# AFP-2800/2802
# Fire Alarm Panel

# OPERATION, INSTALLATION & PROGRAMMING MANUAL

**Rev I**
**22/03/2019**

**Manufactured by:**

NOTIFIER® by Honeywell

Approvals:
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ActivFire Listing No: AFP-1801

Distributors For:

NOTIFIER INERTIA FIRE SYSTEMS | SYSTEM SENSOR | VESDA


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# Installation Precautions

*Adherence to the following will aid in problem-free installation with long-term reliability:*

**WARNING - Several different sources of power can be connected to the fire alarm control panel.** Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until manuals are read and understood.

**Verify that wire sizes are adequate** for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% voltage drop from the specified device voltage.

**Like all solid state electronic devices**, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interference, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services Department if any problems are anticipated or encountered.

**Disconnect AC power and batteries** prior to removing or inserting circuit boards. Failure to do so can damage circuits.

**Remove all electronic assemblies** prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, or printed circuit board location.

**Do not over tighten screw terminals**. Over tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

**This system contains static-sensitive components**. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

**Follow the instructions in the installation**, operating and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

**This equipment must be correctly programmed and installed to suit the specific application**. Please ensure correct operational parameters are set prior to commissioning. If further details on programming options are required, please consult the programming manual or contact our helpful technical support personnel.

# EMC WARNING:

This equipment may radiate radio frequency energy. It may also be affected by radio frequency energy and, if not installed and operated in accordance with the manufacturer's instructions, may cause interference to radio communications. It has been tested and found to comply with the Class A radiated and conducted EMI requirements of AS/NZS CISPR 22:2009 (including Amendments 1 & 2) as well as the EMI susceptibility requirements of Clause C3.5 in AS4428.0:1997.

Radio communication devices should not be used in the vicinity of fire panels or associated ancillary devices and systems.

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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# 1 EMERGENCY OPERATION

| | |
|---|---|
| **Isolate Bells** | **Press: EXT BELL ISOLATE** |
| | • EXT BELL ISOLATE LED will light<br>• The external bells & panel buzzer will stop<br>• A subsequent alarm will restart the panel buzzer but not the bells<br>• 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<br>• The warning system will stop<br>• A subsequent alarm will restart the panel buzzer but not the warning system<br>• 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**<br>**Press: ACK to acknowledge** |
| | • This will individually acknowledge alarms<br>• Once all alarms are acknowledged the alarm LED will go steady |
| **Resetting an Alarm** | **Select the Alarm using the PREV, NEXT buttons**<br>**Press: RESET then press ACK to confirm the resetting** |
| | • This will individually acknowledge and reset alarms<br>• Resets zone in alarm and clears all alarm inputs in the zone<br>• If alarm is still present, the zone(s) will either stay in alarm or re-alarm again after about 15 seconds |
| **Isolate an Alarm** | **Select the Alarm using the PREV, NEXT buttons**<br>**Press: ISOL then press ACK to confirm the isolation** |
| | • Isolates the point or zone in alarm and clears its alarm outputs<br>• Isolating a zone automatically acknowledges and isolates all points in the zone |

**Note: Refer to Appendix 9.15 for Emergency Operation instructions for an AFP-2800 networked to a NCA-2.**

# 2 PLACING INTO OPERATION CHECKLIST

## 2.1 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
- ❑ 240 VAC cabling correctly terminated
- ❑ All earthing secured
- ❑ Power supply securely mounted
- ❑ Power supply correctly wired
- ❑ All ribbon cables firmly secured
- ❑ All other components securely inserted
- ❑ LCM boards correctly addressed and all analogue loops have been tested as per section 9.6.4.2
- ❑ AFP-2800/2802 manufacturing label affixed

**You are now ready to power up the AFP-2800/2802 Fire Indicator Panel.**

**Note: When rebooting the panel, power off for at least 10 seconds or LCM modules might not operate correctly.**

## 2.2 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 ALARMS” message will be displayed.
- ❑ The indicator LED’s on the rear of the CPU board will flash on and off.
- ❑ The MAINS ON and FIRE FIGHTER lamps will be lit.
- ❑ Connect the batteries.

**Caution!! Incorrect polarity of batteries may 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-2800/2802 FIRE PANEL.**

# 2.3 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 AFP-2800/2802 is now ready for operation.

# 3 SYSTEM DESCRIPTION

The AFP-2800/2802 is a microprocessor based distributed Fire Detection/Alarm System. The panel comprises multiple microprocessors for sharing the processing load both within the panel and in the field modules using proprietary communications protocols, thus the term “distributed system”.

The main panel communicates with the intelligent field devices via the RS485 communications ring. 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.

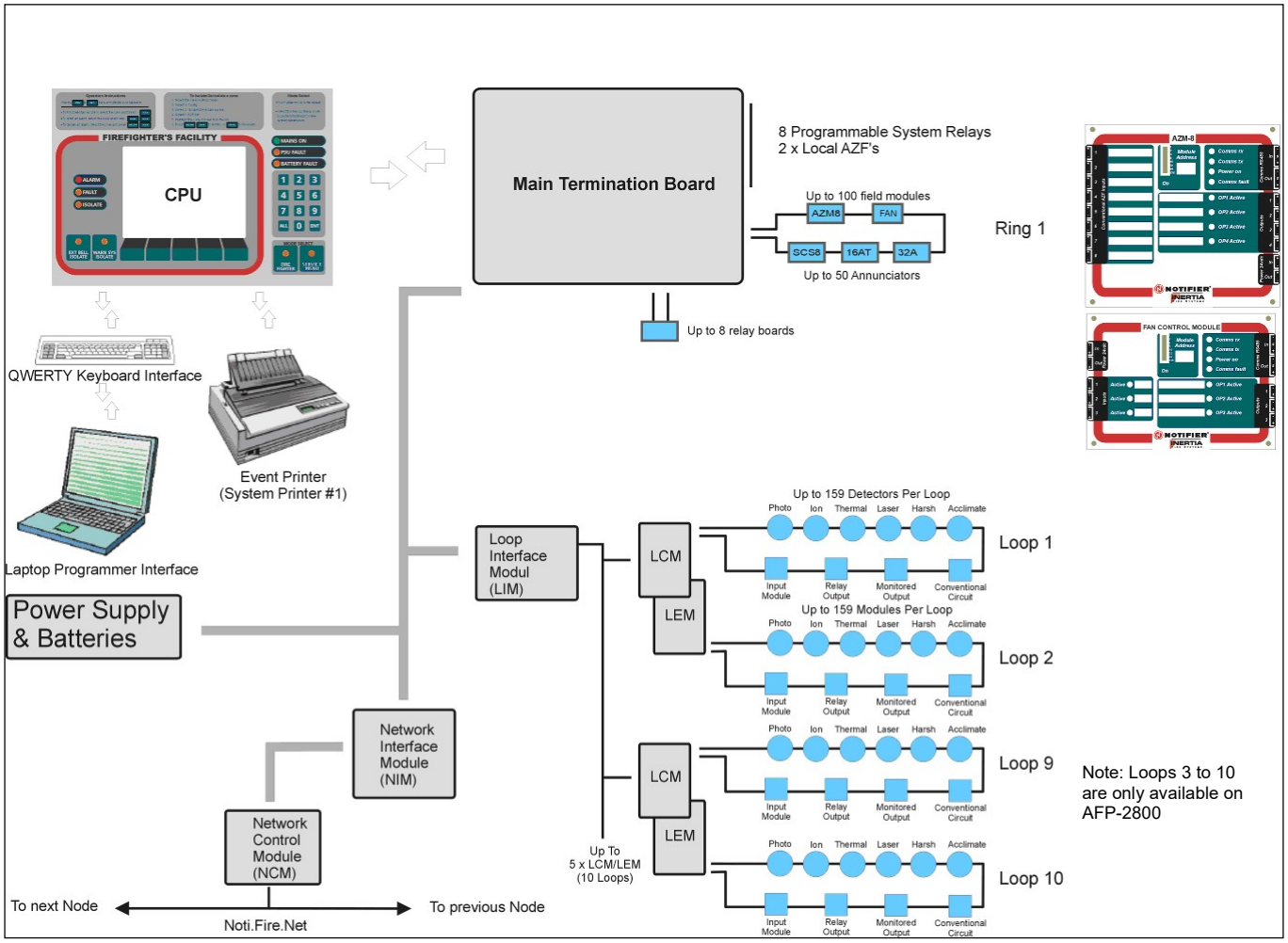
The RS485 communications ring can support up to 100 distributed field modules and up to 50 panel annunciators and 32 LCD80 units in terminal mode. The number of LCD-80s and modules on the ring will affect panel performance and should be considered when designing the system.

In addition to the distributed conventional communication ring, the panel can support up to 10 loops of Analog addressable points using various protocols including the proprietary Notifier FlashScan™ protocol. Each loop can support 159 detectors and 159 modules.

In its maximum configuration, the AFP-2800 can support more than 802 Conventional Detection Circuits, more than 400 Programmable Relay Outputs and 3,180 Analog addressable points. AFP-2802 supports a maximum of 396 Analog addressable 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.



# 4 SPECIFICATIONS & APPROVALS

## 4.1 GENERAL SPECIFICATIONS (SUBJECT TO CHANGE WITHOUT NOTICE):

| | |
|---|---|
| Cabinet | Zinc Sealed Steel<br>Powder Coated<br>Hinged Inner Door<br>Hinged Outer Door |
| Primary Microprocessor | MC68EC000 |
| Memory Type | Non-volatile 16Mbit Flash; 1 Mbyte SRAM |
| Liquid Crystal Display | LED Backlit 1/4 VGA graphical |
| Environmental | Dry cold/heat: -10 °C to +55 °C<br>Damp heat: +40 °C @ 93% Relative Humidity. |
| IP Rating | IP 30 |

## 4.2 APPROVALS INFORMATION

| | |
|---|---|
| Manufacturer: | Notifier Fire Systems<br>9 Columbia Way<br>Norwest Business Park<br>NSW 2153 Australia<br>Phone: +61-2-9899-4155<br>Fax: +61-2-9899-4156 |
| Product Name: | Notifier Inertia AFP-2800 (formerly Notifier Inertia DFP-2800) |
| Approved to: | AS4428.1 1999 |
| Approval Report #: | XF1769/R2 - Scientific Services Laboratory |
| ActivFire Listing No: | AFP-1459 |
| Approved to: | NZS 4512:2003 |
| Approval Report #: | 05-527699.00 - Opus International Consultants Limited, Central Laboratories |
| Panel Serial #: | _____ |
| Date of Manufacture: | _____ |

**EMC WARNING:**

**This equipment may radiate radio frequency energy. It may also be affected by radio frequency energy and, if not installed and operated in accordance with the manufacturer's instructions, may cause interference to radio communications. It has been tested and found to comply with the Class A radiated and conducted EMI requirements of AS/NZS CISPR 22:2009 (including Amendments 1 & 2) as well as the EMI susceptibility requirements of Clause C3.5 in AS4428.0:1997.**

**Radio communication devices should not be used in the vicinity of fire panels or associated ancillary devices and systems.**

**This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**

# 4.3 ELECTRICAL SPECIFICATIONS

Note: All functions and specifications described in this Operators Manual are subject to change without notice.

## 4.3.1 POWER SUPPLY

| Parameter | PS243 (3Amp) | PS249 (9Amp) | NPS-2 (2.6amp) | NPS-5 (5.5amp) | NPS-11 (11.7amp) |
|---|---|---|---|---|---|
| Input Voltage | 240V AC +/- 10% | 240V AC +/- 10% | 110 or 240 (SW select) | Universal | Universal |
| Input Range | 216V AC to 254V AC | 216 V AC to 254V AC | 85-132/170-264VAC (SW select) | 85-264VAC Auto Ranging | 88-264VAC Auto Ranging |
| Output Voltage | 24V DC nom. | 24V DC nom. | 24V DC nom. | 24V DC nom. | 24V DC nom. |
| | 27.6V DC no load | 27.6V DC no load | 27.3V DC no load | 27.3V DC no load | 27.3V DC no load |
| | 26.5 V DC full load | 26.5V DC full load | 27.3V DC full load | 27.3V DC full load | 27.3V DC full load |
| Adjustable Range | 12V DC to 30V DC | 12V DC to 30V DC | +/-10% | +/-10% | 26V to 32V |
| Rated Current Of Power Supply | 3.0A @ 26.5V DC | 9.0A @ 26.5V DC | 2.6A @ 27V DC | 5.5A @ 27V DC | 11.7 @ 27V DC |
| Overload Current Device | 7.4A @ Short Circuit | 20A @ Short Circuit | 105% to 150% of rated power – auto recovery after fault removal | 105% to 150% of rated power – auto recovery after fault removal | 105% to 135% of rated power – auto recovery after fault removal |
| Secondary Transformer Fuse | 5A | 15A | N/A | N/A | N/A |
| Max Ripple | 150mV p-p | 150mV p-p | 120mV p-p | 150mV p-p | 200mV p-p |
| Load Regulation | 2% | 2% | ± 0.5% | ± 0.5% | ± 0.5% |
| Line Regulation | 2% | 2% | ± 0.5% | ± 0.5% | ± 0.2% |
| Efficiency | >80% | >80% | 82% | 84% | 88% |
| Battery Test | Internal: 15 ohms | Internal: 15 ohms | External Load | External Load | External Load |
| Battery Test Relay Contact Rating | 10A | 15A | N/A | N/A | N/A |
| Indicators | Mains On, Output On | Mains On, Output On | Mains On, Charger Fault, Battery Fault, Battery test, Batt test inhibit | Mains On, Charger Fault, Battery Fault, Battery test, Batt test inhibit | Mains On, Charger Fault, Battery Fault, Battery test, Batt test inhibit |
| Status Indicators | By External Interface or FIP | By External Interface or FIP | Onboard LED or External Interface or FIP | Onboard LED or External Interface or FIP | Onboard LED or 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 | -10°C to +55°C Dry heat + 40°C @ 93% RH | -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 may occur if the batteries are connected incorrectly.**

**Note: When annunciators or field modules are powered from external power supplies, use a separate conductor to connect the main power supply common terminal (-0V) to the remote power supplies common terminal (-0V).**

## 4.3.2 TERMINATION BOARD (FIM)

| | |
|---|---|
| Supply Input requirements | 22 to 28V dc – fused at 9A (self-resetting)<br>55mA max (without CPU board or field loops connected)<br>210mA max (with CPU board, without field loops connected) |
| Alarm Inputs | Two conventional Alarm Zone inputs are provided, detecting open 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<br>24V dc & 5V dc Power to Ring Expander Boards<br>CPU power supply – 5V DC± 5% 3A |
| Alarm Outputs | 4 x 1A monitored outputs (Bell & 3 spares – 4k7 EOL resistor)<br>4 x ELV 1A relay contact outputs (Common Alarm, Fault plus 2 spare) |
| Communications Link | EIA485 on dual ports<br>24Vdc (nom) 2A (max)<br>Note: Up to 100 field modules may be installed. Additional auxiliary power supply(s) may be required, depending on the number of field modules installed. |
| Indications | LED indications of relay outputs, fuses, ring power and ground fault |

## 4.3.3 PANEL EXPANSION RELAYS

| | |
|---|---|
| Panel Expansion Relays (XR) IFS-803 and IFS-717 | Up to 64 x 30Vdc @ 1A non-monitored relay contact outputs via 8 x IFS-803/IFS-717 relay boards |

## 4.3.4 LCM / LEM ADDRESSABLE 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 – Heart beat / Onboard 5Vdc supply OK<br>Amber – Ground fault / faulty card detected | | |

## 4.3.5 NCM NETWORK CONTROL MODULE

| | |
|---|---|
| NCM-W | Supports twisted-pair wire medium, data is regenerated at each node. 312.5K baud transmission rate. |
| NCM-F | Supports fibre-optic medium (62.5/125 or 50/125 micrometres – multimode). Single mode available. 312.5K baud transmission rate. Data is regenerated at each node. |
| HS-NCM | High-speed data communications (12 Mb wire, 100 Mb MF/SF fibre). Multi-mode fibre optic (MF), single-mode fibre optic (SF), wire (W), or a combination of W/MF/SF communications path. |

### 4.3.6 FAN CONTROL MODULE

| | |
|---|---|
| Supply Input | IFS700: 20 to 28Vdc<br>55mA max (no relays energised)<br>130mA max (all inputs and relays energised)<br>IFS710: 15 to 28Vdc<br>55mA max (no relays energised)<br>130mA max (all inputs and relays energised) |
| Inputs | 3 x Opto Isolated 4k7 EOL |
| Outputs | 3 x ELV 1A relay contact outputs (Max 30 V DC or 24 V AC) |
| Communications Link | EIA485 on dual ports |
| Indications | LED indications on: Inputs,<br>Outputs<br>RX/TX<br>Power<br>Fault |

### 4.3.7 AZM 8 MODULE

| | |
|---|---|
| Supply Input | IFS701: 20 to 28V DC<br>90mA max (no relays energised)<br>155mA max (all relays energised)<br>IFS711: 15 to 28V DC<br>80mA max (no relays energised)<br>125mA max (all relays energised)<br>238mA max (all AZF & relays energised)<br>43mA max (no relays energised, all AZF disabled) |
| Inputs | 8 conventional alarm inputs<br>Monitoring – Open Circuit, Alarm, Fault |
| Outputs | 4 x ELV 1A relay contact outputs (Max 30 VDC or 24 VAC) |
| Communications Link | EIA485 on dual ports |
| Indications | LED indications on: Outputs, RX/TX, Power, Fault |

**Note: Events generated by AZM modules will not be displayed on NCA-2 panels.**

### 4.3.8 ACM-16AT ANNUNCIATOR

| | |
|---|---|
| Supply Input | 20V to 28Vdc<br>40mA standby<br>180mA alarm (All LED's on) |
| Communications Link | EIA485 multi-dropped |

### 4.3.9 ACM-32A ANNUNCIATOR

| | |
|---|---|
| Supply Input | 20V to 28Vdc<br>40mA standby<br>180mA alarm (All LED's on) |
| Communications Link | EIA485 multi-dropped |

## 4.3.10 SCS-8 ANNUNCIATOR

| | |
|---|---|
| Supply Input | 20V to 28Vdc<br>33mA standby<br>20mA max current per LED when LED ON |
| Communications Link | EIA485 multi-dropped |

## 4.3.11 LDM-R32 ANNUNCIATOR

| | |
|---|---|
| Supply Input | 20V to 28Vdc<br>40mA Standby<br>200mA Alarm (32 relays energised) |
| Communications Link | EIA485 multi-dropped |
| Relay contacts | max 1A @ 30Vdc |

## 4.3.12 LCD-80 DISPLAY INTERFACE

| | |
|---|---|
| Supply Input | 20V to 28Vdc<br>100mA Standby<br>100mA Alarm |
| Communications Link | EIA485 multi-dropped |

# 5 COMPATIBLE DEVICES

## 5.1 ADDRESSABLE DEVICES

| MAKE | MODEL | TYPE | MODEL NUMBER(S) |
|---|---|---|---|
| **ANALOG ADDRESSABLE DETECTORS** | | | |
| Notifier | Thermal | Fixed Temp | FST-751, FST-851, FST-851H, FST-851WP, FDX-851 |
| Notifier | Thermal | Rate Of Rise | FDX-751, FST-751R, FST-851R, FST-851R-WP, FDX-851R |
| Notifier | Smoke | Photo-Optical | FSP-751, FSP-851, SDX-851 |
| Notifier | Smoke | Ionisation | FSI-751, FSI-851 |
| Notifier | Smoke | VIEW | LPX-751L, FSL-751 |
| Notifier | Smoke | Duct | FSD-751P, DNR, DNRW |
| Notifier | Combination | Acclimate | FAPT-751, FAPT-851 |
| Notifier | Combination | HARSH | FSH-751 |
| Notifier | Smoke | Beam | FSB-200, FSB-200s |
| Notifier | Combination | CO, Photo, Heat, IR | FSC-851, SDX-751CTEM |
| **ANALOG ADDRESSABLE MODULES** | | | |
| Notifier | Input Module | Conventional Zone Interface | FZM-1 |
| Notifier | Input Module | Monitor | MMX-1, FMM-1 |
| Notifier | Input Module | Mini Monitor | MMX-101, FMM-101 |
| Notifier | Output Module | Relay | CMX-2, FRM-1 |
| Notifier | Output Module | Control Output | CMX-2, FCM-1 |
| Notifier | Input Module | 5 x Mini Monitor | XP5-M |
| Notifier | Output Module | 5 x Relay/Control Output | XP5-C |
| Notifier | Input Module | 6 x Conventional Zone Interface | XP6-MA |
| Notifier | Input Module | 10 x Mini Monitor | XP10-M |
| Notifier | Output Module | 6 x Relay | XP6-R |
| Notifier | Output Module | 6 x Control Output | XP6-C |
| Notifier | Input/Output Module | 2 x Monitor, 2 x Relay | FDMR-1 |
| Notifier | Input module | Manual Call Point | FSM-500K, WCP-5A |
| Notifier | Sounder/Strobe | Sounder and/or Strobes | DBS24AL, ABS32, ABSB32, AWB32, AWS32, AWSB32 |
| **LOOP ISOLATORS** | | | |
| Notifier | Module | Loop Isolator | ISO-X, M700XE |
| Notifier | Detector Base | Loop Isolator | B524IEFT |

## 5.2 CONVENTIONAL DETECTORS

| MAKE | MODEL | TYPE | MODEL NUMBER(S) |
|---|---|---|---|
| System Sensor | Thermal | Type A | 5451AUS, 51A51 |
| System Sensor | Thermal | Type B | 4451AUS, 51B51 |
| System Sensor | Thermal | Type B Sealed | 885WP-B |
| System Sensor | Thermal | Type C | 51C51 |
| System Sensor | Thermal | Fixed TEMP 63° | 5151AUS |
| System Sensor | Thermal | ROR 63° | 5151RAUS |
| System Sensor | Thermal | Fixed TEMP 90° | 5151HAUS |
| System Sensor | Thermal | ROR 90° | 5151HRAUS |
| System Sensor | Smoke | Photo-Optical | 2151AUS,2151BAUS |
| System Sensor | Smoke | Ionisation | 1151AUS |
| System Sensor | Smoke | Beam | BEAM1224(S) |
| System Sensor | Smoke | Duct | DH-100LP, D2 |
| Notifier | Input | Manual Call Point | M400KR |
| Hochiki | Thermal | Type A | DCD-A, DCC-A, DCA-B-60R Mk V |
| Hochiki | Thermal | Type B | DFJ-60B, DFE-60B, DFG-60BLKJ |
| Hochiki | Thermal | Type C | DCD-C, DCC-C, DCA-B-90R Mk I |
| Hochiki | Thermal | Type D | DFJ-90D, DFE-90D |
| Hochiki | Smoke | Ionisation | SIJ-ASN, SIH-AM |
| Hochiki | Smoke | Photo Optical | SLR-AS, SLK-A |

**Note: Events generated by conventional detectors are not displayed on NCA-2 panels.**

# 5.3 COMPATIBLE BATTERIES

In general, any Sealed Lead Acid (SLA) battery, or Wet Lead Acid battery designed for stationary use is compatible with the AFP-2800/2802 Fire Indicator Panel. The use of Nickel Cadmium batteries is not recommended.

| Manufacturer | Type | Number | Voltage | Capacity (Ah) | Qty Required |
|---|---|---|---|---|---|
| Olympic Batteries | SLA | CJ12-7 | 12 | 7 | 2 |
| Olympic Batteries | SLA | CJ12-12 | 12 | 12 | 2 |
| Olympic Batteries | SLA | CJ12-18 | 12 | 18 | 2 |
| Olympic Batteries | SLA | CJ12-26 | 12 | 26 | 2 |
| Olympic Batteries | SLA | CJ12-33 | 12 | 33 | 2 |
| Olympic Batteries | SLA | CJ12-40 | 12 | 40 | 2 |
| Olympic Batteries | SLA | CJ12-85 | 12 | 85 | 2 |
| Olympic Batteries | SLA | CJ12-100 | 12 | 100 | 2 |

**NOTES:**

**Automotive batteries must not be used. There is a risk of explosion if battery is replaced by an incorrect type.**

**Dispose of used batteries according to Manufacturer Instructions**

**The use of Nickel Cadmium batteries is not recommended.**

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

**The NPS series of power supplies will only charge the battery if the terminal voltage is above 12V when measured across 2 batteries in series.**

# 6 SYSTEM CAPACITY AND EXPANDABILITY

## 6.1 BASE SYSTEM

| Item | Description | Notes |
|---|---|---|
| Communications Ring | RS485 communications ring to support<br>Up to 100 Field Modules<br>Up to 50 Annunciators | |
| 8 System Outputs | 4 x Monitored Outputs.<br>▪ Bell Output<br>▪ 3 Additional programmable outputs<br>4 x Clean contact relays<br>▪ General Alarm Output<br>▪ General Fault Output<br>▪ 2 x programmable outputs | Fault output is normally energised using V5.00 and above firmware.<br><br>Max contact rating of all relays 1A @ 30Vdc. |
| Power Supply | 2.6 A power supply and battery charger<br>Fused 27.3Vdc outputs | A larger power supply may be required if total module load exceeds 2A. Power supplies up to 11.7A are available. |
| 2 Local AZF's | AZF 1<br>AZF 2 | |
| 2 RS232 communication ports | Laptop interface<br>System event printer<br>Remote terminal mode | |
| Keyboard Interface | PS2 QWERTY IBM PC keyboard | |
| System Memory | Approx. 4300 Named points<br>Approx. 4000 Control scripts<br>4000 History events | |

## 6.2 EXPANSION PCBS

| Item | Description | Notes |
|---|---|---|
| Loop Interface Module (LIM) | Interface module to communicate with up to 5 x pairs of Notifier LCM/LEM modules. I.e. total of 10 FlashScan Analog addressable loops for AFP-2800 and a total of 4 CLIP Analog addressable loops for the AFP-2802. | Each Analog addressable loop supports up to 159 detectors and 159 addressable modules using the Notifier FlashScan™ protocol or 99 detectors and 99 modules using the CLIP protocol. |
| Network Interface Module (NIM) | Interface module to communicate with the Network Control Module (NCM) | AFP-2800 only.<br>AFP-2802 does not support Networking. |
| Panel Expansion Relays (IFS803 or IFS-717) | Relay card with 8 relays – contact rating is 1A @ 24Vdc | Up to 8 IFS-803/IFS-717 8-way relay boards can be added |

# 6.3 Analog Addressable Loops

| Item | Description | Notes |
|---|---|---|
| Loop Control Module (LCM/ELCM) | Loop Controller for Loops 1,3,5,7,9 | Max 5 per AFP-2800<br>Max 1 per AFP-2802 |
| Loop Expander Module (LEM) | Loop Controller for Loops 2,4,6,8,10 | Max 5 per AFP-2800<br>Max 1 per AFP-2802<br>LEM “piggybacks” under the LCM. |

# 6.4 Annunciators

| Item | Description | Notes |
|---|---|---|
| ACM32 Annunciator | 32 Red LED | A maximum of 50 annunciators can be connected to the communications ring. |
| ACM16AT Annunciator | 16 x Pushbutton inputs<br>16 x Red LED<br>16 x Yellow LED | |
| SCS-8 Annunciator | 8 x 3 Position switches<br>8 x Red LED<br>8 x Yellow LED<br>8 x Green LED<br>1 x Fire Trip (A/C) Reset switch<br>1 x Fire Trip (A/C) Activated/Latched LED | |
| SCS-8L Annunciator | 24 x LED outputs & 25 digital inputs | |
| LDM-32 Annunciator | 32 x LED outputs (Open Collector) | |
| LDM-R32 Annunciator | 32 x Relay outputs rated to 1A @ 30Vdc | |

# 6.5 Field Modules

| Item | Description | Notes |
|---|---|---|
| AZM-8 | 8 x AZF inputs (4k7 EOL resistor)<br>4 x Programmable Relay Outputs | A maximum of 100 field modules can be connected to the communications ring. Larger/external power supplies and separate feeds are required for systems with a large number of modules or long cable runs.<br><br>The RS485 signal is regenerated at each field module. |
| Fan Controller (FAN-C) | 3 x Inputs (Opto-isolated, not monitored)<br>3 x Programmable Relay outputs | |

**Note: Please note that the FAN-C module has been discontinued and will not be supplied for new installations.**

**When annunciators or field modules are powered from external power supplies, use a separate conductor to connect the main power supply common terminal (-0V) to the remote power supplies common terminal (-0V).**

# 6.6 DISPLAY INTERFACES

| Item | Description | Notes |
|---|---|---|
| LCD80 | Terminal mode display interface (see LCD 80 manual) | A maximum of 32 display interfaces can be installed on the communications ring. Address 201 to 239 |
| LCD80 | Annunciator mode display interface (see LCD 80 manual) | A maximum of 32 display interfaces can be installed on the communications ring. Address 101 to 139 |

# 7 PANEL OPERATION

## 7.1 FRONT PANEL DISPLAY

The AFP-2800/2802 is fitted with a LED backlit 1/4 VGA resolution graphical LCD screen allowing ease of use for the operator by displaying multiple lines of information. The AFP-2800/2802 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-2800/2802 accepts a standard PC101 style keyboard plugged directly into the CPU to allow full QWERTY function accessibility for programming and diagnostic test.

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 switch to and remain in fire-fighters mode until all alarms are acknowledged or reset.

### 7.1.1 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.

### 7.1.2 SCROLLING THROUGH LISTS

When a list of points is displayed on the screen, you can scroll through the list by pressing the UP or DOWN (or PREV / NEXT) button. This will move the highlighted cursor up or down the list. If the button is held down, the cursor will scroll more quickly and if it is held down for several seconds, the list will scroll page by page, enabling rapid access to item near the end of a long list.

When accessing the history List (which is a first-in, first-out list), simply press Page Up at the top of the list to be immediately taken to the last page of the list.

