Instruction Manual
FAC20
Rev 0

FIRE ALARM CONTROLLER
FAC20

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1   Introduction

Read and retain carefully for as long as the product is being used. It contains vital information on the operation and installation of your controller FAC20. The leaflet should be regarded as part of the product.

If you are just installing the unit, the manual MUST be given to the homeowner and to any subsequent user.

1.1   Features

- Remote test, locate and silence hardwired interconnected smoke/heat/CO Alarms

- Microprocessor based unit.

- Requires only 3 wires: Active, Neutral and interconnect utilising the standard easi-fit base supplied with the mains power Alarms.

- Flush or surface mount.

- Supervised opto-isolated input, triggered by voltage free contact to externally drive the sounders of the interconnected Alarms.

- Connected in a centralised location to any Alarm in the system, not required to be installed as the first device in the interconnected circuit.

- Fully concealed printed circuit board, only plug-in terminals are accessible.

- Conforms to AS/NZS 62368.1:2018.

1.2   Product Description

Smoke Alarms are designed to detect smoke particles in the air and may cause false alarms. However, other airborne particles, i.e. steam, cooking fumes, dust, etc. can also cause smoke Alarms to generate false alarms. With interconnected smoke/heat/CO Alarms, when one Alarm senses smoke / heat /CO, all Alarms will sound. The FAC20 is a three button Alarm Controller intended to provide the occupant with a full control over a hardwired interconnected Alarm system.

Alarm Controller buttons functions:

- **Locate**: silences all Alarms in a hardwired interconnected system except the Alarm sensing smoke, heat or CO.

- **Silence**: when the source of the active Alarm is located, pressing the "Silence" button will silence active Alarm(s) in the system for 10 minutes same as the HUSH feature in the Smoke Alarm. New alarm from non-active Alarms will activate all Alarms including the one in silence mode.

- **Test**: provides an easy method to test all hardwired interconnected Alarms.

The FAC20 also provides an isolated supervised input to trigger the sounders in all interconnected Alarms from an external N/O contact e.g. sprinkler flow switch input, panic input, etc. The input circuit supervises for open circuit fault condition whilst short circuit will behave as a triggered condition and activate all the interconnected Alarms.

The FAC20 is not a battery backed device. It is not functional without mains voltage supply.

Up to 2 x FAC20 can be connected in the same interconnected Alarm circuit, provided all the Alarms are of EIB3000 series. For EIB140RC series and EIB160e series, only one controller can be used for each interconnected circuit.

1.3 Overview

The front display / control and rear view of FAC20 are shown in the Figure 1 below.

Front View   Rear View
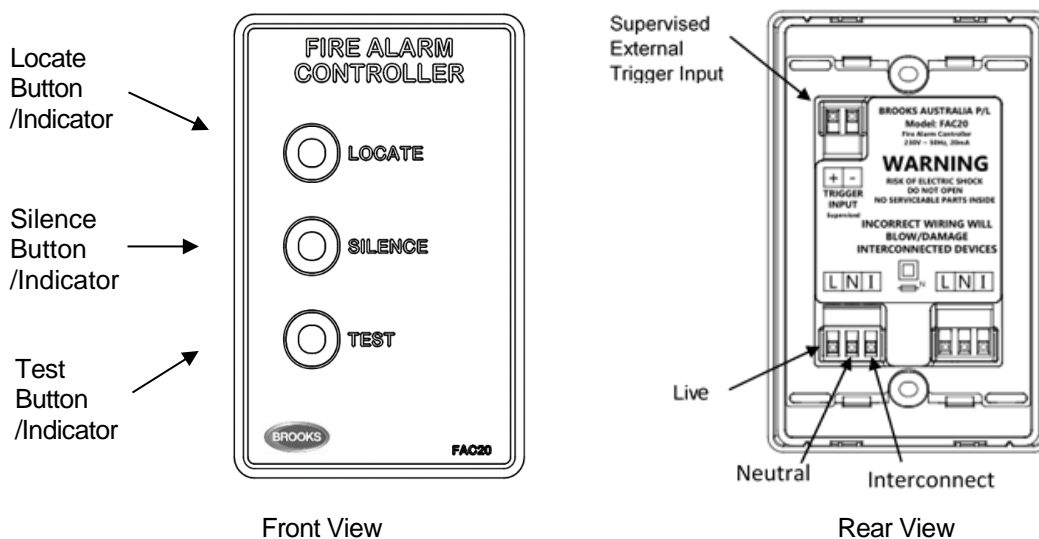
Figure 1 Fire Alarm Controller front and rear view

