NOTIFIER®

INERTIA
FIRE SYSTEMS

OPERATORS MANUAL

& INSTALLATION / PROGRAMMING MANUAL

AFP-2800

Fire Alarm Panel

Revision 1.2

October 30, 2001

Approvals:
Australian Standard AS4428.1 1999
SSL Approval No XF1769/R2
SSL Accredited

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QUALITY ASSURED FIRM ISO 9001 SGS

SECTION 1: EMERGENCY OPERATORS GUIDE

Isolate Bells	**Press: EXT BELL ISOLATE**
	• EXT BELL ISOLATE LED will light • The Bells & Buzzer will stop • A subsequent alarm will restart the Buzzer but not the bells • The bell isolate can be toggled by pressing the button a second time
Isolate Warning System	**Press: WARN SYS ISOLATE**
	• WARN SYS ISOLATE LED will light • The warning system will stop • A subsequent alarm will restart the Buzzer but not the warning system • The warning system isolate can by toggled by pressing the button a second time
Acknowledging an Alarm	**Select the Alarm using the PREV, NEXT buttons** **Press: ACK to acknowledge**
	• This will individually acknowledge alarms • Once all alarms are acknowledged the alarm LED will go steady
Resetting an Alarm	**Select the Alarm using the PREV, NEXT buttons** **Press: RESET then press ACK to confirm the resetting**
	• This will individually reset alarms • Resets zone in alarm and clears all alarm outputs • If alarm is still present, the zone(s) will re-alarm again after about 5 seconds
Isolate an Alarm	**Select the Alarm using the PREV, NEXT buttons** **Press: ISOL then press ACK to confirm the isolation**
	Isolates the point in alarm and clears it's alarm outputs Isolating a zone automatically acknowledges the zone

SECTION 2: TABLE OF CONTENTS:

SECTION 3: SYSTEM DESCRIPTION

The AFP2800 is a state-of-the-art microprocessor based distributed Fire Alarm Detection System. The panel comprises multiple microprocessors for sharing the processing load both within the panel and in the field modules using proprietary multiplexing communications, thus the term “distributed system”.

The main panel communicates with the intelligent field devices via RS485 communications rings. Each field device can have multiple inputs and outputs. These inputs and outputs can include (but are not limited to) smoke or heat detector circuits, bells and air conditioning controls.

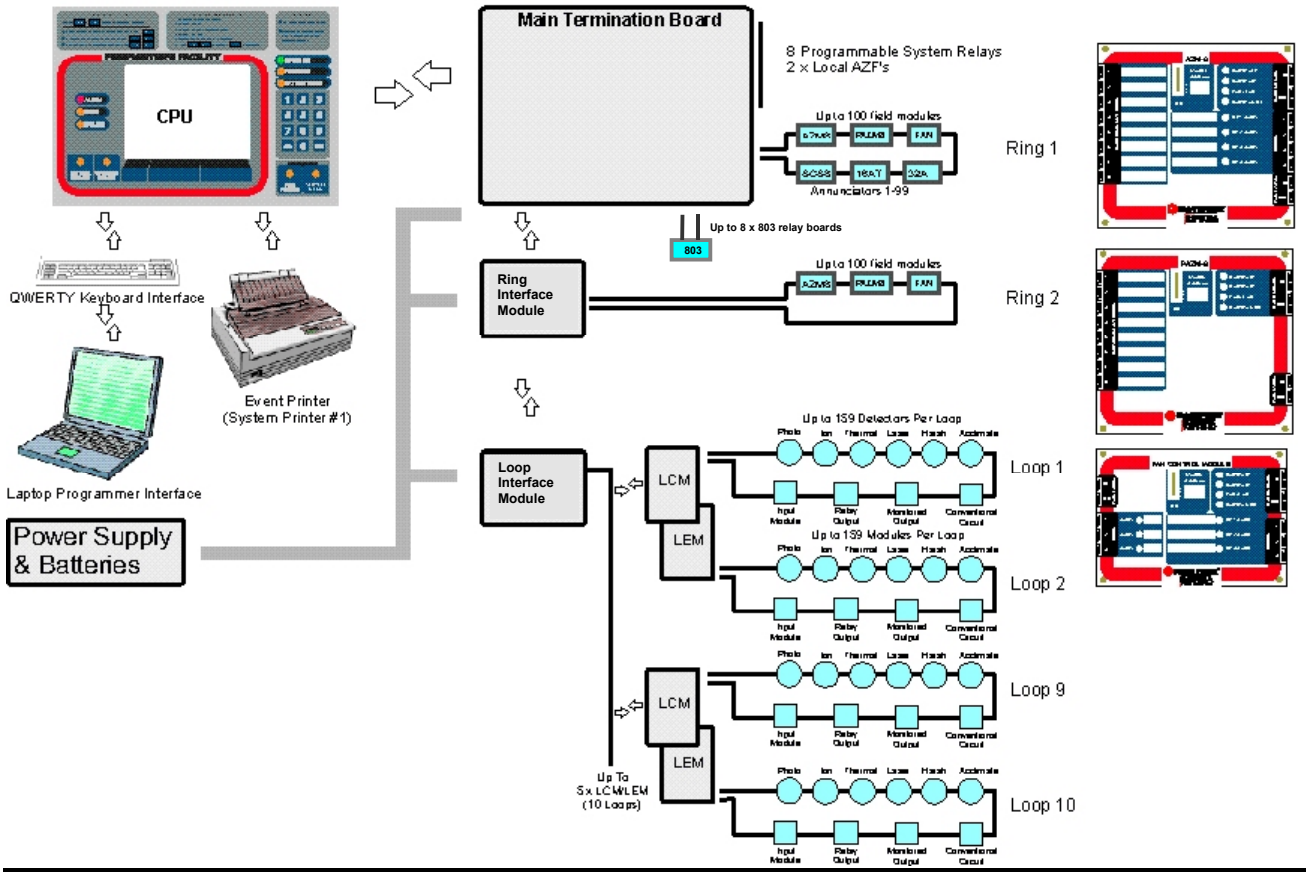
The system supports two RS485 communications rings. Each ring can support up to 100 distributed field modules and ring 1 can additionally support up to 99 panel annunciators and 30 LCD-80 units in terminal mode.

In addition to the two rings of distributed conventional communication, the panel can support up to 10 loops of Notifier FlashScan™ Analog /Addressable points. Each FlashScan™ loop can support 159 detectors and 159 modules.

In its maximum configuration, the panel can support up to 1602 Conventional Detection Circuits, more than 800 Programmable Relay Outputs and 3,180 Analog/Addressable FlashScan™ points.

All of this data is stored in a large database and text based scripts are continuously processed to implement the logic of input and output functions similar to a programmable logic controller (PLC).

The system’s configuration data and event history is stored in non-volatile “Flash” memory, which does not rely on battery power for its backup. The operating system is also stored in flash memory so there is no need for EPROM changes to upgrade the firmware.



3.1 SPECIFICATIONS & APPROVALS:

General Specifications:

Cabinet	Zinc Sealed Steel 1.6mm Powder Coated Hinged Inner Door Hinged Outer Door
AC Operational Voltage	240 VAC 50Hz ± 10% Australian Version
Internal Power Supplies	24 VDC (nom) 3.0AMP (9.0 AMP optional)
Primary Microprocessor	68EC000
Memory Type	Non-volatile 16Mbit Flash
Liquid Crystal Display	Quarter VGA
Environmental	Dry cold/heat: -10 Deg. C to +55 Deg. C Damp heat: +40 Deg. C @ 93% Relative Humidity.
IP Rating	IP 51

3.2 APPROVALS INFORMATION

Manufacturer: Notifier Inertia Pty Ltd
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Phone: +61-2-9899-4155
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Product Name: Notifier Inertia AFP-2800 (formerly Notifier Inertia DFP-2800)

Approved to: AS4428.1 1999

Approval Document #: XF1769/R2

Issued By: Scientific Services Laboratory

Panel Serial #: _____

Date Of Manufacture: _____

3.3 ELECTRICAL SPECIFICATIONS

3.3.1 POWER SUPPLY

Parameter	PS243 (3Amp Supply)	PS249 (9Amp Supply)
Input Voltage	240 V AC +/- 10%	240 V AC +/- 10%
Input Range	216 V AC to 254 V AC	216 V AC to 254 V AC
Output Voltage	24 V DC nom.	24 V DC nom.
	27.6 V DC no load	27.6 V DC no load
	26.5 V DC full load	26.5 V DC full load
Adjustable Range	12 V DC to 30 V DC	12 V DC to 30 V DC
Rated Current Of Power Supply	3.0A @ 26.5 V DC	9.0A @ 26.5 V DC
Max Device Rating (electronic)	3.5A @ short circuit	9.5A @ short circuit
Overload Current Device	7.4A @ Short Circuit	20A @ Short Circuit
Secondary Transformer Fuse	5 A	15 A
Max Ripple	150 mV p-p	150 mV p-p
Load Regulation	2%	2%
Line Regulation	2%	2%
Temperature Coefficient	0.002V/°C	0.002V/°C
Efficiency	>80%	>80%
Switching Frequency	200 kHz	200 kHz
Battery Test	Internal: 15 ohms	Internal: 15 ohms
Battery Test Relay Contact Rating	10A	15A
Indicators	Mains On, Output On	Mains On, Output On
Status Indicators	By External Interface or FIP	By External Interface or FIP
Environmental	-10°C to +55°C Dry heat +40°C @ 93% RH	-10°C to +55°C Dry heat +40°C @ 93% RH

WARNING: Severe damage will result if the batteries are connected incorrectly.

3.3.2 CPU & TERMINATION BOARD

Supply Input requirements	20 to 28V DC 55mA max (without CPU board or field loops connected) 210mA max (with CPU board, without field loops connected)
Alarm Inputs	Two conventional Alarm Zone inputs are provided, detecting open circuit fault, short circuit fault, alarm, and normal. Each input is monitored and requires a 4K7 (nom) EOL resistor.
Power Outputs	Auxiliary Power Output 20-28V 1A max 24V DC & 5V DC Power to Ring Expander Boards CPU power supply – 5V DC+/- 5% 3A
Alarm Outputs	4 x 1A monitored outputs 4 x ELV relay contact outputs
Communications Link	EIA485 on dual ports 24V DC (nom) 2A Max Note: Up to 200 field modules may be installed. Additional auxiliary power supply(s) will be required, depending on the number of field modules installed.
Indications	LED indications on Relay Outputs and Fuses
Panel Expansion Relays	Expansion for 64 x 1A ELV relay contact outputs via 8 serial IFS-803 Relay Boards

3.3.3 LCM/LEM FLASHSCAN™ LOOP CONTROLLER MODULES

	Minimum	Nominal	Maximum
Operating voltage V DC	20.6	24	29
Loop communications voltage	15	24	32
Loop current limit mA	340	400	430
LCM/LEM Pair Q Current	140		200
Communications Link	EIA485 on dual ports		
LED Indications	Green – Onboard 5VDC Supply OK Amber – Ground Fault Detected		

3.3.4 FAN CONTROL MODULE

Supply Input	20 to 28V DC 55mA max (no relays energised) 130mA max (all inputs and relays energised)
Inputs	3 x Opto Isolated
Outputs	3 x ELV relay contact outputs
Communications Link	EIA485 on dual ports
Indications	LED indications on: Inputs Outputs RX/TX Power Fault

3.3.5 AZM 8

Supply Input	20 to 28V DC 90mA max (no relays energised) 155mA max (all relays energised)
Inputs	8 conventional alarm inputs Monitoring – Open Circuit Short Circuit Alarm Fault
Outputs	4 x ELV relay contact outputs
Communications Link	EIA485 on dual ports
Indications	LED indications on: Outputs RX/TX Power Fault

3.3.6 PAZM 8 (FUTURE RELEASE)

Supply Input	20V to 28V DC 100mA max (no alarms)
Inputs	8 A/D Alarm zone Inputs EOL Programmable from 1K5 to 5K6
Communications Link	EIA485 on dual ports
Indications	LED indications on: RX/TX Power Fault

3.3.7 ACM-16AT

Supply Input	20V to 28V DC 40mA Standby 56mA Alarm
Communications Link	EIA485 multi-dropped

3.3.8 ACM-32A

Supply Input	20V to 28V DC 40mA Standby 56mA Alarm
Communications Link	EIA485 multi-dropped

3.3.9 SCS-8

Supply Input	20V to 28V DC 33mA Standby 20mA max current per LED when LED ON
Communications Link	EIA485 multi-dropped

3.3.10 LDM-R32

Supply Input	20V to 28V DC 40mA Standby 200mA Alarm (32 relays energised)
Communications Link	EIA485 multi-dropped
Relay contacts	1Amp maximum current

3.3.11 LCD-80

Supply Input	20V to 28V DC 100mA Standby 100mA Alarm
Communications Link	EIA485 multi-dropped

3.4 COMPATIBLE ADDRESSABLE DEVICES

MAKE	MODEL	TYPE	MODEL NUMBER
ANALOG ADDRESSABLE DETECTORS			
Notifier – FlashScan™	Thermal	Fixed Temp	FST-751
Notifier – FlashScan™	Thermal	Rate Of Rise	
Notifier – FlashScan™	Smoke	Photo-Optical	FSP-751
Notifier – FlashScan™	Smoke	Ionisation	FSI-751
Notifier – FlashScan™	Smoke	VIEW	FSL-751
Notifier – FlashScan™	Combination	Acclimate	FAPT-751
ANALOG ADDRESSABLE MODULES			
Notifier – FlashScan™	Input Module	Conventional Zone Interface	FZM-1
Notifier – FlashScan™	Input Module	Monitor	FMM-1
Notifier – FlashScan™	Input Module	Mini Monitor	FMM-101
Notifier – FlashScan™	Output Module	Relay	FRM-1
Notifier – FlashScan™	Output Module	Control Output	FCM-1

3.5 COMPATIBLE CONVENTIONAL DETECTORS

MAKE	MODEL	TYPE	MODEL NUMBER
System Sensor	Thermal	Type A	5451AUS
System Sensor	Thermal	Type B	4451AUS
System Sensor	Smoke	Photo-Optical	2151AUS
System Sensor	Smoke	Ionisation	1151AUS
Hochiki	Thermal	Type A	DCD-A
Hochiki	Thermal	Type B	DFJ-60B
Hochiki	Thermal	Type C	DCD-C
Hochiki	Thermal	Type D	DFJ-90D
Hochiki	Thermal Cool Room	Type B sealed	DFG-60BLKJ
Hochiki	Smoke	Ionisation	SIJ-ASN
Hochiki	Smoke	Photo Optical	SLR-AS
Vision Systems	VESDA E700	CONTACT DEVICE	
Vision Systems	VESDA E70D	CONTACT DEVICE	
Vision Systems	VESDA LaserPLUS	CONTACT DEVICE	

3.6 COMPATIBLE BATTERIES

In general, any Sealed Lead Acid Battery, or Wet Lead Acid Battery designed for stationary use is compatible with the AFP2800 Fire Indicator Panel. Automotive batteries must not be used. The use of Nickel Cadmium batteries is not recommended.

Manufacturer	Type	Number	Voltage	Capacity (Ah)	Qty Required
Best and Best	Sealed LA	BP17-12	12	17	2
Best and Best	Sealed LA	BP24-12	12	24	2
Best and Best	Sealed LA	BP40-12	12	40	2

NOTE: The batteries could be seriously and permanently damaged if they are permitted to discharge below 20V DC when placed in series.

3.7 SYSTEM CAPACITY AND EXPANDABILITY

Base System

Item	Description	Notes
Communications Ring 1	RS485 communications ring to support Up to 100 Field Modules Up to 99 Annunciators	
8 System Outputs	Bell Output Warning System Output General Alarm Output 5 Additional programmable relay outputs	
Power Supply	3 Amp power supply and battery charger Fused 24VDC outputs	A larger power supply will be required if total module load exceeds 2.5A. Power supplies up to 18A are available.
2 Local AZF's	AZF 1 AZF 2	
2 RS232 comms ports	Laptop interface System event printer	
Keyboard Interface	PS2 QWERTY IBM PC keyboard	
System Memory	7500 Named points 5000 Control scripts 4000 History events	

System Expansion

Item	Description	Notes
Ring Expander – Communications Ring 2	Second RS485 communications ring to support Up to an additional 100 Field Modules	
Loop Interface Module – FlashScan ™	Ring expander module to communicate with up to 5 x pairs of Notifier LCM/LEM modules. ie: total of 10 loops of FlashScan™.	Each loop of FlashScan™ supports 159 Analog/Addressable Detectors and 159 Addressable Modules
Panel Expansion Relays	Up to an additional 8 IFS-803 8-way relay boards can be added via the panel serial relay port	

FlashScan™ Loops

Item	Description	Notes
LCM	FlashScan™ Loop Controller Loops 1,3,5,7,9	Max 5 per system
LEM	FlashScan™ Loop Controller Loops 2,4,6,8,10	Max 5 per system, LEM "piggybacks" onto LCM.

Annunciators

Item	Description	Notes
ACM32 Annunciator	32 Red LED	A maximum of 99 Annunciators can be installed on communication ring #1.
ACM16AT Annunciator	16 Pushbutton 16 Red LED 16 Yellow LED	
SCS-8 Annunciator	8 x 3 Position switches 8 x Red LED 8 x Yellow LED 8 x Green LED	
LDM-R32 Annunciator	32 x 1 Amp relay outputs	

Field Modules

Item	Description	Notes
AZM-8	8 AZF inputs 4 Programmable Relay Outputs	A maximum of 100 field modules can be installed on communications ring #1 and 100 on communications ring #2. On board power supply accommodates for the first 10 modules. Larger power supplies and separate feeds are required for systems with additional modules. RS485 signal is regenerated at each field module.
PAZM-8	8 AZF Inputs with programmable end of line resistor values (1k5 to 5K6)	
Fan Controller	3 Inputs (Opto-isolated, not monitored) 3 Programmable outputs	

Display Interfaces

Item	Description	Notes
LCD-80	Terminal mode display interface	A maximum of 30 Display Interfaces can be installed on communications ring #1.

SECTION 4: PANEL OPERATION

4.1 FRONT PANEL DISPLAY

The AFP2800 is fitted with a one quarter VGA resolution graphical LCD screen allowing ease of use for the operator by displaying multiple lines of information. The AFP-2800 uses the concept of “hard” and “soft” buttons.

A “hard” button is one which is labelled with a fixed function (e.g. **EXT BELL ISOLATE**).The functions of these buttons do not change.

A “soft” button is one of the five buttons along the bottom of the LCD display. The function of the button may change depending on the screen being displayed at the time. To indicate the button function, its label is changed by software, and displayed along the bottom line of the LCD as a pictorial representation of a button. Not all buttons are shown on a screen, and the unlabelled buttons will have no effect if pressed.

Rather than having a cluttered front keypad fascia with letters numbers and function keys, the AFP-2800 accepts a standard PC101 style keyboard plugged directly into the CPU to allow full QWERTY function accessibility for programming and diagnostic test. This provides not only ease of operation but also a more secure environment as it prevents unauthorised tampering of the system configuration.

The LCD display is used to display information about the status of the system, field devices, and programming menus. The layout of the front keypad provides a “Fire-fighter's facility” in accordance with AS4428. The purpose of this facility is to provide a uniform display for all fire alarm panels to assist Fire-fighters during a response. The thick red border signifies the Fire-fighters area and provides alarm based functions for the Fire-fighter.

The mode select buttons (bottom right) will toggle the system in between Fire-fighters mode and the service menu where routine service and diagnostic tests can be performed. If there are any active and unacknowledged alarms on the system, the system will jump to and remain in Fire-fighters mode until all alarms are acknowledged or reset.

4.1.1 SELECTING SCREEN ITEMS

Selecting a screen item may be done in two ways

1. On a screen where the functions are numbered (e.g. Service Menu screen), pressing the number in front of the appropriate item will immediately select that item.

2. On a screen with UP/DOWN facility, pressing the UP or DOWN (or PREV / NEXT) button will move the highlighted cursor up or down the list. When the SELECT button is pressed, the highlighted item will then be selected.

4.1.2 ENTERING INFORMATION

On screens where character information needs to be entered, such as point labels, this must be done using an external QWERTY style keyboard plugged into the PS2 keyboard plug on the rear of the CPU panel.

On screens (e.g. menus, change time/date) that require only numbers to be entered, can be entered directly with the ten digit numeric keypad.

4.1.3 SYSTEM COUNTERS

On the top right hand side of all screens are the system counters showing the total number of alarms, faults, isolates and non-alarm (supervisory) events on the system at any time. If a device is both isolated and in fault it will increment both counters. For more information as to which points are isolated, refer to the list menus.

A = 2
F = 5
I = 10
N = 5

4.1.4 POINT FORMATS

As the system is a database, all distributed points on field modules are controlled and referred to in "Ring, Module, I/O format". ie: Ring.Module.I/O - where I/O can consist of input, output or AZF.

Examples are as follows.

Point to be referred to	Syntax
Ring 1, Module 1, Output 1	**1.1.o1.**
Ring 1, Module 20, AZF input 1	**1.20.Z1**
Ring 1, Module 30, input 1	**1.30.i1**
Ring 1, Annunciator 1 (module 101), Output 1 (led #1)	**1.101.o1**
Ring 1, Annunciator 99 (module 199), Input 1 (button #1)	**1.199.i1**
FlashScan™ Loop 1 Detector 1	**L1D1**
FlashScan™ Loop 1 Module 1	**L1M1**

System points will be displayed and can be referred to as follows:

Description	Syntax	Comments
On Board AZF's		**2 AZF's on termination Board**
AZF #1	0.1.z1	(Ring 0 Module 1, zone 1)
AZF #2	0.1.z2	(Ring 0 Module 1, zone 2)
Distributed Field Modules		**Up to 99 modules per ring**
AZF	1.1.z1	8 AZF points per AZM8 or PAZM8 module
Din	1.1.i1	3 Din Per SCS-8 Module
Dout	1.1.o1	4 Dout Per AZM-8, 3 Dout Per SCS-8
Annunciator		**Up to 99 Annunciators on ring 1**
Inputs	1.101.i1	16 Din per 16AT, 24 Din Per SCS-8
Outputs	1.101.o1	32 Dout Per 16AT, 24 Dout Per SCS-8, 32 Dout Per ACM32A
FlashScan™ Devices		**Up to 10 Loops**
Detectors	L1D1	159 Detectors Per Loop
Modules	L1M1	159 Modules Per Loop

System Parameters		
Common Alarm	CA	
Common Fault	CF	
Common Isolate	CI	
Battery Fault	BF	
Charger Hi	CH	
Charger Low	CL	
Mains On	MO	
Ext. Bell Isolated	BI	
Warning System Isolated	WI	

4.1.5 ANNUNCIATOR ADDRESSING

The AFP-2800 can support up to 99 Annunciator devices on ring 1. There are 4 types of Annunciators that can be used.

Type	Description	Suggested Use
ACM32A	32 Red LED	Mimic panel
ACM16AT	16 Pushbuttons 16 Red LED 16 Amber LED	Output control & Isolate control
SCS-8	8 x 3 position switches 8 Red LED 8 Amber LED 8 Green LED 1 x pushbutton and Red LED for FTR	Fan Control for up to 8 fans.
LDM-R32	32 x 1 Amp relay outputs	EWIS interface

As the Annunciators co-exist on the same RS485 ring as distributed field modules, the Annunciator addresses have 100 added to them. i.e. An Annunciator set to address 1 is recognised as module address 101. Annunciators are simply treated as digital inputs and digital outputs to the system. Each button press or switch position is considered as an input, each LED is considered as an output.

Example1: If an ACM32A Annunciator is installed and addressed as #1. The last Red LED on it would be referred to as 1.101.o32 using the “Ring.Module.I/O” format.

Example 2: If an ACM16AT was installed and addressed as #2. The first Pushbutton on it would be referred to as 1.102.i1 using the “Ring.Module.I/O” format.

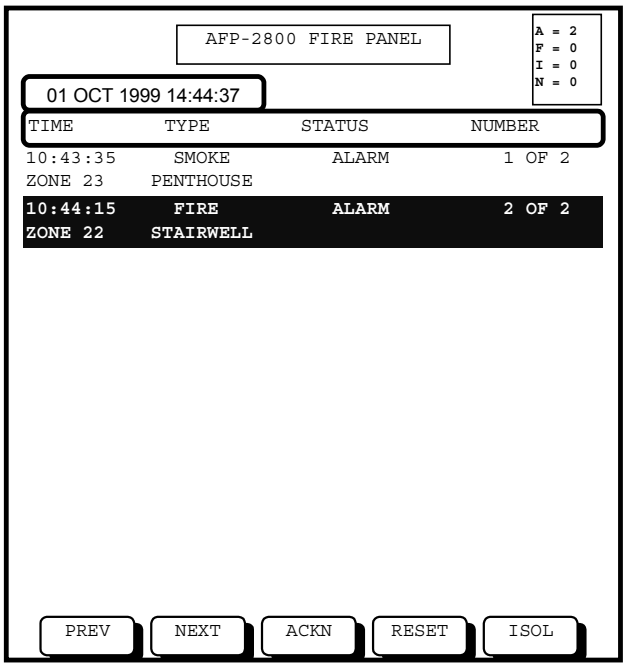
Example 3: If an SCS-8 was installed and addressed as #3. The first switch in the “up” position would be referred to as 1.103.i1 using the “Ring.Module.I/O” format.

Example 4: If an LDM-R32 Annunciator is installed and addressed as #4. The last relay on it would be referred to as 1.104.o32 using the “Ring.Module.I/O” format.

Note: Please refer to Section 5.12 for more information on Annunciator addressing and settings.

4.2 FIREFIGHTERS MODE

Only the one screen is available in this mode. The “soft” buttons control the functions available.
This mode is automatically entered when any unacknowledged alarm is present, and until all alarms are acknowledged or cleared, no other screen can be selected. The top right corner of the screen shows a quick system status, giving the total alarms, faults, isolates and non-alarm events at that time.



The soft button functions for this screen operate as follows:

PREV Will scroll the cursor up the list to the previous item.

NEXT Will scroll the cursor down the list to the next item.

ACKN Will cause the alarm to be marked as acknowledged.

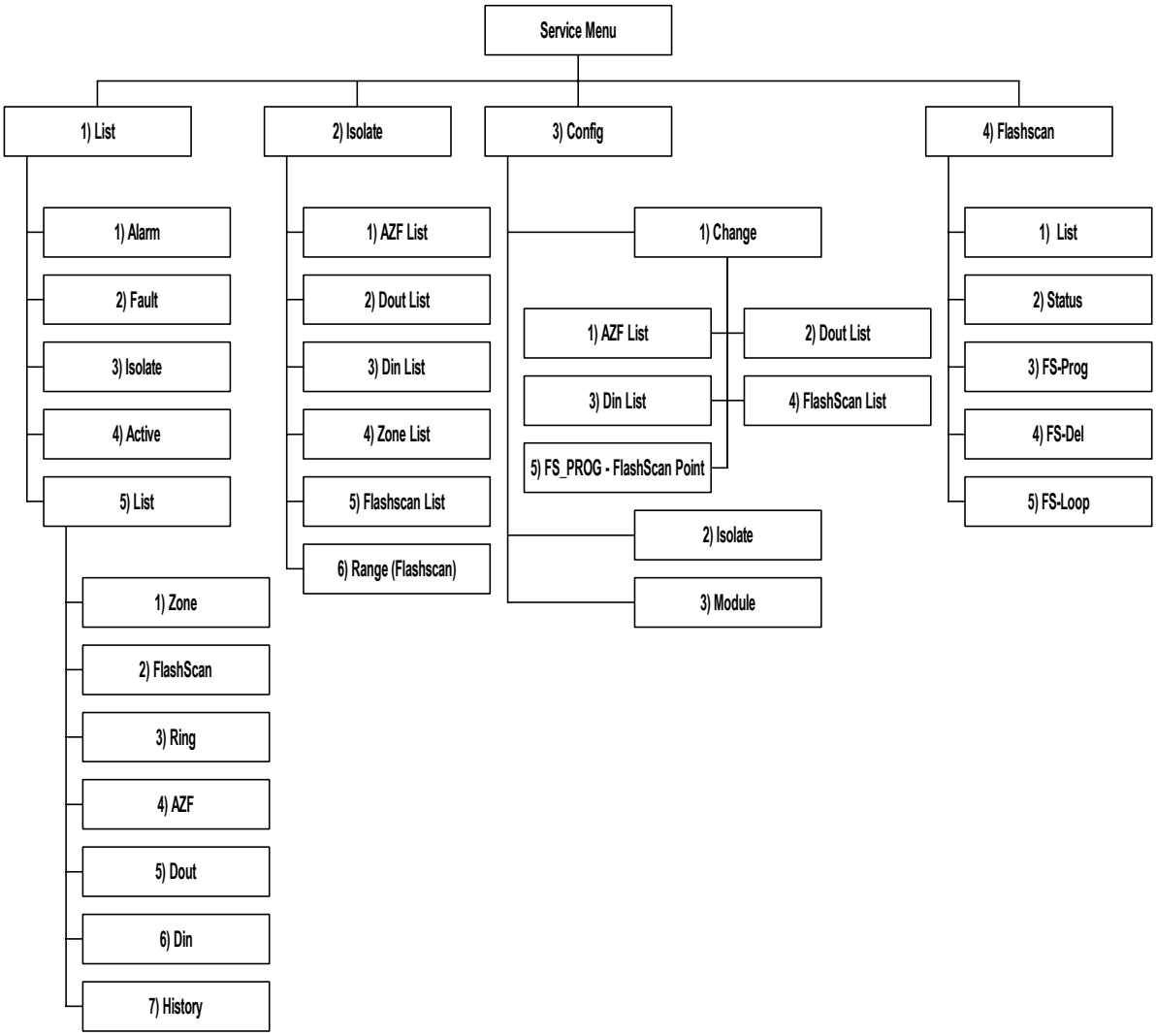
RESET Will perform a point reset function on the currently highlighted alarm. As per AS4428, you will be requested to press **ACKN** to confirm the reset. Any other button will abort the reset. Once an alarm is reset, it will be removed from the screen, however if the alarm condition is still present, it will re-alarm after a 5 second time out.

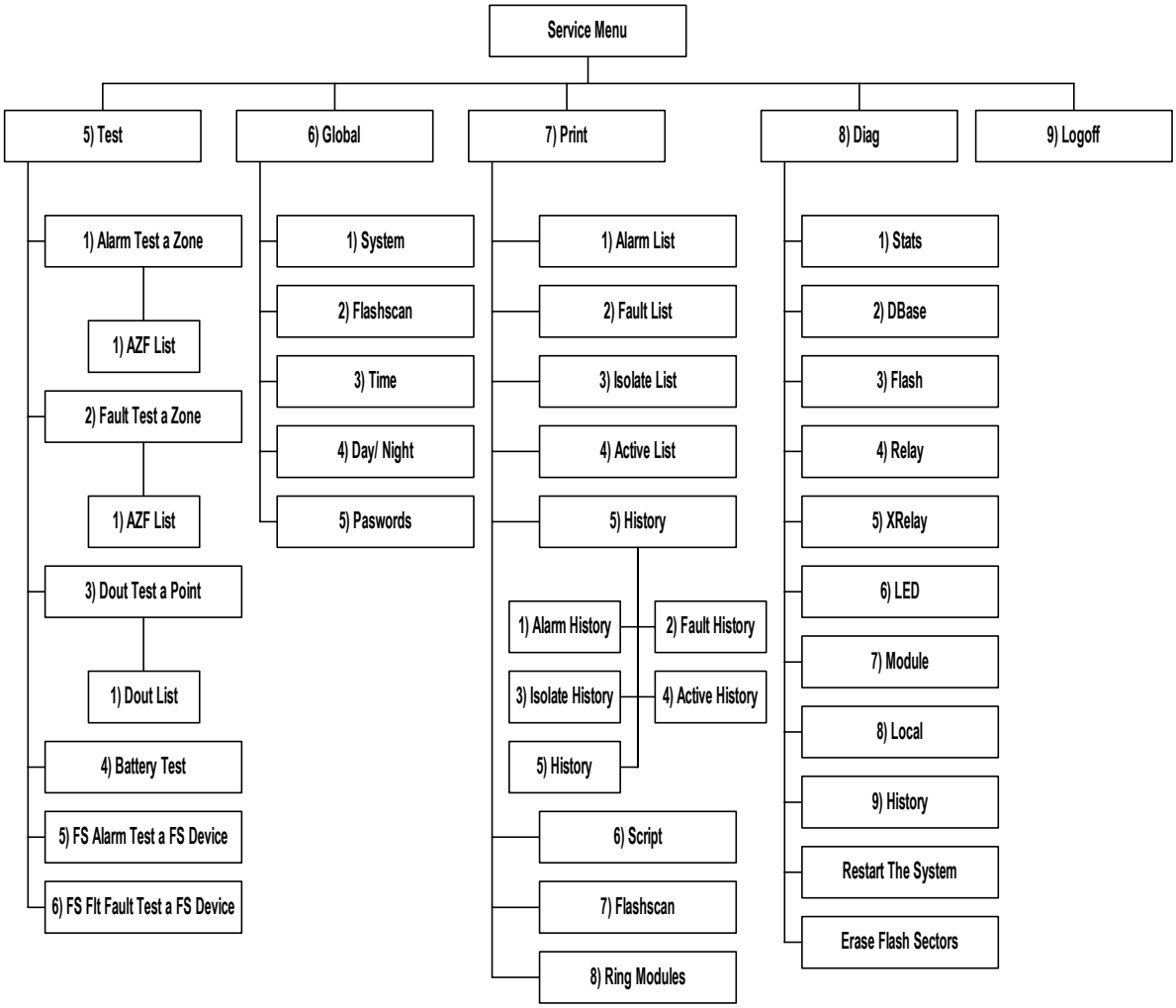
ISOL Will perform a point isolate function on the currently highlighted alarm. As per AS4428, you will be requested to press **ACKN** to confirm the isolate. Any other button will abort the isolate. Once an alarm is isolated , it will be remain on the screen marked as an isolated alarm and must be reset to clear from the alarm screen. Once an alarm is isolated, to deisolate the alarm you must go through the service menu, isol/deisol function.

