

At ground level the controller unit is used to make operational adjustments. The standard unit covers a range of 5 to 40 metres. To increase the beam range additional reflectors are added. We have 2 kits available; FIREFEAM40/80KIT for a range of 40 to 80 metres, and FIREFEAM80/100KIT for a range of 80 to 100 metres.

The Protec Algo-Tec™ 6000/FIREFEAM40 is a loop powered, interactive digital addressable device and is compatible with the Protec Algo-Tec™ 6000 range.

The 6000/FIREFEAM40 head incorporates microprocessor controlled motors that intelligently align the head at all times. When first commissioned the head accurately aligns itself, and in operation the head will re-align should there be building movement, a problem with new build settlement and environmental change. The units unique ability to self align means that high level re-adjustment because of this, is no longer required, saving time, disruption and cost. The motorised head means greater reliability that will reduce troublesome false alarms.

Maintenance is also simplified as the low level controller has a simple menu system viewed through an LCD screen. All adjustments can be made at ground level including a test procedure and full diagnostics.

Features & Benefits

- Infra-Red Transmitter and Receiver
- Technician Friendly
- Simple Menu System
- Protec Algo-Tec™ 6000 Protocol
- Low Power Usage
- FAST™ Addressing
- Cost Effective

Technical Details

Wiring Diagram

Dimensions (mm)

Beam Head 155(W) x 180(H) x 137(D)
Controller 120(W) x 185(H) x 62(D)

For Technical Data - See Table 8, Page 50
6000PLUS/UG4 Ventilation Duct Smoke Detector

Features & Benefits

- 6000PLUS/UG4DP for use with Protec Algo-Tec™ 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 Installation 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.

Technical Details

Dimensions (mm)

<table>
<thead>
<tr>
<th>Options</th>
<th>Product Code Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duct assembly c/w 600mm sampling tube for 150 mm to 800 mm duct diameter</td>
<td>6000PLUS/UG4DP6</td>
</tr>
<tr>
<td>Duct assembly c/w 1500mm sampling tube for 600mm to 1300mm duct diameter</td>
<td>6000PLUS/UG4DP15</td>
</tr>
<tr>
<td>Duct assembly c/w 2800mm sampling tube for 1300mm to 2600mm duct diameter</td>
<td>6000PLUS/UG4DP28</td>
</tr>
</tbody>
</table>

Optional Mounting Bracket

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

Stock code: UG4DP/MB

For Technical Data - See Table 9, Page 50
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
- Third party Approved to Latest EN54 Parts 2 and 4. Meets the Requirements of BS5839 Part 1

**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 ‘non-latching’, 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**

![Typical 3500 Schematic](image)

**Dimensions (mm)**

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

**KEY**

- **3000.PLUS/HT**
- **3000.PLUS/OP**
- **3000.PLUS/OPHT**
- **3000/MCP**
- **3000/VAD/W**
Overview

The Protec 3000PLUS range has been developed to incorporate advanced fire sensing technology, certified to EN54-5 & 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
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
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.

3000SSR2
This high output electronic sounder utilises a Piezo driver unit to enable high sound output and very low current consumption. With two base options and improved aesthetic appearance the 3000/SSR simplifies the installation of the device.

3000VAD/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.

3000SSR/VAD
This is a 24Volt 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 compact high efficiency design improves the aesthetic appearance and simplifies the installation of the device.
Features & Benefits

- Up to 500 luminaires / interfaces can be accommodated
- 28 test groups (first 16 groups feature LED indications)
- Individual test times programmable by group
- Attractive surface, or recessed mounting options
- Compatible with Hercules V6.013 and later (DL500 TCP)
- Built in web-server permits remote monitoring and system verification.
- Bespoke Windows™ Configuration Tool and Excel Text Editor
- Reduced time to comply with testing requirements of BS5266 Part 1, BS5266-8 and EN50172.

Overview

The Protec DigiLite®DL500 Single Loop Addressable Emergency Lighting Test Panel has been designed to be the next generation design to the existing DL500 product. The new design offers enhanced features such as programmable test time per group, integrated web-server option and a bespoke Windows™ configuration tool.

The DL500 automatically tests luminaires to the guidelines in BS5266-8:2004 (BSEN 50172:2004) and BS62034 and logs any test failures for inspection at a later date.

The panel can accommodate up to 500 luminaires which can be grouped into one of 28 test groups.

The time a test starts in a day is fully programmable, as is the day of the month in which a particular group is tested.