1.4 Compatible Smoke/Heat/CO Alarms

The FAC20 can be used with Brooks 230VAC hardwire interconnectable range of smoke / heat / CO Alarms:

EIB3000 Series	EIB3016, EIB3024, EIB3014, EIB3028, EIB3018
EIB140RC Series	EIB146RC, EIB144RC, EIB141RC
EIB160e Series	EIB166e, EIB161e

1.5 Specifications

On Board Power Supply	230V AC, 50Hz, 20mA
Operating Temperature	-10 to +40 degree C
Dimensions	117.5H x 75W x 30D mm, see Figure 2
Interconnection	Up to 12 interconnected devices
Trigger Input	• 4.7K ohm supervision resistor • Up to 100 meter with 1.5 mm² cable • Short circuit triggers alarm • Open circuit triggers fault
Fault Indication	• External trigger Input wiring Open Circuit • Memory Fault
Mounting	Flush or Wall mounted, Wall box, GPO box
Approvals	AS/NZS 62368.1:2018

The rear and side view of the controller are shown in
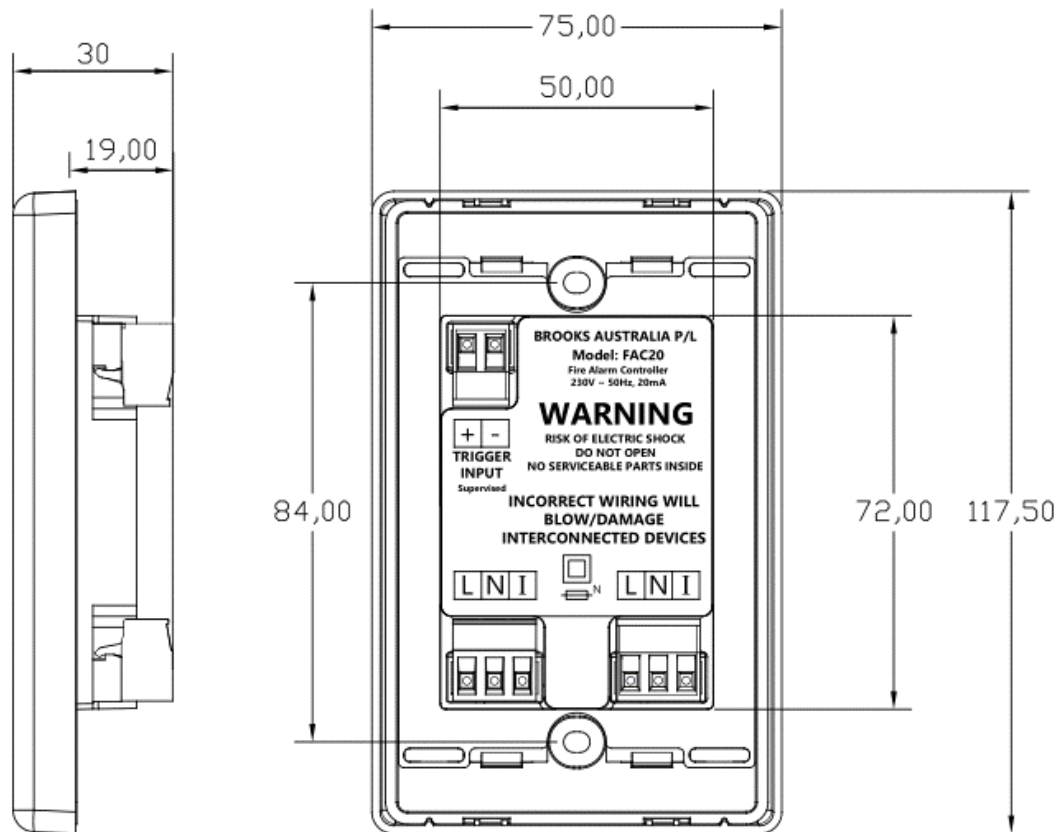
Figure 2 below.