Note: If “group zones” for Firefighters display is selected for AS4428, the zone displayed in fire fighters mode may be a collection of several points on the system. Resetting or isolating a zone will result in all the underlying points being isolated or reset. To view, isolate or reset individual alarm points you must go to the Service Menu and list alarms.

4.3 SERVICE MENU MODE

4.3.1 SERVICE MENU STRUCTURE





4.3.2 SERVICE MENU

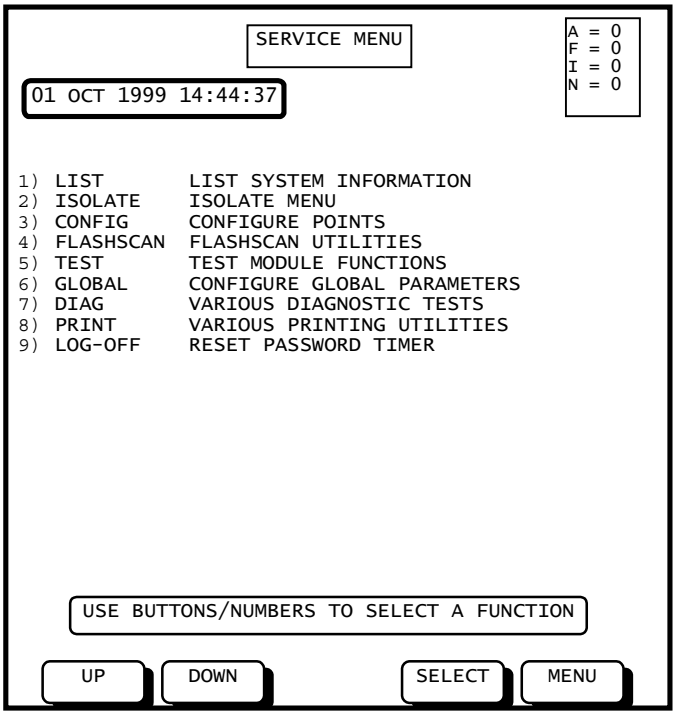
This is the base level of service menu mode.

Screen functions such as the selection of a menu item may be selected in two ways.

1. By using the soft **UP** or **DOWN** buttons to scroll to the required item, then pressing **SELECT** or
2. By selecting the menu item number on the keypad.

The top right corner of the screen shows a quick system status, giving the total number of alarms, faults, isolates and Non-Alarm events at any given time.

Pressing the **SERVICE MENU** button at any time will return you to this main menu screen

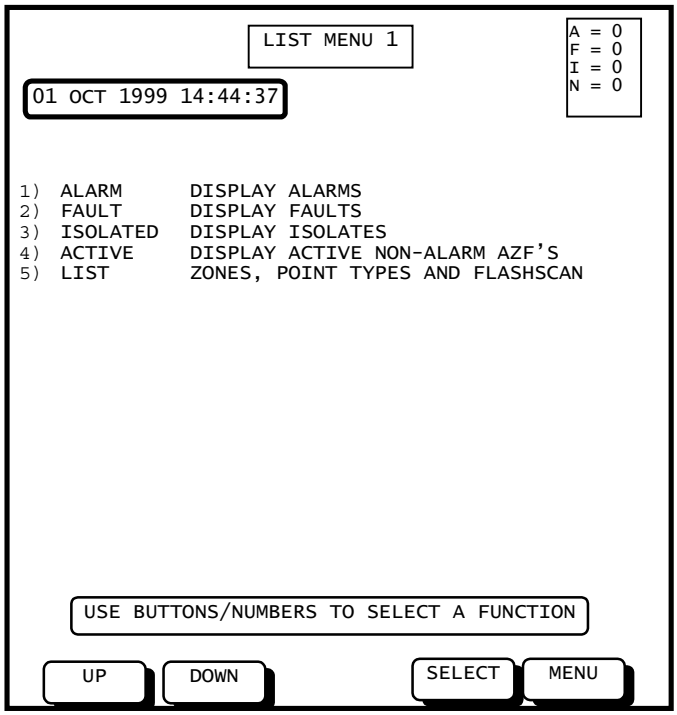


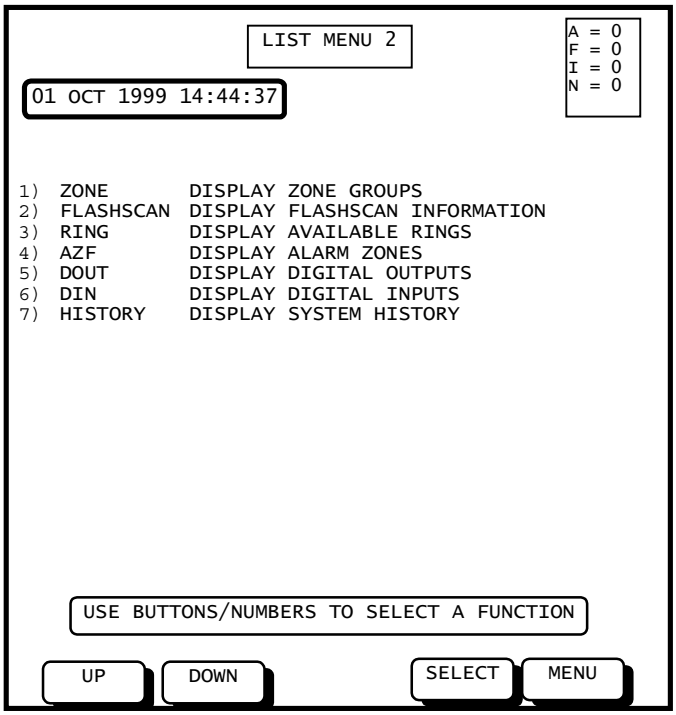
Action:

- Use **UP** and **DOWN** buttons to scroll through options (or button **1** to **9** from keypad)
- Use **SELECT** to select the currently highlighted option

4.3.3 SERVICE MENU - LIST

These menus allow access to various information lists. List Menu 1 is shown first. Use the **PREV** and **NEXT** buttons to scroll through the options then use **SELECT** to select the currently highlighted option or use the numeric keypad. Item 5 on List Menu 1 (LIST) will move you to List Menu 2. The **MENU** button will return you to the Service Menu. The available lists are:

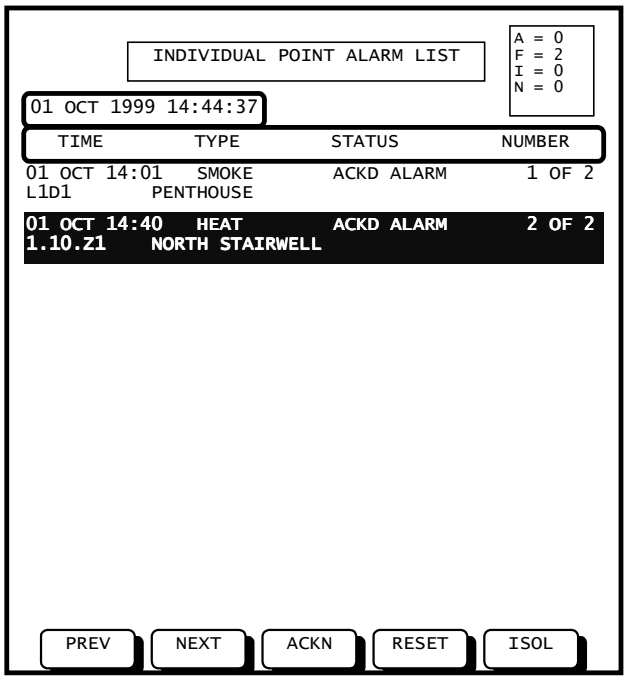




Menu Item	Explanation
ALARM	Displays all current alarms on the system in chronological order and allows you to acknowledge reset and isolate alarmed points using the soft buttons.
FAULT	Displays all current faults on the system in chronological order, and allows you to acknowledge, reset and isolate fault points using the soft buttons
ISOLATED	Displays all currently isolated points on the system and provides a soft button for de-isolation.
ACTIVE	Displays all active Non-Alarm (supervisory) events on the system in chronological order and allows you to acknowledge, reset and isolate points using the soft buttons.
LIST	Moves you to List Menu 2 with the menu items listed below
ZONE	Display zones as per AS4428. Allows editing of displayed zone names for Fire-fighters display purposes.
FLASHSCAN™	Displays FlashScan™ loops 1-10 and detectors/modules with names for status viewing, editing and testing.
RING	Displays the systems communications rings and modules found on each.
AZF	Displays all system AZF's and shows current status. Soft Buttons provide ability to Test and Change a points programming.
DOUT	Displays all system Digital Outputs (Relays) and shows current status. Soft Buttons provide ability to Test and Change a points programming.
DIN	Displays all system Digital Inputs and shows current status. Soft Buttons provide ability to Test and Change a points programming.
HISTORY	Displays the systems history event buffer in chronological order.

4.3.3.1 SERVICE MENU - LIST - ALARM

This screen will display all **individual** alarm conditions active at the time. As new alarms (unacknowledged) force the panel into Fire Fighters mode, this page can only be accessed once all alarms are acknowledged. Counters will continue to dynamically update while in this screen.



Actions:

Use the PREV and NEXT buttons to scroll through the active Alarms.

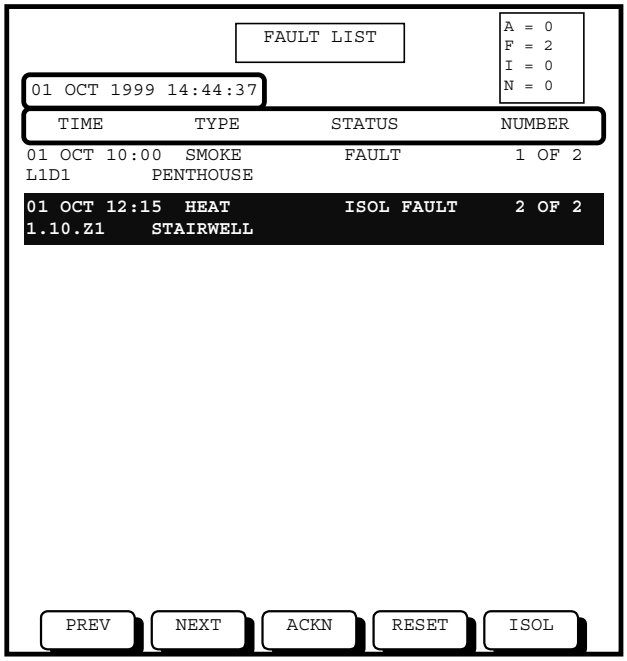
Use ACKN to acknowledge currently highlighted alarm.

Use RESET to reset the currently highlighted alarm. You will be asked to press ACKN to confirm, press any other button to abort.

Use ISOL to isolate the currently highlighted alarm. You will be asked to press ACKN to confirm, press any other button to abort.

4.3.3.2 SERVICE MENU - LIST - FAULT

This list will display all system faults in chronological order. If faults are set as non latching, they will self clear from this list. If faults are set to latching, a reset action from this list is the only way to clear them. Once a fault is isolated it remains in the fault list but does not operate the fault outputs.



Actions:

Use the PREV and NEXT buttons to scroll through the faults.

Use ACKN to acknowledge currently highlighted fault;.

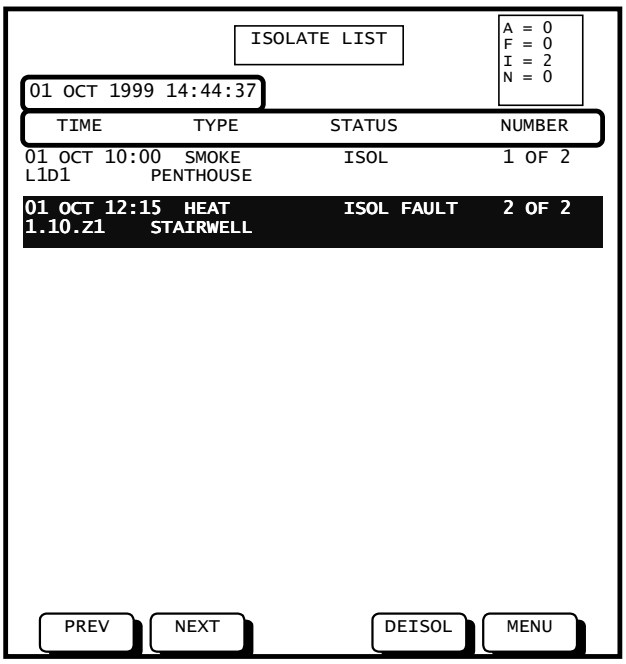
Use RESET to reset the currently highlighted fault. You will be asked to press ACKN to confirm, press any other button to abort.

Use ISOL to isolate the currently highlighted fault. You will be asked to press ACKN to confirm, press any other button to abort.

Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.

4.3.3.3 SERVICE MENU - LIST - ISOLATED

This will display any isolation conditions active at the time.



Actions:

Use the PREV and NEXT buttons to scroll through the Isolated points.

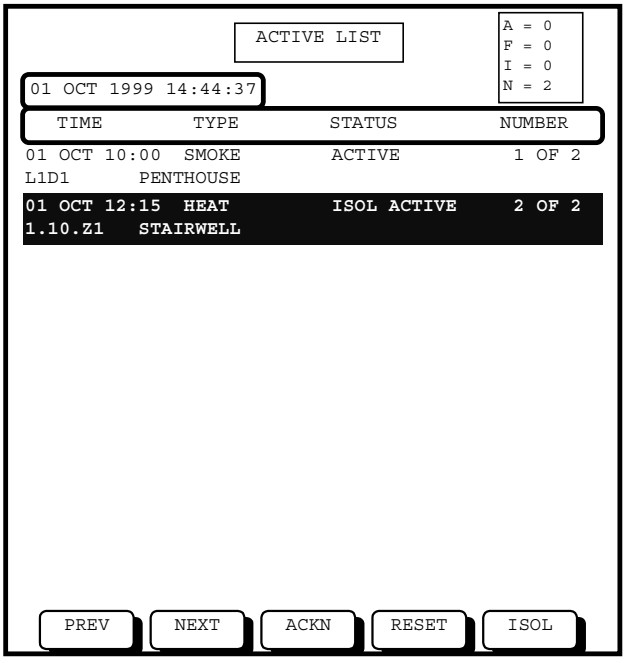
Use DEISOL to De-Isolate the currently highlighted isolated point.

Press MENU to return to the Service menu

Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.

4.3.3.4 SERVICE MENU - LIST - ACTIVE

This list will display all non-alarm AZF's that are currently active. If points are set as latching, this is where they will need to be manually reset. If points are non-latching, they will self-clear.



Actions:

Use the PREV and NEXT buttons to scroll through the active Non-Alarm AZF.

Use ACKN to acknowledge currently highlighted active Non-Alarm AZF.

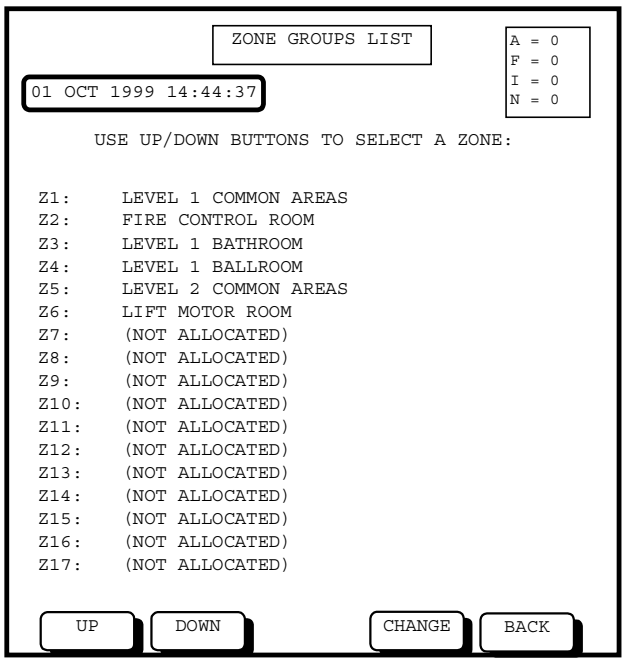
Use RESET to reset the currently highlighted active Non-Alarm AZF.
You will be asked to press ACKN to confirm, press any other button to abort.

Use ISOL to isolate the currently highlighted active Non-Alarm AZF.
You will be asked to press ACKN to confirm, press any other button to abort.

Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.

4.3.3.5 SERVICE MENU - LIST – ZONE

This list will display the systems display zones and provide the ability to edit the zone name and view membership. The zone names as listed will be exactly how they display on the Firefighters screen (up to 28 characters maximum). Editing the members of a zone must be performed from the edit points menu.



Actions:

Use the UP and DOWN buttons to scroll through the zone list.

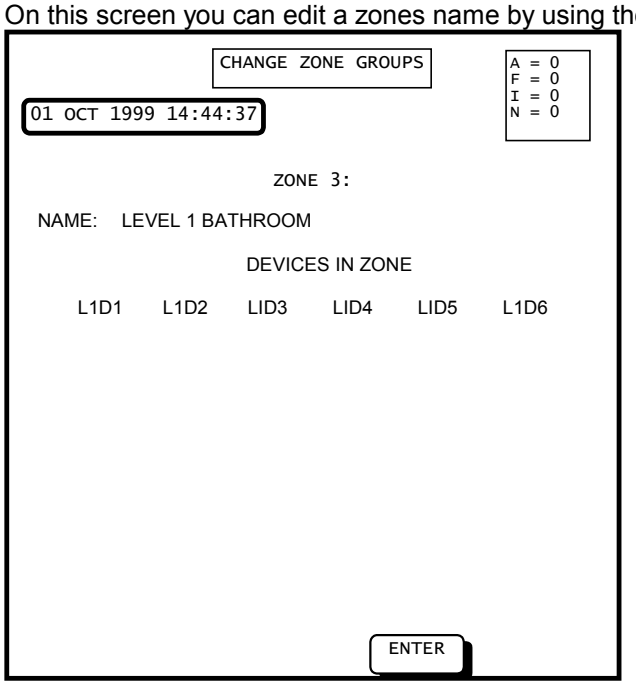
Use the CHANGE button to edit a zone name and to view its membership.

Use the BACK button to return to the previous screen.

Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.

SERVICE MENU - LIST – ZONE - CHANGE

On this screen you can edit a zones name by using the external QWERTY keyboard. Press enter when done.



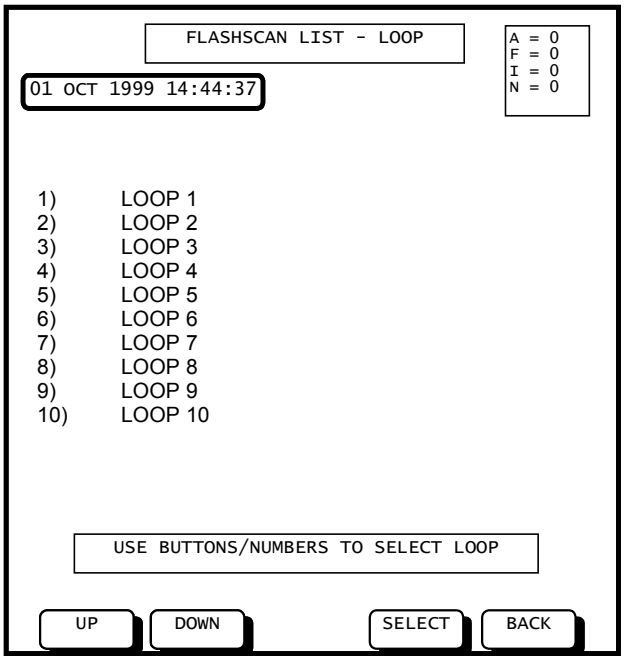
Actions:

Edit the zone name using the QWERTY keyboard. Press enter when done.

To abandon changes press the ESC key on the QWERTY keyboard.

4.3.3.6 SERVICE MENU - LIST - FLASHSCAN™

This menu will list all FlashScan™ loops (1 –10), you can then select detector or modules, then read status or change or test a point.



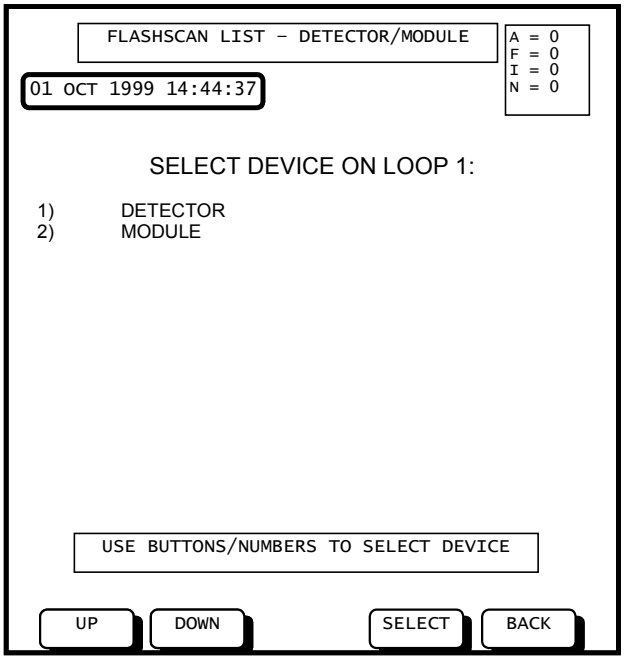
Actions:

Use the UP and DOWN buttons to scroll through the FlashScan™ loop list.

Use the SELECT button to select the loop to list.

Alternatively press 1 through 0 (use '0' to select '10').

Once you have selected the loop you will be prompted to select detectors or modules as follows:



Actions:

Use the UP and DOWN buttons to select option.

Use the SELECT button to select the loop to list.

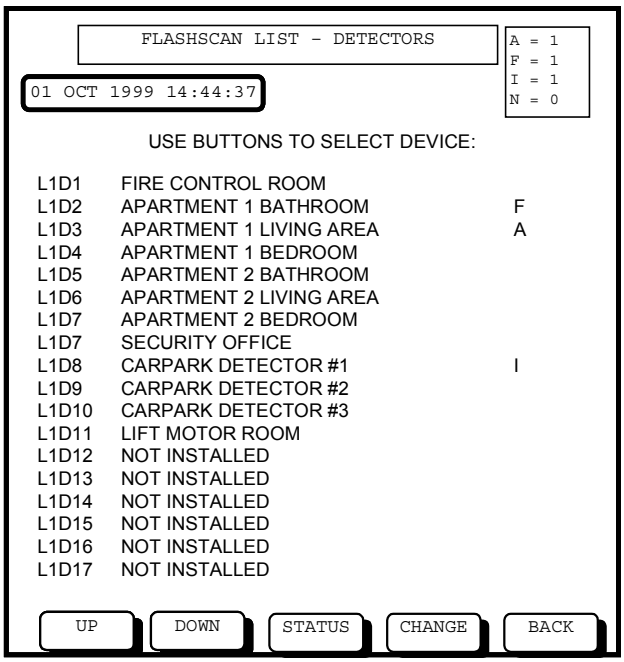
SERVICE MENU - LIST – FLASHSCAN™ - DETECTORS

This screen will provide a list of all detectors (1-159) on the loop selected showing the name of each detector alongside.

An alarm, fault or isolate flag will also appear on the right hand side of the line for easy status reference.

From this screen you can do a live read status of the point or change the configuration of the point.

Detectors that are not installed are listed as “NOT INSTALLED”, performing a change on a detector will automatically install it.



Actions:

Use the UP and DOWN buttons to select detector.

Use the STATUS button to perform a live point read on the detector.

Use the CHANGE button to edit the detectors setting and/or change its name.

Press BACK to return to the previous screen.

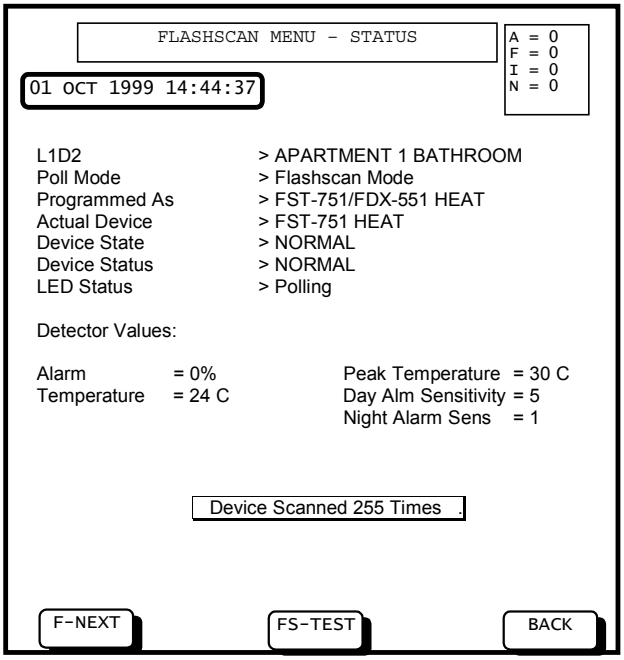
Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.

SERVICE MENU - LIST – FLASHSCAN™ – DETECTORS - STATUS

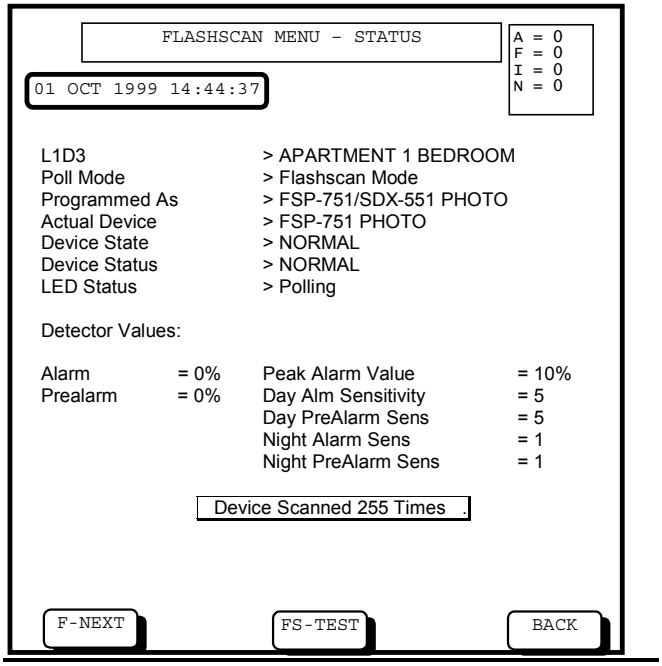
This screen will show a reading of the selected FlashScan™ detector updated every 3 seconds, 255 times.

The detector's current configuration is displayed together with "live readings" as shown below.

Heat Detector



Smoke Detector



Actions:

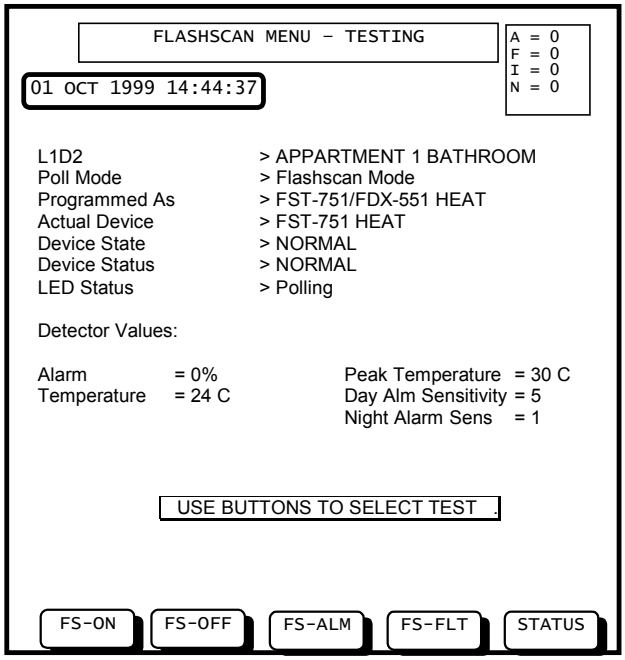
- Press the **F-NEXT** buttons to move to the next installed point.
- Press the **FS-TEST** button to enter test menu for FlashScan™ detectors.
- Press **BACK** to return to the previous screen.

Explanations of terms:

Variable	Range	Description
Poll Mode	FlashScan™ or CLIP	Shows the current polling protocol being used. FlashScan™ = 10 detectors at a time, CLIP = 1 detector at a time. Polling mode is auto sensed at start-up
Programmed As	6 Types	Detector type programmed into panel
Actual Device	6 Types	Detector type physically seen on loop.
Device State	Normal/Active/Alarm	Shows alarm or activated condition of point.
Device Status	20 fault types	Detailed description of fault condition. Ie: "No Response"
LED Status	4 Types	Polling, On, Off, Polling ID
Alarm	%	Current Percentage of alarm or Degree Celsius
Prealarm	%	Current Percentage of Pre-alarm
Peak Alarm Value	% or ^{O}C	Highest reading since last reset.
Sensitivities	1-9	Detector sensitivity for day/night, alarm/pre-alarm. Please refer to page 71 for explanation information on sensitivity settings.

Service Menu - List – FlashScan™ – Detectors – Status - Test

This screen performs operation tests on the selected detector.



Actions:

Press the FS-ON button to turn detector LED's ON Green (Red if CLIP). (This test is useful for locating detectors at same address)

Press the FS-OFF button to return the detector LED's to the Automatic Polling Mode

Press the FS-ALM button to perform an ALARM TEST on the detector.

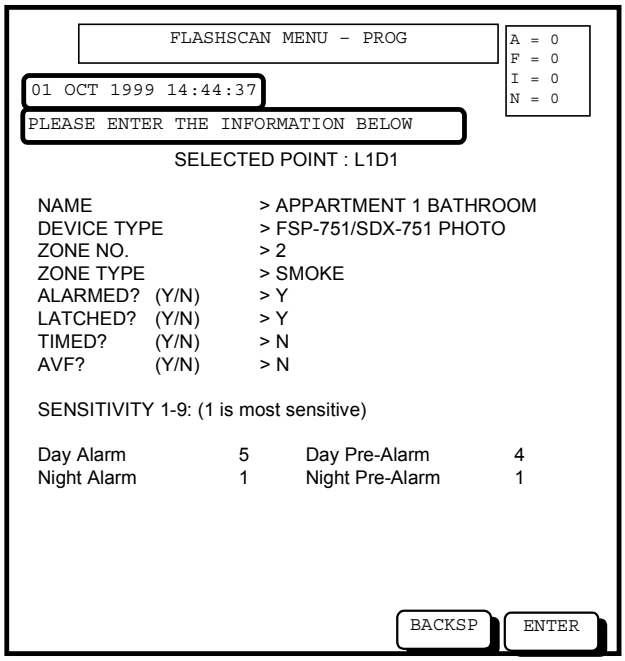
Press the FS-FLT button to perform an FAULT TEST on the detector.

Press the STATUS button to return to the read status screen.

Note: Each time a test is performed, the screen will automatically return to the STATUS screen so the data becomes live once again. To perform another test, simply press FS-TEST again.

Service Menu - List – FlashScan™ – Detectors - Change

This screen will allow you to change FlashScan™ detector information and options on a point by point basis.



Actions:

Press BACKSP to backspace an incorrect character.

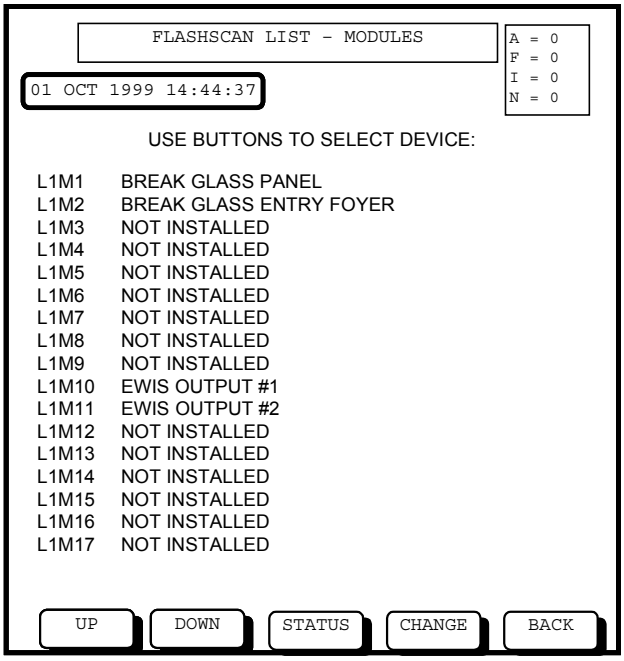
Press ENTER to step through options.

Press YES or NO buttons when highlighted to answer Y/N options.

Use external QWERTY keyboard to edit descriptors and zone type.
The numeric keypad can be used for number entries only.
When entering device type, an option list will appear at the bottom of the screen.
Refer to appendix for more information on options and sensitivity settings.
You will be prompted Yes/No to save changes when finished.

SERVICE MENU - LIST – FLASHSCAN™ - MODULES

This screen will provide a list of modules (1-159) on the loop selected showing the name of each module alongside its address. From this screen you can do a live read status of the point or change the configuration of the point. Modules that are not installed are listed as “NOT INSTALLED”, performing a change automatically installs the point.



Actions:

Use the UP and DOWN buttons to select detector.

Use the STATUS button to perform a live point read on the module.

