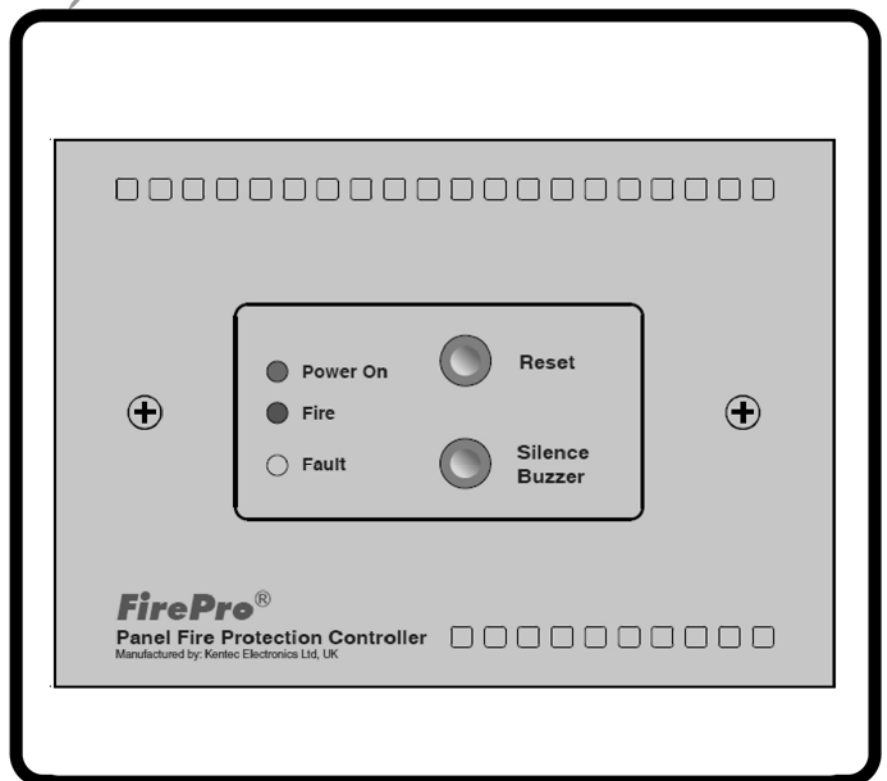
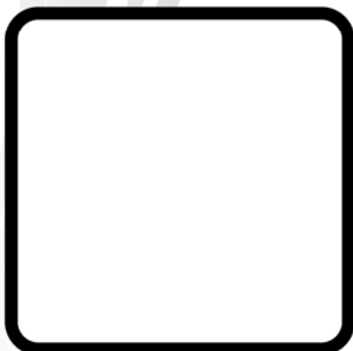
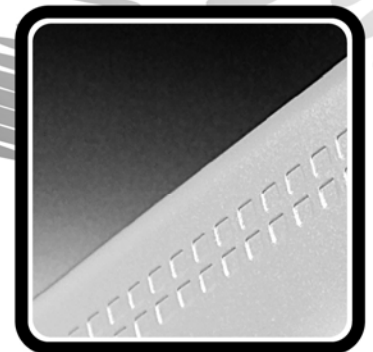


## FPC-2

# Panel Fire Protection Controller Operation and Installation Manuals

Man-1144 Issue 02 June 2011



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# 1. Overview

The **FirePro**® FPC-2 Panel Protection Controller enables monitoring detection and automatic extinguishing of a fire in an electrical cabinet using linear heat detection cable or automatic smoke detectors and **FirePro**® Aerosol Generators.

The FPC-2 has one detection input for connection of linear heat detection cable, smoke detectors or a combination of both which is monitored for disconnection of the detection devices.

Four outputs are provided for the connection of **FirePro**® Aerosol Generators and disconnection of any of these will announce a fault condition.

The FPC-2 requires a battery backed 24V DC power supply capable of delivering 3A for a short period in order to operate the Aerosol Generators. Terminals are provided for incoming and outgoing connection of the 24V DC power supply.

