INERTIA-2464/64

Fire Indicator Panel

TECHNICAL & PROGRAMMING MANUAL

Revision 1.07e

A P P R O V A L S
Australian Standard AS1603.4 1987
Australian SSL Approval No 215
Australian SSL Quality Accredited
Hong Kong Fire Services Dept Approved.
PROC Standard GB4717-93
C-Tick Approval No. N1336

Serial No._____
Date of Manufacture_____

NOTIFIER®
INERTIA
F I R E S Y S T E M S

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COMPATIBLE DETECTORS

Make	Model	Type	Model Number	
Apollo	Thermal	Type A	Series 60	
Apollo	Thermal	Type B	Series 60	
Apollo	Thermal	Type C	Series 60	
Apollo	Thermal	Type D	Series 60	
Apollo	Smoke	Ionisation	Series 60	
Apollo	Smoke	Photo Optical	Series 60	
Hochiki	Thermal	Type A	DCD-A	(DCC-A)
Hochiki	Thermal	Type B	DFJ-60B	(DFE-60B)
Hochiki	Thermal	Type C	DCD-C	(DCC-C)
Hochiki	Thermal	Type D	FDJ-90D	(DFE-90D)
Hochiki	Thermal Cool Room	Type B sealed	DFG-60BLKJ	
Hochiki	Smoke	Ionisation	SIJ-ASN	(SIH-AM)
Hochiki	Smoke	Photo Optical	SLR-AS	(SLK-A)
System Sensor	Thermal	Type A	5451AUS	
System Sensor	Thermal	Type B	4451AUS	
System Sensor	Smoke	Photo-Optical	2151AUS	
System Sensor	Smoke	Ionisation	1151AUS	
Olsen	Thermal	Type A	T56B-T6A	
Olsen	Thermal	Type B	T56B-T6B	
Olsen	Thermal	Type C	T56B-T6C	
Olsen	Thermal	Type D	T56B-TSD	
Olsen	Smoke	Ionisation	C24B	
Olsen	Smoke	Photo Optical	P24B	
Panelect	Thermal	Type A	PFS-A	
Panelect	Thermal	Type B	PFS-B	
Panelect	Thermal	Type C	PFS-C	
Panelect	Thermal	Type D	PFS-D	
Panelect	Smoke	Ionisation	PFS-I	
Panelect	Smoke	Photo Optical	PFS-P	
IEI	VESDA E700	CONTACT DEVICE		
IEI	VESDA E70D	CONTACT DEVICE		

Please contact INERTIA Fire Systems for any additional detectors.

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Section One

TECHNICAL MANUAL

SPECIFICATION

Cabinet	Zinc Sealed Steel 1.6mm Powder Coated Hinged Inner Door Hinged Outer Door
Outside Dimensions	2464/24 750mm H x 390mm W x 160mm D 2464/32>64 750mm H x 780mm W x 160mm D Battery Box 280mm H x 390mm W x 160mm D
AC Operational Voltage	240 VAC 50Hz $\pm$ 10% Australian Version 200 or 220 VAC 50Hz $\pm$ 10% Hong Kong Version 220 VAC 50Hz $\pm$ 10% Chinese Version
Internal Power Supplies	24 VDC 3.0AMP in 8, 16, 24, 32, 40, 48, 56, 64 zones 5 VDC 2.0AMP
Microprocessor	80C52
Memory Type	Non-volatile E2ROM
Liquid Crystal Display	2 Lines x 16 Characters LED Backlit
Fuses	F1: Door Holder 3AG 3A F2: AC Input M205 6.3A F3: AUX & Mimic 3AG 1A F4: ACF 3AG 1A F5: Bell 3AG 1A
E.O.L Resistor On AZF's	4K7 Ohms

SYSTEM EXPANSION

Zones	Qty	Hardware Required	Product Code
24	1	Main Control board	PCB-800
	1	Main Termination board	PCB-801L
	2	Zone Expansion board	PCB-804G
	2	Zone Indicator board	PCB-802
32	1	Main Control board	PCB-800
	1	Main Termination board	PCB-801L
	3	Zone Expansion board	PCB-804G
	3	Zone Indicator board	PCB-802
40	1	Main Control board	PCB-800
	1	Main Termination board	PCB-801L
	4	Zone Expansion board	PCB-804G
	4	Zone Indicator board	PCB-802
48	1	Main Control board	PCB-800
	1	Main Termination board	PCB-801L
	5	Zone Expansion board	PCB-804G
	5	Zone Indicator board	PCB-802
56	1	Main Control board	PCB-800
	1	Main Termination board	PCB-801L
	6	Zone Expansion board	PCB-804G
	6	Zone Indicator board	PCB-802
64	1	Main Control board	PCB-800
	1	Main Termination board	PCB-801L
	7	Zone Expansion board	PCB-804G
	7	Zone Indicator board	PCB-802

Additional relay outputs:

Relays	Qty	Hardware Required	Product Code
8	1	Relay board containing 8 relays	PCB-803
16	2	Relay board containing 8 relays	PCB-803
24	3	Relay board containing 8 relays	PCB-803
32	4	Relay board containing 8 relays	PCB-803
40	5	Relay board containing 8 relays	PCB-803
48	6	Relay board containing 8 relays	PCB-803
56	7	Relay board containing 8 relays	PCB-803
64	8	Relay board containing 8 relays	PCB-803

Open Collector Outputs 24VDC 1A each:

Relays	Qty	Hardware Required	Product Code
8	1	Open collector output board 8 outputs 24VDC 1A each.	PCB-813
16	2	Open collector output board 8 outputs 24VDC 1A each.	PCB-813
24	3	Open collector output board 8 outputs 24VDC 1A each.	PCB-813
32	4	Open collector output board 8 outputs 24VDC 1A each.	PCB-813
40	5	Open collector output board 8 outputs 24VDC 1A each.	PCB-813
48	6	Open collector output board 8 outputs 24VDC 1A each.	PCB-813
56	7	Open collector output board 8 outputs 24VDC 1A each.	PCB-813
64	8	Open collector output board 8 outputs 24VDC 1A each.	PCB-813

ENVIRONMENTAL LIMITS

-10 Deg. C to +55 Deg. C Dry heat.
+40 Deg. C @ 93% Relative Humidity.

POWER SUPPLY RATINGS AND SETTINGS

27VDC 3A POWER SUPPLY

This supply's primary function is to power all external operations of the FIP, ie: Detection circuits, Ancillary circuits, Charge batteries etc. This supply meets the requirements of AS1603.4 with the panel for up to 64 zones.

PERFORMANCE DATA

27VDC Power Supply.

AC Input	30 VAC +10% - 15%
Output Current	3 AMPS (Incl 1A External)
Output Voltage	27.6 VDC
Current Limit	3 AMPS
Output Ripple	50 mV

Internal 5VDC 2A Power Supply.

This supply's primary function is to power all internal operations of the FIP, ie: Microprocessor, liquid crystal display, LED's keypad etc.

AC Input	30 VAC $\pm$15% or 27.6VDC$\pm$15%
Output Current	2.0 AMPS
Output Voltage	5.0 VDC
Current Limit	2.0 AMPS
Output Ripple	150 mV

BATTERY TYPE AND CAPACITIES

ZONES FITTED	BATTERIES REQUIRED
24 to 32	2 X 12V 10 A/H
40 to 64	2 X 12V 17 A/H

TECHNICAL DESCRIPTION

GENERAL

The 2464 in its most basic form comprise of two boards, the main control board and the main termination board.

The main control board contains the Microprocessor, EPROM, RAM and E^{2}ROM. The main control board also has the liquid crystal display and keypad attached. All of the "delicate" electronics have been placed on this board. The main control board complete with the inner door is easily removed during installation to avoid damage and allow greater access to the field terminals.

The main termination board contains the two power supplies (5V and 27V), the first eight zones, all common outputs and the printer interface. All charger settings, fuses etc are located on this board.

Up to seven (7) zone expansion boards can be added to the system to increase its detection capability. These boards contain the same electronics as on the main termination board for zone scanning. Addressing is by a jumper that selects which group of eight zones the board refers to.

Up to seven (7) zone indicator boards can also be added. These boards will displays the status of the zone expansion boards fitted.

Up to eight (8) relay boards can be added. These boards contain 8 change-over relay contacts, each rated at 1 amp. Open collector output boards can also be used in lieu of relay outputs boards. These boards require no addressing they work on a serial data chain. Output 1 is the closest output to the main board up to output 64.

