



Owner's Manual

BARFS-1

Rev 2.1

BARFS-1

Residential Fire System

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1 INTRODUCTION

Congratulations, you have installed a new Brooks Residential Fire Safety System Model **BARFS-1**. The **BARFS-1** is specifically designed for residential applications, its primary purpose, to provide reliable early warning of a developing fire so that the occupant is given the maximum time to escape to a place of safety.

Fire is not just heat, consideration needs to be given to the smoke and toxic gases generated in all house fires. Brooks recognises that residential applications require special consideration; the BARFS-1 must be flexible, have design integrity, be reliability and be conscious occupant amenity.

The BARFS-1 has features that allow the occupant to use and manage the system, but controls that prevent accidental disablement.

Please read this manual as it has information that will explain how your **BARFS-1** works and how you can use it.

2 SYSTEM OVERVIEW

The Residential Fire Safety System **BARFS-1** complete with compatible smoke / heat alarms and auxiliary devices provides a complete single zone automatic fire detection and alarm system for residential applications.

The BARFS-1 is designed to meet the requirements of the Building Code of Australia - (Smoke Alarm System) and incorporates smoke alarms to Australian Standard AS3786; heat alarms to Australian Standard AS1603.3.

The **BARFS-1** system consists of a control panel, operator module which provides both status indication and function controls, smoke and heat alarms. A pillow shaker and strobe are available for the hearing impaired or deaf. The 200 series smoke and heat alarms are designed to be installed in conjunction with the BARFS-1 control panel as an external power source.

The **BARFS-1** system has a generic input/output module as an alarm zone device; it enables remote control of ancillary equipment, interfacing to sprinkler flow switch/any dry contact input, provides alarm relay contacts and a non supervised 12V alarm output.

The connection between the operator module and control panel is via RS485, which allows the operator module to be located remote from the control panel itself, an advantage in multi-storey dwellings. A maximum of 2 operator modules can be fitted to the system.

The power supply of **BARFS-1** is fully supervised for fault condition; mains fail, battery disconnected, charger high or low and battery low. The alarm zone wiring is supervised for both an open and short circuit condition.

The **BARFS-1** has both an alarm and fault output for either remote monitoring and/or the operation of ancillary equipment. For an alarm condition; two priorities can be selected. Priority 1 activates the alarm output relay and initiates the sounder in each smoke/heat alarm. Priority 2 activates only the smoke/heat alarm sounders. An important feature of the BARFS-1 is its ability to discriminate between the activation of a smoke or heat alarm. This combined with the alarm priority selection enables enhanced flexibility in system design to overcome the effects of nuisance alarms and provide for the integration of the **BARFS-1** to other alarm systems. **BARFS-1** provides not only a truly Deemed to Satisfy Solution but includes additional functions and facilities to allow design flexibility for customising the installation to the application.

Remember: your **BARFS-1** has been installed to protect you by raising the alarm and maximising your time to escape to safety, if you tamper with it, misuse it or fail to maintain; its performance cannot be guaranteed, you will be putting both you and your family at risk.

3 SYSTEM DESIGN

The smoke/heat alarms should be installed in compliance with the requirements of Building Code of Australia; for specific technical guidance of Australian Standards AS1670.6, AS1670.1 and this manual should be used.

A properly designed early warning fire system ensures the alarm is given before the escape route becomes blocked with smoke or heat. Therefore smoke alarms must be installed along the escape route, heat alarms would not give sufficient warning.

3.1 Smoke / Heat Alarm

3.1.1 Basic Information about your Smoke / Heat Alarm

A Smoke Alarm is an early warning device, used correctly it will detect the onset of a fire, raise the alarm and give occupants valuable time to escape prior to the evacuation path becoming unusable. In today's modern homes natural material like wood and cotton have all but been replaced by synthetics. The result is that when a fire does occur it will burn much faster and much hotter than for natural materials. It will give off visible smoke and toxic fumes at much greater levels. For this reason Brooks has used only photoelectric smoke alarms in the **BASFS-1** system. Research indicates this technology is superior in performance to ionisation in residential applications and is the overall best and most reliable type of smoke alarm technology for use in the modern dwelling.

Heat Alarms are supplementary devices only; for those areas where Smoke Alarms would not be suitable. Heat detection occurs usually once flames are present therefore they are not early warning. Heat alarms ***must not*** be the only detection used and ***must be*** interconnected to all smoke alarms to provide the best warning throughout the dwelling.

When using household protective devices, basic safety precautions should always be followed.

3.1.2 Technology

Brooks Australia offers a full range of detection technologies.

- Photoelectric Smoke detection
- Heat detection

3.1.2.1 Photoelectric Model EIB206P

Photoelectric (Optical) Smoke Alarms respond to a sufficiently wide range of fires to be of general use, but are particularly responsive to smouldering fires and the dense smoke given off by foam filled furnishings or overheated PVC wiring. They are much less prone to nuisance alarms from cooking, and furthermore, contain no radioactive material.

However, all optical smoke alarms are prone to nuisance alarms caused by dust or insect contamination. Mesh screens are provided and are effective in reducing insect ingress, but it is impossible to make the alarms dust proof, since they would then be effectively smoke proof! For this reason, it is essential that optical smoke alarms are periodically cleaned.

Operating Principle: Light scattering - transmitter produces pulses of light which are detected by a receiver when smoke enters the sensing chamber.

3.1.2.2 Heat Model EIB204T

Heat Alarms require the least maintenance of any alarm. There are locations where the installation of a Smoke Alarm is not recommended, eg kitchens, laundries etc. Yet these areas are a potential of fires and the need for an alternative method of fire detection is, in the opinion of many fire officers and specifiers, essential in this and other vulnerable locations of residential properties.

The heat alarm provides such an alternative. Fixed temperature heat alarms are designed to trigger when the temperature reaches approximately 58°C. The heat alarm is not sensitive to smoke, but in a closed room with a vigorous fire they will tend to respond faster than a smoke alarm a distance away in the hallway. A heat alarm **MUST** be interconnected to your smoke alarms so that the alarm can be heard throughout the building.

Operating Principle: Thermistor sensor - resistance value varies with temperature.

3.1.3 Limitation of Smoke / Heat Alarms

Smoke/Heat Alarms have significantly helped to reduce the number of fire fatalities in countries where they are widely installed.

However independent authorities have stated that they may be ineffective in some circumstances. There are a number of reasons for this:

- The Alarms will not work if the mains power supplied by BARFS-1 control panel is off and the back-up battery is depleted.
- Smoke/Heat Alarms will not detect fire if sufficient smoke/heat does not reach the alarm. Smoke/Heat may be prevented from reaching the Alarm if the fire is too far away, for example, if the fire is on another floor, behind a closed door, in a chimney, in a wall cavity, or if the prevailing air draughts carry the smoke/heat away. Installing Smoke/Heat Alarms on both sides of closed doors and installing more than one Smoke/Heat Alarm as recommended in this manual very significantly improves the probability of early detection.
- The Alarm may not be heard due to background noise, distance from the bedroom or closed doors.
- A Smoke/Heat Alarm may not wake a person who has taken drugs or alcohol.
- Smoke/Heat Alarms may not detect every type of fire to give sufficient early warning. They are particularly ineffective with fires caused by escaping gas, violent explosions, poor storage of flammable rags and/or liquids, (for example petrol, paint, spirits etc). Overloaded electrical circuits, arson and children playing with matches.
- Smoke/Heat Alarms don't last indefinitely. For example if there is a build up of contamination, performance will be impaired. The manufacturer recommends replacement of the Smoke/Heat Alarms after 10 years as a precaution.

3.1.4 Alarm Location

The locations are typically required to meet the Deemed to Satisfy Provisions of the Building Code of Australia. However the BCA does not provide specific guidance as to the minimizing of potential nuisance alarms. There will be dwelling layouts that require further consideration to avoid locating the alarm so that it is not triggered from everyday events such as showers or cooking. This manual as well as AS1670 parts 1 and 6 provides technical guidance with respect to installation.

3.1.4.1 Smoke Alarms

Sufficient smoke must enter the Smoke Alarm before it will respond. The Smoke Alarm needs to be within 7.5 metres (25ft) of the fire to respond quickly. It also needs to be in a position where its alarm sounder can be heard throughout your home, so it can wake the occupants in time for all to escape. As a minimum a smoke alarm should be located between the sleeping area and the most likely sources of fire (living room or kitchen for example). A single Smoke Alarm will give some protection if it is properly installed, but most homes will require two or more to ensure that a reliable early warning is given. For maximum protection you should put individual Smoke Alarms in all the rooms where fire is most likely to break out, (apart from kitchens, bathrooms etc. (see Locations to Avoid).

3.1.4.2 Heat Alarms

The Heat Alarm gives a fire warning when the temperature at the unit reaches approximately 58°C. It is ideal for kitchens, garages, boiler houses and other areas where there are normally high levels of fumes, smoke or dust i.e. places where Smoke Alarms cannot be installed without the risk of excessive nuisance alarms.

A Heat Alarm should only be used in a room adjoining an escape route, and must be used in conjunction with Smoke Alarms on the escape routes.

All the Heat Alarms and Smoke Alarms must be interconnected to ensure the early warning will be heard, particularly by somebody sleeping. A properly designed early warning fire system ensures the alarm is given before the escape routes become blocked with smoke or heat. Therefore, there must be Smoke Alarms along the escape routes as Heat Alarms would not give sufficient warning.

However, a fire in a closed room (e.g. kitchen) adjoining the escape route, can eventually cause the corridor to become smoke-logged due to smoke leaking out from around the door before adequate warning can be given by detectors in the corridor. (Smoke leaking out from a room is often cool and slow moving so it can take a long time to rise to the ceiling, and travel to a detector which could be some distance away). A Heat Alarm in the closed room will give earlier warning of fire in that room and help overcome this problem.

This type, with consideration to the above, can be installed in kitchens, laundry's, garages and boiler houses and other areas where there are normally high levels of fumes, smoke or dust i.e. places where smoke alarms cannot be installed without the risk of excessive nuisance alarms.

Important: These Smoke/Heat Alarms are designed for use in a residential type environment.

3.1.5 Recommended Locations


Figure 2 illustrates where Smoke Alarms and Heat Alarms should be located in a typical two storey house. Note the spacing in "Recommended Protection" which helps ensure the early detection of fire and that the warning will be heard.

Locate Heat Alarms in rooms adjoining or on escape routes – kitchens, garages, boiler houses etc. where Smoke Alarms are unsuitable. Install within 5.3m (17 feet) of potential sources of fire.

Recommended Protection

JP2


Minimum protection

 Smoke Alarms located on:-


- each storey
- every 7.5 metres (25ft) of hallways and escape routes
- Within 3m (10ft) of all bedroom doors.