20 characters of luminaire text and group text can be programmed as well as 40 characters of panel text.

Relevant loop addresses can be programmed to maintained or non-maintained monitoring, and device based parametric programming has been included to allow full flexibility and future proofing.

The panel will be compatible with all existing DL500 loop devices, as well as new DigiLite® LED luminaire ranges.

Remote monitoring, via a standard web browser, is possible on the DL500 TCP variant (using the new DigiView® web-server). Salient luminaire parameters and status can be viewed and tests can be instigated.

To complement the DL500 a bespoke Windows™ based configuration tool has also been developed which permits rapid configuration of the system.

Typical DigiLite Schematic

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

KEY
- Addressable Self Contained Emergency Luminaire
- Addressable Slave Emergency Luminaire
- Addressable Sub Circuit Monitored Interface

See page 46 to identify other luminaires on the schematic.
Overview

Protec have for many years’ experience of designing and manufacturing emergency lighting solutions, from Self-contained luminaires, Central Battery units, Static Inverter units to bespoke LED luminaires, self-test luminaires and digital addressable testing and monitoring systems.

Exitplus
The Exitplus has been specifically designed to provide a clearly defined and unambiguous indication of the escape route from building during a mains failure in accordance with BS5266 Part 1-1:2011. The luminaire additionally provides excellent downlight to illuminate the exit door and escape route area around the luminaire.

Marsden
The Marsden combines the long life and low maintenance benefits of LED technology with energy efficient operation. For best in class performance, the Marsden has a superior light distribution to maximise luminaire spacing and reduces installation cost by reducing the quantity of units required to achieve the latest European illumination requirements.

Marsden Blade
The Marsden blade is an obstructive recessed exit sign utilising the latest LED technology. It combines the long life and low maintenance benefits of LED technology with energy efficient operation. The fitting is suitable for single and double sided use which makes suitable for use in a wide range of applications.

Darwen
The Darwen luminaire is suitable for practically any application and location. It is weather proof and robust with the added benefit of a clip fixing for ease of installation.

Powerflood
This Powerflood is suitable for a wide variety of installations, with a choice of top or side mounting of the lamp heads, with multi-directional swivel and tilt facility ensuring that exactly the right aiming angle is achieved. Twin LED’s provide peace of mind, covering individual lamp failure in addition to mains and charging status.

Recessed / Surface & Open Area / Escape Route Luminaires
Protec have a new range of bespoke Surface and recessed LED emergency luminaires to provide solutions for Open anti panic areas and escape route areas. The luminaires utilise the latest LED and optic technology to provide unobtrusive, high quality, high performance products, designed for indoor use where aesthetics are of prime importance.

The best in class performance and innotive optics provides a uniform distribution in either escape routes or open area anti panic areas. This gives increased spacings and reduced installation costs by reducing the quantity of luminaires required to achieve the latest European illumination levels.

Key Features:
- Environmentally friendly
- Low power consumption, reducing cost of ownership
- Reduces maintenance costs (60,000 hour life LED’s)
- Easy to install
- Best in class performance, wide spacing distribution (reduces installation cost)
- Available in maintained, non maintained, self contained and self test emergency luminaires
- Compatible with Protec DigiLite® DL500-2 automatic addressable testing system.
- IP44 ingress protection (below ceiling)
- Compact downlight fits into a 62mm cut-out
- Manufactured to the latest EN60598-2-22
The selection of appropriate fire protection measures requires an experienced approach. Protec design systems taking into account specific risk, client and insurers’ needs. The range of possible solutions to any given risk includes the choice of chemical or inert extinguishing agent, pressure relief, extraction, extinguishing release control and early warning detection systems. The design must be verified through approved calculations based on type testing in accordance with the international standards and the requirements of LPC, FM or UL.

Protec can provide solutions to these requirements. The services provided are based on a technical, cost effective and impartial approach and include:

- Design, Supply, Installation, Commissioning & Maintenance of Fixed Extinguishing Equipment
- Specialist Extinguishing Systems
- Chemical & Inert Extinguishing Agents
- Carbon Dioxide Fire Extinguishing Systems
- Water Mist Fire Suppression Systems
- Dry Chemical and Particulate Aerosol
- Wet Chemical Fire Suppression Systems
- Foam Suppression Systems
- Incipient Fire and High Sensitivity Smoke Detection Systems
- Halon Removal and Disposal
- Room Integrity Testing, Pressure Relief & Extraction
- Refilling Carbon Dioxide, Chemical & Inert Gases
- Service & Maintenance of mechanical systems, including stretch testing and optional discharge testing

Protec are LPS1204 approved for the Installation, Commissioning and Servicing of Fixed Gaseous Suppression Systems, including HFC227ea, IG-541, IG55 & Co2, our Certificate No is: CFSI-015
From formation back in 1968, Protec have been keenly involved in the development of Audio systems. Our expertise in life safety systems led to the establishment of a dedicated audio team to provide fully compliant Voice Alarm systems and design support to the Fire Alarm industry.