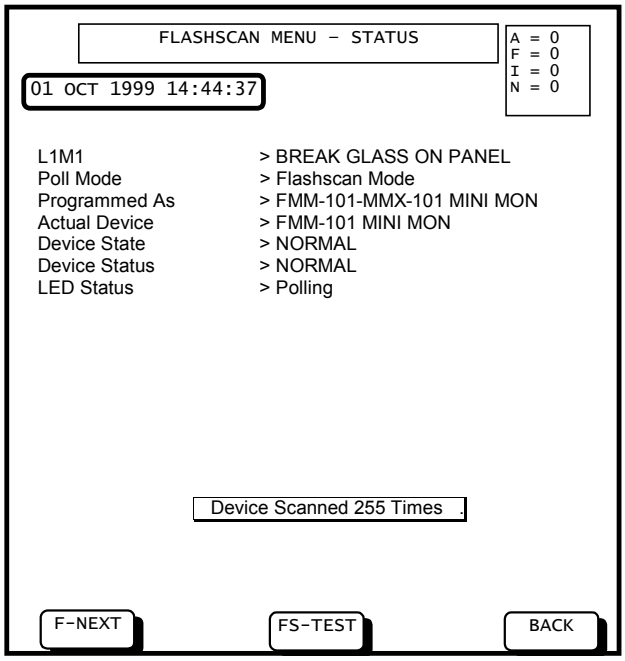
Use the CHANGE button to edit the modules setting and/or change its name.

Press the BACK button to return to the previous screen.

Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.

SERVICE MENU - LIST – FLASHSCAN™ – MODULES - STATUS

This screen will show a reading of the selected FlashScan™ module updated every 3 seconds, 255 times. The modules current configuration is displayed together with “live readings” as shown below.



Actions:

Press the F-NEXT button to move to the next installed point

Press the FS-TEST button to enter test menu for FlashScan™ Modules.

Press BACK to return to the previous screen.

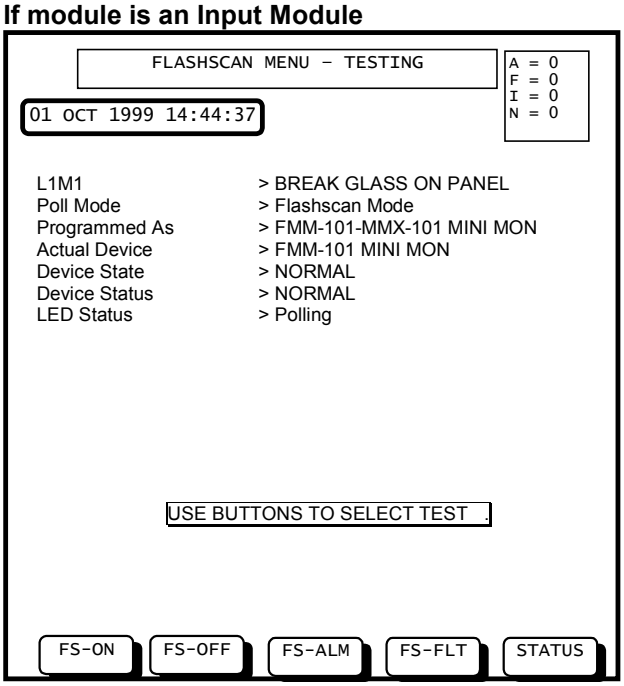
Explanations of terms:

Variable	Range	Description
Poll Mode	FlashScan™ or CLIP	Shows the current polling protocol being used. FlashScan™ = 10 modules at a time, CLIP = 1 module at a time. Polling mode is auto sensed at start-up
Programmed As	5 Types	Detector type programmed into panel
Actual Device	5 Types	Detector type physically seen on loop
Device State	Normal/Active/Alarm	Shows alarm or activated condition of point
Device Status	20 fault types	Detailed description of fault condition. Ie: “No Response”
LED Status	4 Types	Polling, On, Off, Polling ID

Service Menu - List – FlashScan™ – Modules – Status – Test

This screen will perform functional tests on selected FlashScan™ points. As modules can be both inputs and outputs, there are two different modes of operation.

If module is an Input Module



Actions:

Press the FS-ON button to turn module LED's ON Green (Red if CLIP). (This test is useful for locating detector/detectors at same address)

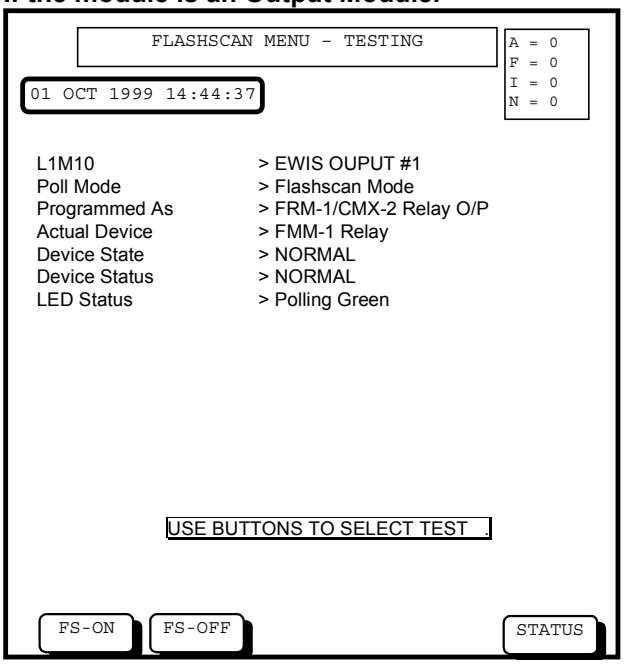
Press the FS-OFF button to return module LED's to the Automatic Polling Mode

Press the FS-ALM button to perform an ALARM TEST on the module.

Press the FS-FLT button to perform an FAULT TEST on the module.

Press the STATUS button to return to the read status screen.

If the module is an Output Module.



Actions:

Press FS-ON to activate the output module.

Press FS-OFF to de-activate the output module.

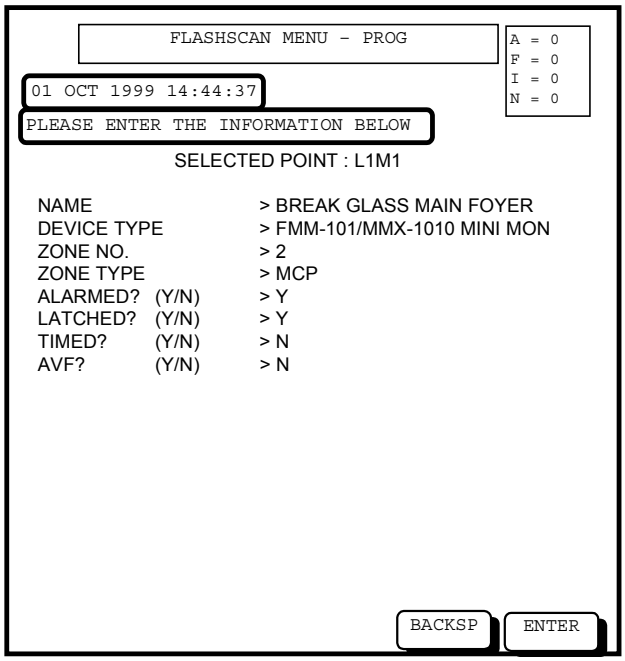
Press STATUS to return to the read status screen.

Note: Script processing is paused during an output module test. Scripts will automatically resume processing once a test is complete.

SERVICE MENU - LIST – FLASHSCAN™ – MODULES - CHANGE

This screen will allow you to change FlashScan™ module information and options on a point by point basis. As modules can be either inputs or outputs, once the device type has been entered, the screen will change to suit either an input or output as follows.

Input modules:



Actions:

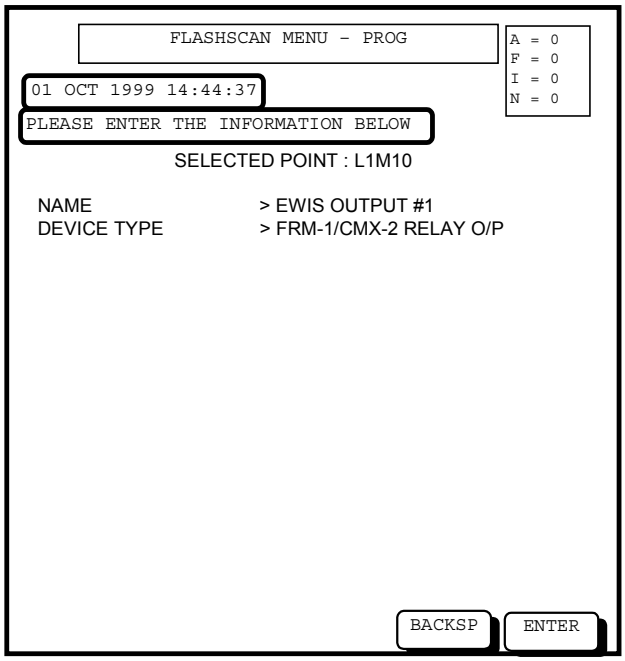
Press the BACKSP button to delete an incorrect character.

Press the ENTER button to step through options.

Press the YES or NO buttons when highlighted to answer Y/N options.

Use external QWERTY keyboard to edit descriptors and zone types.
The numeric keypad can be used for number entries only.
When entering device type, an option pick list will appear at the bottom of the screen.
Refer to appendix for more information on options.
You will be prompted Yes/No to save changes when finished.

Output modules:



Actions:

Press the BACKSP button to delete an incorrect character.

Press the ENTER button to step through options.

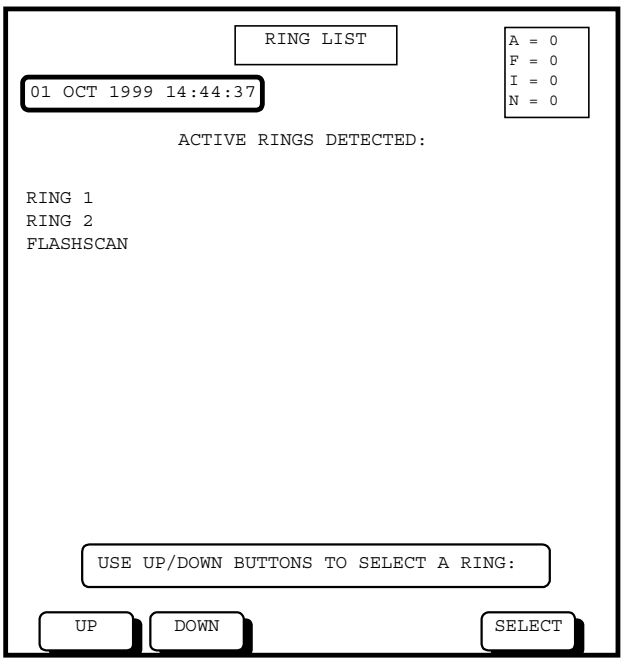
Press the YES or NO buttons when highlighted to answer Y/N options.

Use external QWERTY keyboard to edit descriptors and zone types.
The numeric keypad can be used for number entries only.
When entering device type, an option list will appear at the bottom of the screen.
Refer to appendix for more information on options.
You will be prompted Yes/No to save changes when finished.

Once the output module name and type has been saved, you will then be transferred to the script entry screen and be prompted to enter a script for the output. Please refer to page 65 for more information on entering scripts.

4.3.3.7 SERVICE MENU - LIST - RING

This screen will display a list of all installed rings.



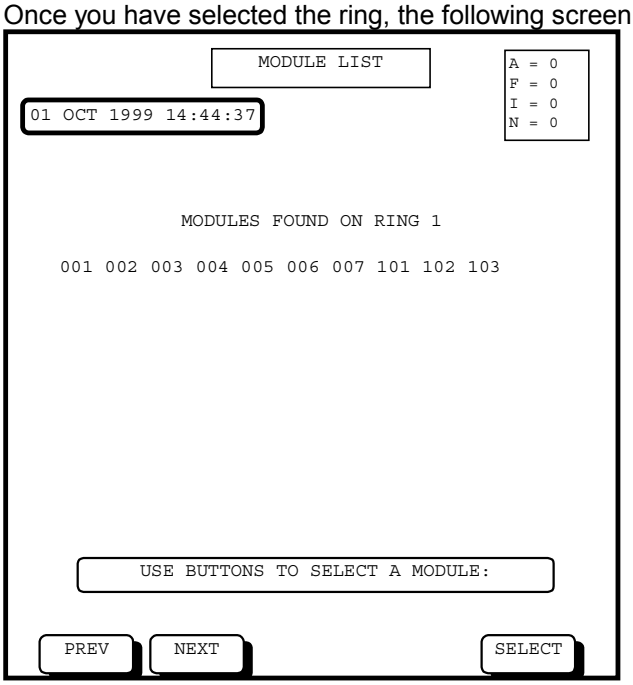
Actions:

Use the **UP** and **DOWN** buttons to scroll through the list of active rings.

Use the **SELECT** button to select the currently highlighted ring.

SERVICE MENU - LIST – RING – MODULE LIST

Once you have selected the ring, the following screen will appear.



Actions:

Use the **PREV** and **NEXT** buttons to scroll through the list of active modules.

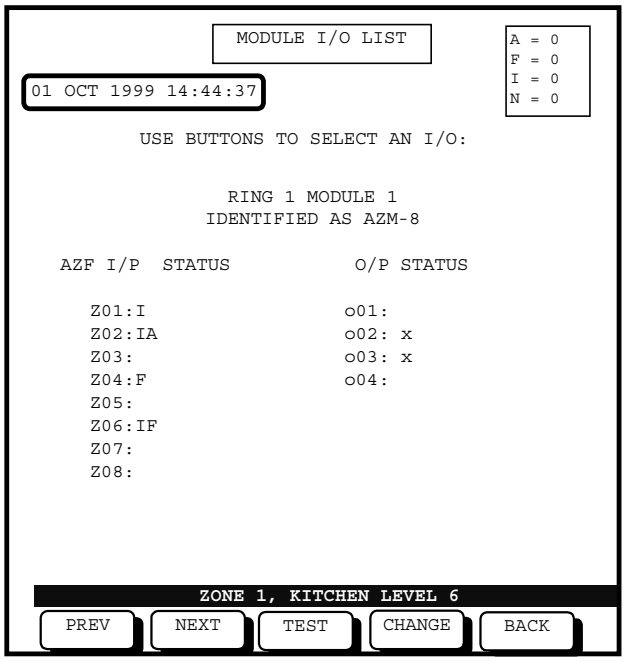
Use the **SELECT** button to select the currently highlighted module.

If the FlashScan™ ring is selected, you will be taken directly to the list FlashScan™ screen (see page 25)

Note: If the module number is displayed with an asterisk (*) beside it, it means the module has been manually programmed in but never seen.

SERVICE MENU - LIST – RING – MODULE LIST – MODULE I/O LIST

Once you have selected the module, a list of all inputs and outputs for that module will be displayed in a format specific for the module type. The example below shows a the layout for an AZM-8 module which has 8 AZF inputs and 4 programmable outputs.



Actions:

- Use the **PREV** and **NEXT** buttons to scroll through I/O points.
  (The points descriptor will display at the bottom of the screen when each point is highlighted.)
- When highlighting an AZF input point, pressing the **TEST** button will take you into the test menu for AZF's (refer page 51). Which provide the options for an Alarm Test and Fault test.
- When highlighting an output point, pressing the **TEST** button will take you to a test menu for outputs where you can toggle the output on/off for commissioning test purposes. Refer to page 52.
- Pressing the **CHANGE** button will take you to the Modify Point Screen (refer to page 41)

In the above example, the following abbreviations of STATUS apply.

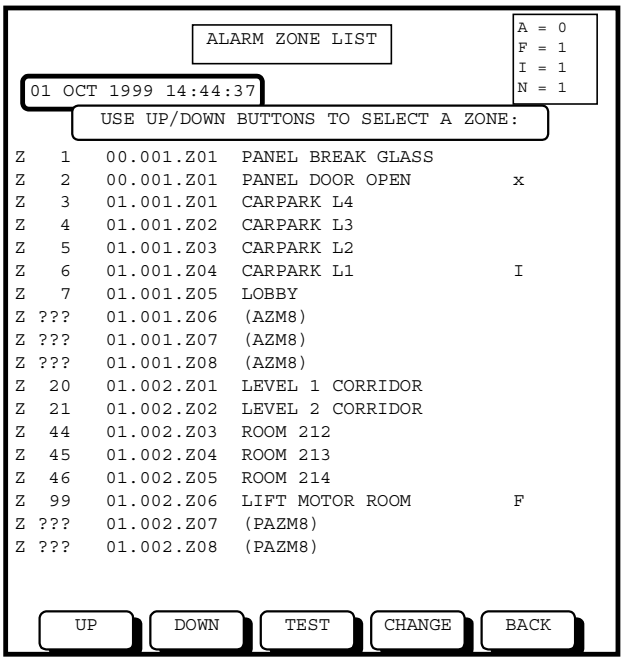
Status Abbreviation	Meaning
A	Alarm
I	Isolated
F	Fault
X	Activated

Note: If the input is a non-alarm AZF, it will display an x when the INPUT is activated.

4.3.3.8 SERVICE MENU - LIST - AZF

This screen will display all conventional alarm zones (AZF's) detected on the system. Zones which have been allocated zone numbers will display the zone number, the physical point number (Ring/Module/I/O format), and the zone description.

Unallocated zones will default to Z??? for the zone number, and the description will be the type of field module to which the zone belongs. i.e. (AZM8 etc.)



Actions:

- Use the **UP** and **DOWN** buttons to scroll through AZF points.
- When highlighting an AZF input point, Pressing the **TEST** button will take you into the test menu for AZF's (refer page 51). Which provide the options for an Alarm and Fault test.
- Pressing the **CHANGE** button will take you to the Modify Point Screen (refer to page 42)
- Pressing the **BACK** button return you back to the Service Menu

In the above example, the following abbreviations of STATUS apply.

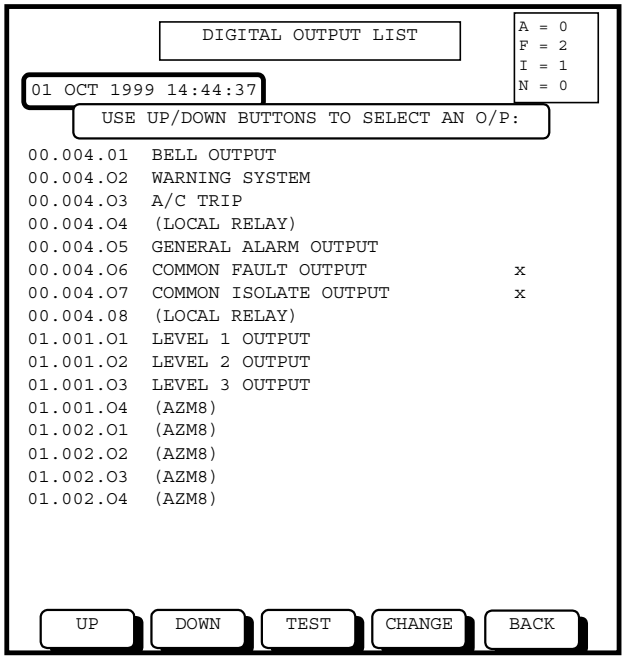
Status Abbreviation	Meaning
A	Alarm
I	Isolated
F	Fault
X	Activated

Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.

4.3.3.9 SERVICE MENU - LIST - DOUT

This screen will list all the Digital Outputs (relays) in the system. Digital outputs consist of local panel relays, field module relays and Annunciator outputs.

The display shows the point number (Ring.Module.I/O format) and the point description. In addition, the current state of the point is displayed. Unnamed points use the associated field module type as their description.



Actions:

- Use the **UP** and **DOWN** buttons to scroll through Output points.
- When highlighting an Output point, Pressing the **TEST** button will take you into the test menu for outputs where you can toggle the output on/off for testing purposes. Please note that during this test process, ALL script processing is paused. (Refer to Page 52 for more details on Dout test page)
- Pressing the **CHANGE** button will take you to the Modify Point Screen (refer to page 43)
- Pressing the **BACK** button will return you to the List Menu Screen.

In the above example, the following abbreviations of STATUS apply.

Status Abbreviation	Meaning
I	Isolated
F	Fault
X	Activated

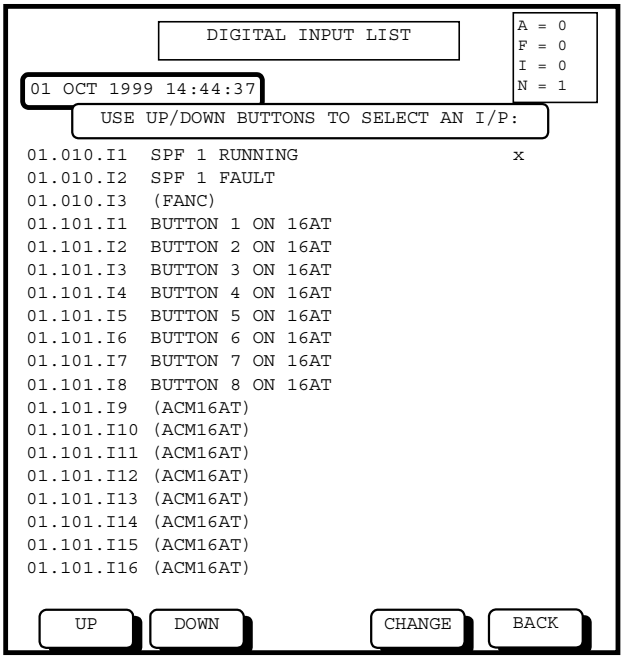
Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.

4.3.3.10 SERVICE MENU - LIST - DIN

This screen will list all the Digital Inputs in the system. Digital inputs consist of non-AZF inputs such as fan control module status inputs and annunciator panel input buttons/switches.

The display shows the point number (Ring.Module.I/O format) and the point description. In addition, the current state of the point is displayed.

Unnamed points use the associated field module type as their description.



Actions:

- Use the **UP** and **DOWN** buttons to scroll through Input points.
- Pressing the **CHANGE** button will take you to the Modify Point Screen (refer to page 44)
- Pressing the **BACK** button will return you to the list menu screen.

In the above example, the following abbreviations of STATUS apply.

Status Abbreviation	Meaning
I	Isolated
F	Fault
X	Activated

Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.

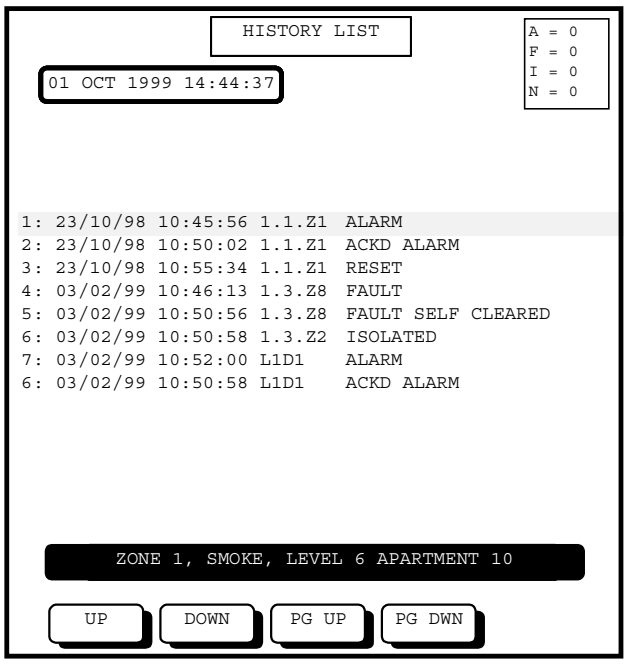
4.3.3.11 SERVICE MENU - LIST - HISTORY

This will display an abbreviated event history list in chronological order. Events are time stamped with date and time and are shown in point and status format.

The AFP-2800 system stores 4000 events. The history list will then "over-expand" to 5,000 events and once it reaches this level, will purge the OLDEST 1000 entries leaving the 4000 most recent entries in the list. This is an automatic process.

The history can be totally erased from the diagnostics menu, if necessary.

As you scroll up and down the list, the currently highlighted items descriptor is shown at the bottom of the screen.



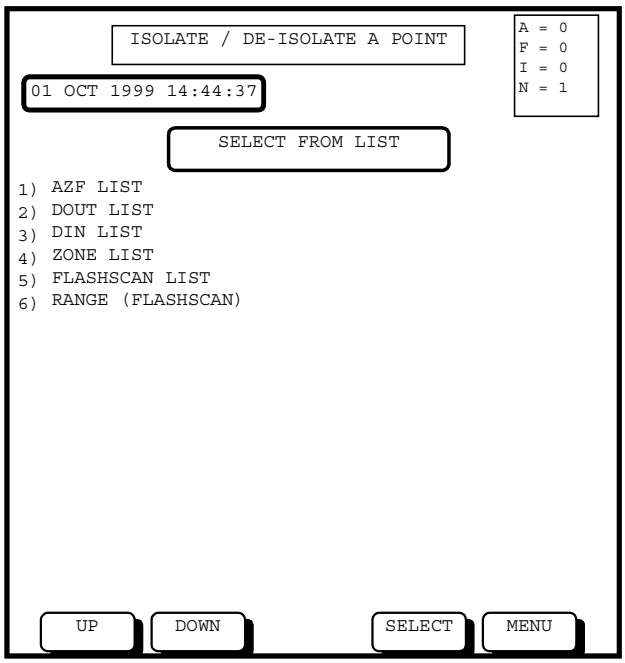
Actions:

- Use the **UP** , **DOWN** , **PG UP** and **PG DWN** buttons to scroll through the History List.
- Pressing the **PG UP** button when you are on the first page of the history will wrap the list around to the last page in the history.

Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.

4.3.4 SERVICE MENU - ISOLATE

This screen provides the ability to isolate or de-isolate any point on the system. Isolating an input will prevent it causing an alarm and isolating an output will prevent the output from activating. Note that an isolated point is seen as inactive by the panel and hence, in a logic programming script, it will return the value FALSE (or TRUE if the NOT function is applied to it within the script).



Actions:

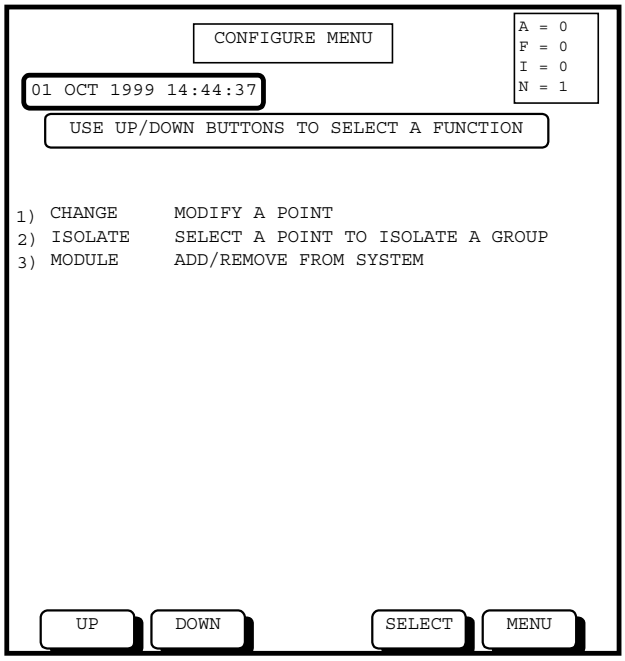
- Use the **UP** and **DOWN** buttons to scroll through options and then use the **SELECT** button to select the highlighted option
  (or button **1** to **6** from numeric keypad)
- Press **MENU** to return to the Service Menu screen.

Selection	Action required
1	Will display the AZF list as per page 35 with an **ISOL** and a **DEISOL** soft button. Use the **UP** and **DOWN** buttons to select the appropriate point and press the appropriate function. If the point is isolated, an "I" will appear on the right hand side of the screen next to the point.
2	Will display the Dout list as per page 36 with an **ISOL** and a **DEISOL** soft button. Use the **UP** and **DOWN** buttons to select the appropriate point and press the appropriate function. If the point is isolated, an "I" will appear on the right hand side of the screen next to the point.
3	Will display the Din list as per page 37 with an **ISOL** and a **DEISOL** soft button. Use the **UP** and **DOWN** buttons to select the appropriate point and press the appropriate function. If the point is isolated, an "I" will appear on the right hand side of the screen next to the point.
4	Will display the Zones list as per page 24 with an **ISOL** and a **DEISOL** soft button. Use the **UP** and **DOWN** buttons to select the appropriate zone and press the appropriate function. Isolating or de-isolating in this screen will isolate/de-isolate ALL points within the display zone.
5	Will display the FlashScan™ list as per page 25 with an **ISOL** and a **DEISOL** soft button. Use the **UP** and **DOWN** buttons to select the appropriate FlashScan™ point and press the appropriate function.
6	Will prompt for the first FlashScan™ point and the last FlashScan™ point. Pressing the **ISOL** and **DEISOL** soft buttons will isolate/de-isolate the selected range of FlashScan™ points.

4.3.5 SERVICE MENU - CONFIG

This menu is for configuring points on the system.

For this menu you can add/remove modules, change scripts, isolate de-isolate points etc.

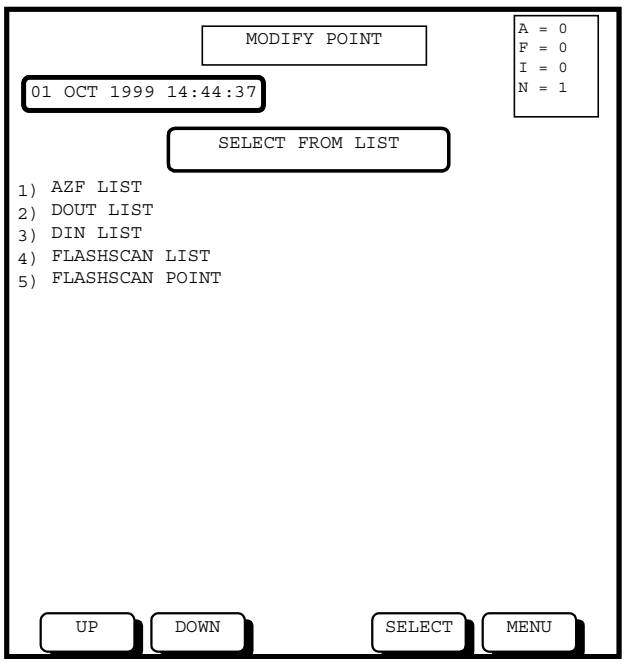


Actions:

- Use the **UP** and **DOWN** buttons to scroll through options (or button **1** to **3** from numeric keypad)
- Use **SELECT** to select the highlighted option.
- Press **MENU** to return to the Service Menu screen.

4.3.5.1 SERVICE MENU – CONFIG – CHANGE

This screen allows the operator to choose which point is to be changed / modified.



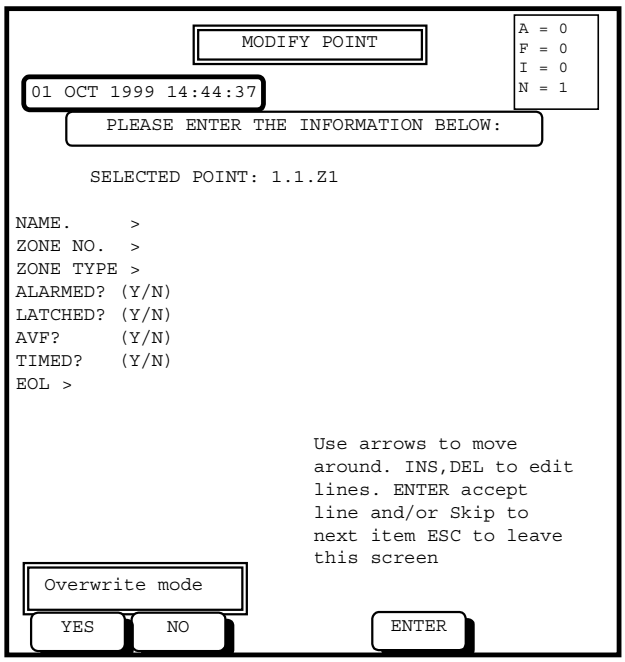
Actions:

- Use the **UP** and **DOWN** buttons to scroll through options and then use **SELECT** to select the highlighted option (or button **1** to **5** from numeric keypad)
- Press the **MENU** button to return to the Service Menu screen.

Selection	Action required
1	Will display the AZF list as per page 35 Select the AZF you wish to change and press the Change button to enter the Modify Point Screen
2	Will display the Dout list as per page 36 Select the output you wish to change and press the Change button to enter the Modify Point Screen
3	Will display the Din list as per page 37 Select the input you wish to change and press the Change button to enter the Modify Point Screen
4	Will display the FlashScan™ list as per page 25 Select the point you wish to change and press the Change button to enter the Modify Point Screen
5	Will prompt for a specific loop and detector / module number and take you directly to the modify point Screen

SERVICE MENU – CONFIG – CHANGE - AZF

Once you have selected the AZF you wish to change you will be in the "Modify Point" screen as follows:



Actions:

- Use the external QWERTY keyboard to enter descriptors
- Press the **ENTER** button to move to the next line
- Use soft YES and NO buttons as appropriate.
- Once all entries have been complete you will be prompted to save changes (Yes/No). If you select no, changes to the point will be ignored.