- Interconnect all Alarms

Maximum protection

 Smoke Alarms located as above plus:-

- All rooms (except bathrooms, shower rooms & kitchens)

 **Heat Alarms** located in Kitchens, garages, boiler rooms etc. Within 5.3m (17ft) of potential fire sources.

3.1.6 Single Storey Dwelling

If the dwelling is on one level you should put the first Smoke Alarm in a corridor or hallway between the sleeping and living areas. Place it as near to the living area as possible, but make sure you can hear it loudly enough to wake a person in the bedrooms. (for example, see figure 1.

Caution: If the living areas are separated from the bedrooms by a door that can potentially be closed, a smoke alarm is recommended either side of the door, these must be interconnected. The door can be closed at night to act as a smoke and heat barrier for the bedrooms from fires originating from the living areas. The smoke alarms will detect and warn of a fire both sides of the door.

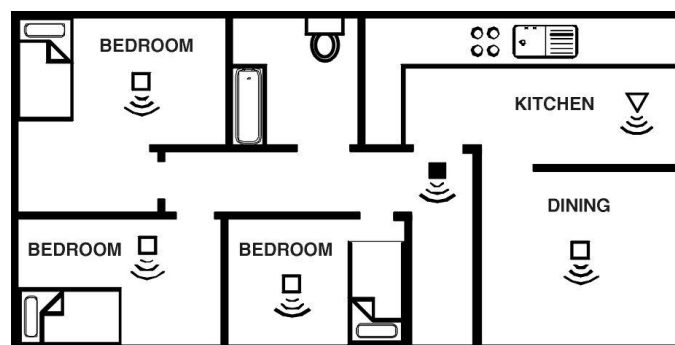


Figure 1 Single Storey Dwelling with Recommended Locations

If the dwelling is very large and the corridor or hallway is more than say, 15 metres (50ft) long, one Smoke Alarm will not be sufficient. This is because no matter where it is located it will be more than 7.5 metres from potential fires.

In houses with more than one sleeping area, Smoke Alarms should be placed between each sleeping area and the living area.

3.1.7 Multi Storey Dwellings

If the dwelling has more than one storey it must have at least one interconnected alarm on each level for minimum protection.

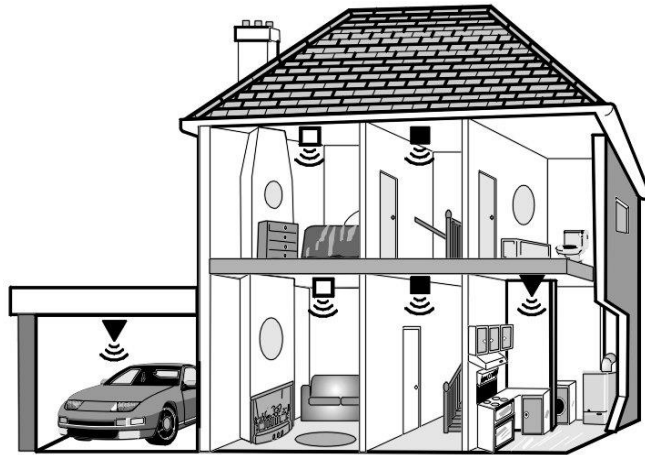


Figure 2 2 Multi Storey Dwelling with Recommended Locations

Recommended Protection Figures 1 & 2

Minimum Protection

- Smoke Alarms located on:
On each storey
Within 3 metre (10 ft) of all bedroom doors
Every 7.5 metres (25 ft) or hallways and rooms

Maximum Protection

- Smoke Alarms located as above plus:
All rooms (except bathroom, shower rooms and kitchen)

In houses with more than one sleeping area, Smoke Alarms should be placed between each sleeping area and the living area (for example, see figure 1).

- ▽ Heat Alarms located in kitchens, garages, boiler rooms etc. within 5.3 metre of potential fire sources

3.1.8 Maximum Protection

For maximum protection you should put an individual Smoke Alarms in all the rooms where fire is most likely to break out (apart from the locations to avoid, mentioned below). Ensure that they are all interconnected. The living area is the most likely place for a fire to start at night, following by the dining areas.

You should also consider putting Smoke Alarms in any bedrooms where fires might occur, for instance, where there is an electrical appliance such as a television, stereo, an electric blanket or heater, or where the occupant is a smoker. You could

also consider putting Smoke Alarms in any rooms where the occupant is unable to respond quickly to a fire starting in the room, such as the elderly.

A smoke alarm in the master bedroom interconnected to all other smoke alarms will provide early warning for parents, care givers or other residents to assist in evacuating the dwelling.

3.1.9 Positioning Smoke/Heat Alarm

3.1.9.1 Ceiling Mounting

Hot smoke rises and spreads out, so a central ceiling position is the preferred location. Wall mounting is not recommended for alarms as the smoke and heat has to first fill the ceiling area then move down the wall. This takes time and reduces the available escape time.

The air is “dead” and does not move in corners; therefore Smoke & Heat Alarms must be mounted away from corners. Place the unit at least 300mm (12 inches) from any light fitting or decorative object which might obstruct smoke/heat entering the Alarm. Keep at least 300mm (12”) away from walls. See figure 4. (For unusual or egg crate ceilings refer AS1670.1)

3.1.9.2 Sloping Ceiling

In areas with sloping or peaked ceilings install your Smoke/Heat Alarm 900mm (3 feet) from the highest point measured horizontally (see figure 4), because “dead air” at the apex may prevent smoke from reaching the unit.

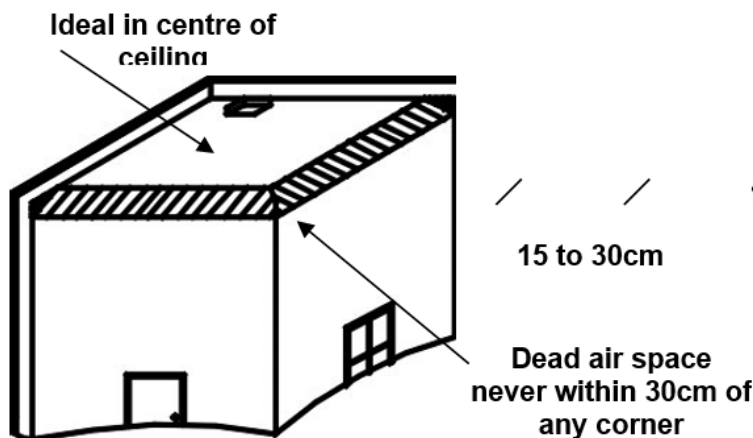


Figure 3 Normal ceiling location

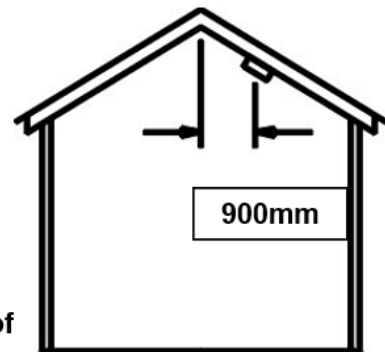


Figure 4 Sloping ceiling location

3.1.10 Locations to Avoid

Don't place **Smoke Alarms** in any of the following areas:

- **Bathrooms, kitchens, shower rooms, garages** or other rooms where the smoke alarms may be triggered by steam, condensation, normal smoke or fumes. The HUSH facility is no substitute for poorly or inappropriately located smoke alarms. Keep at least 6 metres (20 feet) away from sources of smoke.

Don't place **Heat Alarms** in any of the following areas:

- **Bathrooms, shower rooms** or other room where the unit may be affected by steam or condensation.

Don't place **Smoke** or **Heat Alarms** in any of the following areas:

- Places where the normal temperature can exceed 40°C (104°F) or be below 4°C (39°F) e.g. attics, furnace rooms etc. directly above **ovens** or **kettles**, as the heat/steam could cause nuisance alarms.
- Near a **decorative object, door, light fitting, window molding** etc., that may prevent smoke or heat from entering the Alarm. Heat from light fittings may prevent or delay the smoke reaching the detection chamber.
- Surfaces that are normally **warmer** or **colder** than the rest of the room (for example attic hatches, un-insulated exterior walls etc). Temperature differences might stop smoke or heat from reaching the unit.
- Next to or directly above **heaters** or **air conditioning vents, windows, wall vents** etc. that can change the direction of airflow or blow smoke away from the detection chamber.
- In very high or **awkward areas** (e.g. over stairwells) where it may be difficult to reach the alarm (for testing, hushing or battery replacement).
- Locate away from very **dusty** or **dirty areas** as dust build-up in the chamber can impair performance. It can also block the insect screen mesh and prevent smoke from entering the smoke detector chamber.
- Locate the unit at least 1 metre (3 feet) from **dimmer controlled lights and wiring** – some dimmers can cause interference.
- Locate unit at least 1.5m (5 feet) and route wiring at least 1m (3 feet) away from **fluorescent light fittings** as electrical “noise” and/or flickering may affect the unit.
- Do not locate in **insect infested areas**. Small insects getting into the smoke detection chamber can cause intermittent alarms. Insects and contamination on the Heat Alarm sensor can increase its response time.

3.1.11 Checking you can hear the Smoke & Heat Alarms

With the Alarm sounding in its intended location, check you are able to hear it in each bedroom with the door closed, above the sound of the radio. The radio should be set to a reasonably loud conversation level. If you can't hear it over your radio the chances are that it wouldn't wake a person.

If a Smoke Alarm is too far away for it to wake a person, it is best to interconnect to another Smoke Alarm or Heat Alarm near the bedroom, so when one alarm senses fire, all interconnected alarms respond (see below for further details).

Australian and International standards require a sound pressure level of 75dBA at the sleeping position to waken a normal person. The young and old require more.

3.1.12 Interconnecting Smoke/Heat Alarms

The Brooks 200 series smoke/heat alarms provide an interconnect facility. When one smoke/heat alarm activates all smoke/heat alarms sound, this provides not only an increased the sound pressure level and an alarm warning throughout the entire dwelling. Up to 15 Smoke/Heat Alarms models EIB206P, EIB204T can be interconnected to the **BARFS-1**.

Caution: Do not interconnect to any other type of alarm.

The unit initiating the alarm can be identified by the red LED on the cover flashing every second, or by pressing the alarm locate switch on the operator module.

3.1.13 Nuisance Alarms

Smoke alarms are sensitive devices that may also be triggered by other household activities like cooking or steam from showers or laundries. If your smoke alarm sounds but there is no fire that does not mean that it is faulty. Remember, your smoke alarm can be triggered by you accidentally, this does not mean it is faulty it has simply detected something that to it simulates smoke.

If there is a nuisance alarm simply press the test/hush button on the Alarm to silence the unit for 10 minutes. If, when the alarm goes off, there is no sign of smoke, heat or noise to indicate that there is a fire, you should get your family into a safe place, before you start investigating.

Check the house carefully in case there is a small fire smouldering somewhere. Check whether there is some source of smoke or fumes, for example cooking fumes being drawn past the Smoke Alarm by an extractor.