Figure 2 Dimensions of FAC20

2 Installation and Wiring

2.1 Important Safety Instructions

The following warning must be considered to install the controller:

- The FAC20 as a mains operated fixed wiring device, should be installed and interconnected by a licensed electrician in accordance with AS3000. Failure to install this device or Alarms correctly may expose the user to shock or fire hazards and damage the product and other interconnected devices.

- The FAC20 is designed to be permanently mounted and connected to the Alarms mains power circuit.

- The FAC20 is designed to suit a standard wall box or can be flush mounted on a gyprock wall. The controller must not be exposed to dripping or splashing.

- Mains power must be true sinewave, when alternative power source is used e.g. inverters of solar power, ensure the total harmonic distortion (THD) is less than 5%. If in doubt please, check with the manufacturer of the inverter.

- The controller or Alarms must not be powered from a light dimmer circuit.

- Do not use high voltage insulation tester (megger) on the controller and Alarms connected. Remove the plugs and unclip the Alarms before the test.

- The FAC20 and Alarms must be permanently powered, do not use power circuit that can be turned off by a switch.

- Do not interconnect the controller to any non-compatible Alarms (apart from those listed above) or to any other device produced by another manufacturer. Doing so may risk damage and malfunction to the interconnected devices and could result in a shock or fire hazard.

- Ensure the FAC20 mains power is derived from the Alarms interconnected power circuit which should be derived from the public electricity supply to the dwelling. An appropriate disconnect device (e.g. Circuit Breaker) shall be provided to the circuit powering the FAC20 and the Alarms, as part of the building installation.

- Mains must be turned off before installing / replacing the FAC20 or removing the front cover.

- Do not supply mains power to the Alarms or the Controller from two different switch boards.

2.2 Mounting FAC20

Select a centralised location in the dwelling to mount the controller. Ensure FAC20 is mounted at an accessible point on the wall, approximately 1.4 metres from the floor level.

Consider an alternative location if the controller is required to be operated by a disabled person.

To mount the controller, remove the front cover as shown in Figure 3 below. Use the two mounting holes and screws to secure the wall plate into the wall box or the gyprock wall. Then reinstall the front cover.

Note: the controller can be mounted and connected at any point of the interconnected fire alarm system circuit i.e., not required to be the first device in the circuit.

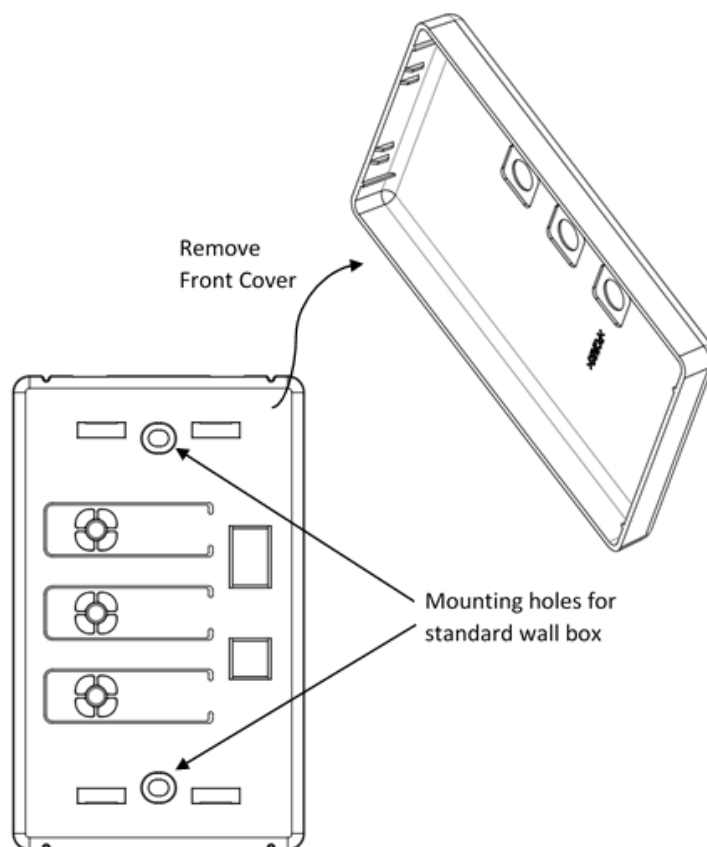Wiring and termination must precede the final mounting on the wall.