## 7.1.3 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, the ten digit numeric keypad can be used.

## 7.1.4 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 (active) 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
```

## 7.1.5 POINT FORMATS

There are three different types of point in the AFP-2800/2802 system – real (or physical) points, virtual (software generated) points and network points.

All points on the distributed ring and the Analog addressable loops are real points. Distributed points on field modules are controlled and referred to in "R.M.IO" format. i.e.: Ring**.**Module**.**I/O – where I/O can consist of input, output or AZF. Analog addressable points on the addressable loops are controlled and referred to in "Loop, I/O format" i.e. Loop I/O where I/O can consist of module or detector number.

Virtual points are referred to as VPx where x can range from 1 to 1000. Virtual points are actually the output from a script equation and are discussed later in this manual (refer to page 97).

Network points are referred to as NPx where x can range from 1 to 1000. Each network node can have up to 1000 Netpoints. Network points are real or virtual points mapped at any network node that is required to interact with other network nodes (refer to page 93).

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 (AZM-8) | **1.20.Z1** |
| Ring 1, Module 30, input 1 (FAN-C) | **1.30.I1** |
| Ring 1, Annunciator 1 (module 101), Output 1 (led #1) | **1.101.O1** |
| Ring 1, Annunciator 50 (module 150), Input 1 (button #1) | **1.150.I1** |
| Loop 1 Detector 1 | **L1D1** |
| Loop 1 Module 1 | **L1M1** |
| Expansion relay 1 | **XR1** |
| Virtual point 1 | **VP1** |
| Network point 1 on Node 1 | **N1.NP1** |

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[1] | 0.1.Z1 | Ring 0 Module 1, zone 1 |
| AZF #2[1] | 0.1.Z2 | Ring 0 Module 1, zone 2 |
| **On Board Relays** | | **8 Relays on termination Board** |
| Relay 1 to 8 on FIM[1] | 0.4.O1 to 0.4.O8 | Ring 0 Module 4, output 1<br>Ring 0 Module 4, output 8 |
| **Distributed Field Modules** | | **Up to 100 modules** |
| AZF[1] | 1.1.Z1 | 8 AZF points per AZM8module |
| Din[1] | 1.1.I1 | 3 Din Per Fan Control Module |
| Dout[1] | 1.1.O1 | 4 Dout Per AZM-8<br>3 Dout Per Fan Control Module |
| | | |
| **Annunciator** | | **Up to 50 Annunciators** |
| Inputs[1] | 1.101.I1 | 16 Din per 16AT, 24 Din Per SCS-8 |
| Outputs[1] | 1.101.O1 | 32 Dout Per 16AT, 24 Dout Per SCS-8, 32 Dout Per ACM32A |
| **Analog Addressable Devices** | | **Up to 10 Loops** |
| Detectors | L1D1 | 159 Detectors Per Loop |
| Modules | L1M1 | 159 Modules Per Loop |
| | | |
| **Virtual Points**[1] | **VPn** | **n can range up to 1000** |
| | | |
| **Network Points** | **NPn** | **n can range up to 1000** |
| | | |
| **Expansion Relays**[1] | **XRn** | **n can range up to 64** |
| | | |
| **System Parameters** | | |
| Common Alarm | CA | |
| Common Fault | CF | |
| Common Isolate | CI | |
| Battery Fault | BF | |
| Charger Fault | CL | |
| Mains On | MO | |
| Ext. Bell Isolated | BI | |
| Warning System Isolated | WI | |

Note: 1. Events from these points will not be displayed on a NCA-2

### 7.1.5.1 ANNUNCIATOR ADDRESSING

The AFP-2800/2802 can support up to 50 annunciator devices on the distributed ring. There are 4 types of annunciators that can be used.

| Type | Description | Suggested Use |
|---|---|---|
| ACM32A | 32 Red LED | Mimic panel |
| ACM16AT | 16 Pushbuttons<br>16 Red LED<br>16 Amber LED | Output control for flow switches and test solenoids.<br>Isolate control for isolating zones or points. |
| SCS-8 | 8 x 3 position switches<br>8 Red LED<br>8 Amber LED<br>8 Green LED<br>1 x pushbutton and Red LED for FTR | Fan Control for up to 8 fans. |
| LDM-32 | 32 LED outputs | Site specific mimic panel |
| LDM-R32 | 32 x 1 Amp relay outputs | EWIS interface |

As the annunciators co-exist on the same RS485 ring as the 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.

Example 1: 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.

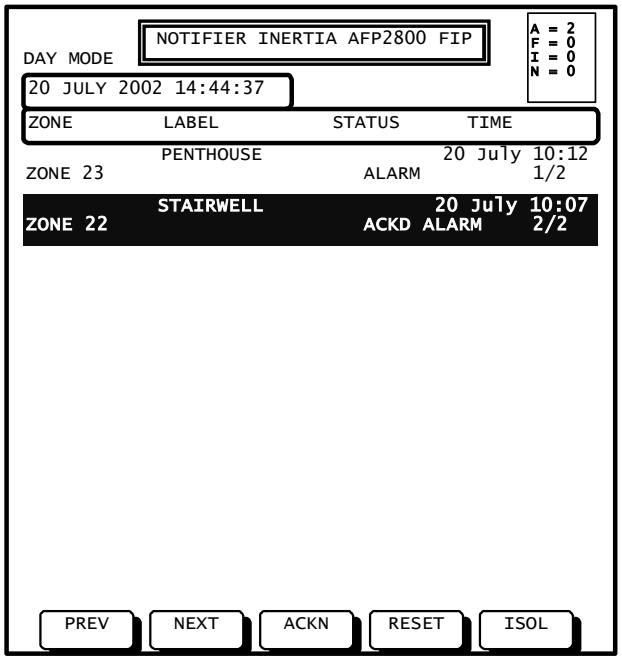
Example 3: If an SCS-8 was installed and addressed as #3. The first switch in the “up” position would be referred to as 1.103.I1 using the “Ring.Module.I/O” format.

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 9.11 for more information on annunciator addressing and settings.**

# 7.2 FIREFIGHTERS MODE

Only 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.

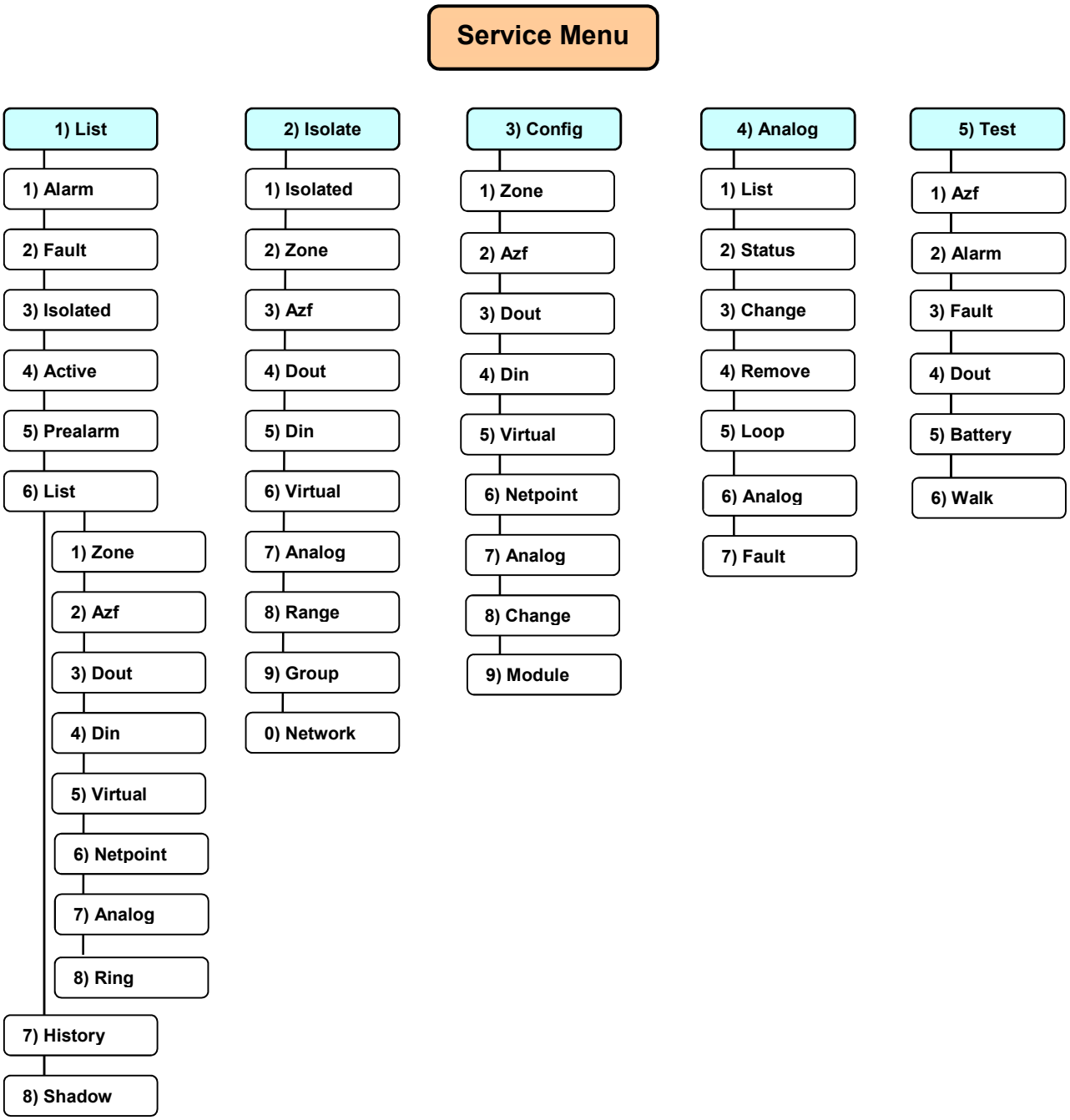
**RESET** — Will perform a point reset function on the currently highlighted alarm. As per AS4428, you will be requested to press **ACKN** to confirm the reset. Any other button will abort the reset. The point is automatically acknowledged by this action. Once an alarm is reset, it will be removed from the screen, however if the alarm condition is still present, it will re-alarm after a 15 second time out.

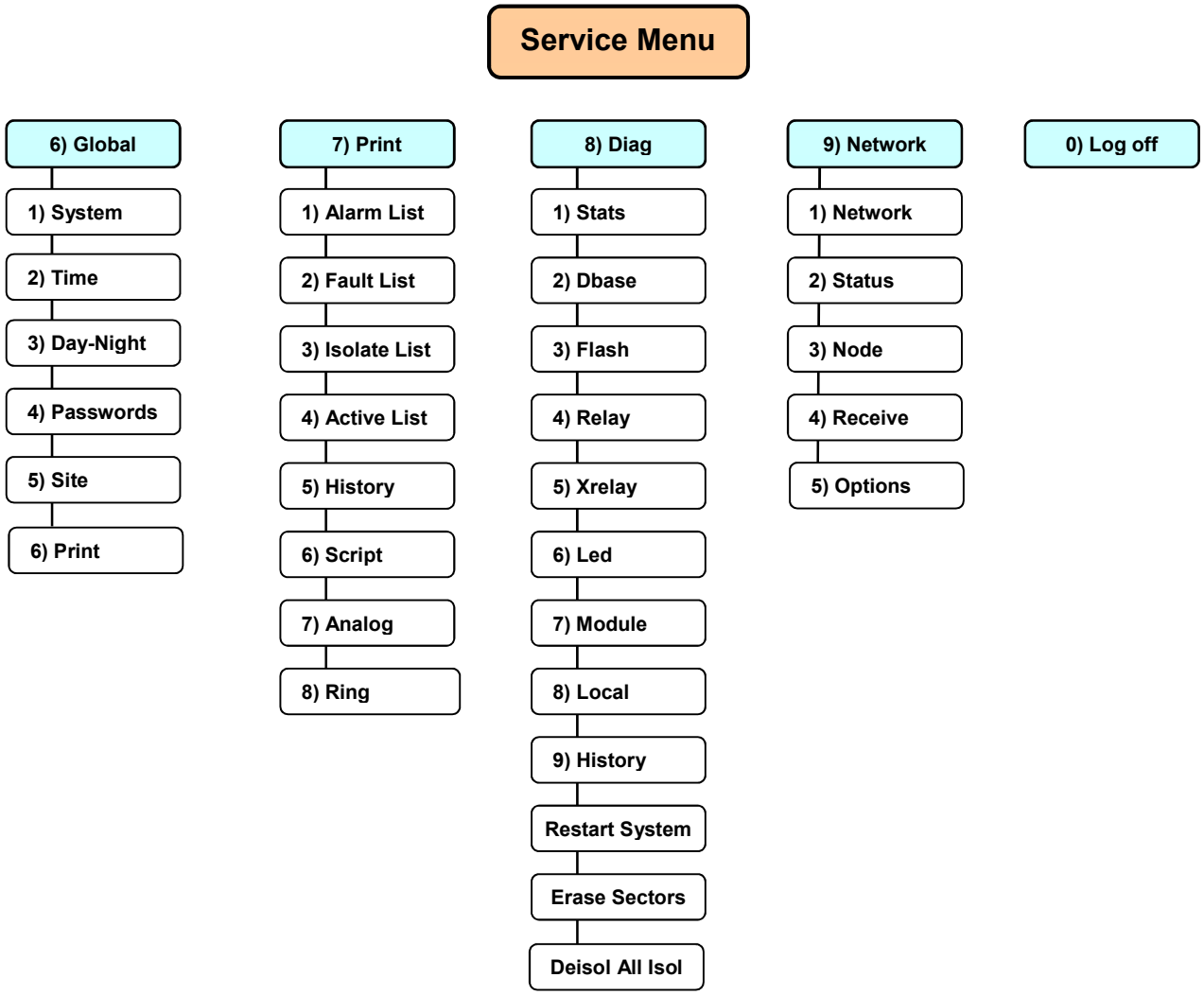
**ISOL** — Will perform a point isolate function on the currently highlighted alarm. As per AS4428, you will be requested to press **ACKN** to confirm the isolate. Any other button will abort the isolate. The point is automatically acknowledged by this action. Once an alarm is isolated, it will be remain 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 Fire Fighters 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, after acknowledging all active alarms. Group zone mode is not supported when networking with a NCA-2**

# 7.3 SERVICE MENU MODE

## 7.3.1 SERVICE MENU STRUCTURE






**Note: The networking menu is only displayed on the AFP-2800 FIP. AFP-2802 does not support networking.**

## 7.3.2 SERVICE MENU

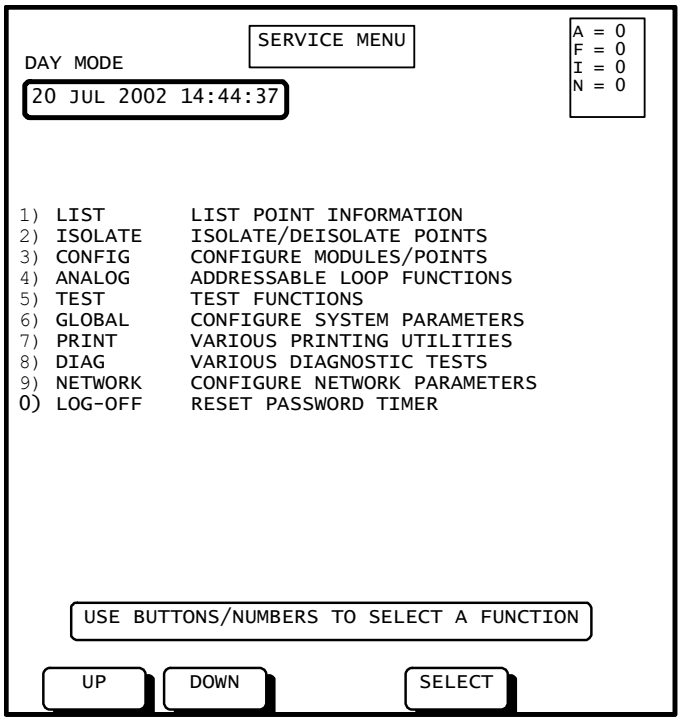
This is the base level of service menu mode.

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 (supervisory) events at any given time.

Pressing the **SERVICE MENU** button at any time will return you to this main menu screen unless there are unacknowledged alarms present in the FireFighters screen.

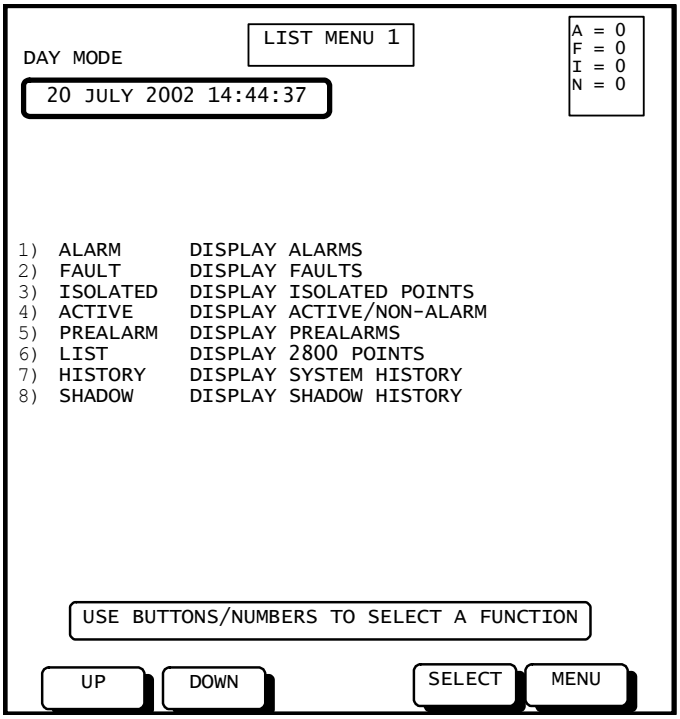


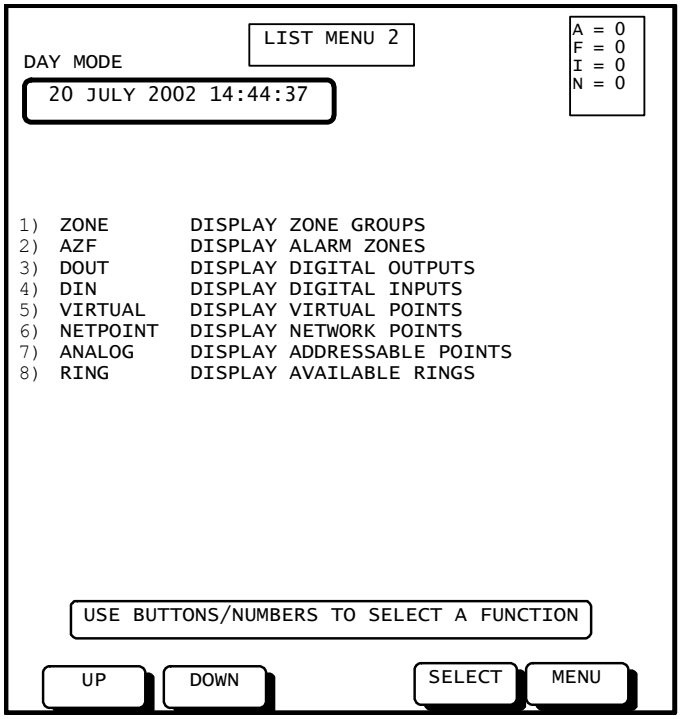

**Actions:**

- Use **UP** and **DOWN** buttons to scroll through options.
- Use **SELECT** to select the currently highlighted option.
- Alternatively press **1** through to **9** (use **0** to select LOG-OFF).

## 7.3.3 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 (6) 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:

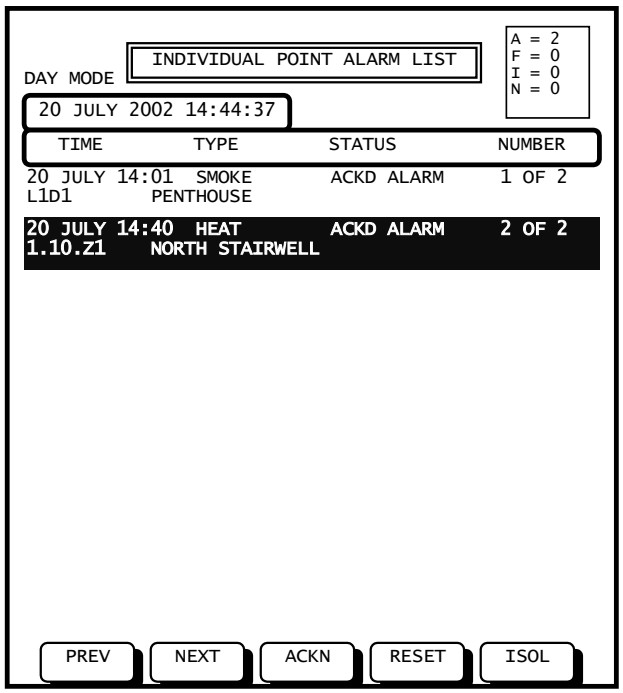



| Menu Item | Explanation |
|---|---|
| **ALARM** | Displays all current alarms on the system in chronological order and allows you to acknowledge reset and isolate alarmed points using the soft buttons. |
| **FAULT** | Displays all current faults on the system in chronological order, and allows you 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 events on the system in chronological order and allows you to acknowledge, reset and isolate points using the soft buttons. |
| **PREALARM** | Displays all active Pre-Alarm 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 |
| **HISTORY** | Displays the systems history event buffer in chronological order. |
| **SHADOW** | Displays the systems shadow history event buffer in chronological order. |
| **ZONE** | Display zones as per AS4428. Allows editing of displayed zone names for Fire-fighters display purposes. |
| **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 & LEDs) and shows current status. Soft Buttons provide ability to Test and Change a point's programming. |
| **DIN** | Displays all system Digital Inputs and shows current status. Soft Buttons provide ability to Test and Change a point's programming. |
| **VIRTUAL** | Displays all system Virtual Points. Soft Buttons provide ability to change a point's programming. |
| **NETPOINT** | Displays all system Netpoints. Soft Buttons provide ability to change a point's programming. |
| **ANALOG** | Displays Analog addressable 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. |

## 7.3.3.1 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.

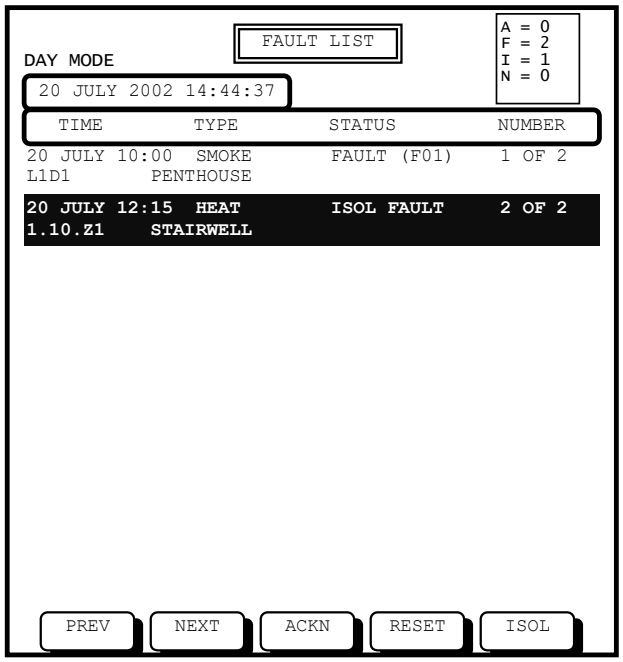



**Actions:**

- 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 selected alarm.
  You will be asked to press **ACKN** to confirm, press any other button to abort.

## 7.3.3.2 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. Faults on Analog points will also indicate a fault code as shown in the example screen below (refer to section 9.5).



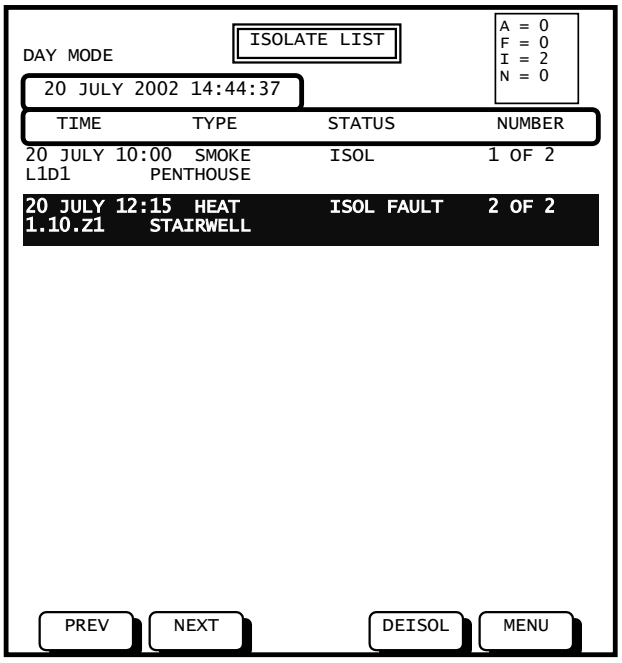

**Actions:**

- Use the **PREV** and **NEXT** buttons to scroll through the faults.
- Use **ACKN** to acknowledge currently selected fault.
- Use **RESET** to reset the currently selected fault.
  You will be asked to press **ACKN** to confirm, press any other button to abort.
- Use **ISOL** to isolate the currently selected 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.**

## 7.3.3.3 SERVICE MENU – LIST – ISOLATED

This will display any isolation conditions active at the time.



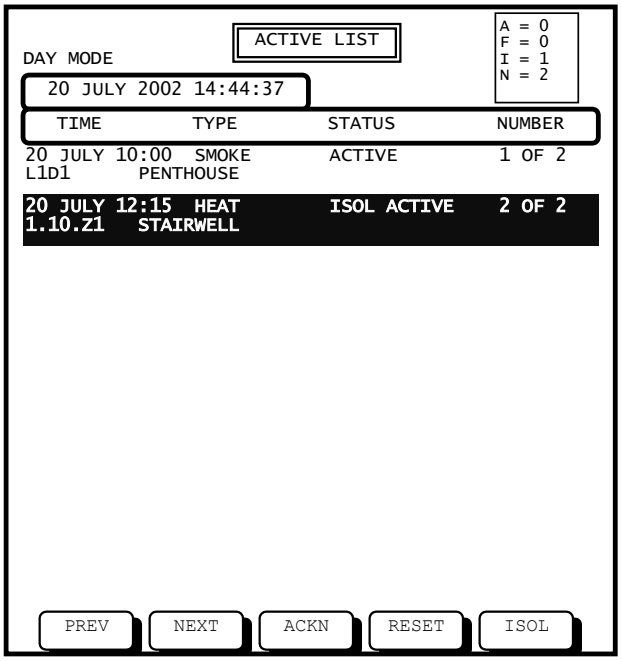

**Actions:**

- Use the **PREV** and **NEXT** buttons to scroll through the isolated points.
- Use **DEISOL** to De-Isolate the currently selected 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.**

## 7.3.3.4 SERVICE MENU – LIST – ACTIVE

This list will display all non-alarm points 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.



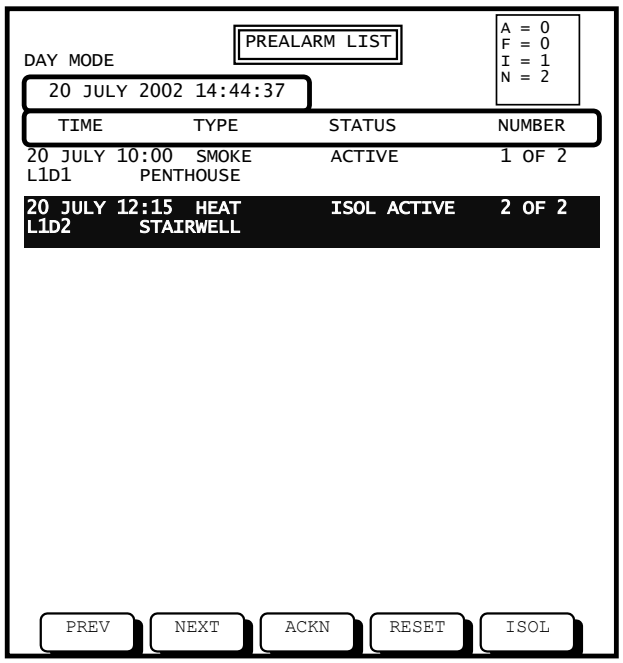

**Actions:**

- 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.**

## 7.3.3.5 SERVICE MENU – LIST – PRE ALARM

This list will display all current pre-alarms. A pre-alarm will sound the local panel buzzer however this function can be disabled from the Global System options screen (refer to Section 7.3.7.1).



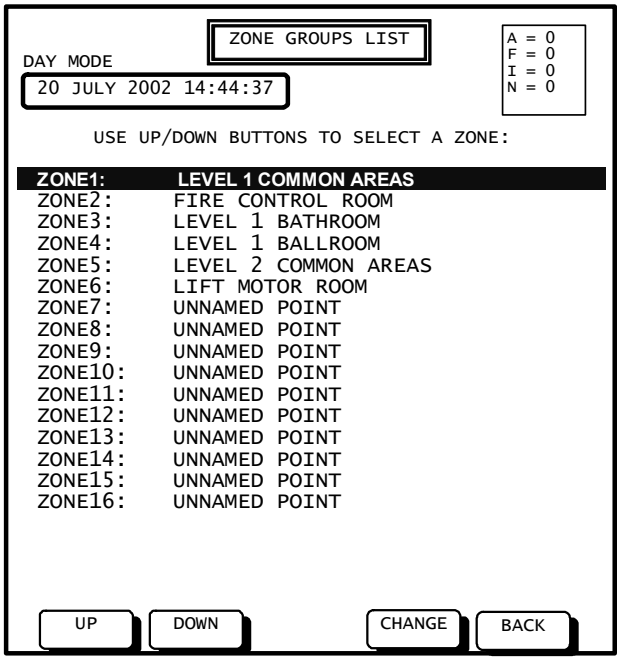

**Actions:**

- Use the **PREV** and **NEXT** buttons to scroll through the list.
- Use **ACKN** to acknowledge currently selected active pre-alarm point.
- Use **RESET** to reset the currently selected pre-alarm point.
  You will be asked to press **ACKN** to confirm, press any other button to abort.
- Use **ISOL** to isolate the currently highlighted active Pre-Alarm point.
  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.**

## 7.3.3.6 SERVICE MENU – LIST – 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 Fire Fighters screen (up to 28 characters maximum). Editing the members of a zone must be performed from the edit points menu.



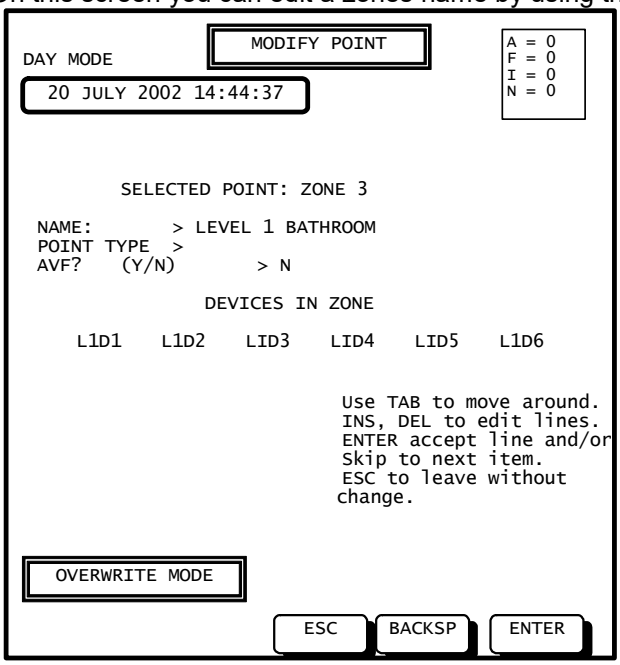

**Actions:**

- 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.**

### 7.3.3.6.1 SERVICE MENU – LIST – LIST – ZONE – CHANGE

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



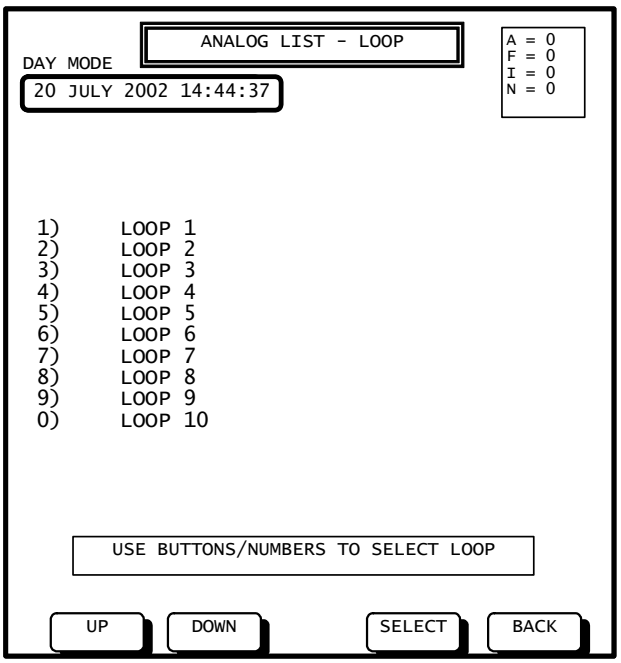

**Actions:**

- Edit the zone name using the QWERTY keyboard. Press **ENTER** when done.
- To abandon changes press **ESC**

Note: Adding/deleting points in the zone is done by editing the individual point configuration.

## 7.3.3.7 SERVICE MENU – LIST – LIST – ANALOG

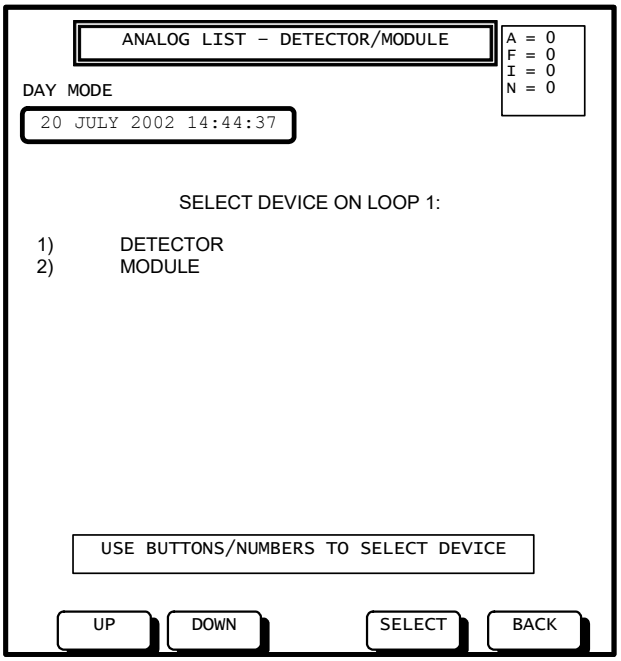
This menu will list all Analog addressable loops (1 –10), you can then select detectors or modules, then read status or change or test a point.




**Actions:**

- Use the **UP** and **DOWN** buttons to scroll through the Analog loop list.
- Use the **SELECT** button to select the loop to list.
- Alternatively press **1** through **9** (use **0** to select LOOP 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.

**Note: AFP-2802 supports a maximum of 4 loops. Loops 5 to 10 are not displayed on AFP-2802.**

### 7.3.3.7.1 SERVICE MENU – LIST – LIST – ANALOG – DETECTORS

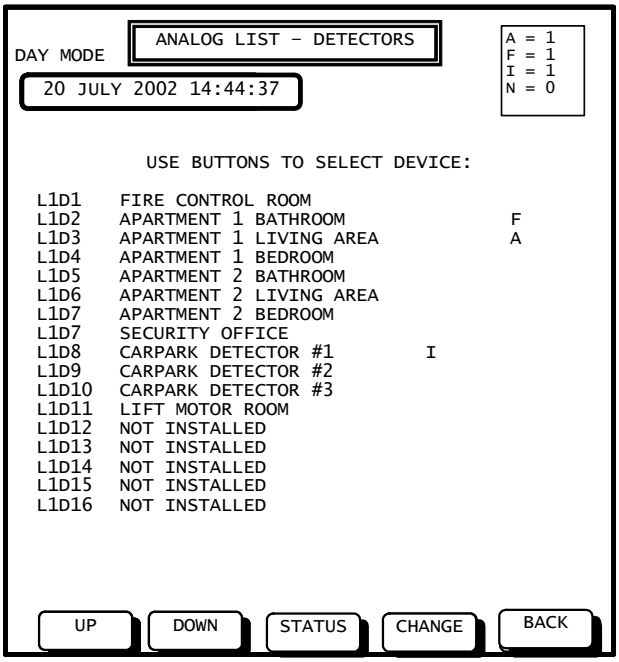
This screen will provide a list of all Analog addressable detectors (1-159) on the loop selected showing the name of each detector alongside.

**Note: AFP-2802 supports a maximum of 99 detectors per loop. Detectors 100 to 159 are not displayed on AFP-2802.**

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 display soft buttons **ADD** and **REMOVE**. Use **ADD** to edit the detectors setting and/or change its name.
- Press **BACK** to return to the previous screen.

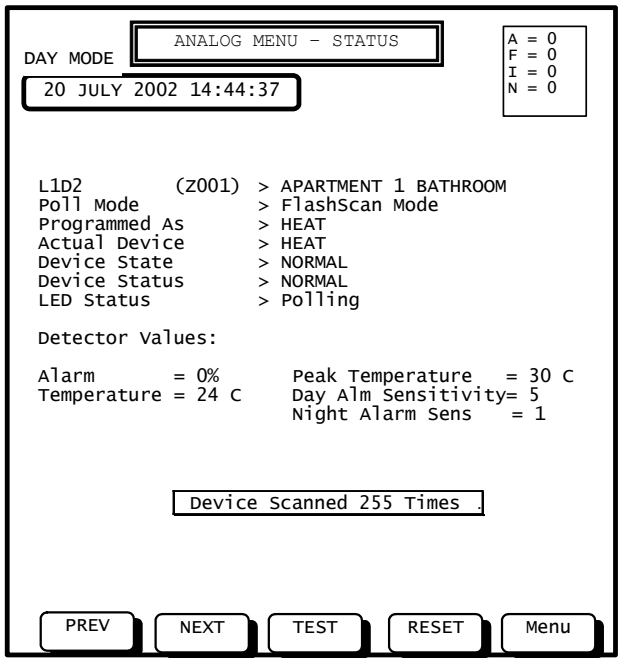
**Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.**

### 7.3.3.7.1.1 Service Menu – List – List – Analog – Detectors – Status

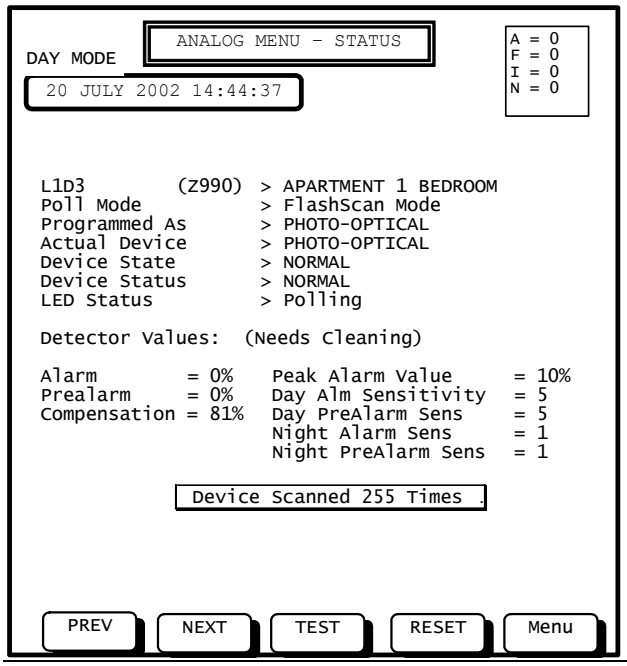
This screen will show a reading of the selected Analog addressable detector updated every 3 seconds, 255 times.

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

**Heat Detector**




**Smoke Detector**




**Note: "Zxxx" is displayed after the descriptor, xxx is the zone number mapped to the detector. A zone number of 0 is an indication that the detector is not mapped to a zone.**

Actions:

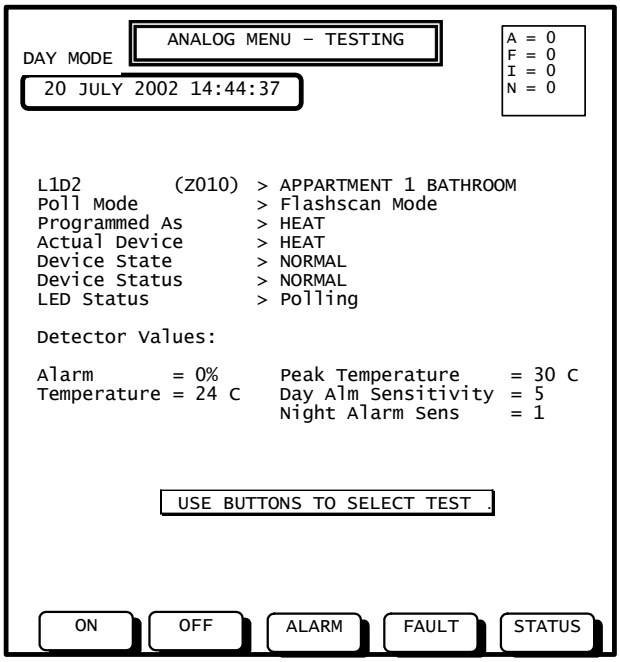
- Press the **PREV** buttons to move to the previous installed point.
- Press the **NEXT** buttons to move to the next installed point.
- Press the **TEST** button to enter test menu for the detector.
- Press the **RESET** button to re-initialise the detector.
- Press **MENU** to return to the Analog Menu 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 | 9 Types | Detector type programmed into panel |
| Actual Device | 9 Types | Detector type physically seen on loop |
| Device State | Normal/Active/Alarm | Shows alarm or activated condition of point |
| Device Status | 28 fault types | Detailed description of fault condition. i.e.: "No Response" |
| LED Status | 4 Types | Polling, On, Off, Polling ID |
| Alarm | % | Current Percentage of alarm or Degree Celsius |
| Pre-alarm | % | Current Percentage of Pre-alarm |
| Peak Alarm Value | % or $^{O}$C | Highest reading since last reset |
| Drift Compensation | % | Please refer to page 109 for information on Drift Compensation |
| Sensitivities | 1-9 | Detector sensitivity for day/night, alarm/pre-alarm. Please refer to page 106 for explanation information on sensitivity settings |

### 7.3.3.7.1.2 Service Menu – List – List – Analog – Detectors – Status – Test

This screen performs operation tests on the selected Analog addressable detector.



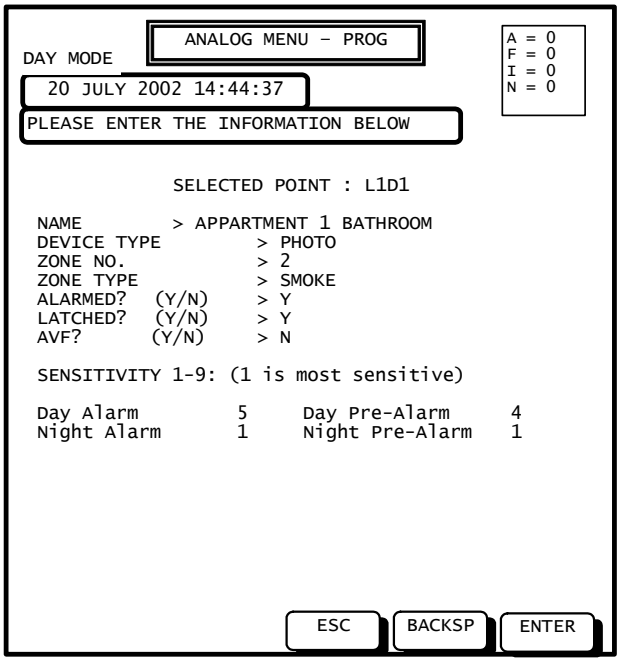

**Actions:**

- Press the **ON** button to turn detector LED's ON green (red if CLIP). (This test is useful for locating detectors at same address)
- Press the **OFF** button to return the detector LED's to the Automatic Polling Mode
- Press the **ALARM** button to perform an ALARM TEST on the detector.
- Press the **FAULT** button to perform a FAULT TEST on the detector (Note: Fault latching may need to be enabled to see the fault on some systems as the fault is cleared on next scan).
- 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 TEST again.**

### 7.3.3.7.1.3 Service Menu – List – List – Analog – Detectors – Change

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




**Actions:**

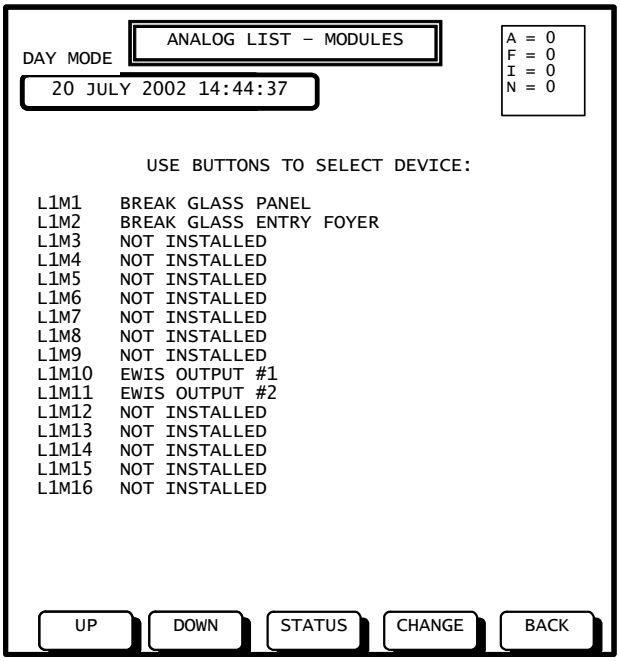
- Press **BACKSP** to backspace an incorrect character.
- Press **ENTER** to step through options.
- Press **YES** or **NO** buttons when highlighted to answer Y/N options.

Use external QWERTY keyboard to edit descriptors and zone type. Tab will scroll through the fields.
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.

## 7.3.3.7.2 SERVICE MENU – LIST – LIST – ANALOG – MODULES

This screen will provide a list of Analog addressable modules (1-159) on the loop selected showing the descriptor 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 installs the point.

**Note: AFP-2802 supports a maximum of 99 modules per loop. Modules 100 to 159 are not displayed on AFP-2802.**



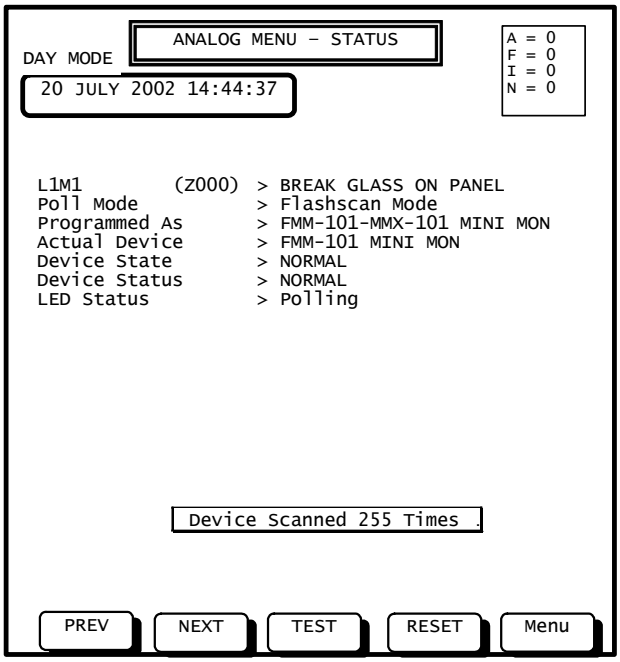

**Actions:**

- 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 display soft buttons **ADD** and **REMOVE**. Use **ADD** to edit the detectors 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.**

#### 7.3.3.7.2.1 Service Menu – List – List – Analog – Modules – Status

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




**Actions:**

- Press the **PREV** buttons to move to the previous installed point.
- Press the **NEXT** buttons to move to the next installed point.
- Press the **TEST** button to enter test menu for the detector.
- Press the **RESET** button to re-initialise the detector.
- Press **MENU** to return to the Analog Menu screen.

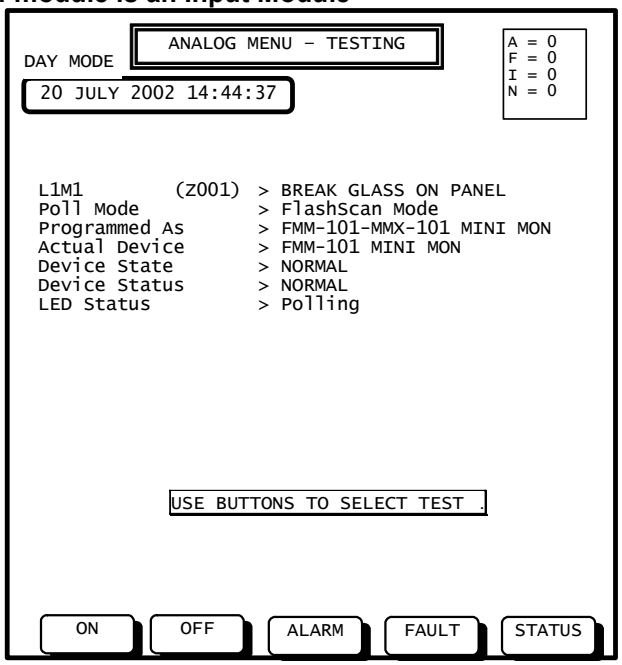
**Explanations of terms:**

| 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 | 9 Types | Module type programmed into panel |
| Actual Device | 5 Types | Module type physically seen on loop |
| Device State | Normal/Active/Alarm | Shows alarm or activated condition of point |
| Device Status | 23 fault types | Detailed description of fault condition. I.e. “No Response” |
| LED Status | 4 Types | Polling, On, Off, Polling ID |

### 7.3.3.7.2.1.1 Service Menu – List – List – Analog – Modules – Status – Test

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

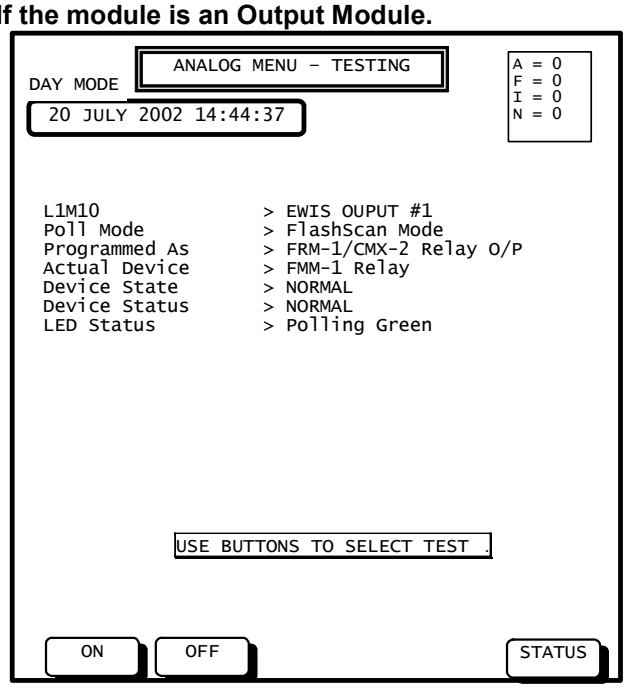
**If module is an Input Module**




**Actions:**

- Press the **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 **OFF** button to return module LED's to the Automatic Polling Mode
- Press the **ALARM** button to perform an ALARM TEST on the module.
- Press the **FAULT** 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:**

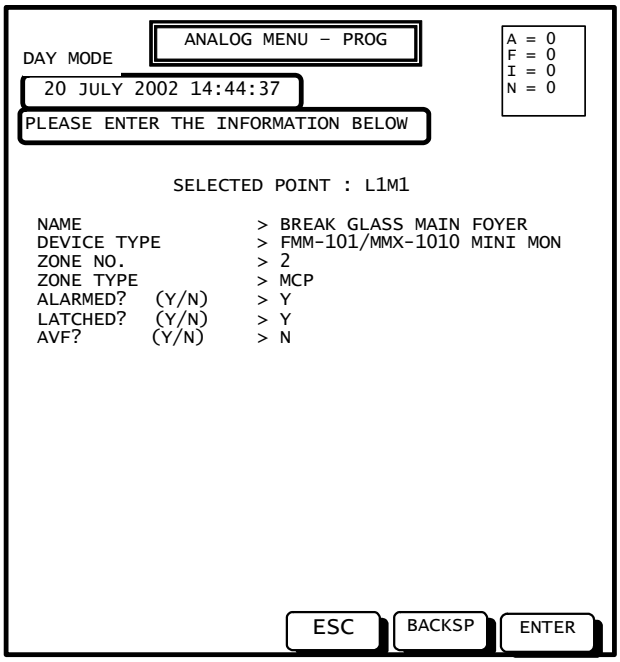
- Press **ON** to activate the output module.
- Press **OFF** to de-activate the output module.
- Press **STATUS** to return to the read status screen.

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

### 7.3.3.7.2.2 Service Menu – List – List – Analog – Modules – Change

This screen will allow you to change Analog addressable 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:**

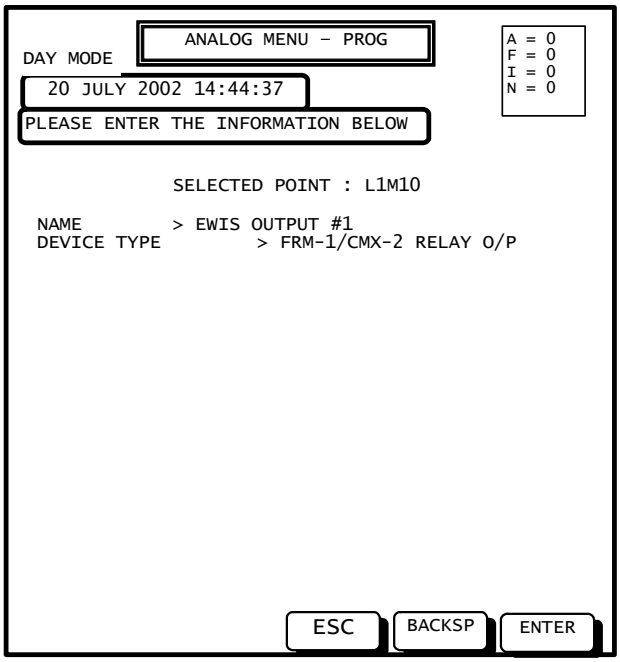



**Actions:**

- 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. Tab will scroll through the fields.
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:**

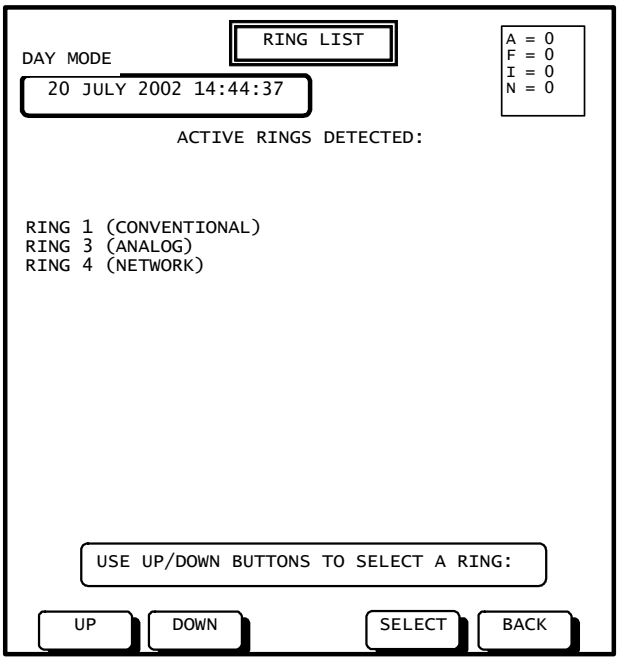
- Press the **BACKSP** button to delete an incorrect character.
- Press the **ENTER** button to step through options.
- Press the **YES** or **NO** buttons when highlighted to answer Y/N options.

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 90 for more information on entering scripts.

## 7.3.3.8 SERVICE MENU – LIST – LIST – RING

This screen will display a list of all installed rings.



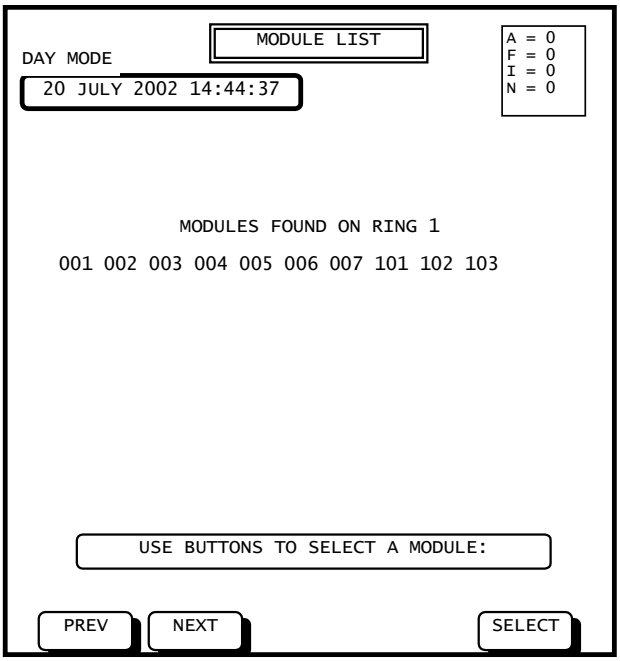

**Actions:**

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

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

### 7.3.3.8.1 SERVICE MENU – LIST – 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.

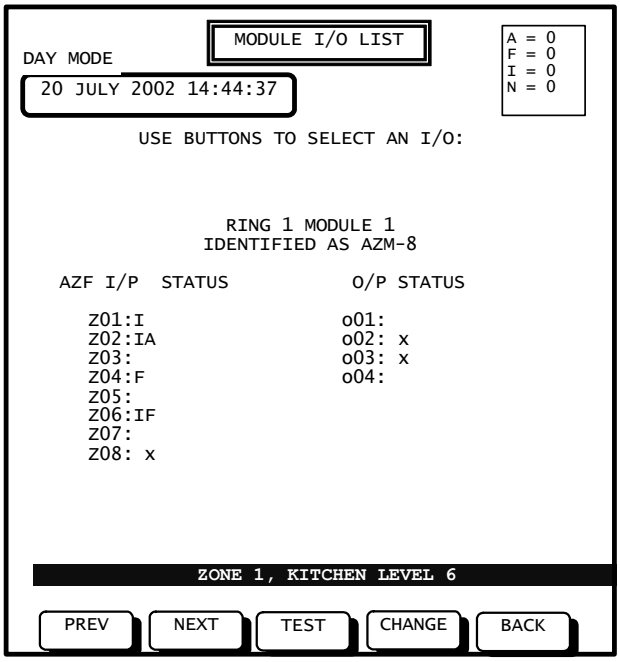
Use the **SELECT** button to select the currently highlighted module.

If the Analog addressable ring (#3) is selected, you will be taken directly to the List – Analog screen (see page 34)

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

### 7.3.3.8.1.1 Service Menu – List – 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 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 point's 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 72) providing 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 73.
- Pressing the **CHANGE** button will take you to the Modify Point Screen (refer to page 59)

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

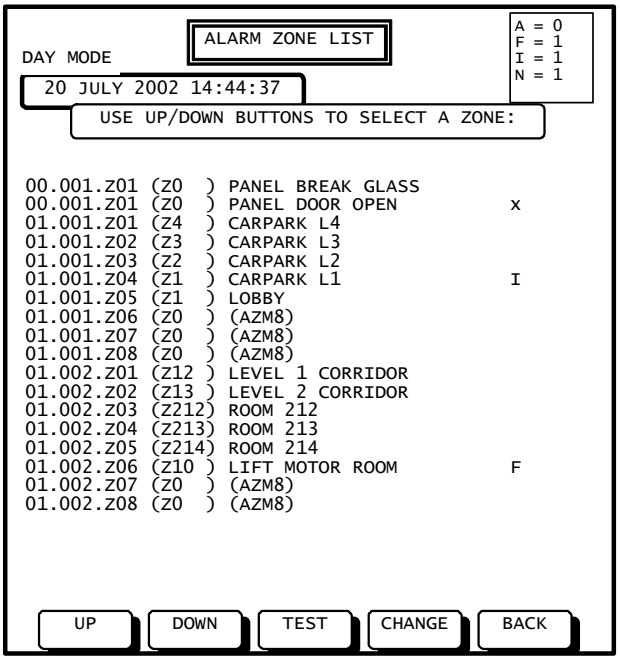
| Status Abbreviation | Meaning |
|---|---|
| A | Alarm |
| I | Isolated |
| F | Fault |
| X | Activated |

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

# 7.3.3.9 SERVICE MENU – LIST – 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 Z0 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 72) providing the options for an alarm and fault test.
- Pressing the **CHANGE** button will take you to the modify point screen (refer to page 60)
- Pressing the **BACK** button will return you back to the service menu

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

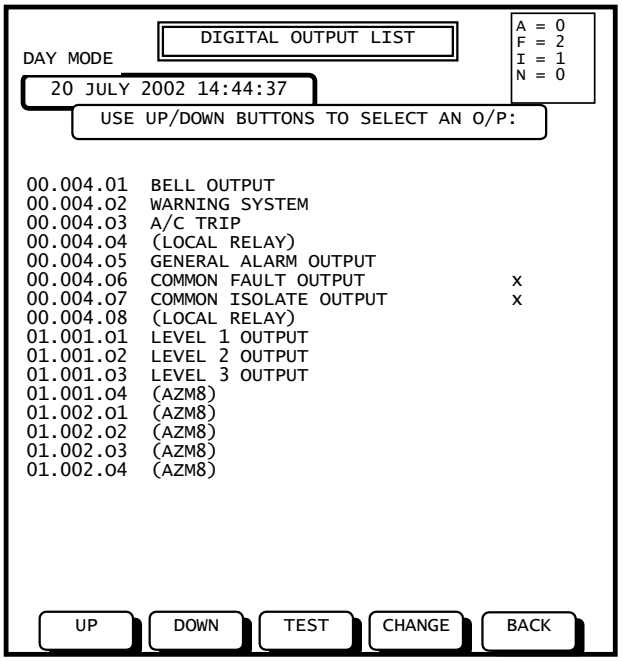
| Status Abbreviation | Meaning |
|---|---|
| A | Alarm |
| I | Isolated |
| F | Fault |
| X | Activated |

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

## 7.3.3.10 SERVICE MENU – LIST – LIST – DOUT

This screen will list all the digital outputs (relays) in the system. Digital outputs consist of local panel relays, field module relays, expansion relays (XRnn) 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 73 for more details on Dout test page)
- Pressing the **CHANGE** button will take you to the modify point screen (refer to page 61)
- 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 |

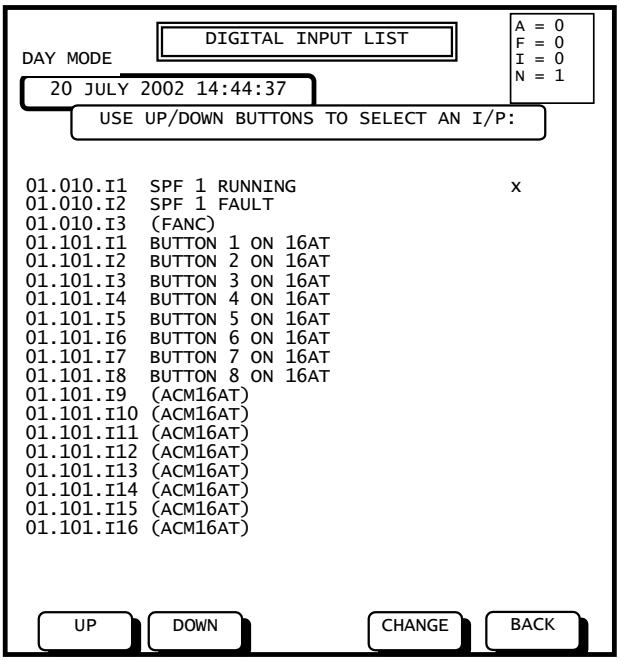
**Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.**

## 7.3.3.11 SERVICE MENU – LIST – 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 62)
- 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 |

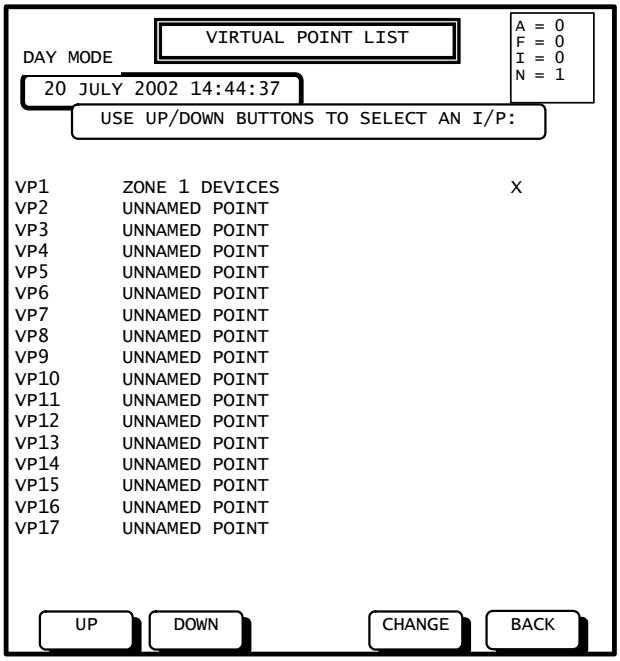
**Note: You can also use the arrow keys, the Page Up and Page Dn keys on an external keyboard for scrolling functions.**

## 7.3.3.12 SERVICE MENU – LIST – LIST – VIRTUAL

This screen lists all the virtual points in the system. Virtual points are software points that can be programmed as latching or non-latching, alarmed or non-alarm event and are controlled by an associated script.

The display shows the point number and the point description.

Active points are denoted by an 'X' after the point description.




**Actions:**

- Use the **UP** and **DOWN** buttons to scroll through Virtual points.
- Pressing the **CHANGE** button will take you to the modify point screen (refer to page 63)
- Pressing the **BACK** button will return you to the list menu screen.

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

## 7.3.3.13 SERVICE MENU – LIST – LIST – NETPOINT

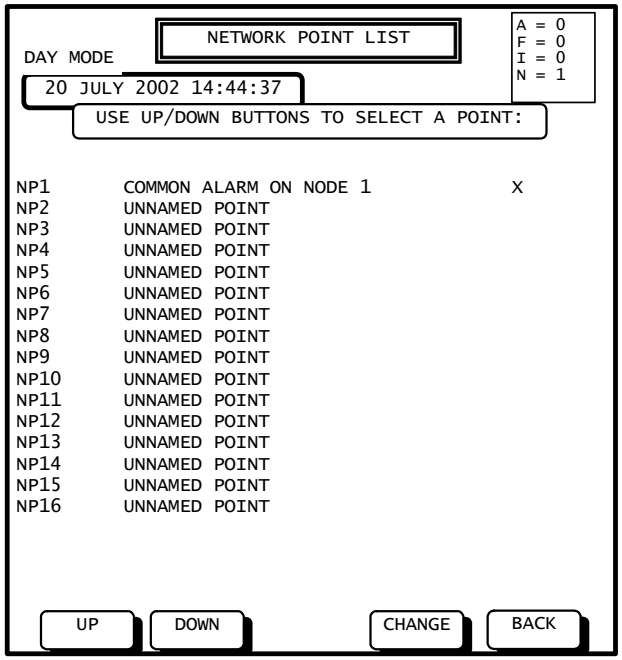
This screen lists all the network points in the system. Network points are points that are used in scripts acting between network nodes. Netpoints programmed on remote nodes will be preceded by a node number whereas the local Netpoints will not have a node number. Any script which uses points from a remote network node may only contain Netpoints from that node and cannot include other remote devices.

E.g.
L1M1 = N10.NP1 OR N20.NP120 OR NP5; is correct
L1M1 = **N10.L1D1** OR **N20.Z1**; is WRONG

**Note: AFP-2802 does not support networking. Netpoints can still be programmed and used locally similar to Virtual Points.**

The display shows the point number and the point description.

Active points are denoted by an 'X' after the point description.




**Actions:**

- Use the **UP** and **DOWN** buttons to scroll through Virtual points.
- Pressing the **CHANGE** button will take you to the modify point screen (refer page 61).
- Pressing the **BACK** button will return you to the list menu screen.

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

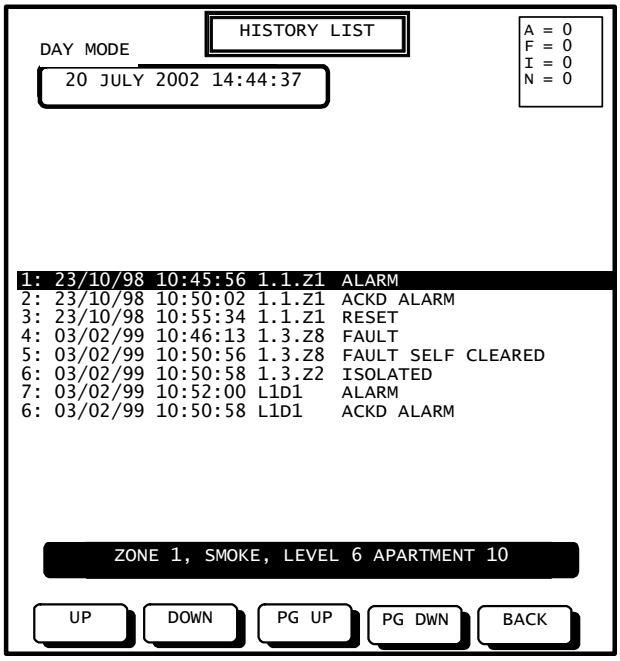
## 7.3.3.14 SERVICE MENU – LIST – HISTORY

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-2800/2802 system stores 4000 events. The history list will then "over-expand" to 8,000 events and once it reaches this level, will purge the **oldest** 4000 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 (refer page 81).

As you scroll up and down the list, the currently highlighted item's description 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.**

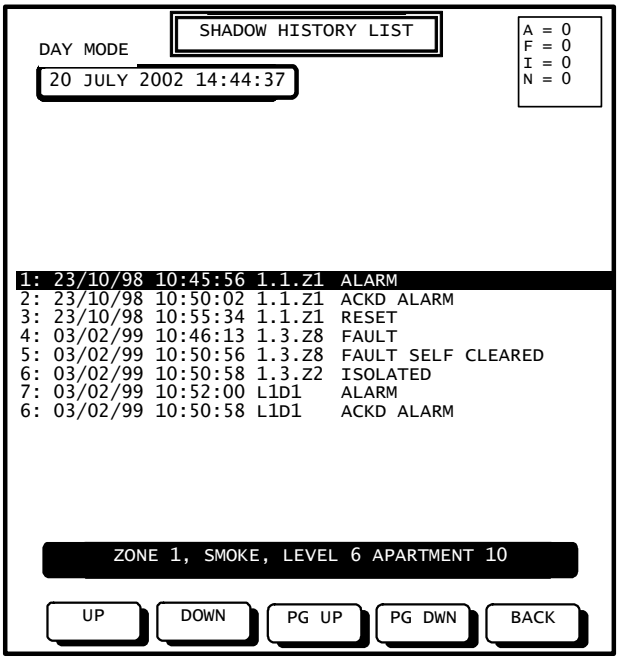
# 7.3.3.15 SERVICE MENU – LIST – SHADOW

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

The AFP-2800/2802 system stores over 4000 shadow history events. When the shadow history buffer is full, the system will remove the oldest entries whenever a new entry is received thus leaving the 4000 most recent entries in the list. This is an automatic process.

The shadow history cannot be erased.

As you scroll up and down the list, the currently highlighted item's description is shown at the bottom of the screen.




**Actions:**

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

The following events are recorded in the shadow history:

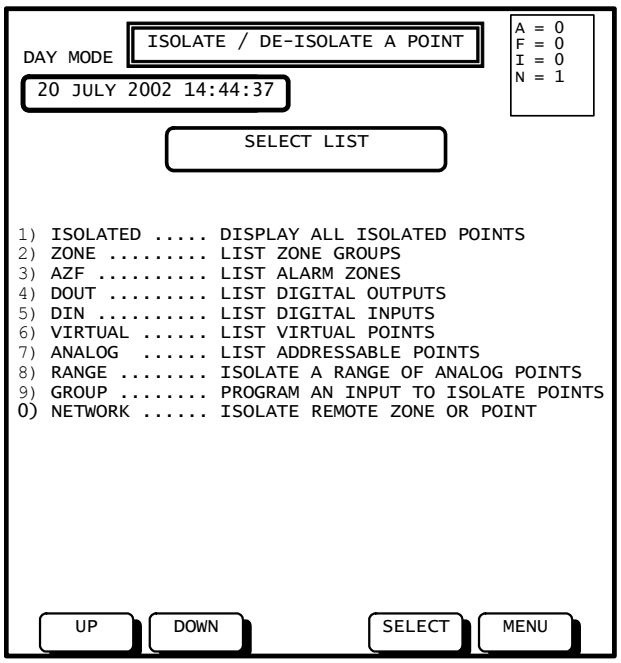
- Alarm
- Acknowledge Alarm
- Alarm Cleared
- Isolated Alarm
- Pre-alarm
- Pre-alarm Cleared
- Isolated Pre-alarm
- Isolated
- De-Isolated
- Fault
- Fault Cleared
- Isolated Fault
- System Faults
- Reset

**Note: Shadow history is not available on the IFS-703 CPU boards. This is due to the size of flash storage on the older CPU boards. V3 and above firmware is required for this feature.**

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

## 7.3.4 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).

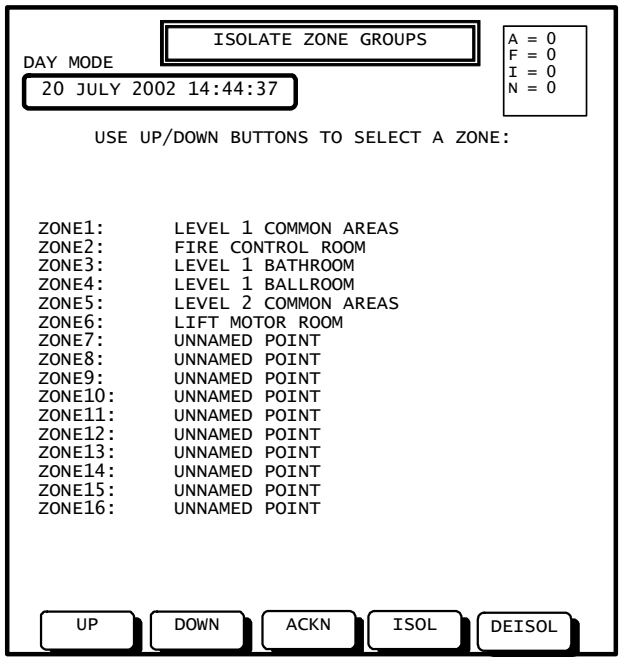