NOTE This product utilises state of the art components and materials and therefore boards must be returned to our factory for proper troubleshooting, repair and retesting. Field component level repairs are not recommended and would void all warranties on the product.

TRANSIENT SUPPRESSION

The INERTIA-2464's superior transient protection comprises of Dual Transorb input traps, treacherous paths on incoming PCB tracks, balanced circuit boards and metal oxide varistors on outputs. These devices are all self-resetting.

CURRENT CONSUMPTION

Zones Fitted	Quiescent Current	Quiescent + 2 AZF'S in alarm +1A of Bell +1 Amp ACF
8	150 mA	2.23 AMPS
16	250 mA	2.33 AMPS
24	350 mA	2.43 AMPS
32	450 mA	2.53 AMPS
40	550 mA	2.63 AMPS
48	650 mA	2.73 AMPS
56	750 mA	2.83 AMPS
64	850 mA	2.93 AMPS

AZF DESCRIPTION

The AZF's on the INERTIA-2464 are monitored and scanned by custom thick film hybrids. These hybrid IC's significantly reduce the possibility of false alarms and improve product efficiency and reliability.

Alarm Zone loop resistance is the end of line resistor (EOLR 4K7) and any parallel connected detector.

AZF SUPERVISORY CURRENT

The supervisory current flows through the external terminal AZF+, through the field cable and to the end of line resistor (EOLR), returning to the panel at AZF- terminal. Parallel connected, across the 2-wire pair field cable, are a number of the previously listed detectors? Maximum number allowable is as per the relevant standards is 40. During the quiescent state there is essentially an open circuit across the + and - terminals of the detector base.

In an alarm state, a 560-ohm resistor is across the detector base causing additional loop current to flow. This is sensed by the AZF to produce an alarm output. Removal of the E.O.L. resistor or the interruption of the supervisory current will produce a fault signal in the AZF.

As described above, the level of current is used to define the status of the alarm zone: -

I=3.5 mA and below	FAULT
I=4.0 - 5.0mA at 24V	QUIESCENT
I=16 mA to 40 mA (current limited)	ALARM

The zone current is used by the hybrid IC to determine the condition of the zone as above. This information is then transferred to the microprocessor for processing.

OVERLOAD PROTECTION

Door Holder Circuit	Fuse F1	3AG 3A
AC Input	Fuse F2	1AG 6.3A
Aux & Mimic	Fuse F3	3AG 1A
Ancillary Output ACF	Fuse F4	2AG 1A
Bell Output	Fuse F5	3AG 1A
Battery Input	PTC Thermistor	3.6A MAX
AZF Circuits	Current Limited	40mA

ZONE OVERLOAD SELF RESET

If a zone is overloaded by an accidental short to earth on an AZF circuit, the zone will automatically shut down and produce a fault. Once this happens the panel will automatically recheck the zone every 60 seconds and once the overload is removed, restore power and the fault will also clear.

PRINTER OUTPUT

The printer port is designed to be used during testing and commissioning of the panel. The printer will report alarms and faults together with the date and time of the event, the printer can also be used during walk test mode to produce a history of the test and can be used to print current programming configuration.

A DB9 plug male is provided at the top of the main termination board. This communication port will communicate with an IBM compatible serial printer (ASCII printer) with the following settings.

Baud Rate	1200 bps
Data Bits	8
Stop Bits	1
Parity	None
Handshaking	DTR

CABLE CONNECTION

Cabling to the printer requires a 4-core telephone style cable with a maximum length of 10 metres. A DB9 socket is required at the panel end. The printer end is dependent on the type of printer used but is usually a male DB25. Connection is as follows.

INERTIA-2464 END	PRINTER	END
DB9 FEMALE	DB25 M	DB9 M
5	7	5
2	4	8
3	5	7
7	3	3

PROGRAMMING BY COMPUTER

Programming of the zones, relays, global functions and time can by set with the DOS based programme "2464/SW" only on INERTIA-2464 panels with DATE and TIME.
After the cable is installed the programm can be run and the menu will prompt for the available functions.

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INERTIA-2400 CONFIGURATION MENU
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D   - SET TO FACTORY DEFAULT

F   - FILE, UPLOAD, DOWNLOAD MENU

G   - GLOBAL CONFIGURATION

V   - VIEW CURRENT CONFIGURATION

Z   - ZONE CONFIGURATION

R   - RELAY CONFIGURATION

X   - EXIT TO SYSTEM

PLEASE SELECT FUNCTION
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ALIGNMENT AND ADJUSTMENT

INTERNAL 27VDC POWER SUPPLY

If the on-board supply <u>ONLY</u> is being used (JP4 is linked) :

With batteries disconnected and no alarms present, measure voltage across AUX 0V & AUX 24V on PCB801 and adjust the multi-turn potentiometer VR4 until voltage is 27.6V 1% (27.32V - 27.87V). (VR1 for 801L5).

Current limiting is factory preset by VR1 and adjustment is not required.

EXTERNAL 27VDC POWER SUPPLY (if fitted)

If an external supply input is being used (**link J4 should be cut**) :

With batteries disconnected and no alarms present, measure voltage across AUX 0V & AUX 24V on PCB801 and adjust the voltage **on the external power supply** untill the AUX voltage is 27.6V 1%.

Current limiting is preset, adjustment is not required.

INTERNAL 5VDC POWER SUPPLY TP4

No adjustments are required, all parameters are preset.

POWER SUPPLY COMPARATOR REFERENCE VOLTAGE TP1

With the panel in the quiescent mode, measure voltage between system 0V and TP1. Adjust multi-turn potentiometer VR2 until voltage is 7.0V 1%

ALARM THRESHOLD COMPARATOR TP3

With the panel in the quiescent mode, measure voltage between system 0V and TP3. Adjust multi-turn potentiometer VR3 until voltage is 3.3V 1%

NON ADJUSTABLE TEST POINTS

TP2 = 0.6 VDC 5%   FAULT THRESHOLD

TP4 = 5.0 VDC '5%   5VDC POWER SUPPLY

(If these test point voltages are not correct, please return the main termination board to the factory for repair.)

IFS800 - JP3   DEFAULT (MEMORY RESET)

Holding a short across these pins for 5 seconds during start-up causes the panel to reset to standard factory defaults. The panel will give 4 beeps after reset, to acknowledge default on startup.

IFS800 - JP4   PROGRAM DISABLE

When fitted, jumper between these pins to inhibit program changes.

IFS800 - JP5   CPU RESET

With panel operating, a momentary short across these pins will cause a CPU restart.

IFS801L - JP3   DOOR HOLDER BYPASS

If zoned door holder outputs are required and is to be done external to the main termination board, then the main door holder release needs to be disabled. Fitting a link across JP3 on IFS801 PCB does this.

Note: Door holder output is only enabled if optional door holder transformer is fitted.

IFS801L - JP4   EXTERNAL POWER SUPPLY ENABLE/DISABLE
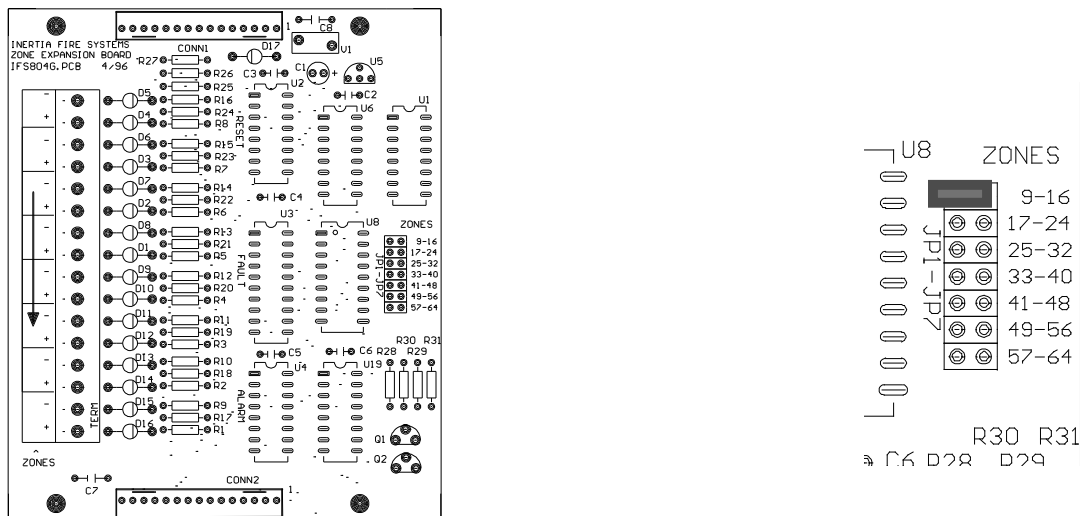
Jumper link remains fitted when the internal supply only is being used.