Figure 3 FAC20 mounting

2.3 Wiring and Termination

The procedures to connect FAC20 to a mains power Alarm system as follow:

1. Turn off the mains power to all the Alarms in the system before commencing any wiring work.

2. Select the nearest Alarm to FAC20 and run active (L), neutral (N) and interconnect (I) to where FAC20 is mounted.

3. Remove the first plug in FAC20 and terminate the incoming three wires L, N & I into the plug as shown in Figure 4, page 7.

4. The second plug is normally used to connect FAC20 to the next Alarm in the circuit.

5. If the external clean contact is required to activate the sounders of the Alarms e.g. sprinkler system N/O contact, Panic input, etc, connect the N/O contact to the "Trigger Input" terminal on FAC20. Ensure to connect the end of line resistor 4.7K across the contact of the external device to supervise the wiring.

6. Connect all the plugs to the sockets in FAC20.

7. Mount the controller on the wall then mount the cover.

Warning: Mixing (or leaving unattached) the Live and Neutral connections when interconnecting Alarms/Controllers may damage all the interconnected devices - ensure that the same colour wires are used throughout the premises for Live, Neutral and Interconnect wires.

We strongly recommend that you check for the following before connecting the FAC20:

- check for Live and Neutral using a two probe tester.

- check for Live using a neon tester.

- check that the Interconnect wire is NOT connected to Live, Neutral or Earth. Do not use an Earth wire for the Interconnect line.

The interconnect wire must be treated as a mains powered conductor. It should be suitably rated and double insulated. Earthing of the FAC20 controller is not required.

Up to 2 x FAC20 can be connected in the same Alarm circuit, provided all the alarms are EIB3000 series.

A maximum of 12 Fire / Smoke / Heat / CO Alarms and accessory devices (e.g. FAC20) can be interconnected in a Brooks Alarm system.
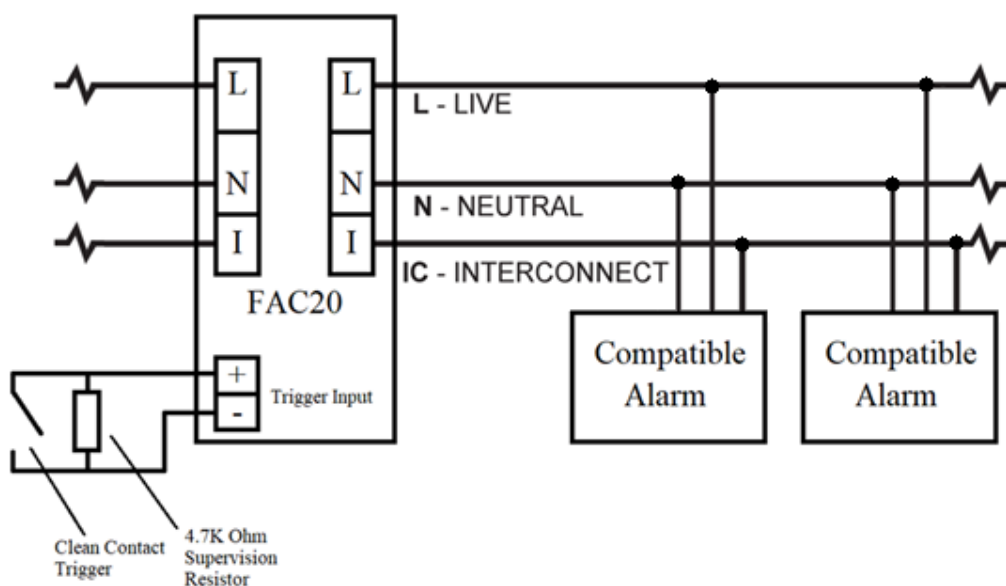
Figure 4 FAC20 connection diagram