Volt free contacts are available to signal fire and fault conditions to plant or other monitoring equipment. By selecting the appropriate jumper link arrangement, it is possible to signal an addressable input module via a simple, 2 wire connection.

## 2. Operation

Under normal circumstances, only the green Power On indicator will be lit, none of the outputs will be operated and the internal buzzer will be silent.

The wiring to the detection circuit and to the **FirePro**® Aerosol Generators is supervised and disconnection of any of this wiring will be shown by illumination of the yellow Fault indicator on the front panel and operation of the internal buzzer.

The internal fault volt free contact will operate and signal any external equipment that is connected to the controller

Internal indicators are provided to show whether it is the detection circuit wiring or the wiring to the Aerosol Generators that has a fault.

The buzzer may be silenced by pressing the Buzzer Silence button.

Upon activation of a linear heat detection cable or smoke detector, the red Fire indicator will be lit, the **FirePro**® Aerosol Generators will operate and immediately discharge extinguishing Aerosol into the protected area, the internal buzzer will sound and the Fault indicator will illuminate, indicating that the Aerosol Generators have fired and need replacing.

The internal fire volt free contact will operate and signal any external equipment that is connected to the controller.

The buzzer may be silenced by pressing the Buzzer Silence button.

Following a fire activation and replacement of the **FirePro**® Aerosol Generators the system can be returned to normal operation by operating the Reset button on the front of the controller.

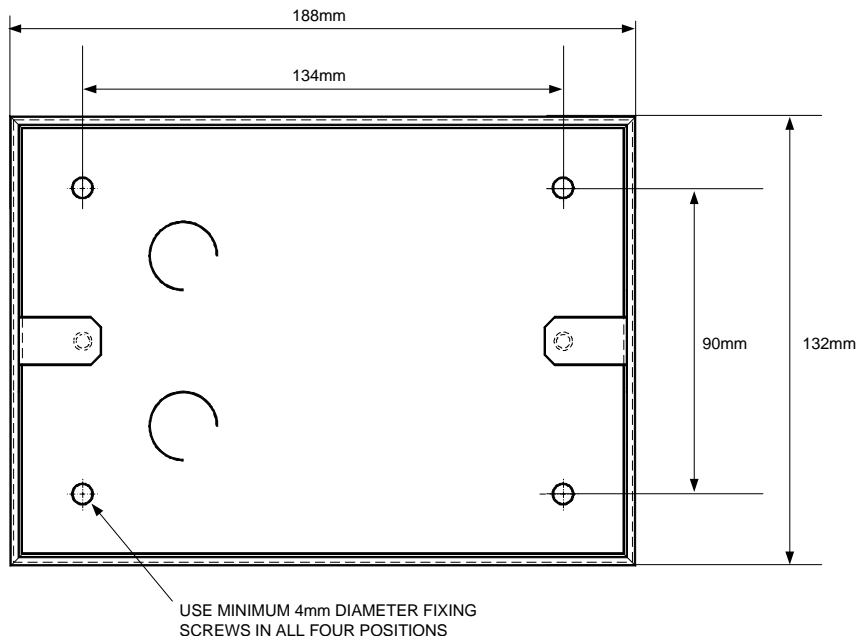
Note: The controller will continue to show a fault condition until the Aerosol Generators are replaced.

### 3. Installation

The front panel of the FPC-2 should be removed by loosening the two M4 fixing screws holding it in place and put in a safe place along with the screws for fitting later.

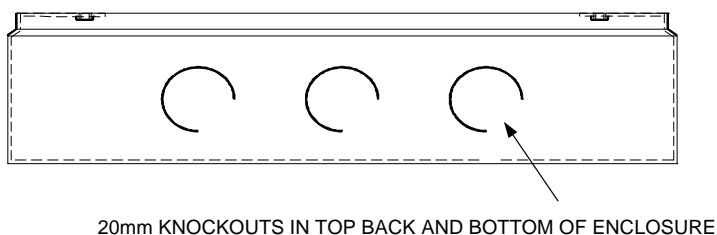
The back box can then be used to mark the fixing position holes in the required place. The box should be mounted with screws of a minimum 4mm diameter in all four fixing positions.