Jumper link is to be cut when an external power supply is being used.

IFS804G - JP1-7 ZONE BOARD ADDRESSING

Jumper JP1 to JP7 on zone expansion board IFS-804 selects the addressing for the zones.

Place jumper in link position for the appropriate 8 zones to which the expansion board applies.

PLACING INTO OPERATION

Suitably qualified technicians must install the panel. The following check procedures are recommended after every installation and prior to initial power-up.

A thorough visual inspection should be made to every aspect of the fire panel. This includes loose wire strippings, metal filings, loose circuit boards, loose cabling, damage in transit etc.

All problems must be rectified immediately as they could cause incorrect operation or permanent damage to the equipment.

INITIAL CHECKLIST

- ❑ System General Appearance Good
- ❑ Cabinet Colour and Condition Good
- ❑ Cabinet Keyed 003
- ❑ All Circuit Boards Firmly Fastened
- ❑ Manual Call Point Fitted & Functional (Australian version only)
- ❑ Viewing Window Clear and Firmly Secured
- ❑ Cable Entries Adequately Sealed
- ❑ 200/220/240VAC Cabling Correctly Terminated
- ❑ All Earthing Secured
- ❑ Transformer Securely Mounted
- ❑ Transformer Correctly Wired
- ❑ All Ribbon Cables Firmly Secured
- ❑ All Operational Zones Adequately Identified
- ❑ AC Fuse 2.5A Fitted And OK
- ❑ Door Holder Fuse 3A Fitted and OK
- ❑ All Other Components Securely Inserted
- ❑ Auxilary and Mimic fuse 1A fitted and OK
- ❑ Manufacturing Label Affixed

You are now ready to power up the 2464 fire indicator panel.

POWER UP CHECKLIST

- ❑ Ensure Batteries Are Disconnected.
- ❑ Turn Mains Switch to "ON"
- ❑ The "Mains On" LED Should Light.
- ❑ Allow 15 Seconds for the Panel To Perform Its Start Up Tests.
- ❑ Connect Batteries

FUNCTIONAL TESTING

❑ Primary AC Supply Voltage: 200 or 220 or 240VAC ±10% as required
❑ Charger Output Voltage without Batteries: 27.6V DC
❑ Keypad Functional
❑ Perform Auto Test

> ❑ LED's All Functional
> ❑ L.C.D Backlighting Functional
> ❑ Liquid Crystal Display Functional
> ❑ Zone Fault Detection
> ❑ Zone Alarm Detection

❑ Internal Sounder Operating
❑ MCP Loop Wired To Zone Number _____ (if applicable)
❑ Door Switch Functional
❑ Test Auxiliary Power Output
❑ Test Bell Output
❑ Test Door Holder Output (optional)
❑ Test Ancillary Output
❑ Test Bell Output Supervision
❑ Test Ancillary Output Supervision
❑ Test Brigade Alarm Relay #1
❑ Test Brigade Alarm Relay #2
❑ Test Standby Relay
❑ Test Fault Relay
❑ Test Mains Fail Relay
❑ Test Isolate Relay
❑ Test General Alarm Relays
❑ Test Relay Boards (if fitted)
❑ Test Open Collector Output Boards (if fitted)
❑ Press "Battery Test" Once
❑ If Batteries Are Flat, Allow 24hrs To Charge And Then Re-test.

FAULT RECORD

FAULT	CORRECTION	DATE

TESTS SATISFACTORILY COMPLETED.

TESTED BY _____

SIGNATURE _____

DATE OF TEST _____

If all faults have been rectified and all tests are completed satisfactorily, the **2464** fire indicator panel is now ready for operation.

SUGGESTED ALARM PROCEDURE

The following is a suggested alarm procedure for use by building fire officers or duty wardens. The fire indicator panel is designed for use by qualified fire fighters and it is strongly recommended that the fire panel not be operated in an emergency situation by other than suitably qualified fire fighters.

- Do not open fire indicator panel door or press any buttons until fire officers arrives.
- Determine location of the fire.
- Visually inspect area at a safe distance for actual fire or false alarm.
- Notify fire-monitoring station of either result.
- Perform evacuation and extinguishing operations as required.
- IF a FIRE, direct fire fighters to the fire indicator panel and cause of alarm as they arrive.
- IF a FALSE ALARM, advise maintenance technicians to determine and rectify cause.
- Record all events in logbook.

NOTE   A suitably qualified fire officer should perform the above procedure. These are suggested procedures only, and if specific fire procedures are available or issued, they MUST prevail.

OPERATOR INSTRUCTIONS

The functions of the INERTIA-2464 are divided into two (2) categories,

* Global Functions
* Zone Functions

GLOBAL FUNCTIONS

Global functions are those common to the overall system and are not specific to particular zones. Following is an explanation of their operation and the keystrokes required to perform the function required.

DOOR SWITCH

A door-operated switch is provided on the inner door. This switch is activated by the opening/closing of the outer door. It functions as follows;

If the panel door is opened and there are NO alarms present:

1. The BELL output is isolated.

2. The ACF output is isolated.

3. The DOOR HOLDER output is held energised

If the panel door is opened and there IS an alarm(s) present:

1. The BELL output is not effected.

2. The ACF output is not effected.

3. The DOOR HOLDER output is not effected.

Closing of the outer door will force the following events, regardless of their previous state;

1. The BELL output is de-isolated.

2. The ACF output is de-isolated.

3. The DOOR HOLDER output is returned to normal.

NOTE   The panel may be left with AZF's isolated but cannot be left with any of the above 3 functions isolated. The closing of the outer door ensures this.

The door switch is also used in selecting programming mode.

INDICATORS

Qty	Descriptor	Colour	Function	Buzzer
1	MAINS ON	Green	Illuminates when there is 200/220/240 VAC supply to the panel.	
1	BATT FAULT	Yellow	Illuminates if the battery fails a battery test. Illuminates if batteries are disconnected >30 seconds. Illuminates if batteries are short circuit >30 seconds.	Yes
1	CHARGER HIGH	Yellow	Illuminates if the power supply / battery charger exceeds the recommended float charge voltage.	Yes
1	CHARGER LOW	Yellow	Illuminates if the power supply / battery charger falls below the recommended float charge voltage for > 15 seconds.	Yes
1	COMMON FAULT	Yellow	Illuminates if; Any de-isolated zone goes into fault. ACF output is open circuit Bell output is open circuit Battery Fault LED Charger High LED is on. MAF Isolate LED is on.	Yes
1	MAF ACT	Red	Illuminates if any zone goes into alarm and transmits a general alarm signal.	
1	MAF ISO	Yellow	Illuminates if an external brigade switch is isolated. Also used for fault on added devices eg. Evac unit.	
1	ACF ACT	Red	Illuminates if the ACF output has been activated.	
1	ACF FLT	Yellow	Illuminates if there is no load on the ancillary circuit, (an open circuit), ie: no relay or EOL resistor. The LED will extinguish if the load is restored.	Yes
1	ACF ISO	Yellow	Illuminates if the ancillary output has been manually isolated.	
1	BELL ACT	Red	Illuminates if the bell output has been energised. This LED will extinguish if bells are silenced or the alarm is removed.	
1	BELL FLT	Yellow	Illuminates if there is no load on the bell circuit (an open circuit), ie: no bell or EOL resistor. The LED will extinguish if the load is restored.	Yes
1	BELL ISO	Yellow	Illuminates if the bell output has been manually isolated. Flashing = silenced.	
1	BUZZER ISO	Yellow	Illuminates if the panel's internal piezo buzzer has been manually isolated. Flashing = silenced.	
8	ALARM LEDS	Red	This LED will flash if it's corresponding zone goes into alarm. It will remain on until the alarm is reset. If the zone is programmed as a time delay type, a steady LED indicates the "pre-alarm" condition. If the zone is isolated and in alarm it will also be steady.	Yes
8	FAULT LEDS	Yellow	This LED illuminates if it's corresponding zone goes into fault. It will remain on until the fault is removed.	Yes
8	ISOLATE LEDS	Yellow	This LED illuminates if its corresponding zone is isolated. It will remain on until the zone is de-isolated.	

BATTERY TEST

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BATT
TEST
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This function tests the performance of the batteries fitted to the system. Pressing this button will initiate a battery test as specified.