3   Operation

Brooks recommend frequent testing of the system to ensure its continued and safe operation.

The following are guidelines for testing the alarm controller:

- After the system is installed.

- Once monthly thereafter.

- After prolonged absence from the dwelling (e.g. after holiday period).

- After repair or servicing of any of the system's elements or household electrical works.

3.1   Testing the Alarm System "TEST"

Note: The "TEST" button can be used to test the interconnected Alarms when the system is in idle state i.e. "LOCATE" and "SILENCE" are not active.

The following procedures are used to test the fire Alarm system

1. Press the "TEST" button, the "TEST" LED will illuminate steady RED as shown in Figure 5 below and all Alarms will sound.

2. Press and hold "TEST" button for approximately 3 seconds) to terminate the test, the "TEST" LED will extinguish and all the Alarms in the system will stop sounding.
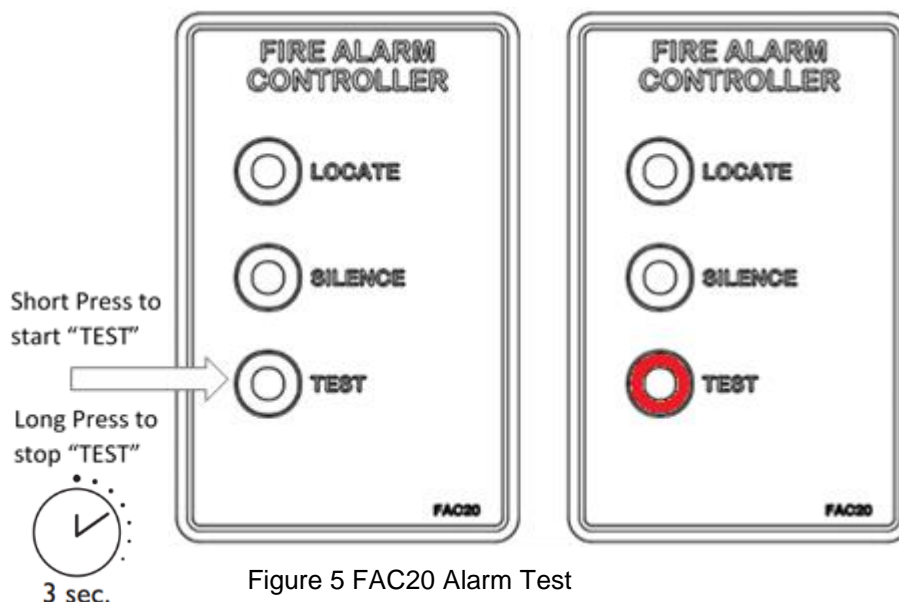

Figure 5 FAC20 Alarm Test

If one of the Alarms has activated whilst the "TEST" button is active, the Alarms will continue sounding until the "TEST" button is pressed for 3 seconds. In this case, the Alarms will remain sounding but the "TEST' light extinguishes and "LOCATE" light flashes red as shown in Figure 6 to prompt the occupant to locate the source of alarm.

If there is a fire, immediately evacuate the premises and contact the fire brigade.