The business foundation is built upon technically qualified and experienced personnel, who are committed to ensure that Protec provide the most cost effective and technically compliant communications system to meet with our clients’ needs.

What we provide...

**Voice Alarms**
Emergency and Voice evacuation systems designed and assembled to meet with your specification and obligations, under the current life safety standards.

**Paging & Music Systems**
Provision of background music players with a prioritised microphone input, to enable paging announcements to be made over a defined loudspeaker zone.

**Professional Sound Systems**
Protec provide ‘state of the art’ networked audio solutions for Stadia and large audience occupancy acoustic spaces, using DSP controlled loudspeaker arrays and comprehensive monitoring and fault reporting systems.

**Hearing Impaired Systems**
Induction loop and Infra Red Systems are used by the hearing impaired to provide sound reinforcement via the users earpiece. The systems may be used in a wide variety of applications.

**Fire Telephone Communication**
Provision of fixed fire telephones to enable effective communications across large de-centralised sites, which enables the emergency services to complete the safe evacuation of persons from a building.

**Disabled Refuge Communication**
To meet with the requirements of the equality act, we are able to provide complete monitored refuge communication systems to meet with the current life safety standards. These systems provide communications from a safe refuge to the emergency control station in the event of a building related emergency.
Protec are able to offer complete Gas Detection for all industry sectors, providing an extensive range of fixed and portable gas detection systems.

**Applications:**
- Refrigerant gas detection
- Marine Gas Detection
- Boiler House Gas Detection
- Brownfield & Landfill Gas Detection
- Water & Wastewater Treatment Gas Detection
- Food & Drinks Industry Gas Detection
- Automotive Industry Gas Detection
- Retail & Facilities Management Gas detection
- Swimming Pool Plant Room Gas Detection
- Laboratory & Medical Gas Detection
- Steel & Metal Processing Gas Detection
- Power Generation Gas Detection
- Chemical Industry Gas Detection
- Car Park Gas Detection

**Available Sensor Types include:**
- Infra-Red
- Pellistor
- Electrochemical
- Photo-Ionisation (PID)
- Semi Conductor

**Flammable and Toxic Gas**
Toxic and flammable gases present a serious risk to health and safety. When toxic gases are present the risks of poisoning or asphyxiation increase considerably and when flammable gases and vapours are exposed there is a serious danger of fire and explosions.

**Gases detected include:**

**Flammable gas detection:**
- Methane
- LPG
- Butane
- Propane
- Hexane
- Hydrogen
- VOCs

**Toxic gas detection:**
- Carbon Monoxide
- Hydrogen Sulphide
- Chlorine
- Sulphur Dioxide
- Ammonia
- Nitrogen Dioxide
- Hydrogen Chloride
- Nitric Oxide
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
## Technical Data

### Panels

#### Table 1

<table>
<thead>
<tr>
<th></th>
<th>6100</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table 2</strong></td>
<td><strong>6000</strong></td>
</tr>
<tr>
<td><strong>6000PLUS/HT</strong></td>
<td><strong>6000PLUS/HT/S</strong></td>
</tr>
<tr>
<td><strong>6000PLUS/OP</strong></td>
<td><strong>6000PLUS/OP/S</strong></td>
</tr>
<tr>
<td><strong>6000PLUS/OPHT</strong></td>
<td><strong>6000PLUS/OPHT/S</strong></td>
</tr>
<tr>
<td><strong>6000PLUS/OPHT/I</strong></td>
<td><strong>6000PLUS/OPHT/S</strong></td>
</tr>
<tr>
<td><strong>6000PLUS/OPHT/S</strong></td>
<td><strong>6000PLUS/OPHT/TS</strong></td>
</tr>
<tr>
<td><strong>6000PLUS/OPHTCO</strong></td>
<td><strong>6000PLUS/OPHTCO/S</strong></td>
</tr>
</tbody>
</table>