The test will temporarily disconnect the batteries from the panel and apply load on the batteries for 60 seconds. If the batteries are OK, the test will be performed for 60 seconds and then the panel will return to normal. If the batteries fail the test, the "Battery Fault" LED will illuminate and the buzzer will sound.

The pressing of any key during the test period will abort the battery test and return the system back to normal mode.

• **<u>NOTE</u>: The batteries are also monitored for open or short circuit. If the batteries are open or short-circuited for a period of 30 seconds the "Battery Fault" LED will illuminate and provide a common fault. This automatic battery monitoring functions in quiescent mode and is therefore disabled if there is an alarm present to avoid confusion.**

AUTO TEST MODE

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AUTO
TEST
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This function will perform a fixed automatic test procedure to the panel. This mode cannot be selected if any zone(s) is in alarm.

Auto test will perform the following test functions;

Turn on ALL LEDs for 0.5 seconds

- Test LCD Backlight
- Test E^{2}ROM
- Test RAM
- Test LCD
- Isolate all alarm zones
- Fault test all alarm zones
- Alarm test all alarm zones
- Test buzzer

TEXT The pressing of any key during "AUTO TEST" will abort the tests and return the system back to normal mode once the current test is complete.

Note: During "AUTO TEST", all zones are treated as zone type #1 (standard latching type with 2 second delay). Once AUTO TEST has finished, all zones will be reset and returned back to their previously configured types.

WALK TEST MODE

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**WALK
TEST**

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This function will place the panel into "walk test" mode. Walk test mode is used for the on-site testing of detector zones. This mode cannot be selected if any zone(s) is in alarm. Entry to walk test mode will be acknowledged by three beeps and the LCD will display "WALK TEST MODE".

For the duration of walk test mode, all zones are changed to output configuration #2 (indicate and ring bells only) and all zones are set to type #1 (standard latching, 2 second).

If the bells are not required to ring during walk test, simply press the "BELL ISOLATE" key once. The bell isolate LED will illuminate to verify that the bells have been isolated.

Any alarm signal from detectors etc. will be received by the panel on its appropriate zone. The panel will beep to acknowledge receipt of the alarm and indicate the alarm by illuminating the appropriate alarm LED for 4 seconds (the bells will also ring for a 3-second period unless previously isolated).

The zone and detector will then be automatically reset.

If the optional printer is connected, the alarm will be printed out as it is received together with the date and time. This can eliminate the need for a second serviceman to record zone numbers during walk test and the printout can be retained for verification at a later date.

Pressing any key will terminate the walk test mode and return the panel back to normal operation, restoring all zone types and output configurations also ensuring that bell and ancillary outputs are de-isolated. The bells will give three pulses of 1 second each to warn any testers still in the building that walk test mode has been terminated.

Failure to receive any alarms or keystrokes within a 15 minutes period will result in the panel automatically exiting walk test mode and returning back to normal as follows;

- Bell outputs to be de-isolated.

- Ancillary outputs to be de-isolated.

- Bell will sound 3 times, each of 1-second duration.

- Zone types and output configurations restored

SILENCE/ACKNOWLEDGE   SILENCE

The purpose of the bells and internal buzzer, is to alert persons of a potential fire danger. Once the fire's location has been determined and appropriate measures are being taken, the firefighter may wish to silence the internal buzzer and bells without having to totally reset the alarm.

When the buzzer and bells are operating, pressing the "SILENCE" key once will silence them, however if a subsequent alarm arises, the buzzer and bells will be reactivated and a second silence operation will be required to silence them.

When silenced, the "Buzzer Isolate" and "Bells Isolate" LEDS will flash. The re-activation of the buzzer and bells will cause the "Buzzer Isolate" and "Bells Isolate" LED's to turn off.

If the buzzer or bells are already isolated, the isolate LED's will be illuminated continuously; pressing "silence" will have no effect on the display.

If the buzzer or bell isolate LEDS are illuminated due to a "silence" operation, once the zone(s) in alarm is reset, the isolate LEDS will be automatically turned off.

BUZZER ISOLATE   BUZZ ISOL

Depressing the "BUZZ ISOL" key will isolate the buzzer, the "buzzer isolated" LED will illuminate and the buzzer will not sound until the buzzer is de-isolated. Pressing "BUZZ ISOL" for a second time will de-isolate the buzzer.

BELL ISOLATE   BELL ISOL

Depressing the "BELL ISOL" key will isolate the bells. The "bells isolated" LED will illuminate and the bells will not sound until the bells are de-isolated. Pressing "BELL ISOL" for a second time will de-isolate the bell.

Opening the outer door of the panel when no alarms are present will automatically force a bells isolate condition. This can be over-ridden by pressing bell isolate again, effectively de-isolating bells.

Opening the outer door of the panel when there is an alarm will have no effect on the bells.

Once the outer door has been closed, the bells will be placed in the de-isolated mode, regardless of their previous state.

ACF ISOLATE

```
┌──────┐
│ ACF  │
│ ISOL │
└──────┘
```

Depressing the "ACF ISOL" key, will isolate the ACF (Ancillary output). The ACF isolated LED will illuminate and the ancillary output will not operate until the ancillary output is de-isolated. Pressing "ACF ISOL" for a second time will de-isolate the ancillary output.

If the ancillary output has already been tripped and is programmed as latching, isolating the ACF will not effect the existing ancillary output. If the ACF is isolated prior to the alarm, it will prevent the ancillary output from tripping.

Note: If the ACF output is programmed as normally energised then isolating the output prevents it from de-energising.

ACF RESET

```
┌───────┐
│ ACF   │
│ RESET │
└───────┘
```

Resetting of the ancillary output (ACF) is only required if the ancillary output was programmed as latching.

The ancillary alarm will remain latched until manually reset. Pressing the "ACF RESET" button will extinguish the 'ACF Activated' LED and de-energise the ancillary output. Pressing "ACF RESET" when the ACF is not tripped will have no effect.

ZONE FUNCTIONS

Zone functions are those relating specifically to the detection zones. Following is an explanation of their operation and the keystrokes required to perform the function required.

ALARM TEST

| ALARM TEST | # | ENTER |

The alarm test function momentarily disconnects the detector lines of the zone(s) under test and simulates a detector going into alarm, therefore testing the zone(s) alarm detection capability.

A resistive load equal to worst case alarm condition is placed on the zone for a period of 10 seconds and then removed, if the zone being tested is not a latching type, the alarm will reset automatically once the load is removed. Resetting the zone can manually terminate an alarm test.

Once the zone has alarmed, all outputs are initiated (as programmed) similar to a real alarm. The zone may be isolated prior to alarm test if desired; this will prevent any outputs from operating.

The character "#" in the keystrokes above requires any one the following entries;

1,2,3,4........, 63,64 or "ALL"

If only one zone is to be tested, use the appropriate number. Alternatively the "ALL" button can be used to simultaneously test all zones.

To perform an alarm test:

1.   Press the "ALARM TEST" button once, the buzzer will give 2 short beeps to indicate that alarm test mode has been entered.

2.   LCD display will read "ALARM TEST MODE, ENTER ZONE No.".

3.   Now enter the zone number ("#")

4.   Press "ENTER"

A long beep will signify an incorrect entry and will revert back to normal operating mode. The "ALARM TEST" button will need to be depressed again to re-enter alarm test mode. If a correct entry is made, alarm testing on the zone commences immediately. However, remember there is a 2 second transient delay on all zones. It will therefore take approximately 2 seconds before the zone registers an alarm (this could be longer, depending on zone type).

FAULT TEST | FAULT TEST | | # | | ENTER |

The fault test function momentarily disconnects the detection zone(s) under test and simulates the worst case condition for fault.

A resistor load equal to worst case fault is placed on the zone continuously for 5 seconds then the zone is returned back to it's normal condition.

If several zones are being tested consecutively and are being entered at a rate faster than the 5-second fault timer, the fault timeout will occur 5 second after the last entry was completed.

Once the zone has registered a fault, all outputs relating to that zone are initiated similar to a real fault.

The zone may be isolated prior to fault test if desired. This will prevent any outputs from operating.

The character "#" in the keystroke requires any one of the following entries;

1,2,3,4........, 63,64 or "ALL"

If only one zone is to be tested, use the appropriate zone number. Alternatively the "ALL" button can be used to simultaneously test all zones.