**Actions:**

- Use the **UP** and **DOWN** buttons to scroll through options and then use the **SELECT** button to select the highlighted option
  (or button **0** to **9** from numeric keypad)
- Press **MENU** to return to the service menu screen.

## 7.3.4.1 SERVICE MENU – ISOLATE – ZONE LIST

This screen allows the operator to isolate or de-isolate a zone.



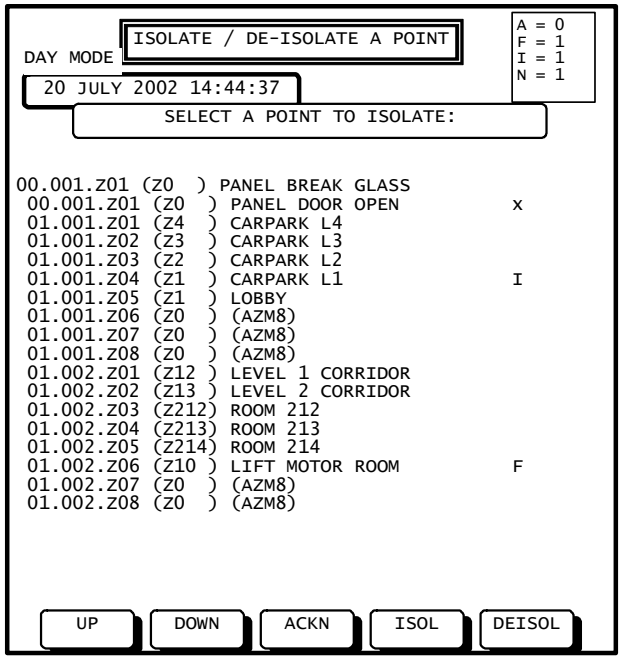

**Actions:**

- Use the **UP** and **DOWN** buttons to select the appropriate point and then press the **ISOL** button to isolate or the **DEISOL** button to de-isolate the point. If the point is isolated, an "I" will appear on the right hand side of the screen next to the point.

NOTE: Isolating or de-isolating in this screen will isolate/de-isolate **ALL** points within the zone

## 7.3.4.2 SERVICE MENU – ISOLATE – AZF LIST

This screen allows the operator to isolate or de-isolate a point.

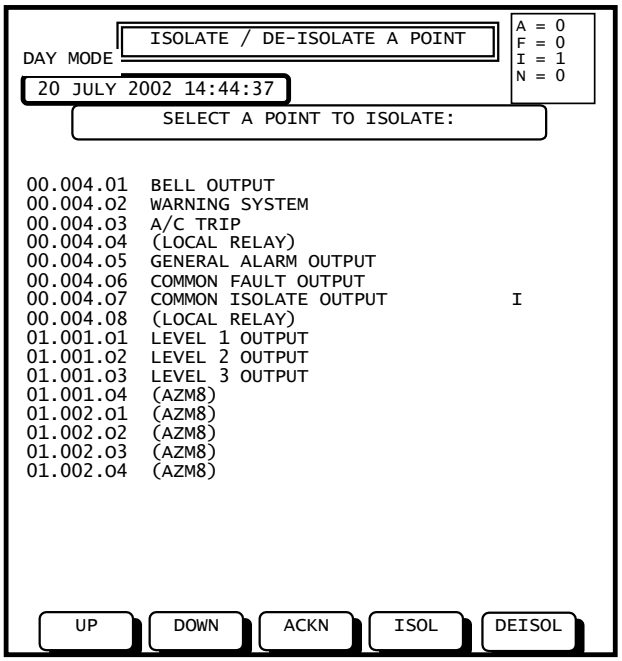



**Actions:**

- Use the **UP** and **DOWN** buttons to select the appropriate point and then press the **ISOL** button to isolate or the **DEISOL** button to de-isolate the point. If the point is isolated, an "I" will appear on the right hand side of the screen next to the point.

## 7.3.4.3 SERVICE MENU – ISOLATE – DOUT LIST

This screen allows the operator to isolate or de-isolate an output point.

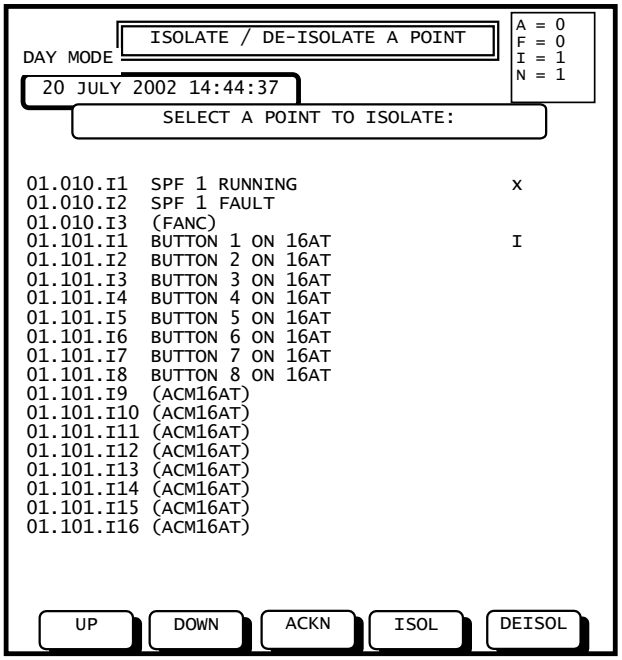



**Actions:**

- Use the **UP** and **DOWN** buttons to select the appropriate point and then press the **ISOL** button to isolate or the **DEISOL** button to de-isolate the point. If the point is isolated, an "I" will appear on the right hand side of the screen next to the point.

## 7.3.4.4 SERVICE MENU – ISOLATE – DIN LIST

This screen allows the operator to isolate or de-isolate an input point.

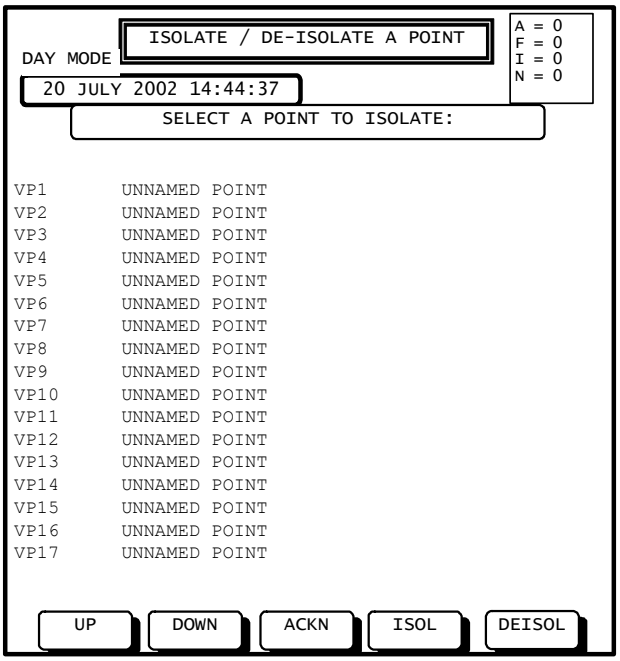



**Actions:**

- Use the **UP** and **DOWN** buttons to select the appropriate point and then press the **ISOL** button to isolate or the **DEISOL** button to de-isolate the point. If the point is isolated, an "I" will appear on the right hand side of the screen next to the point.

## 7.3.4.5 SERVICE MENU – ISOLATE – VIRTUAL POINT LIST

This screen allows the operator to isolate or de-isolate a virtual point.



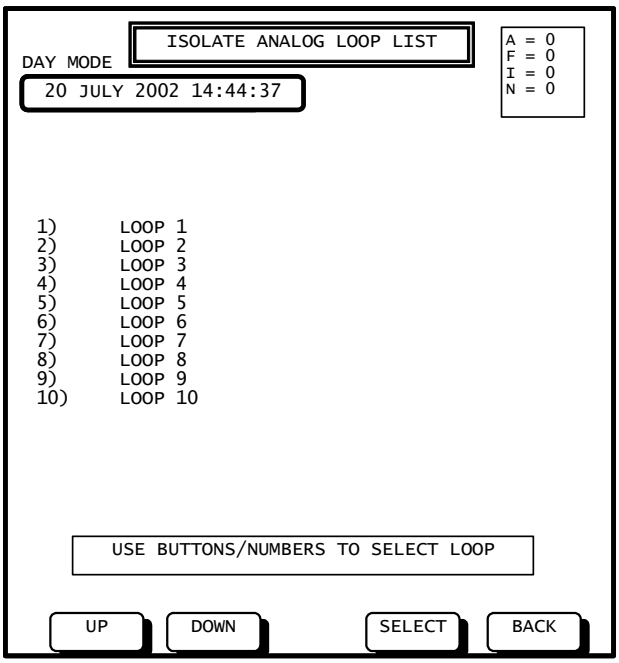

**Actions:**

- Use the **UP** and **DOWN** buttons to select the appropriate point and then press the **ISOL** button to isolate or the **DEISOL** button to de-isolate the point. If the point is isolated, an "I" will appear on the right hand side of the screen next to the point.

## 7.3.4.6 SERVICE MENU – ISOLATE – ANALOG LIST

This screen allows the operator to isolate or de-isolate an Analog addressable point.

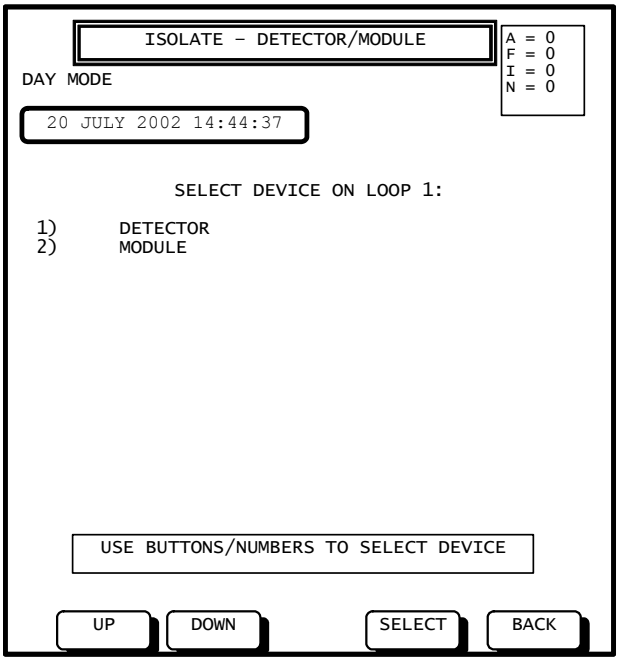
First you are prompted to select the required Analog addressable loop:




**Actions:**

- Use the **UP** and **DOWN** buttons to scroll through the Analog loop list.
- Use the **SELECT** button to select the loop to list.
- Alternatively press **1** through **9** (use '0' to select **10** ).

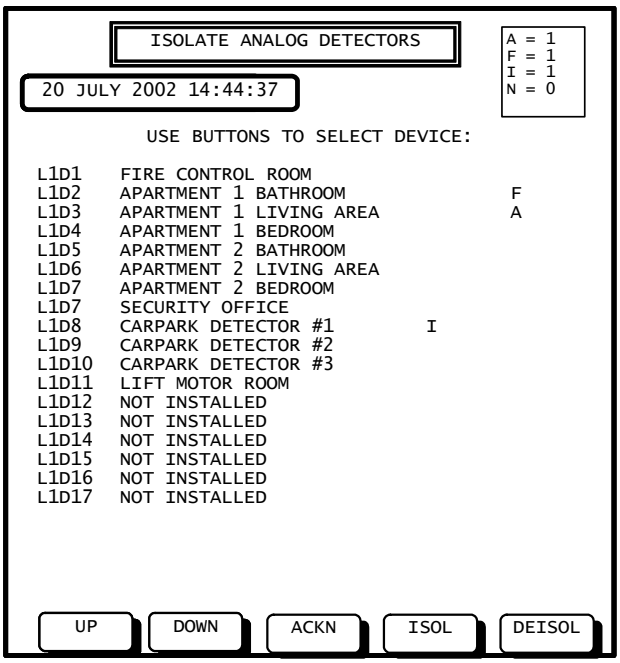
Once you have selected the loop you will be prompted to select Analog addressable detectors or modules as follows:




**Actions:**

- Use the **UP** and **DOWN** buttons to select option.
- Use the **SELECT** button to select the loop to list.

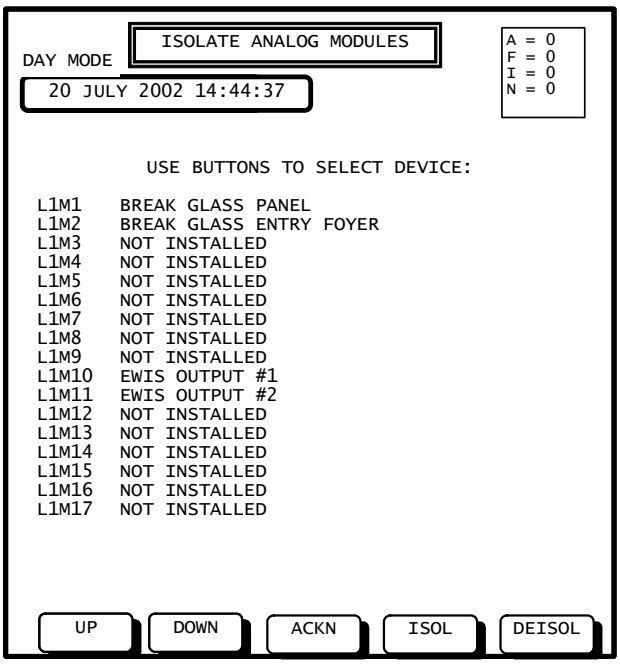
### 7.3.4.6.1 ISOLATE ANALOG DETECTORS




**Actions:**

- Use the **UP** and **DOWN** buttons to select the appropriate point and then press the **ISOL** button to isolate or the **DEISOL** button to de-isolate the point. If the point is isolated, an "I" will appear on the right hand side of the screen next to the point.

### 7.3.4.6.2 ISOLATE ANALOG MODULES




**Actions:**

- Use the **UP** and **DOWN** buttons to select the appropriate point and then press the **ISOL** button to isolate or the **DEISOL** button to de-isolate the point. If the point is isolated, an "I" will appear on the right hand side of the screen next to the point.

## 7.3.4.7 SERVICE MENU – ISOLATE – RANGE (ANALOG ONLY)

Follow the on-screen instructions. You will be prompted for the first Analog addressable point in the range and then the last point in the range. Pressing the **ISOL** or **DEISOL** buttons will isolate / de-isolate the selected range of points.

# 7.3.4.8 SERVICE MENU – ISOLATE – GROUP ISOLATE FROM POINT

**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.

Pressing the button (typically on an ACM16AT annunciator) 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 the isolate list is in alarm. Yellow = all points in isolate list are isolated.

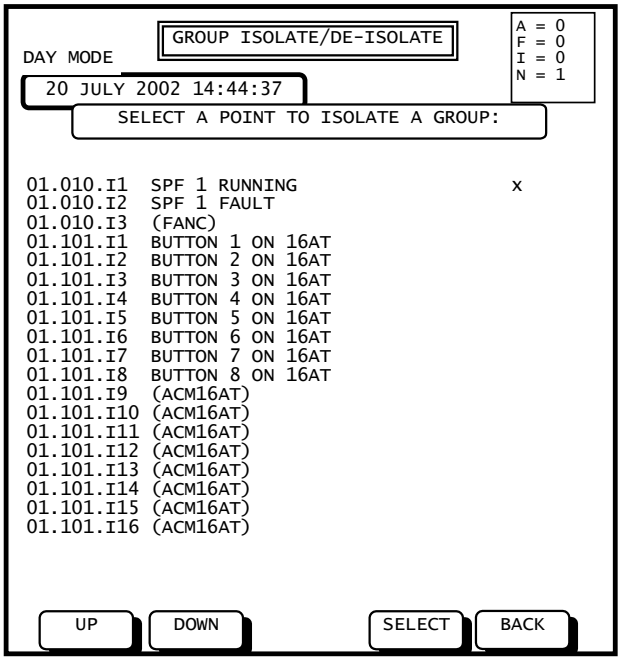
If the points are isolated by an ACM16AT press button action and then one of the points is de-isolated via the menus the next time the ACM16AT button is pressed it will ensure ALL points are isolated.

**Note: The annunciator button that is being used to initiate the isolate must be a non-latching button. i.e. 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.

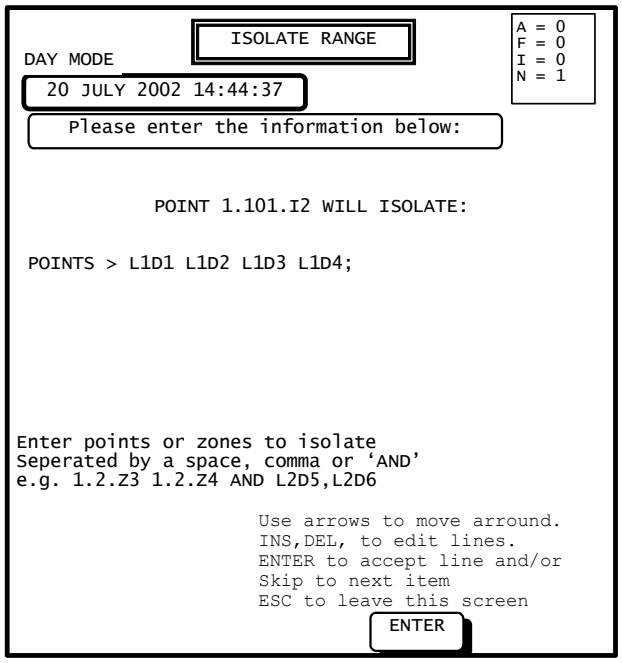
Firstly you must select the digital input used to trigger the isolation process from the list below.




**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 an external QWERTY keyboard to enter in the points that are to be isolated/de-isolated by the button press.

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

- Press **ENTER** once complete.

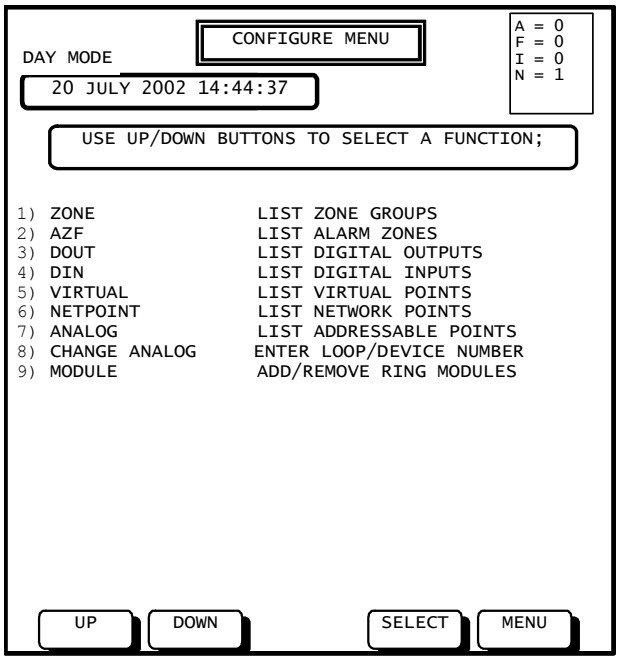
- Zxxx cannot be used when entering isolate groups using the keyboard.

## 7.3.4.9 SERVICE MENU – ISOLATE – NETWORK

This menu will allow the operator to perform a read status and then isolate zones and points programmed on remote nodes.

## 7.3.5 SERVICE MENU – CONFIG

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



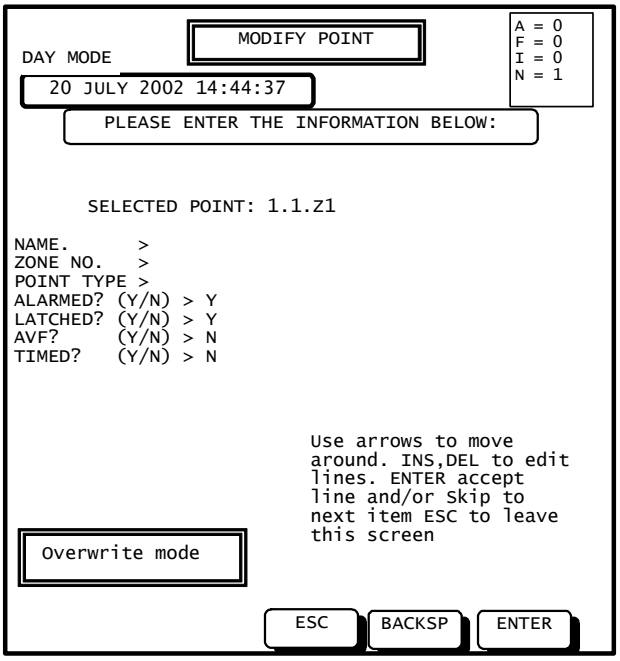

**Actions:**

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

| Selection | Action required |
|---|---|
| **1** | Will display the ZONE list as per page 33<br>Select the ZONE you wish to change then press the **Change** button to enter the modify zone screen |
| **2** | Will display the AZF list as per page 44<br>Select the AZF you wish to change then press the **Change** button to enter the modify point screen or the **Test** button to test a point. |
| **3** | Will display the Dout list as per page 45<br>Select the output you wish to change then press the **Change** button to enter the modify point screen or the **Test** button to test a point. |
| **4** | Will display the Din list as per page 46<br>Select the input you wish to change then press the **Change** button to enter the modify point screen |
| **5** | Will display the Virtual list as per page 47<br>Select the input you wish to change then press the **Change** button to enter the modify point screen |
| **6** | Will display the Netpoint list as per page 48<br>Select the input you wish to change then press the **Change** button to enter the modify point screen |
| **7** | Will display the Analog addressable loop list as per page 34<br>Select the loop and device you wish to change then press the **Change** button to enter the modify point screen |
| **8** | Will prompt for a specific loop and detector / module number and take you directly to the modify point screen |
| **9** | Will PROMPT YOU TO SELECT conventional ring or Analog addressable loop modules and take you directly to the Add/Remove Module screen. |

### 7.3.5.1.1 SERVICE MENU – CONFIG – 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.
- **ESC** will take you back to the previous screen
- If a zone number other than zero is entered, you will be prompted to enter a zone name. A previously named zone will automatically display the zone name.
- Once all entries have been completed 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:

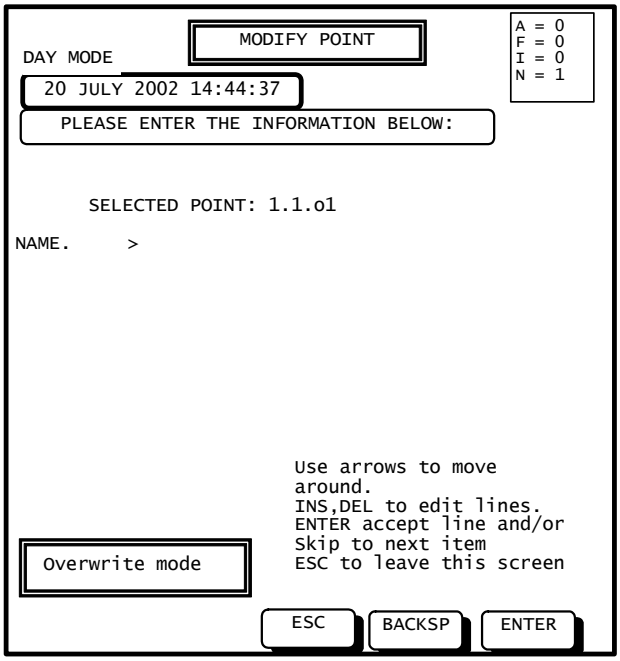
| Item | Description |
|---|---|
| NAME | This is the descriptor for the AZF e.g. "LIFT MOTOR ROOM L16". Up to 28 characters are allowed. |
| ZONE NUMBER | This is the Zone number assignment of the AZF. One AZF per Zone. Allowed Zone numbers are 1 to 999. An unnamed zone will prompt you for a zone name. |
| POINT TYPE | Type of point: e.g. FIRE, HEAT, SMOKE, FLAME, FSW, MCP, VMD, PSW, SPR. This information is purely for display purposes when in Fire Fighter's 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). |

**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.**

### 7.3.5.1.2 SERVICE MENU – CONFIG – DOUT

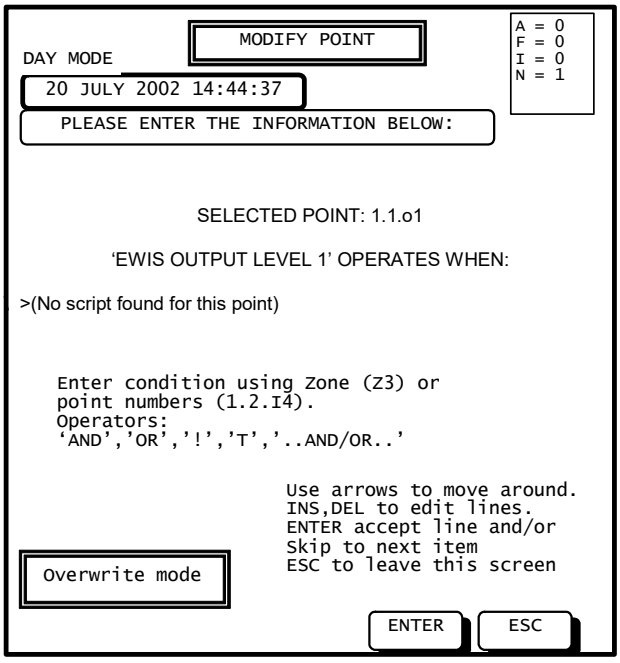
Once you have selected the Dout you wish to change you will be in the “Modify Point” screen as follows:




**Actions**:

- 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.
- **ESC** will take you back to the previous screen.

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




**Actions**:

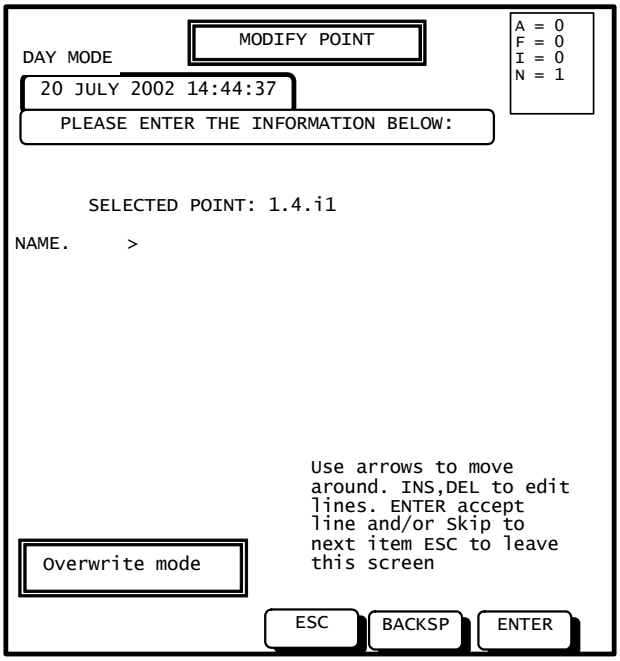
- Type in the control script you wish the point to be controlled by and press **ENTER**
- The AFP-2800/2802 will then check the syntax, report any errors and give you the option to accept Yes/No. Press YES or NO as appropriate. See page 81 for more information on entering control scripts.
- **ESC** will take you back to the previous screen.

**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.**

### 7.3.5.1.3 SERVICE MENU – CONFIG – DIN

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

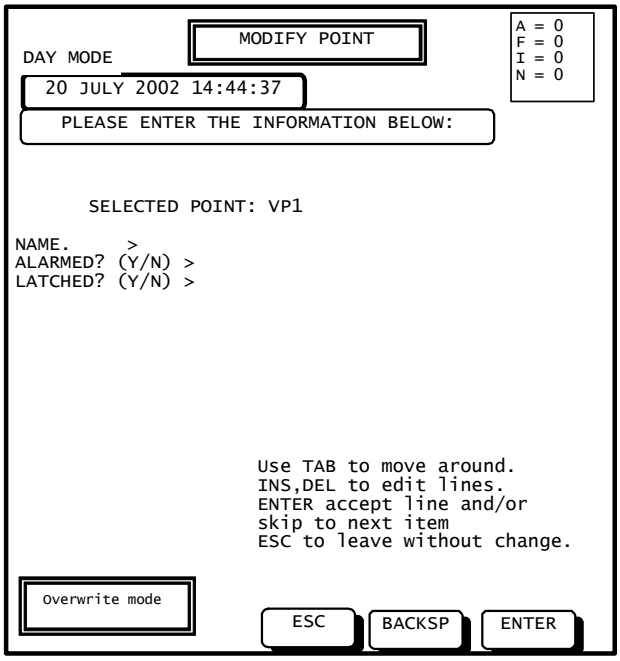



**Actions:**

- 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.
- **ESC** will take you back to the previous screen.

### 7.3.5.1.4 SERVICE MENU – CONFIG – VIRTUAL POINT LIST

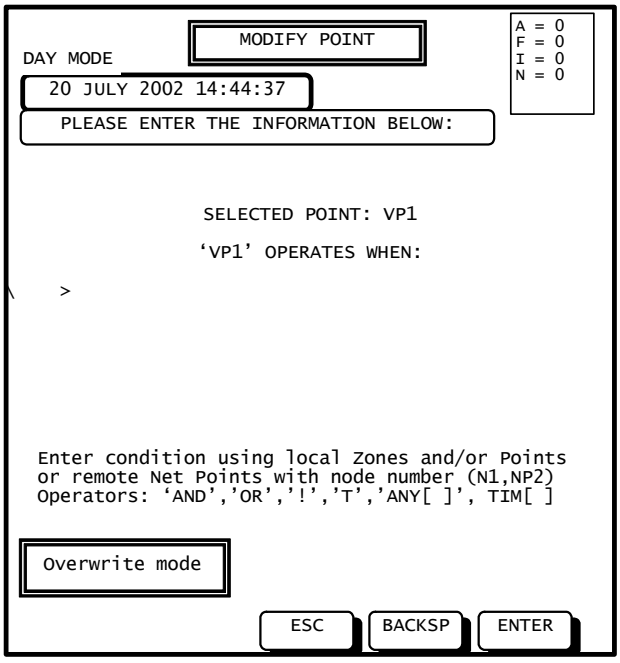
Once you have selected the Virtual Point you wish to change you will be in the “Modify Point” screen as follows:




**Actions**:

- 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.
- **ESC** will take you back to the previous screen.

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




**Actions**:

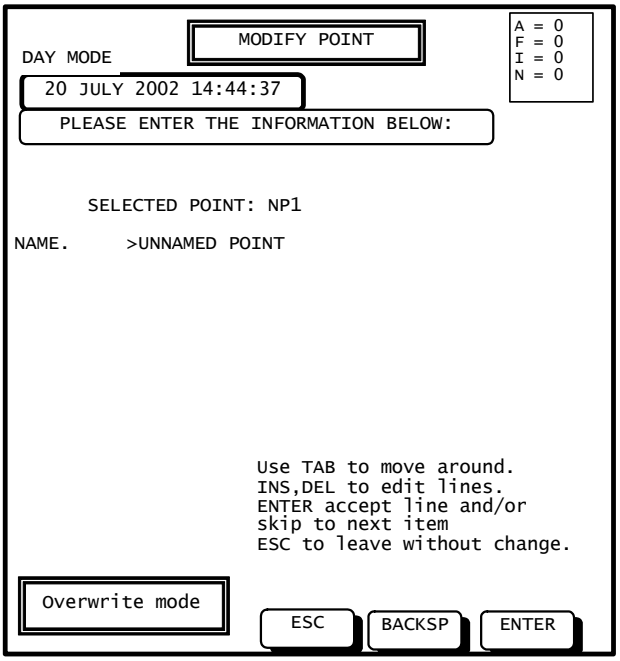
- Type in the control script you wish the point to be controlled by and press **ENTER**
- The AFP-2800/2802 will then check the syntax, report any errors and give you the option to accept Yes/No. Press YES or NO as appropriate. See page 90 for more information on entering control scripts.
- **ESC** will take you back to the previous screen.

**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.**

### 7.3.5.1.5 SERVICE MENU – CONFIG – NETPOINT LIST

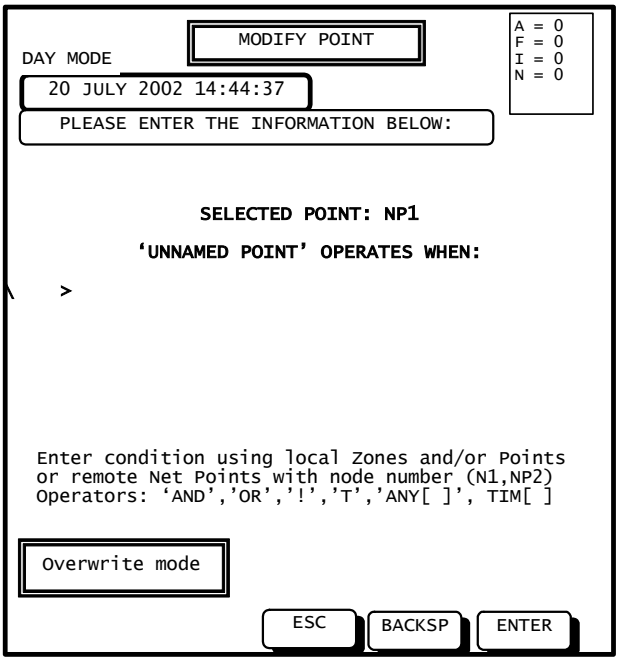
Once you have selected the Network Point you wish to change you will be in the “Modify Point” screen as follows:




**Actions**:

- 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.
- **ESC** will take you back to the previous screen.

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




**Actions**:

- Type in the control script you wish the point to be controlled by and press **ENTER**
- The AFP-2800/2802 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 90 for more information on entering control scripts.
- **ESC** will take you back to the previous screen.

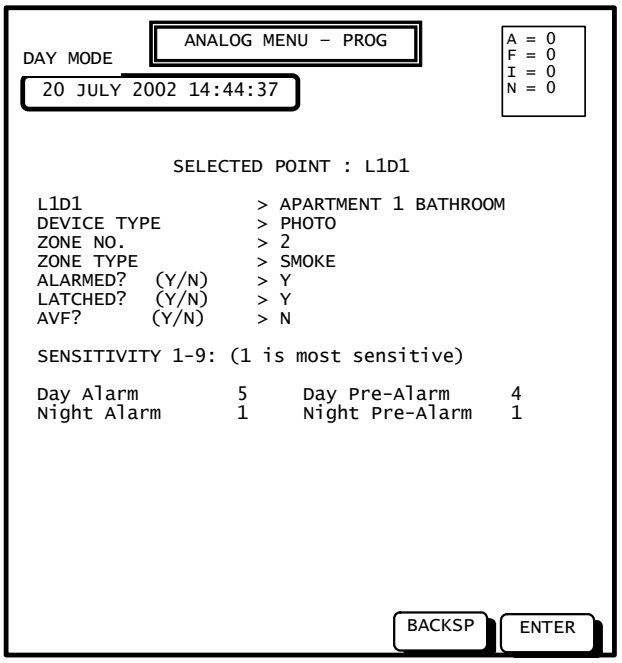
**Note: If the Selected Point already has data, the existing data will be displayed. This data may be modified by overwriting, or can be confirmed by just pressing the ENTER button for the field (using the soft or hard buttons, or the Enter key on the keyboard).**

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

### 7.3.5.1.6 SERVICE MENU – CONFIG – CHANGE – ANALOG POINT

Once you have selected an Analog addressable point from the list or entered directly, you will be on modify Analog point screen. This screen will be different depending on what type of Analog addressable point is selected. I.e. Detector, Input Module or Output Module.

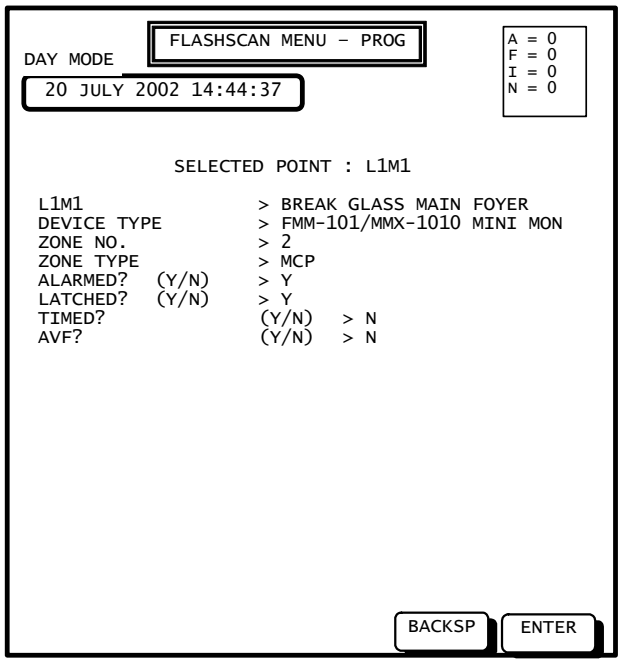
## Detectors:




**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 keypad 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.

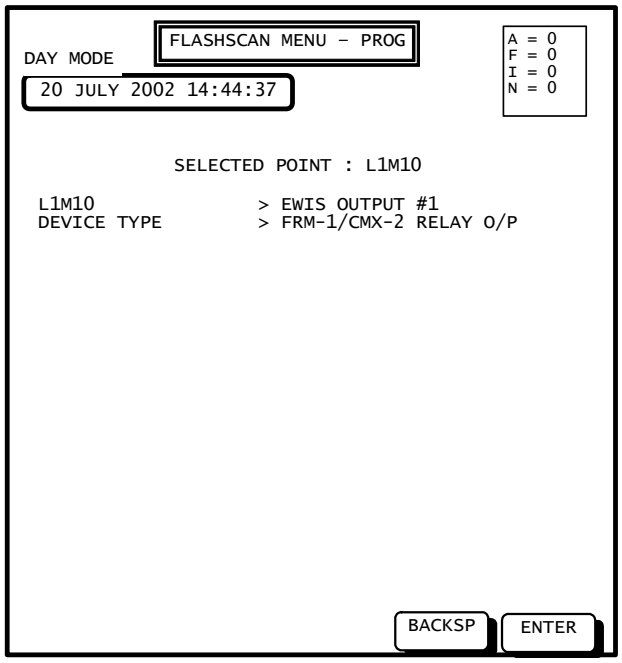
## Input modules:




**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 keypad 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 keypad 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 90 for more information on entering scripts.

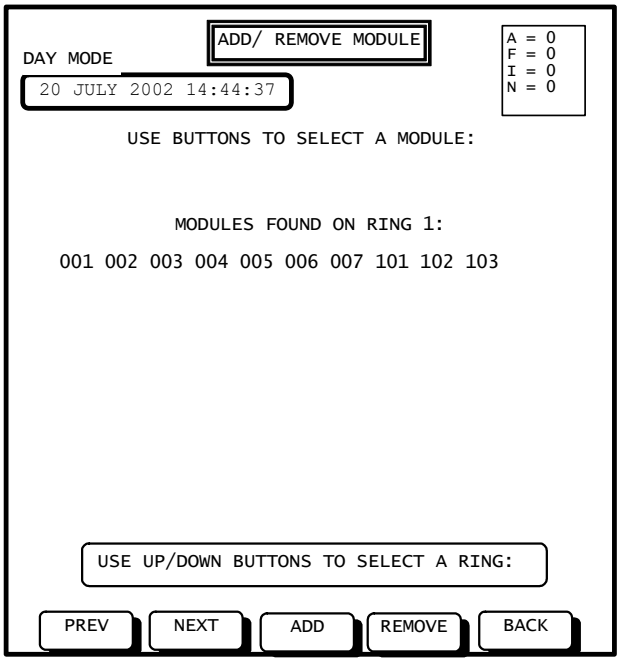
## 7.3.5.2 SERVICE MENU – CONFIG – MODULE (ADD/ REMOVE)

**Overview:**

This Config menu is used for adding and removing distributed field modules from the RS485 ring. Even though the AFP-2800/2802 auto-detects any 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 panel's memory.

**How to Add/Remove modules**




**Actions:**

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 be prompted to enter a module number to add.
- Then you will be prompted for a module type from the on screen list of 1-8 i.e. (FANC,AZM8, ACM16AT,ACM32,SCS8, LDM32, LCD80)
- The module has now been added.

## 7.3.6 SERVICE MENU – ANALOG

**Overview:**

The AFP-2800 can support up to 10 loops of Analog addressable devices using various protocols including the Notifier FlashScan™ protocol, which can support 159 detectors and 159 modules per loop.

The AFP-2802 can support up to 2 loops of Analog addressable devices using CLIP protocol, which can support 99 detectors and 99 modules per loop.

On power up, the AFP-2800/2802 programs the LCMs (Loop Control Modules) with the appropriate information for devices installed, and then the LCMs handle all the polling of the devices. The LCMs only report off normal conditions such as alarm, fault etc, to the CPU.

Therefore, if an LCM is for any reason powered down and re-powered, it must be re-programmed to be in synchronisation with the panel. The AFP-2800/2802 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 Analog menu option contains all functions specific to Analog addressable detectors and modules. Many of these features can be accessed from previously explained list menus and instructions will not be duplicated here.**

### 7.3.6.1 SERVICE MENU – ANALOG – LIST

This menu option will list all 10 Analog addressable 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 – List – Analog on page 34.

### 7.3.6.2 SERVICE MENU – ANALOG – STATUS

This menu option gives direct access to the read status screen of an Analog addressable 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 – List – Analog – Detectors – Status on page 36 or Service Menu – List – List – Analog – Modules – Status on Page 39

### 7.3.6.3 SERVICE MENU – ANALOG – CHANGE

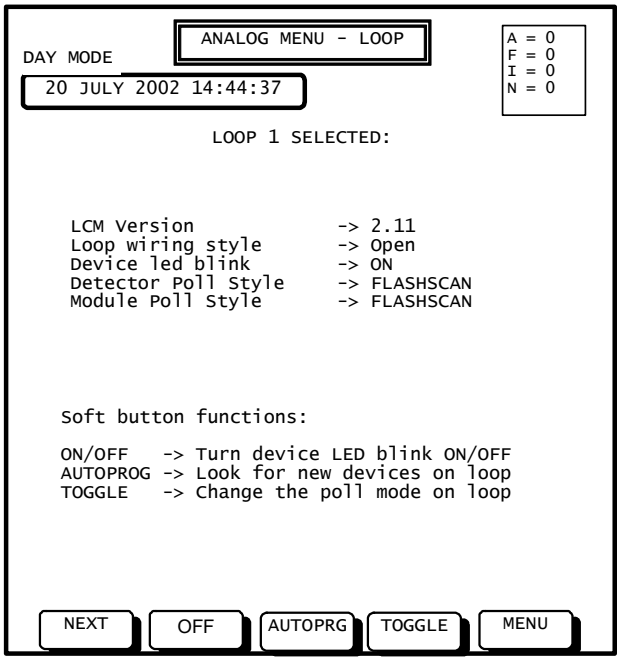
This menu option is direct access to the program / change point screen of an Analog addressable point. You will be prompted for a loop number and a detector or module number. You will then be taken directly to the program / change point screen for the point. Please refer to
Service Menu – List – List – Analog – Detectors – Change on page 37 or Service Menu – List – List – Analog – Modules – Change on page 41.

### 7.3.6.4 SERVICE MENU – ANALOG – REMOVE

To remove an Analog addressable detector or module from the panel's memory, it must be removed from the CPU memory and the LCM memory consecutively. This menu allows for the permanent removal of an Analog 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.

## 7.3.6.5 SERVICE MENU – ANALOG – LOOP

This menu item allows several diagnostic functions to be performed on the loops themselves. Firstly you will be prompted to enter a loop number. Then the screen will appear as follows:



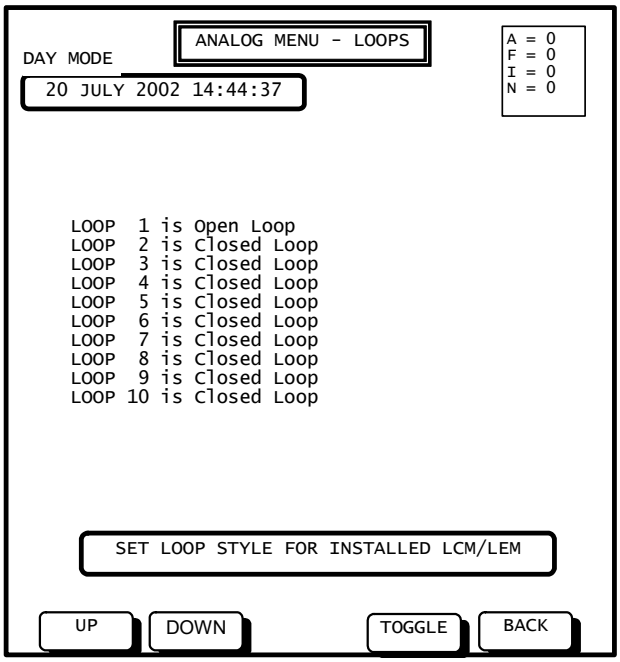

**Actions:**

- Use the **NEXT** buttons to move to the next loop.
- Pressing the **OFF** button will turn device blinking off on the selected loop. If device blinking is already off, the button will toggle to **ON**.
- Press the **AUOTPRG** button to Auto Program the selected loop. This will add any new detectors and modules placed on the loop.
- Pressing the **TOGGLE** button will change the loops polling mode. If the loop is in CLIP mode, the button will toggle it to FlashScan mode. If the loop is in FlashScan mode, the button will toggle it to CLIP mode. The toggle button is only available on the AFP-2800. AFP-2802 can only operate in CLIP mode
- Pressing the **MENU** button will return you to the service menu.

**Note: Applicable to V4.xx and below firmware**
**If the panel is powered down all loops will initialise with led blinking on. Where required, led blinking needs to be turned off manually after a power up; the panel will not save the state of led blink after a cold reboot.**

## 7.3.6.6 SERVICE MENU – ANALOG – ANALOG

This menu item allows you to set the Loop styles to either Open or Closed loops. The screen will appear as follows:

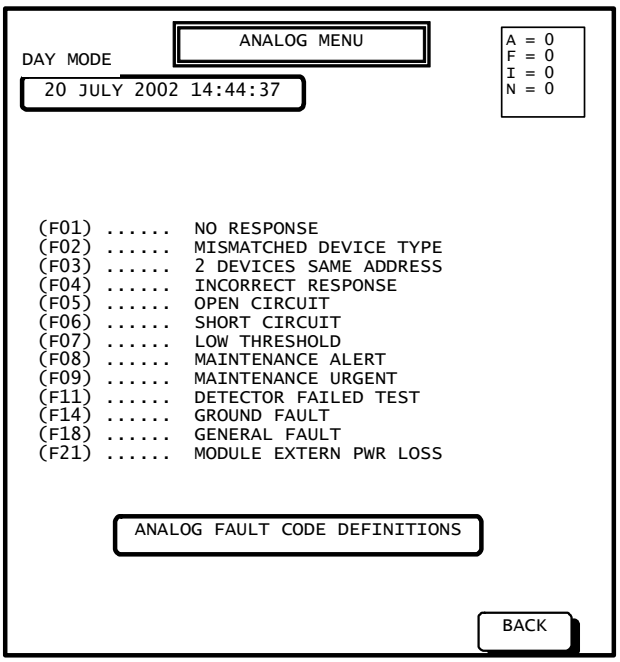



**Actions:**

- Use the **UP** / **DOWN** buttons to move to the next loop.
- Pressing the **TOGGLE** button will change the loop style for the selected loop between Open and Closed.
- Pressing the **BACK** button will return you to the previous menu.

# 7.3.6.7 SERVICE MENU – ANALOG – FAULT

This menu displays the Analog Fault Codes for reference. A list of the fault codes and their description can be found on page 110.The screen will appear as follows:

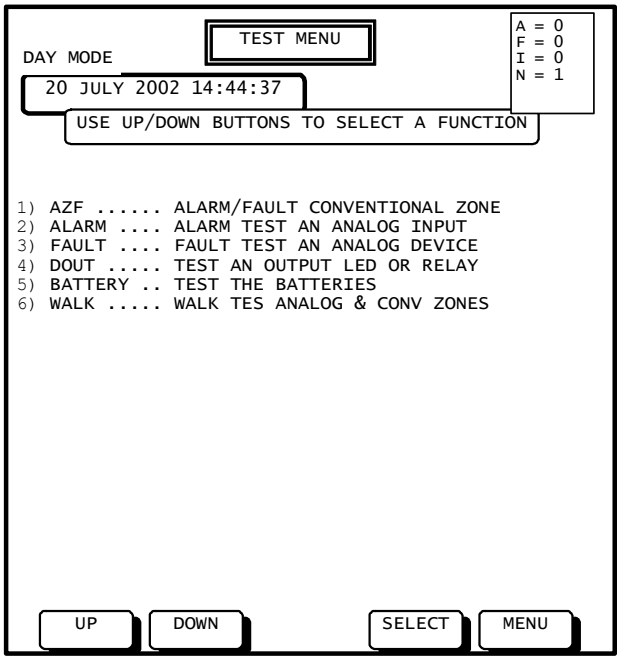



**Actions:**

- Pressing the **BACK** button will return you to the previous menu.

## 7.3.6.8 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, perform a manual battery capacity test or perform a 'walk' test.



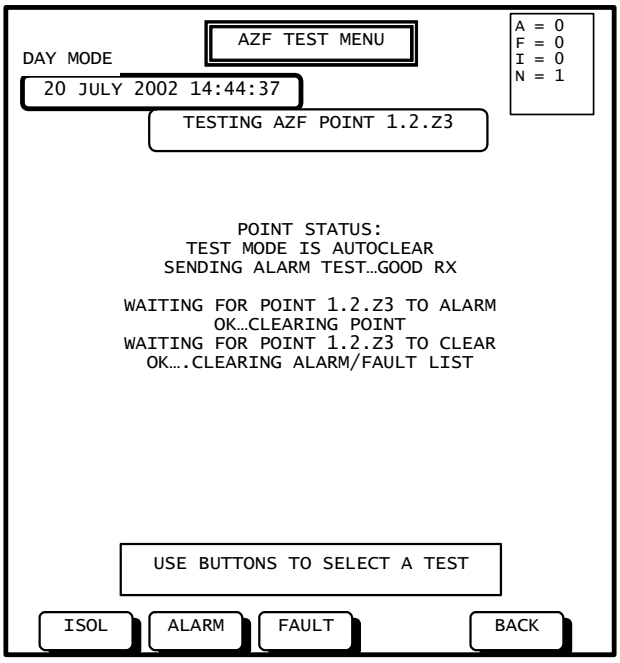

**Actions:**

- 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 |
|---|---|
| **1** | Will take you to the AZF List – Where you can select an AZF from the AZF list as per page 44 and then press the **TEST** button to enter AZF Test Mode. |
| **2** | Perform an alarm test on an Analog addressable point. You will be prompted for loop number and detector or module number. |
| **3** | Perform a fault test on an Analog addressable point. You will be prompted for loop number and detector or module number. |
| **4** | Will take you to the Digital Output List – Where you can select an output from the DOUT list as per page 45 and then press the **TEST** button to enter DOUT Test Mode. |
| **5** | Will perform a battery capacity test which will last 15 seconds (Not available in NZ mode). Note that in NZ mode a battery fault on the PSI will latch on for up to 1 hour. |
| **6** | Will take you to the 'Walk Test Output Target List' where you can select an output for the Walk Test. This output will activate for 2 seconds whenever a device is tested during the walk test. You will then be asked to select the Group Zone or Loop you wish to test. You are then able to remove individual devices from the walk test if you wish, or simply start the walk test. Throughout the duration of the Walk Test, the 'FAULT', 'EXT BELL ISOLATE' and "WARNING SYSTEM ISOLATE" front panel LEDs will pulse on and off. |

## 7.3.6.9 SERVICE MENU – TEST – ALARM/FAULT – AZF

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




**Actions:**

- 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).

- All tests will require the operator to manually reset the alarm or fault after the test.
- If the alarm test or 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.**

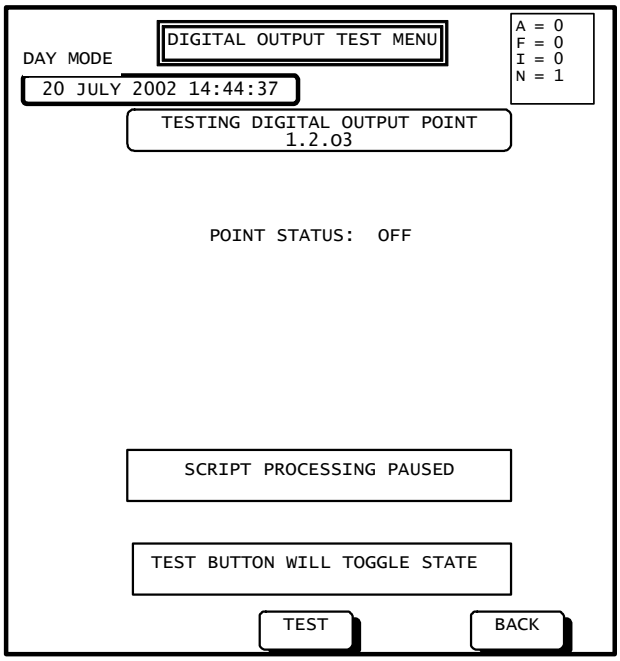
## 7.3.6.10 SERVICE MENU – TEST – ALARM/FAULT – ANALOG

Will prompt the operator to enter the device address to be fault or alarm tested.

**Note: The Analog tests do not generate a real alarm or fault condition at the device. A successful test is not an indication of the device's ability to report a real alarm condition, its only an indication of proper communication between the LCM and FIP.**

## 7.3.6.11 SERVICE MENU – TEST – DOUT

In this screen a digital output may be tested to verify its ability to operate when required.




**Actions:**

- 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. Scripts 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.**

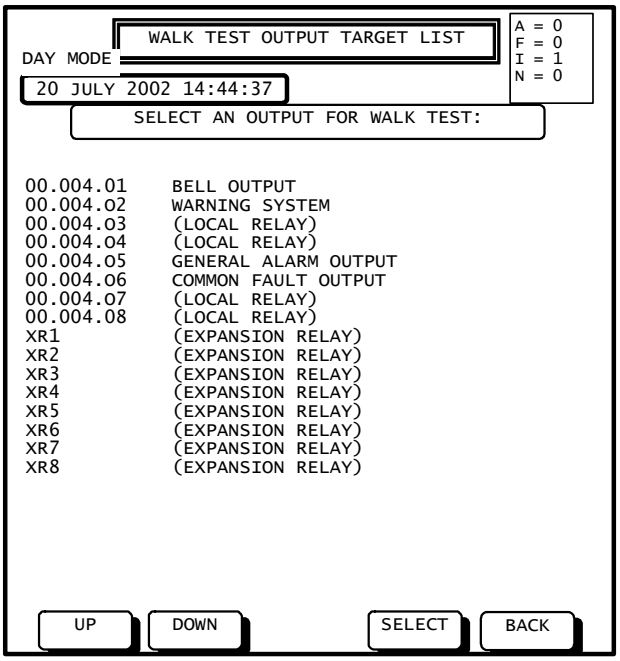
## 7.3.6.12 SERVICE MENU – TEST – BATTERY

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.**

## 7.3.6.13 SERVICE MENU – TEST – WALK

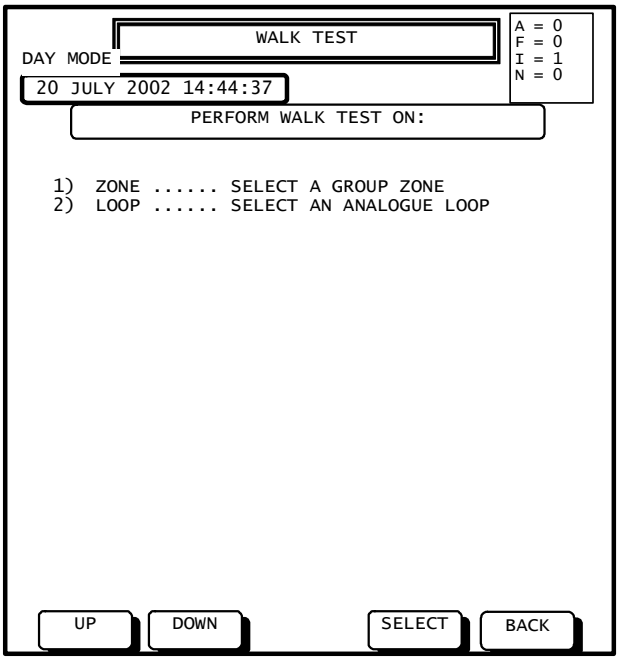
Selecting 'Walk' will take you to the 'Walk Test Output Target List' where you can select an output for the Walk Test. (Note: This output will activate for approximately 2 seconds whenever a device is tested during the walk test). Throughout the duration of the Walk Test, the 'FAULT', 'EXT BELL ISOLATE' and "WARNING SYSTEM ISOLATE" front panel LEDs will pulse on and off. This screen will appear as follows:




**Actions:**

- Use the **UP** and **DOWN** buttons to select the appropriate point and then press the **SELECT** button to select the output point.

After selecting the walk test output, the following screen will appear. You must then select the Group Zone or Loop you wish to test.




**Actions:**

- Use the **UP** and **DOWN** buttons to select the appropriate menu item and then press the **SELECT** button to select either a group zone or an Analog loop to be walk tested.

After selecting either a group zone or loop, you are taken to the respective group zone or loop walk test screen showing all the input points in the zone or loop that can be "walk tested". From this screen, you are able to remove individual devices from the walk test if you wish, or simply start the walk test by pressing the **START** button.

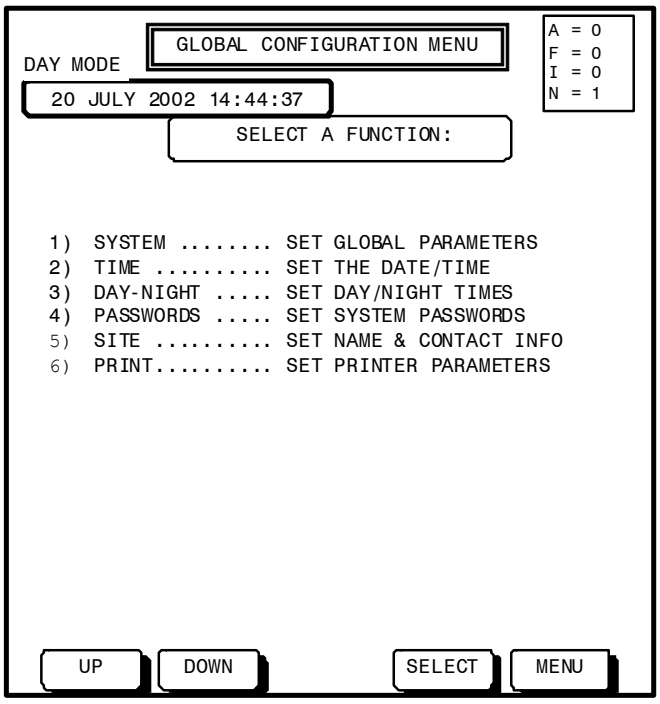
All points to be tested are automatically isolated during the test.

If a point is in the walk test list, the FIP will treat it as inactive in scripts. The FIP will also bypass AVF for the point. As the user walks around and activates the inputs, the FIP will mark the point as active and record the event in history. As each point in the walk test list is activated a user selectable output will turn on for 2 seconds. If any point which is not in the walk test list goes into alarm, the panel will terminate the walk test and go back to normal operation. The same applies if no new walk test events have been received for 30 minutes after starting the walk test.

Once the START button is pressed, you must manually put each point under test into alarm, one by one. They will all remain in alarm until the test is stopped. As each one goes into alarm, the Walk Test Output Target selected previously will activate for approximately 2 seconds. At the conclusion of the test, the points list on the display will indicate each device tested that has passed the alarm test.

## 7.3.7 SERVICE MENU – GLOBAL

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



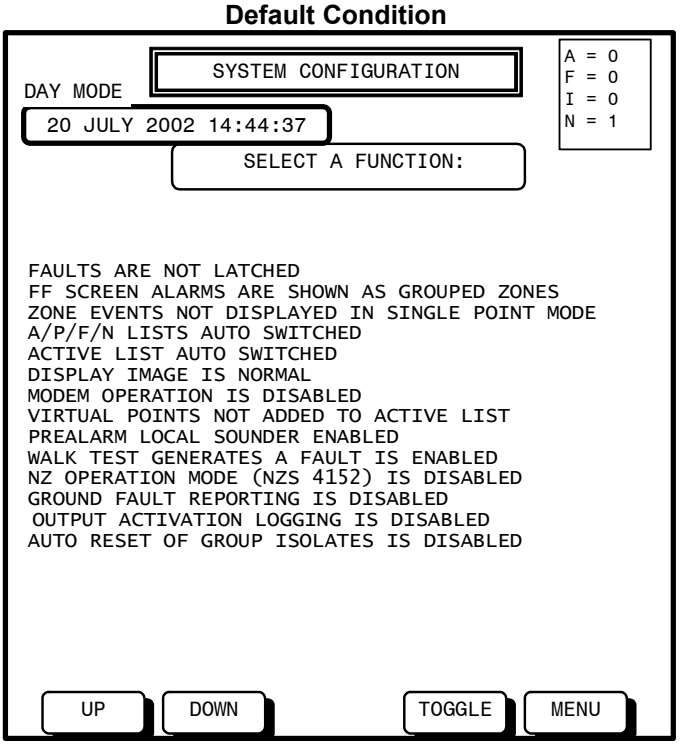

**Actions:**

- 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 **6** from the numeric keypad)
- Press the **MENU** button to return to the Service Menu screen.

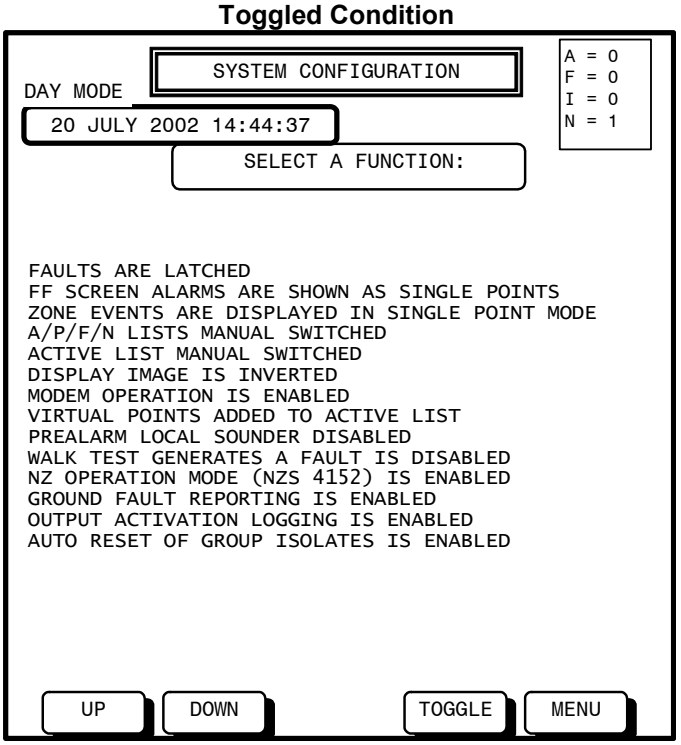
## 7.3.7.1 SERVICE MENU – GLOBAL – SYSTEM

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.

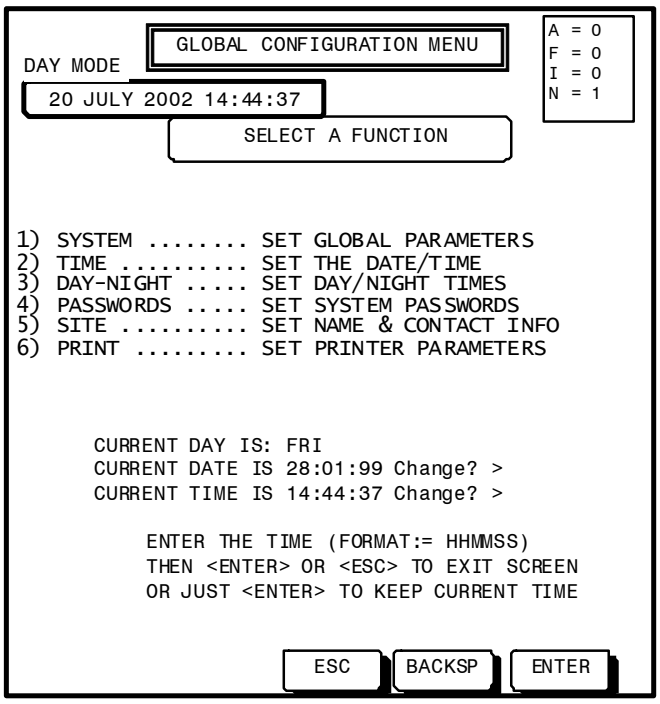
**Explanation of Global Configuration Options:**

| Item | Description |
|---|---|
| **Faults Latched / Non Latched** | Determines if faults will self clear or remain latched until a manual reset. |
| **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. When in group zone mode, a reset or isolate of a point mapped to a zone will isolate / reset all points in the zone. When networking with a NCA-2, the system must not be in group zone mode. |
| **Zone events are displayed in single point mode** | In single point mode, this option allows the user to choose if the zone in alarm is also displayed. I.e. Two events will be displayed for one device in alarm – the point in alarm and zone that the point is mapped to. When networking with a NCA-2, the system can be in either mode |
| **A/P/F/N Lists Manual Switched or auto switched** | This setting determines if the panel should automatically jump to the alarm, pre-alarm, fault or non-alarm list if an alarm, pre-alarm, fault or non-alarm event comes in and there are no alarms on the system. The panel will jump to the event screen with the highest priority. The priority order is Alarm ➔ Pre-alarm ➔ Fault ➔ Non-alarm. |
| **Active List Switching** | This disables auto switching of non-alarms (actives) if required. |
| **Display image is normal or inverted** | This setting determines if the LCD display is black on white or white on black (inverse). |
| **Modem** | Determines if the panel will support terminal mode using the PCI. Modem operation must be enabled to use terminal mode with the PC Interface. |

| | |
|---|---|