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

### Sensors

#### Table 2

<table>
<thead>
<tr>
<th></th>
<th><strong>6000PLUS/HT</strong></th>
<th><strong>6000PLUS/HT/S</strong></th>
<th><strong>6000PLUS/OP</strong></th>
<th><strong>6000PLUS/OP/S</strong></th>
<th><strong>6000PLUS/OPHT</strong></th>
<th><strong>6000PLUS/OPHT/S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight (Excluding Base)</strong></td>
<td>90g</td>
<td>105g</td>
<td>90g</td>
<td>105g</td>
<td>90g</td>
<td>90g</td>
</tr>
<tr>
<td><strong>Loop Standby Load</strong></td>
<td>0.2mA</td>
<td>0.4mA</td>
<td>0.2mA</td>
<td>0.4mA</td>
<td>0.2mA</td>
<td>0.2mA</td>
</tr>
<tr>
<td><strong>Loop Alarm Load</strong></td>
<td>0.2mA</td>
<td>5.4mA</td>
<td>0.2mA</td>
<td>5.4mA</td>
<td>0.2mA</td>
<td>0.2mA</td>
</tr>
<tr>
<td><strong>Isolator</strong></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Beacon Flash Rate</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Sounder Volume</strong></td>
<td>N/A</td>
<td>85dB(A) (High), 75dB(A) (Mid), 65dB(A) (Low) (measured at one metre)</td>
<td>N/A</td>
<td>85dB(A) (High), 75dB(A) (Mid), 65dB(A) (Low) (measured at one metre)</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Approvals</strong></td>
<td>LPCB Ref No: 201w/01, EC No: 0832-CPD-1169, Standard: EN 54-5</td>
<td>LPCB Ref No: 201aa/01, EC No: 0832-CPD-1182, Standard: EN 54-3, 5 &amp; 17</td>
<td>LPCB Ref No: 201v/01, EC No: 0832-CPD-1168, Standard: EN 54-7</td>
<td>LPCB Ref No: 201aa/01, EC No: 0832-CPD-1182, Standard: EN 54-3, 5 &amp; 17</td>
<td>LPCB Ref No: 201w/01, EC No: 0832-CPD-1169, Standard: EN 54-5</td>
<td>LPCB Ref No: 201aa/01, EC No: 0832-CPD-1182, Standard: EN 54-3, 5 &amp; 17</td>
</tr>
</tbody>
</table>

Protec Fire Detection plc
<table>
<thead>
<tr>
<th></th>
<th>Standalone</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6500E</strong></td>
<td>230Vac ± 10% - 15% (50/60Hz)</td>
<td>230Vac ± 10% - 15% (50/60Hz)</td>
<td>230Vac ± 10% - 15% (50/60Hz)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>21.5 - 30Vdc</td>
<td>21.5 - 30Vdc</td>
<td>21.5 - 30Vdc</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-10° to +55° C</td>
<td>-10° to +55° C</td>
<td>-10° to +55° C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5% to 95% RH (no condensation, or icing)</td>
<td>5% to 95% RH (no condensation, or icing)</td>
<td>5% to 95% RH (no condensation, or icing)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>185mA (2 loop) 226mA (4 loop)</td>
<td>215mA (2 loop) 256mA (4 loop)</td>
<td>280mA (2 loop) 326mA (4 loop)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>220mA (2 loop) 261mA (4 loop)</td>
<td>250mA (2 loop) 291mA (4 loop)</td>
<td>318mA (2 loop) 362mA (4 loop)</td>
<td></td>
</tr>
<tr>
<td>Full colour, 7” touch screen graphical display</td>
<td>Full colour, 7” touch screen graphical display</td>
<td>Full colour, 7” touch screen graphical display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1, 2 or 4</td>
<td>1, 2 or 4</td>
<td>2 or 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>200</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both (Internal &amp; External Charger)</td>
<td>Both (Internal &amp; External Charger)</td>
<td>External Charger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Charger: 3 Amp</td>
<td>Internal Charger: 3 Amp</td>
<td>n/a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 x 12v 12Ah Valve regulated</td>
<td>2 x 12v 12Ah Valve regulated</td>
<td>n/a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>100 expandable to 10,000</td>
<td>100 expandable to 10,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000</td>
<td>4,000</td>
<td>4,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>255 per panel</td>
<td>255 per panel</td>
<td>255 per panel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None dedicated but a programmable alarm output may be configured for this function</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 (3 terminal board &amp; 3 display board)</td>
<td>6 (3 terminal board &amp; 3 display board)</td>
<td>5 (2 terminal board &amp; 3 display board)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/a</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/a</td>
<td>32</td>
<td>160</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USB (for commissioning use only) / RS232</td>
<td>USB (for commissioning use only) / RS232</td>
<td>USB (for commissioning use only) / RS232</td>
<td></td>
<td></td>
</tr>
<tr>
<td>440(V) x 385(H) x 144(D)</td>
<td>440(V) x 385(H) x 144(D)</td>
<td>440(V) x 385(H) x 144(D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7Kg</td>
<td>7Kg</td>
<td>7Kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*60 characters device location text, 20 characters device alarm text, 20 characters panel text, 20 characters device loop test*
**Technical Data**