If there are frequent nuisance/false alarms, it may be necessary to re-locate the smoke alarm away from the source of the problem. If for some reason the alarm continues to sound without smoke or heat being present (possibly due to insect infestation or contamination build-up for example) the individual unit can be silenced by removing it from its base (see figure 6). If cleaning the Alarm does not correct the problem it can be returned for repair or replacement (see Getting Your Alarm Serviced below).

3.2 Control Panel

The control panel should be located in a secure area typically a broom cupboard or the like. It must be hard wired to the 230 Volt supply to the dwelling by a licensed electrician. It can be connected to either a dedicated circuit or a lighting circuit.

3.3 Operator Module

The operator module allows the occupant to monitor the status BARFS-1 system and provides the necessary indicators and controls to operate the system. Two operator modules can be connected to the control panel. These should be placed in a convenient location at least one of which should be a normally occupied area. In the case of a two storey dwelling one module could be placed on each level.

3.4 Planning your Escape for when the Alarm goes OFF

1. Check room doors for heat or smoke. Do not open a hot door. Use an alternate escape route. Close doors behind you as you leave.
2. If smoke is heavy, crawl out, staying close to floor. Take short breaths, if possible, through a wet cloth or hold your breath. More people die from smoke inhalation than from flames.
3. Get out as fast as you can. Do not stop for packing. Have a prearranged meeting place outside for all family members. Check everybody is there.
4. Call the Fire Brigade from a neighbor's house. Remember to give your name and address.
5. NEVER re-enter a burning house.



Figure 5 Planning to scape in alarm condition

3.5 Important Safe Guards

When using household protective devices, basic safety precautions should always be followed, including those listed below:

- Please read all instructions.
- Rehearse emergency escape plans so everyone at home knows what to do in case the alarm sounds.
- To maintain sensitivity to smoke, do not paint or cover smoke/heat alarms in any manner; do not permit any accumulation of cobwebs, dust or grease.
- If a unit has been damaged in any way or does not function properly, do not attempt a repair. Return Alarm (see – Getting your Alarm Serviced).
- Smoke/Heat Alarms are intended for premises having a residential type environment.
- Smoke/Heat Alarms are not a substitute for insurance. The supplier or manufacturer is not your insurer.
- Do not dispose of your Alarm in a fire.

Use the Smoke/Heat Alarm Test Buttons to familiarize your family with the Alarm sound and to practice fire drills regularly with all family members. Draw up a floor plan that will show each member at least 2 escape routes from each room in the house. Children tend to hide when they don't know what to do. Teach children how to escape, open windows, and use roll up fire ladders and stools without adult help. Make sure they know what to do if the alarm goes off.

4 EQUIPMENT

4.1 Overview

The basic configuration of Brooks **BARFS-1** consists of a control panel, containing the main processor/termination board and the operator module containing the display and control board.

The processor/termination board is a microprocessor based system utilises state of the art components. It provides the control functions, monitoring, power supply, supervision and terminations to the field devices.

The Display board contains indicators, function switches and the interface to the processor/termination board. Interface between main and display board is via an RS485 bus (4 wires) which allows for the display board to be remotely installed.

Figure 6 below shows the front view of BARFS-1 and Figure 7 shows the actual remote keypad.

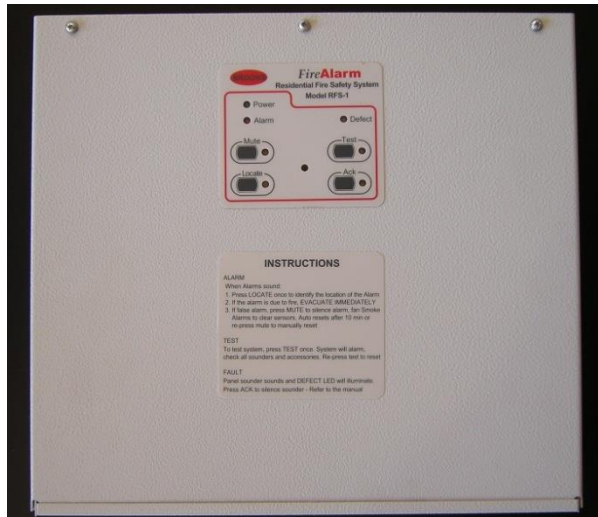


Figure 6 BARFS-1 front view



Figure 7 Remote keypad view

4.2 Control Panel

4.2.1 Specifications

Table 1 BARFS-1 Specifications

Feature	Specification
Enclosure	Zink steel 1.6mm powder coated oyster Dimensions 280mm H x 305mm W x 75mm D
Power Supply	Input voltage 85-264V AC, 40W switch mode power supply Output 13.5-16.5V DC, Typical 13.8V Current 3 Amp Note: Larger power supply 60W is available on request
Standby Supply	12V / 7AH Sealed lead acid battery
Nominal Voltage	13.8V dc
Current Draw	90mA Single Display 130mA Dual Display
Operating Temperature	0°C to +50°C
No. of Alarm Circuits	One supervised circuit with discrimination between heat alarm / manual actuation and smoke alarm (priority 1 & priority 2)
No. of Devices per Circuit	15 Smoke/Heat Alarms, and or 15 MCP, Sprinkler Clean Contact, and or 3 Strobe Modules, and or 4 Vibration Patrice Modules Note: current consumption must be calculated using "Battery capacity calculation sheet" page 43
Zone Monitoring	Wiring loop in / loop out to smoke / heat alarms and zone devices fully supervised by active end of line device
Alarm Output	Supervised 12Vdc / 1A fused output 1 set of changeover clean contact
Fault / Defect Output	1 set of changeover clean contact
Fault / Defect Mode	Initiated by abnormal system condition: <ol style="list-style-type: none"> 1. Power Supply fault, mains fail, battery low or removed, etc 2. Alarm circuit wiring open or short circuit 3. Supervised alarm output open or short 4. Device removed 5. Communications fault 6. Memory fault
Control Switches	Ack Silences panel buzzer until another event occur Locate Silences all smoke / heat alarms except those that have actuated, restores after approximately 5 minutes. Locate LED illuminates during the 5 minutes timer Mute Silences all smoke / heat alarms, restores after approximately 10 minutes. Mute LED illuminates during the 10 minutes timer Test activates all smoke / heat alarm sounders, vibration pad and strobes, during test, the test LED illuminates
Visual Indications	Power ON LED, mains power available Alarm LED, priority P1 alarm or Priority P1&P2 alarm Defect LED common defect / fault
Keypad	<ol style="list-style-type: none"> 1. One keypad per panel and one optional remote keypad can be fitted or 2 remote keypads without panel keypad. 2. Four wires (RS485) required for remote keypad.

4.2.2 Compatible Devices

Table 2 BARFS-1 Compatible field units and current requirements

Device	Description	Quiescent mA	Alarm mA
EIB204T	Heat Alarm 58 to 64°C	8.1	25
EIB206P	Photoelectric Smoke Alarm	8.1	27
EIB207V	Vibration Pad (pillow shaker)	8.1	100
EIB208ST1	High intensity strobe for Sleeping Area	8.1	700
EIB208ST2	Strobe for Living Area	8.1	250
EIB209IO	Generic Input / Output Module	8.1	25

4.2.3 Power Supply

The primary and standby supplies are calculated to suit the system alarm and standby requirements. If the primary power supply fails, the secondary supply will provide sufficient current to maintain the system fully operational for a period determined by the added options to the zone circuit. Special considerations must be taken when strobes and vibration pads are fitted. This is due to the higher alarm current required for these devices.

4.2.3.1 Primary Supply

The primary power supply is a switch mode power supply fully regulated and adjustable to the required voltage, it has the following features:

- Universal AC input 85-264V AC, 47-63 Hertz
- Output voltage 15V dc adjustable to +/- 10%
- Output current 3.3A @ 12V, 5A power supply is optional
- Built-in EMI filter, low ripple noise
- Short circuit, overload and over voltage protection

Note: Power supply voltage output can be adjusted (if required) to the nominal voltage using potentiometer on the power supply PCB. The battery charging current is shown in the following table:

Battery Charger	Battery, 12V / 7AH
Charging Voltage	13.8 V
Max Charging Current	300-400 mA, Flat
Min Charging Current	0 mA, Fully Charged

4.2.3.2 Standby Supply

Battery capacity is calculated to suit the system requirement¹. The standard RFS-1 is normally fitted with 7AH battery, if required, additional 7AH battery can be fitted inside the enclosure and connected in parallel with the standard battery to increase the capacity to 14AH.

¹ See battery capacity calculation sheet page 43

4.3 Main Control Module

BARFS-1 main control module is mounted on the rear of the enclosure and has screw terminals for all the field wiring termination, power connection and display modules wiring.

Figure 8 shows the PCB layout and jumper setting for alarm priority selection and address setting if additional remote keypad required.

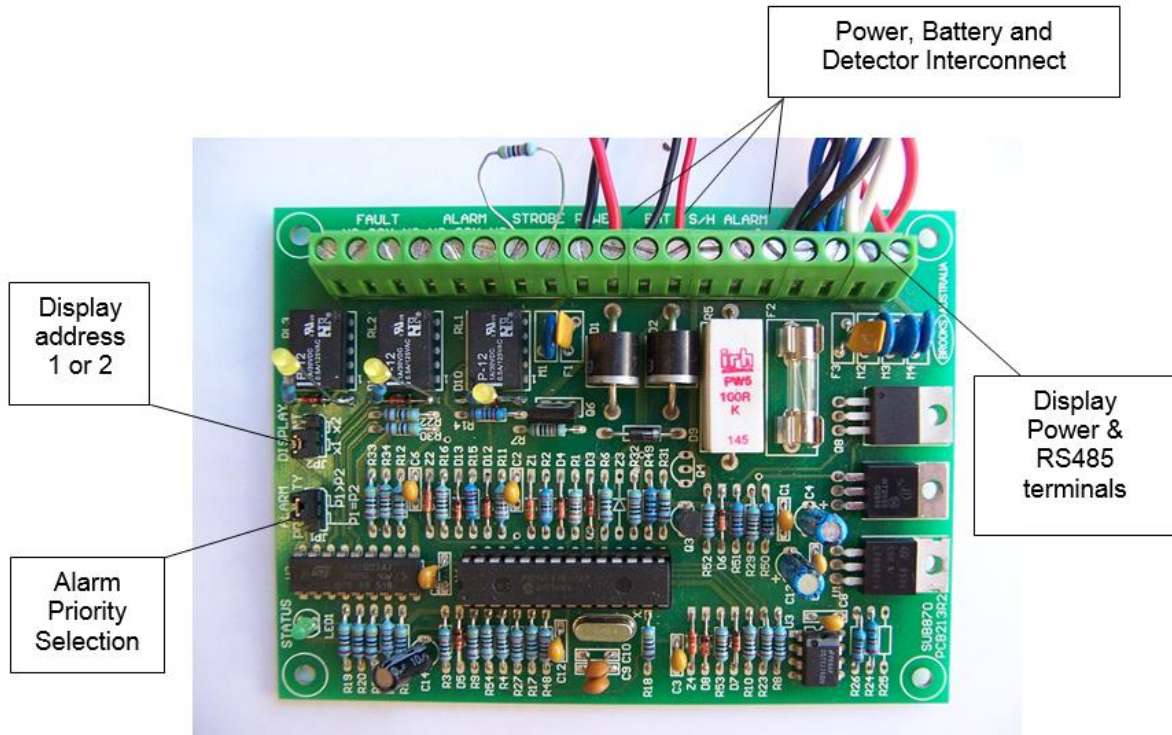


Figure 8 BARFS-1 Main and termination board

4.3.1 Alarm Priority

Brooks BARFS-1 has a distinctive feature, it can distinguish between smoke detection and heat detection which enables the system to respond differently to the type of detection. The alarm priority is set in the main control module using JP1 to respond to smoke alarm (priority 2) as a local warning or to heat alarms and manual activation (priority 1) as a full alarm condition.