| **Virtual points are added / not added to Non-alarm list** | This setting determines if active Virtual Points are added to the Non-alarm list. |
| **Pre alarm local sounder is enabled / disabled** | Enables or disables the local sounder in the event of a pre-alarm. |
| **NZ operation mode (NZS 4152) is disabled / enabled** | This option toggles panel operation mode between AS 4428 and NZS 4152 |
| **Ground fault reporting is disabled / enabled** | This option enables/disables ground fault reporting on the panel (requires IFS-714 or IFS-724 FIM). |
| **Output Activation Logging is disabled / enabled** | Logs relay output state changes to the history (ACTIVE/ACTIVE CLEARED) |
| **Auto Reset of Group Isolates is disabled / enabled** | Enabling this option will force the panel to perform an automatic device or zone reset prior to de-isolating the isolated device or zone through isolate groups. Manual de-isolation through the isolate menus is not affected by this option and will not perform a reset prior to de-isolating. This function can be used to ensure the device or zone latching alarm state is cleared prior to an automatic de-isolation using timer scripts.<br>In V5 and up firmware combined with increased timer limit of 28800 seconds, isolated zones or devices can be de-isolated automatically up to 8 hours after isolation by using a VP as isolate group triggers.<br><br>E.g. VP3 can be used as the trigger for isolate group to de-isolate Z1<br>**Trigger** **Points to Isolate**<br>**ISOLM.1** 1.101.I1 Z1; - 1.101.I1 is a 16at button which isolates Z1<br>**ISOLM.2** VP3 Z1; - When VP3 activates, Z1 will be de-isolated<br>**VP3** = IZ1 AND T1200; - VP3 activates 1200s after Z1 is isolated |

## 7.3.7.2 SERVICE MENU – GLOBAL –TIME

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



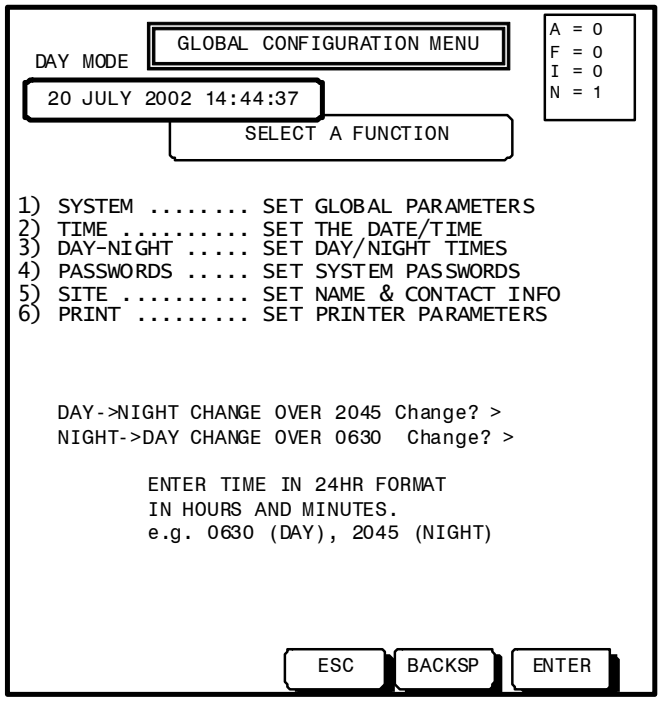

**Actions:**

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

## 7.3.7.3 SERVICE MENU – GLOBAL – DAY/NIGHT

Each Analog addressable 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 e.g. 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 e.g. 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: NP1000 can be used to force the panel into night mode. On V5.02 and above firmware if NP1000 is active, the panel will be forced to operate in night mode and stays in night mode as long as NP1000 is active. This feature allows the programmer to use scripting for switching between day/night modes.**

## 7.3.7.4 SERVICE MENU – GLOBAL – PASSWORDS

**Overview:**

The AFP-2800/2802 supports a total of 15 passwords. Passwords consist of 3 different levels. Each level can have 5 user passwords (refer to 97 for a full description of password access levels).

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.

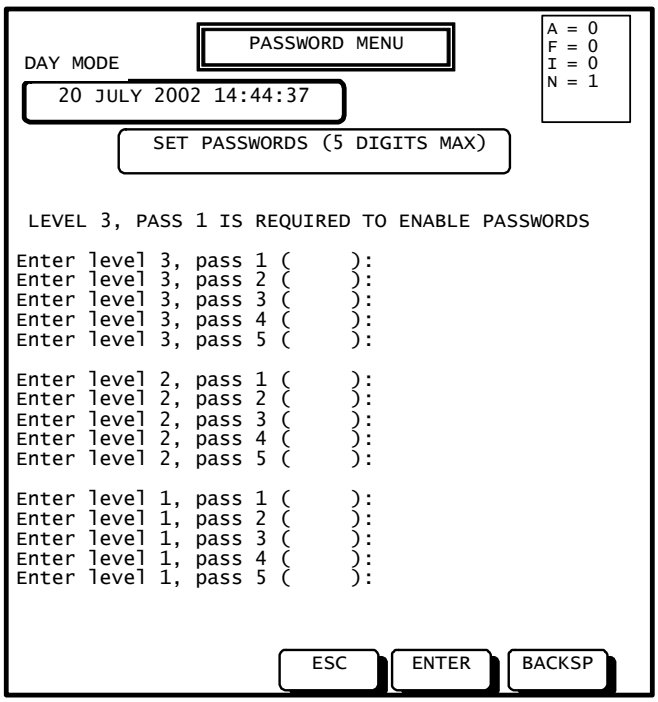
Only level 3 (highest) has the ability to change the passwords on the system.

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.
- To clear a password, simply enter a '0' then press the **ENTER** button

**Forgotten Passwords:**

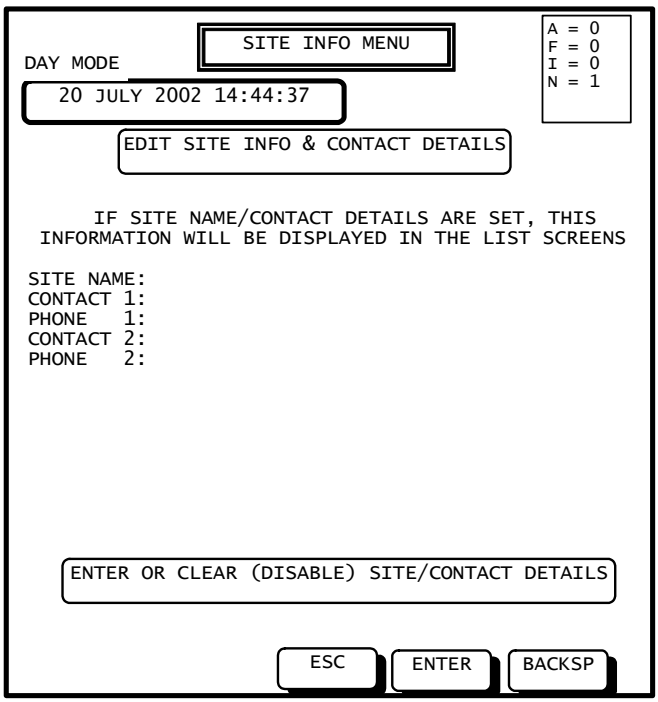
All passwords can be viewed and changed on-site by Level 3 access.

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. 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 in writing.

Please contact Notifier technical support for more information on releasing passwords.

## 7.3.7.5 SERVICE MENU – GLOBAL – SITE

This screen is used to enter name and contact details that are displayed in the Fire Fighters interface. Up to 2 contact names and phone numbers may be entered.



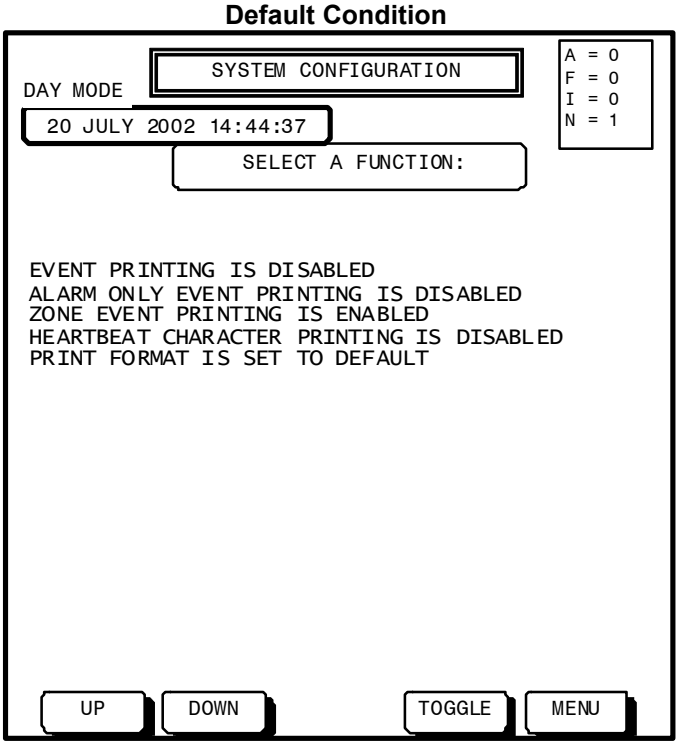

**Actions:**

- Use the external keyboard to enter details directly then press the **ENTER** button. Alternatively, the PC Interface can be used to download the site/contact details.
- The current details (if they have been previously entered) for the site and each contact are shown on the screen, if you do not wish to change them, simply press the **ENTER** button.

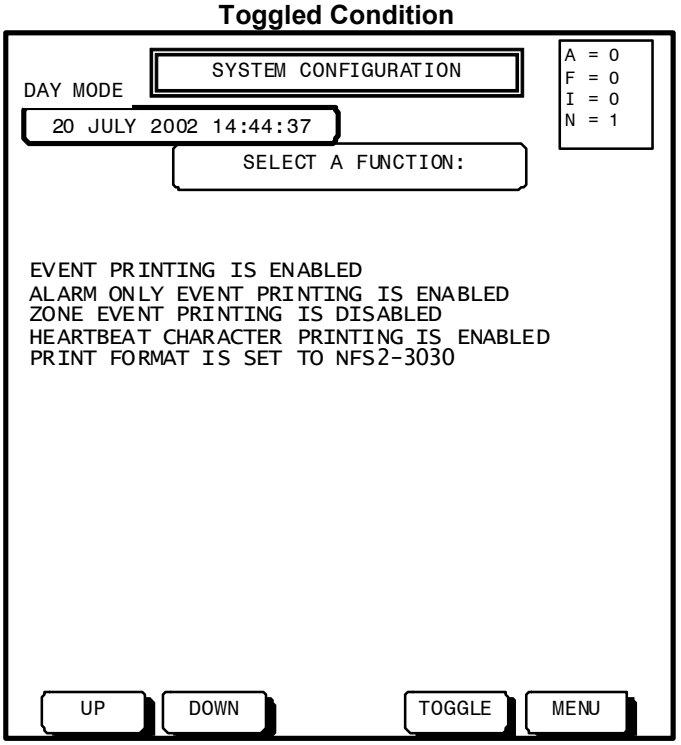
## 7.3.7.6 SERVICE MENU – GLOBAL – PRINT

This page displays system global printer port 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.

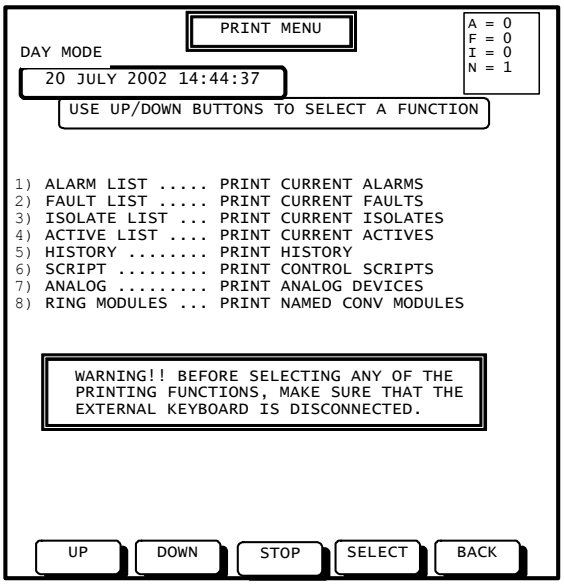
**Explanation of Global Configuration Options:**

| Item | Description |
|---|---|
| **Event Printing** | Determines if the panel should print events to the printer port. |
| **Alarm Only Printing** | This setting determines if the panel should only print alarm events or all events. |
| **Zone Event Printing** | This setting determines if the panel should print zone events as well as single point events. If this option is enabled, the panel will print two events for a single alarm condition (zone alarm and point alarm). |
| **Heartbeat Character** | Enable this option to print a Carriage Return character every 10 seconds. This feature can be used to monitor the panel and communications link by a remote system such as a BMS. |
| **Printing Format** | Determines the panel printer port output format. Default setting should be used unless instructed by Notifier technicians. The non default format is the same as the Notifier NFS2-3030 fire panel format and should only be used in conjunction with the Fieldserver MODBUS gateway. The NFS2-3030 format does not print all events and should not be used as the standard printing format. |

## 7.3.7.7 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 76 for enabling / disabling event printing options.
- Please refer to page 116 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.

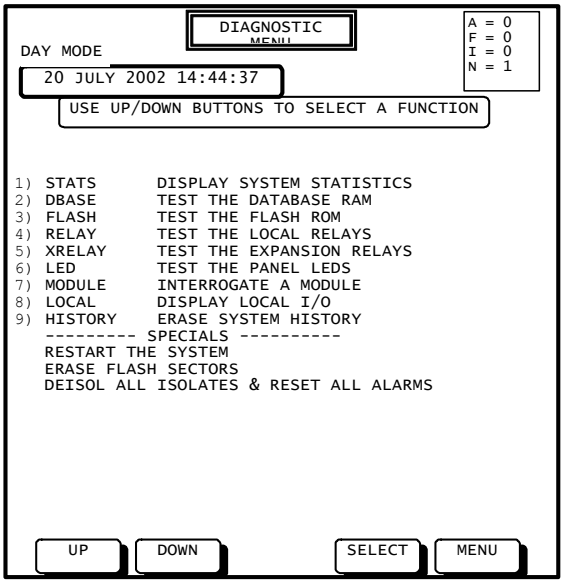
**Warning!! Before selecting any of the printing functions, make sure that the external keyboard is disconnected or the panel may re-boot**

| 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:<br>• All Alarm in Ascending Date Order.<br>• All Faults in Ascending Date Order.<br>• All Isolates in Ascending Date Order.<br>• All Active events in Ascending Date Order.<br>• All history events starting from a selected date. |
| **Scripts** | Prints all output points which are operated by scripts. |
| **Analog** | Prints all installed Analog addressable points. This option also prints the % compensation and maximum value reached since last reset for Analog detectors. |
| **Ring Modules** | Prints all installed modules on rings 1 & 2. |

## 7.3.8 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.

## 7.3.8.1 SERVICE MENU – DIAGNOSTICS – STATS

This selection will display the following:

| Item | Description |
|---|---|
| Code & Panel Versions | Current Version Of Code In CPU, FIM, LIM, NIM |
| Config last modified on | Date of last configuration change |
| No Of Rings | No Of rings fitted to the system |
| No Of Field Modules | Total Number Of Conventional Field Modules Found On The System |
| No Of Analog Devices | Total number of Analog loo[p devices found on the system |
| No Of Named Points | No of points which have been assigned names |
| No Of Controlled Outputs | Number of Dout points that have control scripts written for them |
| CRC | Checksum values of code and configuration |

Press the **BACK** button to return to the service menu

## 7.3.8.2 SERVICE MENU – DIAGNOSTICS – DBASE

Performs a test of Database RAM, this will clear all database information etc. The system will take several seconds to re-acquire all system information but will not destroy any configuration information.

## 7.3.8.3 SERVICE MENU – DIAGNOSTICS – FLASH

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

## 7.3.8.4 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.

## 7.3.8.5 SERVICE MENU – DIAGNOSTICS – XRELAY

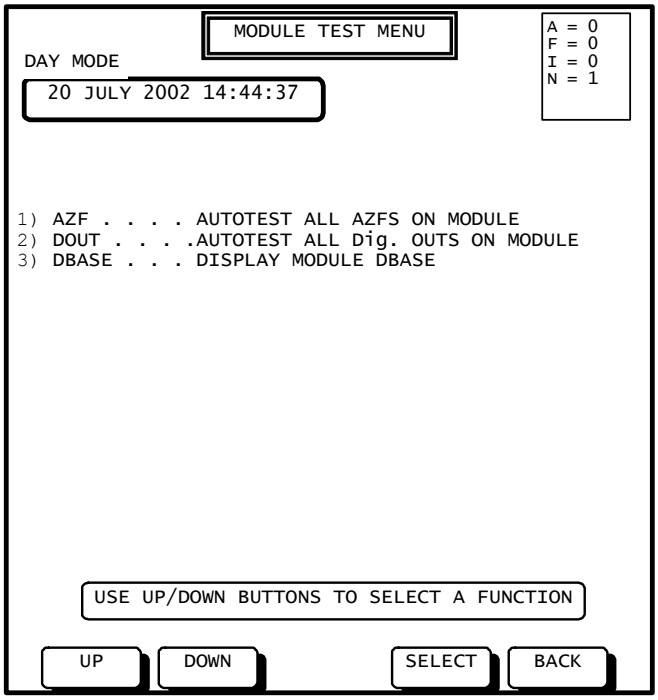
This mode will test the correct operation of expansion relays within the panel by cycling through them one at a time. Pressing any button stops the test.

## 7.3.8.6 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.

## 7.3.8.7 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 **BACK** 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.<br>Press the **SERVICE MENU** button to exit. |
| DBASE | You will be prompted to enter a ring number or a module number.<br>The panel will then display LIVE module raw data for use by trained Notifier engineers only. |

### 7.3.8.8 SERVICE MENU – DIAGNOSTICS – LOCAL

This command will display raw local data for use by trained Notifier engineers only.

### 7.3.8.9 SERVICE MENU – DIAGNOSTICS – HISTORY

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

### 7.3.8.10 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. A Warm reboot will not reboot the FIM, LIM, NIM or LCM modules. To reboot the entire system, disconnect batteries and remove power to the panel for at least 10 seconds.**

### 7.3.8.11 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.

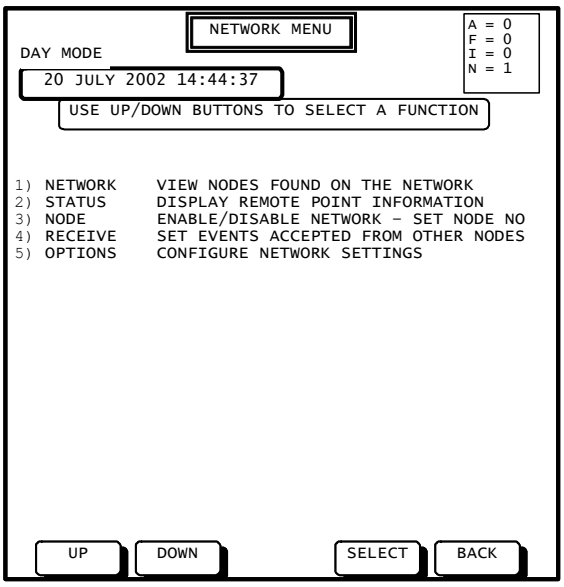
### 7.3.8.12 SERVICE MENU – DIAGNOSTICS – DEISOL ALL ISOLATES & RESET ALL ALARMS

This command will reset all alarms and de-isolate all isolated points on the panel.

## 7.3.9 SERVICE MENU – NETWORK

**Note: AFP-2802 does not support networking. The rest of this section only applies to the AFP-2800 FIP.**

This menu is used to enter the network operating parameters and display network information for the panel. Networking is only available on panels with V3.xx or higher firmware version.

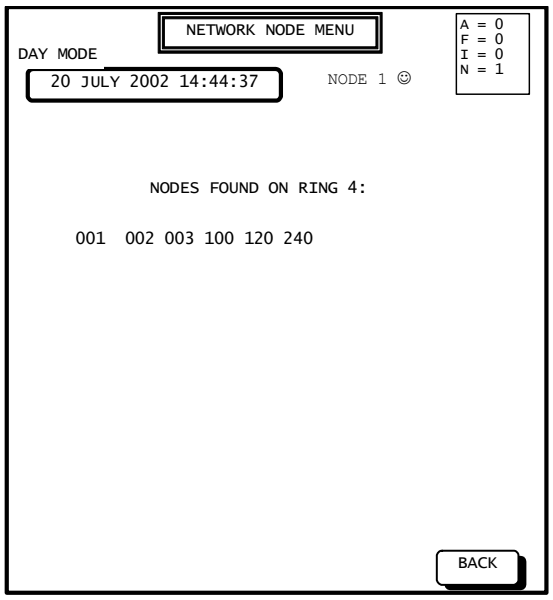



**Actions:**

- 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 **BACK** button to return to the Service Menu screen.

### 7.3.9.1 SERVICE MENU – NETWORK – NETWORK

This option will display a list of nodes found on the network. The node list is updated automatically and displays the active nodes on the network




**Actions:**

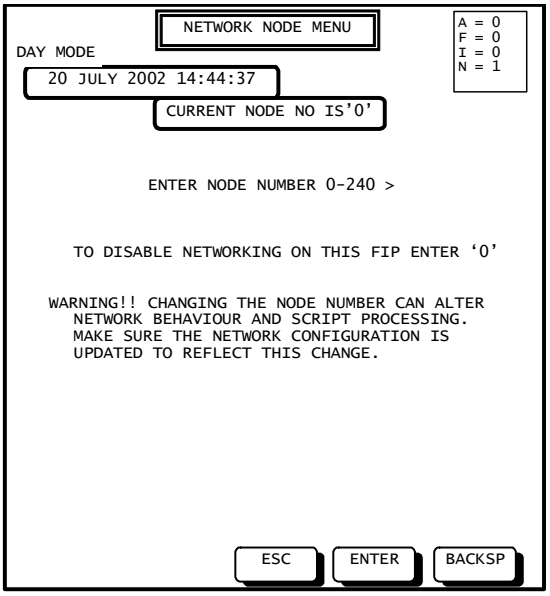
- Press the **BACK** button to return to the Service Menu screen.

### 7.3.9.2 SERVICE MENU – NETWORK – STATUS

This menu will allow the operator to perform a read status on zones and points programmed on a remote node.

## 7.3.9.3 SERVICE MENU – NETWORK – NODE

This menu allows you to set the network address and send/receive network parameters for the panel.

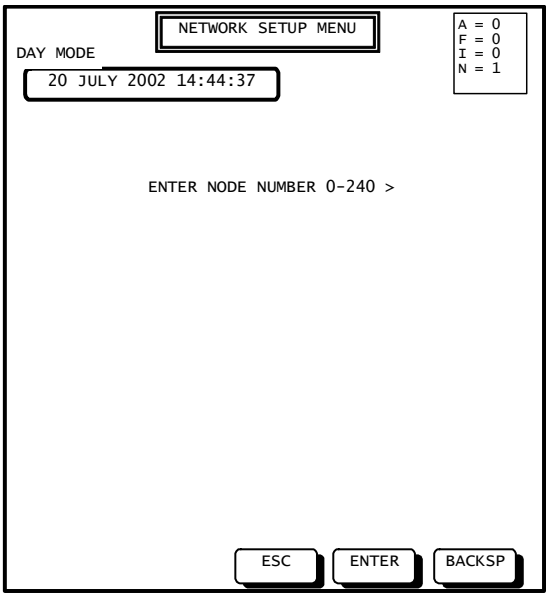



**Actions:**

- Follow the on screen prompts to enter a node number. To remove the panel from the network, enter Node 0.
- If a non-zero node number is entered, you will be further prompted to enter if you want the panel to transmit events to the rest of the network **YES** or to receive network events only without transmitting them (mimic panel mode) **NO**.

## 7.3.9.4 SERVICE MENU – NETWORK – RECEIVE

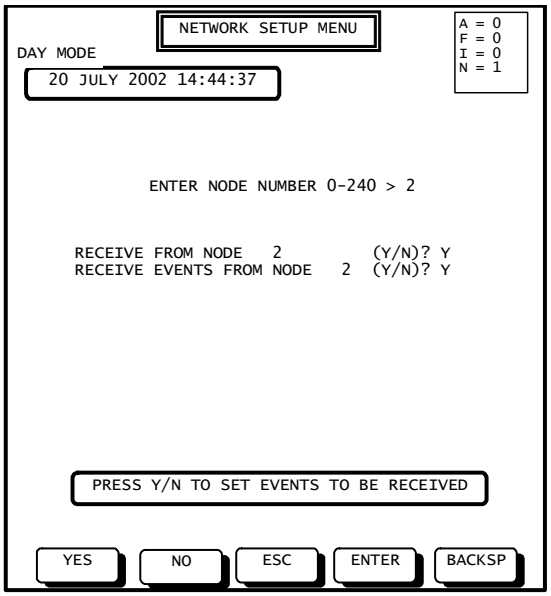
This menu is used to select which other nodes the panel will receive events from.




**Actions:**

- Enter the node number of the panel from which the local node shall receive events.

After entering a node number, the following screen will appear, asking for details on what you wish to receive from the remote node:




**Notes:**

If 'Receive From Node n' is 'No', then node n is ignored by this node.

If 'Receive From Node n' is 'Yes, then system commands, netpoints, scripts, status, bell isolates, warning system isolates and node up/down information is received from node n.

If 'Receive Events From Node n' is 'No', then no alarms, faults, isolates, pre-alarms or non-alarms will be received from node n. In this mode, the local node acts as a Slave node on the network.

If 'Receive Events From Node n' is 'Yes, then alarms, faults, isolates, pre-alarms and non-alarms will be received from node n. In this mode, the local node acts as a Master node on the network.

In a typical slave/master network layout where only the master panel will display remote alarms and faults, the slave panels receive settings from other nodes should be setup as follows:

| | | |
|---|---|---|
| RECEIVE FROM NODE | XXX | (Y/N)? Y |
| RECEIVE EVENTS FROM NODE | XXX | (Y/N)? N |

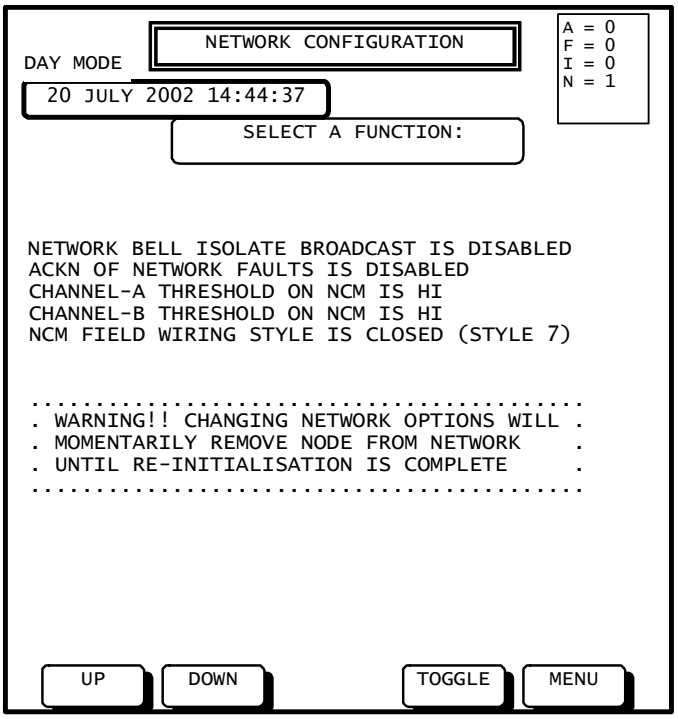
The above setting will allow the slave panel to receive network points and commands from remote panels but will not display remote events such as alarms and faults on the local display.

The master panel should be setup with both receive options enabled for all panels on the network. This configuration will allow the display of all events from remote panels on the local display.

**Note: If events are to be received from more than one node on the network, the above steps must be repeated for each additional node.**

## 7.3.9.5 SERVICE MENU – NETWORK – OPTIONS

This page displays network parameters that can be toggled.




**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.

**Explanation of Network Options:**

| Item | Description |
|---|---|
| **Network Bell Isolate broadcast is disabled / enabled** | This option allows you to broadcast a 'Bell Isolate' or a 'Warning System Isolate' to the entire network from this panel. Usually enabled on "Master" FIP. |
| **Acknowledge of network faults is disabled / enabled** | This option allows you to acknowledge all faults on the network with a single ACK from this panel. Usually enabled on "Master" FIP. |
| **Channel A Threshold is High / Low** | Default value is high. Low threshold should only be used for long network cable runs – refer to notifier network manual for more details. |
| **Channel B Threshold is High / Low** | Default value is high. Low threshold should only be used for long network cable runs – refer to notifier network manual for more details. |
| **NCM Field Wiring Style is Closed / Auto-detect** | Default is Closed (style 7) which forces the NCM to monitor both channel A & B for communication loss. Auto detect will only monitor the channel(s) that have "seen" other nodes (received data from other nodes). |

## 7.3.10 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.

# 8 PROGRAMMING

## 8.1 CONTROL SCRIPTS & VIRTUAL POINTS

Scripts are text based logic equations which are 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).

Virtual points are the logical output of the script attached to them. A maximum of 1000 virtual points can be assigned to any panel. A virtual point can be latched or non-latched, alarmed or non-alarmed. These parameters are configured from the Virtual Point List (refer to page 47). They can be changed at any time by going back into the list and reprogramming the point. Virtual points are used in other scripts to simplify them, for instance if a number of scripts use the same group of points, these points can be allocated a VP, which can then be used in the scripts which use this group. Real points, as well as other virtual points, can be used in any script to create logic that will control outputs from the system.

Scripts can refer to any AZF, digital input, digital output, virtual point, Analog addressable device, software zone or system point in any combination of AND, OR, NOT or RANGE logic. Logic equations can be built up by bracketing functions to create combinations of logic.

**Note: RANGE logic functions entered via the panel keyboard must not span more than 1 module address e.g. 1.1.Z1 → 1.1.z8. If you need to span more than 1 module address, then you must enter the range via the PC Interface**

The scripting facility on the AFP-2800/2802 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 a laptop programmer.

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 -> 1.1.Z8; |
| RANGE AND ( **&>** ) | 1.1.Z1 &> 1.1.Z8; |
| DELAY ( **Txx** ) | T10 |
| ON/OFF Day-Date-Time ( **TIM[]** ) | TIM[00:00:00,09:00:0, MO, WE]; |
| Number of Points in a Zone ( **ANY[]** ) | ANY3[Z20] |

All of the above functions refer to the alarm condition of each point. If you wish to refer to the fault, isolate or pre-alarm 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 |
| Point in Pre-alarm | PL1D1; | Pre-alarm Loop 1 Detector 1 |
| Point is on/active (isolate state of point is ignored) | SL1D1; | De-isolated state of loop 1 Detector 1 I.e. an isolated alarm point in a script is treated as alarm. |

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 ON (Mains ON LED) |
| PF | PSU Fail (PSU fail LED) |
| BF | Battery Fail (Battery fault LED) |
| CL | Charger Fault (charger high or low) |

### 8.1.1 WRITING SCRIPTS

- All scripts must be terminated with a semi-colon " ; ".
- 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 7.1.5 on Point Formats, can be used in Scripts.
- Scripts can have a maximum bracket ( ) nesting of 20. i.e. 20 pairs of brackets.

A delay timer can be added to the end of any script by adding "AND Tnn" – where nn is the number of seconds of delay before the script goes active, e.g. T10 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 28,800 seconds (8 hrs).

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.

### 8.1.2 USING ZONE NUMBERS IN SCRIPTS:

As Display Zones are 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;**

### 8.1.3 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);**

### 8.1.4 ANY OPERATOR

The basic format is: ANYxx[Zyyy] / ANYxx[ ]

The ANY script will operate when xx number of devices in zone yyy go into alarm (isolated alarms do not count).

ANY3[Z20] will operate when any 3 points in zone 20 go into alarm
ANY10[ ] will operate when any 10 points in the panel go into alarm

Rules:

1. The number of devices in a zone is limited to 40 therefore valid range for xx is 1 to 40.
2. The number of zones on the panel is limited to 999 valid range for yyy is 1 to 999.
3. If no zone number is entered, ANY will use the number of devices in alarm on the panel.

### 8.1.5 TIM OPERATOR

The TIM operator is intended to be used to operate a script, either by itself or in combination with other conditions, based on dates and times of day.

The basic format is: TIM[ <ON date and time>,<OFF date and time>,<days of week>];
Where: Date format: dd/mm/yy
Time format : hh:mm:ss
Days of the week format: SU,MO,TU,WE,TH,FR,SA

This is processed as :"Turn ON at date1, time1, turn OFF at date2,time2, for the following days of the week"

Examples:

1. TIM[23/01/03, 09:00:00, 23/01/03, 17:00:00];
   This script will turn on at 9 am and turn off at 5 pm on the 23rd of Jan 2003.

2. TIM[09:00:00, 17:00:00];
   This script will turn on at 9 am and turn off at 5 pm every day

3. TIM[17:00:00, 09:00:00];
   This script will turn on at 5pm and turn off at 9am the next day, every day

4. TIM[00:00:00, 09:00:00, MO,WE,FR];
   This script will turn on at midnight( 00:00:00) and turn off at 9 am, every Monday, Wednesday and Friday

5. TIM[SA,SU];
   This script will turn on at midnight Saturday Morning and turn off at midnight Sunday evening.

6. TIM[MO5];
   This script will turn on at midnight Monday morning and stay on for 5 days (Friday midnight).

Rules:

1. There must be at least a date/time, or a day entry.
2. If there is an ON date, there must be an OFF date.
3. If there is an ON time, there must be an OFF time.
4. If ALL seven days are entered or if no days are entered, the script will operate every day.
5. The order of days is not significant.
6. If a date range, does not include a day specified, the script will not operate

## 8.1.6 'S' PRE-OPERATOR

The actual state of a point can be referenced in a script by putting an S before the point. Actual state is either ON/ALARM/ACTIVE or OFF. The S operator should be used when the isolated state of the point is to be ignored and only the on/off state is required. Using the S operator before the point will return the actual state of the point and ignore the fact that the point is isolated.

E.g. If L1D1 is in alarm and isolated it would normally be treated as off, all isolated points are treated as off or inactive in scripts. Script "SL1D1;" will activate its associated output if L1D1 is in alarm and isolated but script "L1D1;" will only activate its associated output if L1D1 is in alarm and not isolated.

**1.101.O1 = SL1D1;**
**L1M6 = SZ1;**

**Note: If there is a need for the NCA-2 to activate on the S state of a device, a netpoint is needed to communicate the status to the NCA-2.**
**For scripting examples for the NCA-2, refer to Appendix 9.15.**

## 8.1.7 SCRIPTING EXAMPLES

| Type | Script | Description |
|---|---|---|
| **OR** | **0.1.Z1 OR L1D1 OR Z100 OR 1.101.I1;** | Any of the 4 points/zones zones in alarm (active) |
| **AND** | **L1D1 AND L10D159;** | Both points required to be in alarm (active |
| **NOT** | **L1D1 AND L10D159;** | L1D1 must be in alarm (active) and L10D159 must NOT be in alarm (active). |
| **OR Range** | **(L1D1 -> L1D20);** | Any detector between 1 to 20 on loop 1 in alarm (active). |
| **AND Range** | **(1.1.Z1 &> 1.1.Z8);** | ALL AZF's on module 1 in Alarm. |
| **Alarm/Active** | **Z999;** | Zone 999 is in alarm (only if not isolated) |
| **Fault** | **FL1D1;** | L1D1 is in fault |
| **Isolate** | **IL1M1;** | L1M1 is isolated |
| **Pre-alarm** | **PL1D3;** | L1D3 in pre-alarm |
| **S pre-operator** | **SZ1;** | Zone 1 is in alarm (isolate state is ignored) |

### Combination examples:

| Example | Description |
|---|---|
| **(L1M1 OR L2D10) AND !Z3;** | L1M1 or L2D10 and not Zone 3. Expressions in the brackets are evaluated first and the result is used to evaluate the rest of the script. |
| **(L1M1 -> L1M10) OR (L2D1 -> L2D10);** | Any module 1 to 10 on loop 1 or any detector 1 to 10 on loop 2. |
| **CA and T10;** | When Common Alarm has been active for 10 seconds. |
| **(ANY3[Z20] or Z21) and !VP10;** | Any 3 devices in zone 20 or zone 21 as long as VP10 is not active |

**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 (i.e. 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.**

**Note: Special Netpoints can be used to perform special functions on AFP-2800/2802 FIP. See page 94 for details.**

# 8.2 POINTS AND ZONES USED FOR NETWORKING (WHERE APPLICABLE)

**Note: Netpoints are only available in V4 and above of the AFP-2800 FIP.**

**Starting from V7 firmware, networking with NCA-2 is added.**

For the NCA-2, a Netpoint (NP) is known as a Logic Zone (ZL). Usage of ZL is exactly the same as NP, except:

1. There are 2000 logic zones on an AFP-3030 panel where there are only 1000 Netpoints on an AFP-2800 panel. Accessing or referencing an AFP-2800 NP above 1000 is not supported.
2. Accessing or referencing an AFP-2800 NP from a NCA-2 is supported, but not from an AFP-3030.

For equation on NCA-2 that refers to AFP-2800 panels, just replace NP with ZL.

Each network node can have up to 1000 local network points (Netpoints or NPs) that are activated by scripts. NPs are either ON or OFF depending on their associated scripts. A NP is not added to any of the lists and is only used in scripts. NPs are the only remote points allowed in scripts. For example, a script that operates between network nodes cannot contain N10.L1D1, instead L1D1 should be mapped to a NP on node 10 and that NP used on remote panels for scripting. That is, node 10 must contain the script: NP1 = L1D1; and the network script will be N10.NP1;

Each AFP-2800 node can access the status of both local and remote NPs across the entire network. The address formats are as follows:

| | | |
|---|---|---|
| Local node NP: | NPxxxx | NP1 to NP1000 |
| Remote node NP: | Nxxx.NPyyyy | N1.NP1 to N240.NP1000 |

**Example 1:**

There are 5 panels on the network and each panel has a local NP100 as common alarm for that node. Therefore each panel will have the following script for its local NP100:

NP100 = CA;

The bell on Node 1 is required to activate if any of the panels in the network go into alarm. The bell on Node 1 is driven off expansion relay XR1. Therefore, the Node 1 Bell Output script is:

XR1 = NP100 OR N2.NP100 OR N3.NP100 OR N4.NP100 OR N5.NP100;

**Example 2:**

There are 5 panels on an AFP-2800 network. There is a toggle switch on Node 1 which is mapped to a non latching input module L1M1. Nodes 2 to 5 have a local AC shutdown relay L2M10. Netpoints can be used to prevent fans on Nodes 2 to 5 from operating by activating the toggle switch on the main panel (Node 1).

On node 1 program NP200 to follow the state of L1M1 – N1.NP200 will activate when L1M1 on Node 1 is activated.

NP200 = L1M1;

On Nodes 2 to 5 program the AC shutdown (L2M10) to only activate if N1.NP200 is not active (switch is off)

On Node 2 - L2M10 = CA AND !N1.NP200;
On Node 3 - L2M10 = CA AND !N1.NP200;
On Node 4 - L2M10 = CA AND !N1.NP200;
On Node 5 - L2M10 = CA AND !N1.NP200;

Using the above scripts, the state of toggle switch on Node 1 is transmitted to all other nodes on the network by N1.NP200. The other nodes on the network use the state of this netpoint to stop their local AC shutdown relay from operating when the switch is in the on position.

**Example 3:**

Isolating Z1 on Node 2 using a ACM-16at (module 101) on Node 1.

On Node 1