The following data may be entered:

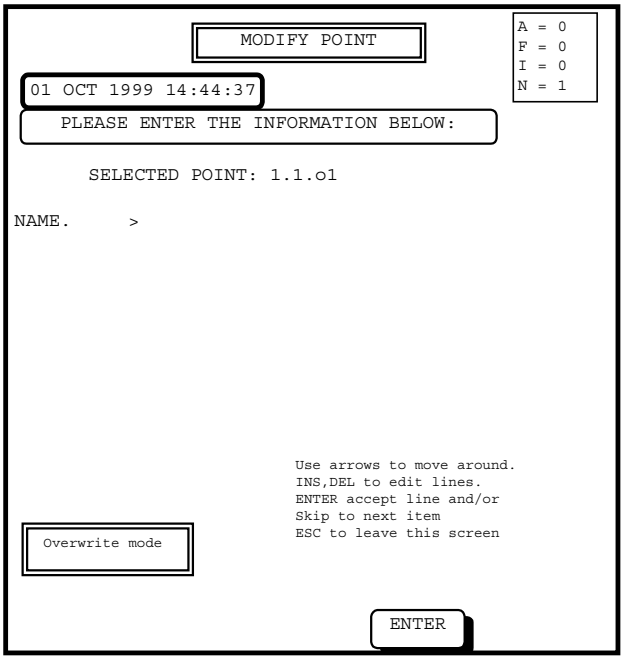
Item	Description
NAME	This is the descriptor for the AZF e.g. "LIFT MOTOR ROOM L16". Up to 28 characters are allowed.
ZONE NUMBER	This is the Zone number assignment of the AZF. One AZF per Zone. Allowed Zone numbers are 1 to 36863.
ZONE TYPE	Type of zone: e.g. FIRE, HEAT, SMOKE, FLAME, FSW, MCP, VMD, PSW, SPR. This information is purely for display purposes when in Firefighters display mode.
ALARMED (Y/N)	Determines if the AZF is to be a full alarm point or a non-alarm input used for logic purposes only.
LATCHED (Y/N)	Determines if the AZF is to be latching or non-latching type.
AVF (Y/N)	Determines if the AZF is to utilise the Alarm Verification Facility. (See Appendix for explanation of AVF)
TIMED (Y/N)	Determines if the AZF is to be a time controlled input for use with Duct Probe detectors. Refer Appendix for additional details).
EOL Res.	For PAZM8 only, determines end of line resistor value for the AZF. Default value is 4700 Ohms. See Appendix for more details)

Note: **If the Selected Point already has data, the existing data will be displayed. This data may be modified by overwriting, or can be confirmed by just pressing the ENTER button for the field (using the soft or hard buttons, or the Enter on the keyboard).**

Overwrite/Insert mode can be toggled by pressing the Insert key on the remote keyboard.

SERVICE MENU – CONFIG – CHANGE – DOUT

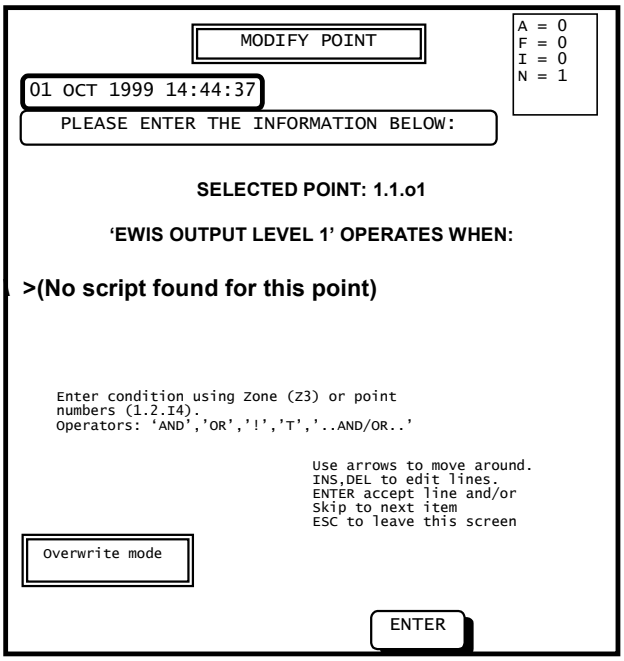
Once you have selected the Dout you wish to change you will be in the "Modify Point" screen as follows:



Action:

- Use the external keyboard to enter a descriptor (up to 28 characters) for the output and press the ENTER button.
- You will then be prompted to accept, press YES to accept or NO to redo.

You will then be prompted to enter a control script for the point as follows:



Action:

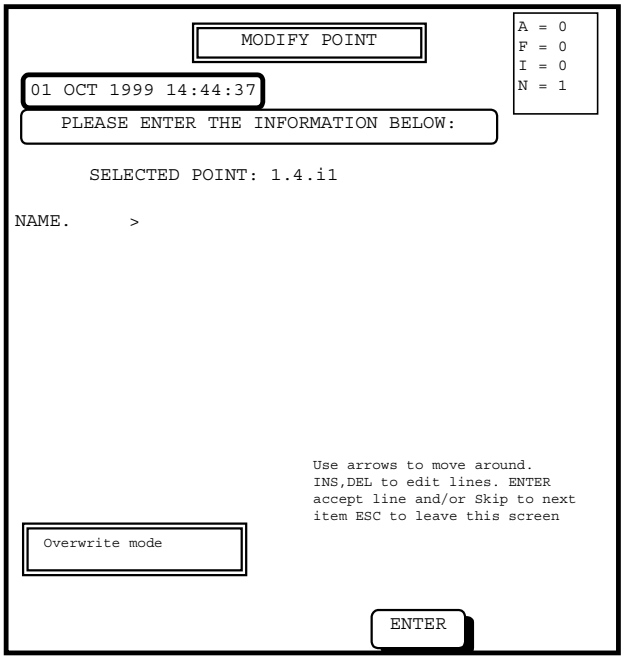
- Type in the control script you wish the point to be controlled by and press ENTER
- The AFP-2800 will then check the syntax, report any errors and give you the option to accept Yes/No. Press YES or NO as appropriate. See page 44 for more information on entering control scripts.

Note: **If the Selected Point already has data, the existing data will be displayed. This data may be modified by overwriting, or can be confirmed by just pressing the ENTER button for the field (using the soft or hard buttons, or the Enter key on the keyboard).**

Overwrite/Insert mode can be toggled by pressing the Insert key on the QWERTY keyboard.

SERVICE MENU – CONFIG – CHANGE– DIN

Once you have selected the Digital Input you wish to change you will be in the "Modify Point" screen as follows:



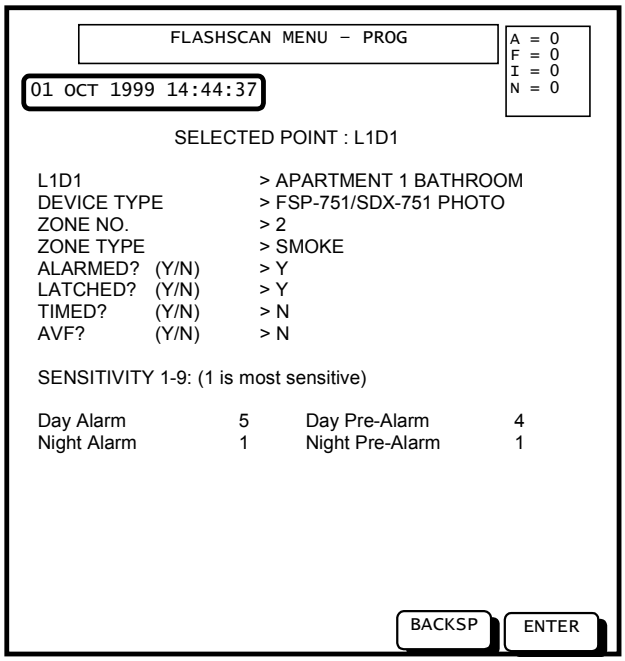
ACTION:

- Use the external keyboard to enter a descriptor (up to 28 characters) for the output and press the **ENTER** button.
- You will then be prompted to accept. Press the YES button to accept or the NO button to redo.
- A descriptor is the only configurable option for a digital input.

SERVICE MENU – CONFIG – CHANGE– FLASHSCAN™ POINT

Once you have selected the FlashScan™ point you wish to modify from the list or entered directly, you will be on the modify FlashScan™ point screen. The screen will be different depending on what type of FlashScan™ point is selected. Ie: Detector, Input Module or Output Module.

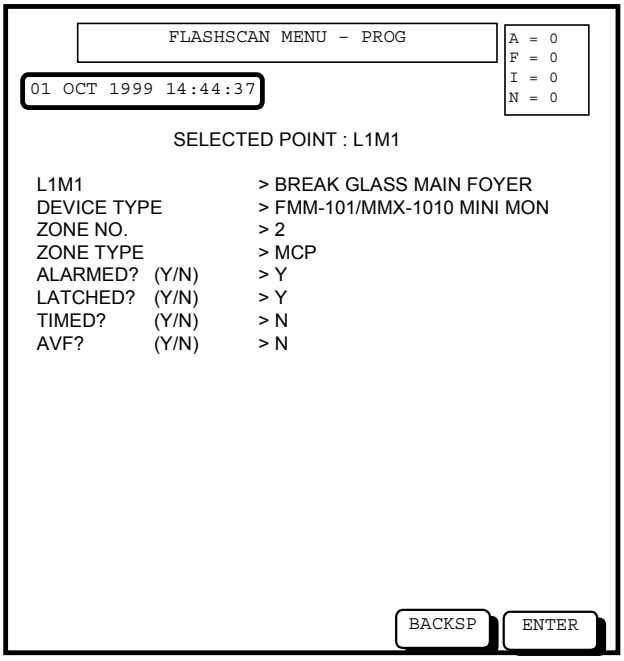
Detectors:



Actions:

- Press the **BACKSP** button to delete an incorrect character.
- Press the **ENTER** button to step through options.
- Press the **YES** or **NO** buttons when highlighted to answer Y/N options.
- Use external QWERTY keyboard to edit descriptors and zone type.
- The numerical keyboard can be used for numerical entries.
- When entering device type a numerical pick list will appear at the bottom of the screen.
- Refer to appendix for more information on options and sensitivity settings.
- You will be prompted Yes/No to save changes when finished.

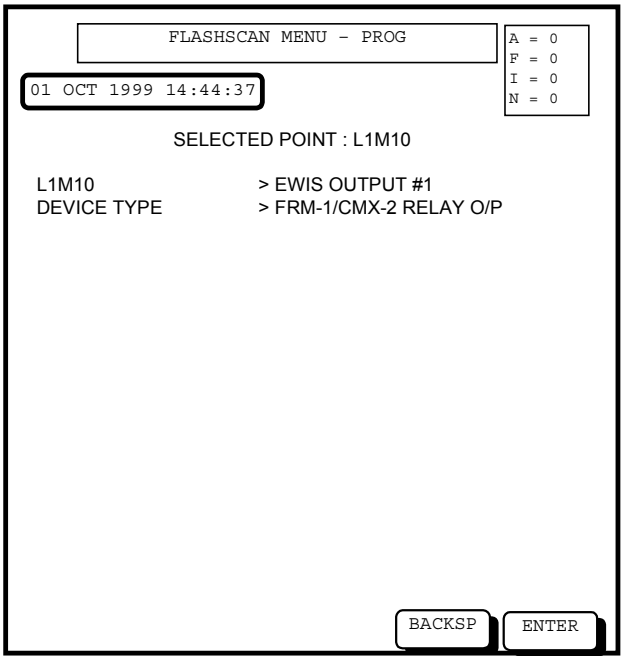
Input modules:



Actions:

- Press the **BACKSP** button to delete an incorrect character.
- Press the **ENTER** button to step through options.
- Press the **YES** or **NO** buttons when highlighted to answer Y/N options.
- Use external QWERTY keyboard to edit descriptors and zone type.
- The numerical keyboard can be used for numerical entries.
- When entering device type a numerical pick list will appear at the bottom of the screen.
- Refer to appendix for more information on options and sensitivity settings.
- You will be prompted Yes/No to save changes when finished.

Output modules:



Actions:

- Press the **BACKSP** button to delete an incorrect character.
- Press the **ENTER** button to step through options.
- Press the **YES** or **NO** buttons when highlighted to answer Y/N options.
- Use external QWERTY keyboard to edit descriptors and zone type.
- The numerical keyboard can be used for numerical entries.
- When entering device type a numerical pick list will appear at the bottom of the screen.
- Refer to appendix for more information on options and sensitivity settings.
- You will be prompted Yes/No to save changes when finished.

Once the output module name and type has been saved, you will then be transferred to the script entry screen and be prompted to enter a script for the output. Please refer to page 65 for more information on entering scripts.

4.3.5.2 SERVICE MENU – CONFIG – ISOLATE (PUSH BUTTON ISOLATES)

Single Push Button Isolate Overview

This is a particularly useful feature for setting up single push button isolates for routine testing purposes.

The "single push button isolate" method can isolate any number of points on the system, be they inputs or outputs.

Pressing the button the first time will automatically isolate all the points in the isolate script. Pressing the button a second time will de-isolate all the points in the isolate script.

Note: An isolated point is seen as inactive by the panel and hence, in a logic programming script, it will return the value FALSE (or TRUE if the NOT function is applied to it within the script).

If the input being used to trigger the isolate is an ACM16AT button, the system will automatically write scripts for the corresponding Yellow and Red LED's on the ACM16AT as follows. Red = Any point in isolate list in alarm. Yellow = ALL points in isolate list isolate.

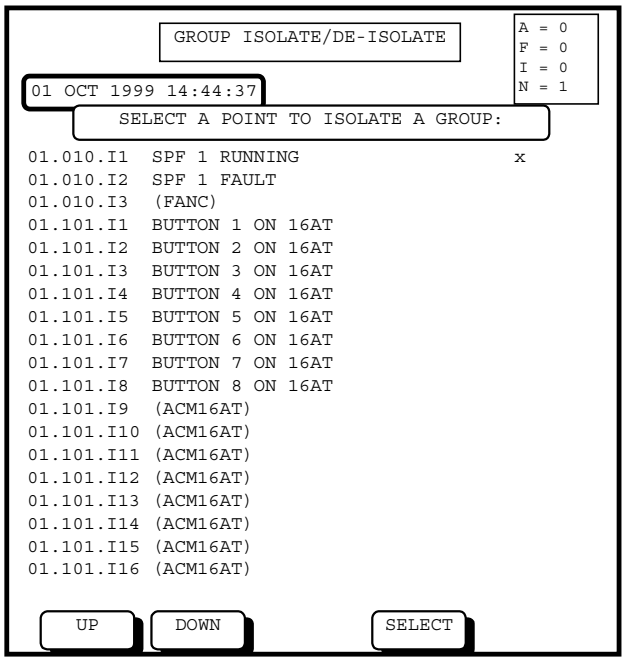
If the points are isolated by an ACM16AT press button action and then one of the points is de-isolated via the menus the next time the ACM16AT button is pressed it will ensure ALL points are isolate.

Note: The Annunciator button that is being used to initiate the isolate must be a non-latching button. ie. the Dip Switch on the ACM16AT Annunciator must be set to OFF. The minimum time between isolate and de-isolate pushbutton action is 5 seconds.

How to configure single push button isolates:

From this menu option the panel will list all the Digital Inputs on the system where you can then assign the activation of the digital input to perform an isolate of multiple points on the system.

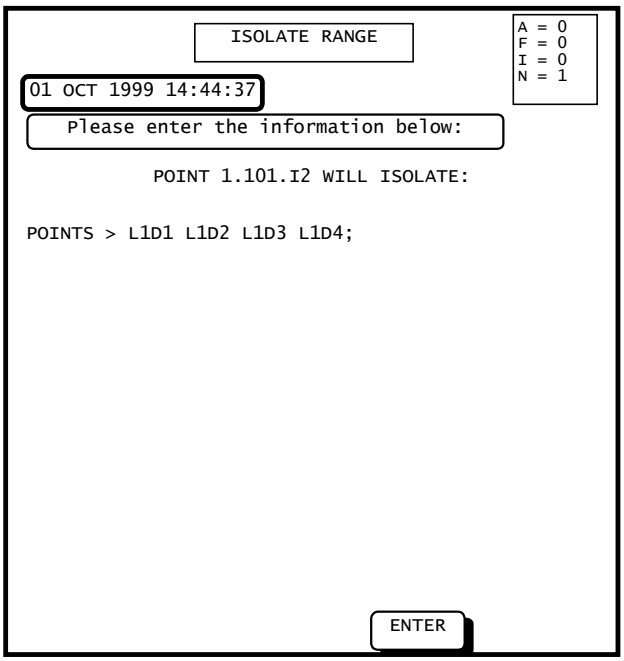
Firstly you must select the digital input used to trigger the isolation process from the list below.



Actions:

- Use the **UP** and **DOWN** buttons to scroll through Input points.
- Pressing the **SELECT** button will take you to the "Isolate Range" screen where you enter in all the points for this button press to isolate. (see below)

Once you have selected the input point to trigger the "single push button isolate" you will be asked to enter "isolate range" of points to be entered as follows.



Actions:

- Use the external QWERTY keyboard to enter in the points that are to be isolated or de-isolated by the button press.

  Points are to be entered in separated by spaces or commas and terminated with a semicolon (;)

Press **ENTER** once complete.

4.3.5.3 SERVICE MENU – CONFIG – MODULE (ADD/ REMOVE)

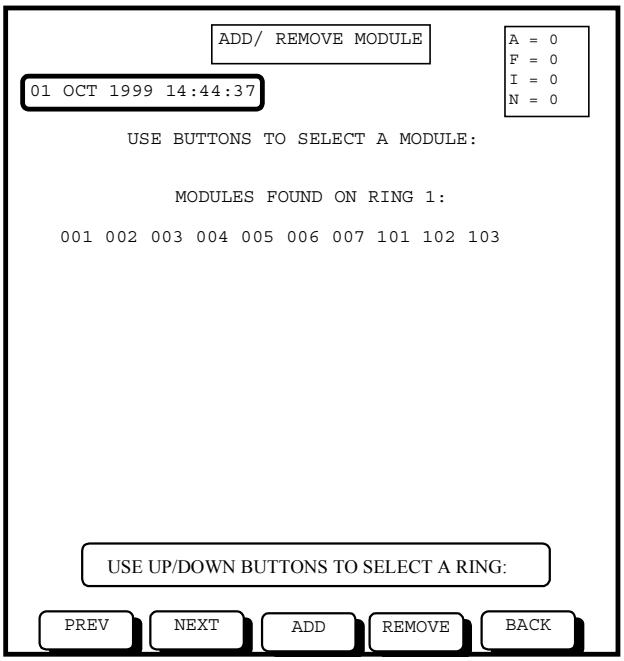
Overview:

This Config menu is used for adding and removing distributed field modules from the RS485 rings. Even though the AFP-2800 auto-detects new modules and adds them to the system approximately every 5 minutes. You may have a module that is not physically installed yet, but you wish to configure its inputs etc. You can use this menu to Add the module to the system. If the module is not physically found the panel will register a fault but it will still allow you to set all the parameters.

Similarly, if a module had been physically removed from the system, you can use this menu item to permanently remove it from the panels memory.

How to Add/Remove modules.

You will first be asked to select the ring (1-4) and then the Add / Remove module menu appears as follows:



To remove a module:

- Use the **PREV** and **NEXT** buttons to scroll through the list of active modules. Once the desired module is selected, press the **REMOVE** button once to remove it.

To Add a module:

- Press the **ADD** button once.
- You will then prompted to enter a module number to add.
- You will then be prompted for a module type from the on screen list of 1-8 ie: (FANC,AZM8, PAZM8,ACM16AT,ACM32,SCS8, LDM32, LCD80)
- The module has now been added.

4.3.6 SERVICE MENU – FLASHSCAN™

Overview:

The AFP-2800 can support up to 10 loops of FlashScan™. Each loop can support 159 detectors and 159 modules.

On power up, the AFP-2800 programs the FlashScan™ LCMs (Loop Control Modules) with the appropriate information for devices installed, and then the LCMs handle all the polling of the devices. The LCMs report back to the CPU only off normal conditions such as alarm, fault etc.

Therefore, if an LCM is for any reason powered down and re-powered, it must be re-programmed to be in sync with the panel. The AFP-2800 detects disconnection / reconnection automatically and will re-program the LCM in the background.

The LCM boards have a slave board that is called the LEM (loop expander module). Five (5) LCM/LEM pairs are required to achieve 10 loops. Each LCM has an address switch to set the loop address for the pair. While it is not mandatory that loops always be sequential it is highly recommended for ease of use.

Note: The FlashScan™ menu option contains all functions specific to FlashScan™ analog Addressable detectors and modules. Many of these features can be accessed from previously explained list menus and instructions will not be duplicated here.

4.3.6.1 SERVICE MENU – FLASHSCAN™ – LIST

This menu option will list all 10 FlashScan™ loops allowing the user to then select detectors or modules and perform read status and/or change a point's programming. For a full explanation, please refer to Service Menu - List - on page 25

4.3.6.2 SERVICE MENU – FLASHSCAN™ – STATUS

This menu option gives direct access to the read status screen of a FlashScan™ point.

You will be prompted for a Loop Number and a Detector or Module number.

You will then be taken directly to the Read Status screen for the point.

Please refer to Service Menu - List – FlashScan™ – Detectors - Status on page 27

Or Service Menu - List – FlashScan™ – Modules - Status on Page 30

4.3.6.3 SERVICE MENU – FLASHSCAN™ - PROGRAM

This menu option is direct access to the program / change point screen of a FlashScan™ point.

You will be prompted for a loop number and a detector or module number.

You will then be taken directly to the program / change point screen for the point.

Please refer to Service Menu - List – FlashScan™ – Detectors - Change on page 28

Or Service Menu - List – FlashScan™ – Modules - Change on page 32

4.3.6.4 SERVICE MENU – FLASHSCAN™ - DELETE

To remove a FlashScan™ detector or module from the panel's memory, it must be removed from the CPU memory and the LCM memory consecutively.

This service menu allows for the permanent removal of a point.

- You will be prompted for a loop number and a detector or module number.
- You will then be prompted to confirm removal by a Yes or No action.

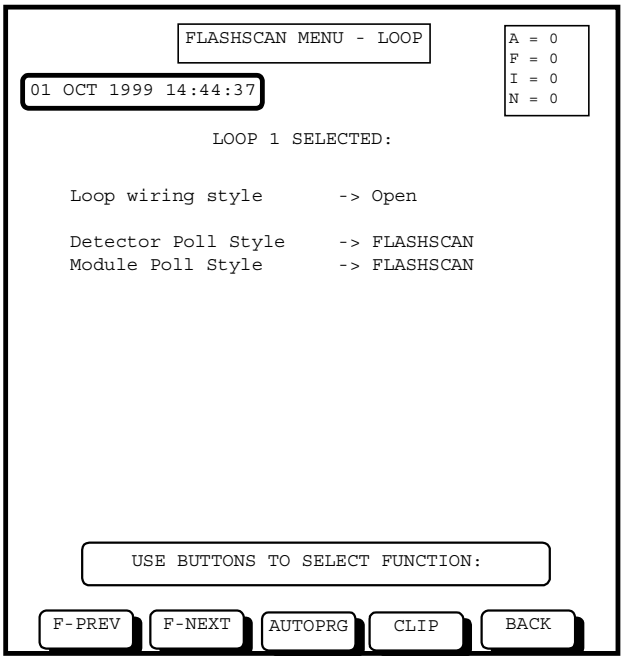
If you select YES the detector / module will be permanently removed from the system.

4.3.6.5 SERVICE MENU – FLASHSCAN™ - LOOP UTILITIES

This menu item allows several diagnostic functions to be performed on the loops themselves.

Firstly you will prompted to enter a loop number.

Then the screen will appear as follows:

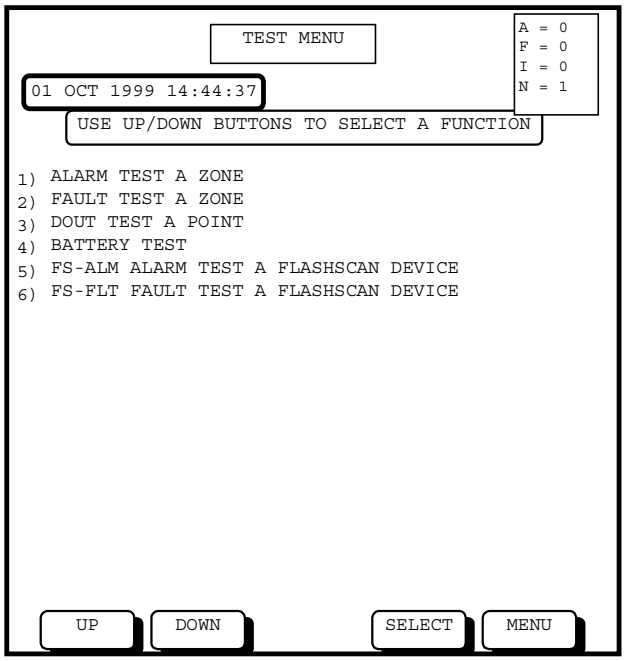


Action:

- Use the **F-PREV** and **F-NEXT** buttons to move to the next / previous loop.
- Press the **AUTOPRG** button to Auto Program the selected loop. This will add any new detectors and modules placed on the loop.
- Pressing the **CLIP** button will change the loops polling mode to clip mode. If the loop is already in clip mode, the button will toggle to **FLASHSCAN**.
- Pressing the **BACK** button will return you to the service menu.

4.3.7 SERVICE MENU - TEST

From this menu, the operator is able to perform alarm and fault tests on individual AZFs, operate a single digital output point, or perform a manual battery capacity test.



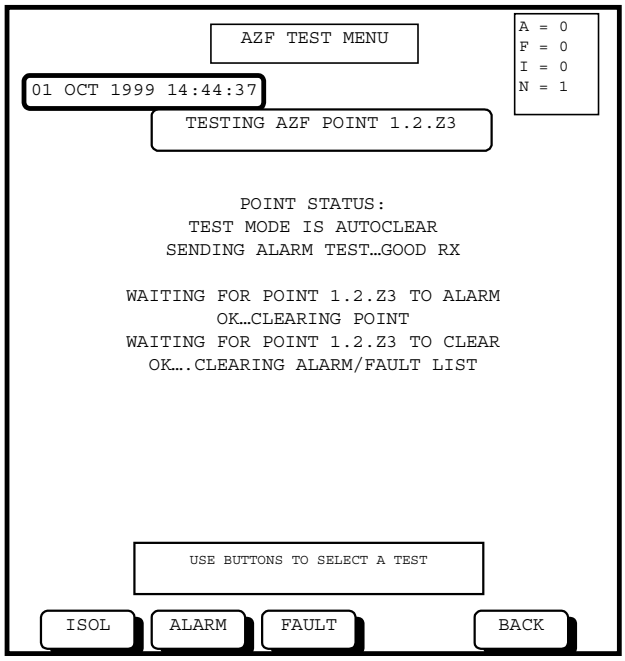
Actions:

- Use the **UP** and **DOWN** buttons to scroll through options and then use the **SELECT** button to select the highlighted option (or button **1** to **6** from the numeric keypad)
- Press the **MENU** button to return to the Service Menu screen.

Selection	Action required
Item 1	Will take you to the AZF List – Where you can select an AZF from the AZF list as per page 35 and then press the TEST button to enter AZF Test Mode.
Item 2	Will take you to the AZF List – Where you can select an AZF from the AZF list as per page 35 and then press the TEST button to enter AZF Test Mode.
Item 3	Will take you to the Digital Output List – Where you can select an output from the DOUT list as per page 36 and then press the TEST button to enter DOUT Test Mode.
Item 4	Will perform a battery capacity test is accordance with AS4428.1 which will last 15 seconds.
Item 5	Will perform an alarm test on a FlashScan™ Point. You will be prompted for loop number and detector or module number.
Item 6	Will perform a fault test on a FlashScan™ Point. You will be prompted for loop number and detector or module number.

4.3.7.1 SERVICE MENU – TEST - AZF

In this screen an AZF may be tested to verify it's ability to detect an Alarm or Fault condition.



Action:

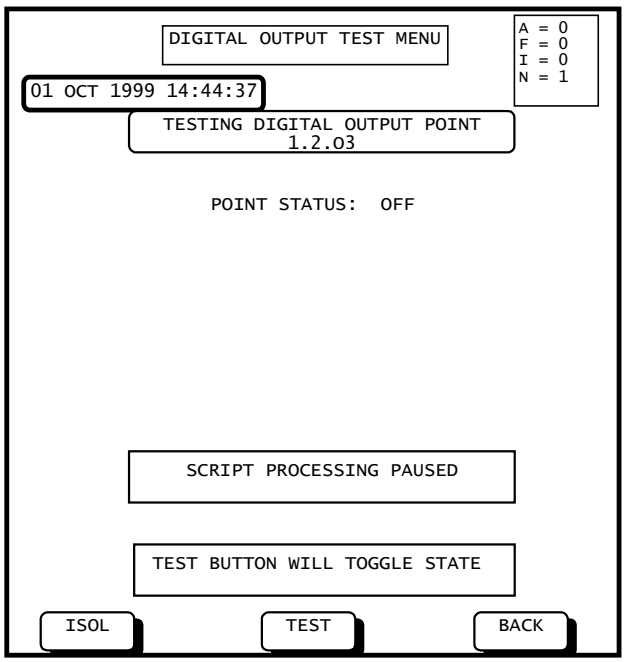
- An ISOL button is provided so that the point can be easily isolated during the test period, this button will toggle to DEISOL if the point is already isolated.
- A single button press of the ALARM or FAULT buttons is all that is required to initiate the tests.
- Pressing the BACK button will return to the previous screen.
- Note that an isolated point is seen as inactive by the panel and hence, in a logic programming script, it will return the value FALSE (or TRUE if the NOT function is applied to it within the script).

- A global option for **"Alarm/Fault test Autoclear"** can be set to either leave the zone in Alarm or Fault condition after the test which will require a manual reset or to automatically clear the zone at the conclusion of the test. Refer to Page 54 for more information of setting global parameters.
- If the Alarm test of Fault test fails a message of
  TIMEOUT ON ALARM/FAULT!!
  or
  TIMEOUT ON CLEAR!!
  If this occurs the module should be immediately investigated for faults.

Note: The AZF tests generate a real alarm or fault condition at the remote module, so the module itself is tested as well as the panel to module communications.

4.3.7.2 SERVICE MENU – TEST - DOUT

In this screen a Digital Output may be tested to verify it's ability to operate when required.



Action:

- An **ISOL** button is provided so that the point can be easily isolated during the test period, this button will toggle to **DEISOL** if the point is already isolated.
- A single press of the TEST button will toggle the output between On and Off.
- Pressing the **BACK** button will return to the previous screen.

- All Script processing is paused while in test mode to provide positive control of the output state. Script automatically recommence processing when test mode is exited.
- Test mode will automatically exit after 10 minutes from the last button press to prevent the system remaining off line.
- If a digital output does not have a control script and is set on during test mode, the output will remain on permanently until turned off through test mode. This can be a useful function for testing purposes during commissioning.

Note: As the Dout tests activate the output at the remote module, the module itself is tested as well as the panel to module communications.

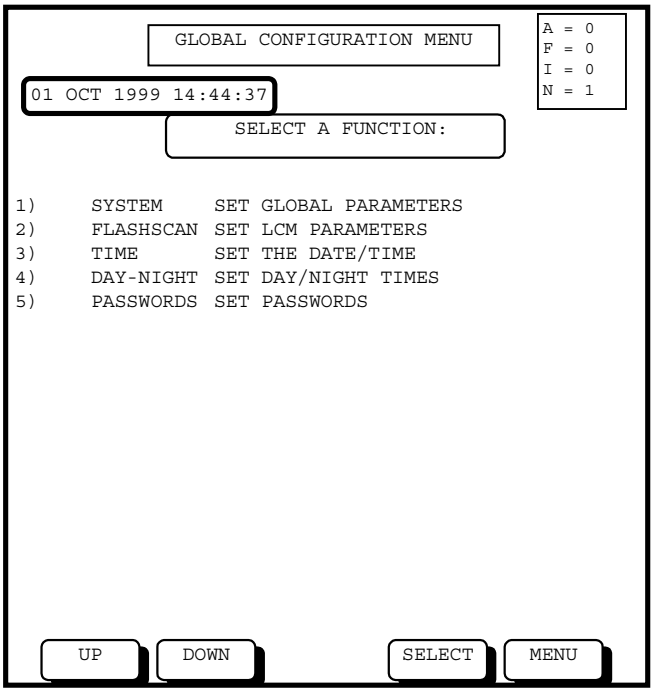
4.3.7.3 SERVICE MENU – TEST - BATTERY

This function will run a load test on the batteries for 15 seconds, and if a battery fault is detected, it will be displayed and logged as such to the history. A successful Battery Test will clear a battery fault. The panel also performs a short battery integrity test every hour.

Note: The battery test will not run if there is a Mains Fail condition, so as not to further deplete the battery charge.

4.3.8 SERVICE MENU - GLOBAL

This menu items provides the ability to set system wide global parameters for various items and also set the systems date and time.



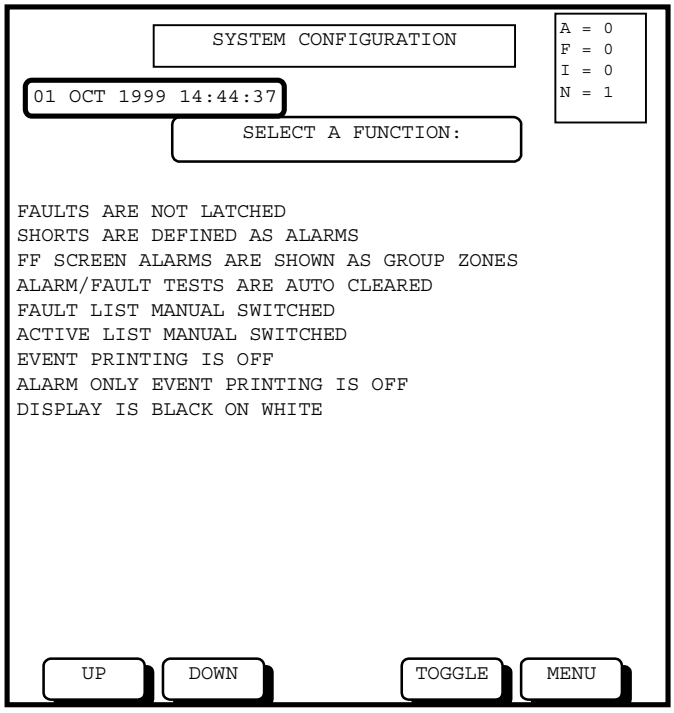
Actions:

- Use the **UP** and **DOWN** buttons to scroll through options and then use the **SELECT** button to select the highlighted option (or button **1** to **5** from the numeric keypad)
- Press the **MENU** button to return to the Service Menu screen.