To perform a fault test on a particular zone or on all zones;

1.   Press the "FAULT TEST" button once.

2.   The buzzer will give 2 short beeps to indicate that fault test mode has been entered.

3.   LCD display will read "FAULT TEST MODE, ENTER ZONE No.".

4.   Enter the zone number ("#").

5.   Please "ENTER".

A long beep will signify an incorrect entry and the panel will revert back to normal operating mode. The "FAULT TEST" button will need to be pressed again to re-enter fault test mode.

If a correct entry is made, fault testing on the zone commences and the fault LED will illuminate.

ISOLATE   ISOLATE   #   ENTER

The isolate function prevents the transmission of alarms or faults from the zones to the master alarm facility.

The character "#" in the keystroke requires any one of the following entries;

1,2,3,4........, 63,64 or "ALL"

If only one zone is to be isolated, use the appropriate zone number. Alternatively the "ALL" button can be used to simultaneously isolate all zones.

To isolate a particular zone or all zones;

1.   Press the "ISOLATE" button.
        The buzzer will give 2 short beeps to indicate that isolate mode has been entered.

2.   The LCD display will read "ALARM ISOL. MODE, ENTER ZONE No.".

3.   Enter the zone number ("#").

4.   Press "ENTER".

A long beep will signify an incorrect entry and will revert back to normal operating mode. The "ISOLATE" button will need to be depressed again to re-enter isolate mode.

If a correct entry is made, the zone is immediately isolated. If the zone is already in alarm, all of its alarm outputs are isolated and indicators remain visible.

If the "ALL" function is performed, all zones will be isolated, regardless of their previous state. Performing the "ALL" function for a second time will de-isolate all zones.

RESET   RESET   #   ENTER

The reset function momentarily disconnects power, and resets all alarm parameters for the zone(s) being reset. This returns the zone back to its "normal" state.

The character "#" in the keystroke requires any one of the following entries;

1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24 or "ALL"

If only one zone is to be reset, type in the zone number. Alternatively the "ALL" button can be used to simultaneously reset all zones.

To perform a reset on a particular zone or on all zones;

1.   Press the "RESET" button.

2.   The buzzer will give 2 short beeps to indicate that reset mode has been entered.

3.   The LCD display will read "ALARM RESET MODE, ENTER ZONE No.".

4.   Enter the zone number ("#").

5.   Press "ENTER".

A long beep will signify an incorrect entry and will revert back to normal operating mode. The "RESET" button will need to be depressed again to re-enter reset mode.

If a correct entry is made, resetting of the zone begins immediately. Any alarm indication will be removed immediately; also resetting the zone(s) programmed outputs.

EQUIPMENT AS FITTED

QTY	Description	Code
1	MAIN CONTROL BOARD	PCB-800
1	MAIN TERMINATION BOARD	PCB-801L
OPTION	ZONE EXPANSION BOARD	PCB-802
OPTION	ZONE INDICATOR BOARD	PCB-804G
OPTION	ADD ON RELAY BOARD	PCB-803
OPTION	ADD ON OPEN COLLECTOR OUTPUT BOARD	PCB-813
OPTION	100VA DOOR HOLDER P/SUPPLY TRANSFORMER	2400/DHTX

Section Two

PROGRAMMING MANUAL

PROGRAMMABLE OPTIONS

GLOBAL

ANCILLARY TRIP		
1	LATCHING	NORMALLY DE-ENERGISED
2	NON-LATCHING	NORMALLY DE-ENERGISED
3	LATCHING	NORMALLY ENERGISED
4	NON-LATCHING	NORMALLY ENERGISED

ALARM VERIFICATION	
1	DISABLED
2	2 MINUTES
3	3 MINUTES
4	4 MINUTES
5	5 MINUTES

TIME
(DD) / (MM) / (YY) (HH) : (MM)

ZONES

	DESCRIPTION	INPUT DELAY
1	Standard Latching	2 seconds
2	Standard Latching	2 seconds with AVF
3	Non Latching	2 seconds
4	Non Latching	20 seconds
5	Time Delay	10 seconds
6	Time Delay	20 seconds
7	Time Delay	30 seconds
8	Time Delay	40 seconds
9	Time Delay	50 seconds
10	Time Delay	60 seconds

Type	Output Description
1	Indicate Only
2	Indicate, Bell
3	Indicate, Bell, General Alarm
4	Indicate, Bell, General Alarm, Ancillary
5	Indicate, Bell, General Alarm, Ancillary, Brigade Relay #1
6	Indicate, Bell, General Alarm, Ancillary Brigade Relay #2
7	Indicate, Bell, General Alarm, Ancillary, Brigade Relay #1, & Brigade Relay #2

OUTPUT RELAYS

Relays can be programmed to simulate: -

- Isolate Relay
- ACF Output
- Brigade Relay #1
- Brigade Relay #2
- Fault Relay
- Mains Fail Relay
- General Alarm Relay
- Bell Output
- Door Holder Relay
- Door Switch
- Reset

Or Can Be Used To:

- "MAP AND" Up To 5 Zones in Alarm
- "MAP OR" Up To 5 Zones in Alarm
- "FAULT MAP" Up To 5 Zones in Fault
- "MAP ISOLATE" Up to 5 Zones in Isolate
- "MAP ISO/FAULT" Up to 5 Zones in Isolate/Fault

DEFAULTS

ACF OUTPUT	NON-LATCHING, NORMALLY DE-ENERGISED
ALARM VERIFICATION (AVF)	3 MINUTES
TIME	1/1/11 11:11
ZONE TYPES	STANDARD LATCH 2S
ZONE OUTPUT CONFIG	I-B-G-A-BR1 & BR2
RELAY MAPPING	MAP -OR-, MAPPING = 1 TO 1 IE: RELAY 1 = ZONE 1, RELAY 2 = ZONE 2 ....

The **2464** PANEL is self-configuring on power-up therefore it is not necessary to program the number of zone expansion boards fitted.

TO ENTER PROGRAM MODE

Hold the door switch down while pressing the following buttons in order shown to enter programming mode.

| PREVIOUS | NEXT | SELECT | EXIT | ENTER |

PROGRAMMING MODE

The liquid crystal display will display all messages and prompts required to program the **2464**

ONLY the "PREVIOUS","NEXT","SELECT","EXIT" AND "ENTER" keys are used in programming mode. All other keys will give an error beep and are ignored.

You must exit programming mode if any other panel functions are to be performed.

Note: Refer to appendices for detailed explanation of functions

PROGRAMMING HIERARCHY

EXIT	
SAVE CHANGES	
YES	NO

ZONES	RELAY
GLOBAL	PRINT

ZONES

TYPE		OUTPUT
STD LATCHING		INDICATE
STANDARD LATCHING AVF		I BELL
NON LATCH		IB GENERAL
NON LATCH 20S		IBG ACF OUT
TIME DELAY 10S (RESETTING)		IBGA BRIGADE 1
TIME DELAY 20S (RESETTING)		IBGA BRIGADE 2
TIME DELAY 30S (RESETTING)		IBGA BRIGADE 1 & 2
TIME DELAY 40S (RESETTING)		
TIME DELAY 50S (RESETTING)		
TIME DELAY 60S (RESETTING)		

RELAYS

TYPE	MAPPING
ISOLATE RELAY	
ANCILLARY OUTPUT (ACF)	
BRIGADE RELAY #1	
BRIGADE RELAY #2	
FAULT RELAY	
MAINS FAIL RELAY	
GENERAL ALARM RELAY	
BELL OUTPUT	
DOOR HOLDER RELAY	
MAP - AND	(00)(00)(00)(00)(00)
MAP - OR	(00)(00)(00)(00)(00)
MAP - FAULT	(00)(00)(00)(00)(00)
MAP – ISOLATE	(00)(00)(00)(00)(00)
MAP – ISOLATE / FAULT	(00)(00)(00)(00)(00)
DOOR SWITCH	
RESET	

GLOBAL

ACF	AVF	RELAY	TIME
NON-LATCHING ND	DISABLED	MAP RELAY (XX) >>>	(DD) / (MM) / (YY)
LATCHING ND	2 MINUTES	FROM ZONE XX	(HH) : (MM)
NON-LATCHING NE	3 MINUTES		
LATCHING NE	4 MINUTES		
	5 MINUTES		

ND: = NORMALLY DE-ENERGISED
NE: = NORMALLY ENERGISED

PRINT

PRINT
PRINTS OUT CURRENT CONFIGURATION

MAIN MENU

(ZONES)	RELAYS
GLOBAL	PRINT

Use the "NEXT" & "PREVIOUS" keys to scroll through "ZONES" "RELAYS" "GLOBAL" "PRINT" and wrap around. Once the desired option has been highlighted, pressing the "SELECT" button will select.