```
NP10 = 1.101.I1;        - NP10 on node 1 follows the state of the first push button on ACM-16at
1.101.O1 = N2.NP1;      - First LED on ACM-16at follows the state of Z1 on node 2 using N2.NP1
1.101.O2 = N2.NP2;      - Second LED on ACM-16at follows the isolated state of Z1 on N2 using N2.NP2
```

On Node 2

```
NP1 = SZ1;              - De-isolated state of Z1 on Node 2 transmitted to network using NP1
NP2 = IZ1;              - Isolated state of Z1 on Node 2 transmitted to network using NP2
Isolate group “ISOLM.1”   trigger = “N1.NP10”   points to isolate = “Z1;”
```

Pressing ACM-16at button on N1 will isolate Z1 on N2 and the state of Z1 on N2 is displayed on ACM-16at on N1.

## 8.2.1 SPECIAL NET POINTS

**NP1000**

On V5.02 and above firmware if NP1000 is active, the panel will be forced to operate in night mode and stays in night mode as long as NP1000 is active. This feature allows the programmer to use scripting for switching between day/night modes.

**NP900 to NP999**

Network points 900 to 999 can be used to switch Acclimate detector(s) between normal and heat only operation. Up to 99 individual detector lists can be switched using NP900 through NP999. If a network point between 900 and 999 is used as an isolate group trigger, the list of points associated with that isolate group will be switched to sensitivity 9 (heat only for Acclimates) instead of the points being isolated. This functionality enables the programmer to use scripting for switching specific groups of Acclimate detectors to heat only mode as required.

Note that the sensitivity of non-Acclimate detectors in the list will also be set to 9 which means that they will still alarm due to smoke. Ensure that all detectors in the list are Acclimates to ensure there are no unwanted alarms due to smoke.

**Example:**

```
NP950 = 1.101.I1;           - NP950 follows the state of the first push button on ACM-16at
1.101.O1 = L1D1 OR L1D2;    - First LED on ACM-16at follows the alarm state of Acclimates
1.101.O2 = IVP950;          - Second LED on ACM-16at shows the operation mode of Acclimates
VP950 = ;                   - This VP does not require a script and should be labelled to indicate the
                              operation mode of the acclimate detectors. E.g. “Z1 HEAT ONLY MODE”