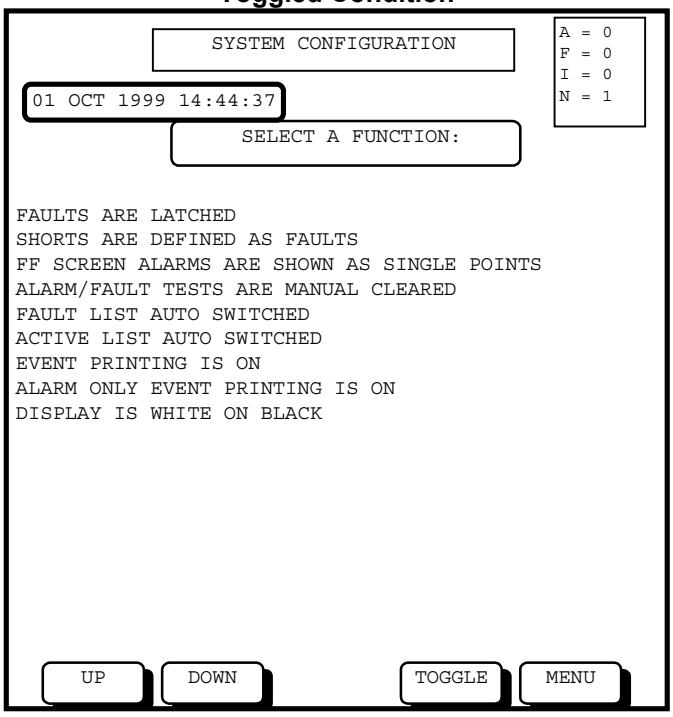
4.3.8.1 SERVICE MENU – GLOBAL - SYSTEM

This page displays system global parameters that can be toggled. The default states are shown below on the left, while the toggled states are shown on the right.

Default Condition



Toggled Condition



Actions:

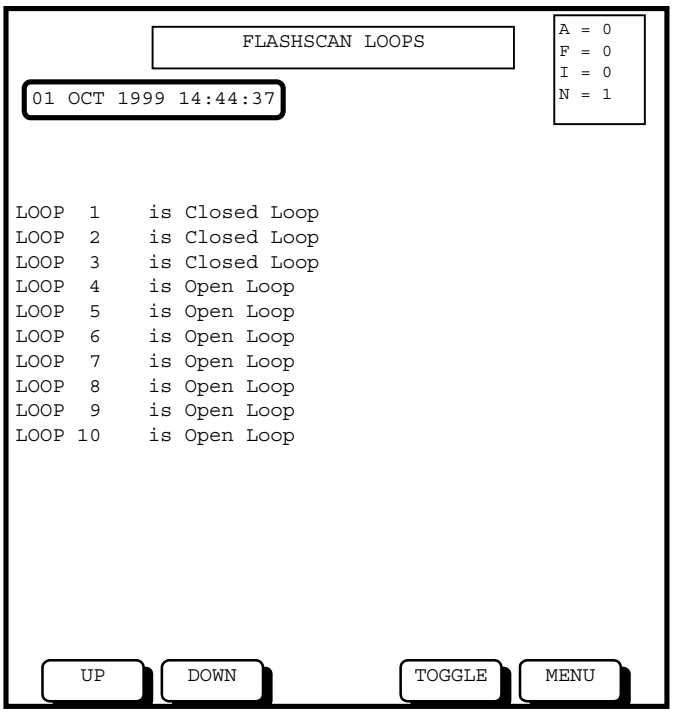
- Use the **UP** and **DOWN** buttons to scroll through options and then use the **TOGGLE** button to select the toggle the highlighted option . Changes are instant.
- Press the **MENU** button to return to the Service Menu screen.

Explanation of Global Configuration Options.

Item	Description
Faults Latched / Non Latched	Determines if faults will self clear or remain latched until a manual reset.
Shorts defined as faults or alarms	For some markets a short circuit on an AZF is to be classified as a fault. Please note this would require all Break Glass units and other hard contact devices to be fitted with a resistor.
FF Screen shows individual Alarms or group zones	AS4428.1 has a requirement for Addressable points to show the zone to which they belong in the FF screen and not all the individual alarms. Please note that when in this mode only the zone in alarm is displayed, if you want to know which points are in alarm you must go to the service menu and view alarms. A reset or isolate in the group zones FF screen will isolate / reset all points in the zone.
Alarm/Fault Test Auto clear or manual clear	During an AZF test you can control whether a point will automatically clear itself once the test is successfully completed or remain latched until a manual reset.
Fault List Manual Switched or auto switched	This setting determines if the panel should automatically jump to the fault list if a fault event comes in and there are no alarms on the system.
Active List Manual Switched or auto switched	This setting determines if the panel should automatically jump to the active list if a Non-alarm event comes in and there are no alarms on the system.
Event Printing Enabled / Disabled	This setting determines if the panel should print events to the printer port.
Alarm Only Printing activated / de-activated	This setting determines if the panel should only print alarm events or all events.

4.3.8.2 SERVICE MENU – GLOBAL – FLASHSCAN™

For each FlashScan™ loop a setting must be made to tell the LCM whether the Loop is a closed loop or an open loop. If it is set as an open loop then the LCM does not check for broken loop wiring. The LCM will still communicate out of Port A and Port B it just wont check for continuity. This is very useful when using existing cabling in a star pattern configuration.

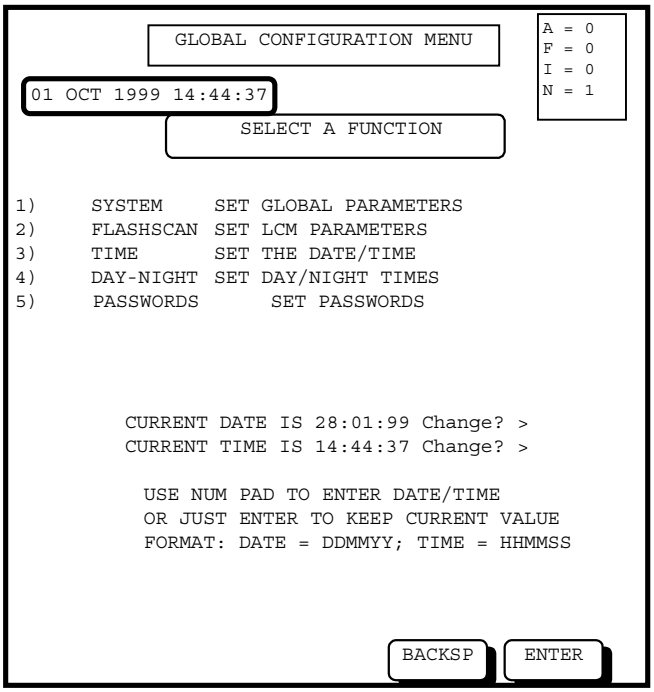


Actions:

- Use the **UP** and **DOWN** buttons to scroll through options and then use the **TOGGLE** button to select the toggle the highlighted option. Changes are immediate.
- Press the **MENU** button to return to the Service Menu screen.

4.3.8.3 SERVICE MENU – GLOBAL – SET DATE/TIME

From the Global configuration menu, selecting item 2 will display the change date / time criteria on the bottom of the page as follows:



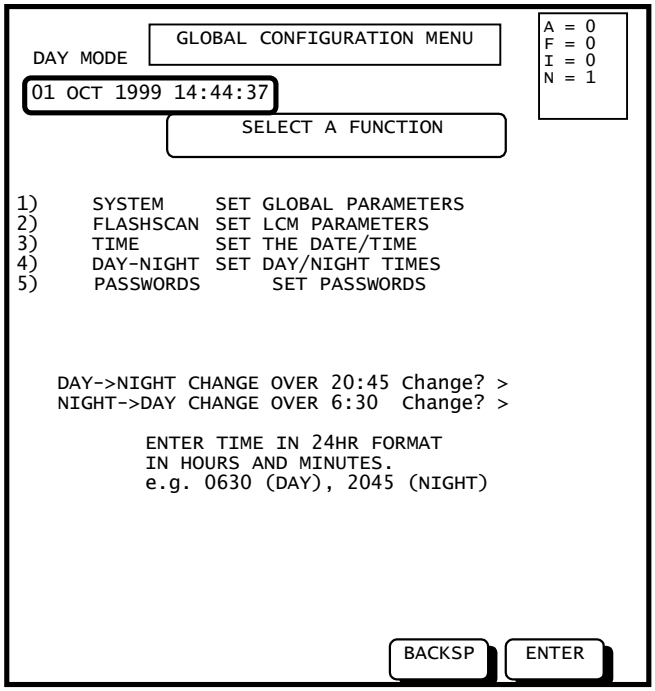
Actions:

- Use the numerical keypad or external keyboard to type in the new time in HHMMSS (without spaces) and then press the **ENTER** button. Or just press the **ENTER** button to accept the current time.
- Use the numerical keypad or external keyboard to type in the new date in DDMMYY (without spaces) and then press the **ENTER** button. Or just press the **ENTER** button to accept the current date.
- Once you have correctly entered the new date and time, you will automatically return back to the Service Menu.

4.3.8.4 SERVICE MENU – GLOBAL – DAY/NIGHT TIMERS

Each FlashScan™ device has sensitivity setting for day mode and night mode. From this menu item you can determine the changeover from Day > Night and Night > Day. To disable day / night mode, set both changeover times to 00:00.

Current day / night mode is displayed in the top left of all screens.



Actions:

- Use the numerical keypad or external keyboard to type in the new Day -> Night change over time in 24 hour format eg. 2045 and then press the **ENTER** button. Or just press the **ENTER** button to accept the current time.
- Use the numerical keypad or external keyboard to type in the new Night -> Day change over time in 24 hour format eg. 0630 and then press the **ENTER** button. Or just press the **ENTER** button to accept the current date.
- Once you have correctly entered the new times, you will automatically return back to the Service Menu

Note: **Whenever a change is made to the system time or the panel is rebooted, the panel will default to day mode and night mode will activate at the next day -> night trigger time.**

4.3.8.5 SERVICE MENU – GLOBAL – PASSWORDS

Overview:

The AFP-2800 supports a total of 15 passwords. Passwords consist of 3 different levels. Each level can have 5 user passwords.

If the Level 3 User 1 password is left blank (or a zero is used at the beginning of this field), then passwords are disabled on the system. This may be useful during commissioning and/or small installations. Setting this password back to zero at any time will disable all passwords on the system.

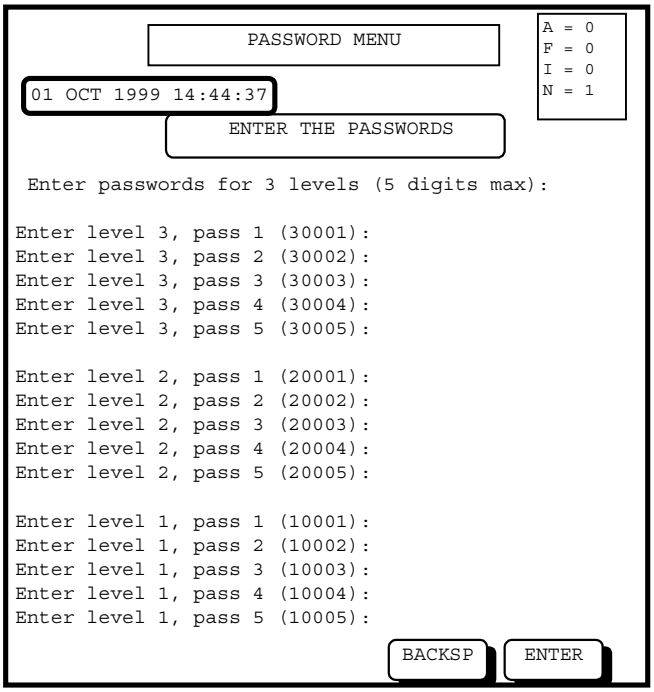
Only level 3 (highest) has the ability to change the passwords on the system.

Level 3 access should only be given to responsible persons with full authority to modify or delete the system configuration.

Various different screens on the system require passwords (level 1, 2, or 3) and the user will be prompted for a password on entry to those screens. Once a password has been entered, it will remain valid until logged out from the service menu.

If a user does not log out using the log-out option on the service menu, they will be automatically logged out 5 minutes after the last button press to avoid systems remaining open to modification.

Setting / Changing Passwords:



Actions:

- Use the numerical keypad or external keyboard to enter a NUMERIC password of up to 5 characters then press the **ENTER** button.
- The current password for each level is shown in brackets, if you do not wish to change the password, simply press the **ENTER** button.

Forgotten Passwords:

All passwords can be viewed and changed on-site by Level 3 access.

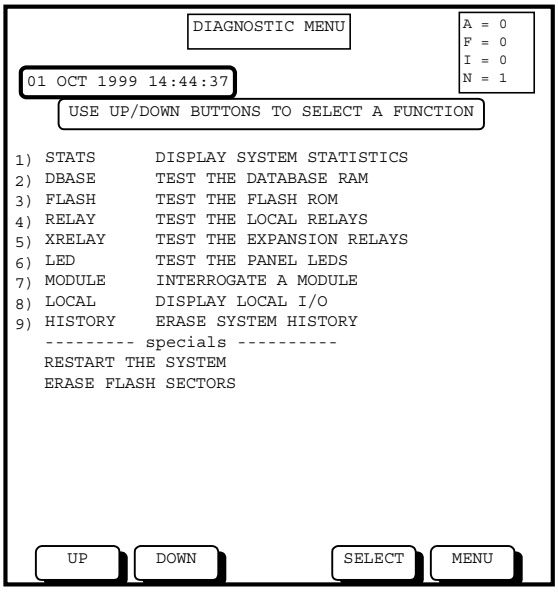
If the level 3 access password has been forgotten, enter any incorrect password and an 8 character alpha-numeric code will be displayed on the LCD screen. Note down this code and contact Notifier Inertia Pty Ltd. The original, correct password can be calculated by Notifier using this code and released to the building owner, so long as the appropriate authority has been provided by the building owner.

Please contact our offices for more information on releasing passwords.

4.3.9 SERVICE MENU - DIAGNOSTICS

The following screens are used for diagnostic use and would normally be accessed only during installation or in system fault-finding by testing whole module functions. Some of these tests will destroy data and should be used with care. Some tests run continuously, and can only be exited by pressing **MENU**.

These functions should only be accessed by trained technicians and are not for the end user.



Actions:

- Use the **UP** and **DOWN** buttons to scroll through options and then use the **SELECT** button to select the highlighted option (or button **1** to **9** from the numeric keypad)
- Press the **MENU** button to return to the Service Menu screen.

4.3.9.1 SERVICE MENU – DIAGNOSTICS - STATS

This selection will recalculate the panels CRC which takes about 10 seconds and will then display the following:

Item	Description
CPU Code Version	Current version Of CPU Code
Program CRC	Current Checksum Of CPU Code
No Of Rings	No Of rings fitted to the system
No Of Modules	Total Number OF Modules Found On The System
No Of Active Alarms	Number Of Points Currently In Alarm On The System
No Of Active Faults	No of points currently in fault on the system
No Of Active Isolates	No of points currently isolated on the system
No Of Named Points	No of points which have been assigned names
Total Number Of AZF's	Total number of AZF type points on the system
No Of Controlled Outputs	Number of Dout points that have control scripts written for them

Press the **MENU** button to return to the Service Menu

4.3.9.2 SERVICE MENU – DIAGNOSTICS - DBASE

Performs a test of Database RAM, this will clear all counters etc. But will not destroy any configuration information.

4.3.9.3 SERVICE MENU – DIAGNOSTICS - FLASH

This will perform a full CRC check (up to 30 seconds) on the Flash memory to confirm correct operation.

4.3.9.4 SERVICE MENU – DIAGNOSTICS - RELAY

This mode will test the correct operation of local relays by cycling through them one at a time. Pressing any button stops the test.

4.3.9.5 SERVICE MENU – DIAGNOSTICS - XRELAY

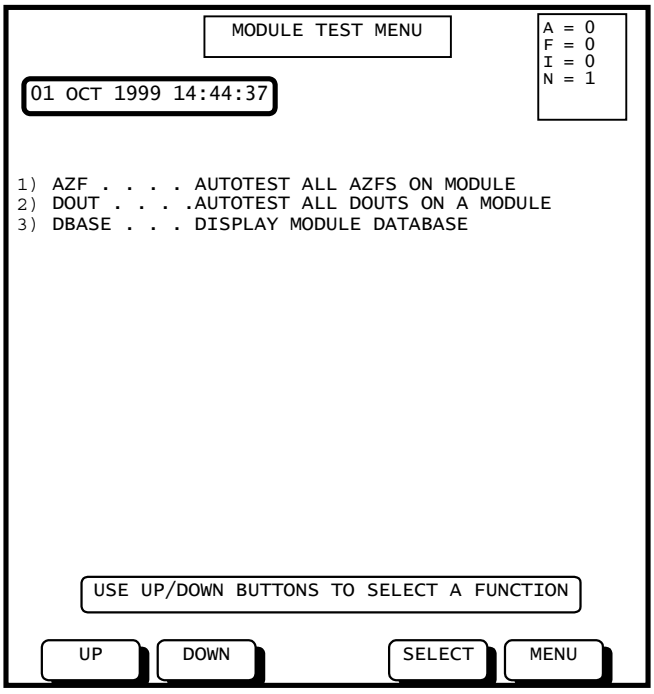
This mode will test the correct operation of expansion relays within the panel by cycling through them one at a time. Pressing any button stops the test.

4.3.9.6 SERVICE MENU – DIAGNOSTICS - LED

This mode will test the correct operation of panel LED and LCD display by randomly flashing LEDS and filling the LCD with data. Pressing any button stops the test.

4.3.9.7 SERVICE MENU – DIAGNOSTICS – MODULE

This mode will perform tests on field modules to ensure correct communications and operation.



Actions:

- Use the **UP** and **DOWN** buttons to scroll through options and then use the **SELECT** button to select the highlighted option (or button **1** to **3** from the numeric keypad)
- Press the **MENU** button to return to the Service Menu screen.

Item	Description
AZF	You will be prompted to enter a ring number or a module number. The panel will then automatically isolate each AZF on the module, perform a fault test, and perform an alarm test displaying the results on the screen.
DOUT	You will be prompted to enter a ring number or a module number, the panel will then automatically cycle all Douts on the module. Script processing is halted during this process. Press the **SERVICE MENU** button to exit.
DBASE	You will be prompted to enter a ring number or a module number. The panel will then display LIVE module raw data for use by trained Notifier Inertia Pty Ltd diagnostics engineers only.

4.3.9.8 SERVICE MENU – DIAGNOSTICS – LOCAL

This command will display raw local data for use by trained Notifier Inertia Pty Ltd diagnostics engineers only.

4.3.9.9 SERVICE MENU – DIAGNOSTICS – HISTORY

This command will permanent delete ALL events in the systems history log.

4.3.9.10 SERVICE MENU – DIAGNOSTICS – RESTART THE SYSTEM

This command will perform a warm system reboot and will reprogram all LCM's.

Note: A warm system reboot can also be performed by pressing Reset SW1 on the back of the CPU board.

4.3.9.11 SERVICE MENU – DIAGNOSTICS – ERASE FLASH SECTORS

This command will take you to a special erase flash sector menu. This menu is to be used by factory trained technicians only as it allows the deleting of individual flash memory sectors. The accidental erasure of 1 or more flash sectors may render the system inoperative and cause the system to malfunction.

4.3.10 SERVICE MENU – LOG OFF

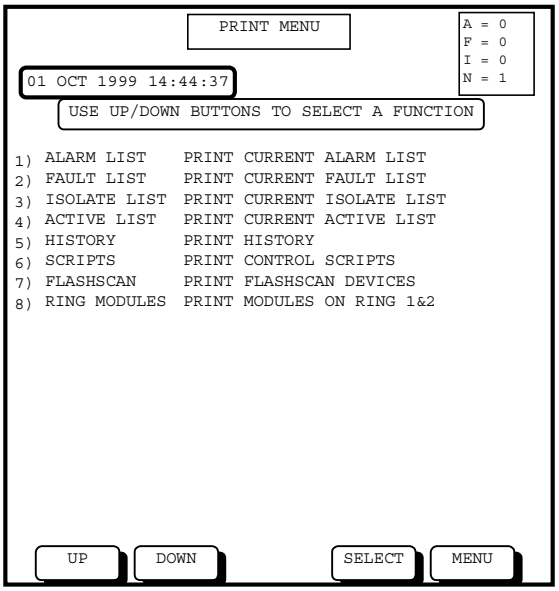
This option on the service menu allows the current user logged onto the system to log off and return the system back to level 0 access.

Failure to manually log off the system will result in the system automatically logging the user off after 5 minutes of no button presses, to prevent the system remaining accessible after the technician has finished.

4.3.11 SERVICE MENU - PRINT

The following screens are used for printing hard copies of information to a serial printer connected to CONN1 on the back of the CPU board.

- Please refer to global settings menu on page 54 for enabling / disabling event printing options.
- Please refer to page 75 for information on printer port settings and cable requirements.



Actions:

- Use the **UP** and **DOWN** buttons to scroll through options and then use the **SELECT** button to select the highlighted option (or button **1** to **8** from the numeric keypad)
- Press the **MENU** button to return to the Service Menu screen.

Selection	Result
Alarm List	Prints all Alarm events currently on the system.
Fault List	Prints all points currently in fault on the system.
Isolate List	Prints all Isolated points on the system.
Active List	Prints all Non-Alarm points which are currently active on the system.
History	Prints system history with the following options for printing: • All Alarm in Ascending Date Order. • All Faults in Ascending Date Order. • All Isolates in Ascending Date Order. • All Active events in Ascending Date Order. • All history events starting from a selected date.
Scripts	Prints all outputs points which are operated by scripts.
FlashScan™	Prints all installed FlashScan™ points.
Ring Modules	Prints all installed modules on rings 1 & 2.

SECTION 5: APPENDIX:

5.1 PLACING INTO OPERATION CHECKLIST

5.1.1 PRE POWER-UP CHECKS.

- ❑ System General Appearance Good
- ❑ Cabinet Colour And Condition Good
- ❑ Cabinet Keyed 003
- ❑ All Circuit Boards Firmly Fastened
- ❑ Manual Call Point Fitted & Functional
- ❑ Viewing Window Clear And Firmly Secured
- ❑ Cable Entries Adequately Sealed
- ❑ 240VAC Cabling Correctly Terminated
- ❑ All Earthing Secured
- ❑ Power Supply Securely Mounted
- ❑ Power Supply Correctly Wired
- ❑ All Ribbon Cables Firmly Secured
- ❑ All Other Components Securely Inserted
- ❑ FlashScan™ LCM Boards correctly addressed
- ❑ INERTIA-AFP2800 Manufacturing Label Affixed

You are now ready to power up the INERTIA-AFP 2800 Fire Indicator Panel.

5.1.2 POWER UP CHECKLIST

- ❑ Ensure Batteries Are Disconnected.
- ❑ Turn Mains Switch To "ON"
- ❑ After a few seconds, some power-up information should be displayed on the LCD screen, which will then clear and display the Alarm screen.
- ❑ Under normal conditions the “NO ACTIVE ALARMS” message will be displayed.
- ❑ The Indicator LED’s on the rear of the CPU board will cycle back and forth (Cylon)
- ❑ The MAINS ON and FIRE FIGHTER lamps will be lit
- ❑ Connect Batteries.

  Caution !! Incorrect polarity of batteries can cause permanent and serious damage to the system.
- ❑ Check for system faults by pressing, “Service Menu”, “List”, “Faults”. If there are any faults, either rectify or note in fault log on following page

YOU ARE NOW READY TO COMMENCE USING THE AFP-2800 FIRE PANEL.

5.1.3 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 INERTIA-AFP2800 is now ready for operation.

5.2 ZONE OPTION EXPLANATIONS

5.2.1 AVF FUNCTIONAL DESCRIPTION

Alarm Verification Facility (AVF) can be used selectively on each alarm point to reduce false alarms by requiring an alarm condition to be present for a period of time before an alarm is generated. AVF works as follows.

1. Receive 1st alarm signal. (Do not do anything with the alarm signal)
2. Initiate a 15 second reset on the point which generated the alarm.
3. Once the 15 second reset has completed, Start a 120 second timer.
4. If an alarm comes in within the 120 seconds it is to be treated as a real alarm.
5. If the 120 second timer expires, return the zone back to its normal condition.

5.2.2 TIMED AZF FUNCTIONAL DESCRIPTION

A timed AZF can be used where normal latching detectors are required to be used in a duct probe application.

1. Timed AZF's function as follows:
2. Once the point goes into alarm, generate an alarm. (You can combine with AVF too if you wish)
3. Retest the zone for continued alarm condition every 15 seconds by powering down and re-powering the detector.
4. If the alarm is still present, keep zone in alarm, otherwise return zone back to normal condition.

Note: Minimum time in alarm condition is 75 seconds ie: if alarm clears in 20 seconds the point will be held in alarm for an additional 55 seconds.

5.2.3 PAZM8 EOL VALUES (FUTURE RELEASE)

The PAZM module has the ability to select the EOL value for the AZF circuit. This value can be anything between 1000 ohms and 5600 ohms in 100 ohm increments. This is particularly useful in retrofit applications

5.3 ENTERING CONTROL SCRIPTS

As the AFP-2800 is simply a database of inputs and outputs, scripts are used to determine when outputs should operate. Scripts are text based logic equations, which are entered into the system by the operator and then parsed into an internal logic equation, which is stored and processed by the panel many times a second. As each script's logic becomes true, the output associated with the script is activated. Note that an isolated point is seen as inactive by the panel and hence, in a logic programming script, it will return the value false (or true if the NOT function is applied to it within the script).

Scripts can refer to any AZF, Digital Input, Digital Output, FlashScan™ Device, Software Zone or System Pointer in any combination of AND, OR, NOT or RANGE logic. Logic equations can be built up by bracketing functions to create combinations of logic.

The scripting facility on the AFP-2800 is a very powerful feature which makes it easy for the operator to view and modify the control logic of an output and all can be done on-screen without the need of external Laptop programmers.

Functions which can be used in scripts are as follows:

Function	Syntax example
OR	L1D1 OR 1.1.Z2;
AND	1.1.Z1 AND 1.1.Z2;
NOT	!1.1.z1;
RANGE OR	1.1.z1 -> 1.99.z8;
RANGE AND	1.1.z1 &> 1.1.z8;

All of the above functions refer to the Alarm condition of each point. If you wish to refer to the Fault or Isolate condition in a script you can use the following special functions.

Special Function	Syntax Example	Syntax Meaning
Point In Fault	F1.1.z1;	Fault 1.1.Zone 1
Point Isolated	IL1D1;	Isolate Loop 1 Detector 1

Abbreviations for common points used in scripts are as follows:

Abbreviation	Point
CA	Common Alarm (Common alarm relay)
CF	Common Fault (Fault LED)
CI	Common Isolate (Isolate LED)
BI	Bell Isolate (Bell isolate LED)
WI	Warning System Isolate (Warning system isolate LED)
MO	Mains Fail (Mains ON LED)
PF	PSU Fail (PSU fail LED)
BF	Battery Fail (Battery fault LED)
CH	Charger HI
CL	Charger LO

5.3.1 USING ZONE NUMBERS IN SCRIPTS:

As Display Zones are purely a collection of individual points, they can be used in scripting equations to save time. For Example: If Z1 contained the points L1D1, L1D2, L1D3, and you needed L1M1 to turn on whenever a detector in Z1 went into alarm you could write a script as follows:

L1M1 = Z1;

This panel will the automatically create the script **L1M1 = L1D1 OR L1D2 OR L1D3**;

Note that this script is created as a macro function, meaning that if you change the content of Z1, the script will not automatically change. You must update the script manually for the output to still operate off display zone 1.

5.3.2 WRITING SCRIPTS

Important notes on writing scripts:

- All scripts must be terminated with a semicolon, ;
- Scripts always belong to the output to which they are controlling.
- A script going true will turn the output on.
- All system input and output points, as seen in section 4.1.4 on Point Formats, can be used in Scripts.
- Scripts can have a maximum bracket ( ) nesting of 10. ie: 10 pairs of brackets.

A delay timer can be added to the end of any script by adding "AND T10" - in this case for a 10 second delay timer. This means that the script conditions must be true for 10 seconds before the script goes true. You can only have 1 timer per script. Time delays can be up to 180 seconds.
Range functions include all points of the same type within the specified range as a large OR or AND function. This function is performed as a macro and includes only modules installed at the time of parsing. If modules are added after this point they will not automatically be included in the range. If you add a module and you and want it included in range scripts, you must re-parse the script again.
When using a Range Function, if the point you are writing the script for falls within the range, the script will automatically exclude the point from the script to avoid the output latching on. If you want the output to latch on, you can manually add the point into the script.

5.3.3 SCRIPTING EXAMPLES

Type	Script	Description
Or	**1.1.z1 or 1.1.z2 or 2.1.i2 or 1.101.i1;**	Any of the 3 point in alarm
And	**1.1.z1 and 1.1.z2;**	Both points required to be in alarm
NOT	**1.1.z1 and !1.1.z2;**	AZF#1 must be alarm and AZF#2 must NOT be in alarm.
OR Range	**(1.1.z1 -> 1.1.z8);**	Any AZF on module 1 in alarm
AND Range	**(1.1.z1 &> 1.1.z8);**	ALL AZF's on module 1 in Alarm.
Fault	**F1.1.z1;**	1.1.z1 is in fault
Isolate	**I1.1.z1;**	1.1.z1 is isolated

Combination examples:

Example	Description
(1.1.z1 and 1.1.z2) and !1.1.z3;	AZF 1 and 2 on module 1 and not AZF3 on module 1.
(1.1.i1 -> 1.99.i3) or (1.1.z1 -> 1.99.z8);	And input or any zone on ring 1
CA and T10;	When Common Alarm has been active for 10 seconds.

Caution: When a script is being evaluated and a point in the script is found to be isolated, that point is treated as being inactive (ie. off or non-alarmed). If the NOT function has been used in the script, this may have unexpected results. For example, a script such as 1.2.o3 = !1.3.I4; would operate as follows: output 1.2.o3 is ON when input 1.3.I4 is OFF, and the output 1.2.o3 is OFF when input 1.3.I4 is ON. However if input 1.3.I4 is now isolated, output 1.2.o3 will go ON because the script will treat the isolated point as OFF (inactive). This may or may not be the desired action depending on the application.

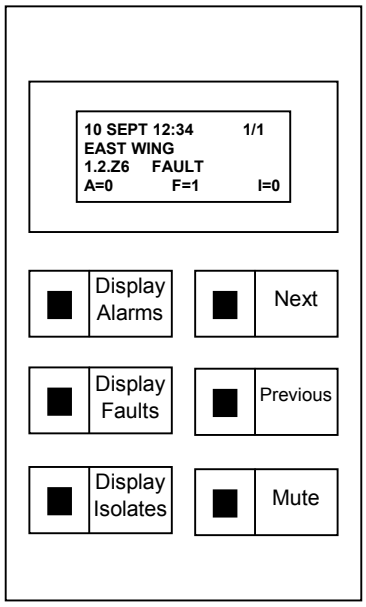
5.3.4 MAKING AN OUTPUT LATCH.

The way to latch an output is to include itself in its script, you do need to remember however to include a way to reset the output. For example, a fire trip relay (L1M3) is required to latch on common alarm and to be reset by push button 1 on annunciator 1, once all alarms have cleared. A script that will perform this operation is:

L1M3 = CA or (L1M3 and !1.101.i1);

5.4 LCD-80 OPERATION – TERMINAL MODE

The LCD-80 is an alphanumeric display module that acts as a remote display interface to the AFP-2800. It displays Alarm, Fault and Isolate lists. A local buzzer will sound for any alarm or fault (this buzzer can be disabled if required). The AFP-2800 can support up to 30 LCD-80 units on Ring 1. Refer to section 5.12.6 for connection, addressing and set-up details.



Normal Operation

The display will automatically show the highest priority event in the FIP event queue. Priorities, in descending order, are Alarms, Faults, then Isolates. In the event that a fault is showing on the display and an alarm occurs, the display will automatically change to show the alarm. Totals of all Alarms, Faults and Isolates are also shown and are automatically updated every 10 seconds.

Manual Operation

- Pressing “DISPLAY ALARMS” will show the first alarm in the alarm list
- Pressing “DISPLAY FAULTS” will show the first fault in the fault list
- Pressing “DISPLAY ISOLATES” will show the first isolate in the isolate list
- Pressing the “NEXT” and “PREVIOUS” buttons allow the user to scroll up and down the lists. When the last event on the list is reached, the display will wrap around to the first event on the list, and vice versa.

Note: If a new event occurs on the FIP, then the highest priority event will automatically be displayed.

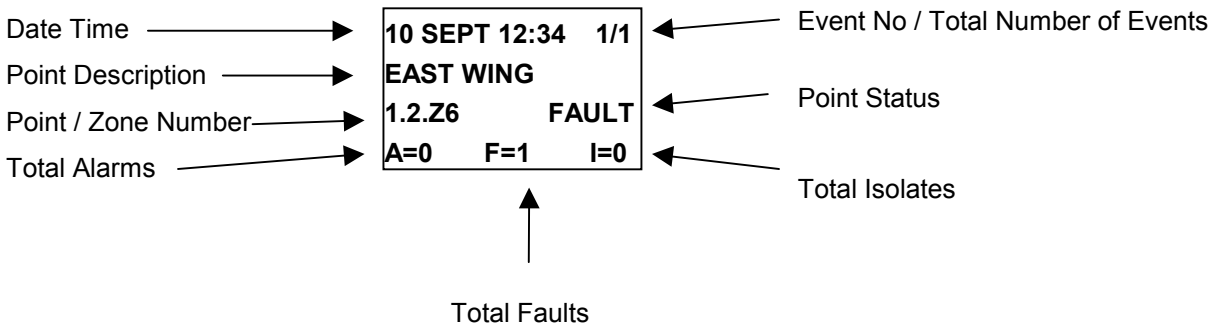
Event Sounder

Switch 1 of DIP switch SW1 will disable the buzzer for alarms.
Switch 2 of DIP switch SW1 will disable the buzzer for faults.