The priority on the main control module is selected using jumper link JP1 on the PCB as follow:

Priority P1 only, position "P1>P2" or Common priority (P1 & P2), position "P1=P2"

In order for the priority alarm function to operate properly, the priority on the smoke/heat alarm interface card must be selected to send the alarm priority. When an alarm is activated, the interface card inside smoke alarm, heat alarm, or Input / output card (used for MCP, flow switch, etc) will send priority 1 alarm (P1) or priority 2 alarm (P2) depending on the jumper link setting in these cards.

Heat alarms and manual activation (sprinkler flow switch, manual call point, etc) have priority 1 while smoke alarms have priority 2. The main control module can be configured to respond to P1 alarms only or responds to both P1 & P2 alarms. Priority "P1 alarm" means all the ancillary devices such as strobes, alarm relays or vibration pads will only activate on P1 alarms while P2 alarms (smoke alarms) do not activate the ancillary devices. Common priority "P1 & P2" means the ancillary

devices will activate on either alarm condition. The advantage behind two alarm priorities is to reduce nuisance alarms caused by smoke alarms and prevent these alarms from activating the control panel but react immediately when a heat alarm or manual activation is activated.

Table 3 and Table 4 below describe the different actions for both priority 1 and priority 2 alarms respectively.

Table 3 Priority P1 (Heat Alarms or Manual Activation)

Device	Action	Location
Smoke/Heat Alarms	Sounding	RFS-1 Zone
Ancillary Devices	Active	RFS-1 Zone
Panel Sounder	On	Display
Locate Button	Flashing	Display
Alarm LED	On	Display
Alarm Relay	Energised	Main Control
Strobe Output	Active	Main Control

Table 4 Priority P2 (Smoke Alarms only):

Device	Action	Location
Smoke/Heat Alarms	Sounding	RFS-1 Zone
Ancillary Devices	Not Active	RFS-1 Zone
Panel Sounder	On	Display
Locate Button	Flashing	Display
Alarm LED	Off	Display
Alarm Relay	De-energised	Main Control
Strobe Output	Not Active	Main Control

Note: If the alarm priority is set to common “P1 & P2”, the system will function as priority P1 mode.

4.3.2 Normal Mode

During normal operation the main control module scans the system to check for alarms, faults and power supply.

4.3.3 Alarm Mode

In the event of an alarm, all audible and visible devices will be active. The locate LED on the display module will flash to prompt the operator to the next course of action. Pressing the “locate” button will do the following:

- Silences smoke / heat alarm sounders except the one(s) in alarm
- The locate flashing LED turns to steady for the location time (approximately 5 minutes)
- The “Mute” button flashes to prompt the operator to the next action.

If the alarm has been located, pressing the “Mute” button will mute this Alarm and all other Alarms for 10 minutes and the mute LED turns to steady. Both functions, alarm locate and mute are auto-reset after each timer times out.

4.3.4 Defect/Fault

The main control module constantly monitors the system status and upon detection of a fault condition, the defect LED illuminates and the panel sounder sounds one short beep every 3 seconds.

The panel sounder can be silenced by pressing the acknowledge button. This will silence the defect buzzer. However, should a new fault occurs, the sounder will sound again.

Once the fault or defect has been restored, the buzzer will silence automatically and the defect light will turn off.

The illumination of the defect and power On LED's depends on the type of fault are in Table 5 below.

Table 5 BARFS-1 Indications and flashing pattern

Fault	Indication	Location
Mains Power Loss	Power LED flashes Defect LED steady ON	Main Control Module
Power Loss	Power LED OFF Defect LED ON Second display steady ON	Display Module
Display communication loss		
Zone circuit fault <ul style="list-style-type: none"> 1. Open or short circuit 2. Missing Smoke/Heat Alarm 3. Missing end of line device 	Defect LED flashes once	Display Module
Strobe fault (open or short circuit)	Defect LED flashes two times	Display Module
Power Supply fault <ul style="list-style-type: none"> 1. Mains Fail 2. 2Charger high or low 3. Battery Low 4. Battery missing 	Defect LED flashes three times	Display Module
Memory fault	Defect LED steady ON	Display Module

4.4 Operator's Module

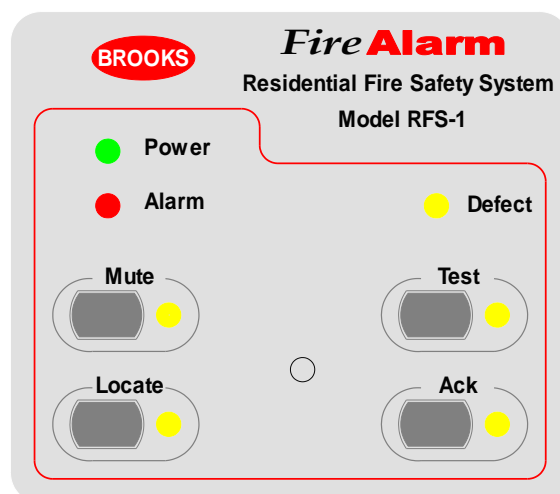


Figure 9 BARFS-1 Front decal

The display module is connected to the main control module via four way screw terminal, the front display is shown in Figure 6 above. Two wires for 12V supply and the other two wires for RS485 bus which used for the communication between main and display modules. If two display modules have been used, the address in the main control and display modules must be set as per the following table

System	Main Control (JP2 – Display Count)	Display Board (JP1 – Address)
Single Display	X1	#1
Dual Displays	X2	#1 and #2

Notes:

1. Remote display module requires the same four wires, RS485 bus and power.
2. Terminating resistor 1K Ohm must be fitted across the comms terminal of RS485 bus.

4.4.1 Indicators

Table 6 Indictors identification

Descriptor	Colour	Function	Buzzer
Power	Green	Steady On, mains power ok Flashing, mains power off, system running on battery	No Yes
Alarm	Red	Steady on for priority 1 (P1) alarm or common priority (P1 & P2) Off for priority 2 alarm	Yes
Defect	Yellow	One blink : Zone circuit fault Two Blinks, Strobe fault Three blinks, Power supply fault Steady On, Memory fault	Yes
Mute	Yellow	Mute 10 minutes timer running	No
Locate	Yellow	Locate 5 minutes timer running	No
Test	Yellow	Steady On	Yes
Ack	Yellow	Steady On	No

Note: If priority one selected, the alarm LED illuminates a heat alarm or manual activation, Priority 2 will not turn on the alarm LED unless common priority is selected. When the LED is on, all the smoke/heat alarms will sound, the panel buzzer will sound and the strobe and alarm relay will activate. When common priority i.e. P1 and P2 is selected, Only the smoke and heat alarm sounders will sound and also panel buzzer will sound, no other outputs is activated.

4.4.2 Controls

Table 7 Control buttons

Descriptor	Function
ACK	Silences panel buzzer
Locate	Identifies the smoke / heat alarm causing alarm condition
Mute	Silences all smoke and heat alarms for 10 minutes
Test	Activates smoke / heat alarm sounders and panel buzzer

4.4.2.1 Fault Acknowledge

Pressing the Ack button will Silence the defect/fault buzzer, defect LED remains illuminating and fault relay remains de-energised. A new fault condition will re-initiate the buzzer. The defect LED and fault relay remain in fault condition until the fault restores.

4.4.2.2 Alarm Locate

In alarm condition, all the smoke/heat alarms sound, the “Locate” LED flashes to prompt the occupant to press the button and identify the location of the alarm origin. Pressing the locate button once silences all the smoke/ heat alarm sounders except those that have been activated. This function allows the occupant to identify the location of alarm by listening to the smoke/heat alarm sounder. Automatically resets after approximately 5 minutes. If the smoke/heat alarm has been identified and rectified before the locate timer times out, the locate function can be cancelled by pressing the button once again.

The locate facility acts as a service tool to identify contaminated or faulty smoke or heat alarms.

4.4.2.3 Alarm Mute

When the locate button is pressed, the locate LED turns to steady and the mute LED starts flashing to prompt the occupant to the next action. Once the alarm has been located, pressing the mute button will silence the active smoke/heat alarms for approximately 10 minutes. The mute function deactivates all devices on the alarm circuit (smoke / heat alarm sounders, strobes, vibration pad, etc). Pressing the mute button once starts the mute timer for approximately 10 minute to cancel the timing sequence, press the button once again. The mute function will automatically reset after the 10 minutes timer.

4.4.2.4 Test Button

The test function allows the occupant to test the BARFS-1 system. Pressing the test button once activates smoke/heat alarms, panel sounder, strobes, vibration pads, etc. Pressing the button once again will cancel the test mode.

Note: When the “Test” button is pressed, the alarm relay remains in normal mode.

4.5 Smoke/Heat Alarm Interface Module

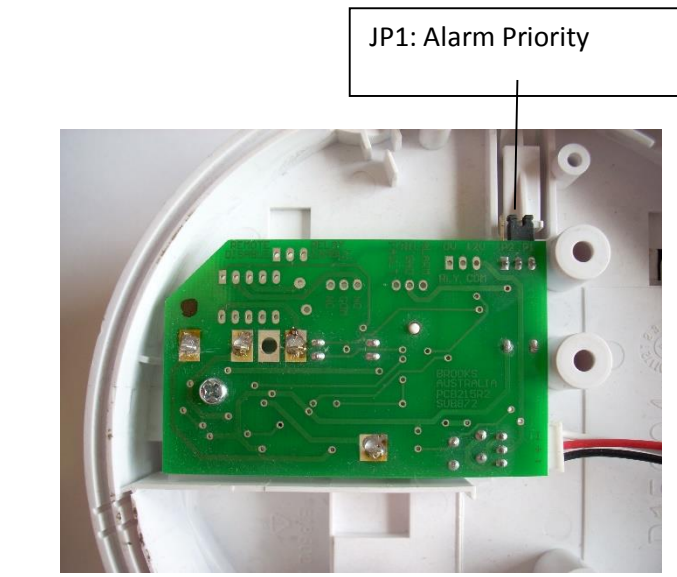


Figure 10 Smoke / Heat alarm interface card (rear view)

The smoke / heat alarm interface board is the interface between a smoke or heat alarm and the control panel. The board is soldered in 200 series base and secured by one screw, it provides via a 3 way connector the field wiring termination on a three way terminal block for +, - and interconnect.