Figure 1- Fixing centres of mounting enclosure



The back box has a number of 20mm knockouts in the top, back and bottom. Remove the knockouts required and fit 20mm cable glands and the required cables.

Figure 2 – Knockouts



If additional cable entries or cable entries in different positions to those provided are required, these cable entries should now be drilled and any swarf or debris removed from the enclosure.

Use proper 20mm glands and seal all unused openings properly

With all cables in position, connections can now be made to the circuit board mounted on the front plate. All connections must be made with power off.

## 4. Terminal details

### 4.1 24V IN/24V OUT

These are the power supply terminals. The polarity of these terminals is very important. The 24V IN is for connection of the power from a previous unit or a power supply and the 24V OUT is for connection to further units.

Use a minimum cable size of 1.5mm<sup>2</sup> and a maximum length of 100 metres or a maximum cable size of 2.5mm<sup>2</sup> and a maximum cable length of 160 metres.

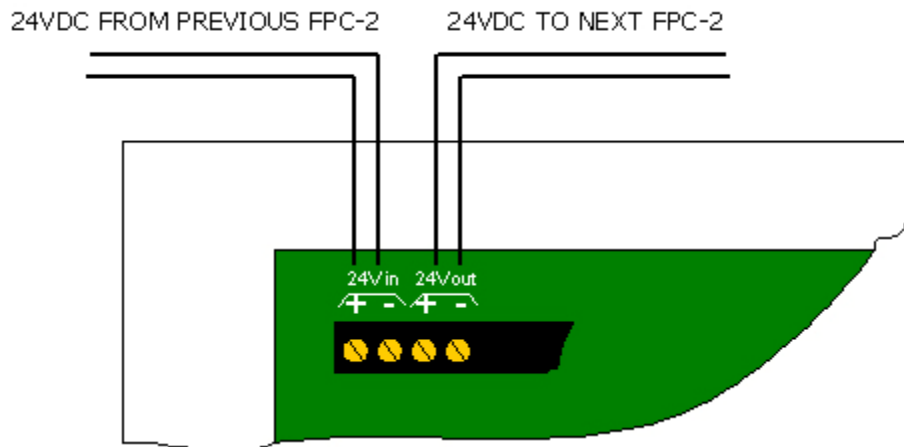


Figure 3- Connection of 24V power supply

### 4.2 DETECTION

These terminals are for the connection of a conventional type 24V smoke detector or other another detection device such as linear heat detection cable.

A 6K8 end of line monitoring resistor is fitted to these terminals. This must be removed and place across the end of the detection circuit wiring to provide open circuit monitoring for the detection cable.

Note: automatic smoke detectors are polarity sensitive so polarity should be observed. If a short circuit take place over the detection line (either by linear heat detector activation or smoke detector activation [470 Ohms] or by accident), then the panel will immediately proceed to activation

