



A Bosch Company



## Protec Algo-Tec™ 6100 Interactive Digital Addressable Fire Control System



## Protec Algo-Tec™ 6100

### INTERACTIVE DIGITAL ADDRESSABLE FIRE CONTROL SYSTEM

- Cost Effective Single Loop Panel
- High Capacity Loop - 192 Addresses
- Algo-Tec™ 6000PLUS Protocol
- Surface and Recessed Mounting
- Easy to Install
- Reduced False Alarms
- Enhanced Performance
- On Site Flexibility
- AS 7240 Part 2 & 4 Approved
- AS 4428 Part 3 Approved
- Open Protocol

#### 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 AS 7240 Part 2 & 4. The control panel is suitable for surface or recessed mounting with a moulded polycarbonate enclosure finished in storm grey. To Meet the Australian AS 1670 requirement an AS 4428 Part 3 2010 compliant Fire Brigade Panel Interface is provided.

#### 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™ 6000PLUS sensors, interfaces and manual call points the loop can also support loop powered SOUNDERS, VISUAL ALARM DEVICES and OPTICAL BEAM DETECTORS. Additionally a 6300 Loop Powered Repeat Display can be connected directly to this loop, resulting in reduced cabling requirements, simplified installation and associated cost savings.

#### Controls and Display

All the functions of the modern styled Control Panel are accessed by entering the user access code. The controls are SILENCE, SOUND ALARMS, RESET and ACCEPT plus navigation push buttons to enable access to the user menu facilities. The control panel display consists of a 4x20 character liquid crystal display, twin common fire LED indicators, 16 separate zonal fire LED's, power on, pre-alarm, system fault, common fault, test and disablement LEDs.

The optional AS4428 Part 3 2010 Fire Brigade Panel interface is operated via a 003 key switch and provides the following controls: Silence Buzzer, Silence Alarm, Reset and Disable. All controls operate as per the requirement of the standard.



#### Alarms

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

#### Auxiliary Contacts

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

#### 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

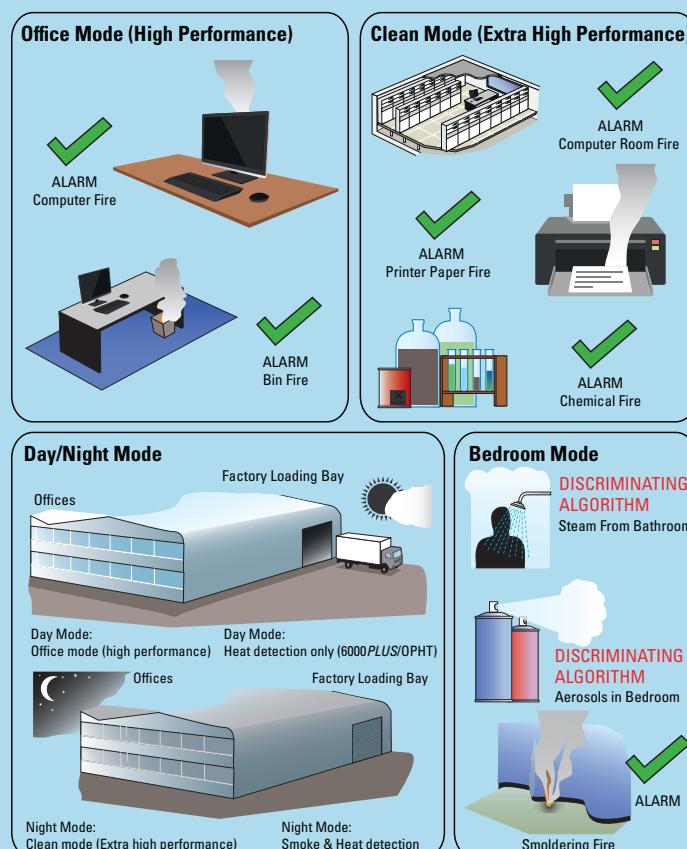
The Protec Algo-Tec™ 6100 system is on site programmable. All of the commissioning configuration data can be entered and/or backed up using the Protec 6100 windows based programming software via a PC. This feature enables the system to be re-configured and checked prior to attending site simplifying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



## Guide to loop cable conductor sizing for the Protec 6100 system.

		Loop Length (Metres)										
		500	550	600	650	700	750	800	850	900	950	1000
Total Loop Load in Alarm (mA)	50											
	100											
	150											
	200											
	250											
	300											
	350											
	400											
	450											
	500											
	550											
	600											
	650											
	700											
	750											
	800											
	850											
	900											
	950											
	1000											

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



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



### 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.

Loop Load (average at 24v loop):

Panel Normal	1.6mA
Panel Mains Fail	13.1mA (4.7mA after 5min)
Panel in Alarm	12.7mA

Dimensions (mm): 184.50(W) x 109.50(H) x 47(D)

## The Protec Algo-Tec™ 6100 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 interactive digital addressable fire control systems. Immunity to false alarms, more responsive fire detection, and ease of use has all been achieved to develop one of the most reliable systems available.