The priority of the alarm is set using a jumper link and 3 way pin header JP1 as follow:

- Priority 1 (higher priority), link across P1 (pin 2 & 3)**
- Priority 2 (common priority), link across P2 (pin 1 & 2)**

4.6 Input / Output Module EIB209IO

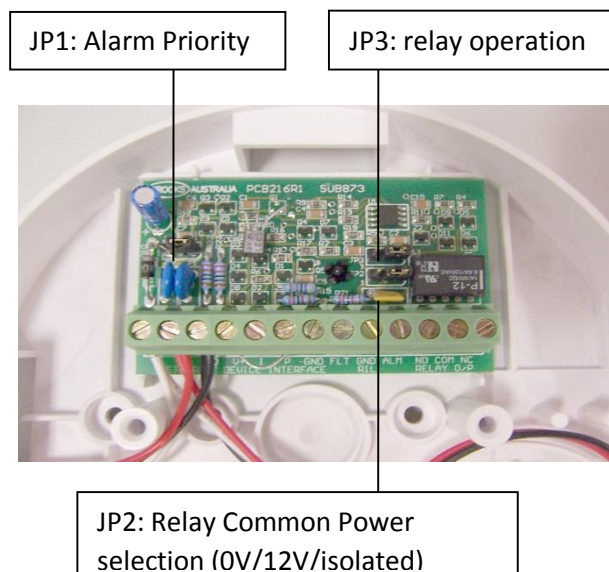


Figure 11 Generic input / output field module EIB209IO

The input/output module is a zone device which interfaces the control panel to external devices. The module is fitted (clip in) in x-series rectangular base. The input is a clean contact input which can be used to interface manual call point or sprinkler flow switch to BARFS-1.

The alarm output can be either a changeover relay contact or 12V (or 0V) switched output via the COM terminal depending on the position of jumper link JP2, the output is limited to 1Amp and may be utilised to drive strobes or vibration pads.

The module provides terminals for remote indication RIL, this indication can be either for remote alarm or for remote fault indication or both.

4.6.1 Jumper Link Setting

Table 8 EIB209IO card jumper settings

Jumper	Function	Description	Jumper Position
JP1	Alarm Priority	P1 (high priority)	Jumper across pin 2 & 3 or not fitted
		P2 (common priority)	Jumper across pin 1 & 2
JP2	Alarm Relay	Voltage free contact	Jumper not fitted
		Com=0V (switches 0V to NO terminal)	Jumper across pin 1 & 2
		Com=12V (switches 12V to NO terminal)	Jumper across pin 2 & 3
JP3	Alarm Relay & RIL Trigger	Standalone, activated of smoke or heat alarm	Jumper across pin 1 & 2 or not fitted
		Common, activated of Common Interconnect Bus	Jumper across pin 2 & 3

4.6.2 PCB Layout

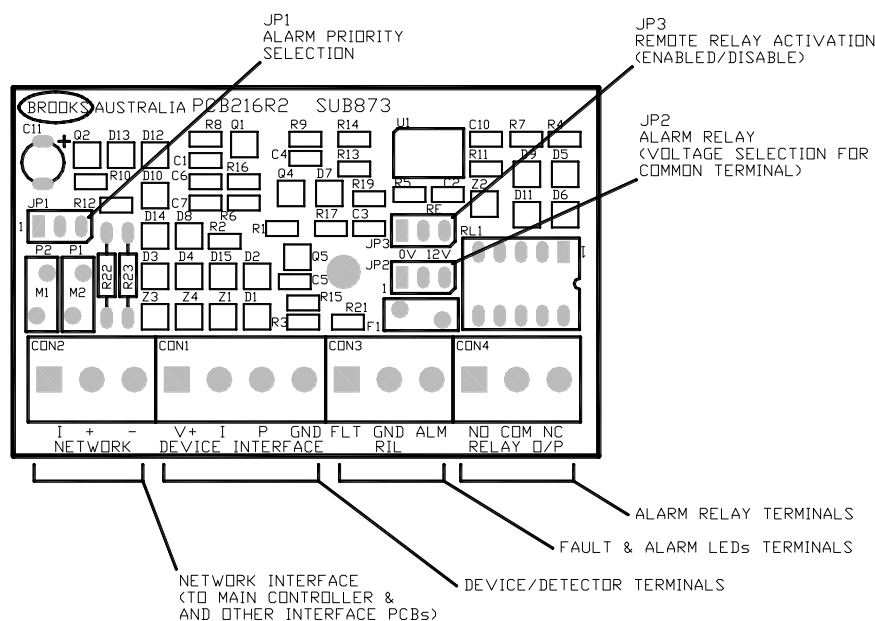


Figure 12 EIB209IO PCB

4.6.3 Switch Input Application

The following diagram shows how the module is used as an input module for clean contact normally open contact such as manual call point or sprinkler flow switch.

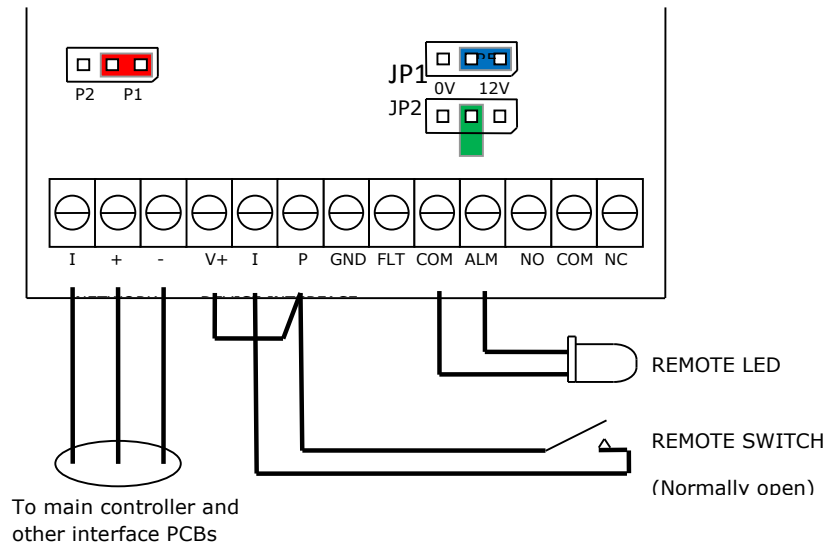


Figure 13 EIB209IO connection to N/O contact sprinkler flow switch input

4.7 Vibration Pad EIB207V

Smoke and heat alarms may not provide an early warning for hearing impaired. Brooks has added additional equipment to provide warning for the hearing impaired occupants, the VibrAlarm EIB207V is a device that can be placed under the billow to provide an early warning for hearing impaired.

Note: the VibrAlarm does not detect fire, it responds only to a fire detected by smoke or heat alarm which compromise a part of BARFS-1 zone detection circuit.



EIB207V Control Box



EIB207V Vibration Pad

Figure 14 EIB207V Vibration pad

The diagram shown used for wiring a vibration pad to **BARFS-1**, note the jumper link setting. The jumper across pin 1 & 2 in the vibration pad plug is used to generate a fault when the plug is not fitted in the socket. The relay is configured to switch +12V via the NO contact (0V is required from the zone -ve)

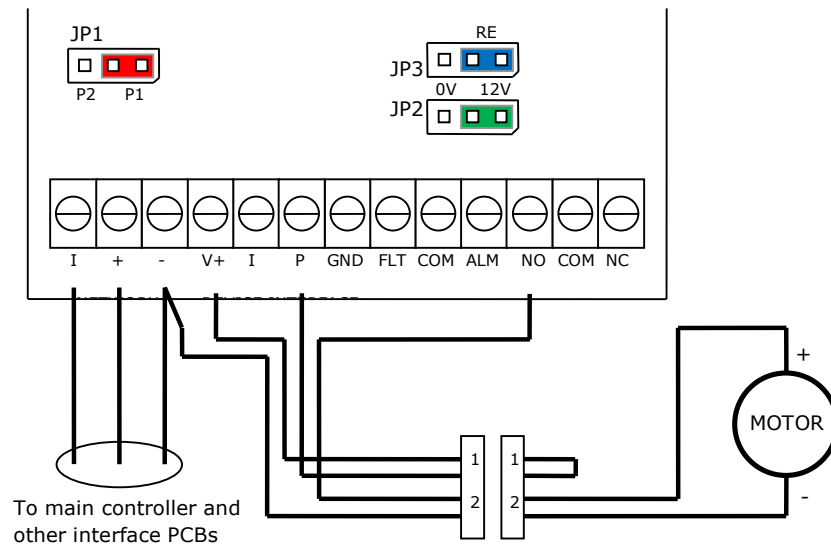


Figure 15 EIB207V connection diagram

4.8 Strobe Output EIB208ST1 & EIB208ST2

The second type of devices for hearing impaired is the strobe light, two different types of strobes are available and may be connected as a zone device. The first type EIB208ST1 is used inside the sleeping area and provides a high intensity light to help the sleeping hearing impaired occupant to wake up. The second type EIB208ST2 is used in the living area and has less intensity.



EIB208ST2



EIB208ST1

Figure 16 Strobe view

This diagram shown below is used for connecting strobe (flashing light) to the generic input / output module. The strobe is used for hearing impaired purposes.

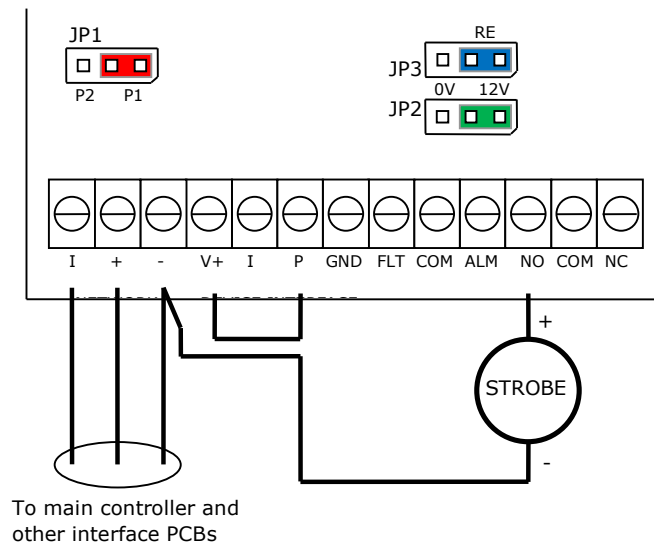


Figure 17 Strobe connection to EIB209IO

4.9 End of Line Module



The end of line module must be terminated on the last device on the zone circuit. Only one device required for each BARFS-1 system.