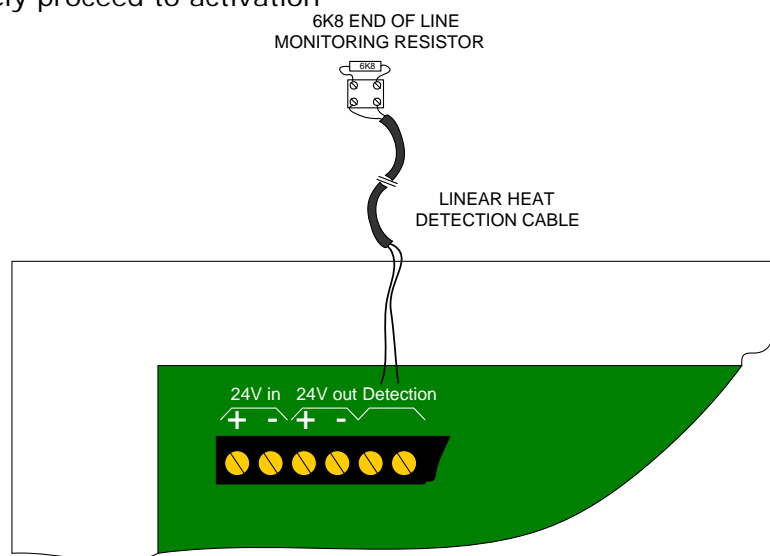


Figure 4- Connection to linear heat detection cable

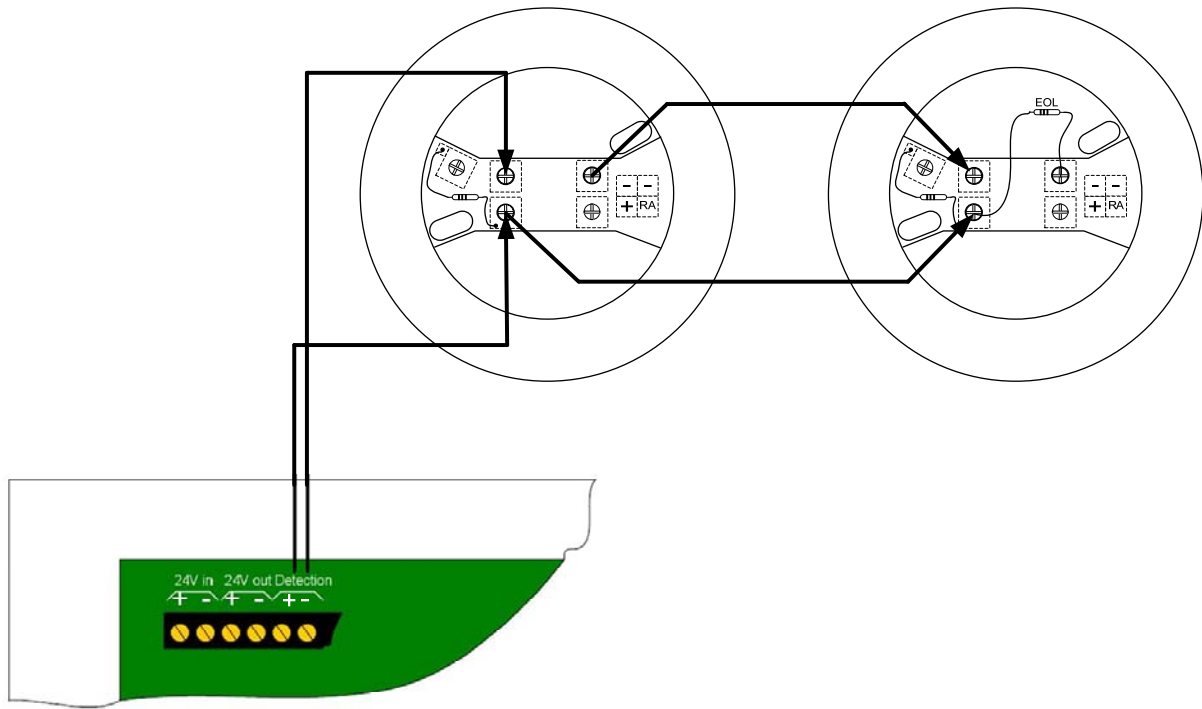


Figure 5- Connection to smoke detectors

### 4.3 Firepro Generators connections FIREPRO GEN1. TO FIREPRO GEN4.

These terminals are for the connection of **FirePro®** Aerosol Generators. Test lamps are provided in the terminals to allow testing of the system before connecting the **FirePro®** generators. These test lamps should be removed from the terminals if a **FirePro®** Aerosol Generator is to be fitted.