**Sensors continued....**

### Table 3

<table>
<thead>
<tr>
<th>Feature</th>
<th>Common Specification across all sensor variants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loop Voltage</td>
<td>18 - 28V</td>
</tr>
<tr>
<td>Loop Powered</td>
<td>Yes</td>
</tr>
<tr>
<td>IP Rating</td>
<td>IP41</td>
</tr>
<tr>
<td>Environment</td>
<td>-10°C to +50°C (95% RH non condensing)</td>
</tr>
<tr>
<td>Standards</td>
<td>CE Marked</td>
</tr>
<tr>
<td>Device Protocol</td>
<td>Algo-Tec™6000/PLUS</td>
</tr>
</tbody>
</table>

**Sensor VAD’S**

### Table 4

<table>
<thead>
<tr>
<th>Feature</th>
<th>HT/SVAD</th>
<th>HT/TSVAD</th>
<th>OPHT/VAD</th>
<th>OPHT/SVAD</th>
<th>OPHT/TSVAD</th>
<th>OPHTCO/VAD</th>
<th>OPHTCO/SVAD</th>
<th>OPHTCO/TSVAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>-10°C to +50°C (95% RH non condensing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP Rating</td>
<td>IP41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (Excluding Base)</td>
<td>108.6g</td>
<td>109.46g</td>
<td>103.35g</td>
<td>108.52g</td>
<td>111.38g</td>
<td>105g</td>
<td>105g</td>
<td>105g</td>
</tr>
<tr>
<td>Loop Powered</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop Voltage</td>
<td>18 - 28V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop Standby Load</td>
<td>0.55mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Alarm Load</td>
<td>24mA</td>
<td>25mA</td>
<td>16.5mA</td>
<td>24mA</td>
<td>25mA</td>
<td>16.5mA</td>
<td>24mA</td>
<td>25mA</td>
</tr>
<tr>
<td>Mounting Height</td>
<td>3m</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coverage</td>
<td>7.5m, 5m or 2m cylindrical diameter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VAD Flash Rate</td>
<td>1Hz pr 0.5Hz white flash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolator</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Device Protocol</td>
<td>Algo-Tec™6000/PLUS</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Product Approval (CoCP)</td>
<td>CoCP No: 0356-CPR-0407</td>
<td></td>
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<tr>
<td>Product Approval (Standard)</td>
<td>EN54-3, 5, 7, 17 &amp; 23</td>
<td></td>
<td></td>
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</tbody>
</table>

**Sounder VAD’S**

### Table 5

<table>
<thead>
<tr>
<th>Feature</th>
<th>6000/VAD/C</th>
<th>6000/VAD/W</th>
<th>6000/SSR/VAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>-10°C to 55°C, 95% R.H (non condensing or icing)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP Rating</td>
<td>EN54-23 Type B Outdoor + IP65</td>
<td></td>
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</tr>
<tr>
<td>Weight (excluding base)</td>
<td>122g</td>
<td>125g</td>
<td>315g</td>
</tr>
<tr>
<td>Loop Powered</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>18 - 28V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop Standby Load</td>
<td>0.8mA</td>
<td>0.7mA</td>
<td></td>
</tr>
<tr>
<td>Loop Peak Alarm Load</td>
<td>14.5mA</td>
<td>19mA</td>
<td>24mA</td>
</tr>
<tr>
<td>Mounting Height (x)</td>
<td>3 metres</td>
<td>2.4 metres</td>
<td></td>
</tr>
<tr>
<td>Coverage (y)</td>
<td>7.5m configurable to 5m or 3m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coverage Volume Code</td>
<td>C-3-7.5</td>
<td>W-2.4-7.5</td>
<td>W-2.4-7 (117.6m³)</td>
</tr>
<tr>
<td>Flash Rate</td>
<td>1 or 0.5Hz white flash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolator</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting</td>
<td>Ceiling</td>
<td>Wall</td>
<td></td>
</tr>
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</table>
## Table 6: Specifications