The EOL module sets the normal operating voltage of the interconnect line. The voltage of the interconnect input to the main control module determines the three modes of operation: normal, alarm or fault.

Interconnect Voltage Threshold:

The following voltages can be used to diagnose a faulty system.

Note: Voltage ranges may vary +/-10%

Table 9 Interconnect voltage threshold

Function	Voltage
P1 Alarm	8.0V to 12V
P2 Alarm	5.1V to 8.0V
Missing Alarm Head fault	2.5V to 5.1V
EOL device (normal)	0.6V to 2.5V
Open Circuit fault	0.0V to 0.6V

Colour coding:

Red wire +12V
Black wire 0V
White wire interconnect

5 INSTALLATION

5.1 Smoke / Heat Alarms

The Alarm is designed to be permanently mounted, using its own built-in terminal board to connect it to the panel. The mounting plate can be screwed directly to the ceiling after connecting the wires.

IMPORTANT PRECAUTION: Do not install the actual alarm head itself in new or renovated buildings until all work is completed (including floor coverings) and the building has been fully cleaned. The wiring can be installed when appropriate. (Excessive dust and debris from building work can contaminate the smoke chamber or heat sensor and cause problems; it will also invalidate the guarantee). If it must be installed, cover it completely, particularly around the edge, with a dust cover (e.g. with the elasticated cover supplied or a plastic bag), until all cleaning is finished.

Warning: Wiring should only be installed by a properly trained technician or electrician in accordance with current wiring regulations for electrical installation. The installation must also be in accordance with the control panel instructions in this manual.

Warning: The mains circuit used to power the control panel must be a 24 hour voltage circuit and be wired on a separate circuit (one with no other lights or appliances) to ensure maximum reliability of the supply.

Warning: For safety reasons the voltage supply from the control panel must not be greater than 15Vdc.

Installation

Select a location complying with the above advice.

1. Remove the mounting plate from the Smoke/Heat Alarm by releasing the tamper-proof catch with a small screwdriver as shown in figure 5 and sliding the alarm from the plate.
2. Connect the three incoming wire from RFS-1 zone output and 3 wires going out to the next device in the three way terminal block provided in the smoke/heat alarm as shown in figure 6
3. Carefully align the mounting plate and screw into place. With recessed wiring, ensure the rear gasket seals around the edge of the hole in the ceiling. This is to prevent air draughts affecting the smoke/heat entering the alarm. If the orifice is too large it should be sealed with silicone rubber or equivalent.
4. Check the battery is connected in the back of the alarm
5. Carefully line up the unit on the base and slide on.

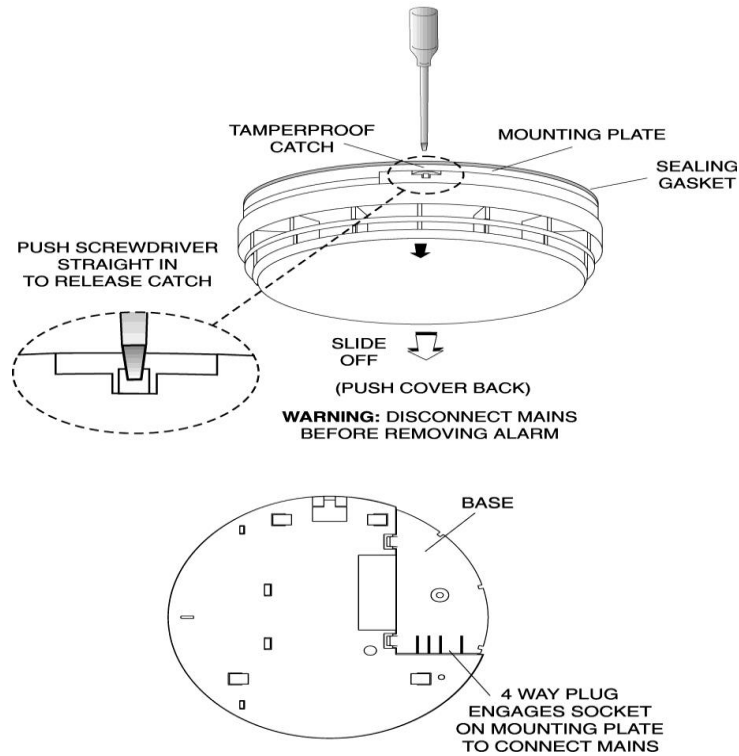


Figure 18 Smoke alarm and mounting base

5.1.1 Smoke / Heat Alarm Wiring

The following pictures show how the smoke / heat alarm should be wired.

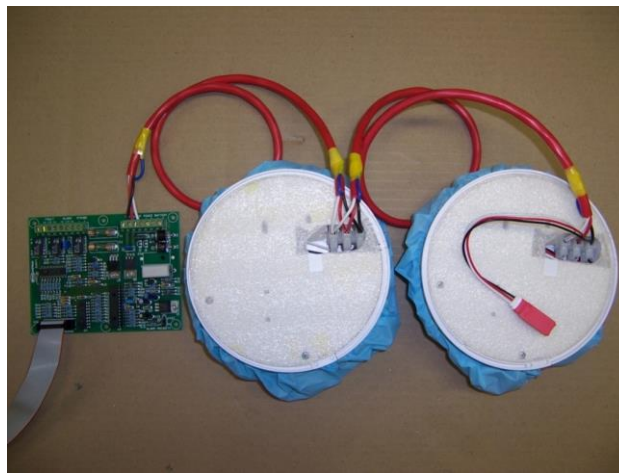


Figure 19 Rear view of smoke alarm wiring

The above picture on the left shows an Alarm wired with the End of Line device while the picture on the right shows how smoke or heat alarms as loop-in / loop-out.

Note: T-Off wiring must be avoided, all terminations from one smoke / heat alarm to the next one should be done at the three way terminal block provided in each smoke or heat alarm. The picture below shows where the interconnect wires are terminated at the circuit board.

5.2 Control Panel

The Control Panel is factory pre-wired and fully tested before delivery. After receipt of the panel, it should be carefully checked for any possible mechanical damage during transportation. Report any damage to your supplier immediately.

Carefully remove the faceplate from the panel enclosure and unplug the 4 way plug from the main control module.

Store in a safe position until panel is installed and wired.

5.2.1 Surface Mounting Instructions

- Step 1 Locate the position where the panel is to be sited.
- Step 2 Mark the position of the two mounting holes and the cable cut-outs, knockouts available between the two mounting holes. (**Note: Power and ELV cables are to be kept segregated**).
- Step 3 Select the appropriate mounting hardware and prepare the two mounting holes.
- Step 4 Fix the top two points, leaving approximately 6 mm of the protrusion from the wall. Mount the Panel and secure all mounting hardware.

5.2.2 Recommended Mounting Hardware

Masonry

Drill - 6.5 mm
Rawlplug – Green
Fastener - 8 gauge x 25 mm zinc plated self-tapping screws

Plaster Board

Drill - 8 mm
Fastener - Hollow wall anchors type SWA416 or equivalent

Solid Timber

Drill - 3 mm
Fastener - 8 gauge x 25 mm zinc plated self-tapping screws

5.2.3 Control Panel Wiring

5.2.3.1 AC Power

The 240V AC input is terminated on the mains 3 way terminal block (complete with fuse holder and fuse) and earth stud provided on the rear inside of the enclosure.

5.2.3.2 Field Wiring

All field cabling is to be terminated on the terminals provided on the main control module mounted on the back side of the enclosure as per the standard connection diagram in Figure 20 and the block wiring diagram in Figure 21 for the BARFS-1 with MDH and sprinkler options. The Figure shows the conventional Block Wiring Diagram using 3 core cable for both the smoke and heat alarm zone.

Cables should be terminated as required, ensuring all cables are neat and secured using plastic ties.

5.2.3.3 Battery

Place the Battery on the bottom of enclosure and connect leads provided.

RED POSITIVE
BLACK NEGATIVE

Ensure to turn the mains on before connecting the battery

5.2.3.4 Refit Faceplate

Carefully refit the faceplate to the enclosure by firstly plugging in the 4 way plug to the connector in the main control module, switch on the mains power and connect battery leads to battery. Then with the hardware supplied fit the faceplate to the enclosure.