When all the Alarms sound and the source of alarm is not obvious, check the indicators on the FAC20, three status indications may be shown:

1. If the "LOCATE" LED is flashing RED as shown in Figure 6 below, the source of alarm is generated from Smoke/Heat/CO Alarm.

Figure 6 FAC20 Alarm Locate

2. If the "TEST" LED is flashing RED, it means the source of alarm is from the external alarm trigger e.g. sprinkler, panic, etc. connected to this FAC20. The FAC20 cannot control the alarm condition generated by external input.

3. If ALL three LEDs are flashing RED as shown in Figure 7 below, the system is being controlled by the second FAC20 (if additional FAC20 is used in the circuit).
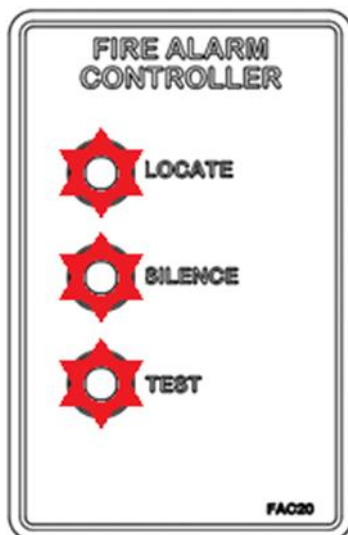

Figure 7 Second FAC20 indication

3.2   Locate the source Alarm(s)

When one Alarm activates, all the Alarms in the system will sound and the "LOCATE" LED will be flashing red as shown in Figure 8.

Press the "LOCATE" button to locate the source of fire signal, the LED will change to steady red as shown in Figure 8, all the Alarms in the system will be silenced except the active Alarm(s). The "SILENCE" LED will flash RED to prompt the occupant to press the "SILENCE" button.

To cancel the locate function, press the "LOCATE" button for approximately 3 seconds.
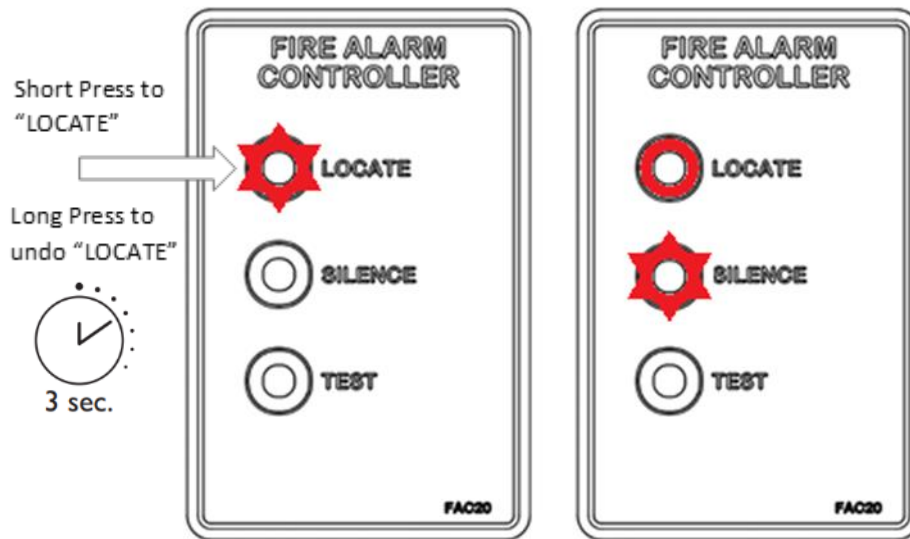
Figure 8 Locating alarm source

3.3 Silence the located Alarm(s)

If you are satisfied there is no fire but the Smoke/ Heat / CO Alarm is still continuing to alarm you may now silence the system.

Press the "SILENCE" button as shown in Figure 9 below, after a delay, the Alarm(s) will stop sounding.

The "SILENCE" LED will turn on RED for 10 minutes to indicate the source Alarm(s) will be silenced for 10 minutes.