<table>
<thead>
<tr>
<th>Metric</th>
<th>6000/SSR</th>
<th>6000/LED</th>
<th>6000/SSR/LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>-10°C to 55°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 85% RH non condensing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP Rating</td>
<td>IP65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop Powered</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop Standby Load</td>
<td>700μA</td>
<td>500μA</td>
<td>700μA</td>
</tr>
<tr>
<td>Loop Alarm Load</td>
<td>5mA</td>
<td>5.5mA</td>
<td>10mA</td>
</tr>
<tr>
<td>Number of Addresses</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop Isolator</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Details</td>
<td>Piezo sounder, Sounder tone and volume selectable at the control panel</td>
<td>Array of 18 Red high intensity LED's, Flash Rate 1Hz</td>
<td>Piezo sounder and array of 18 Red high intensity LED's, Flash rate 1Hz</td>
</tr>
<tr>
<td>Weight</td>
<td>244g</td>
<td>99g</td>
<td>273g</td>
</tr>
<tr>
<td>Construction</td>
<td>ABS Base &amp; Body</td>
<td>ABS Base/Polycarbonate LENS</td>
<td>ABS Base &amp; Body/Polycarbonate lens</td>
</tr>
<tr>
<td>Applicable Standards</td>
<td>Designed to EN54 Part 3 &amp; 17 Compliant to CE and LVD standards</td>
<td>Designed to EN54 Part 17 Compliant to CE and LVD standards</td>
<td>Designed to EN54 Part 3 &amp; 17 Compliant to CE and LVD standards</td>
</tr>
<tr>
<td>Approvals</td>
<td>LPCB to EN54 Part 3 : 2001 Cert No 201n</td>
<td>n/a</td>
<td>n/a</td>
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## Table 7: Specifications

<table>
<thead>
<tr>
<th>Metric</th>
<th>6000/MCP</th>
<th>6000/MCP/WP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>-10°C to 55°C</td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 95% RH non condensing</td>
<td></td>
</tr>
<tr>
<td>IP Rating</td>
<td>IP24D</td>
<td>IP67</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>16 - 30V dc</td>
<td></td>
</tr>
<tr>
<td>Loop Powered</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Loop Standby Load</td>
<td>450μA</td>
<td></td>
</tr>
<tr>
<td>Loop Alarm Load</td>
<td>0.85mA</td>
<td></td>
</tr>
<tr>
<td>LED Illuminated</td>
<td>4.5mA</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Flush - 93g, Surface - 144g</td>
<td>296g</td>
</tr>
<tr>
<td>Product Approvals</td>
<td>LPCB No: 201ae/01, EC: 0832-CPD-1049, Standard: EN 54-11 &amp; 17, CE Marked</td>
<td>n/a</td>
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</tbody>
</table>

## Table 8: Specifications

<table>
<thead>
<tr>
<th>Metric</th>
<th>6000/FIREBEAM40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>-10°C to 55°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>10 to 95% RH non condensing</td>
</tr>
<tr>
<td>IP Rating</td>
<td>IP85</td>
</tr>
<tr>
<td>Loop Voltage</td>
<td>18 - 28V</td>
</tr>
<tr>
<td>Loop Standby Load</td>
<td>3.65mA</td>
</tr>
<tr>
<td>Loop Alarm Load</td>
<td>7mA</td>
</tr>
<tr>
<td>Isolator</td>
<td>Yes</td>
</tr>
<tr>
<td>Time to Fault</td>
<td>Adjustable between 2s to 60s</td>
</tr>
<tr>
<td>Time to Fire</td>
<td>Adjustable between 2s to 30s</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>Fully adjustable between 25% to 50%</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx: Head 1Kg / Controller 0.5Kg</td>
</tr>
<tr>
<td>Construction</td>
<td>Housing: white high heat abs UL94 HB</td>
</tr>
<tr>
<td>Device Protocol</td>
<td>Algo-Tec™ 6000</td>
</tr>
</tbody>
</table>

## Table 9: Specifications

<table>
<thead>
<tr>
<th>Metric</th>
<th>6000PLUS/UG4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Velocity</td>
<td>0.5m/s to 20m/s</td>
</tr>
<tr>
<td>Sampling Pipe</td>
<td>Aluminium</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-10°C to +50°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% non condensing</td>
</tr>
<tr>
<td>Weight</td>
<td>0.8Kg (approx)</td>
</tr>
<tr>
<td>Detector Heads</td>
<td>6000PLUS/OP</td>
</tr>
</tbody>
</table>
Technical Data