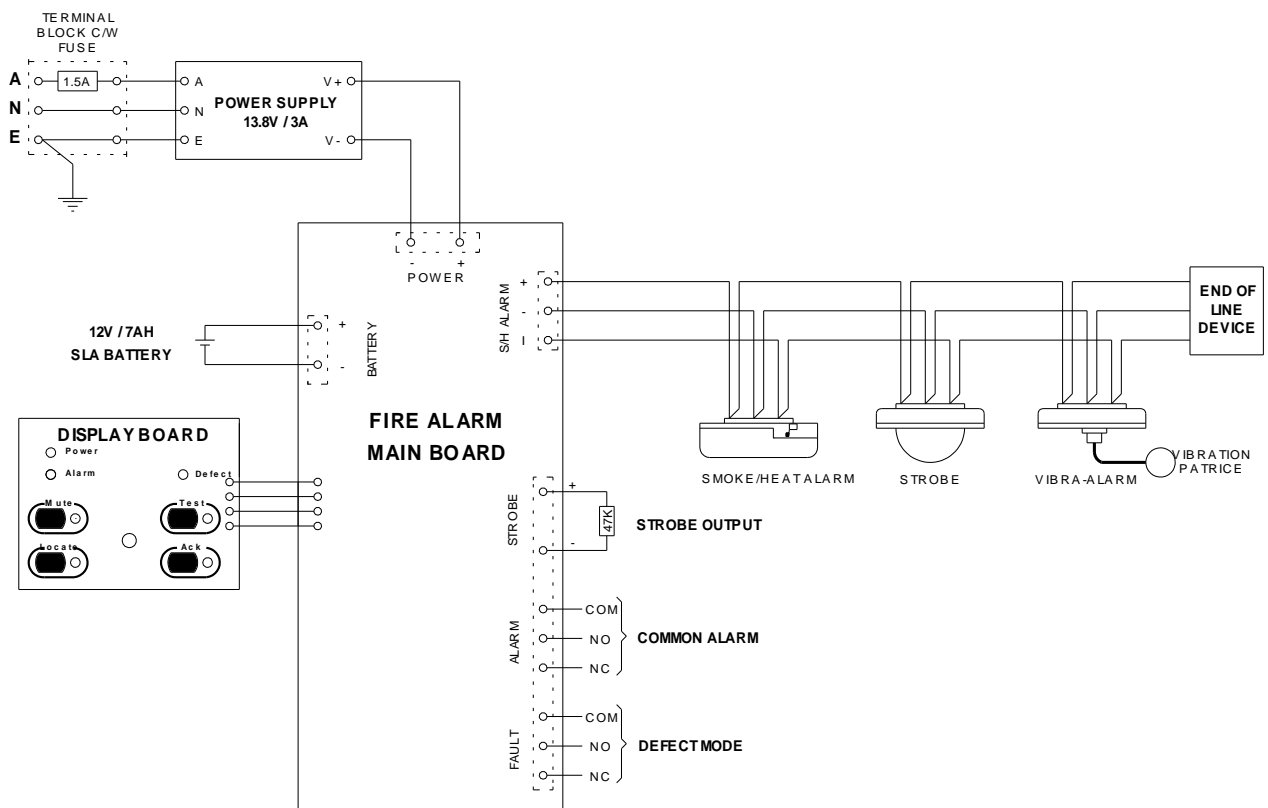


Figure 20 Basic RFS-1 system Block Wiring Diagram

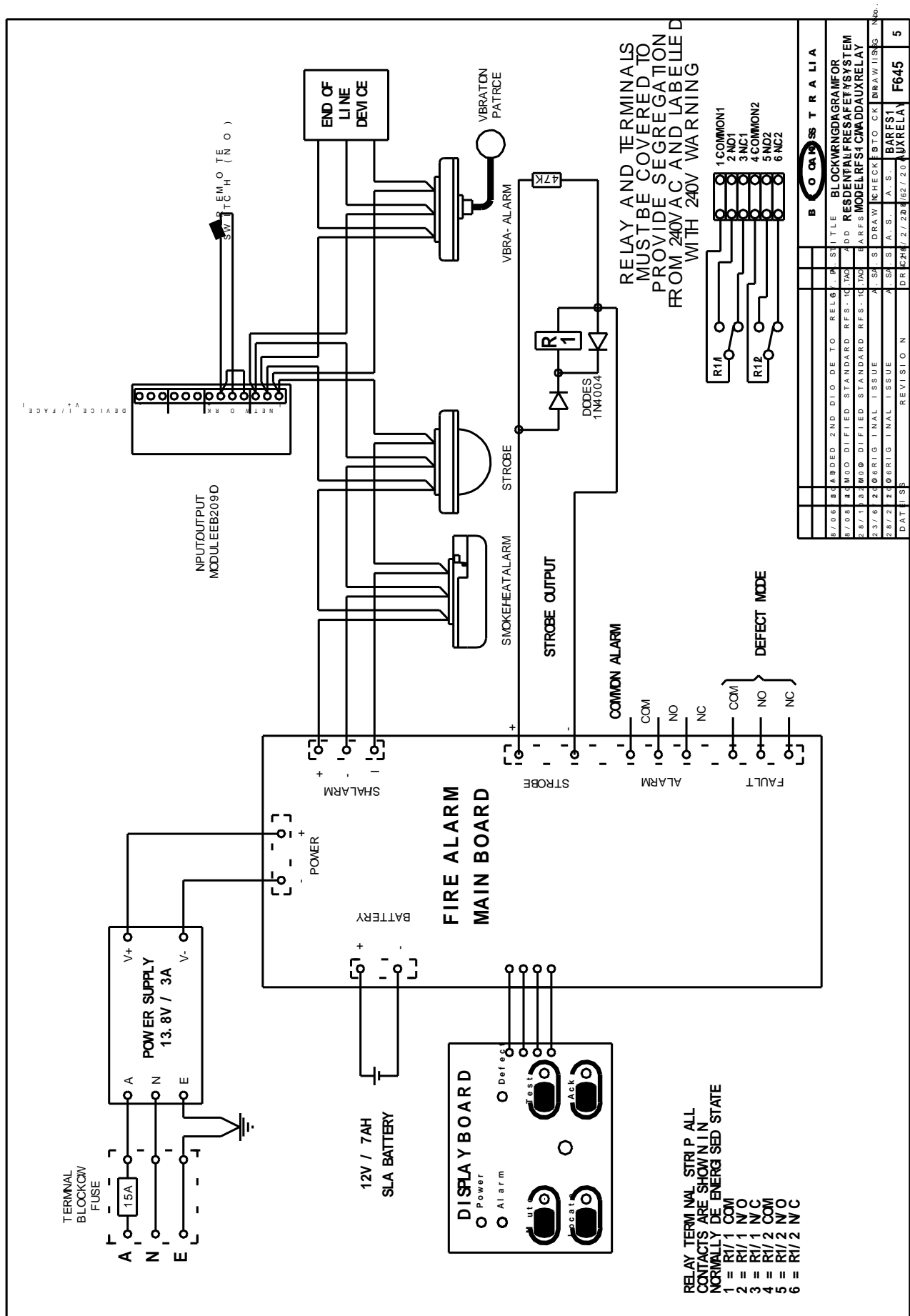


Figure 21 BARFS-1 with MDH option block wiring diagram

6 COMMISSIONING

The fire alarm installer shall ensure that all documentation, logbook, handbook (operators and installers manuals), as-installed drawings, and check list are available at the time of commissioning.

The fire alarm system installer shall rectify any faults in the fire detection and alarm installation, as appropriate, where the results of the commissioning tests are outside the manufacturer's limits.

6.1 As-Installed Diagrams and Installer's Statement

An as-installed diagram of the wiring layout of the complete installation, including the positions of the Smoke/Heat Alarms and any ancillary devices, should be provided before a final inspection is made.

6.2 Commissioning Tests

6.2.1 System Configuration

- | | |
|--------|---|
| Step 1 | Ensure that the control panel and smoke/heat alarm locations are appropriate for the type of site and usage. |
| Step 2 | Check that all smoke / heat alarms used in the system are: <ul style="list-style-type: none">• Listed in this manual• Compatible with the installed zone circuit, particularly that the permitted number of smoke/heat alarms for the zone is not exceeded; and• Installed in an environment for which they are suitable• Check for any sign of contamination due to installation or other building works. |
| Step 3 | Check that all ancillary control functions for the system are: <ul style="list-style-type: none">• listed in this manual• wired as per design specification. |
| Step 4 | Check that the AC mains power supply for the system has been provided in accordance with AS3000. |
| Step 5 | Visually check all field wiring terminations (refer to the block wiring diagram shown in figure 6 of this manual). |
| Step 6 | Ensure the End of Line Device is in correct location (last device or alarm in the zone), visually confirm wiring is correct (refer to figure 6). |
| Step 7 | Check that the battery is fitted. It should be of a suitable type and capacity. |
| Step 8 | Check that as-installed drawings have been correctly marked up and that they are consistent with the installation. |
| Step 9 | Record the results of the commissioning test on the commissioning sheet in this Handbook. |

6.2.2 System operation

Before you apply power to your BARFS-1 system it is important to ensure that you advise any relevant people i.e. tenants or a security / fire monitoring company, that system commissioning is occurring as alarm and defect warnings will be initiated.

6.2.3 Power Supply

Power supply voltage is pre-set at the factory to 13.8V DC.

- Step 1 Insert the fuse holder (with fuse fitted) in the 3 way mains terminal block to switch the mains power ON, the power on LED illuminates green. The panel sounder will sound and the defect LED illuminates red until the battery is fitted. Only the green power ON indicator should stay illuminated green; no other facility or indicator should function.
- Step 2 Remove the fuse holder to switch off the AC supply few times to check that the system will not false alarm.
- Step 3 Connect the battery leads to the battery, the panel sounder will stop sounding and the defect LED distinguishes. Ensure that only the power ON LED is illuminating.

6.2.4 Smoke Heat Alarm Test

- Step 1 Proceed to each smoke or heat alarm in turn: check that the green light on the mounting plate is 'on'.
- Step 2 Press the test button for up to 10 seconds to ensure the sensor chamber, electronics and sounder are working. A red light on the cover will flash while horn is sounding. The alarm will stop when the button is released.

Where smoke/heat alarms are interconnected when pressing the test button of any smoke or heat alarm all alarms should sound within about 5 seconds of the first alarm sounding. The red alarm light on the first unit only will flash once a second and the alarm LED on the control panel BARFS-1 will illuminate.

Pressing the test button simulates the effect of smoke or heat during a real fire and is the best way to ensure the Alarm is operating correctly.

WARNING: DO NOT TEST WITH FLAME. This will damage both the Alarm and the house.

We do not recommend testing with smoke or heat as the results can be misleading unless special apparatus is used.

6.2.5 Alarm Output Test

- Step 1 Ensure alarm outputs are not isolated
- Step 2 Proceed to any smoke or heat alarm (only heat alarm if priority 1 selected) and press the test button, within 5 seconds the alarm outputs should activate.
- Step 3 Check for the operation of any ancillary devices i.e. strobe etc connected to the alarm output.
- Step 4 Check that the remote indicator (if fitted) illuminates – Red LED
(Note: this will only illuminate while the alarm sounds)

6.2.6 Alarm Test Switch Test

- Step 1 Press 'Test' switch, the sounders in all smoke and heat alarms will sound, check all smoke and heat alarms are sounding.
- Step 2 Press 'Test' switch again to cancel the alarm test

6.2.7 Alarm Locate Switch

- Step 1 Spray some smoke of a smoke tester, all smoke and heat alarms sound for approximately 5 minutes. On the control panel, the 'Locate' LED in the switch body will be flashing.
- Step 2 Press the 'Locate' switch, all smoke and heat alarms stop sounding and the locate LED will turn on steady.
- Step 3 Ensure only the active (on test) smoke alarm is sounding

Note: To cancel the locate function, press the locate button for about 4 seconds and then release.

6.2.8 Mute Switch

- Step 1 Spray some smoke of a smoke tester, all smoke and heat alarms sound. On the control panel, the 'Locate' LED in the switch body will be flashing.
- Step 2 Press the 'Locate' switch, all smoke and heat alarms stop sounding and the locate LED will turn on steady.
- Step 3 Press the 'Mute' button, the active smoke alarm stops sounding, the locate LED distinguishes and the mute LED illuminates.

Note: To cancel the mute function, press the mute button for about 4 seconds and then release. The mute function will be active for approximately 10 minutes, when selected.

6.2.9 Defect Mode Test

- Step 1 On the main control board, disconnect any incoming wire from smoke/heat alarms (Positive, Negative, Interconnect).
- Step 2 Ensure the following:
1. Defect amber LED illuminates
 2. The panel sounder will sound continuously
 3. Defect Mode output active
- Step 3 Activate the mute button, the panel sounder silences
- Step 4 Check for the operation of any ancillary devices i.e. strobe etc connected to the defect output.
- Step 5 Restore the wire, amber Defect LED extinguishes.
- Step 6 Check the Panel sounder silences and defect output deactivates.

6.2.10 End of Line (EOL) Test

- Step 1 Precede to the smoke/heat alarm containing the end of line (EOL) device, this is the last smoke/heat alarm on the circuit. For location see the as installed diagrams.
- Step 2 Remove any of the three wires of the end of line (EOL) device; the panel should now be in defect mode as per “Defect Mode Test”
- Step 3 Restore the EOL, the defect mode is cancelled.

If you are unsure of any test results please contact your nearest Brooks office or distributor.

7 LOG BOOK

A log should be kept by the person on-site responsible for the BARFS-1 system. The responsible person's name and contact details should be kept at the BARFS-1 control panel. A separate section of this manual provides an example for the recording of all alarm/service/maintenance details.