### Protec Algo-Tec™ 6000PLUS

The name Algo-Tec™ is a derivative of Protec algorithms. Algorithms are logical mathematical procedures for solving problems. Protec have developed fire detection algorithms coupled with fuzzy logic specifically designed to reduce unwanted fire alarms and to enhance the sensitivity of the system to true fire phenomenon. The Algo-Tec™ algorithms are exclusively utilised by the Protec Algo-Tec™ 6500 and 6100 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, 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.

**Technical Specification****6100 Control Panel****Model:-****Specification:-**

Rated Voltage

Rated Frequency

Rated Current

Working Voltage

Temperature Range

Maximum Humidity

IP Rating

Battery Type

Standby Load (Mains Fail Condition)

Maximum Alarm Load (Mains Fail Condition)

Display

Digital Addressable Loops

Total Loop Load

Zones

Integral Charger

Integral Battery

Alarm Outputs

Global Fire Outputs

Alarm Load

Fault Monitoring

Fault Output

Auxiliary Output Supply

Common Fire Output (fire station)

Communications Interface

Dimensions (mm)

Weight

Applicable Standards

**Programmability**

32 Input Groups

32 Output Groups

Non-Latching

Coincidence

Detection Sensitivities

Sounder Volume

Day/Night Time

Talking Sounder Synchronisation Time

Fire Link Delay Time

Walk Test Time

Windows Software Suite

**Text**

Panel Text

Device Address Text

Zone Text

**Language Support**

Approved to AS 7240 Part 2 &amp; 4 + AS 4428 Part 3

6100 - Single Loop.

6100 - Single Loop with Fire Brigade Interface Panel

Mains 100 to 240V ac rms.

50 to 60Hz.

600mA rms.

21.5 - 29V dc.

0 - 40°C.

85% Non-condensing.

IP30.

2 x 12V 3.3Ah sealed lead acid.

22mA.

56mA panel, 600mA loop, 200mA conventional alarms (100mA per alarm output), 150mA auxillary 24V output, 20mA fire-link.

Backlit liquid crystal display 4 lines of 20 characters.

1 loop, with 192 address capacity. Algo-Tec™ 6000PLUS Protocol.

600mA including all loop connected devices.

32 Zones, 16 with LED indication, plus general fire indicator.

1A dc switch mode, temperature compensated.

2 x 12V 3.3Ah sealed lead acid.

2 monitored conventional sounder circuits (100mA per output maximum).

Up to 192 alarm outputs using loop output devices.

1 set of non-monitored changeover contacts (1A @ 24V dc) operating on any fire.

600mA loop, 100mA per conventional alarm output.

Fully fault monitored to EN 54-2 &amp; 4.

Single pole changeover contacts (1A rated @ 24V dc).

24V dc fused at 150mA.

24V dc fully monitored output (requires end of line module SF4165759).

USB 2.0 (Type A male to Type B male connection lead required, 2 metres maximum length).

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

1.5kg (excluding batteries).

AS 7240 Part 2&amp;4 + AS 4428 Part 3 2010

First 31 groups are available for detection zones, group 32 is reserved for Sound Alarms push button.

Each output group can have a delay programmed (5 seconds to 10 minutes).

Each output group can be set as Alarm or Control type.

Loop addresses may be programmed to be non-latching.

Type C dependency.

Each detector may have one of two sensitivities programmed.

Each loop sounder may be programmed to be low, medium or high volume.

The panel may be programmed into two time zones to run different sensitivities for each detector.

1 sec to 120 sec in 1 second increments.

5 seconds to 10 minutes in 5 second increments.

1 sec to 255 sec in 1 second increments.

Proprietary software suite designed specifically for the 6100.

Allows text editing, matrix configuration, setup of all panel parameters.

2 lines of 20 character panel text. Displayed when the system is 'normal'.

20 characters of device address text.

20 characters of zone text.

The 6100 supports multiple languages.

PRODUCT CERTIFICATION



BSI Certified Product

BMP 709279

BMP 709288