The silence condition of the Alarms and FAC20 will timeout automatically after the 10 minutes. If any alarm re-activates, the sequence will be repeated. Check the Alarms and replace if required.
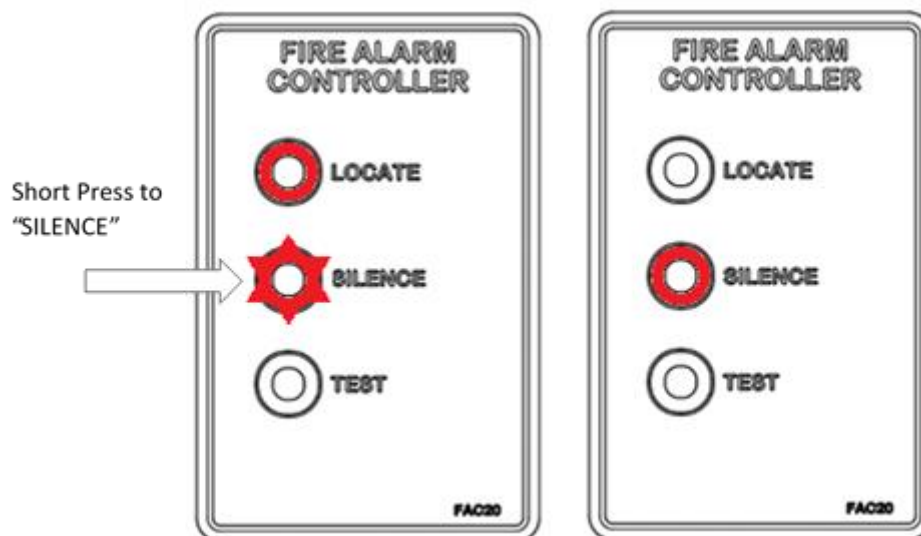

Figure 9 Silence indication of active Alarm

3.4   Fault Indications

Two possible fault indications may be shown on the FAC20

1. If the "TEST" LED illuminates steady ON yellow as shown in Figure 10 below, an open-circuit fault is detected on the External Trigger Input wiring to the FAC20. Contact a licensed electrician to check the wiring.

Note: The monitoring resistor is 4.7K ohm.

Figure 10 Wiring fault of the external trigger

2. If the "SILENCE" LED is steady ON yellow Figure 11 below, a firmware corruption is detected in the FAC20. The unit needs to be replaced.

Figure 11 Firmware fault of FAC20

4   Guarantee

If the product has any defect due to faulty workmanship or material it is to be returned to Brooks freight paid. Brooks will, at its sole discretion, repair or replace the item free of charge.

On returning the complete product, proof of purchase will be required, all accessories MUST be returned.

This guarantee does not cover damage caused to the product or its components as a result of incorrect installation, accident, neglect, misuse or unauthorised dismantling howsoever caused, careless handling or where repairs have been made or attempted by others.

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, consequential loss or injury caused to any equipment, property or persons resulting from the use of the fire alarm controller FAC20.

Brooks guarantees the controller for a period of 15 month from the date of purchase the equipment or 12 months from the date of operation.

5 Revision history

Issue	Date	Description	Written By	Checked By
0	28/7/21	Initial revision	BC	AS/HN

NSW - Head Office

P.O. Box 7050 Silverwater NSW 1811

4 Pike Street Rydalmere NSW 2116

Ph: 02 9684 1466

Website: www.Brooks.com.au

VIC

9/71 Victoria Crescent, Abbotsford VIC 3067

Ph: 03 9879 5294

SA

P.O. Box 101 Woodville SA 5011

729A Port Road, Woodville, SA 5011

Ph: 08 8347 0000

QLD

P.O. Box 511 Archerfield QLD 4108

2/49 Boyland Ave Coopers Plains, QLD 4108

Ph: 07 3373 8222

WA

PO Box 2114

Midland WA 6936

Ph: (08) 6454 5900

Or National Australian Sales Number: 1300 78 FIRE (3473)

For the cost of local call.