Pressing "EXIT" at this stage will exit programming mode.

EXIT PROGRAMMING MODE

SAVE   CHANGES
YES   (NO)

Use the "NEXT" & "PREVIOUS" keys to scroll through "YES" & "NO". Once the desired option has been highlighted, pressing the "SELECT" button will select it.

Highlighting "YES" and pressing "SELECT" will write all changes made to the E^{2}ROM and the panel will then restart (this will drop any door holders / air-conditioning if connected).

Highlighting "NO" and pressing "SELECT" will ignore any changes made to the programming and exit back to normal panel operation without restarting.
   Note: This does not apply to saving changes to the time.

ZONE PROGRAMMING

SELECT ZONE #

SELECT ZONE #
(ALL)

Use the "NEXT" & "PREVIOUS" keys to scroll through "ALL" "1" "2" "3"
Up to the maximum number of zones fitted and then wrap around. Once the desired zone number has been highlighted, pressing the "SELECT" button will select. Pressing "EXIT" at this stage will return to main menu.

ZONE SELECTED

ZONE # ALL
(TYPE) OUTPUT

Use the "NEXT" & "PREVIOUS" keys to scroll through "TYPE" & "OUTPUT". Once the desired option has been highlighted, pressing the "SELECT" button will select. Pressing "EXIT" at this stage will return "SELECT ZONE #".

ZONE TYPE

ZONE # ALL TYPE
STD LATCHING

Use the "NEXT" & "PREVIOUS" keys to scroll through

STD LATCHING	
STD LATCHING AVF	
NON LATCH	
NON LATCH 20S	
TIME DELAY 10S	(RESETTING)
TIME DELAY 20S	(RESETTING)
TIME DELAY 30S	(RESETTING)
TIME DELAY 40S	(RESETTING)
TIME DELAY 50S	(RESETTING)
TIME DELAY 60S	(RESETTING)

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Once the desired option has been highlighted, pressing the "SELECT" button will select. Making a selection or pressing "EXIT" will return to zone selected.

> **Note:** The option previously set is displayed in brackets and is the first to be displayed. Previously set options will not be displayed if "ALL" is selected.

ZONE OUTPUT CONFIGURATION

ZONE #ALL   OUTPUT
IBGA BRIG 1&2

Use the "NEXT" & "PREVIOUS" keys to scroll through:

INDICATE
I BELL
IB GENERAL
IBG ACF OUT
IBGA BRIGADE 1
IBGA BRIGADE 2
IBGA BRIG 1&2

Once the desired option has been highlighted, pressing the "SELECT" button will select. Pressing "EXIT" at this stage will return to "Zone Selected".

> **Note:** The option previously set is displayed in brackets and is the first to be displayed. Previously set options will not be displayed if "ALL" is selected.

RELAY PROGRAMMING MODE

SELECT RELAY

SELECT   RELAY#
(ALL)

Use the "NEXT" & "PREVIOUS" keys to scroll through "ALL" "1" "2" "3". Up to 64 and then wrap around. Once the desired relay number has been selected, pressing the "SELECT" button will select. Pressing "EXIT" at this stage will return to main menu.

RELAY SELECTED

RELAY   #ALL
(TYPE) MAPPING

Use the "NEXT" & "PREVIOUS" keys to scroll through "TYPE" & "MAPPING". Once the desired option has been highlighted, pressing the "SELECT" button will select. Pressing "EXIT" at this stage will return to "Select Relay #".

RELAY TYPE

```
┌─────────────────────────┐
│    RELAY #ALL TYPE      │
│       (GENERAL)         │
└─────────────────────────┘
```

Use the "NEXT" & "PREVIOUS" keys to scroll through:

ISOLATE
ANCILLARY
BRIGADE 1
BRIGADE 2
FAULT
MAINS FAIL
GENERAL
BELL
DOOR HOLDER
MAP -AND-
MAP -OR-
MAP –FAULT-
MAP –ISOLATE-
MAP -ISOLATE/FLT-
DOOR SWITCH
RESET

Once the desired option has been highlighted, pressing the "SELECT" button will select. Making a selection or pressing "EXIT" will return to "Relay Selected".

> **Note:** The option previously set is displayed in brackets and is the first to be displayed. Previously set options will not be displayed if "ALL" is selected.

RELAY MAPPING

```
┌─────────────────────────────┐
│       RELAY  #1 MAP         │
│  (00)   00   00   00   00   │
└─────────────────────────────┘
```

** Relay mapping can only be selected if the relay is set as a MAP type.

These 5 entry fields represent the zone numbers that the relay is to be mapped to.

Use the "NEXT" and "PREVIOUS" keys to increment/decrement the zone number within the brackets.

Use the "ENTER" key to move to the next field. Fields may be changed as required and set by pressing "SELECT".

Any fields left as (00) will be ignored.

Pressing "EXIT" at this stage will return to "RELAY # ".

> **Note:** The option previously set is displayed in brackets and is the first to be displayed. Previously set options will not be displayed if "ALL" is selected.

GLOBAL PROGRAMMING

(ACF)	**AVF**
RELAY	**TIME**

Use the "NEXT","PREVIOUS" & "SELECT" keys to select.
Pressing "EXIT" will return to "Main Menu".

ACF OUTPUT

ACF OUTPUT
(NON-LATCH   ND)

Use the "NEXT" & "PREVIOUS" keys to scroll through:

LATCHING ND
NON-LATCH   NE
LATCHING   NE

> **Note:**   The option previously set is displayed in brackets and is the first to be displayed.

ND = Normally De-energised ie: Output is not energised until an alarm occurs.
NE = Normally energised ie: Output is energised and then is de-energised once an alarm occurs.

AVF

AVF TIMEOUT
(3 MINUTES)

Use the "NEXT" & "PREVIOUS" keys to scroll through:

DISABLED
2 MINUTES
3 MINUTES
4 MINUTES
5 MINUTES

> **Note:**   The option previously set is displayed in brackets and
>   is the first to be displayed.

RELAY (GLOBAL RELAY UNITY MAP)

MAP RELAY (XX) >>
FROM ZONE (XX)

Use the "NEXT" & "PREVIOUS" keys to change the first relay to start from, together with the matching zone. Use the "ENTER" key to toggle between the two and press "SELECT" once finalised. "Exit" will abort unity map.

This function will start programming relays starting from the relay number specified in a 1 to 1 configuration with zones starting from the first zone number specified.

Example 1: if the above table was to look like this:

MAP RELAY (10) >>
FROM ZONE (01)

Then relay #10 would be set as MAP OR with its mapping as (01) 00 00 00 00, relay #11 would be set as MAP OR with it's mapping set as (02) 00 00 00 00 and so on all the way up to relay #64. Relays number 1-through 9 remains unaffected by this function.

Example 2: if the above table was to look like this:

MAP RELAY (01) >>
FROM ZONE (09)

Then relay #1 would be set as MAP OR with its mapping as (09) 00 00 00 00, relay #2 would be set as MAP OR with it's mapping set as (10) 00 00 00 00 and so on all the way up to relay #64.

Note: In example 2, zone number 64 is reached and there are still more relays to go. (ie we are only at relay #56) the programming stops at this point and any relays not yet programmed will be left in their previous programmed mode and are unaffected by this function.

PRINT PROGRAMMING DATA

Prints the programming data currently stored in RAM, including all changes made (they may have not yet been written to the E2ROM).

Output is printed directly onto the printer if fitted.

TIME (DATE & TIME)

The current DATE & TIME will be displayed as DD/MM/YY (in 24h format)
Use the PREVIOUS" & NEXT" keys to increment or decriment the number highlighted by brackets.
The ENTER key will move to the next field.
When finished,The SELECT key must be pushed to store the date/time.

Note

The Date/Time data is saved when the Select key is pushed.
DO NOT select "Save Changes "Y" as this will restart (and drop any door holders / air-conditioning relays if connected).

APPENDIX A

DESCRIPTION OF ALARM ZONE TYPES

Different zone types can be selected using the programming mode. Each zone can be selected as any one of following:

Type	Description	Input Delay
1	Standard Latching	2 seconds
2	Standard Latching	2 seconds with AVF
3	Non Latching	2 seconds
4	Non Latching	20 seconds
5	Time Delay	10 seconds
6	Time Delay	20 seconds
7	Time Delay	30 seconds
8	Time Delay	40 seconds
9	Time Delay	50 seconds
10	Time Delay	60 seconds

LATCHING TYPE

Once a signal is received from the detector the alarm zone will start a timer, if after 2 seconds the detector is still activated the alarm zone will register an alarm condition. Indicators will illuminate and alarm functions are initiated immediately, unless zone is set as AVF - refer Appendix C. The alarm zone will remain in alarm until manually reset.