Isolate group “ISOLM.1”   trigger = “NP950”    points to isolate = “L1D1 L1D2;”
Isolate group “ISOLM.2”   trigger = “1.101.I1”  points to isolate = “VP950;”
```

In the above example, the user can change the operation mode of Acclimate detectors by pressing the first button on an ACM-16AT at address 101. Note that a second isolate group is also used to isolate a VP (VP950 in this case) to indicate the operation mode of Acclimates. The trigger of the second isolate group cannot be NP900 or above.

Pressing the ACM-16at button for a second time will change the detector sensitivities back to their original settings and remove VP950 from the isolate list.

**Note:** **Netpoints 900, 901, 902, 920 and 980 are reserved. Do not use these Netpoints. No script should refer to these Netpoints.**

**If NZ mode has been selected in global options, NP996 to NP999 are reserved for special functions as described in NZ supplement to this manual.**

**NPxxx cannot be programmed as ISOLM trigger through the keypad. Use PCI for programming.**

**Points to isolate must be a list of detectors and cannot include zones.**

### 8.2.2 Reserved Virtual Points

Some Virtual points are reserved for features that use the alarm device control messages to control the local device that needs to work with the command/control from the NCA-2

VP890 – Alarm Device Fault
VP891 – Alarm Device Test
VP892 – Alarm Device Silenced
VP893 – Alarm Device Disable

These VPS would be on after receiving the corresponding message from NCA-2.

### 8.2.3 Reserved Logic Zones

Logic Zone 902 is used with ATE and SCN for Alarm Device Disable

### 8.2.4 Special Function Zones

Special functions zones are used for communication with NCA-2; these special function zones are used by the system firmware and are no directly accusable from the AFP-2800 panel; however some of the special function zones on the AFP-2800 panel can be read from a NCA-2.

Special Function Zone 0 – Turn On Delay Zone - Always show as inactive.
Special Function Zone 6 – Smoke Control Disable (Australian only) - Always show as inactive.
Special Function Zone 7 – Alarm Device Test – VP891 must be programmed with the label “Alarm Device Test”
Special Function Zone 17 – Alarm Device Silenced – VP892 must be programmed with the label “Alarm Device Silenced”
Special Function Zone 23 – Local Fire Alarm - Active whenever there is a local fire alarm on the panel.
Special Function Zone 24 – Local or Network Fire Alarm - Assume network Fire Alarm is always inactive, hence follow ZF23
Special Function Zone 25 – Alarm Device Disable - VP893 must be programmed with the label “Alarm Device Disable”
Special Function Zone 26 – Door Holder Disable (NZ only) - Always show as inactive
Special Function Zone 27 – Auxiliary Device Disable (NZ only) - Always show as inactive
Special Function Zone 28 – Smoke Alarm from Type 5 Zone (NZ only) - Always show as inactive
Special Function Zone 29 – Turn ON Delay Status - Always show as inactive
Special Function Zone 30 - Alarm Device Fault - VP890 must be programmed with the label “Alarm Device Fault”

# 9 APPENDIX

## 9.1 ZONE OPTION EXPLANATIONS

### 9.1.1 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.

### 9.1.2 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 after 60 seconds.

**Note: Minimum time in alarm condition is 75 seconds (15 seconds to first test plus 60 seconds after alarm clears)**

# 9.2 PASSWORD ACCESS LEVELS

The AFP-2800/2802 has 3 levels of password protection. For a full explanation of how to use passwords, refer to 78.

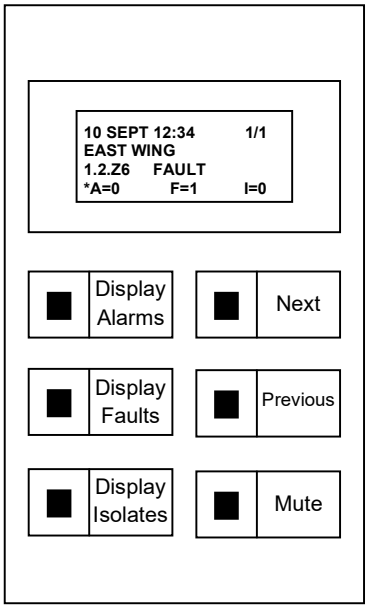
Each password level can have 5 different user passwords and each password level has security access as follows:

| Access Level | Access To |
|---|---|
| Level 0 (no Password Required) | • Firefighter's Screen<br>• Ability to reset alarms<br>• Ability to reset faults<br>• Ability to isolate / de-isolate<br>• Ability to view system information<br>• Ability to view history<br>• Ability to view all read-only data |
| Level 1 | • Level 0 access +<br>• Ability to change descriptors<br>• Ability to change point options<br>• Ability to change display zone options<br>• Ability to add and edit pushbutton isolate functions.<br>• Ability to change global options<br>• Ability to alarm and fault test devices |
| Level 2 | • Level 1 access +<br>• Ability to add and remove modules/devices<br>• Ability to change scripts<br>• Ability to auto-program Analog addressable loops |
| Level 3 | • Level 2 access +<br>• Ability to perform upload/download<br>• Ability to delete history<br>• Ability to change passwords<br>• Ability to access diagnostics menu |

# 9.3 LCD80 OPERATION

## 9.3.1 LCD80 – TERMINAL MODE

The LCD80 is an alphanumeric display module that acts as a remote display interface to the AFP-2800/2802. 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-2800/2802 can support up to 32 LCD80 units on Ring 1. Refer to page 139 for connection, addressing and set-up details.




### 9.3.1.1 NORMAL OPERATION

The display will automatically show the highest priority event in the FIP event queue. Priorities, in descending order, are Alarms, Faults, and 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.

### 9.3.1.2 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.
- The mute key can also be used like a shift key to provide the following service functions
  Shift “NEXT” Contrast up
  Shift “PREV” Contrast down
  Shift “DISPLAY ALARMS” show Software Version

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

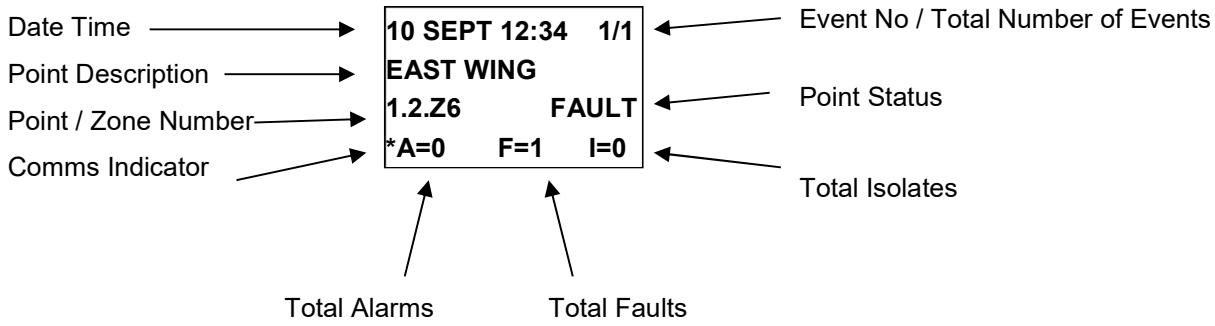
## 9.3.1.3 EVENT SOUNDER

Switch 1 of DIP switch SW1 will enable (ON) or disable (OFF) the buzzer for alarms.
Switch 2 of DIP switch SW1 will enable (ON) or disable (OFF) the buzzer for faults.

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

## 9.3.1.4 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 fault, and 0 isolates on the system.

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

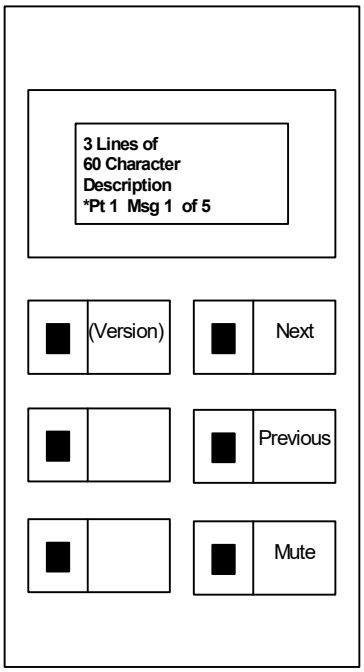
In this example, an alarm occurred on the 10th of September at 12:37pm. It is the first of two alarms and occurred in the West Wing on point number 1.1.Z7. There are 2 alarms, 2 faults, and 0 isolates on the system.

## 9.3.1.5 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 |
| **CPU NOT RESPONDING** | The LCD80 is being polled by the CPU, but the CPU has not responded to an LCD80 request in over 20 seconds |

## 9.3.2 ANNUNCIATOR MODE

The LCD80 (annunciator mode) is an alphanumeric display module that acts as a remote display interface to the AFP-2800/2802. It displays pre-programmed messages of 60 characters each which are activated via a script event in the AFP-2800/2802. Up to 64 different messages are possible. A local buzzer will sound for any message annunciation or fault (this buzzer can be disabled if required). The AFP-2800/2802 can support up to 32 LCD80 units on Ring 1. Refer to page 139 for connection and set-up details.




### 9.3.2.1 NORMAL OPERATION

The display will automatically show the first event point activated by the FIP. The points are displayed in the order in which they were activated.

### 9.3.2.2 MANUAL OPERATION

- Pressing the “NEXT” and “PREVIOUS” buttons allow the user to scroll up and down the list. When the last message on the list is reached, the display will wrap around to the first message on the list, and vice versa.
- Pressing “Mute” will silence the buzzer if active. The buzzer will resound if another event occurs and the buzzer is enabled for that event.
- The “Mute” button doubles as a “SHIFT” key. When held down, key functions are changed as follows

    - Shift “(VERSION)” will show the following
        - LCD80 mode (“Terminal” or annunciator”)
        - Firmware version
        - LCD80 address

    - Shift “NEXT” / “PREVIOUS” cycles through the 8 contrast modes of the LCD80 display.

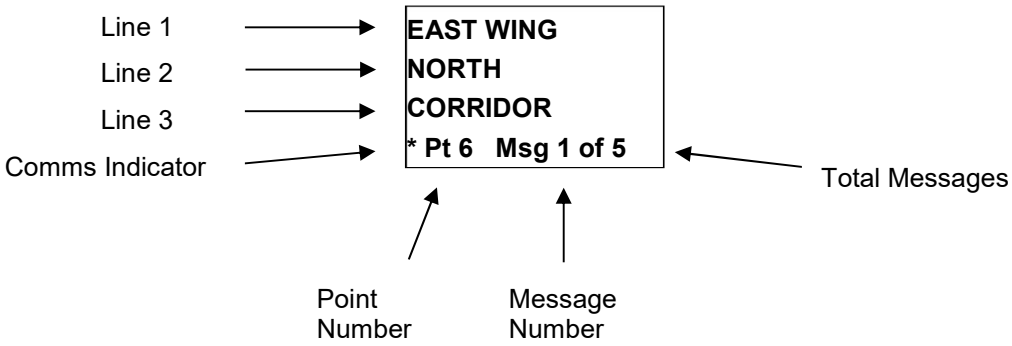
### 9.3.2.3 EVENT SOUNDER

Switch 1 of DIP switch SW1 will enable the buzzer for alarms.
Switch 2 of DIP switch SW1 will enable the buzzer for faults.
Switch 7 of DIP switch SW1 will enable the RS232 port on the LCD80 for programming.
(Note: Activation of this switch prevents the LCD80 from communicating with the FIP.)
Switch 8 of DIP switch SW1 will select terminal mode (OFF) or annunciator mode (ON)

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

### 9.3.2.4 DISPLAY

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




In the above example, the FIP has activated Point 6 on the LCD80. It is the first of 5 points which are active. The Comms Indicator "Spins" when messages are being received by the LCD80.

| |
|---|
| **EAST WING** |
| **SOUTH** |
| **CORRIDOR** |
| *** Pt 12 Msg 1 of 1** |

In this example: The FIP has activated Point 12 on the LCD80.
It is the only point active.

### 9.3.2.5 SPECIAL MESSAGES

| | |
|---|---|
| **NO ACTIVE POINTS** | There are no active points on the panel programmed to display on the LCD-80. |
| **COMMS FAILURE** | This messages flashes: The LCD80 has not been polled by the CPU in over 10 seconds |

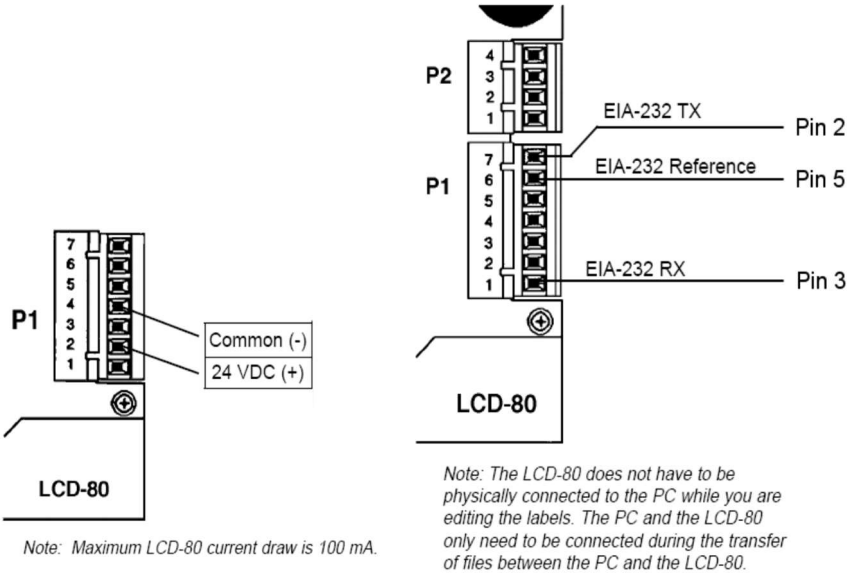
## 9.3.2.6 PROGRAMMING

The LCD80 annunciator mode pre-programmed messages can be programmed in via a laptop using the AFP-2800/2802 PC Interface Program. Each required message must be activated via a script in the AFP-2800/2802 panel.

Switch 7 of DIP switch SW1 will enable the RS232 port on the LCD80 for programming.

The upload/download cable for the LCD-80 is a 9 pin female on one end and 3 wires on the other end.

A RS-232 serial cable is needed in the configuration as shown below:




| LCD-80 | EIA Name | 9 PIN Connector | 25 PIN Connector |
|---|---|---|---|
| 1 | Tx D | 3 | 2 |
| 6 | Signal Ground | 5 | 7 |
| 7 | Rx D | 2 | 3 |
| No Connection | DTR | 4 (Note 1) | 20 |
| No Connection | DSR | 6 (Note 1) | 6 |

**Note 1:** Pin 4 (DTR) is connected to pin 6 (DSR) in the 9 pin connector housing.

Downloading new labels:

- Using the PCI create an LCD-80 at the desired address.
- Enter all the required descriptors in the PCI.
- Set dip switch 7 to on and connect the programming cable to the LCD-80.
- Select download on the PCI and tick the LCD-80 option.
- The PCI will ask for the address of the LCD-80 before commencing download.

Uploading existing labels:

- Using the PCI create an LCD-80 at the desired address.
- Set dip switch 7 to on and connect the programming cable to the LCD-80.
- Select upload on the PCI and tick the LCD-80 option.
- The PCI will ask for the address of the LCD-80 before commencing upload.

# 9.4 Recommended Cabling Requirements

## 9.4.1 RS-485 Ring Communication Cabling

**Applies to:**

- Ring 1 communication lines
- Annunciator communication lines

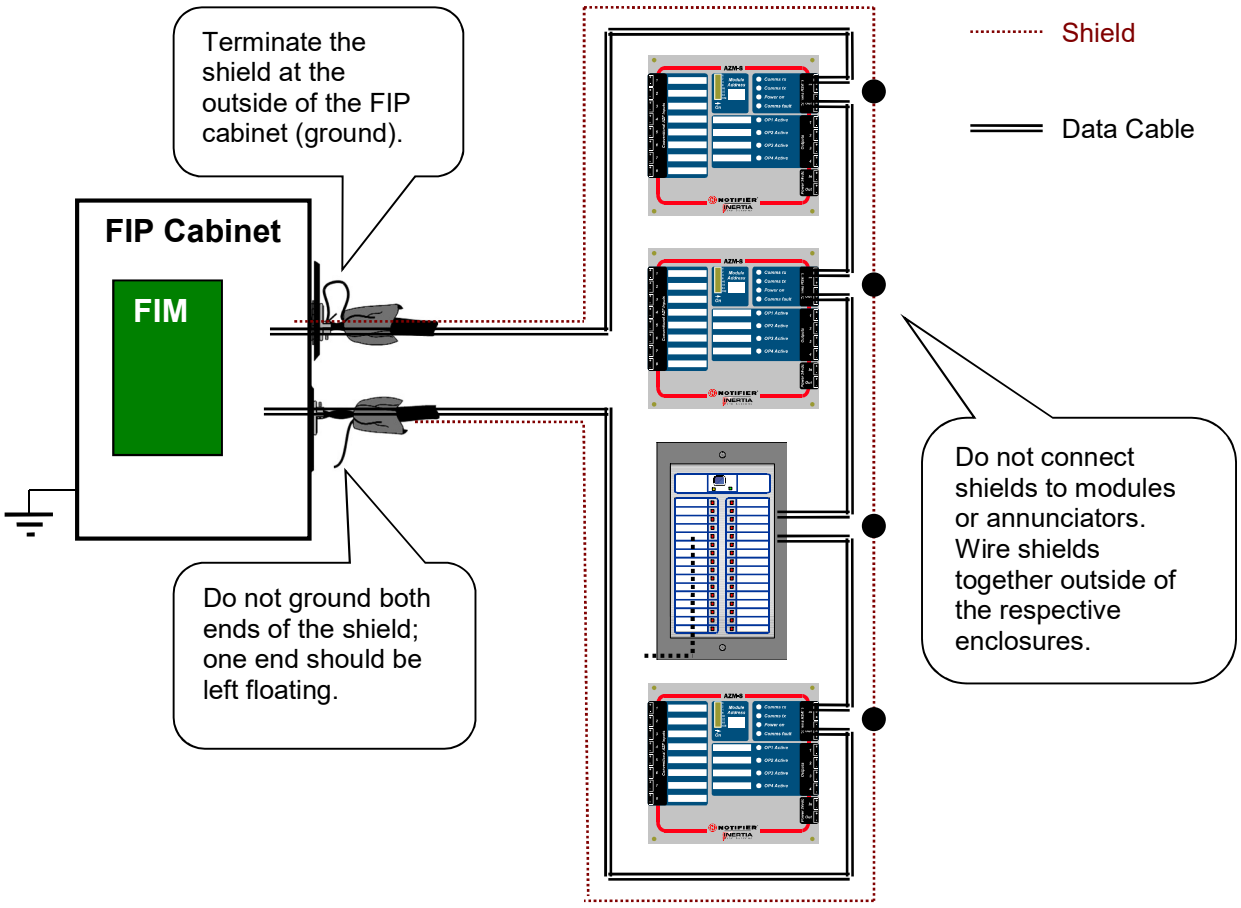
**Requirements:**

| | |
|---|---|
| Style | **Minimum 0.75mm$^2$ x 2 core Twisted Pair Shielded** communications cable<br>(+ separate 2 core cable for 24VDC module power ) |
| Max distance | Communications cable: 1000M between modules with 1.5mm$^2$ cable<br>(24VDC power cable distance will be determined by voltage drop) |
| Notes: | • Maximum of 16 annunciators between any two modules<br>• Fire rated cables may be required as per AS1670, AS1668, AS2118 |

**Note: When annunciators or Field Modules are powered from external power supplies, use a separate conductor to connect the main power supply common terminal (-0V) to the remote power supplies common terminal (-0V).**

The EIA-485 circuit MUST be wired using a twisted-pair shielded cable. Do not run cable adjacent to, or in the same conduit as, 240-volt AC service, noisy electrical circuits that are powering mechanical bells or horns, audio circuits above 25 VRMS or motor control circuits. All enclosures, including the FIP cabinet, must be connected to electrical earth! Never use the shield as an earthing conductor.

Terminate the shield at the outside of the FIP cabinet (ground). Where this is not possible, the shield must be terminated to physical ground immediately adjacent to cable entry. Between Field modules, connect shields together outside of their respective enclosures. Make sure that the shield is only grounded at the FIP and not at the modules or annunciators. Do not ground both ends of the shield; one end should be left floating.



## 9.4.2 ADDRESSABLE LOOP CABLING

**Applies to:**

- Signalling Line Circuit (SLC) loops. Refer to the *SLC Wiring Manual* for more detailed specifications and specific device listings.

**Requirements:**

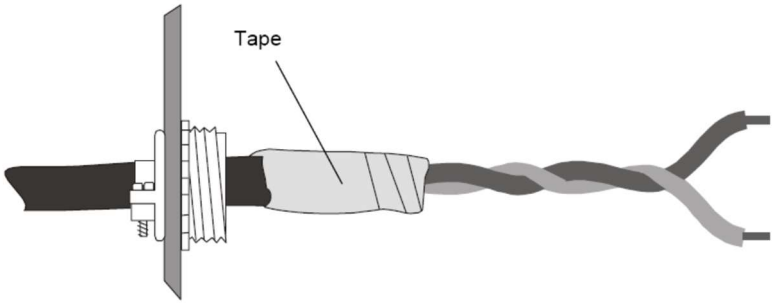
| | |
|---|---|
| Recommended Cable | ▪ **TWISTED pair, NOT shielded**. The cable should have short overall twist lengths (8 or more twists per metre). |
| **Max** distance | Recommended cable type (unshielded):<br>▪ *3810 m using 3.25 $mm^2$ Twisted-unshielded pair<br>▪ *3000 m using 2.5 $mm^2$ Twisted-unshielded pair<br>▪ *2000 m using 1.5 $mm^2$ Twisted-unshielded pair<br>▪ *1000 m using 0.75 $mm^2$ Twisted-unshielded pair<br><br>Others:<br>▪ 1000 m using 0.75 $mm^2$, 1500 m using 1.5 to 3.25 $mm^2$ Twisted-shielded pair<br>▪ 1000 m using 0.75 $mm^2$, 1500 m using 1.5 to 3.25 $mm^2$ Untwisted-unshielded cable |
| Maximum Current | ▪ 130 mA: LCM-320<br>▪ 100 mA: LEM-320<br>▪ 400 mA max**: Single SLC loop |
| Maximum resistance | ▪ Maximum **50 ohms** (supervised and power-limited).<br><br>For more information on installation checks, refer to section 9.6.4.2 Analog Loop Installation checks and fault finding |
| Maximum Capacitance | ▪ Maximum total capacitance for all SLC wiring (both between conductors and from any conductor to ground) should not exceed 0.5 microfarads |
| Notes: | ▪ Usage of shielded or flat cable for the SLC loops is not recommended and should be avoided where possible.<br>▪ Fire rated cables may be required as per AS1670, AS1668, and AS2118.<br>▪ Separate 2 core cable to be run for 24VDC power to FZM-1 and FCM-1 modules |

*Max distance of the loop is governed by the total loop resistance and will depend on the type of cable used. Always check the cable specification to ensure the total loop resistance will be less than **50 ohms** for the required length of cable. A higher resistance than 50 ohms will result in communication problems on the addressable loop.
**Max short circuit…circuit will shut down until short circuit condition is corrected.

### Floating Shield

Twisted-**unshielded** wire is recommended. If twisted-shielded pair wire is installed, use a floating shield to terminate the wire. The following precautions must be met:

• If the SLC is more than 900 m, divide the shield into floating segments of less than 300 m.
• To divide the shield wire into floating segments, cut shield even with jacket and tape as shown:




**NOTE:** Using shielded wire in applications where it is not recommended will reduce the maximum SLC length. If shielded wire must be used where not recommended, failing to float the ends will reduce the maximum SLC length even further.

# 9.4.3 NOTI.FIRE.NET NETWORK CABLING

## Wire Circuits

**Applies to:**

- AFP-2800 networks using NCM-W network cards and RPT-W repeaters.

**Requirements:**

| | |
|---|---|
| Recommended Cable | ▪ **0.75 mm$^2$ x 2 core TWISTED pair, NOT Shielded** The cable should have short overall twist lengths (8 or more twists per metre). |
| Max distance | Recommended cable type (unshielded):<br>• 900 m between each segment (node) using **0.75 mm$^2$ Twisted-unshielded** pair. A repeater module (RPT-W) can be used to increase this distance between nodes.<br><br>Other:<br>• 350 m between each segment (node) using **3.25 mm$^2$ Twisted-shielded** pair. |
| Maximum resistance | ▪ Wire length resistance for each cable segment cannot exceed **15 ohms.** |
| Notes | Refer to **NOTI.FIRE.NET** manual for detailed cabling requirements and selection of threshold settings for NCM-W cards.<br><br>Refer to **High-Speed NOTI.FIRE.NET** manual for detailed cabling requirements for the high speed range of devices such as HS-NCM. |

## Fibre Optic Circuits

**Applies to:**

- AFP-2800 networks using NCM-F network cards and RPT-F repeaters.

**Requirements:**

The attenuation of cabling between two nodes/repeaters (fibre optic circuits are point-to-point) is limited by cable choice. If the distance required for a circuit segment is greater than permitted, a Repeater module (RPT-F) must be inserted into the circuit at intervals less than, or equal to, the attenuation length restriction.

**Multi-mode fibre:**

62.5/125µm cable - 8dB limit
50/125µm cable - 4.2dB limit

**Single-mode fibre:**

9/125µm cable - 8dB limit

The actual attenuation can be measured end-to-end with fibre-optic industry standard equipment using a test wavelength of 850 nanometres for multi-mode and 1310 nm for single-mode.

For a quick approximation, perform the following calculations:

**a. Calculate loss due to cable.** Look up the rated dB loss per foot within the cable manufacturer's specifications. Multiply this by the length of cable between the two nodes/repeaters to determine loss due to cable:
Loss = (loss/ft.) x (length in feet).
**b. Calculate loss due to connectors/splices.** Look up the dB loss for each connector and splice, and add all figures to determine loss due to connectors/splices.
**c. Calculate total loss.** Add the attenuation factors obtained in steps a. and b. This will provide an approximate attenuation total.

# 9.5 Intelligent Sensing Features

## 9.5.1 FlashScan Detector LED Operation

The detector LEDs will blink green every 6 seconds under normal conditions. When in fault, an intelligent addressable device will blink its address id to simplify locating the faulty device.

Blink pattern examples for faulty devices are given below.

| Address | Blink Pattern |
|---|---|
| 8 | 8 blinks, long stop, 8 blinks, long stop, … |
| 37 | 3 blinks, stop, 7 blinks, long stop, 3 blinks, stop, 7 blinks, long stop, … |
| 152 | 15 blinks, stop, 2 blinks, long stop, 15 blinks, stop, 2 blinks, long stop, … |

## 9.5.2 Detector Initialisation

The control panel automatically performs a detector initialisation routine when a detector is added or changed. The detector initialisation routine takes approximately 2.5 minutes. During this time, the detector being initialised does not perform fire protection functions. The LEDs of detectors polled in FlashScan mode will latch a steady green while initialising, and return to blinking green when initialisation is over.

**While initialising a detector, follow these guidelines:**

- Make sure the detector is free of residual smoke during detector initialisation.
- Do not test a detector during detector initialisation.

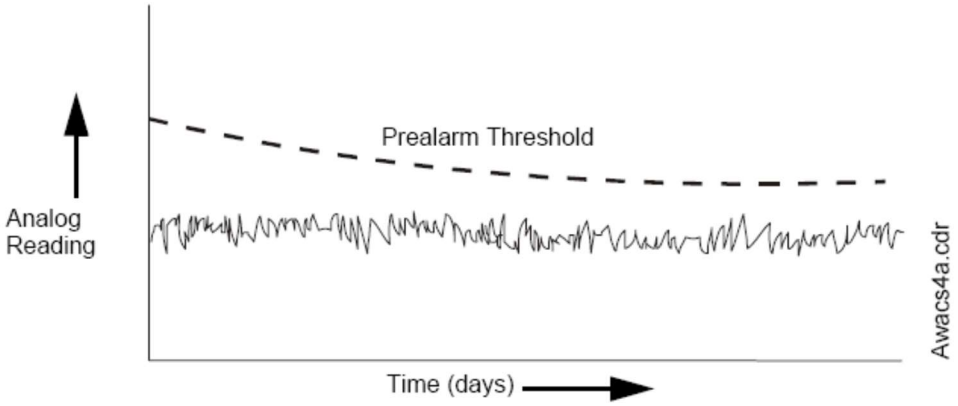
**NOTE: The control panel only performs detector initialisation if it senses that a detector was removed for at least 15 seconds.**

**WARNING!!**

If any detector is replaced with a different type of detector (for example, a laser detector is replaced with a photoelectric detector), the control panel must be programmed immediately with the new detector Type Code. Failure to do so can cause incorrect control panel operation, including false alarms.

## 9.5.3 Self-Optimizing Pre-Alarm

A Self-Optimizing Pre-Alarm can set each detector, except FST-851/751 (Heat), by programming the detector to have a Pre-Alarm sensitivity level setting of 1. In Self-optimizing mode, the software measures the normal peak Analog readings and sets the Pre-Alarm level just above these normal peaks. This allows extremely sensitive Pre-Alarm capability with reasonable protection against non-fire signals. The figure below shows a graphical representation of the Self-Optimizing Pre-Alarm level:




## 9.5.4 Detector Sensitivity

The control panel provides nine Sensitivity Levels for alarm detection and pre-alarm as follows:

• **Alarm Sensitivity Levels** You can select the sensitivity of a detector from 1 to 9 (1=highest sensitivity; 9=lowest sensitivity).
• **Pre-Alarm Sensitivity Levels** You can select one of nine levels from 1 to 9 (1=self-optimizing, 2=highest sensitivity, 9=lowest sensitivity).

You can set the sensitivity levels as fixed or programmed for day and night operation.

| Analog Addressable Detectors Sensitivity Settings Table | | | | |
|---|---|---|---|---|
| **Detector Type** | | **Alarm %/Metre Obscuration** | | **Pre-Alarm %/Metre Obscuration** |
| **Photo Optical** | Level 1 | 0.50% | | **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% |
| **Default** | 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% |
| **Default** | Level 8 | 7.38% | | 5.74% |
| | Level 9 | 8.20% | | 6.56% |
| | | | | |
| **Laser (View)** | Level 1 | 0.07% | | **Auto** |
| | Level 2 | 0.10% | | 0.07% |
| | Level 3 | 0.16% | | 0.16% |
| | Level 4 | 0.33% | | 0.33% |
| | Level 5 | 0.66% | | 0.66% |
| | Level 6 | 1.64% | | 1.64% |
| | Level 7 | 3.28% | | 2.30% |
| **Default** | Level 8 | 4.92% | | 3.28% |
| | Level 9 | 6.56% | | 4.92% |
| | | | **Alarm (CLIP)** | |
| **Acclimate** | Level 1 | 1.64% | 3.28% | Auto |
| | Level 2 | 3.28% | 3.28% | 3.28% |
| | Level 3 | 3.28 to 6.56% | 3.28 to 6.56% | 3.28% |
| | Level 4 | 6.56% | 6.56% | 3.28 to 6.56% |
| | Level 5 | 6.56 - 9.84% | 6.56 to 13.12% | 3.28 to 6.56% |
| | Level 6 | 9.84% | 6.56 to 13.12% | 6.56% |
| | Level 7 | 9.84 - 13.12% | 6.56 to 13.12% | 6.56% |
| **Default** | Level 8 | 13.12% | 13.12% | 6.56 - 9.84% |
| | Level 9 | 63 $^{O}$C degrees Heat Only | 63 $^{O}$C degrees | 6.56 - 9.84% |

| Analog Addressable Detectors Sensitivity Settings Table | | | |
|---|---|---|---|
| **Detector Type** | | **Alarm Total Obscuration** | **Pre-Alarm Total Obscuration** |
| **Beam** | Level 1 | 25% | 50% |
| | Level 2 | 30% | 55% |
| **Default** | Level 3 | 40% | 60% |
| | Level 4 | 50% | 65% |
| | Level 5 | 30 - 40% Auto | 70% |
| | Level 6 | 40 - 50% Auto | 75% |
| | Level 7 | - | 80% |
| | Level 8 | - | 85% |
| | Level 9 | - | 90% |
| | | | |
| **Thermal** | | **Degrees Celsius** | **Degrees Celsius** |
| | Level 1 | 43 °C | 40 °C |
| | Level 2 | 57 °C | 43 °C |
| **Default** | Level 3 | 65 °C | 57 °C |
| | Level 4 | 70 °C | 65 °C |
| | Level 5 | 75 °C | 70 °C |
| | Level 6 | 90 °C | 75 °C |

## 9.5.4.1 SMART4 & INTELLIQUAD SENSITIVITY AND APPLICATION GUIDE

### SDX-751CTEM (Smart 4)

Smart 4 is a CLIP only Multi-Criteria detector that is programmed as an “Acclimate” detector to allow backward compatibility with older versions of software. Six different sensitivity settings are available with this detector.

The sensitivity settings and suggested applications for each setting are listed in the following table.

| Sensitivity | Suggested Application | Details |
|---|---|---|
| Level 1 | Ultra clean environments - Laboratories | 3.28% per metre of smoke or greater than 45 ppm of CO. No delays from processed photo output |
| Level 2, 3 | Clean environments – Offices | 6.56% per metre of smoke. No delays from processed photo output |
| Level 4 | Moderately clean environments – Hotel/Dorm rooms | 9.84% per metre of smoke. No delays from processed photo output |
| Level 5, 6 | Moderate environments – hotel near shower, boiler rooms | 9.84% per metre of smoke. Maximum of 10 minutes delay from processed photo output. See notes. |
| Level 7, 8 **Default** | Harsh environments – Equipment rooms, kitchens, night clubs | 13.12% per metre of smoke. Maximum of 10 minutes delay from processed photo output. See notes. |
| Level 9 | Harsh environments | Heat only alarm. If the heat level on either thermistor exceeds 63°C or rate of rise limits. |

**Notes:**
**- The delay counter starts when the smoke level exceeds approximately 2.46% per metre. Maximum of 10 minutes delay from processed photo output. If there is a detection of another fire signature (Carbon Monoxide, Infrared or Thermal) the detector overrides the 10 minute confirmation time.**
**- Use of AVF function is not permitted by AS1670.1 at sensitivity levels 5, 6, 7, 8 and 9.**
**- Smart 4 is a CLIP only detector and should be programmed as an “Acclimate”.**
**- Level 9 may be used with day/night settings to provide heat only detection during certain times of the day.**

### FSC-851 (IntelliQuad)

IntelliQuad detector is a FlashScan Multi-Criteria detector which will also run in CLIP mode. When in FlashScan mode, the CO and temperature levels can be accessed through the read status menu on the panel.

The sensitivity settings and suggested applications for each setting are listed in the following table.

| Sensitivity | Suggested Application | Details |
|---|---|---|