Any **FirePro®** generator outputs that are not being used should be left with test lamps fitted.

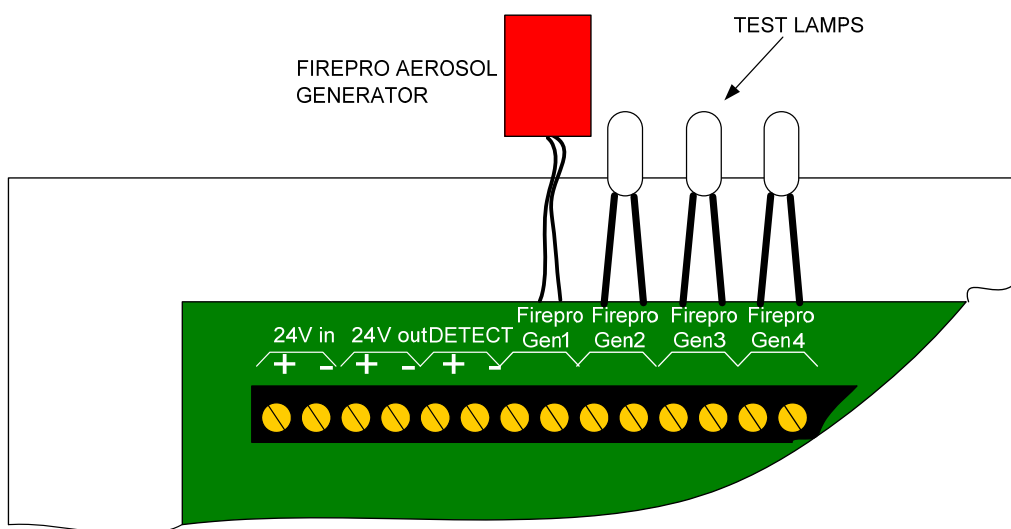


Figure 6- Connection to Aerosol Generator

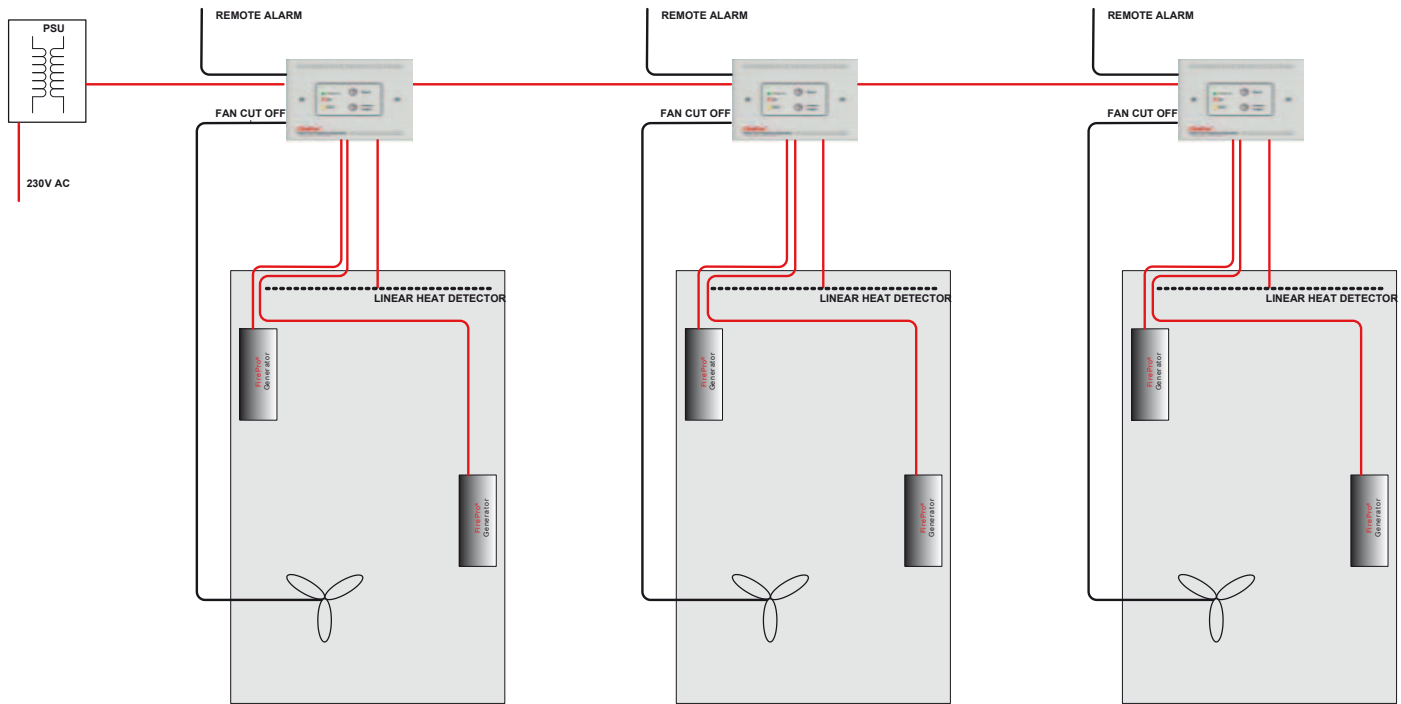


Figure 7- Example of system using volt free contacts to signal remote alarm

#### 4.4 FIRE contacts for remote signalling

Volt free changeover contact that will operate whenever the system is triggered to alarm. This contact is rated for a maximum of 30V DC and 1Amp. These ratings must not be exceeded.

#### 4.5 FAULT contacts for remote signalling

Volt free changeover contact that will operate when ever there is a fault condition. This contact is rated for a maximum of 30V DC and 1Amp. These ratings must not be exceeded

#### 4.6 Connection to addressable modules via FIRE and FAULT contacts

It is possible to configure the FPC-2 such that it will trigger a VMMI1000 addressable module with fire and fault signals.

To make the FPC-2 compatible with an addressable input module, move jumpers J1 and J2 from their default positions (position A) to position B.

The FIRE NO and C terminals can now be connected directly to the addressable input module.

Alarm and fault conditions will be indicated on a suitable addressable fire alarm control panel.

Note: The volt free contact function is not available when the contacts are being used to signal and addressable input module.