A reset is performed by interrupting the power to the detector for 0.5 seconds and returning the alarm zone back to its quiescent state. If an alarm is still present in the detector area, the detector will re-activate and the 2-second timer will be re-initiated.

NON LATCHING TYPE

A temporary actuation device (eg. Flow Switch) is usually connected to this type of alarm zone. Once a signal has been received CONTINUOUSLY for 2 seconds or 20 seconds (dependant on programming) an alarm will be registered causing the alarm LED to flash and alarm functions will be performed as programmed.

The alarm group will remain in alarm until the actuating device no longer reports a signal. When actuating device signal is clear, the alarm is cleared, causing the zone to power down for 0.5 seconds and return back to normal state.

TIME DELAY AZF

The time delay AZF zone can be preset to any one of 6 time delays in the initial setup. This type of zone is used for AS1668 smoke detection zones. Zone timing etc is as per AS1668-1991.

Example: Timer #1 = 60 seconds

Once the first alarm is received, the alarm LED is turned on steady; this indicates "PARTIAL ALARM" condition.

The detector is then reset (by removing its power for 0.5 seconds) and a timer is also started for 60 seconds (TIMER#1). Another timer of 10 seconds (TIMER#2) is also started. The zone must respond again within this 10 seconds (TIMER#2) to register another alarm.

Failure to receive another alarm within this 10-second period will return the zone back to its normal state immediately and extinguish the alarm LED.

If an alarm is received, the detector is reset again and TIMER#2 is also reset.

This monitoring continues until the 60-second timer (TIMER#1) has elapsed and then the NEXT alarm signal will trip the zone into "FULL ALARM". This is the stage at which all mapped relays, bells etc. will operate.

When "FULL ALARM" condition is reached, a third timer (TIMER#3) of 70 seconds is started. This timer is used to prevent "hunting" of air conditioning fans etc. to AS1668

 TIMER#2 is kept operating and alarm signals are still to be received as per previous. Alarm signals are required continually to keep the zone in "FULL ALARM". Each time another alarm is received Timer#3 is restarted (ie 70 seconds)

Failure to comply with TIMER#2 will result in the zone being returned back to its **NORMAL** state once TIMER#3 has elapsed.

ZONE OUTPUT CONFIGURATIONS

Once a zone has alarmed, its output functions as programmed to one of the following output types.

Type	Output Description
1	Indicate Only
2	Indicate, Bell
3	Indicate, Bell, General Alarm
4	Indicate, Bell, General Alarm, Ancillary
5	Indicate, Bell, General Alarm, Ancillary, Brigade Relay #1
6	Indicate, Bell, General Alarm, Ancillary, Brigade Relay #2
7	Indicate, Bell, General Alarm, Ancillary, Brigade Relay #1, & Brigade Relay #2

Refer to technical specification for descriptions of output types.

The zone can also be programmed to operate one (1) or more relay contacts through the use of the relay mapping output feature.

ALARM VERIFICATION FACILITY (AVF)

Alarm verification (AVF) is a facility used to minimise false alarms. It is also commonly referred to as a "CHECK- ALARM".

GLOBAL PROGRAMMABLE OPTIONS

AVF TIMEOUT
Disabled
2 Minutes
3 Minutes
4 Minutes
5 Minutes

Operation is as follows:

If a zone is programmed as AVF and it registers an alarm, no alarm functions are performed, if it is the first AVF zone in alarm.

This zone and all other zones programmed as AVF zones are reset by shutting down power to their detectors for 12 seconds, the power is then restored and the zones are re- enabled.

The alarm verification zones are now in "alert" mode. Any AVF zone going into alarm within the preselected timeout period (2,3,4,5 minutes) will then cause an immediate alarm condition with all the programmed output functions being initiated.

If no alarm is received within this period, the AVF zones are removed from the "alert" mode and returned to normal. A further alarm will re-initiate the reset sequence etc.

Other zones are unaffected by the actions of AVF zones. They will all function as normal, regardless of AVF zone status.

If the timeout period is disabled, the alarm will transmit instantly thus making the AVF non-functional.

ANCILLARY TRIP (ACF)

The ancillary trip is used for the shutting down of air conditioning systems etc. in the event of a fire.

GLOBAL PROGRAMMABLE OPTIONS

ANCILLARY TRIP (ACF)	
NON-LATCHING	ND
LATCHING	ND
NON-LATCHING	NE
LATCHING	NE

The ancillary trip can be programmed as latching or non- latching depending on the application.

It call also be programmed as normally energised or normally de-energised.

If a zone is programmed to operate the ancillary trip, an alarm condition will energise the ancillary trip until the alarm is removed (if non-latching), or until the alarm is removed and the ACF is manually reset via the keypad (latching).

RELAY OUTPUT MAPPING

A total of 64 expansion relays can be fitted to the INERTIA-2464. Each relay can be individually programmed to mimic any of the following;

STANDARD OUTPUTS WHICH MAY BE MIMICED

ANCILLARY OUTPUT (ACF)
BRIGADE ALARM RELAY #1
BRIGADE ALARM RELAY #2
* FAULT RELAY (NORMALLY ENERGISED)
* MAINS FAIL RELAY (NV) (NORMALLY ENERGISED)
ISOLATE RELAY
GENERAL ALARM RELAYS
BELL OUTPUT
DOOR SWITCH
RESET
DOOR HOLDER RELAY
FAULT/ISOLATE

When mapping to a normally energised relay, take care to ensure that connections take into account the normally energised state of the relay.

Alternatively, the expansion relay(s) can be mapped to provide customised logic to suit specific installations:

AND MAPPING

AND MAPPING which allows the relay output to be programmed so if a programmed combination of up to 5 zones, **all** go into alarm, the relay will operate.

AND MAPPING is useful for applications which have special shutdowns, multiple risk Gas Facilities etc.

OR MAPPING

OR MAPPING works similarly. This function will cause the relay to operate if **any** one of up to five (5) zones go into alarm, the relay will operate.

If the relay map options are set as "01" "02" "03" "00" "00", zones 1 or 2 or 3 in alarm will cause the relay to operate.

OR MAPPING is useful for applications which have special shutdowns, zoned mimic outputs etc.

FAULT MAPPING

FAULT MAPPING works the same as OR mapping of alarm except it relates to the fault flag on each zone instead of the alarm flag. This function will cause the relay to operate if **any** one of up to five (5) zones go into fault.

If the relay map options are set as "01" "02" "03" "00" "00", then zones 1 or 2 or 3 going into fault, will cause the relay to operate.

FAULT/ISOLATE MAPPING

FAULT/ISOLATE MAPPING works the same as OR mapping of alarm except it relates to the fault/isolate flag on each zone instead of the alarm flag. This function will cause the relay to operate if **any** one of up to five (5) zones go into fault/put in isolate.

If the relay map options are set as "01" "02" "03" "00" "00", then zones 1 or 2 or 3 going into fault/(or are manually put in isolate) will cause the relay to operate.

ISOLATE MAPPING

ISOLATE MAPPING works the same as or mapping of alarm except it relates to the isolate flag on each zone instead of the alarm flag. This function will cause the relay to operate if **any** one of up to five (5) zones are put in isolate.

If the relay map options are set as "01" "02" "03" "00" "00", then zones 1 or 2 or 3, if put in isolate will cause the relay to operate.

GLOSSARY OF TERMS

AS-1603.4   Australian standard for; -
                  Automatic Fire Detection and Alarm Systems Control and Indicating Equipment.

AS-1670   Australian standard for; -
                  Automatic Fire Detection and Alarm Systems System Design Installation and Commissioning.

AS-1668.1   Australian standard for; -
                  SAA Mechanical Ventilation and Air Conditioning Fire Precautions in Buildings with Air-handling Systems.

AZF	Alarm Zone Facility (zone)
MAF	Master Alarm Facility
ACF	Ancillary Control Facility
AVF	Alarm Verification Facility
ISOL	Isolate
FLT	Fault
ZONE	Alarm Zone Facility
DET	Detector
LED	Light Emitting Diode
LCD	Liquid Crystal Display
A/C	Air Conditioning
AC	Alternating Current
DC	Direct Current
V	Voltage
A	Amps
FIP	Fire Indicator Panel
N/L	Non Latching
TD	Time Delay
STD	Standard
SBY	Standby
BR1	Brigade Relay 1
BR2	Brigade Relay 2
NV	AC Fail Relay
IS	Isolate
GEN	General Alarm Contacts
D/H	Door Holder
RLY	Relay

APPENDIX G

SUMMARY OF TERMINATIONS AND CAUTIONS.