### Interfaces

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimensions (mm)</th>
<th>Weight</th>
<th>Voltage</th>
<th>Quiescent Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000/2IO</td>
<td>146.5(W) x 39(H) x 118(D)</td>
<td>213g</td>
<td>18 - 28V</td>
<td>1.6mA</td>
</tr>
<tr>
<td>6000/4IO</td>
<td>146.5(W) x 40(H) x 118(D)</td>
<td>237g</td>
<td>18 - 28V</td>
<td>0.6mA</td>
</tr>
<tr>
<td>6000/2LPZA</td>
<td>146.5(W) x 42(H) x 118(D)</td>
<td>204g</td>
<td>18 - 28V</td>
<td>1.6mA</td>
</tr>
<tr>
<td>6000/2APZA</td>
<td>146.5(W) x 40(H) x 118(D)</td>
<td>217g</td>
<td>18 - 28V</td>
<td>0.6mA</td>
</tr>
<tr>
<td>6000/APZA</td>
<td>146(W) x 86(H) x 25.5(D)</td>
<td>217g</td>
<td>18 - 28V</td>
<td>0.6mA</td>
</tr>
<tr>
<td>6000/2LPZA</td>
<td>146(W) x 86(H) x 25.5(D)</td>
<td>204g</td>
<td>18 - 28V</td>
<td>1.6mA</td>
</tr>
<tr>
<td>6000/2APZA</td>
<td>146(W) x 86(H) x 25.5(D)</td>
<td>217g</td>
<td>18 - 28V</td>
<td>0.6mA</td>
</tr>
<tr>
<td>6000/CCO</td>
<td>147.3(W) x 86.7(H) x 10(D)</td>
<td>106g</td>
<td>18 - 28V</td>
<td>0.55mA</td>
</tr>
<tr>
<td>6000/MICCO</td>
<td>146.6(W) x 86.4(H) x 15.2(D)</td>
<td>110g</td>
<td>18 - 28V</td>
<td>3.7mA</td>
</tr>
<tr>
<td>16 Way</td>
<td>222(W) x 18.5(H) x 108(D)</td>
<td>144g</td>
<td>18 - 28V</td>
<td>7mA</td>
</tr>
<tr>
<td>Evacuation</td>
<td>362.5(W) x 47.5(H) x 21.5(D)</td>
<td>2kg</td>
<td>18 - 28V</td>
<td>6.5mA</td>
</tr>
</tbody>
</table>