8 MAINTENANCE

For the continuous reliability of the system, provision should be made for regular inspection, testing and preventative maintenance of the installation. AS1851 provides guidance.

A properly designed and installed detection system offers effective life and property protection; however, for ongoing reliability the system must be maintained at its peak performance. A poorly maintained system can lead to nuisance alarms or complete system failure. Under these conditions the system will not perform to the level of protection needed.

1. It is recommended that the owner test each smoke/heat alarm every month including the operation of any ancillary device.
2. It is also recommended that each 12 months a full system test be performed. Battery and power supply voltages should be checked and adjusted, if necessary.

8.1 Cleaning your Alarm

Clean your Alarm regularly, particularly in dusty areas. Use the narrow nozzle attachment of your vacuum cleaner to remove dust, insects and cobwebs from the sides and cover slots where the smoke or heat enters. To clean the cover, wipe with a damp cloth. Dry cover thoroughly with a lint free cloth.

WARNING: Do not paint your Alarm.

Other than the cleaning described above, no other customer servicing of this product is required. Repairs, when needed, must be performed by the manufacturer. All Alarms are prone to dust and insect ingress which can cause false alarms or failure to alarm.

The latest design, materials and manufacturing techniques have been used in the construction of our Alarms to minimise the effects of contamination. However it is impossible to completely eliminate the effect of dust and insect contamination, and therefore, to prolong the life of the Alarm you must ensure that it is kept clean so that excess dust does not build up. Any insects or cobwebs in the vicinity of the Alarm should be promptly removed.

In certain circumstances even with regular cleaning, contamination can build up in the smoke sensing chamber causing the alarm to sound or fail. If this happens the alarm must be returned to Brooks for servicing or replacement. Contamination is beyond our control; it is totally unpredictable and is considered normal wear and tear. For this reason, contamination is not covered by the guarantee and a charge is made for servicing such units.

If you experience persistent false alarms, in particular locations, due to contamination of the smoke chamber you should review technology chosen for that location.

8.2 Getting your Alarm Serviced

If your Alarm fails to work after you have carefully read all the instructions, checked the unit has been installed correctly, and is receiving panel power contact Customer Assistance at the address given at the end of this leaflet. If it needs to be returned for repair or replacement put it in a padded box and send it to "Customer Assistance and Information" at the nearest address given on the Alarm or in this leaflet. Do not snap on the mounting plate as this connects the battery and the unit may beep or alarm in the post. State the nature of the fault, where the Alarm was purchased and the date of purchase.

9 TROUBLE SHOOTING

In case of nuisance alarms, the following checks may help:

1. Frequent Nuisance Alarms Occur:
 - A. Close kitchen/bathroom door when in use.
 - B. Ensure that the alarm is sited at least 6m away from sources of fumes.
 - C. Contamination from insects, paint or paint fumes may have occurred. Clean the alarm as described in this booklet.
 - D. If the problem persists, re-sitting of the unit should be considered. Alternatively, replace the unit with an Optical unit, assuming that the problem is with an Ionisation type alarm.
2. Alarm Sounds for no Apparent Reason:
 - A. Identify the alarm source, press alarm "LOCATE" at the control panel. On interconnected units, the red light on the smoke/heat alarm will flash rapidly **only** on the unit which is the source of the alarm.
 - B. Check for fumes; steam etc. from the kitchen or bathroom. Paint and other fumes can cause nuisance alarms.
 - C. If required, press the "MUTE" button to silence all the Smoke/Heat Alarm for 10 minutes.
 - D. If alarm does not stop, remove the unit (Only remove alarm with red light flashing, the others are probably satisfactory).

Note: Removing the unit will activate the defect mode.

3. Low Battery Beeps:

If the battery in the control panel becomes depleted the sounders in the smoke/heat alarms will beep once every 40 seconds. Check the mains supply to the panel and if missing restore as a matter of urgency

Other Beeps:

- If the panel is providing power and cleaning unit has not stopped beeps, a fault may exist. Replace the unit
- The Ionisation/Heat units give two beeps 10 minutes after the test/hush button is pressed.
- If the Optical units beep without the red light flashing at the same time, the chamber is defective. Clean the chamber.

10 SPARE PARTS

To obtain any of the spare parts shown or equipment service, please contact your nearest Brooks distributor or Brooks Australia office

Control Panel

SUB870	BARFS-1 Main Control Module PCB.
SUB871	BARFS-1 Operator Module PCB.
SUB872	BARFS-1 Smoke/Heat Alarm Interface PCB (for EIB201I, 204T, 206P).
SUB873	BARFS-1 Input / Output Relay Module PCB (for EIB209IO).
SUB874	BARFS-1 End of Line (EOL) Device.

Field Devices

EIB 204T Heat alarm (58°C - 64°C)
EIB 205M Manual Call Point
EIB 206P Photoelectric Smoke Alarm
EIB 207V Vibration Patrice
EIB 208ST1 High intensity Strobe module
EIB 208ST2 Strobe module
EIB 209IO Input/output module.

11 BATTERY CAPACITY CALCULATION

Quiescent Current Iq:

Panel 33.6 mA

With only End of Line Device connected

EIB204T	_____	x 8mA	_____mA
EIB205M	_____	x 1.3mA	_____mA
EIB206P	_____	x 8mA	_____mA
EIB207V	_____	x 1.3mA	_____mA
EIB208ST1	_____	x 1.3mA	_____mA
EIB208ST1	_____	x 1.3mA	_____mA
EIB209IO	_____	x 1.3mA	_____mA
TOTAL IQ			_____mA

Standby duration T1 _____ Hrs

Alarm Current Ia:

Panel 100 mA

With only End of Line Devices

EIB204T	_____	x 30mA	_____mA
EIB205M	_____	x 30mA	_____mA
EIB206P	_____	x 30mA	_____mA
EIB207V	_____	x 100mA	_____mA
EIB208ST1	_____	x 800mA	_____mA
EIB208ST2	_____	x 400mA	_____mA
EIB209IO	_____	x 45mA	_____mA

Total Ancillary Loads (Max 1000mA) _____mA

TOTAL IA _____

Alarm Duration T2 _____mins.

Power supply = Ia + 300mA (where 300mA is the battery charge current)

Battery Capacity = $\{[(I_q \times T_1) + (I_a \times T_2)/60] \times 1.2\}/1000$

= AH

12 INSTALLERS STATEMENT (BARFS-1 SYSTEM)

Page 1 of 2

1. Name of Building _____
2. Situated at _____
3. Is the system monitored YES/NO
If YES, by whom _____
4. Name of nearest Fire Brigade Station _____
Phone _____
5. Type or Model No. BARFS-1 Serial No. _____
6. Number of smoke alarms connected _____
7. Number of heat alarms connected _____
7. Number of Ancillary Devices connected _____
8. Describe any ancillary equipment installed and connected to the BARFS-1 panel.

9. Main Supply Voltage _____
10. Battery Type and Capacity _____
11. Nominal Battery Voltage 13.7Vdc _____
12. Maintenance Agreement held by _____
13. Has Log Book been supplied YES/NO _____
14. Have as-installed drawings been supplied YES/NO _____

INSTALLERS STATEMENT (BARFS-1 SYSTEM)

Page 2 of 2

Additional Comments

[illegible]

13 COMMISSIONING REPORT (BARFS-1SYSTEM)

SYSTEM CONFIGURATION

- | | | |
|-------------------------|------------------------------------|---|
| • As installed Diagrams | | Correct/Incorrect |
| • Log Book Details | | |
| • Smoke Alarms | Layout
Number
Type Selection | Correct/Incorrect
Correct/Incorrect
Correct/Incorrect |
| • Heat Alarms | Layout
Number
Type Selection | Correct/Incorrect
Correct/Incorrect
Correct/Incorrect |
| • Ancillary Devices | Layout
Number
Type Selection | Correct/Incorrect
Correct/Incorrect
Correct/Incorrect |
| • Panel Position | _____ | |

IF INCORRECT, COMMENT _____

CONTROL PANEL

- | | |
|----------------------------|-------------------|
| • Power Supply Test | Correct/Incorrect |
| • Alarm Output Test | Correct/Incorrect |
| • Defect Mode Test | Correct/Incorrect |
| • Alarm Test Switch Test | Correct/Incorrect |
| • Locate Switch Test | Correct/Incorrect |
| • Mute Switch Test | Correct/Incorrect |
| • Battery Voltage | Correct/Incorrect |
| • Mains Connection | Correct/Incorrect |
| • Field Wiring Termination | Correct/Incorrect |

IF INCORRECT, COMMENT _____



FIELD DEVICES

- | | |
|---------------------------------------|-------------------|
| • End of Line Defect Test | Correct/Incorrect |
| • Smoke Alarms All Operational | Correct/Incorrect |
| • Heat Alarms All Operational | Correct/Incorrect |
| • Ancillary Equipment All Operational | Correct/Incorrect |

IF INCORRECT, COMMENT

General Observations or Comments

14 PRODUCT GUARANTEE

Brooks Australia Pty Ltd guarantees the BARFS-1 control panel for a period of either fifteen (15) months from the date of purchase or twelve (12) months from the date of installation, whichever is the lesser. Brooks Australia Pty Ltd. Guarantees the smoke/heat Alarms for five years from date of purchase. If a product has any defect due to faulty workmanship or material it will upon return to Brooks be repaired or replaced free of charge.

If the control panel or any smoke/heat alarm should become defective within the guarantee period, it must be returned to Brooks Australia, with proof of purchase, carefully packaged, with the problem clearly stated. Brooks shall at its discretion repair or replace the fault unit. If returning the complete product all accessories and documentation **MUST** be returned.

This guarantee only applies to normal conditions of use and service, and does not cover damage caused to the product or its components as a resulting from accident, neglect, misuse, unauthorized dismantling, or contamination howsoever caused, incorrect installation, careless handling or where repairs have been made or attempted by others. On site warranty repairs are not part of this guarantee. This guarantee excludes incidental and consequential damage. This guarantee does not cover costs associated with the removal and/or installation of alarms.

No other guarantees written or verbal are authorised to be made on behalf of Brooks. All other conditions and warranties whether expressed or implied are, to the extent permitted by law, hereby excluded.

As Brooks has no control over the system's design, installation to the relevant Australian Standard or maintenance, the Company and its agents take no responsibility for any damage, financial loss or injury caused to any equipment, property or persons resulting from the use of the BARFS-1 SYSTEM

Do not interfere with the Alarm or attempt to tamper with it. This will invalidate the guarantee, but more importantly may expose the user to shock or fire hazards. This guarantee is in addition to your statutory rights as a consumer.

15 Revision history

Issue	Date	Description	Written By	Checked By
1	6/4/2007	First revision	O.K	A.S.
2	17/7/2008	Minor update	O.K.	A.S.
2.1	26/3/2015	Update to new Brooks manual format & add block wiring diagram (figure 21)		A.S.



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