If the buzzer is enabled, pressing the “MUTE” button will silence the buzzer until a new event is received.

Display

The LCD Display is made up of 4 lines of 20 characters each. Events are displayed as:



In the above example, a fault occurred on the 10th September at 12:34pm. It is the first of only one fault and occurred in the East Wing on point number 1.1.Z3. There are 0 alarms, 1 faults, and 0 isolates on the system.

10 SEPT 12:37 1/2
WEST WING
1.1.Z7 ALARM
A=2 F=2 I=0

In this example, an alarm occurred on the 10th of September at 12:37pm. It is the first of two alarms and occurred in the West Wing on point number 1.1.Z7. There are 2 alarms, 2 faults, and 0 isolates on the system.

SPECIAL MESSAGES

ALL SYSTEMS NORMAL	The system is 100% normal with no alarms, faults, or isolates.
COMMS FAILURE *	This messages flashes and appears when the LCD80 has not been polled by the CPU in over 10 seconds
NO RESPONSE FROM CPU	The LCD80 is being polled by the CPU, but the CPU has not responded to an LCD80 request in over 20 seconds

5.5 RECOMMENDED CABLING REQUIREMENTS

5.5.1 RS 485 COMMUNICATION'S CABLING

Applies to:

- Ring 1 Communication lines
- Ring 2 Communication lines
- Annunciator Communication lines

Requirements:

Style	**0.75mm^2 x 2 core Twisted Shielded** communications cable (+ separate 2 core cable for 24VDC module power)
Max distance	Communications cable: 1000M between modules with 1.5mm^2 cable (24VDC power cable distance will be determined by voltage drop)
Notes:	• Maximum of 16 annunciators between any two modules • Shields must only ever be terminated at one end • Fire rated cables may be required as per AS1670, AS1668, AS2118

5.5.2 ADDRESSABLE LOOP CABLING

Applies to:

- Loops 1-10

Requirements:

Style	Minimum size cable used should be **0.75mm^2 x 2 core TWISTED pair, NOT shielded**
Max distance	• 3810 m total using 4.0 mm^2 x 2 core Twisted
Notes:	• Up to 3810 m needs 4.0 mm^2 • Up to 2800 m needs 2.5 mm^2 • Up to 1800 m needs 1.5 mm^2 • Up to 1100 m needs 0.75 mm^2 • Shielded cable should NOT be used. (contact Notifier if installing in noisy environments) • Fire rated cables may be required as per AS1670, AS1668, AS2118. • Separate 2 core cable to be run for 24VDC power to FZM-1 and FCM-1 modules as required.

Refer to section 5.8.4 - FlashScan™ LCM and LEM Terminations for information on loop wiring styles and installation checks.

5.6 PASSWORD ACCESS LEVELS

The AFP-2800 has 3 levels of password protection.

Each password level can have 5 different user passwords.

Each level has security access as follows:

Access Level	Access To
Level 0 (no Password Required)	• Firefighters Screen • Ability to reset alarms • Ability to reset faults • Ability to Isolate/Deisolate • Ability to view system information • Ability to view history • Ability to view all read-only data
Level 1	• Level 0 access + • Ability to change descriptors • Ability to change point options • Ability to change display zone options • Ability to add edit Pushbutton Isolate functions. • Ability to change global options
Level 2	• Level 1 access + • Ability to change scripts • Ability to remove points
Level 3	• Level 2 access + • Ability to perform Upload/Download • Ability to delete history • Ability to change passwords

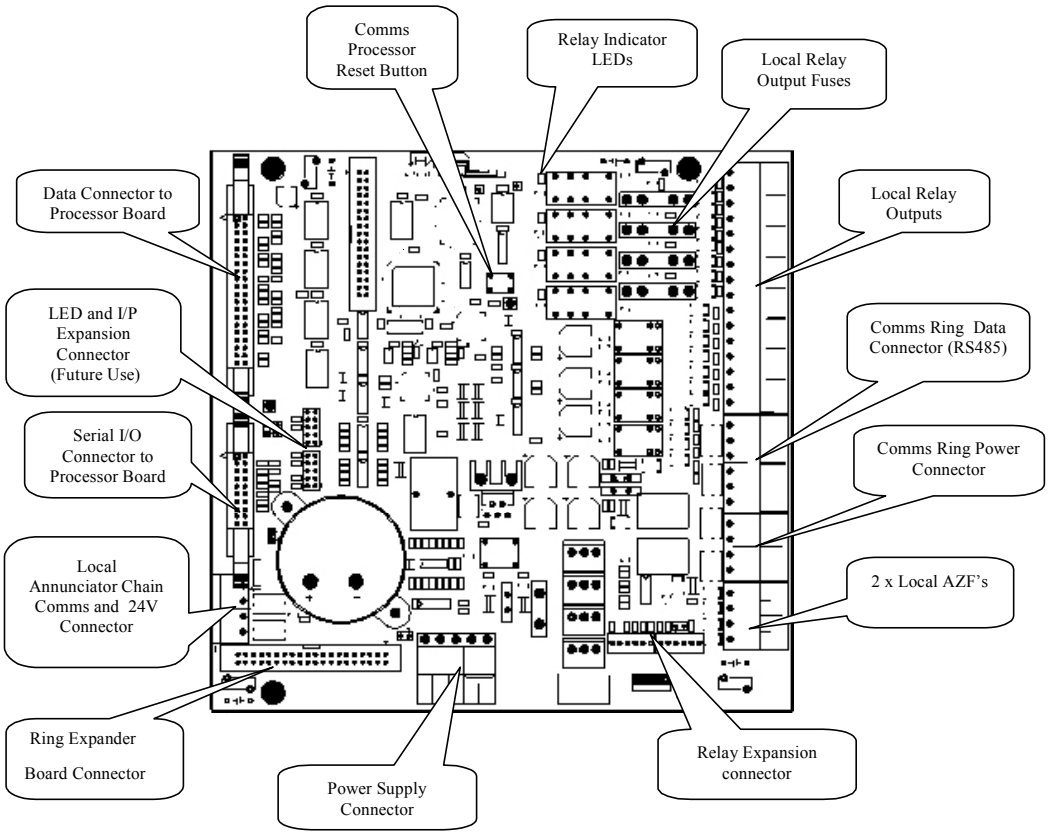
5.7 FLASHSCAN™ DETECTOR SENSITIVITIES

FlashScan™ Detectors Sensitivity Settings Table			
Detector Type		**Alarm %/Metre Obscuration**	**Pre-Alarm %/Metre Obscuration**
Photo Optical	Level 1	1.64%	Auto
	Level 2	2.40%	0.98%
	Level 3	3.15%	1.54%
	Level 4	3.90%	2.10%
	Level 5	4.69%	2.66%
	Level 6	5.45%	3.25%
	Level 7	6.20%	3.81%
Note 1, 2	Level 8	6.96%	4.36%
	Level 9	7.71%	4.92%
Ionisation	Level 1	1.64%	Auto
	Level 2	2.46%	1.31%
	Level 3	3.28%	1.64%
	Level 4	4.10%	2.46%
	Level 5	4.92%	3.28%
	Level 6	5.74%	4.10%
	Level 7	6.56%	4.92%
Note 1, 2	Level 8	7.38%	5.74%
	Level 9	8.20%	6.56%
View Detector	Level 1	0.09%	Auto
	Level 2	0.16%	0.07%
	Level 3	0.33%	0.10%
	Level 4	0.66%	0.16%
	Level 5	0.98%	0.33%
	Level 6	1.64%	0.66%
	Level 7	2.30%	0.98%
Note 1, 2	Level 8	2.62%	1.31%
	Level 9	3.28%	1.64%
Acclimate	Level 1	1.625%	1.625%
	Level 2	3.25%	1.625%
	Level 3	3.25 – 6.5% Auto	1.625 – 3.25% Auto
	Level 4	6.5 %	3.25 %
	Level 5	6.5 – 9.75% Auto	3.25 - 6.5% Auto
	Level 6	9.75%	6.5%
	Level 7	9.75 - 13.0% Auto	6.5 - 9.75% Auto
Note 1, 2	Level 8	13.0%	9.75%
	Level 9	Not available	Not available
Thermal		**Degrees Celsius**	
	Level 1	43 ^{O}C	
Note 2	Level 2	57 ^{O}C	
Note 1	Level 3	65 ^{O}C	
	Level 4	70 ^{O}C	
	Level 5	75 ^{O}C	
	Level 6	88 ^{O}C	

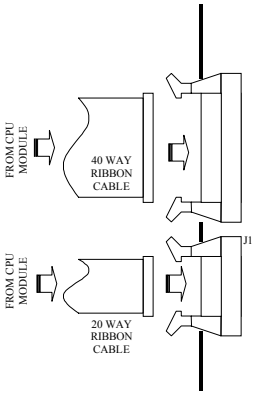
Note 1 = Default setting on normal program
Note 2 = Default setting on auto program

5.8 PANEL CONNECTION DIAGRAMS:

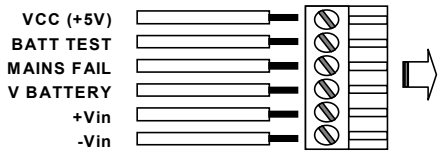
5.8.1 MAIN TERMINATION BOARD



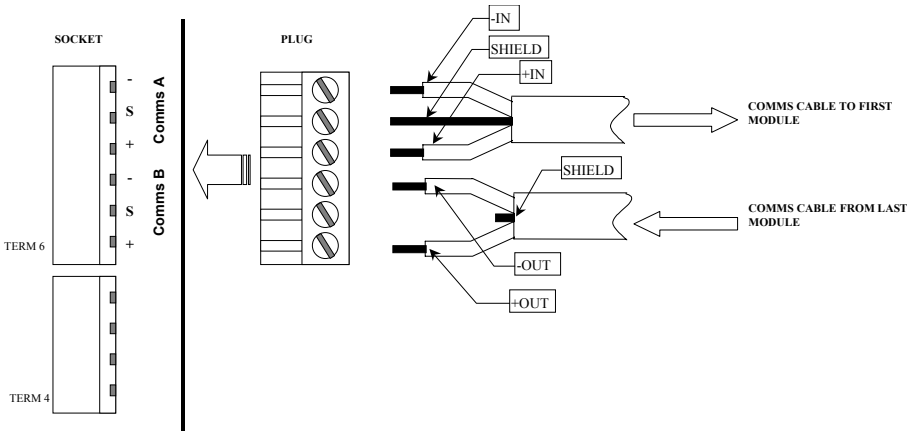
CONNECTING RIBBONS TO CPU



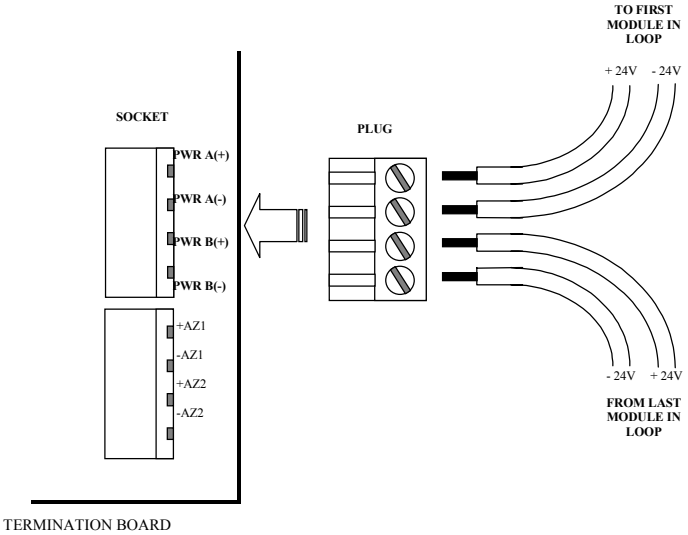
POWER SUPPLY CONNECTIONS



5.8.1.1 MAIN TERMINATION BOARD - CONNECTING RS485 FOR RING #1

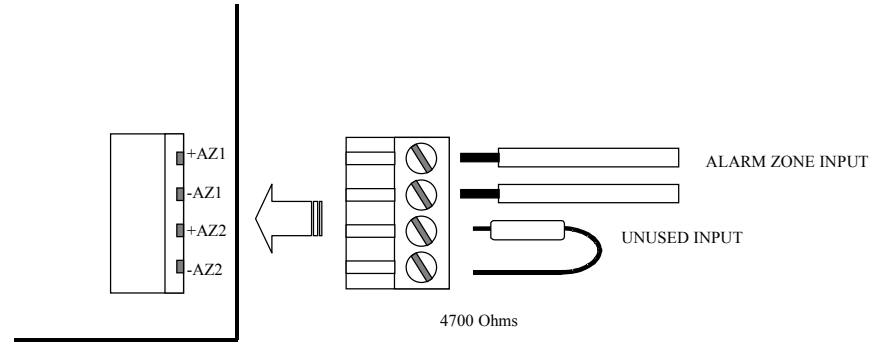


5.8.1.2 MAIN TERMINATION BOARD - CONNECTING 24VDC FOR RING #1



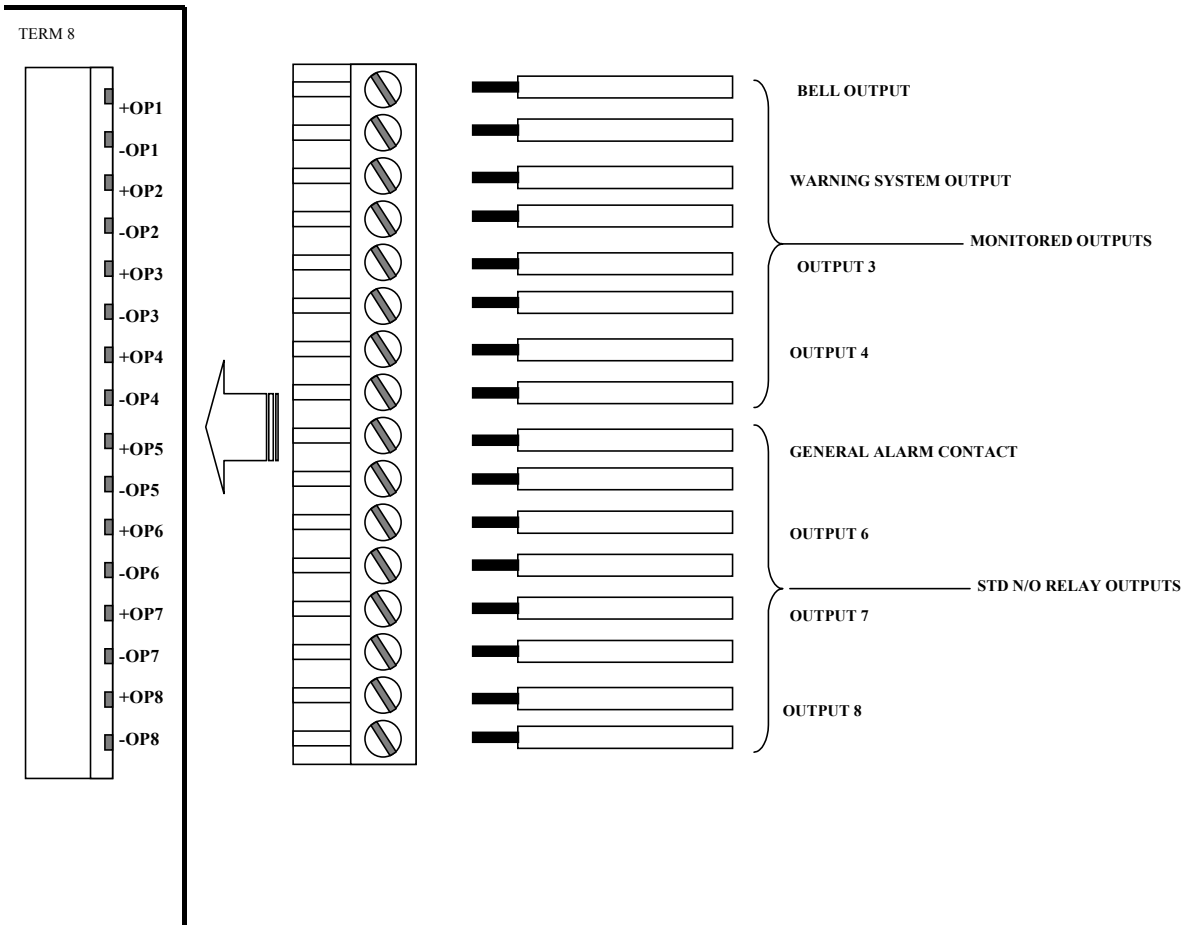
TERMINATION BOARD

5.8.1.3 MAIN TERMINATION BOARD - CONNECTING AZF'S 1 &2

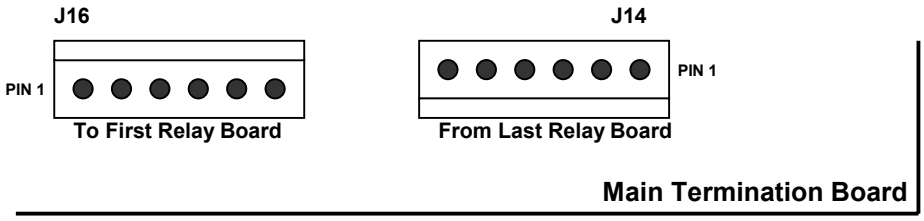


TERMINATION BOARD

5.8.1.4 MAIN TERMINATION BOARD - CONNECTING RELAY OUTPUTS



5.8.1.5 MAIN TERMINATION BOARD - PANEL EXPANSION RELAYS



HEADER J16

Pin1 = VCC
Pin 2 = GND
Pin 3 = 24V
Pin 4 = STROBE2
Pin 5 = DATA OUT
Pin 6 = CLOCK

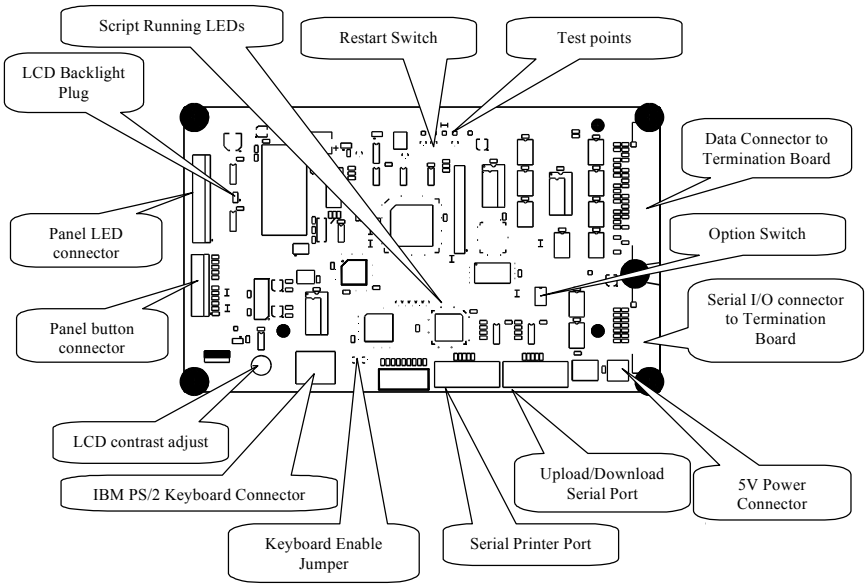
HEADER J14

Pin1 = VCC
Pin 2 = GND
Pin 3 = 24V
Pin 4 = STROBE2
Pin 5 = DATA IN
Pin 6 = CLOCK

Note that the Panel Expansion Relay boards must be connected in a closed serial loop between J16 and J14 on the Main Termination Board for the software to auto-detect the actual number of Relay boards connected. The maximum allowed is 8 x 8 way relays boards. If the serial loop is left open, the panel will assume that all 8 boards are present.

Note: If no expansion relay boards are used, jumper pins J18, situated close to the J14 connector, must be shorted togther.

5.8.2 CPU



5.8.2.1 UPLOAD/DOWNLOAD PORT SETTINGS

Port Information	
Mode	RS232
Baud Rate	115200
Data Bits	8
Stop Bits	1
Parity	None
Handshaking	None

Connector Information	
Type	DB9 Female
Location	CPU Conn 2
TX	Pin 3
RX	Pin 2
GND	Pin 5

Cable Specification AFP-2800 End **Laptop End**

DB9 Male	DB9 Female
2	2
3	3
5	5

5.8.2.2 PRINTER PORT SETTINGS

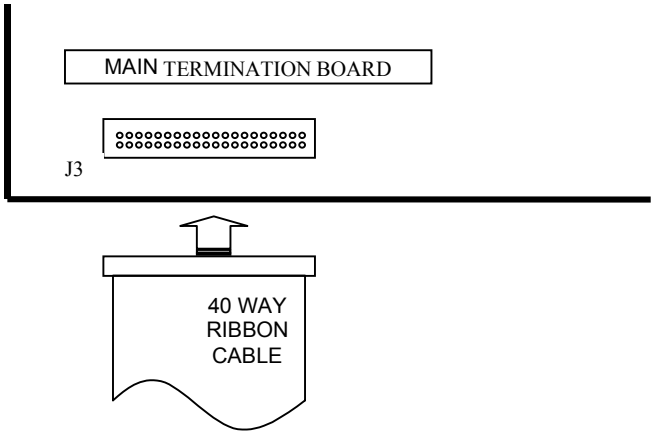
Port Information	
Mode	RS232
Baud Rate	9600
Data Bits	8
Stop Bits	1
Parity	Odd
Handshaking	Hardware

Connector Information	
Type	DB9 Female
Location	CPU Conn 1
RX	Pin 2
GND	Pin 5
CTS	Pin 8

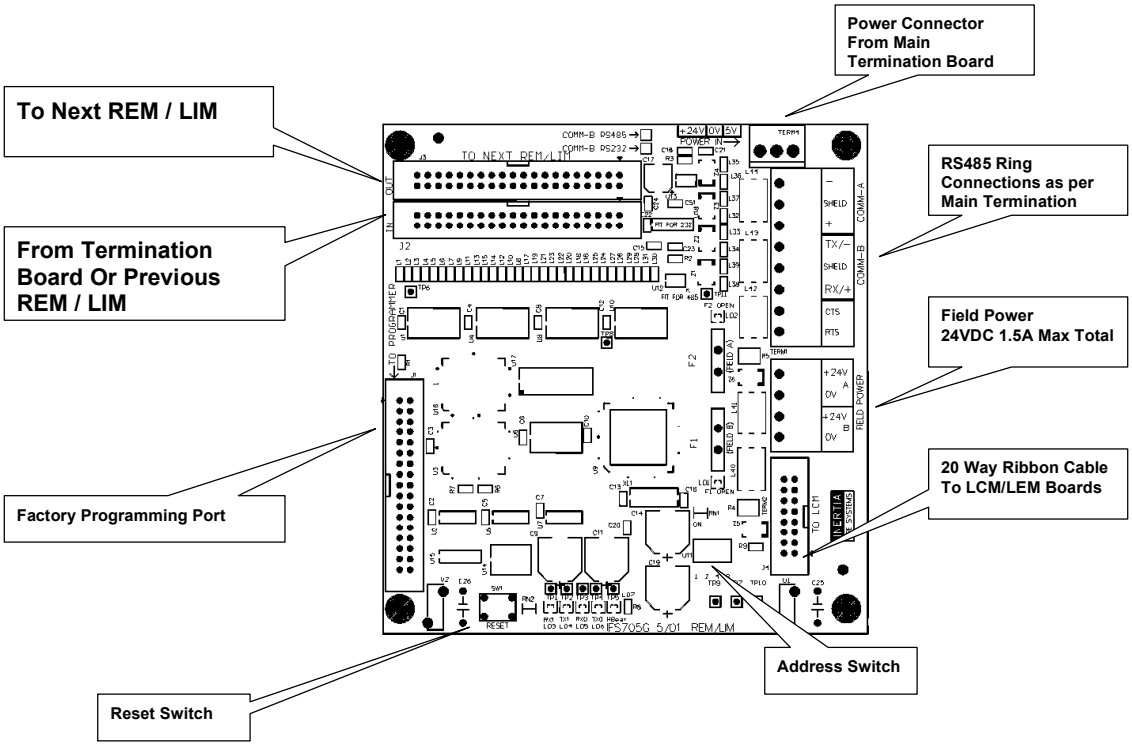
Cable Specification AFP-2800 End Printer End

DB9 Male	DB25 Male
3 (TX)	3 (RX)
5 (REF)	7 (REF)
8 (CTS)	4 (RTS)

5.8.3 RING EXPANDER MODULE



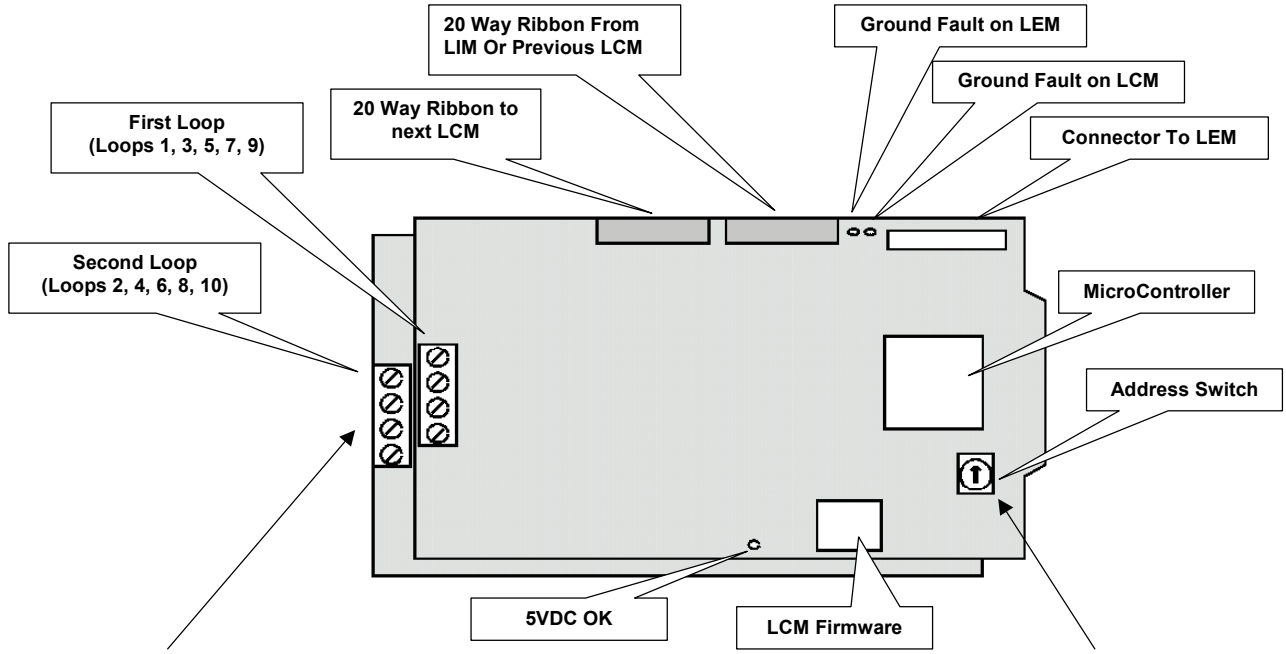
To Ring Expander Module OR Loop Interface Module



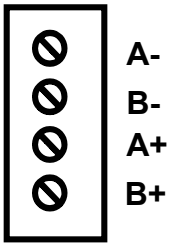
Address Settings:

Description	SW1	SW2	SW3	SW4
Ring Expander Module (Conventional Ring #2)	**ON**	**OFF**	**OFF**	**OFF**
FlashScan™ Loop Interface Module (For use with LCM's)	**OFF**	**ON**	**OFF**	**OFF**

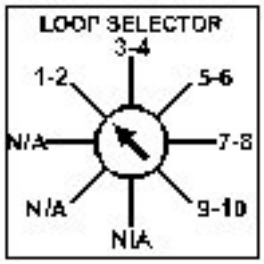
5.8.4 FLASHSCAN™ LCM AND LEM TERMINATIONS



Loop Connections



Address Switch Settings



The LCM is a 1-loop board and can support 159 detectors and 159 modules. The field wiring is electrically isolated from the rest of the system so that any two-ground faults on separate loops will not cause invalid replies from devices. A short to any other system circuit will not cause communication loss. The LCM has an earth fault detection circuit with a yellow LED displaying an earth fault condition.

The LEM is an expansion board that attaches to its LCM parent providing a second loop which has the same features as the parent loop.

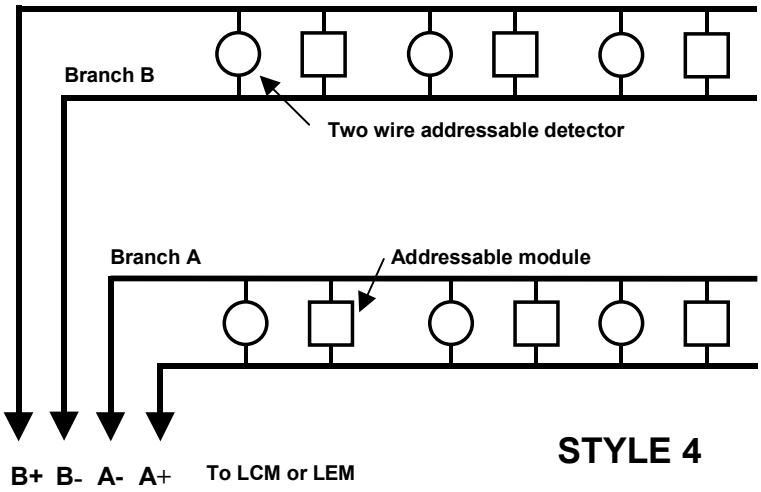
Loop wiring styles:

Loops may be operated one of several modes – style 4, style 6 as well as style 7 (refer to diagrams below). Style 4 is an open loop arrangement while styles 6 and 7 are closed loop arrangements. Refer to section 4.3.8.2 for loop configuration details and to section 5.5.2 for cabling requirements.

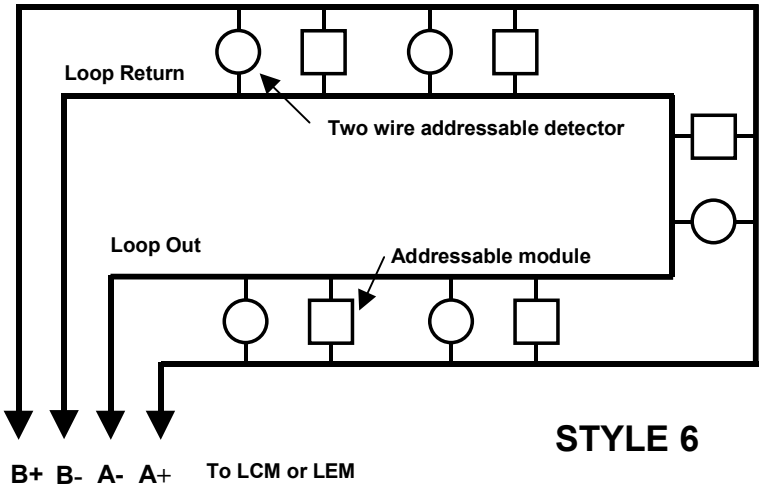
Style 4. (Open loop - does not return to the panel, non-redundant)
Port A (Channel A) 3810M maximum, 50 Ohms resistance maximum.
Port B (Channel B) 3810M maximum, 50 Ohms resistance maximum.
In style 4, the processor will poll both legs of the “loop” simultaneously through its own driver. If either leg is shorted (wire-wire), the other leg is not degraded since it is operated from a separate driver.

Style 6. (Closed loop - returns to panel providing a redundant path for open circuit conditions)
Total Loop, 3810M maximum, 50 Ohms resistance maximum.
In style 6, the processor polls the loop from one of the drivers (the B-side). If a failure (open circuit) is detected, it will poll through both ends.

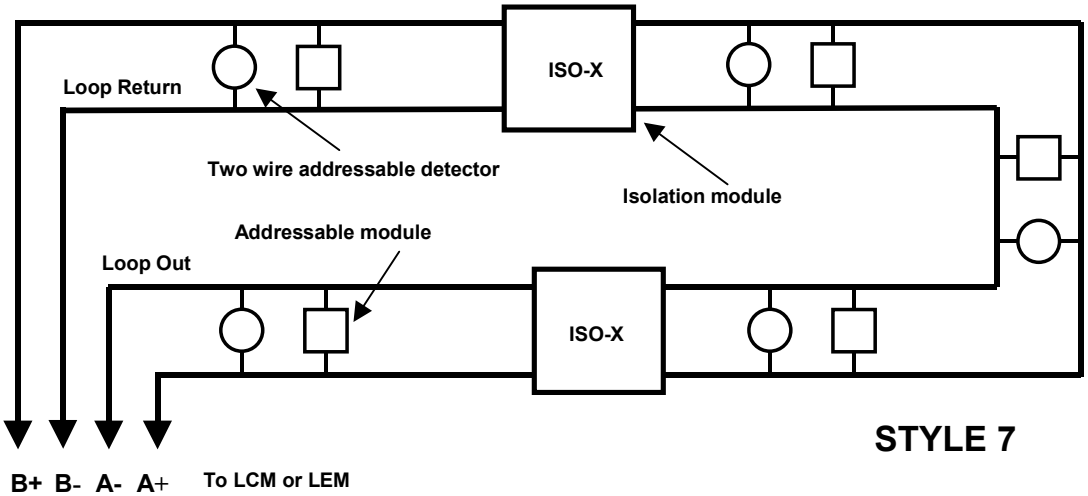
Style 7. (Closed loop with isolation modules providing a redundant path for short circuit conditions)
Total Loop, 3810M maximum, 50 Ohms resistance maximum.
Maximum of 25 devices between isolation modules (Note: contact Notifier Inertia for details)
In style 7, the processor polls the loop from one of the drivers (the B-side). If a failure (short circuit) occurs between two isolation modules, or the A or B ports of the LCM and an isolation module, the shorted section of loop will be isolated and the processor will poll through both ends. Note that the A and B ports of the LCM also provide short circuit isolation.