MCP LOOP

Used for the looping of the manual call point to a particular zone chosen for indication. This is achieved by wiring from the zone, to the MCP, to the MCP loop then out to the field with the EOL across the last detector. The MCP is the first device on the circuit and both fault and alarm conditions will be indicated.

DETECTION ZONES

Refer to list of compatible actuation devices for detectors which may be used. Any other hard contact device may be used on these detection zones. An end of line resistor (E.O.L) of 4K7 ohms is required.

RELAY OUTPUTS

Relay outputs are voltage free change over contacts rated at 50VDC 1 Amp. DO NOT attempt to switch 240VAC with these relay contacts.

Note: Relay Contacts Shown At Terminals (NC, C, NO) Are For The Relay In a De- Energised State.

BELL OUTPUTS

This output is fused at 1 Amp and can drive up to 10 bells as specified. Output is also monitored and if no bells are connected a termination resistor (4K7 ohms) is required across the output terminals.

ACF OUTPUTS

This output is fused at 1 Amp. Output is also monitored and if no ancillary devices are connected, a termination resistor (4K7 ohms) is required across the output terminals.

DOOR HOLDER OUTPUTS

When a door holder transformer is fitted to the panel, this output becomes functional. Output is rated at 3 Amps maximum and can power up to 30 Inertia style door holders continuously. (Nom. 80mA each). Output is separately fused at 3A (F1).

AUXILIARY POWER & MIMIC POWER

A total auxiliary power draw of 500mA is available from the auxiliary power and mimic power terminals. This output is fused at 1 Amp (F3) and is battery backed.

MAF ISOL & TRANSPONDER 0V

A 0V signal is switched back from the transponder test switch and is used for indication purposes at the FIP. This will indicate as MAF ISOLATED and initiate a common fault. It can also used for external devices to indicate a fault eg: evac amplifier speaker monitor.

MIMIC DATA & CLOCK

These outputs together with the mimic power terminals are used to serially communicate with the mimic panels when fitted. EOL resistor is not required on these lines.

AC INPUT

Mains step down transformer output (30VAC) is connected at these terminals. *DO NOT* connect 240VAC to these terminals.

BATTERY

The 24V batteries are connected at these terminals. Reverse polarity can cause serious and permanent damage to the equipment.

DOOR HOLDER AC INPUT

Terminate the door holder AC transformer at these terminals. 24VAC is the only acceptable power source at this point. *DO NOT* connect 240VAC at this point.

OUTPUT RELAYS

SBY   Normally energised, drops out when power supply (or battery supply) is below specified voltage.

BR1   Brigade 1, defaults as energising on any alarm zone, programmable.

BR2   Brigade 2, defaults as energising on any alarm zone, programmable.

FLT   Normally energised, drops out on any fault unless that function is isolated.

NV   Normally energised, drops out if the mains is lost.

ISO   Energised if any zone is isolated.

GEN1 Energised if any zone goes into alarm

GEN2 Energised if any zone goes into alarm

2464 PROGRAMMED OPTIONS

Global System Parameters	Date: / /

	Latch ND	Non-Latch ND	Latch NE	Non-Latch NE
ACF Output				

	Disabled	2 min	3 min	4 min	5 min
Alarm Verification (AVF)					

Notes:
Programmed by

Place an "X" in the appropriate box ▓▓▓▓ = Default

ZONE TYPE PROGRAMMING	Date: / /

AZF No.	1 STD 2S	2 STD AVF	3 N/L 2S	4 N/L 20S	5 T/D 10S	6 T/D 20S	7 T/D 30S	8 T/D 40S	9 T/D 50S	10 T/D 60S
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Place an "X" in the appropriate box   = Default

AZF No.	1 STD 2S	2 STD AVF	3 N/L 2S	4 N/L 20S	5 T/D 10S	6 T/D 20S	7 T/D 30S	8 T/D 40S	9 T/D 50S	10 T/D 60S
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ZONE OUTPUT PROGRAMMING	Date: / /

AZF No.	INDICATE	I-BELL	IB-GENERAL	IBG-ACF	IBGA-BR1	IBGA- BR2	IBGA-BR1&BR2
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
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Place an "X" in the appropriate box   = Default

AZF No.	INDICATE	I-BELL	IB-GENERAL	IBG-ACF	IBGA-BR1	IBGA-BR2	IBGA-BR1&BR2
33							
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36							
37							
38							
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40							
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Place an "X" in the appropriate box   = Default

RELAY OUTPUT MAPPING   Date: /   /

RLY	ISO	ACF	BR1	BR2	FLT	MAINS FAIL	GEN	BELL	D/H	AND	OR	FLT	ISO	ISO/ FLT	DO- OR	RE- SET
												MAPPING				
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Place an "X" in the appropriate box   ▓▓▓▓ = Default

RLY	ISO	ACF	BR1	BR2	FLT	MAINS FAIL	GEN	BELL	D/H	MAPPING						
										AND	OR	FLT	ISO	ISO/ FLT	DO- OR	RE- SET
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APPENDIX I

TECHNICAL DRAWINGS

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L2400_1	Presentation Drawing	Rev A
L2400_3	System ConFiguration	Rev A
E2400_1	Typical Output Connection	Rev A
2464PS_3	External 3A Power Supply	Rev C

	ACT	FLT	ISO
MAINS ON ○			
BATTERY FAULT ○	MAF ○		○
CHARGER HIGH ○	ACF ○	○	○
CHARGER LOW ○	BELLS ○	○	○
COMMON FAULT ○	BUZZER ISOLATED ○		

X X X X X X X
X X X X X X X

AZF	LOCATION	ALM	FLT	ISO
1		○	○	○
2		○	○	○
3		○	○	○
4		○	○	○
5		○	○	○
6		○	○	○
7		○	○	○
8		○	○	○

BATT. TEST   AUTO TEST   WALK TEST   SILENCE
BUZZ. ISOL. / PREVIOUS   BELL ISOL. / NEXT   ACF ISOL. / SELECT   ACF RESET / EXIT

AZF
ALARM TEST   [1] [2] [3]
FAULT TEST   [4] [5] [6]
ISOLATE   [7] [8] [9]
RESET   [ALL] [0] [ENT]

NOTIFIER
INERTIA FIRE SYSTEMS

2400 FIRE PANEL
FRONT PANEL LAYOUT
PRESENTATION DRAWING

2464 FIRE PANEL SYSTEM CONFIGURATION PRESENTATION DRAWING

LOAD TEST RESISTOR

FAN − +

PS249

SP3

CONN1

MAINS FAIL
NO N/C COM

LOAD RES

B/TEST

VR2 (V) DC

VR1 (I) AC

BATT −
BATT +
MAINS −
MAINS +
OPUT −
OPUT +

220/240V AC MAINS ISOLATION SWITCH

400V 25A BRIDGE

240V/30V 300VA TRANSFORMER

15A

SP5
SP4
SP6

BATTERY TEST INPUT

MAINS ON LED INDICATION
0V OUTPUT TO PANEL
+24V OUTPUT TO PANEL

IFS PCB801 REV H.>>

1	1	+24V
2	2	0V
3	3	SENSE
4	4	BATT +
5	5	MAINS ON
6	6	BATT TEST
7	7	BATT RESET
8	8	BATT NEG

1	1	24V AC INPUT
2	2	24V AC INPUT
3	3	BATT +
4	4	BATT -
5	5	D/H INPUT
6	6	D/H INPUT

POS   NEG

BATTERY

NOTE   REMOVE JP4 FROM MAIN BACKBOARD
WHEN EXTERNAL POWER SUPPLY FITTED

NOTIFIER®
INERTIA FIRE SYSTEMS

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Sheet: 1 Of: 1
Drawn/Traced 3/1/1
Engineer Design G.W.
Approved
This Drawing must not be used for Construction unless signed as approved

Title
EXTERNAL 9A POWER

Size A4 | Drg. No. | 24-9A-1 | Rev B

| B | REVISED RELAY CONN | GW | GW | 9/1/1 |
| No. | Revision - revise on CAD. Do not amend by hand | Eng. | App. | Date |