### Aspirating Fire Detectors

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimensions (mm)</th>
<th>Weight</th>
<th>Power Consumption</th>
<th>Current Consumption</th>
<th>Operating Conditions</th>
<th>Sensitivity Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cirrus Pro 200</td>
<td>360(W) x 215(H) x 144(D)</td>
<td>5kg (11lbs)</td>
<td>8.2 watts quiescent (24VDC 90% Fan Speed)</td>
<td>340mA quiescent 500mA alarm (24VDC 90% Fan Speed)</td>
<td>0˚C to 38˚C (32˚F to 100˚F)</td>
<td>20,000 particles per cc to 3 million particles per cc 10 programmable sensitivity ranges</td>
</tr>
<tr>
<td>ProPointPlus</td>
<td>380(H) x 250(W) x 137(D)</td>
<td>3kg (6.6lbs)</td>
<td>9.6 watts quiescent (24VDC 100% Fan Speed)</td>
<td>300mA with blower @ 30% 400mA with blower @ 100%</td>
<td>0˚C to 55˚C (32˚F to 131˚F)</td>
<td>n/a</td>
</tr>
<tr>
<td>Cirrus HYBRID</td>
<td>380(H) x 250(W) x 137(D)</td>
<td>3.5kg (7.7lbs)</td>
<td>16.8 watts quiescent (24VDC 100% Fan Speed)</td>
<td>500mA with blower @ 30% 700mA with blower @ 100%</td>
<td>-20˚C to 60˚C (-4˚F to 140˚F)</td>
<td>n/a</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Cable Access</th>
<th>Cable Termination</th>
<th>Sampling Network</th>
<th>Pipe ID</th>
<th>Alarm Indications</th>
<th>Other Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cirrus Pro 200</td>
<td>6 x 20mm knock outs</td>
<td>Screw terminal blocks (0.2 - 2.5mm2, 30 - 12AWG)</td>
<td>Four inlet ports with combined sampling pipe length up to 200m (650ft) Maximum Transport Time allowed up to 120 seconds</td>
<td>19 to 25mm (preferred OD 25mm)</td>
<td>Pre-alarm, Fire 1, Fire 2, Fire 3</td>
<td>Supply Healthy, General Fault</td>
</tr>
<tr>
<td>ProPointPlus</td>
<td>10 x 20mm knock outs</td>
<td></td>
<td>Four inlet ports with combined sampling pipe length up to 200m (650ft) Maximum Transport Time allowed up to 120 seconds</td>
<td></td>
<td>Pre-alarm, Fire 1, Fire 2, Fire 3</td>
<td>20,000 PCC to 7 million PCC 0 - 1000CFS (Combined Fire &amp; Smoke scales)</td>
</tr>
<tr>
<td>Cirrus HYBRID</td>
<td></td>
<td></td>
<td>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</td>
<td></td>
<td>Pre-alarm, Fire 1, Fire 2, Fire 3</td>
<td>Class A - 3 holes per detector (per pipe) Class B - 5 holes per detector (per pipe) Class C - 8 holes per detector (per pipe)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Programmable Inputs</th>
<th>Programmable Output Relays</th>
<th>Camera Inputs</th>
<th>Event Log / Data Retention</th>
<th>Variable Sensitivity Settings</th>
<th>EN54 Approved Sensitivity Setting</th>
<th>Airflow Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cirrus Pro 200</td>
<td>4 monitored inputs that may be configured for Isolate, Reset, Disable, Fault, Gain Set, Battery Fault and Mains Fault</td>
<td>5 Relays rated 1A @ 30VDC (Volt-free change over contacts)</td>
<td>n/a</td>
<td>128 events stored on FIFO basis (Approx 10 day historical graph)</td>
<td>7 day programmable settings with 3 time zones per day</td>
<td>n/a</td>
<td>‘High Airflow’ and ‘Low Airflow’ fault monitoring</td>
</tr>
<tr>
<td>ProPointPlus</td>
<td>3 monitored inputs that may be configured for Isolate, Reset, Disable, Fault, Gain Set, Battery Fault and Mains Fault</td>
<td></td>
<td>n/a</td>
<td>24,000 events stored on FIFO basis (alarms, actions, faults and data points) (Approx 30 day historical graph data)</td>
<td>7 day programmable settings with 2 time zones per day. Day-time/Night-time mode setting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cirrus HYBRID</td>
<td></td>
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</tr>
<tr>
<td>Alarm Current</td>
<td>DIN Rail</td>
<td>Loop Powered</td>
<td>Isolator</td>
<td>Approvals</td>
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<td></td>
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<tr>
<td>---------------</td>
<td>----------</td>
<td>--------------</td>
<td>----------</td>
<td>-----------</td>
<td></td>
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</tr>
<tr>
<td>18mA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Kitemark No: KM589455, DoCP: 0086-CPR-589456, Standard: EN54-17 &amp; 18</td>
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</tr>
<tr>
<td>0.6mA</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Kitemark No: KM589455, DoCP: 0086-CPR-589456, Standard: EN54-17 &amp; 18</td>
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<tr>
<td>15mA + SNDR Current</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Kitemark No: KM589455, DoCP: 0086-CPR-589456, Standard: EN54-17 &amp; 18</td>
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</tr>
<tr>
<td>0.6mA</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Kitemark No: KM589455, DoCP: 0086-CPR-589456, Standard: EN54-17 &amp; 18</td>
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</tr>
<tr>
<td>7.5mA + SNDR Current</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Kitemark No: KM589455, DoCP: 0086-CPR-589456, Standard: EN54-17 &amp; 18</td>
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<tr>
<td>4mA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>LPCB no: 201t/03 EC: 0832-CPD-1164, Standard: EN54-17 &amp; 18</td>
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</tr>
<tr>
<td>18mA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>LPCB no: 201t/03 EC: 0832-CPD-1164, Standard: EN54-17 &amp; 18</td>
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</tr>
<tr>
<td>2.2mA</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>LPCB no: 201t/02 EC: 0832-CPD-1163, Standard: EN54-17 &amp; 18</td>
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<td></td>
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</tr>
<tr>
<td>67mA</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Kitemark No: KM589455, DoCP: 0086-CPR-589456, Standard: EN54-17 &amp; 18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7mA</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Kitemark No: KM589455, DoCP: 0086-CPR-589456, Standard: EN54-17 &amp; 18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.5mA</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>