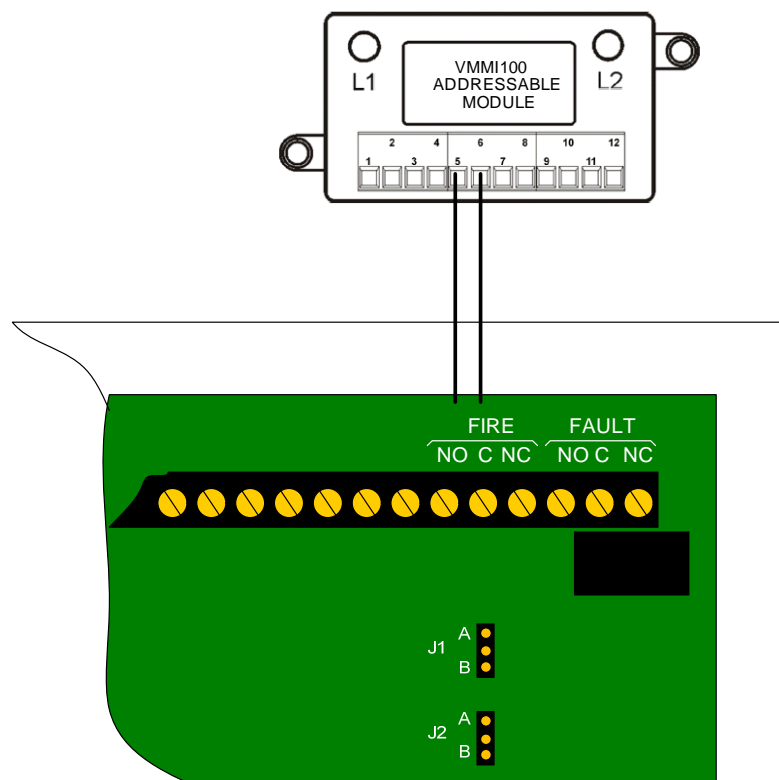


Figure 8 - Connection from FPC-2 to VMMI100 addressable modules



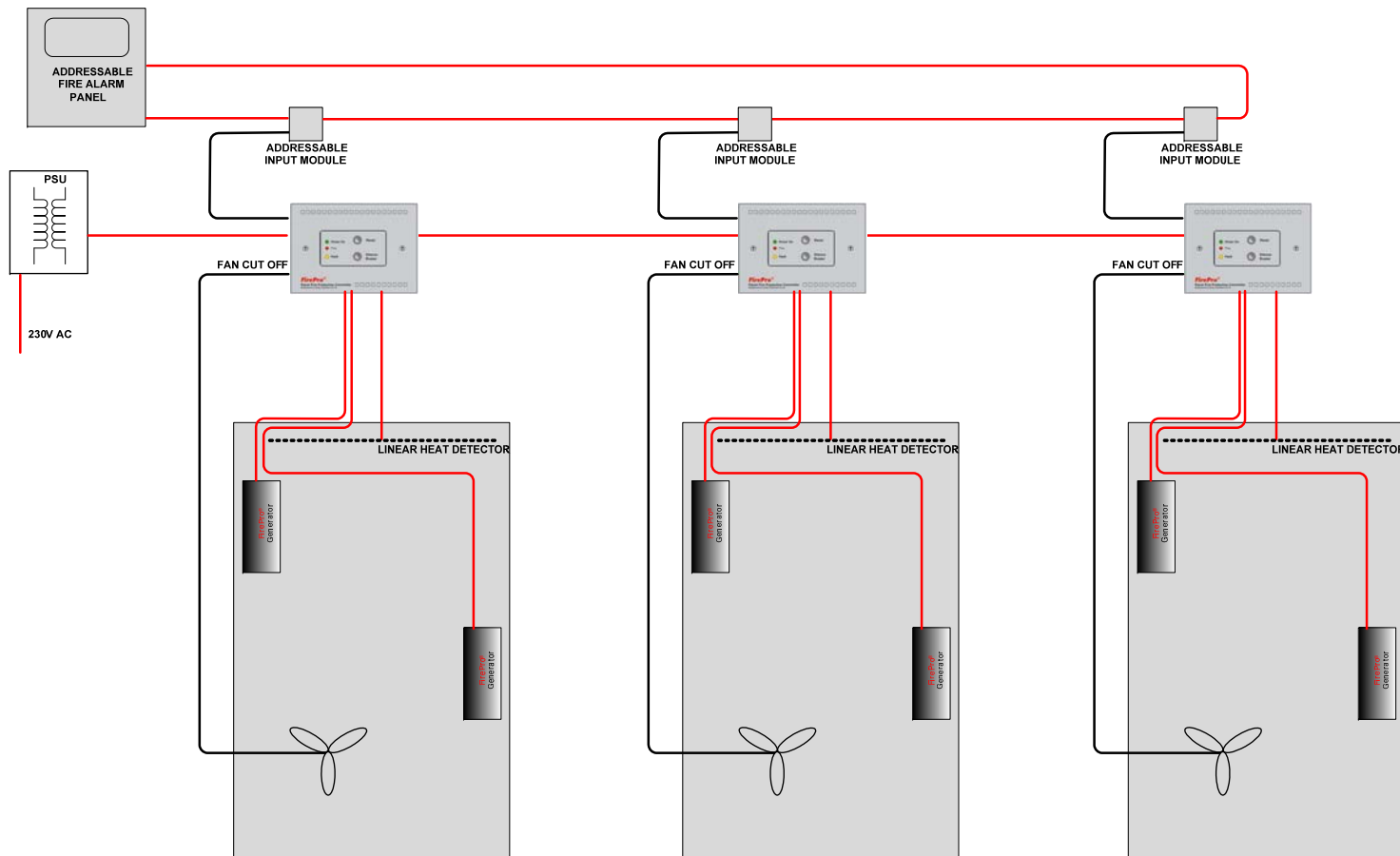


Figure - Example of connection to addressable fire alarm system

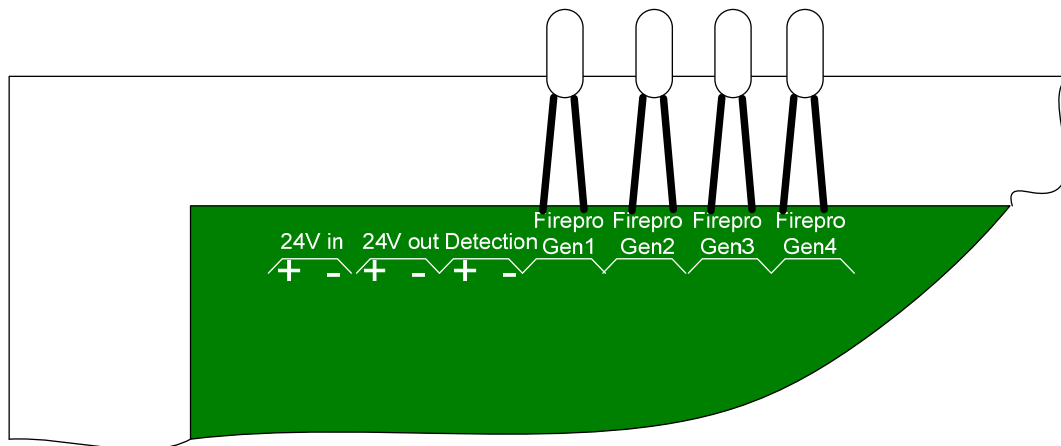
## 5. Testing and commissioning

**IMPORTANT – DISCONNECT ALL FIREPRO AEROSOL GAS GENERATORS BEFORE TESTING.**

With all **FirePro®** Aerosol Gas generators disconnected from the panel, ensure that the test lamps that are supplied with the unit are fitted to terminals FireproGEN1, FireproGEN2, FireproGEN3 and FireproGEN4.

**Do not leave any FirePro® gas generators connected to the unit when testing or these units will activate.**

*Figure 9 - Connections to Firepro Gen outputs to test system.*



Ensure that both jumper links are fitted in position "A" and trigger the detection input by operating a smoke detector or linear heat detector. Ensure that the test lamps connected to the FireproGEN terminals light immediately, the red fire indicator on the front panel lights, the yellow fault indicator lights and the buzzer sounds. Press the Buzzer Silence button to silence the buzzer and then the Reset button to rest the system.

Disconnect the wiring to the detector and ensure that the yellow Fault LED on the front panel and the internal yellow LED marked LED4 are lit and the buzzer sounds. Press the buzzer silence button and ensure the buzzer silences. Re-connect the detector wiring and ensure that the fault indication clears.

Disconnect one of the test lamps and ensure that the yellow Fault LED on the front panel and the internal yellow LED marked LED5 are lit and the buzzer sounds. Press the buzzer silence button and ensure the buzzer silences. Re-connect the test lamp and ensure that the fault indication clears.

## 6. Specifications

Overall size – 188mm x 132mm x 47mm

Construction – 1/2mm sheet steel

Finish – Epoxy powder coat

Colour - BS 00 A 05 light grey textured

Operating voltage – 19 to 30 Volts DC

Standby current –18 milliamps

Maximum current – 3 Amps

Fault monitoring – Detection and actuator circuits (open circuit monitored only)

Cable entries – 20mm knockouts

Terminal capacity – 2.5<sup>2</sup>mm maximum