| Level 1 | Ultra Clean environments - Laboratories | 3.28% per metre of smoke or greater than 45 ppm of CO. No delays from processed photo output. |
| Level 2 | Clean environments - Offices | 6.56% per metre of smoke. No delays from processed photo output |
| Level 3 **Default** | Moderately clean environments – Hotel/Dorm rooms | 9.84% per metre of smoke. No delays from processed photo output. |
| Level 4 | Moderate environments – hotel near shower, boiler rooms | 9.84% per metre of smoke. Maximum of 10 minutes delay from processed photo output. See notes. |
| Level 5 | Harsh environments – Equipment rooms, kitchens, night clubs | 13.12% per metre of smoke. Maximum of 10 minutes delay from processed photo output. See notes. |
| Level 6 | Harsh environments | Heat only alarm. If the heat level on either thermistor exceeds 60°C or rate of rise limits. |

**Notes:**
**- The delay counter starts when the smoke level exceeds approximately 2.46% per metre. Maximum of 10 minutes delay from processed photo output. If there is a detection of another fire signature (Carbon Monoxide, Infrared or Thermal) the detector overrides the 10 minute confirmation time.**
**- Use of AVF function is not permitted by AS1670.1 at sensitivity levels 4, 5 and 6.**
**- Level 6 may be used with day/night settings to provide heat only detection during certain times of the day.**

### 9.5.5 DRIFT COMPENSATION

Drift compensation uses algorithms that identify and compensate for long term changes in the Analog readings from each smoke detector. (Typically, dirt and dust accumulation inside the smoke chamber causes long-term changes in detector readings.) Drift compensation does the following:

- Allows a detector to retain its original ability to detect actual smoke, and resist false alarms, even as dirt and dust accumulates.
- Reduces maintenance requirements by allowing the control panel to automatically perform the periodic sensitivity measurements.

The software also provides smoothing filters to remove transient noise signals, usually caused by electrical interference. Different smoothing algorithms are used, depending on the sensitivity selection of each detector.

The software determines when the drift compensation for a detector reaches an unacceptable level that can compromise detector performance. When a detector reaches an unacceptable level, the control panel indicates a maintenance warning. The table below summarizes the three levels of Intelligent Sensing maintenance warnings:

| Detector Fault Message | Indicates | Detector Compensation Percentage Range | | | |
|---|---|---|---|---|---|
| | | Ion | Photo | Laser | Acclimate Smart 4 IntelliQuad |
| N/A | Compensation is within recommended range. | 6 - 91 | 6 - 91 | 3 - 82 | 0 - 79 |
| LOW THRESHOLD | A hardware problem in the detector. | 0 - 5 | 0 - 5 | 0 - 2 | N/A |
| MAINTENANCE REQ | Dust accumulation that is near but below the allowed limit. The Maintenance Required is an alert level that indicates the need for maintenance before the performance of the detector is compromised. | 92 - 99 | 92 - 99 | 83 - 99 | 80-99 |
| MAINT.URGENT | Dust accumulation above the allowed limit. | 100 | 100 | 100 | 100 |

A drift compensation value above the recommended range indicates that the detector should be cleaned for optimum performance. Note that the drift compensation values for Acclimate and IntelliQuad detectors can only be accessed through the read status menu if the loop in running in FlashScan mode. The drift compensation value for a multi criteria detector is not available in CLIP mode.

## 9.5.6 FAULT CODES

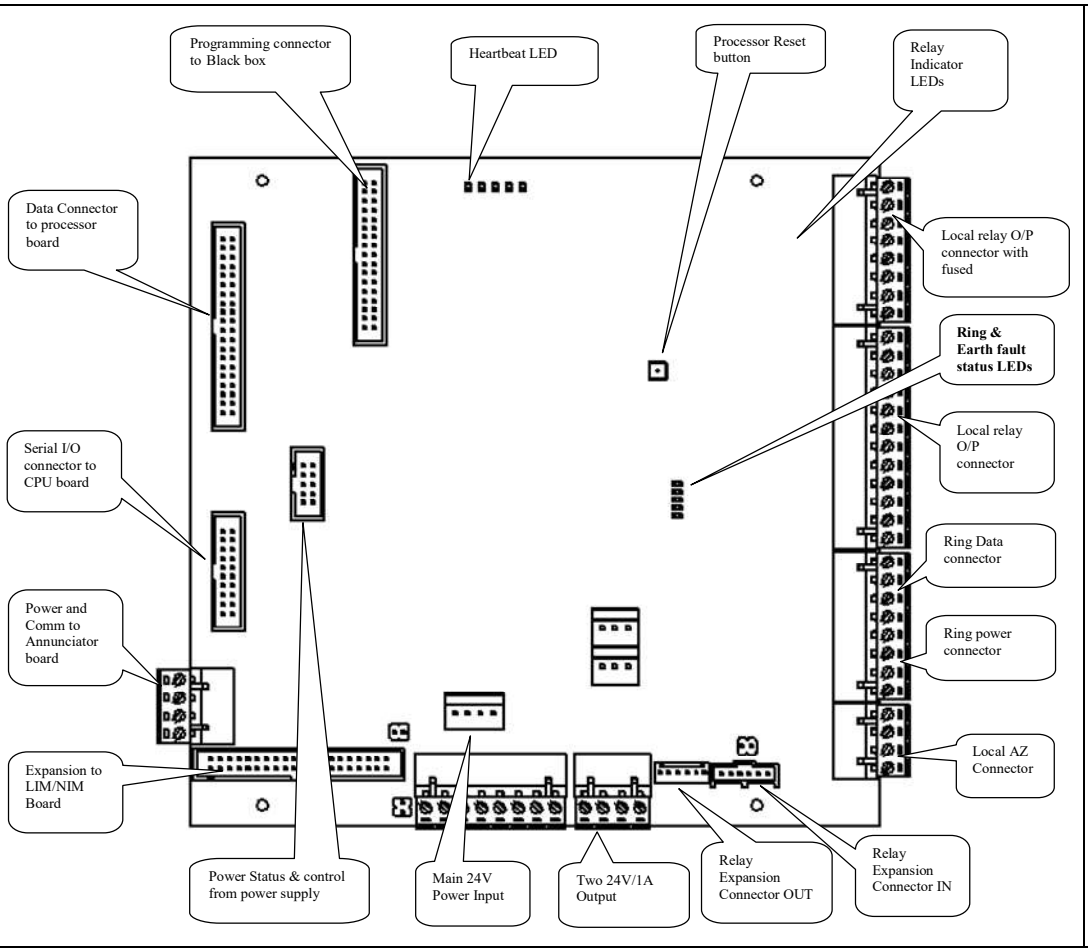
These codes apply to Analog devices and are added to the history log as well as being displayed in the Fault List when the fault occurs.

| Actual Fault | Code Displayed | Possible causes |
|---|---|---|
| No Response | FAULT (F01) | The device in fault is not communicating with the LCM. This fault can occur if the device is not physically connected, damaged or set at wrong address. |
| Mismatched Hardware Type | FAULT (F02) | The actual device type is different to the programmed type. This fault would occur if an incorrect device type is used such as a heat detector instead of a photo optical detector. |
| Devices At Same Address | FAULT (F03) | Two devices have the same address on the loop. |
| Incorrect Response | FAULT (F04) | The device has returned an incorrect response. This fault can occur if the device is faulty or the loop wiring is substandard. If the resistance of the entire loop wire exceeds 50 ohms, this fault will be observed intermittently. |
| Open Circuit | FAULT (F05) | An Analog module does not have the End Of Line resistor connected or an incorrect value of EOL is used. |
| Short Circuit | FAULT (F06) | There is a short circuit on the output terminals of an Analog relay module. |
| Low Threshold | FAULT (F07) | A low threshold fault indicates a faulty detector which needs to be replaced. |
| Maintenance Alert | FAULT (F08) | Analog detector needs cleaning. |
| Maintenance Urgent | FAULT (F09) | Analog detector needs cleaning urgently. Once the detector is in maintenance urgent fault it will no longer provide reliable detection of fire. |
| Verify Count Over 20 | FAULT (F010) | Not used on AFP-2800/2802. |
| Detector Failed Test | FAULT (F011) | LCM performs a test on each detector every 2 – 3 hours. This fault can occur if the device is faulty or the loop wiring is substandard. If the resistance of the entire loop wire exceeds 50 ohms, this fault will be observed intermittently. |
| Security Tamper | FAULT (F012) | Not used on AFP-2800/2802. |
| Low Temperature | FAULT (F013) | Not used on AFP-2800/2802. |
| Ground Fault | FAULT (F014) | Less than 50kohms resistance to ground. The Ground Fault LED on the affected LCM will be ON (refer to page 118). |
| Charger Fault | FAULT (F015) | Not used on AFP-2800/2802. |
| Battery Low | FAULT (F016) | Not used on AFP-2800/2802. |
| Battery High | FAULT (F017) | Not used on AFP-2800/2802. |
| General Trouble | FAULT (F018) | General fault code that LCM uses when it cannot detect the actual problem with the device. This fault can occur if the device is faulty or the loop wiring is substandard. If the resistance of the entire loop wire exceeds 50 ohms, this fault will be observed intermittently. |
| Missing Address | FAULT (F019) | Not used on AFP-2800/2802. |
| AC Fail | FAULT (F020) | Not used on AFP-2800/2802. |
| Module External Power Loss | FAULT (F021) | 24 volt power is not connected to the Analog module. (Conventional Zone and Control modules). |
| Wrong OEM Device Type | FAULT (F022) | The device on the loop is using the wrong communication protocol. Replace the device with a version that has compatible protocol with the panel. |
| RFX Communication Loss | FAULT (F023) | Not used on AFP-2800/2802. |

| Actual Fault | Code Displayed | Possible causes |
|---|---|---|
| Beam Blocked | FAULT (F024) | Beam Detector Fault - Something has come between the detector's beam and its reflector. |
| Alignment Mode | FAULT (F025) | Beam Detector Fault - A beam detector is in configuration mode. |
| Device Disabled | FAULT (F026) | Not used on AFP-2800/2802. |
| Zone Disabled | FAULT (F027) | Not used on AFP-2800/2802. |
| Initialisation Mode | FAULT (F028) | Beam Detector Fault - A beam detector is running through its initialization sequence. |
| Incorrect Position | FAULT (F029) | Beam Detector Fault - |
| Over Range | FAULT (F030) | Not used on AFP-2800/2802 - FMM-4-20. |
| Under Range | FAULT (F031) | Not used on AFP-2800/2802 - FMM-4-20. |
| Device Inhibit | FAULT (F032) | Not used on AFP-2800/2802 - FMM-4-20. |
| No Threshold Programmed | FAULT (F033) | Not used on AFP-2800/2802 - FMM-4-20. |
| Trouble 1 | FAULT (F034) | Not used on AFP-2800/2802 - FMM-4-20. |
| Trouble 2 | FAULT (F035) | Not used on AFP-2800/2802 - FMM-4-20. |
| Comms Loss | FAULT (F036) | Not used on AFP-2800/2802 - FMM-4-20. |
| Command Failed | FAULT (F037) | Not used on AFP-2800/2802. |
| Thermistor Fault | FAULT (F038) | The thermistors are not functioning properly on a FSC-851 detector. This trouble is generated for FlashScan mode only. |
| IR Fault | FAULT (F039) | The infrared element is not working properly on a FSC-851 detector. This trouble is generated for FlashScan mode only. |
| IR Light Saturation | FAULT (F040) | The infrared sensor on a FSC-851 detector is saturated. |
| CO 6 Month Of Life | FAULT (F041) | The CO (carbon monoxide) detection element on a FSC-851 detector has six months left to expiration. |
| CO Life Expired | FAULT (F042) | The CO (carbon monoxide) detection element on a FSC-851 detector has expired. |
| CO Fault | FAULT (F043) | The CO element on a FSC-851 detector is not working properly. This trouble is generated for FlashScan mode only. |

# 9.6 PANEL CONNECTION DIAGRAMS:

## 9.6.1 MAIN TERMINATION BOARD (FIM)




**Ring & Earth Fault Status LED**

**SC A**
Short Circuit on Ring 1 power A

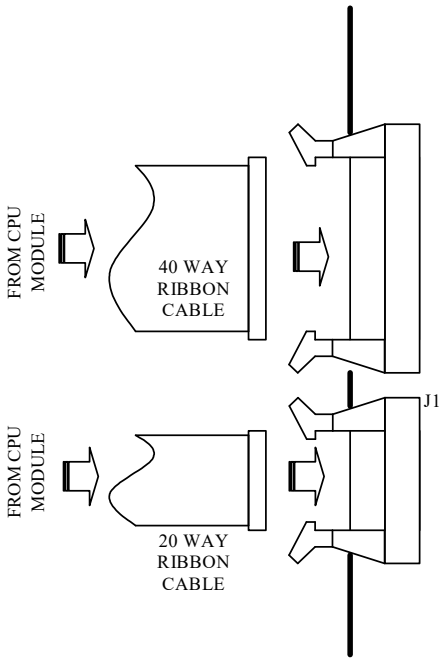
**SC B**
Short Circuit on Ring 1 power B

**EFLT**
Earth fault detected on panel or power supply

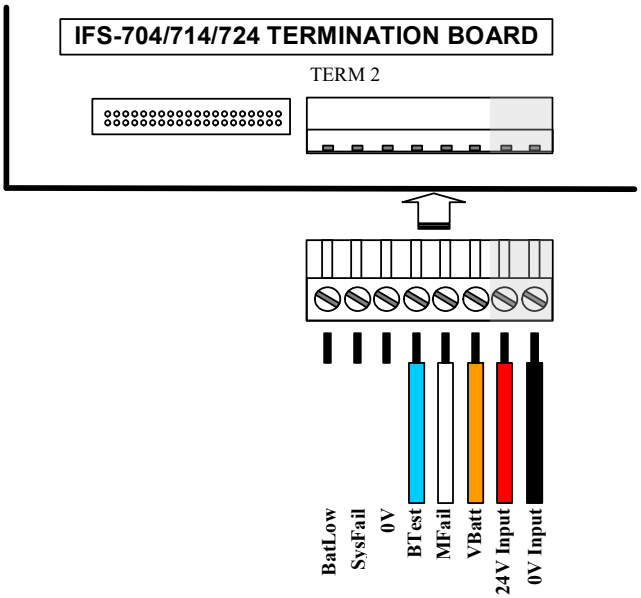
**Open –**
Ring 1 data negative leg is open circuit.

**Open +**
Ring 1 data positive leg is open circuit.

### CONNECTING RIBBONS TO CPU



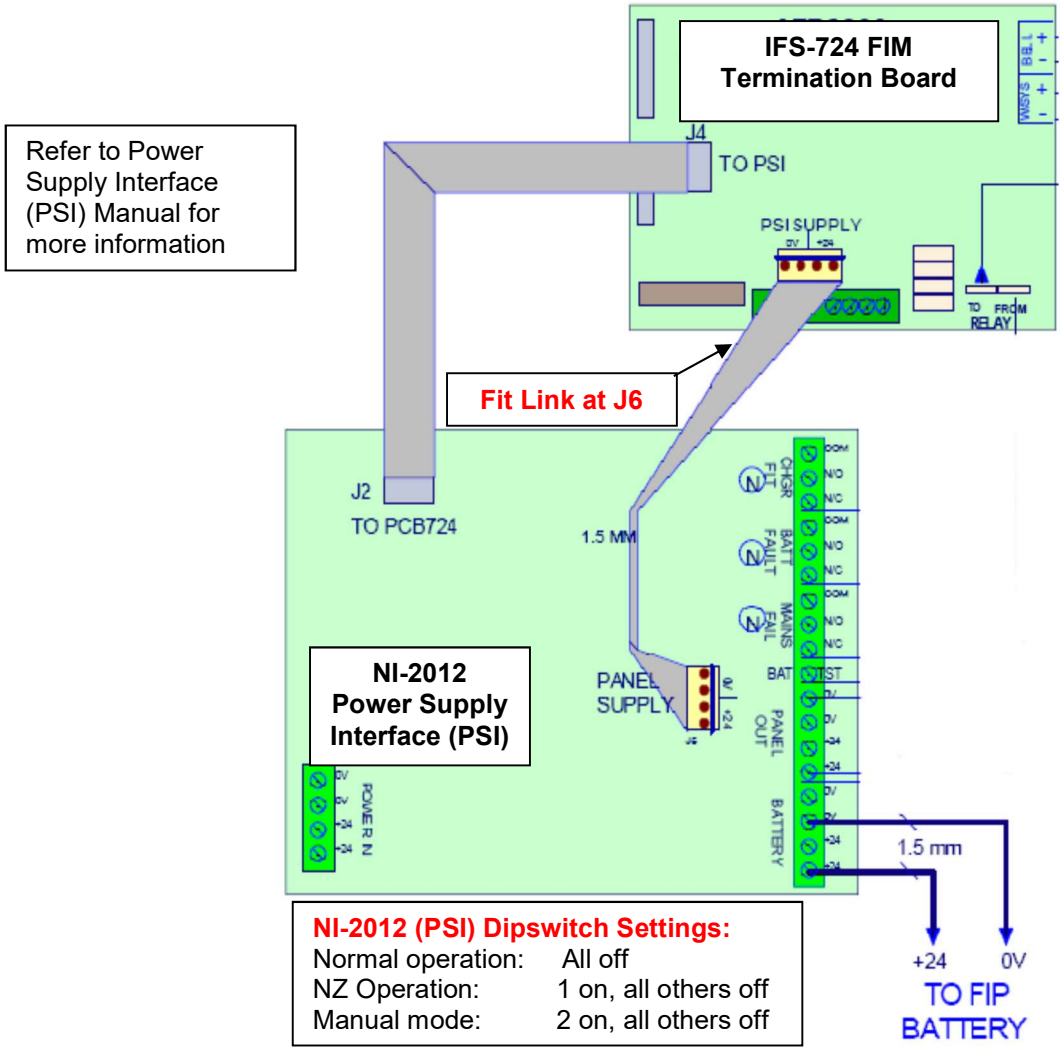
## 9.6.1.1 POWER SUPPLY CONNECTIONS - PS243 & PS249



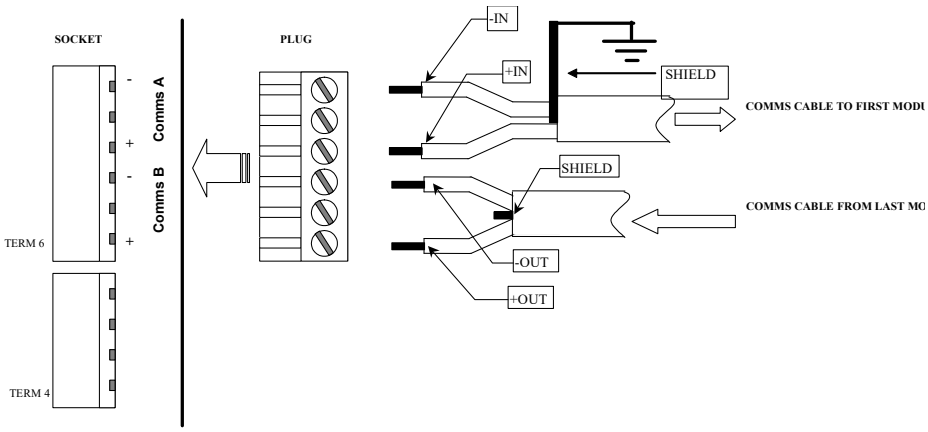

## 9.6.1.2 POWER SUPPLY CONNECTIONS - NPS-2/5/11

The following settings are used when connecting a NPS power supply to an IFS-724 FIM using the ribbon cable:

1. The CPU must have V5.02 or above firmware installed.
2. Set the bottom dipswitch on mode dipswitch U25 (on the back of the CPU) to the on position. Note that the dipswitch can be marked 1 or 4. Always set the dipswitch closest to the upload/download port.
3. J6 on IFS-724 FIM board must be fitted.

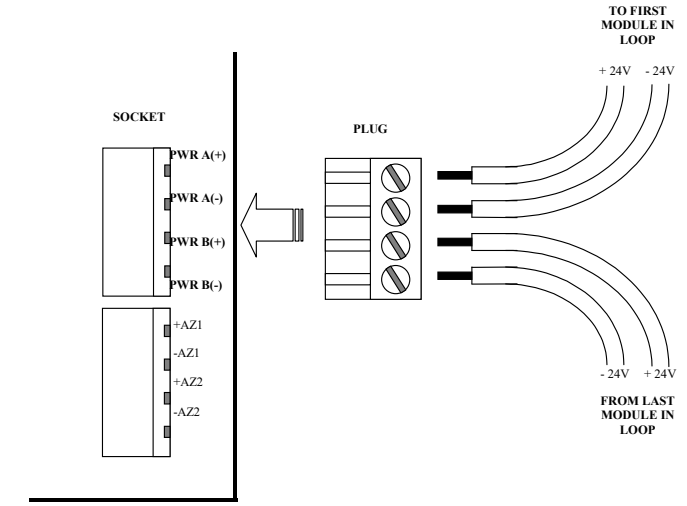


## 9.6.1.3 MAIN TERMINATION BOARD – CONNECTING RS485

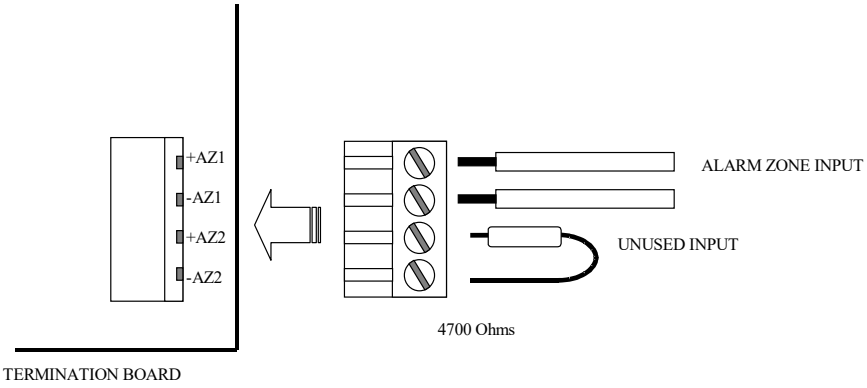



**Note:** **Terminate the shield at the outside of the FIP cabinet (ground). Where this is not possible, the shield must be terminated to physical ground immediately adjacent to cable entry. Between Field modules, connect shields together outside of their respective enclosures. Make sure that the shield is only grounded at the FIP and not at the modules or annunciators. Do not ground both ends of the shield; one end should be left floating.**

## 9.6.1.4 MAIN TERMINATION BOARD – CONNECTING 24VDC



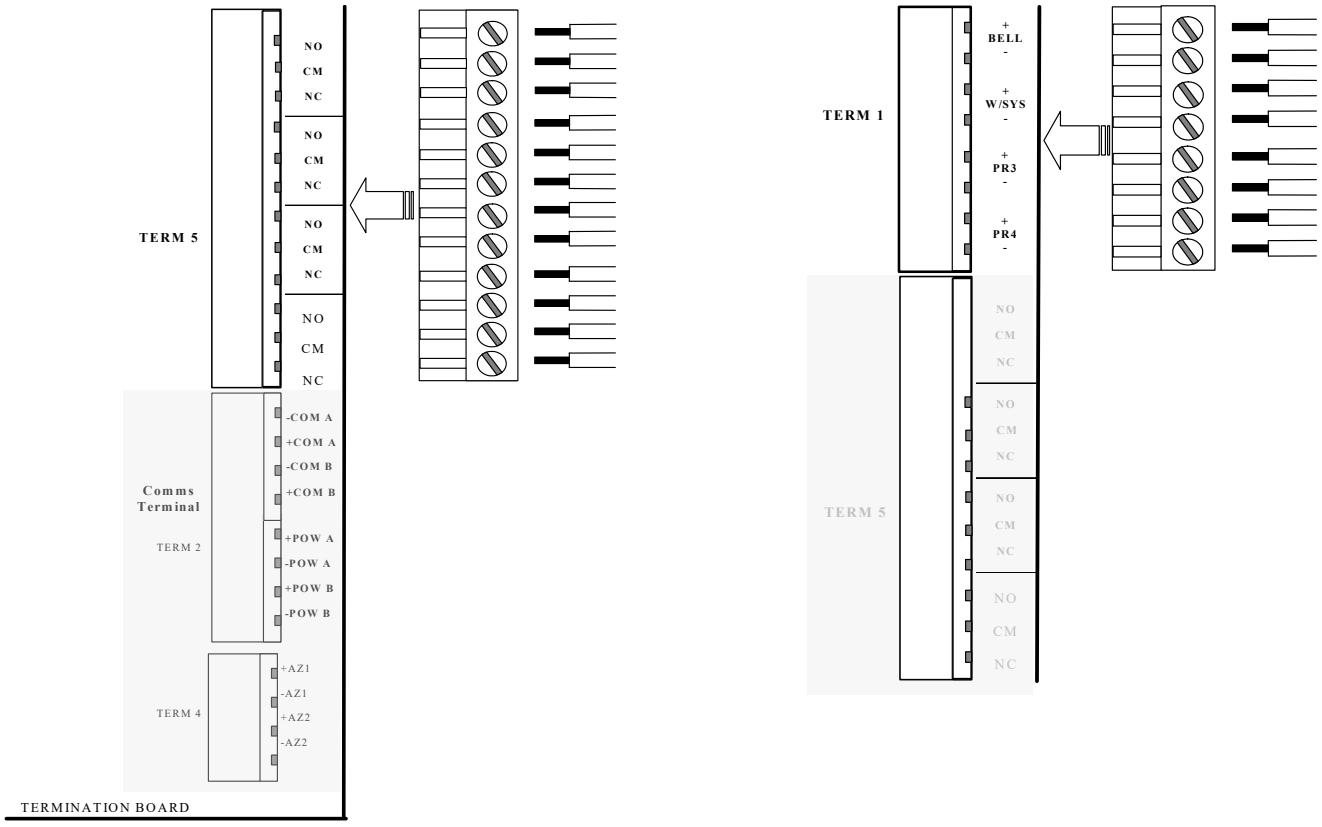

## 9.6.1.5 MAIN TERMINATION BOARD – CONNECTING AZF'S 1 & 2



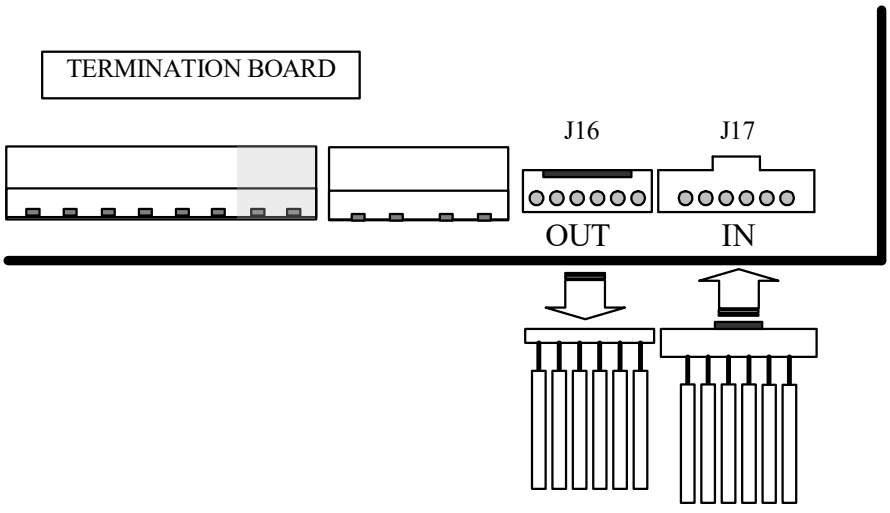
## 9.6.1.6 MAIN TERMINATION BOARD – CONNECTING RELAY OUTPUTS

4 x Clean Contact Relays

4 x Monitored 24V Outputs (4k7 EOL Resistors)



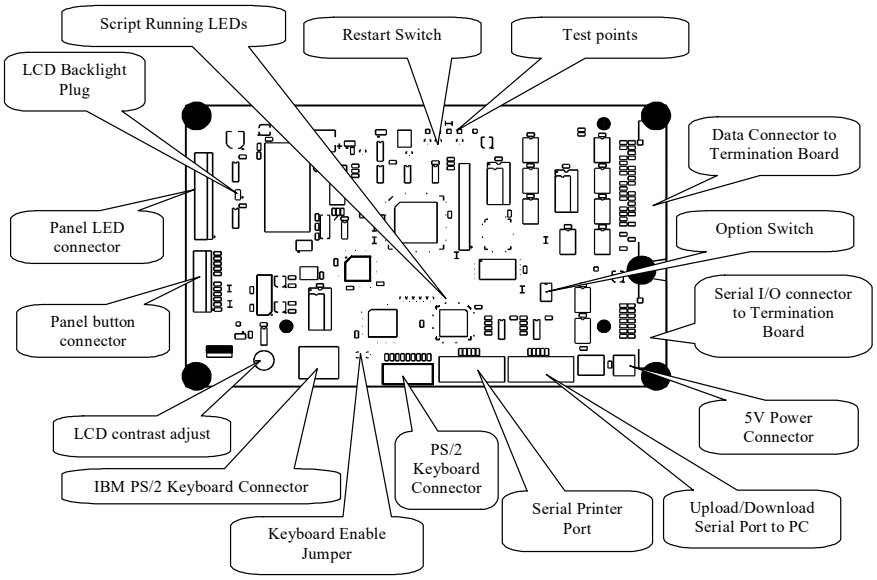

## 9.6.1.7 MAIN TERMINATION BOARD – PANEL EXPANSION RELAYS




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 relay 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 together.

## 9.6.2 CPU




### 9.6.2.1 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-2800/2802 End (CONN2) — Laptop End

| DB9 Male | DB9 Female |
|---|---|
| 2 (RX) | 2 (RX) |
| 3 (TX) | 3 (TX) |
| 5 (REF) | 5 (REF) |
| 8 (CTS) | 7 (RTS) |

### 9.6.2.2 Printer Port Settings

**Caution: The PS/2 keyboard and serial printer must not be connected at the same time or printing errors will result. The serial printer (where fitted) must be disconnected whilst the keyboard is plugged in.**

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

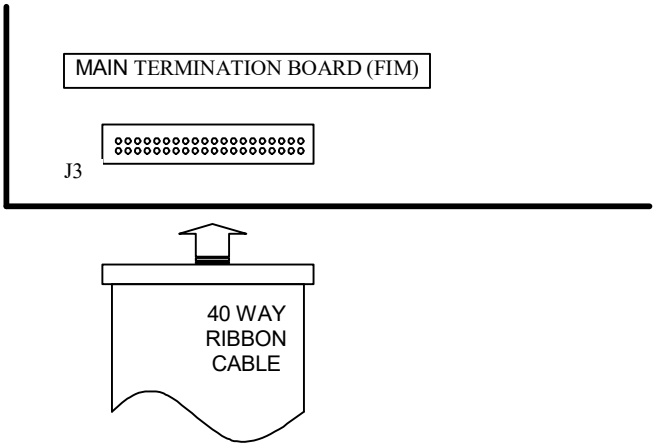
| Connector Information | |
|---|---|
| Type | DB9 Female |
| Location | CPU Conn 1 |
| RX | Pin 2 |
| GND | Pin 5 |
| CTS | Pin 8 |
| | |

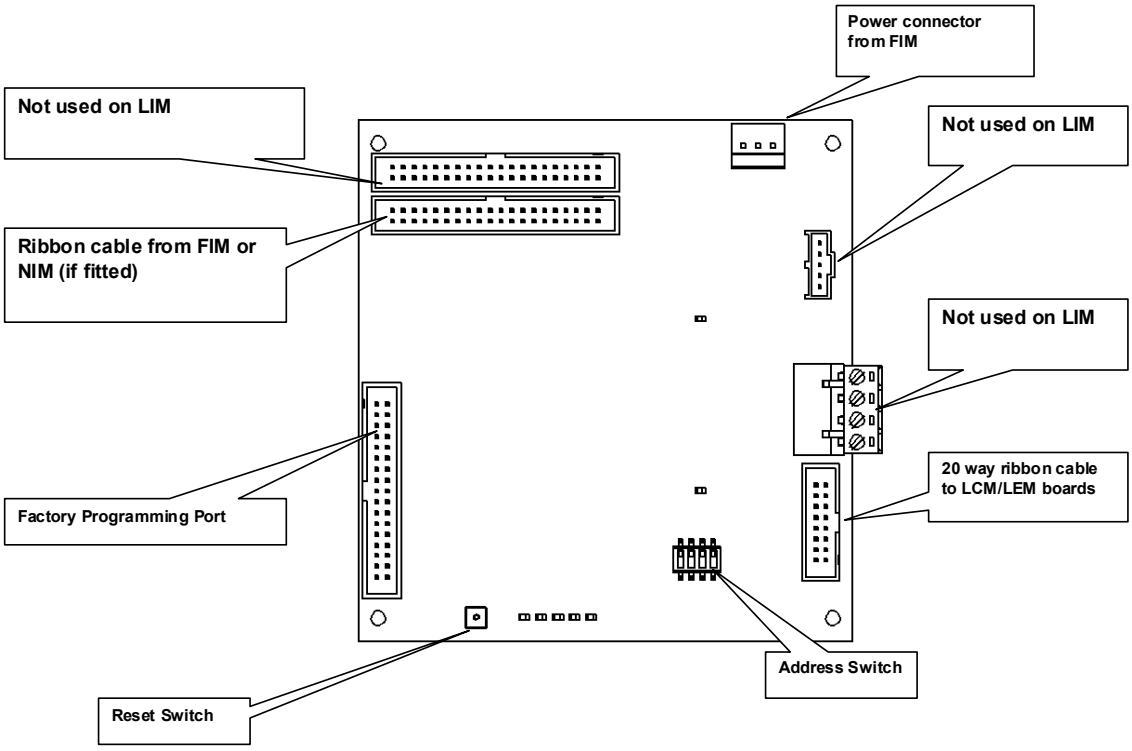
Cable Specification AFP-2800/2802 End (CONN1) — Printer End (25 or 9 pin)

| DB9 Male | DB25 Male | DB9 Male |
|---|---|---|
| 3 (TX) | 3 (RX) | 2 (RX) |
| 5 (REF) | 7 (REF) | 5 (REF) |
| 8 (CTS) | 4 (RTS) | 7 (RTS) |

**Note: If using a DPU414 thermal printer with 9 pin connector, connect pins 3, 5, 8 on AFP-2800/2802 to pins 3, 5, 8 on the printer (1 to 1). Refer to printer manual for detailed connection information.**

## 9.6.3 LOOP INTERFACE MODULE (LIM)



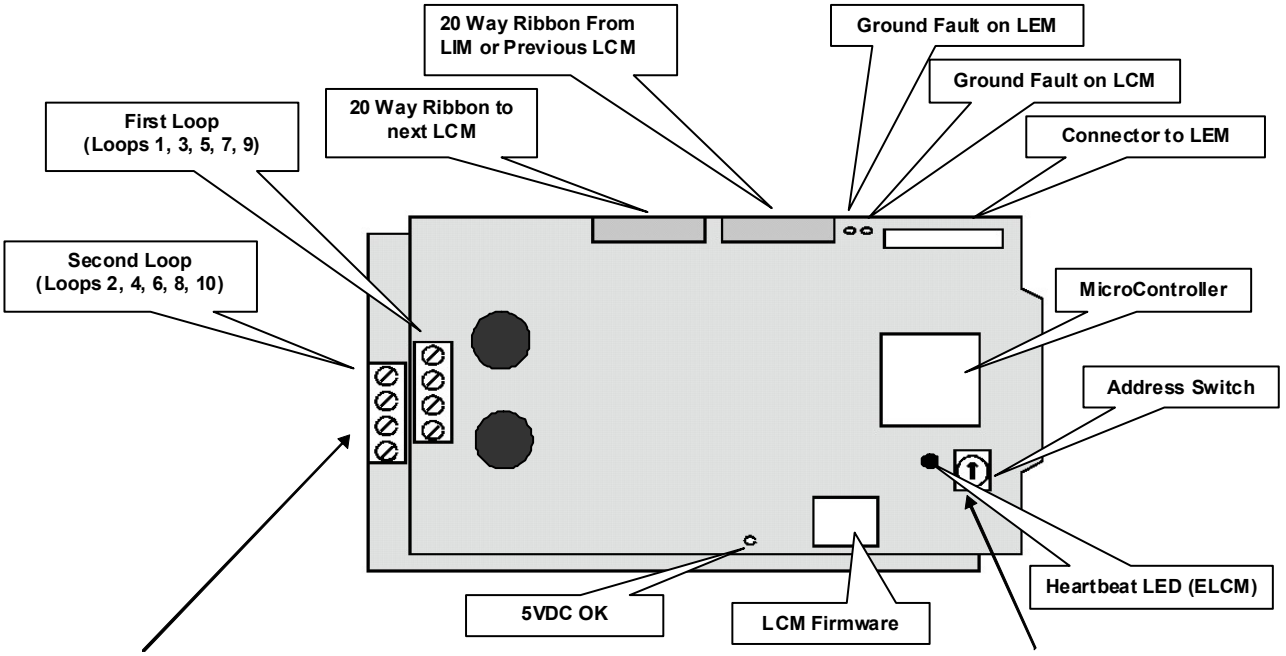

Address Settings:

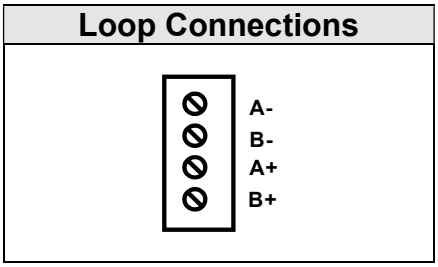
| Description | SW1 | SW2 | SW3 | SW4 |
|---|---|---|---|---|
| Loop Interface Module (For use with LCM's) | **OFF** | **ON** | **OFF** | **OFF** |
| Network Interface Module (For use with NCM's) | **ON** | **ON** | **OFF** | **OFF** |

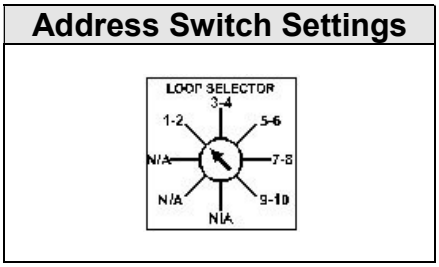
## 9.6.4 ANALOG LCM AND LEM TERMINATIONS

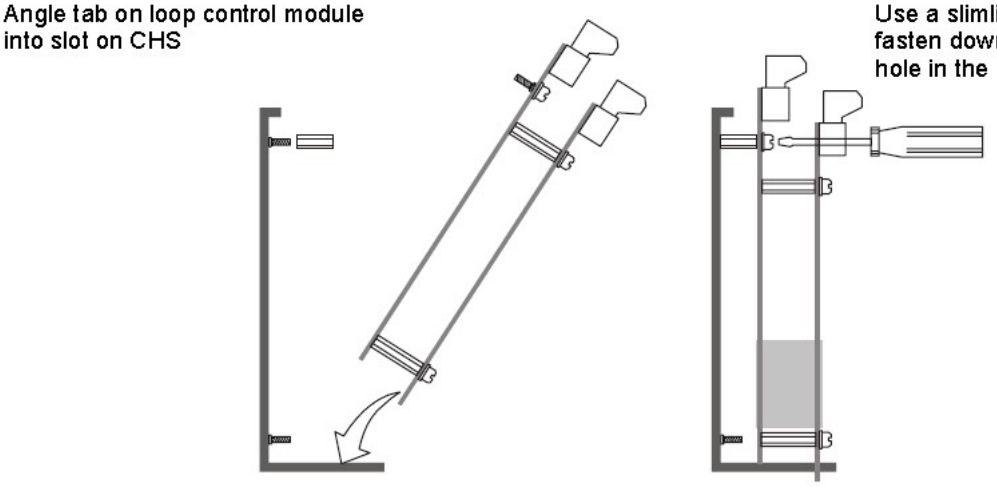
The LCM-320 and the updated ELCM-320 is a 1-loop board that can support up to 159 detectors and 159 modules in FlashScan mode or 99 detectors and 99 modules in CLIP mode. The field wiring is electrically isolated from the rest of the system so that any two-ground faults on separate loops will not cause 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. ELCM modules also include a green heartbeat LED to show that the processor is working.

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.

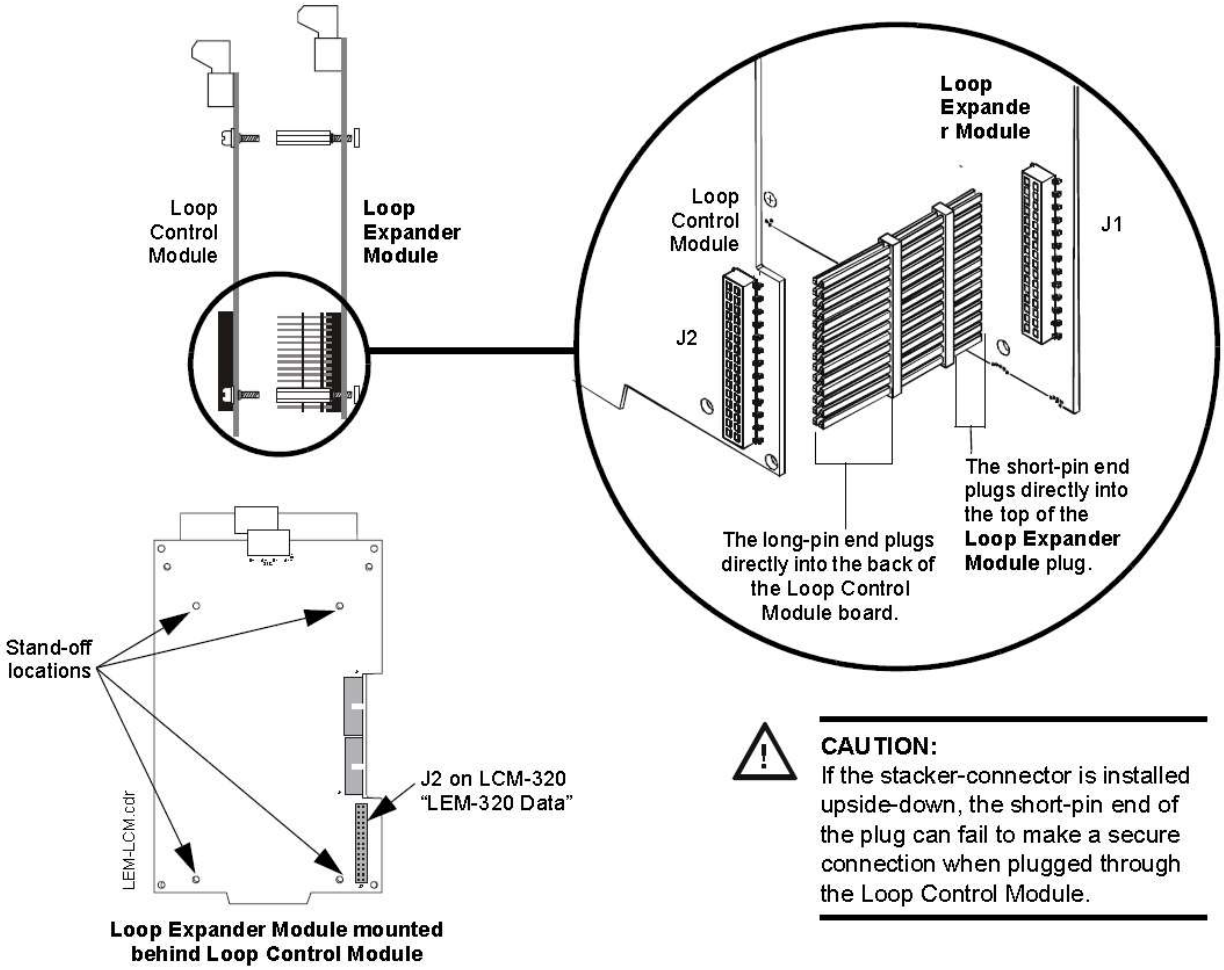



**Inserting a pair of LCM/LEM into CHS-3L/4L**




**Connecting LCM with LEM**

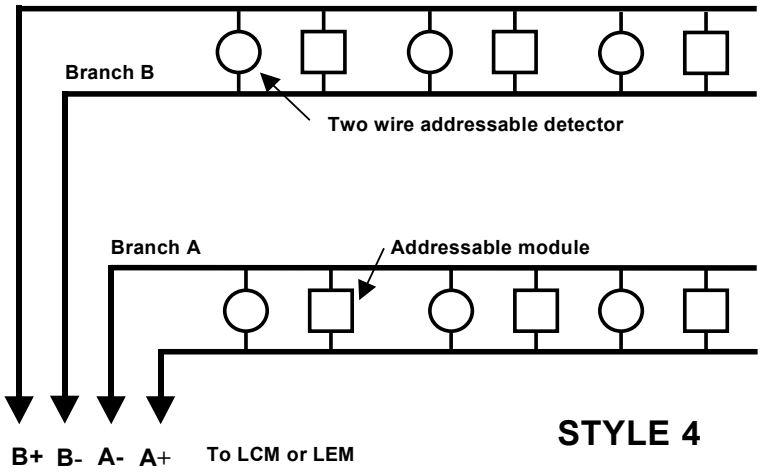
## 9.6.4.1 LOOP WIRING STYLES:

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 0 for loop configuration details and to section 9.4.2 for cabling requirements.

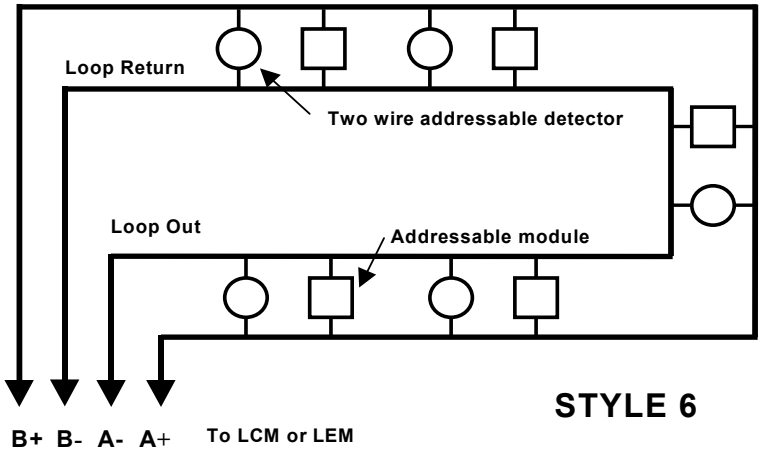
Style 4. (Open loop – does not return to the panel, non-redundant)
Port A (Channel A) 3810m maximum, 50 Ω s resistance maximum.
Port B (Channel B) 3810m maximum, 50 Ω resistance maximum.
In style 4, the processor will poll both legs of the "loop" simultaneously through its own driver. If either leg is 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 Ω 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.

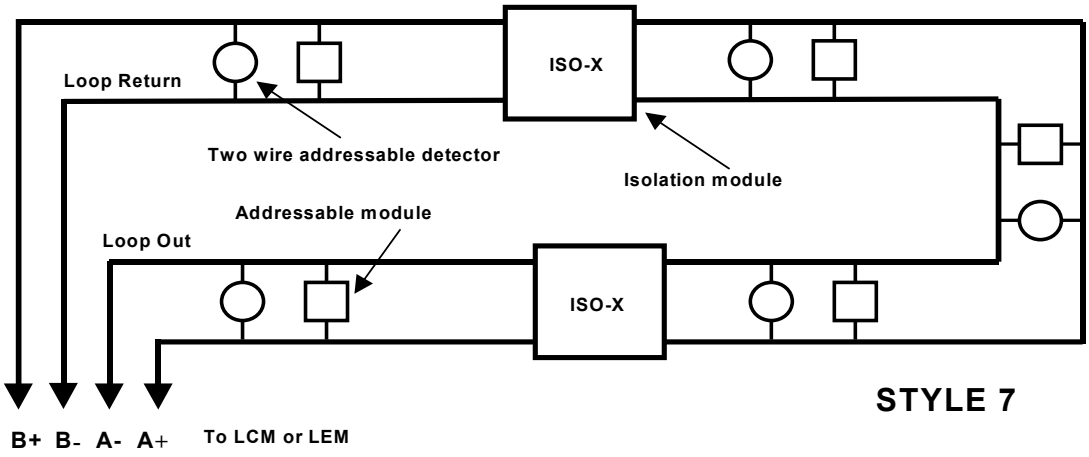
Style 7. (Closed loop with isolation modules providing a redundant path for short circuit conditions)
Total Loop, 3810m maximum, 50 Ω resistance maximum.
Maximum of 25 devices between isolation modules (Note: contact Notifier more details)
In style 7, the processor polls the loop from one of the drivers (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**

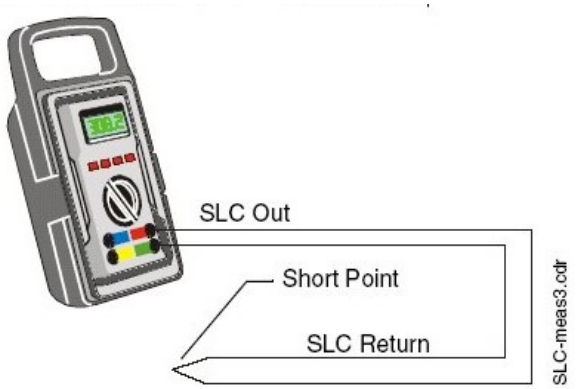



**STYLE 7**

## 9.6.4.2 ANALOG LOOP 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 Ω per leg. Refer to note below if using loop isolator devices.




Measuring DC Resistance of a Four-Wire SLC

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 approximately 23 - 25 volts with no devices programmed on the loop. If there are devices programmed on the loop then the voltage will be approximately 13 - 16 volts. Now connect the loop. The reading should be the same as when the loop was disconnected. If the measured voltage is below the specified values, 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 Ω, 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 isolation modules or bases are present:**

**ISO-X Modules**
**When power is removed from the loop, the positive side of the circuit is opened at each 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.**

**B524IEFT-1 Isolator Base**
**When power is removed from the loop, the positive side of the circuit is opened at each isolator base. To measure the loop resistance, temporarily place a jumper between terminals 5 (A+) and 6 (B+) on each B524IEFT-1 before taking measurements. Remember to remove all the jumpers and test all isolator bases when you have finished taking the readings.**

**All addressable sounder/strobes with built in isolators should also be removed from the loop while taking measurements.**

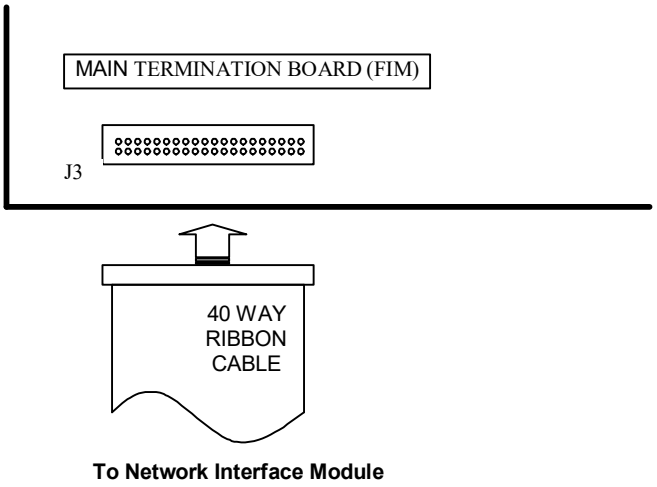
**Refer to SLC Wiring Manual for more information.**

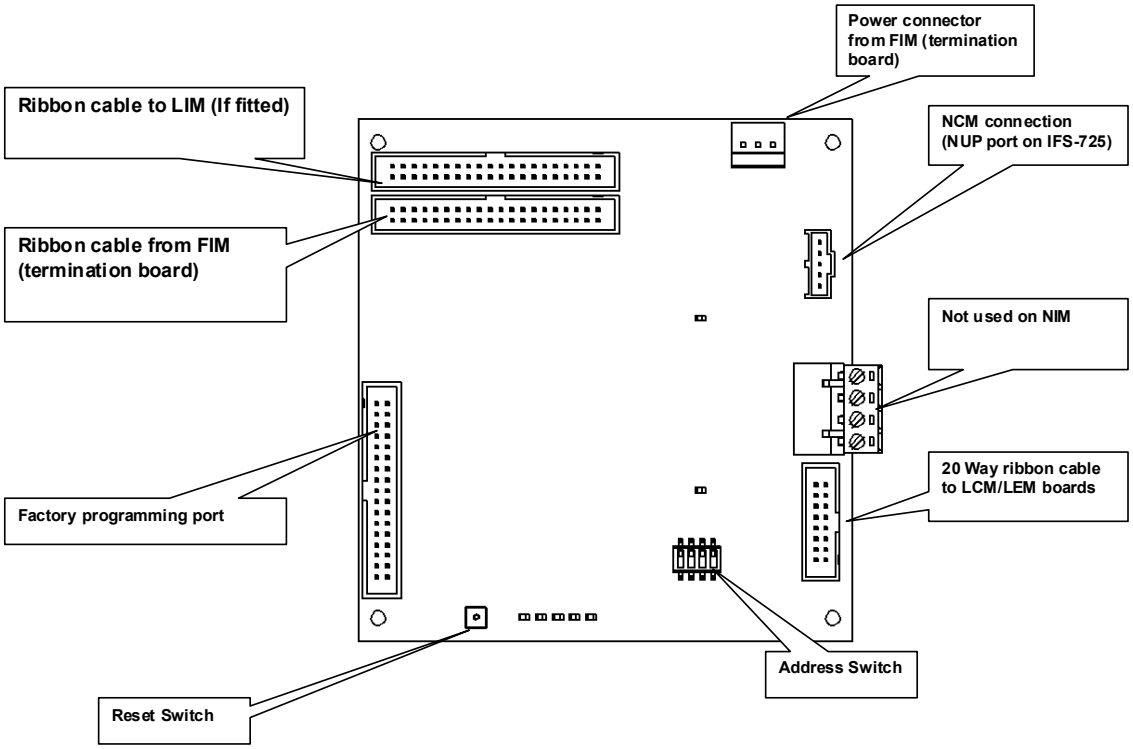
## 9.6.5 NOTI.FIRE.NET™

**Note: AFP-2802 does not support networking. The rest of this section only applies to the AFP-2800 FIP.**

**Noti.Fire.Net™** is a series of modules and products which allow a group of Fire Alarm Control Panels (FACP) and other control equipment to connect, forming a true peer-to-peer network. Equipment that connects to **Noti.Fire.Net™** and communicates with other equipment using the network may be referred to as a network node. The minimum hardware requirement for **Noti.Fire.Net™** is two nodes connected via wire (or optical fibre). **Noti.Fire.Net™** for the AFP-2800 supports up to 100 nodes. The AFP-2800 occupies a single node address on the network. Each network node requires a unique node address; the node communicates with other nodes via a Network Control Module (NCM). The NCM connects to the AFP-2800 via the Network Interface Module (NIM).

### 9.6.5.1 NETWORK INTERFACE MODULE (NIM)



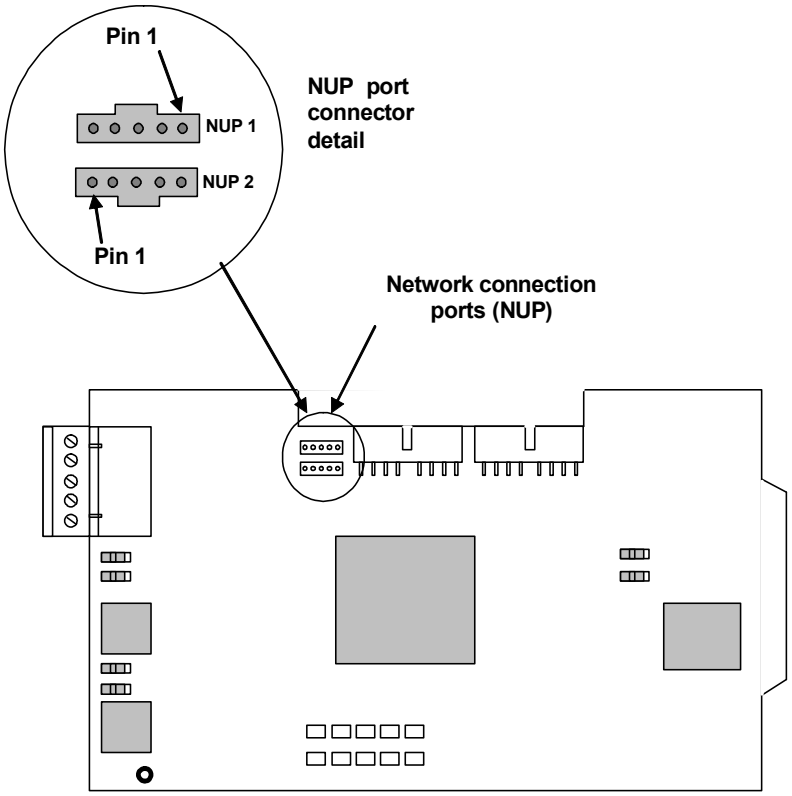




| Address Settings | SW1 | SW2 | SW3 | SW4 |
|---|---|---|---|---|
| Network Interface Module | ON | ON | OFF | OFF |

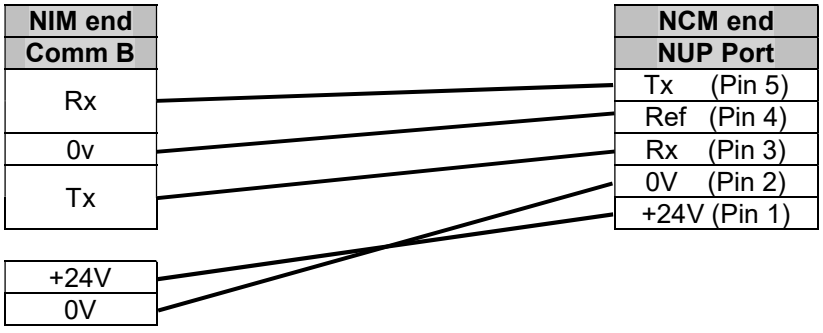
NIM connects to the NUP port on the NCM.

## NIM (IFS-725) to NCM cable specification:

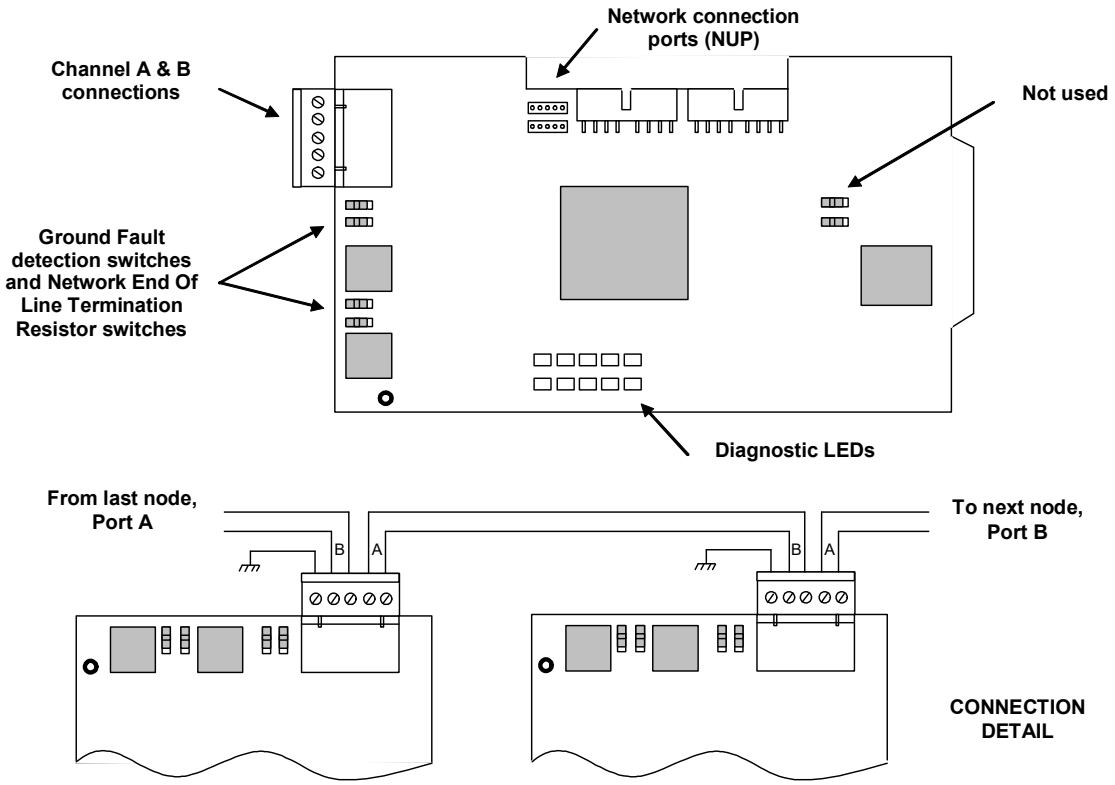
Standard 5 way NUP cable connects J6 connector on IFS-725 NIM to **NUP 1** (J3) connector on NCM.




## NIM (IFS-705) to-NCM cable specification:



## 9.6.5.2 NOTI.FIRE.NET™ NCM SWITCHES & TERMINATIONS




**Note:**

**Wiring from the NCM-W that is installed outside buildings:**

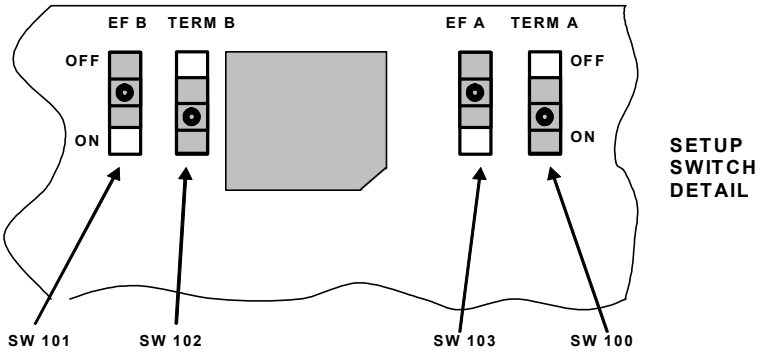
- **Must be in conduit and be buried in a trench separate from any power lines**
- **Cannot cross any power lines**

### NCM-W Connections:

| Connector Pin | Signal Name | |
|---|---|---|
| TB100-1 | CH-A (+) | Channel-A Driver / Receiver |
| TB100-2 | CH-A (-) | Channel-A Driver / Receiver |
| TB100-3 | CH-B (+) | Channel-B Driver / Receiver |
| TB100-4 | CH-B (-) | Channel-B Driver / Receiver |
| TB100-5 | Earth Ground | |

### 9.6.5.3 NCM Switch Functions: Ground Fault Detection and Line Termination

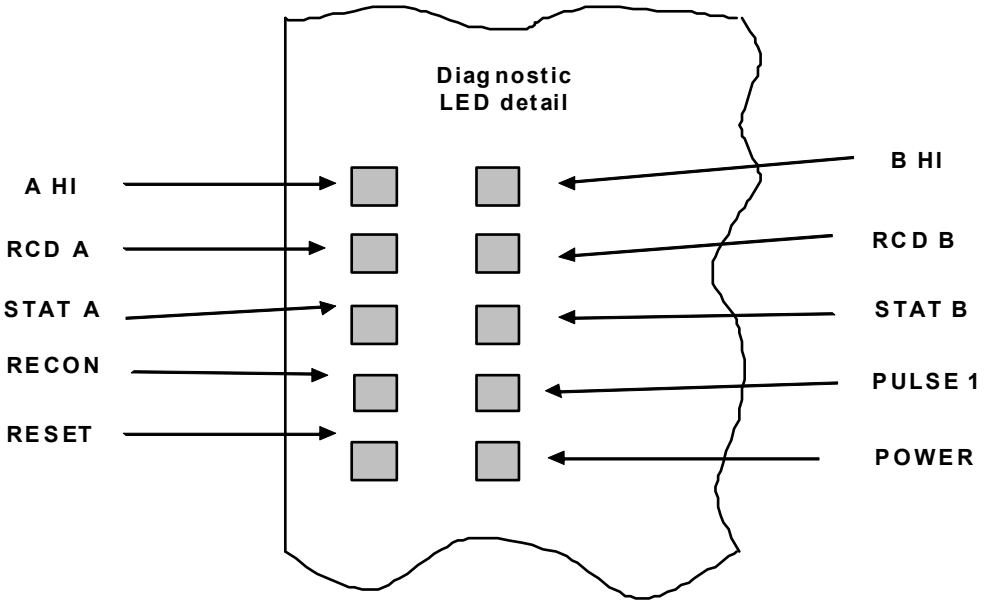
The NCM-W provides two sets of switches to simplify network set-up. Default settings for AFP-2800 networks are shown in the diagram below.




- To enable ground fault detection, set SW103 for Channel A; SW101 for Channel B, to the ON position
- To activate the on-board end-of-line resistors, set SW100 for Channel A; SW102 for Channel B, to the ON position. There MUST be a functioning terminating resistor on the first and last node/repeater of a wire segment (between 2 nodes). This means that in a ring configuration each NCM in the ring **MUST** have terminating resistors enabled for both channels.

### 9.6.5.4 NCM Diagnostic LED Indicators:

The NCM has LEDs that serve as diagnostic indicators to help in troubleshooting and system connection. The table below outlines their function.




| LED Indicator | LED Colour | LED Description |
|---|---|---|
| A HI | Green | Illuminates to indicate that the NCM-W Port A is set for high threshold |
| B HI | Green | Illuminates to indicate that the NCM-W Port B is set for high threshold |
| RCD A | Green | Illuminates when the NCM is receiving data from the network on Port A |
| RCD B | Green | Illuminates when the NCM is receiving data from the network on Port B |
| STAT A | Yellow | Illuminates when the NCM has not received valid data on Port A for at least 16 seconds |
| STAT B | Yellow | Illuminates when the NCM has not received valid data on Port B for at least 16 seconds |
| RECON | Yellow | Illuminates when a reconfiguration on the network is in progress |
| PULSE1 | Green | Illuminates when the NCM is transmitting data to the network |
| RESET | Yellow | Illuminates when the microcontroller fails |
| POWER | Green | Illuminates when +5VDC is available |

# 9.7 MODEM/PRINTER/HLI INTERFACE

## 9.7.1 MODEM INTERFACE

The AFP-2800/2802 PC Interface can be used to control the FIP using a modem and AFP-2800/2802 PCI software. A global option on the FIP will enable/disable modem operation.

### 9.7.1.1 PC MODEM

Any non software modem should work correctly with the PCI. It is recommended to use a high quality external modem to allow modifying of modem parameters to solve any possible compatibility issues.

### 9.7.1.2 FIP MODEM

The recommended modem for the FIP is a NetComm IG6000 (industrial modem) that is modified to work with 24VDC. This modem was chosen due to its construction and reliability. NIFS part number is 10972.

### 9.7.1.3 FIP MODEM SETTINGS

The FIP modem needs to be programmed with the following AT commands using a terminal program such as HyperTerminal and the standard modem to PC cable provided:

Use “AT S0=2 R115 &K3 &S0 %E2” command to set the required modem options

**ATS0=2** - answer after 2 rings
**ATR115** - lock terminal speed to 115000
**AT&K3** - RTS/CTS flow control
**AT&S0** - DSR signal always asserted
**AT%E2** - Automatic speed stepping

To establish connection with the modem after the above commands have been entered, set HyperTerminal port settings to 115 baud rate & RTS/CTS handshaking.

After re-connecting to the modem using the above settings, save the configuration to hardware profile 0 using the **AT&W0** command.

Check modem configuration using **AT&V** command. Ensure that all the options are the same as the configuration printout below:

B0 E1 L1 M1 T Q0 **R115** V1 W2 X5 &B4 &C1 &D2 &G0 &H0 **&K3** &L0 &M0 &N1 &P1 &R0 **&S0**
&T4 &X0 &Y0 \A3 \B3 \J0 \K5 \N3 \T0 \V0 \X0 #A2 #B0 #C0 #D0 #E0 #F0 #I0 #J1
#M0 #N0 #O0 #Q0 #U0 #V0 %B0 %C3 %D0 **%E2** %F1 %G0 %H0 %K0 %L11 %M0 %N0 %P0 %R0
%S0 %T0 %U0 %V0 %W0 *K0 *V0 *R0 *T0 *Y0 -Q1 :E1 -SDR0,1 #CID0 #MUS0
**S000:002** S002:043 S003:013 S004:010 S005:008 S006:004 S007:050 S008:004
S009:006 S010:018 S011:095 S012:050 S018:000 S025:005 S026:000 S030:000
S033:003 S042:002 S043:015 S045:098 S047:030 S066:010 S067:042 S069:060
S076:080 S077:010 S105:030 S110:004 S126:061
&Z0 = &Z1 =
&Z2 = &Z3 =
&Z4 = &Z5 =
&Z6 = &Z7 =
&Z8 = &Z9 =
Last dialled = T2
+MS: 12,1,300,56000,1,0
Access Security: OFF Security Database, Security Mode & Call-Log Erase: FREE
Stored Phone Numbers: DISPLAYED OutDial: ENABLED
Caller ID: DISABLED DES: 64bit
Internal Storage (#MEM): Enabled when DTR off: 4 Voice Messages
#ALM1=0, #ALM2=0, PIN number =1234

#### 9.7.1.4 MODEM TO FIP CABLE

The modem is connected to the CPU debug port and uses a **special** serial cable with pin connections outlined below:

| AFP-2800/2802 Debug Port DB9(male) Labelled CONN2 | Modem Connector DB9 (male) | Modem Connector DB25 (male) |
|---|---|---|
| Pin 2 RX | Pin 2 | Pin 3 |
| Pin 3 TX | Pin 3 | Pin 2 |
| Pin 5 GRND | Pin 5 | Pin 7 |
| Pin 7 RTS | Pin 4 | Pin 20 |
| | Pin 7 linked to 8 | Pin 4 linked to 5 |

**Notes:**

- All other pins should be left disconnected.
- The cable is not bi-directional. When making or connecting the cable, make sure that each end is marked and connected correctly to either CPU or Modem.
- This cable cannot be used to change the AT settings of the modem. A standard modem cable (modem to PC) should be used for setting the modem options.

### 9.7.2 PRINTER/PAGER/HLI INTERFACE

AFP-2800/2802 can be interfaced to serial printers, pagers and nurse call systems using the printer port on the CPU (CONN1). A global option on the FIP will enable/disable printing. Any standard terminal program or the AFP-2800/2802 PCI history upload tool can be used to monitor the output of this port. An example of this text output is included in the next section for reference.

#### 9.7.2.1 PORT SETTINGS

| AFP-2800/2802 Printer Port (Conn1) Settings | |
|---|---|
| Mode | RS-232 |
| Baud Rate | 9600 |
| Data Bits | 8 |
| Stop Bits | 1 |
| Parity | Odd |
| Handshaking | Hardware CTS/RTS |

#### 9.7.2.2 FIP TO PRINTER CABLE

| AFP-2800/2802 Printer Port (DB9 Male) Labelled CONN1 | Printer Connector (DB25) | Printer connector (DB9) |
|---|---|---|
| Pin 2 (RX) | - | - |
| Pin 3 (TX) | Pin 3 (RX) | Pin 2 (RX) |
| Pin 5 (REF) | Pin 7 (REF) | Pin 5 (REF) |
| Pin **7 (RTS)** | **-** | **-** |
| Pin **8 (CTS)** | Pin **4 (RTS)** | Pin **7 (RTS)** |

**Notes:**

- Pin 8 (CTS) on the CPU side has to be high (+5v) for AFP-2800/2802 to print. If the printer/pager does not support Hardware handshaking (RTS signal), link pin 7 and 8 (on the CPU side) to allow printing without handshaking.
- A global option on the FIP will enable/disable printer output.

## 9.7.2.3 PRINTER OUTPUT FORMAT