STYLE 4



STYLE 6



STYLE 7

5.8.4.1 INSTALLATION CHECKS AND FAULT FINDING

Before connecting a loop to an LCM or LEM card, carry out the following tests:

1. Check loop continuity and resistance by placing a short circuit on one end of the loop and reading the loop resistance with a multimeter at the other (be sure to set the multimeter to Ohms). The loop resistance cannot exceed 50 Ohms which is 25 ohms per leg. Refer to note below if using ISO-X modules.

2. Check devices for correct wiring as follows. With both ends of the circuit open, set the multimeter to diode test, and place the leads on the cable, the reading should be approx. 0.645, reverse the leads to get a reading of approximately 1.2 or higher. If both readings are low, there is an incorrectly wired device, or a short on the wiring. (Note: Each device has a diode installed)

3. Check the loop voltage as follows. Set the multimeter to D.C. volts and read the voltage at the loop card before connecting the loop. The reading should be 24 - 25 volts. Now connect the loop. The reading should be 15-16 volts. If the measured voltage goes below this value, there could either be a short on the line or a device may be incorrectly wired (possible reverse polarity). Find the device and correct the loop connections at that device.

4. Check that there are no earth faults as follows. Select ohms on the multimeter and measure between each leg of the loop and earth. If the reading falls below 50,000 ohms, an earth fault will be indicated when the loop is connected. Find the cause of the earth fault and rectify it. (Note: Possible causes of an earth fault are moisture, inadequate insulation from the surrounding building, equipment or materials).

NOTE: Loop resistance measurement when ISO-X isolation modules are present:
When power is removed from the loop, the positive side of the circuit is opened at each ISO-X isolation module. To measure the loop resistance, temporarily place a jumper between Terminals 2 and 4 on each ISO-X while taking measurements. Remember to remove all the jumpers and test all isolator modules when you have finished taking the readings.

5.9 BATTERY CALCULATIONS:

The following tables and formulas can be used for calculating battery capacity required as per AS4428.

The size of the power supply / battery charger, and capacity of the batteries required will depend on the installation and must be calculated using the following table and formulas.

5.9.1 QUIESCENT CURRENT CALCULATION:

Item	Qty	Current Each (Amps)	Sub Total (Amps)
Main Control Panel	1	0.210	0.210
Ring Expander Module		0.025	
Loop Interface Module		0.025	
LCM/LEM Pairs (5 max)		0.200	
Fan Control Modules		0.055	
AZM8 Modules		0.090	
PAZM8 Modules		0.090	
Other Quiescent load			
Total Quiescent Current (Q)			

5.9.2 ALARM CURRENT CALCULATION:

Item	Qty	Current Each (Amps)	Sub Total (Amps)
Main Control Panel	1	0.210	0.210
Ring Expander Module		0.025	
Loop Interface Module		0.025	
LCM/LEM Pairs (5 max)		0.200	
Fan Control Module (In Alarm)		0.130	
Fan Control Module (Quiescent)		0.055	
AZM8 Modules (In Alarm)		0.155	
AZM8 Modules (Quiescent)		0.090	
PAZM8 Modules (In Alarm)		0.155	
PAZM8 Modules (Quiescent)		0.090	
Bells		0.070	
FlashScan™ Points In Alarm/Activated		0.003	
Other Quiescent Load			
Other Alarm Load			
Total Alarm Current (A)			

5.9.3 BATTERY CAPACITY REQUIREMENTS

Battery Capacity (Ampere Hour) = ((Q x 24) + (A x 0.5)) x 1.25

5.9.4 POWER SUPPLY CAPACITY REQUIREMENTS:

$$\text{Power Supply Size (Amps)} = A + \left(\frac{(Q \times 5)}{24} + \frac{(A \times 0.5)}{24} \right) \times 1.1$$

5.10 FIELD REPLACEMENT PARTS:

The following parts are replaceable on-site.

Sub assemblies are replaceable on site, provided the system is fully powered down. Replacing a PCB with power connected can permanently damage equipment and void all warranties.

Any malfunctioning circuit boards must be returned to the factory for repair and full retest. There are no user serviceable parts on-board. Any attempt to repair circuit boards by personal, other than a certified factory technician, will void all warranties.

Sub Assemblies:

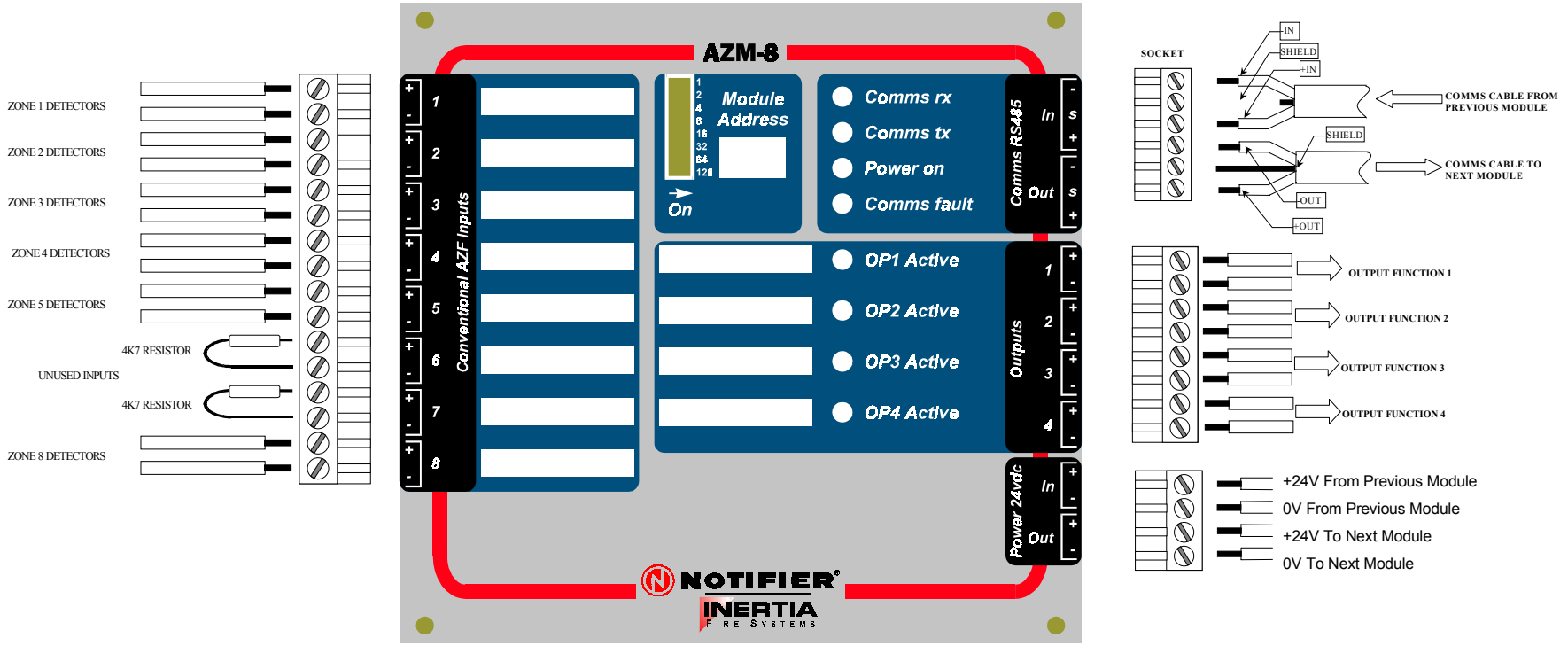
Part #	Description
PCB/703	AFP-2800 CPU board
PCB/704	AFP-2800 Main termination board
2800/REM	AFP-2800 Ring expander module (Conventional)
2800/LIM	AFP-2800 Loop Interface Module (FlashScan™)
2800/LCM	AFP-2800 FlashScan™ Loop Driver – Master (Loops 1,3,5,7,9)
2800/LEM	AFP-2800 FlashScan™ Loop Driver – Slave (Loops 2,4,6,8,10)
2800/16AT	AFP-2800 Annunciator – 16AT
2800/32A	AFP-2800 Annunciator – 32A
2800/SCS8	AFP-2800 Annunciator – SCS8
2800/PS243	AFP-2800 3 Amp power supply.
2800/PS249	AFP-2800 9 Amp power supply.

Replacement parts:

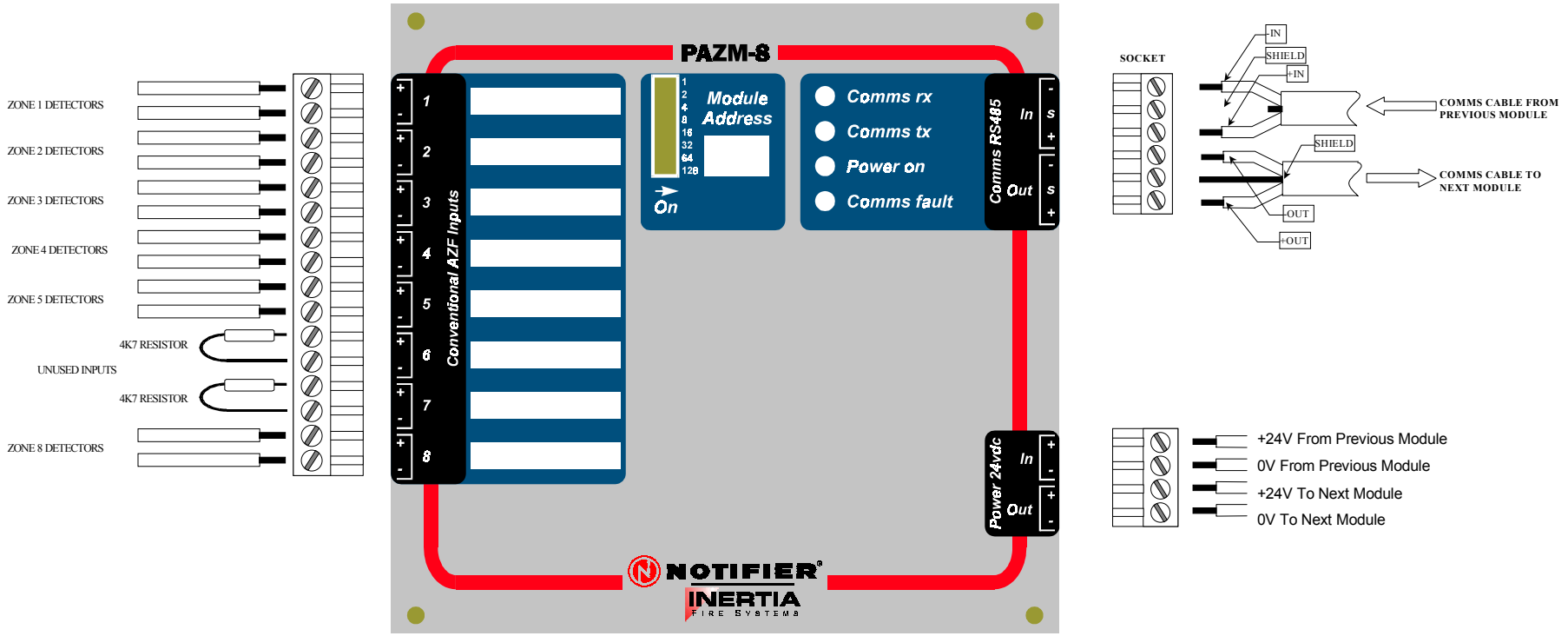
Part #	Description	Rating
FUSE-M205-1A	TERMINATION BOARD FUSES	1A

5.11 FIELD MODULE CONNECTION DIAGRAMS

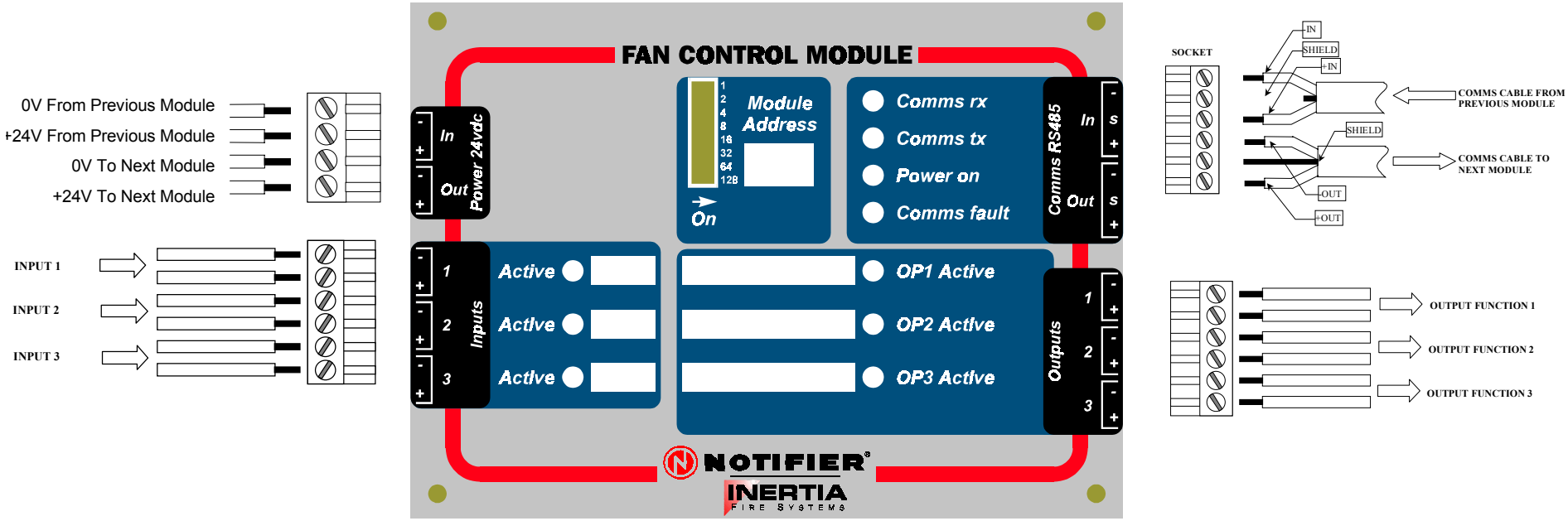
5.11.1 AZM-8



5.11.2 PAZM-8

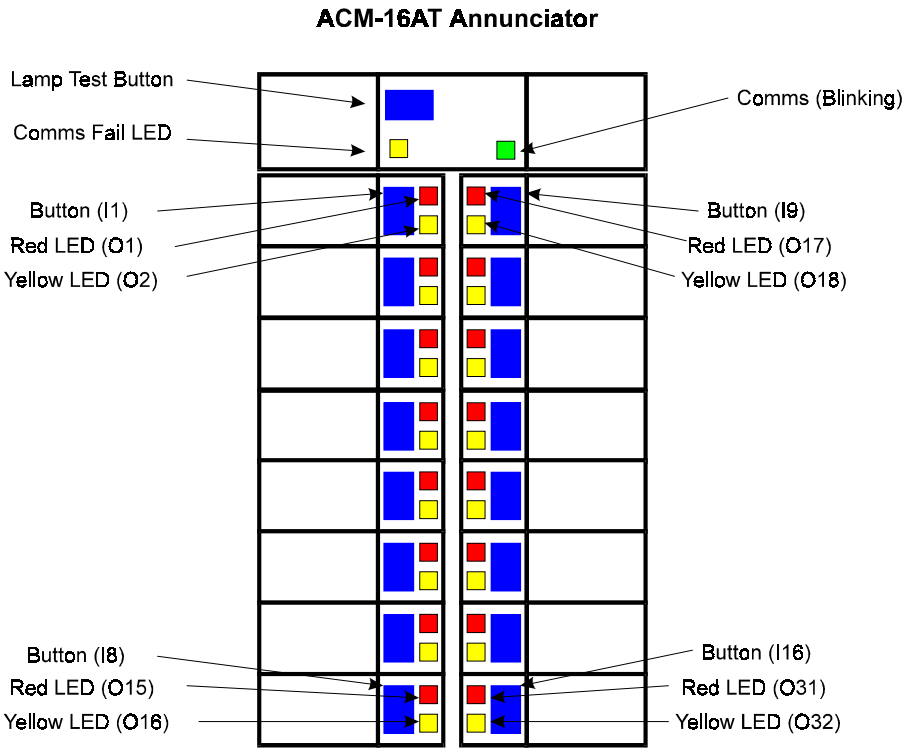


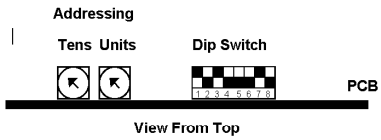
5.11.3 FAN CONTROLLER



5.12 ANNUNCIATOR CONNECTION DIAGRAMS

5.12.1 ACM-16AT (16 BUTTONS, 32 LED'S)

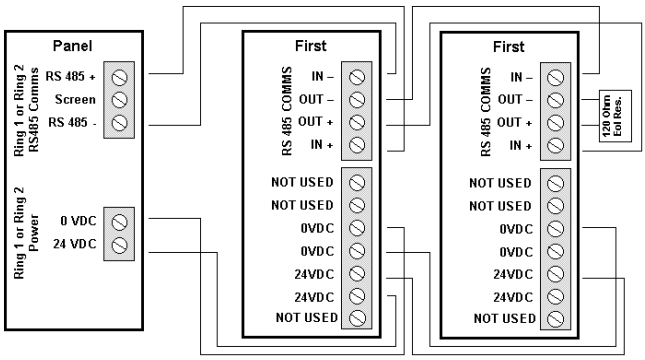




Example: Annunciator address = 99

First RED LED = 1.199.o1
Last pushbutton = 1.199.i16

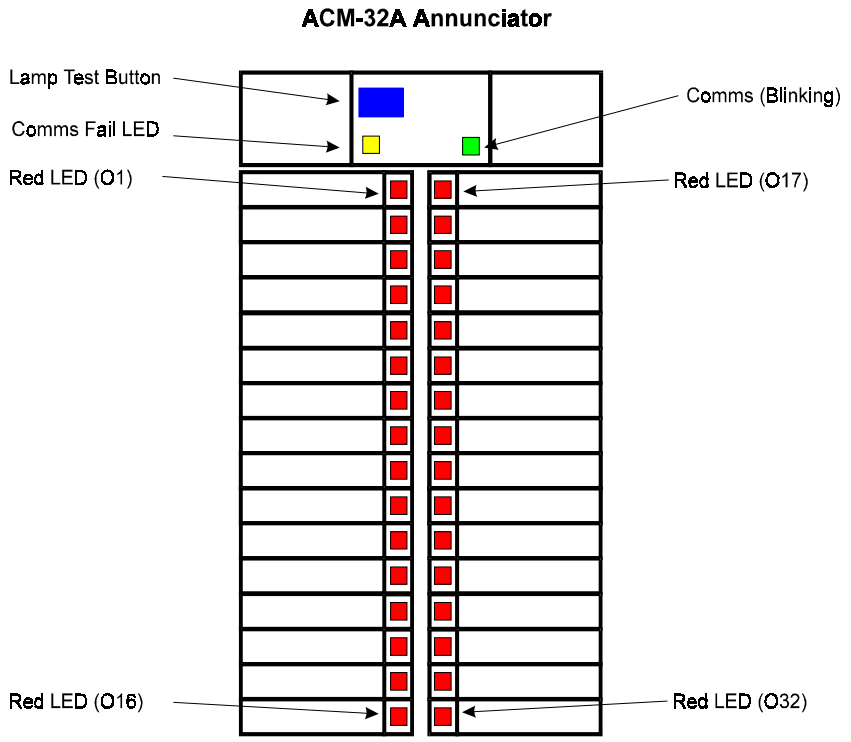
Connections:

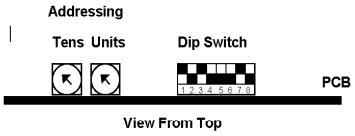


Dip Swtich Settings:

	On	Off
1	Bank 1 (buttons 1-8) are "toggle on/toggle off"	Bank 1 (buttons 1-8) are momentary
2	Bank 2 (buttons 9-16) are "toggle on/toggle off"	Bank 1 (buttons 1-8) are momentary
3-8	Not Used	Not Used

5.12.2 ACM-32A (32 RED LED's)

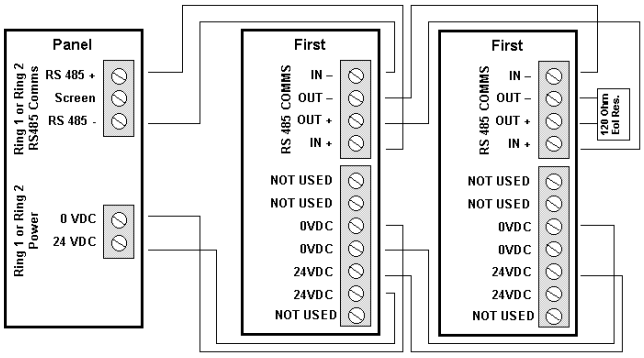




Example: Annunciator address = 99

First RED LED = 1.199.o1
Last RED LED = 1.199.o32

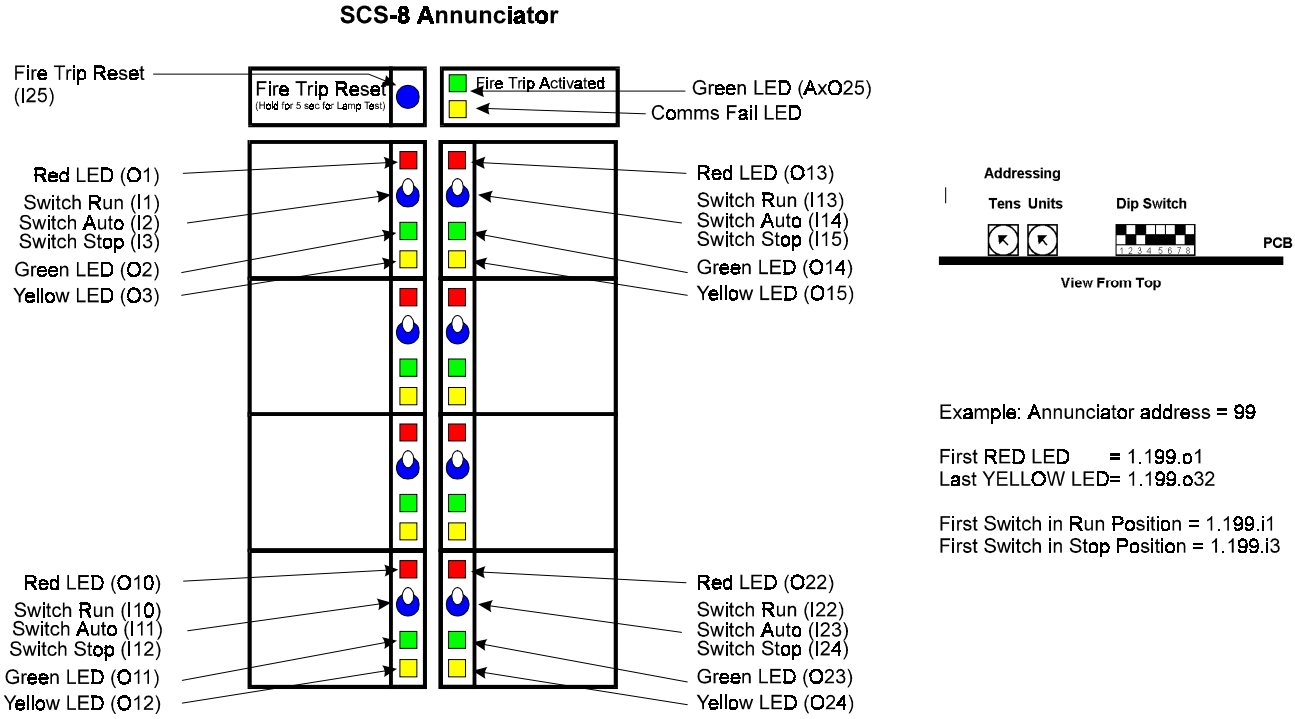
Connections:



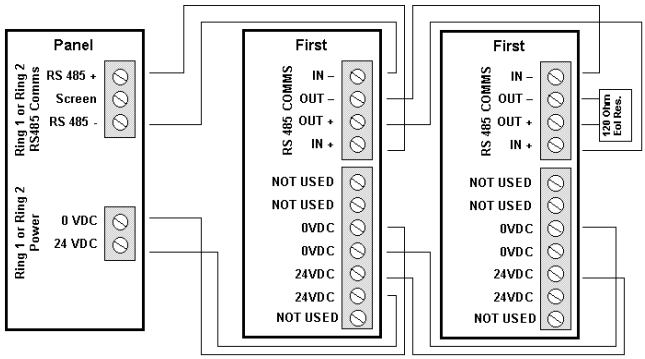
Dip Switch Settings:

	On	Off
1-8	Not Used	Not Used

5.12.3 SCS-8 (8 FAN CONTROLS)



Connections:

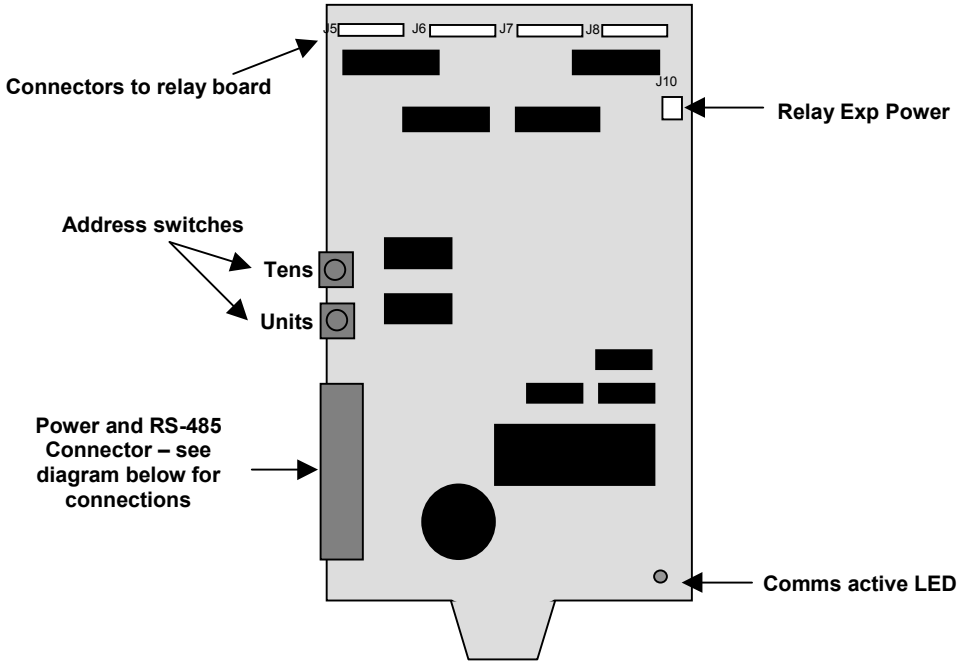


Note: EOL resistor can be enabled by dip switch 8 on SCS-8, see below.

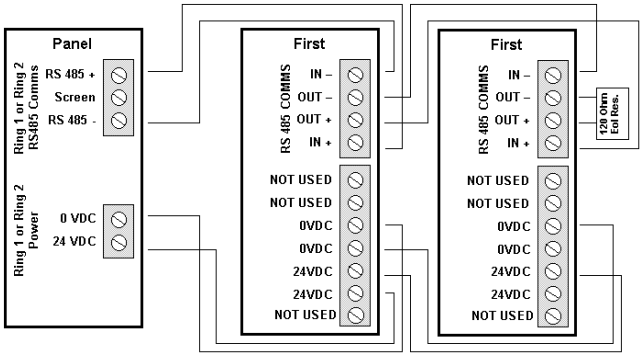
Dip Swtich Settings:

	On	Off
1-7	Not Used	Not Used
8	120 Ohm EOL resistor selected	No EOL resistor selected

5.12.4 LDM-32 (EXPANSION RELAY DRIVER BOARD)



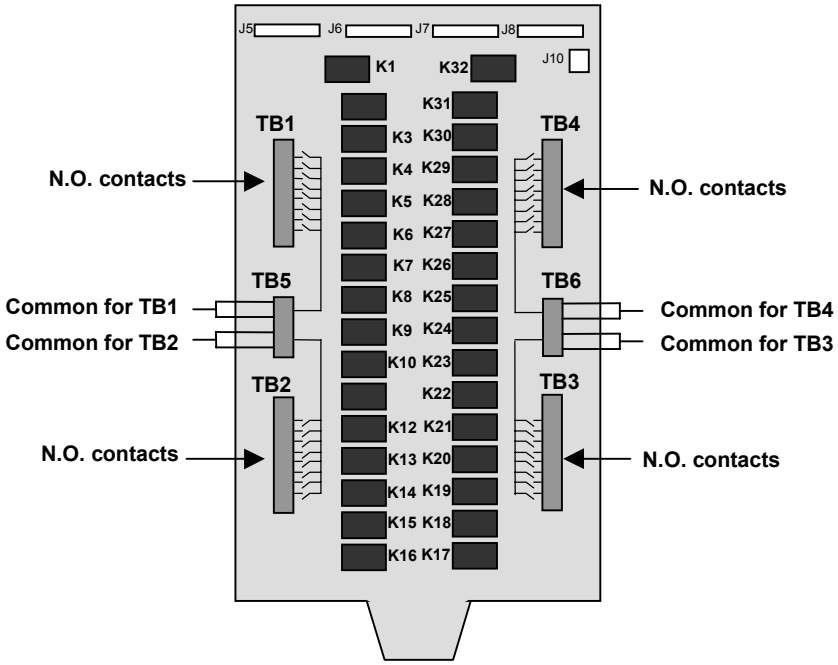
Connections:



Dip Switch Settings:

	On	Off
1-8	Not Used	Not Used

5.12.5 LDM-R32 (32 EXPANSION RELAYS)



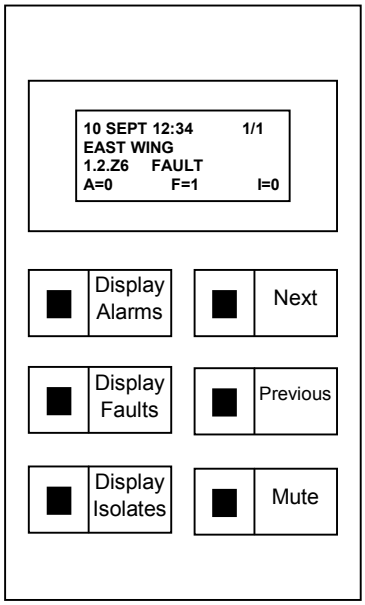
Connections:

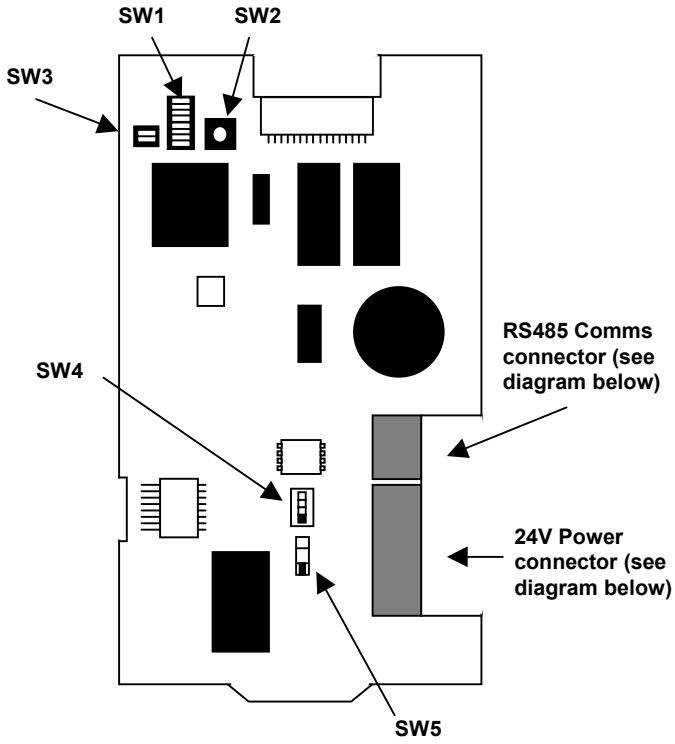
J5, J6, J7 and J8 on the LDM-R32 connect to J5, J6, J7 and J8 on the LDM-32 respectively
J10 on the LDM-R32 connects to J10 (Relay Exp) on LDM-32
Relay contacts are on Terminal Blocks TB1 – TB6 as shown in the diagram above

Notes:

Relay contacts are rated at 1 Amp
Example addressing: If annunciator address is 99, then relay K1 point address will be 1.199.o1 and relay K32 point address will be 1.199.o32

5.12.6 LCD-80 DISPLAY INTERFACE





Note:

Both Operating Mode switches (SW4 & SW5) on the PCB must be set for ACS Mode (the UP position).

Event sounder:

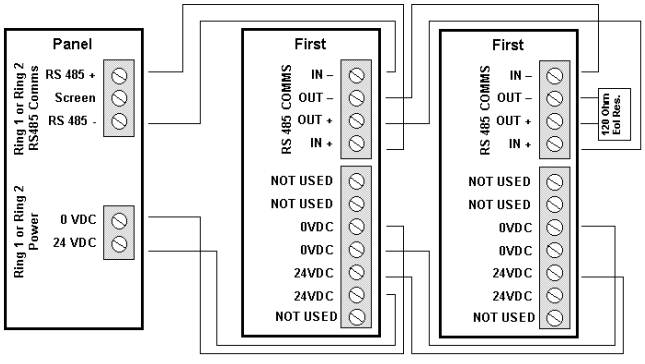
Setting DIP Switch 1 of SW1 to OFF will disable the buzzer for alarms. Setting DIP Switch 2 of SW1 to OFF will disable the buzzer for faults. If the buzzer is enabled, pressing the “MUTE” button will silence the buzzer until a new event is received.

Addressing:

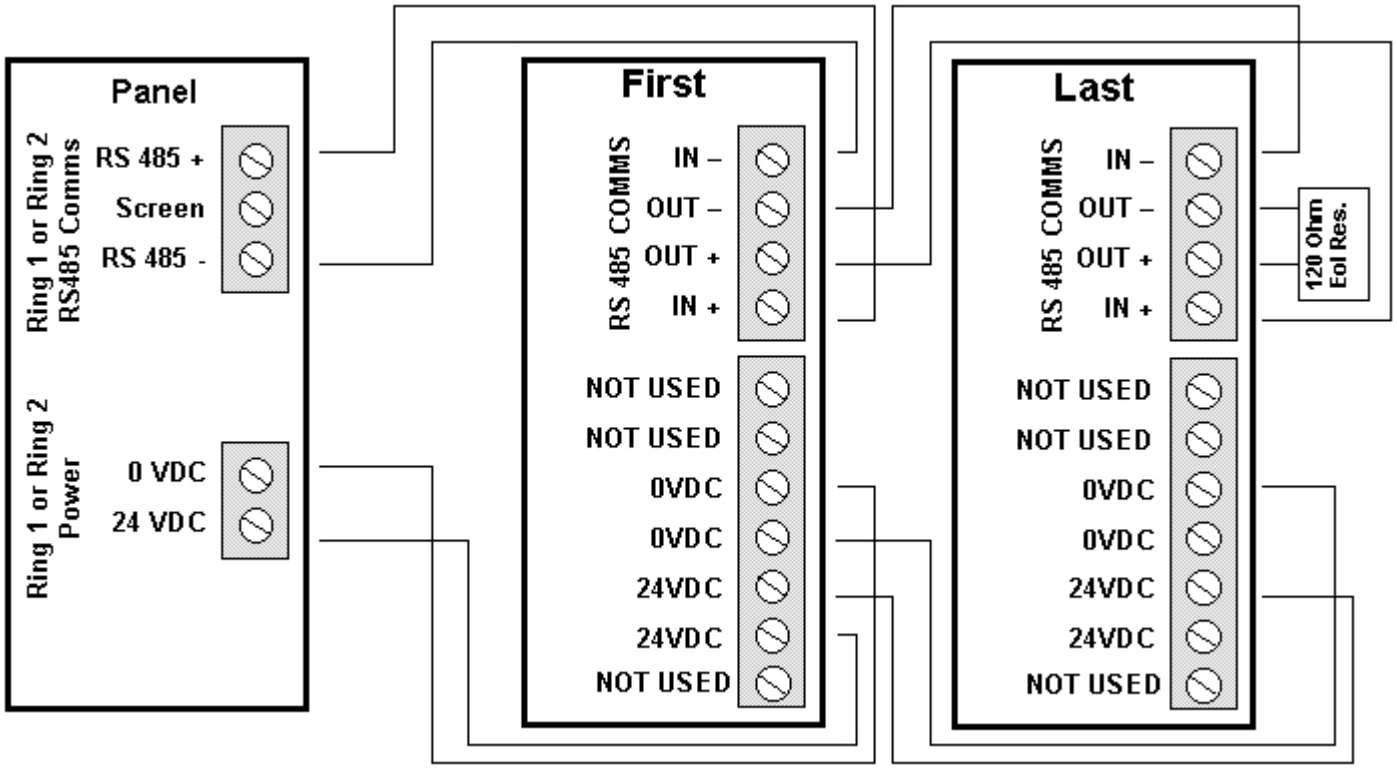
SW2 & SW3 set the address as per the table below. Note that “200” is added to the actual values of SW2 & SW3 to give an address in the range 200 – 229.

SW3-1	SW3-2	SW2	Actual Address
OFF	OFF	0 – 9	200 – 209
ON	OFF	0 – 9	210 – 219
ON	ON	0 – 9	220 - 229

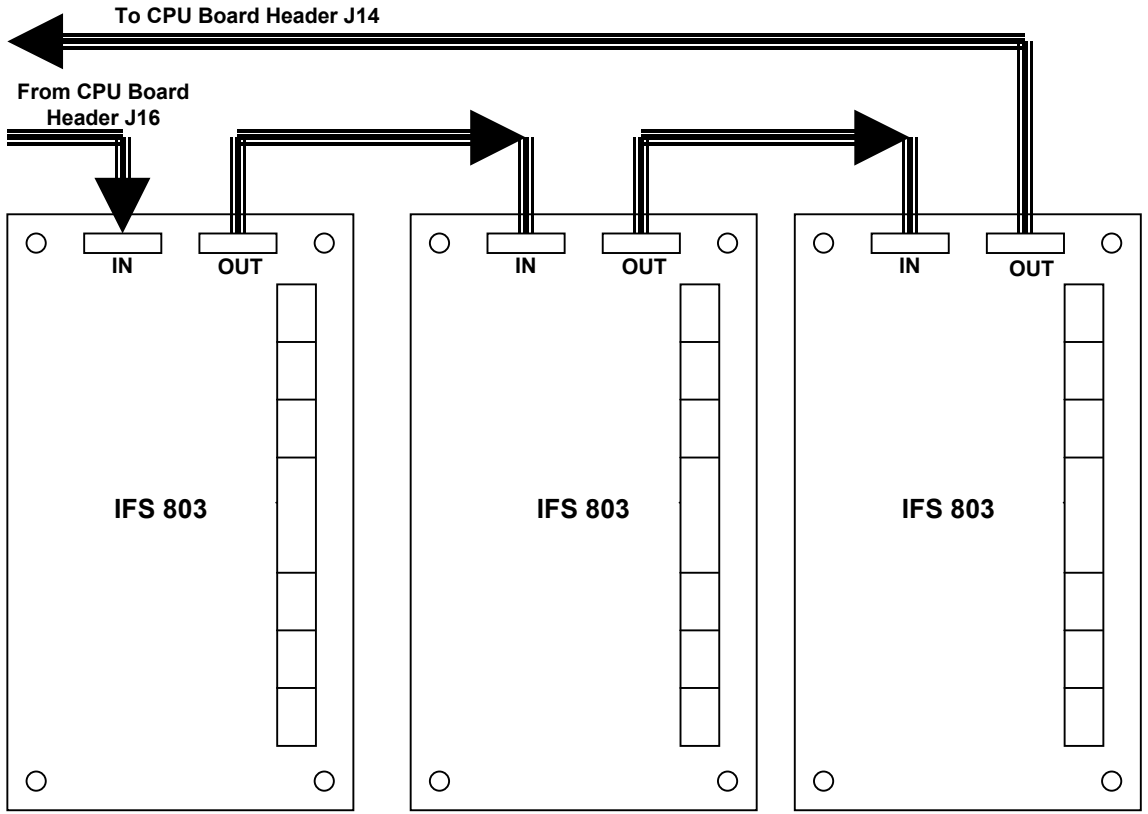
Connections:



5.12.7 RS485 COMMS AND POWER CONNECTIONS (DETAIL)

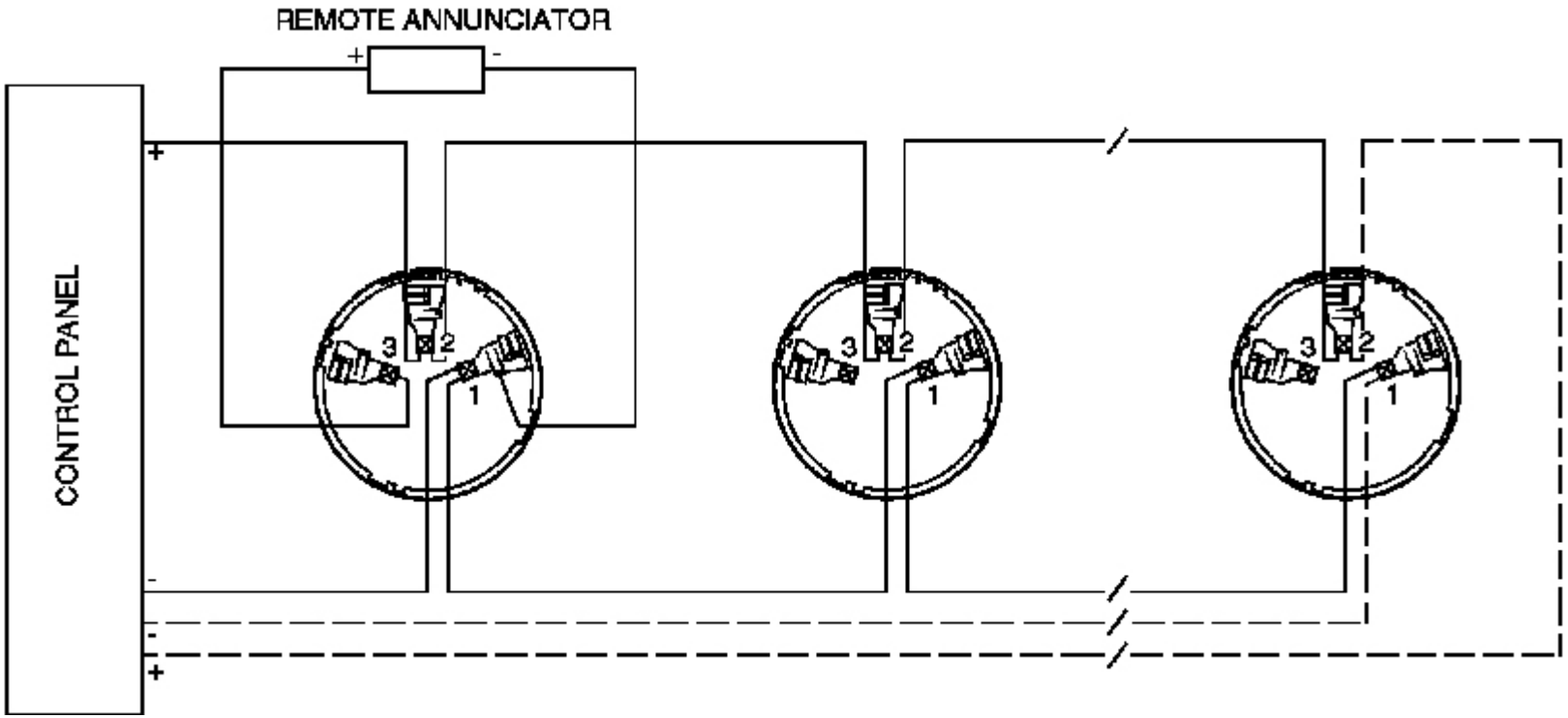


5.13 PANEL EXPANSION RELAYS

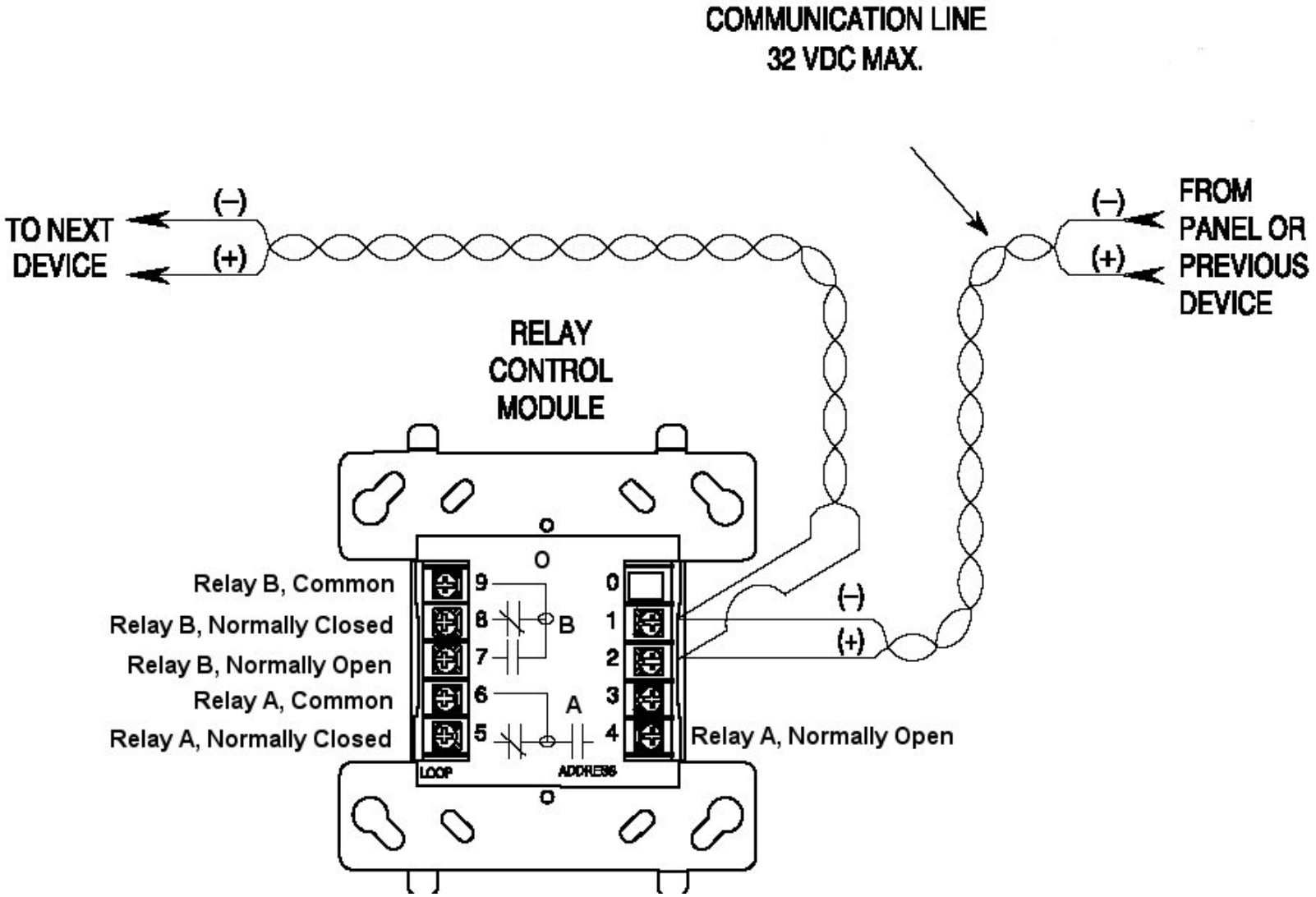


5.14 FLASHSCAN™ DEVICES

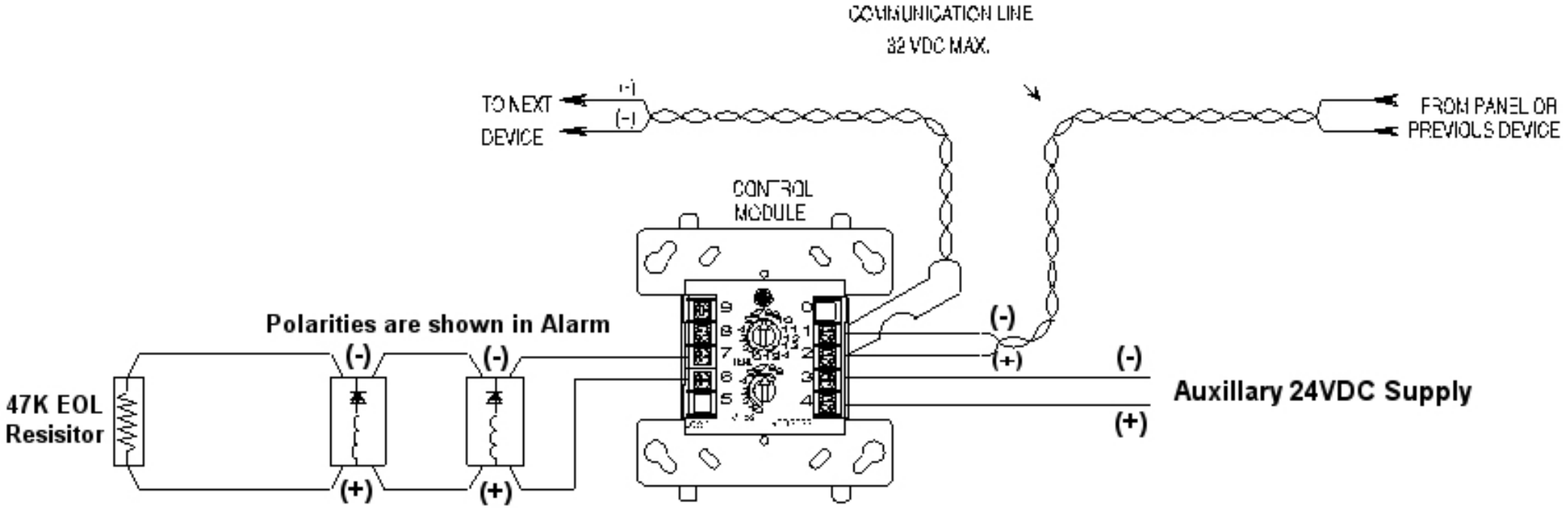
5.14.1 DETECTOR BASES



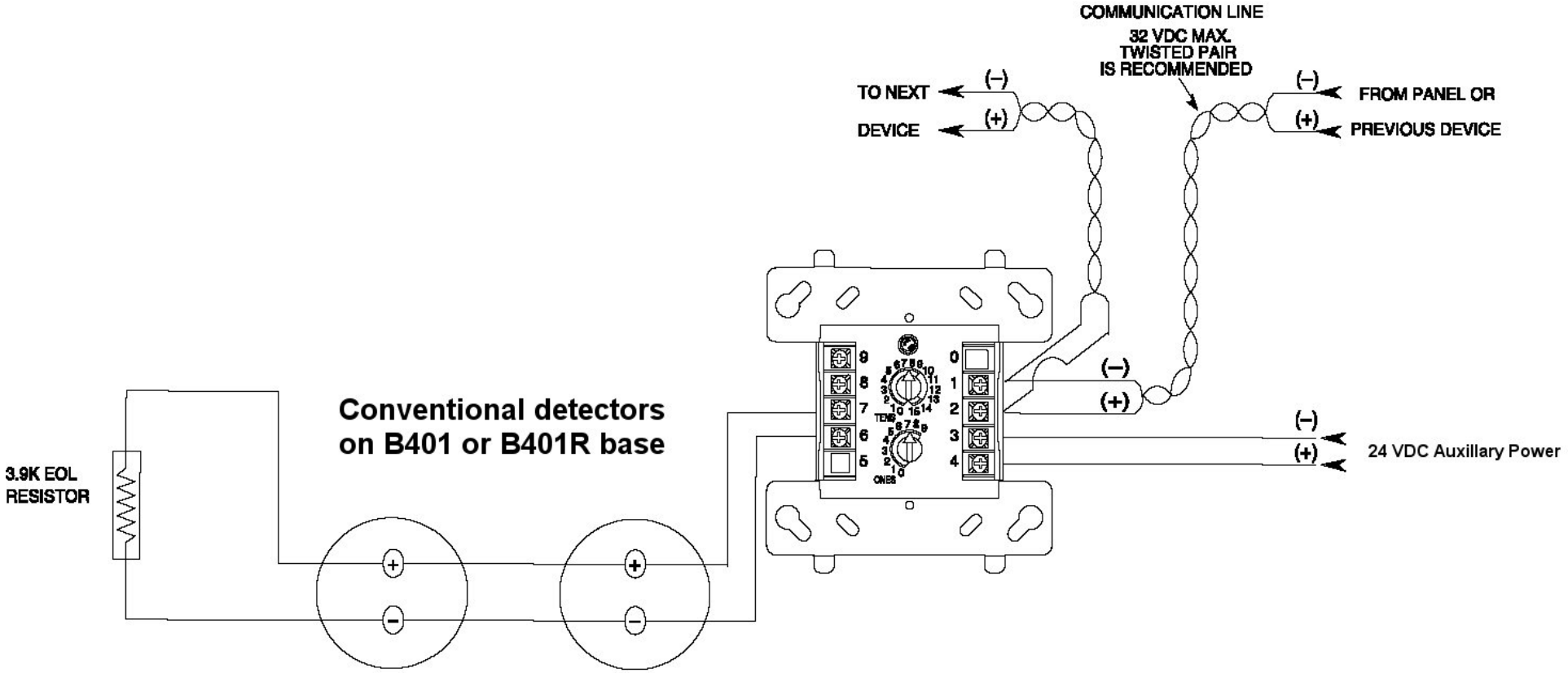
5.14.2 FLASHSCAN™ RELAY MODULE FRM-1



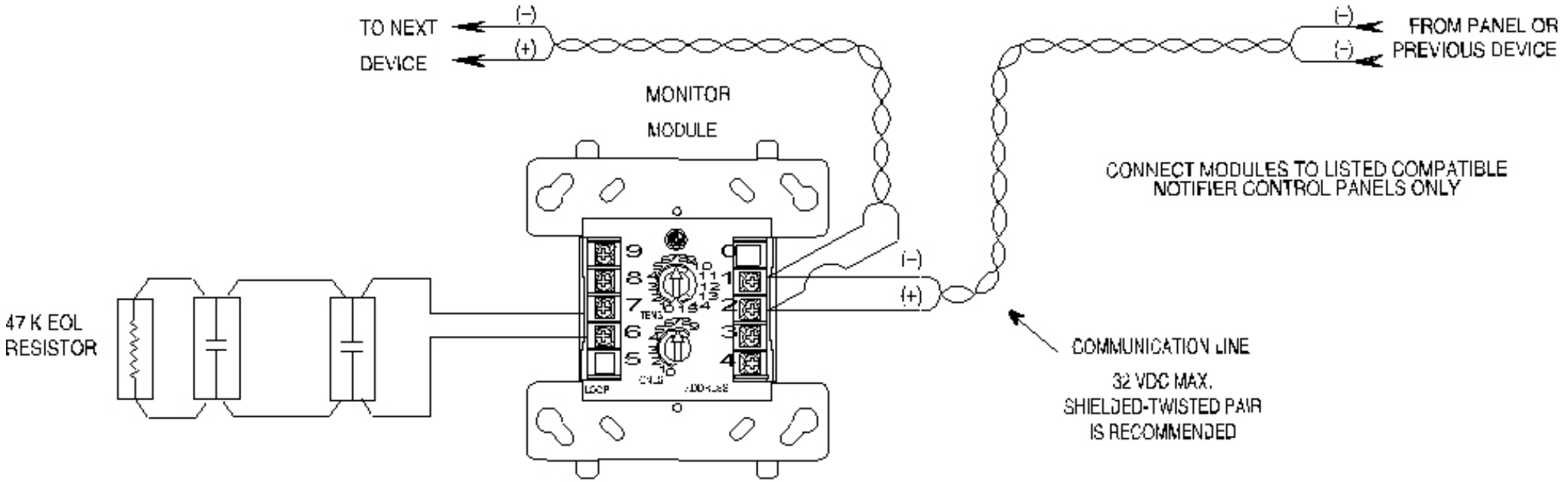
5.14.3 FLASHSCAN™ CONTROL MODULE FCM-1



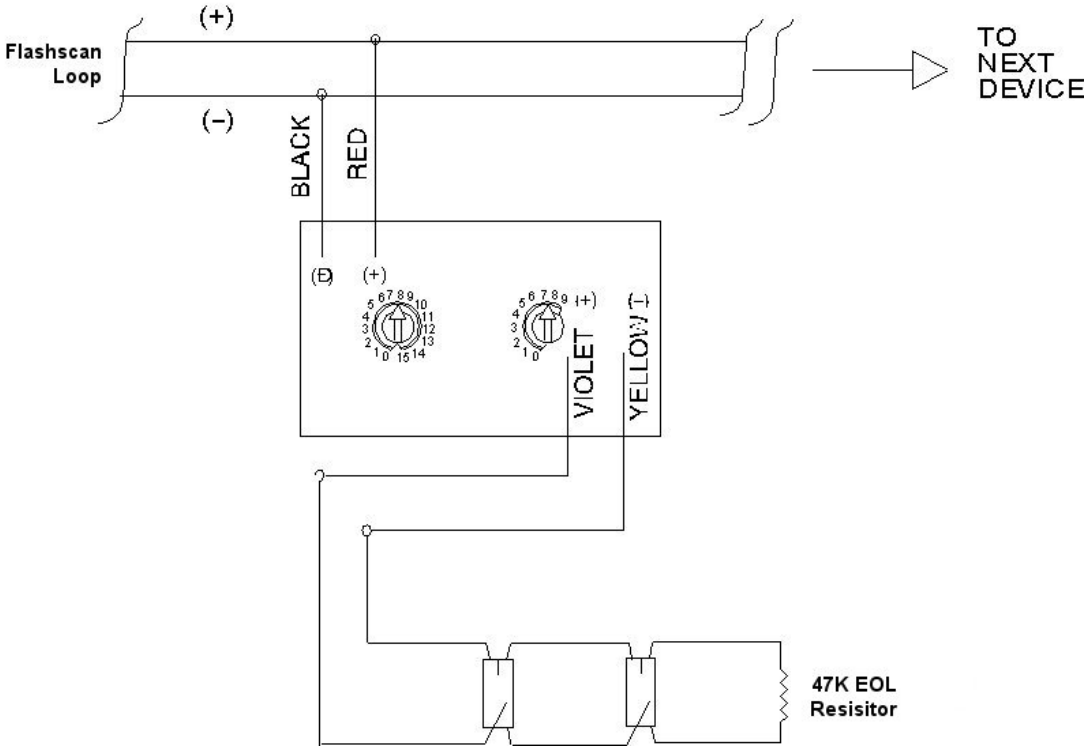
5.14.4 FLASHSCAN™ ZONE MODULE FZM-1



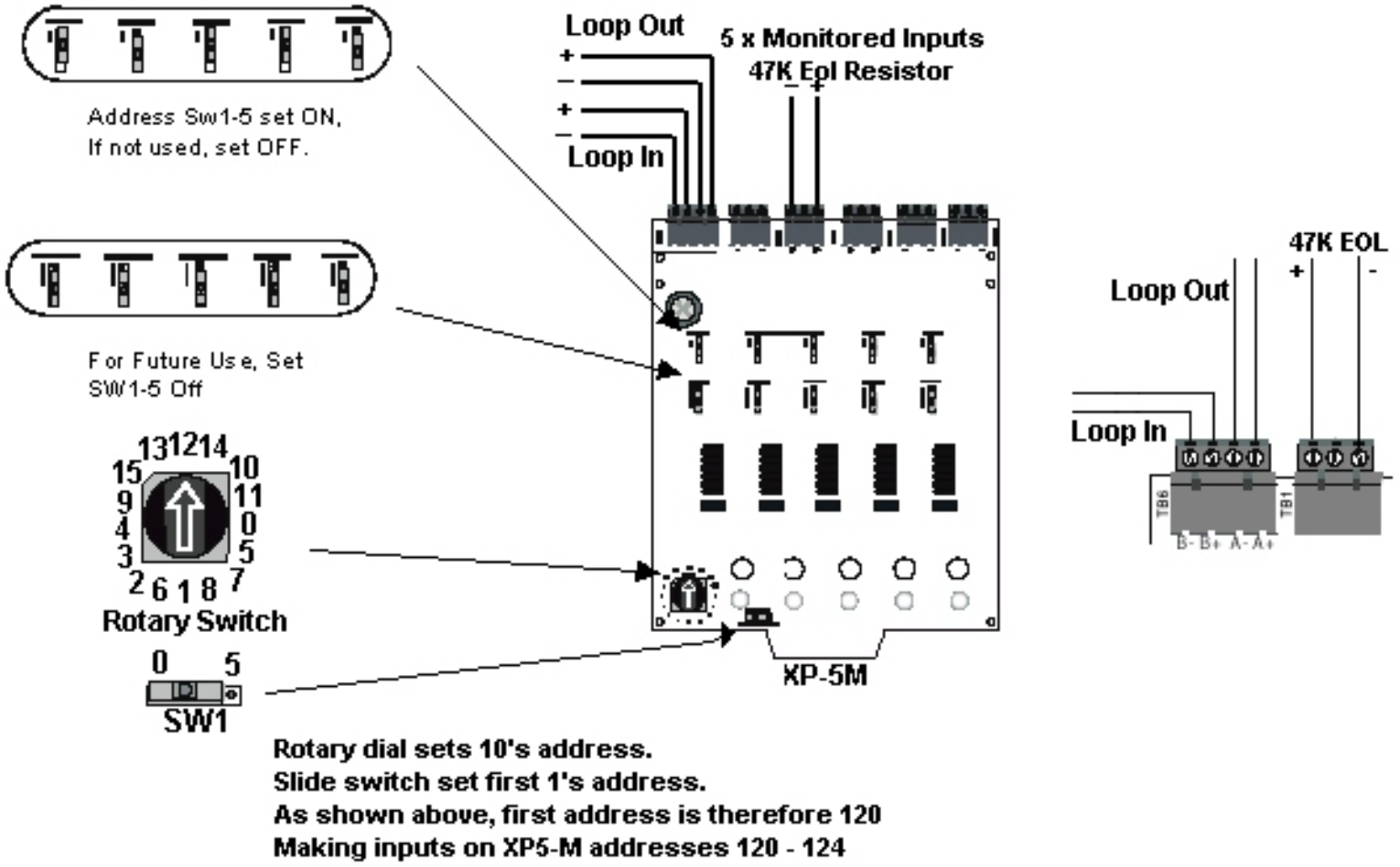
5.14.5 FLASHSCAN™ MONITOR MODULE FMM-1



5.14.6 FLASHSCAN™ MINI MONITOR MODULE FMM-101

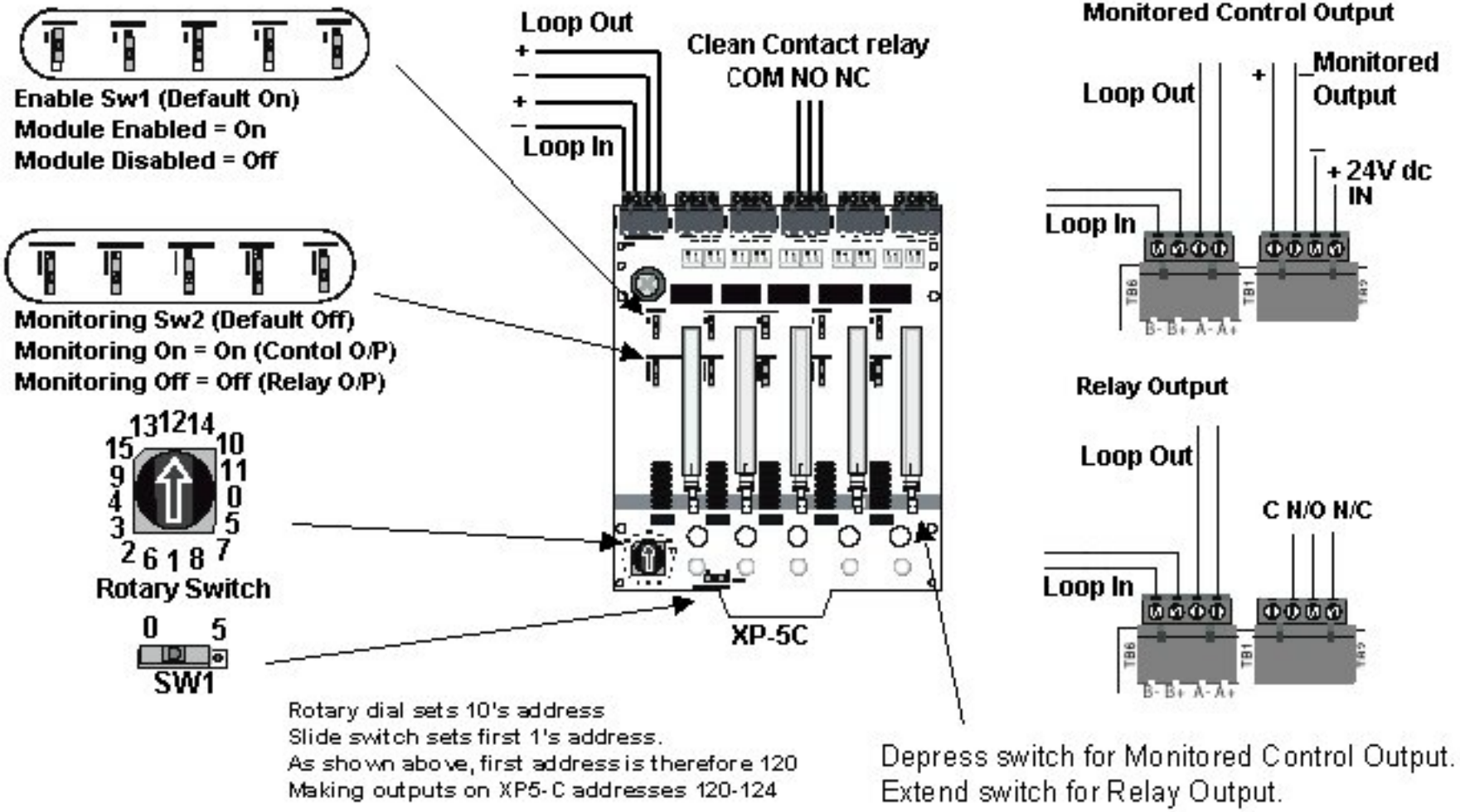


5.14.7 FLASHSCAN™ XP5M (5 X MONITOR MODULE)



Rotary dial sets 10's address.
Slide switch set first 1's address.
As shown above, first address is therefore 120
Making inputs on XP5-M addresses 120 - 124

5.14.8 FLASHSCAN™ XP5C (5 X CONTROL MODULE)



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