```
Event(max 18 char)  Zone  Point         Label(max 28 characters)     Date  Time
-------------------------------------------------------------------------------
```

**Event Format:**

```
:ALARM              Z002 1.1.Z2        ROOM 75 ON SECOND FLOOR      03/03 10:07;
:RESET              Z002 1.1.Z2        ROOM 75 ON SECOND FLOOR      03/03 10:08;
:ALARM CLEARED      Z002 1.1.Z2        ROOM 75 ON SECOND FLOOR      03/03 10:08;

:PREALARM           Z999 L10D159       ROOM 15 ON THIRD FLOOR       03/03 10:10;
:PREALARM CLEARED   Z999 L10D159       ROOM 15 ON THIRD FLOOR       03/03 10:10;

:FAULT F05          Z000 L1M7          MONITOR MODULE               03/03 10:12;
:FAULT CLEARED      Z000 L1M7          MONITOR MODULE               03/03 10:13;

:ACKD ISOL          Z000 L1M1          PUMP RUN                     03/03 10:14;
:DE-ISOLATE         Z000 L1M1          PUMP RUN                     03/03 10:17;

:ACTIVE             Z000 0.4.O2        WARNING SYSTEM OUTPUT        07/03 14:39;
:ACKD ISOL FAULT    Z000 L2D159        KITCHEN IN BUILDING E        07/03 14:39;
```

**System Fault Format:**

```
:SYSTEM             Z000               SYSTEM POWER UP              03/03 11:33;
:FAULT              Z000 0.2.I6        BATTERY FAULT                03/03 11:33;
:FAULT CLEARED      Z000 0.2.I6        BATTERY FAULT                03/03 11:33;
:SYSTEM             Z000               SYSTEM NORMAL                03/03 11:33;
:FAULT              Z000 0.10.2        PORTA FLT                    03/03 11:34;
:FAULT              Z000 NODE100.      NODE DOWN                    03/03 11:46;
:FAULT              Z000 0.10.3        PORTB FLT                    03/03 11:46;
:FAULT CLEARED      Z000 0.10.3        PORTB UP                     03/03 11:47;
:FAULT CLEARED      Z000 NODE100.      NODE UP                      03/03 11:47;
:FAULT              Z000 N100.0.10.2   PORTA FLT                    03/03 11:47;
:FAULT              Z000 N100.0.10.3   PORTB FLT                    03/03 11:47;
:FAULT CLEARED      Z000 N100.0.10.2   PORTA UP                     03/03 11:47;
:FAULT CLEARED      Z000 N100.0.10.3   PORTB UP                     03/03 11:47;
:FAULT CLEARED      Z000 0.10.2        PORTA UP                     03/03 11:49;
:FAULT              Z000 0.2.I3        RING POWER SHORT             03/03 11:51;
:FAULT CLEARED      Z000 0.2.I3        RING POWER SHORT             03/03 11:51;
:SYSTEM             Z000 0.6.O5        WARN SYS ISOLATED            03/03 10:42;
:SYSTEM             Z000 0.6.O5        WARN SYS DE-ISOL             03/03 10:48;
:FAULT              Z000 NODE100.      NODE DOWN                    03/03 10:48;
:FAULT CLEARED      Z000 NODE100.      NODE UP                      03/03 10:49;
:FAULT              Z000 N100.0.10.4   PROG MODE ACTIVATED          03/03 10:50;
:FAULT CLEARED      Z000 N100.0.10.4   PROG MODE ENDED              03/03 10:50;
```

**Field start positions in output string:**

| | |
|---|---|
| Event | First character in each event is a colon ':' followed by max 18 characters for a description |
| Zone | Zone number is max 4 characters long and starts at position 21 |
| Point | Point address is max 13 characters long and starts at position 26 |
| Label | Label is max 28 characters long and starts at position 40 |
| Date | Date is max 5 characters long and starts at position 69 |
| Time | Time is max 5 characters long and starts at position 75 |

There is a semicolon ';' at the end of each line (position 80) followed by a carriage return (ASCII characters 13) and a line feed (ASCII characters 10)

# 9.8 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.

## 9.8.1 QUIESCENT CURRENT CALCULATION:

| Item | Qty | Current Each (Amps) | Sub Total (Amps) |
|---|---|---|---|
| Main Control Panel | 1 | 0.220 | 0.220 |
| Loop Interface Module | | 0.025 | |
| LCM/LEM Pairs (5 max) | | 0.200 | |
| Fan Control Modules | | 0.055 | |
| AZM8 Modules | | 0.090 | |
| Other Quiescent load | | | |
| | | | |
| Total Quiescent Current (Q) | | | |

## 9.8.2 ALARM CURRENT CALCULATION:

| Item | Qty | Current Each (Amps) | Sub Total (Amps) |
|---|---|---|---|
| Main Control Panel | 1 | 0.220 | 0.210 |
| 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 | |
| Bells | | | |
| Analog Points In Alarm/Activated | | | |
| Other Quiescent Load | | | |
| Other Alarm Load | | | |
| | | | |
| Total Alarm Current (A) | | | |

## 9.8.3 BATTERY CAPACITY REQUIREMENTS:

$$\text{Battery Capacity (Amp Hour)} = ( (Q \times 24) + (2 \times (A \times 0.5)) ) \times 1.25$$

## 9.8.4 POWER SUPPLY CAPACITY REQUIREMENTS:

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

**Note:** **When annunciators or Field Modules are powered from external power supplies, use a separate conductor to connect the main power supply common terminal (-0V) to the remote power supplies common terminal (-0V).**

# 9.9 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:**

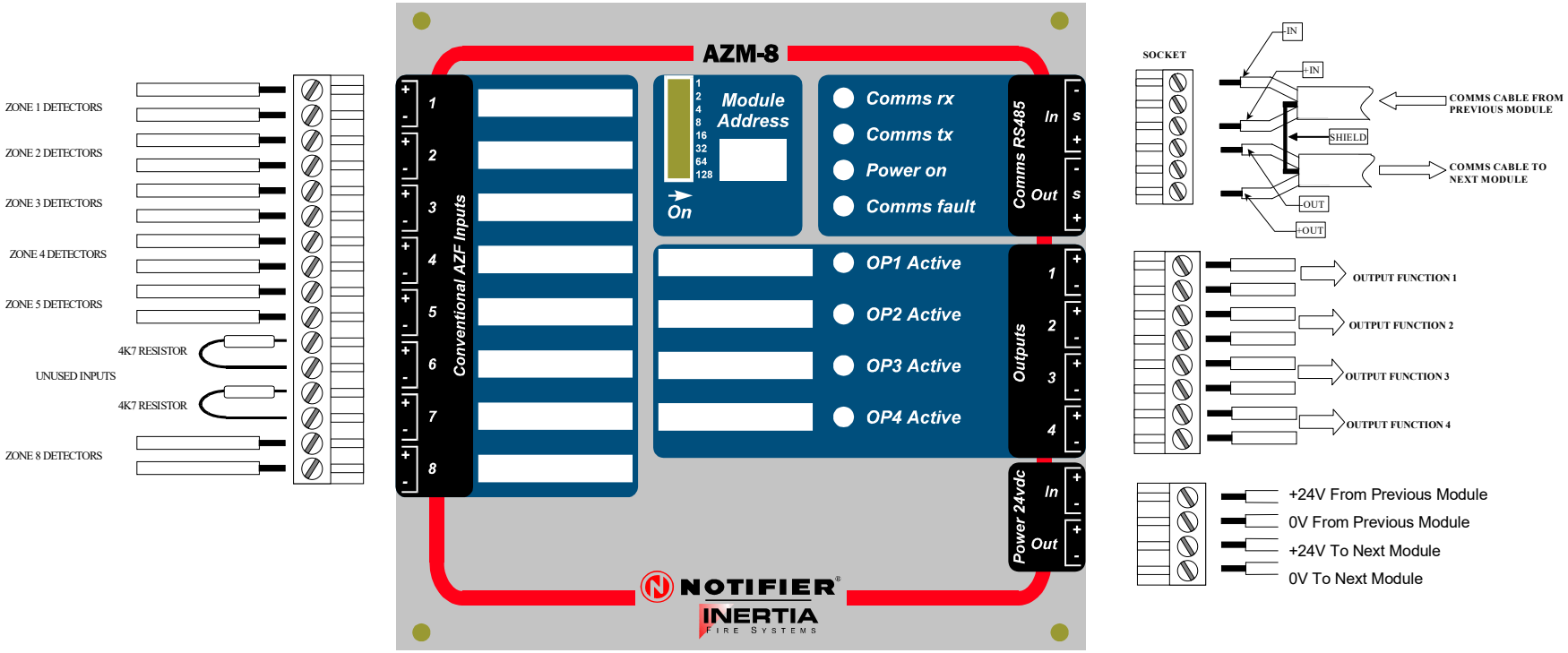
| Part # | Description |
|---|---|
| PCB/713 | AFP-2800/2802 CPU board |
| PCB/724 | AFP-2800/2802 Main termination board |
| 2800/LIM | AFP-2800/2802 Loop Interface Module (Analog addressable) |
| 2800/NIM | AFP-2800 Network Interface Module |
| 2800/LCM | AFP-2800/2802 Addressable Loop Driver – Master (Loops 1,3,5,7,9) |
| 2800/LEM | AFP-2800/2802 Addressable Loop Driver – Slave (Loops 2,4,6,8,10) |
| 2800/16AT | AFP-2800/2802 Annunciator – 16AT |
| 2800/32A | AFP-2800/2802 Annunciator – 32A |
| 2800/SCS8 | AFP-2800/2802 Annunciator – SCS8 |
| 2800/PS243 | AFP-2800/2802 3 Amp power supply. |
| 2800/PS249 | AFP-2800/2802 9 Amp power supply. |
| 2800/NPS-2 | AFP-2800/2802 2.6 Amp power supply. |
| 2800/NPS-5 | AFP-2800/2802 5.5 Amp power supply. |
| 2800/NPS-11 | AFP-2800/2802 11.7 Amp power supply. |

**Replacement parts:**

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

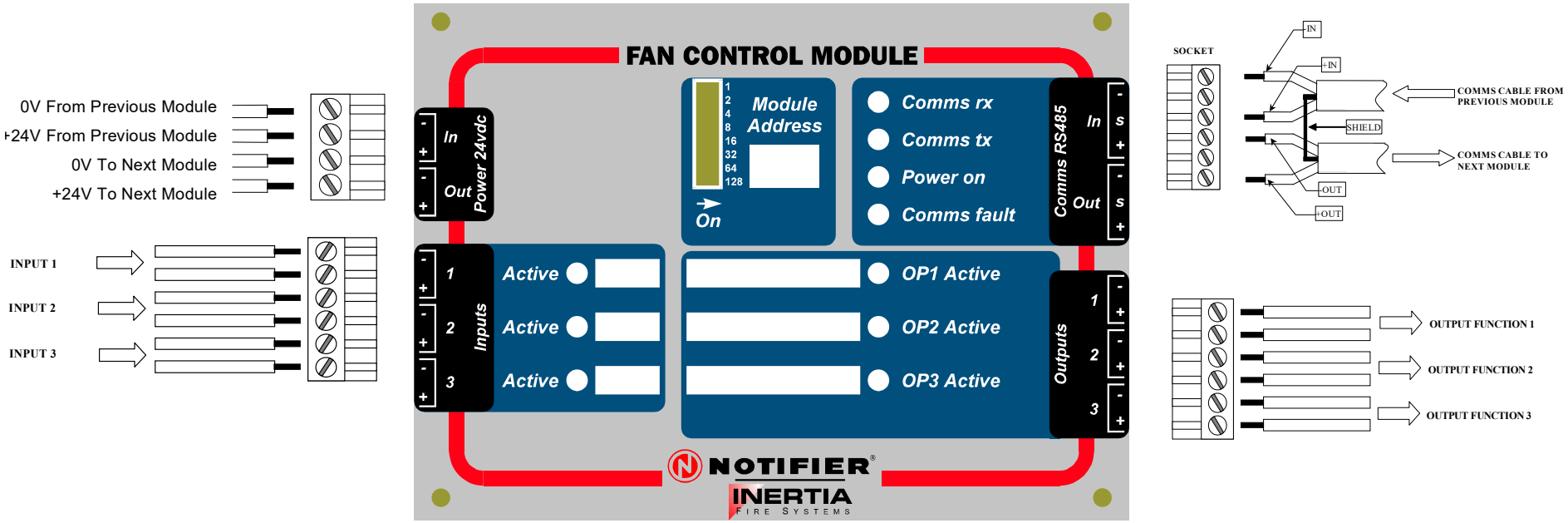
# 9.10 FIELD MODULE CONNECTION DIAGRAMS

## 9.10.1 AZM-8




**Note:** **Between Field modules, connect shields together outside of their respective enclosures. Make sure that the shield is only grounded at the FIP and not at the modules or annunciators.**

## 9.10.2 FAN CONTROLLER

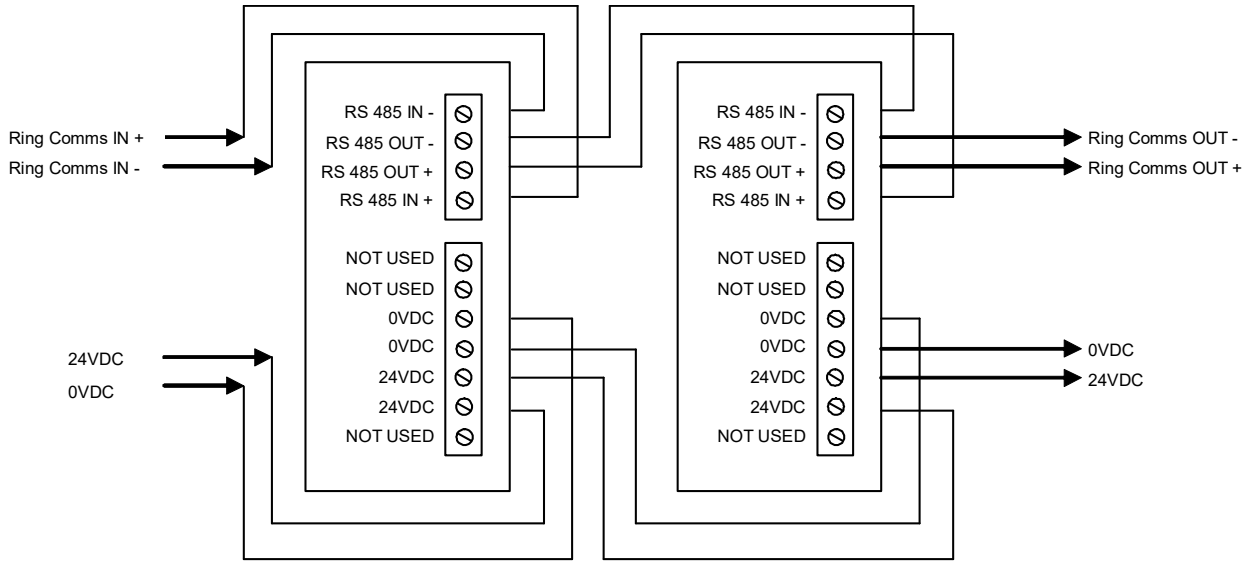



**Note:** **Between Field modules, connect shields together outside of their respective enclosures. Make sure that the shield is only grounded at the FIP and not at the modules or annunciators.**

# 9.11 ANNUNCIATOR CONNECTION

## 9.11.1 RS485 COMMS AND POWER CONNECTIONS

The connection diagram below applies to all annunciators (ACM-16AT, ACM-32A, SCS-8, LDM-32) and the LCD80 Display Interface Unit.




Notes:

1) Field annunciators (and LCD80 Display Interface Units) must be multi-drop connected on Ring 1 as shown in the above diagram; a T-connection (or spur) is not allowed. No termination resistor should be fitted to the RS-485 communication ring. The shield shall be connected to earth.

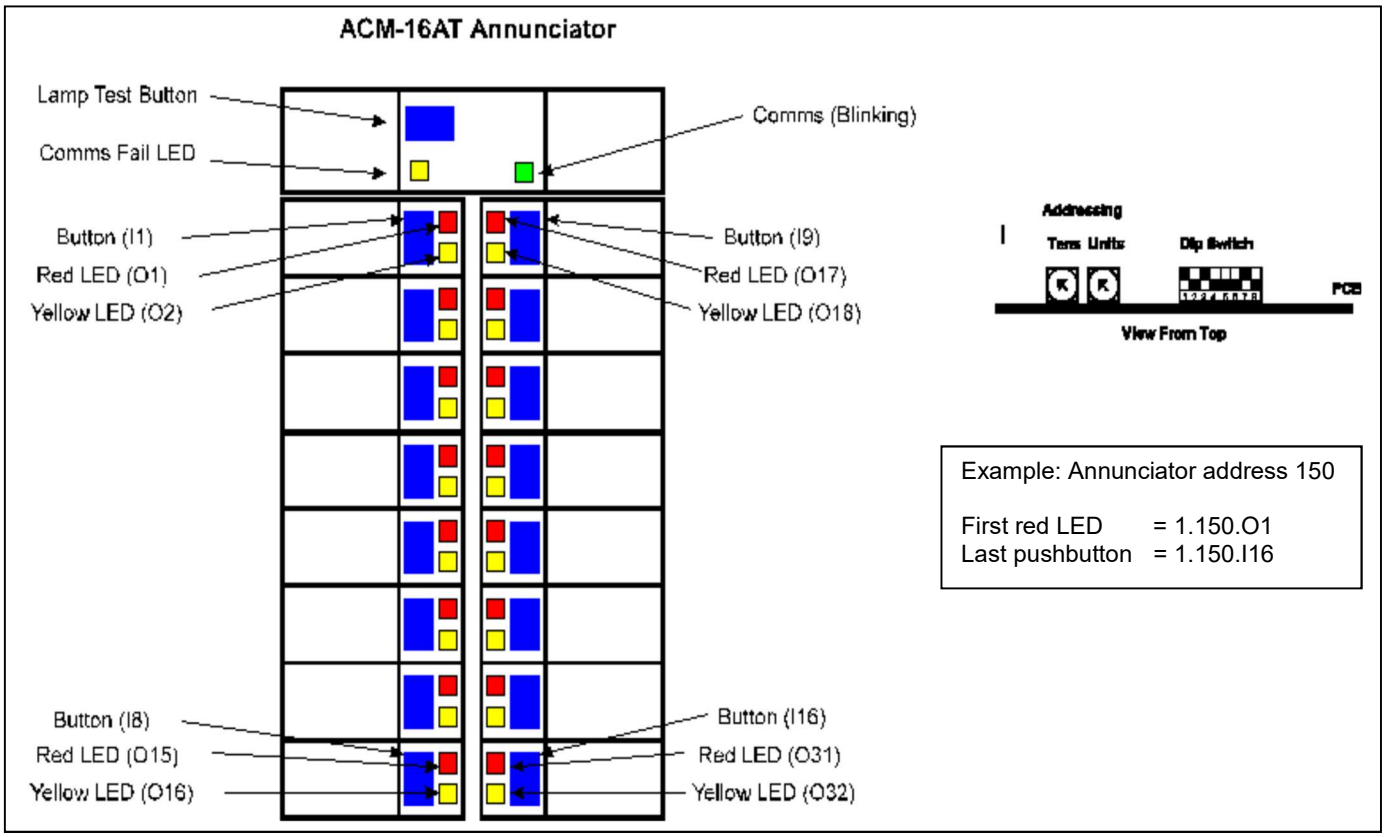
2) Local annunciators (and LCD80 Display Interface Units) may be connected to the local annunciator chain connector on the lower left edge of the Termination Board. This connector is only to be used for annunciators (and LCD80 Display Interface Units) that are mounted internally to the fire panel or in a cabinet immediately adjacent to it. No termination resistor is to be used for this mode of connection since there is a built in 150 ohm resistor on the termination board.

3) There can be a maximum of 16 annunciators (and LCD80 Display Interface Units) between any 2 consecutive field modules (or port A and port B if no field modules are present on the Ring).

4) Between Field modules, connect shields together outside of their respective enclosures. Make sure that the shield is only grounded at the FIP and not at the modules or annunciators. Do not ground both ends of the shield; one end should be left floating.

5) When annunciators or Field Modules are powered from external power supplies, use a separate conductor to connect the main power supply common terminal (-0V) to the remote power supplies common terminal (-0V).

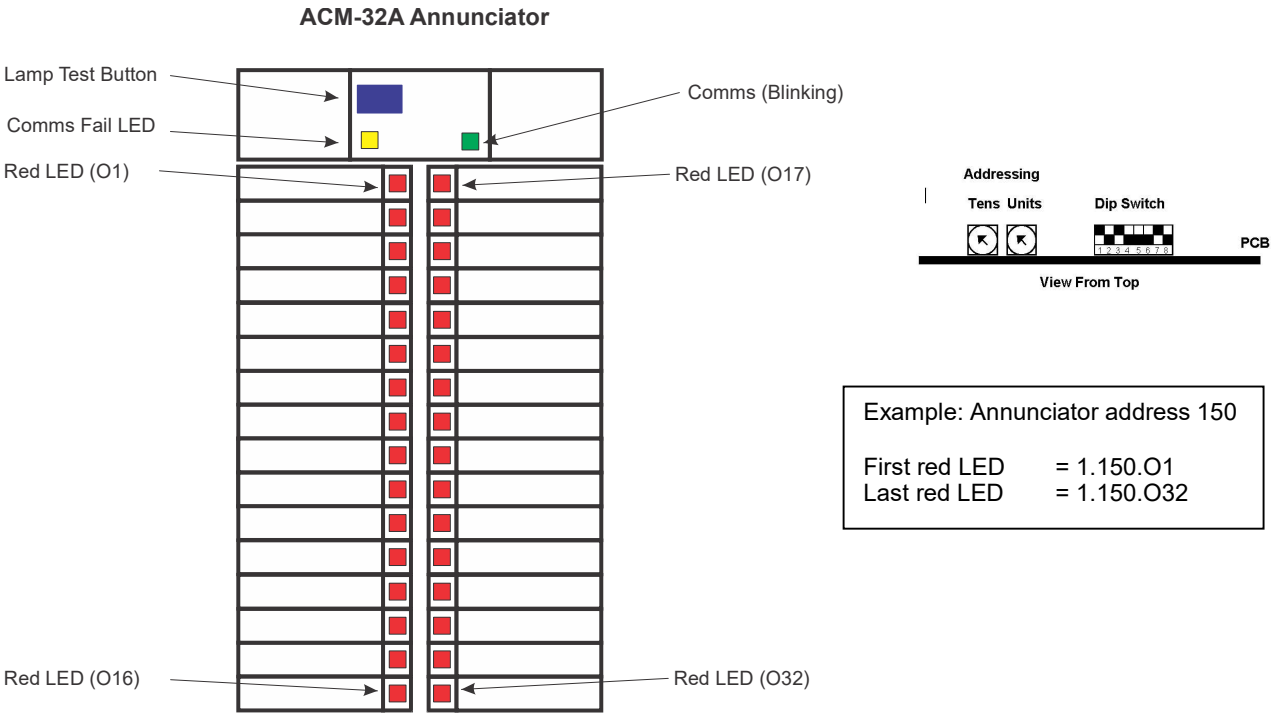
## 9.11.2 ACM-16AT (16 BUTTONS, 32 LED's)




**Dip Switch 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 |

## 9.11.3 ACM-32A (32 RED LED's)



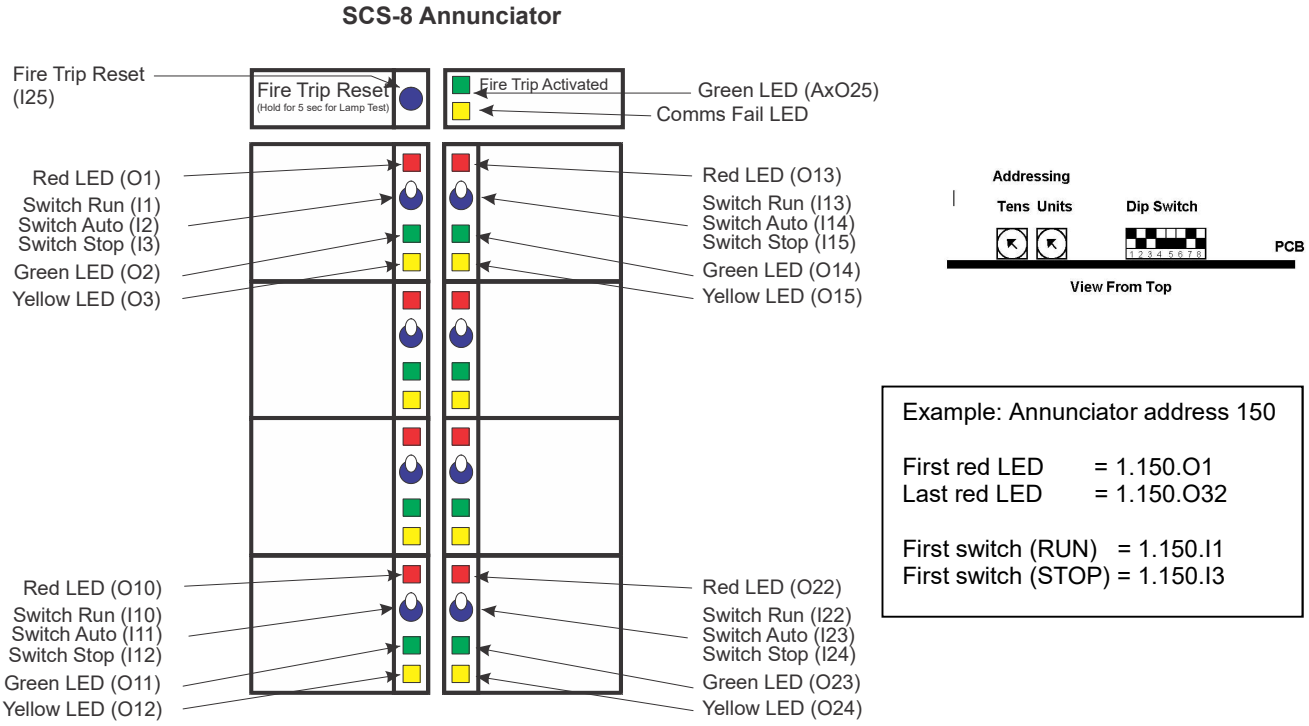

Example: Annunciator address 150

First red LED = 1.150.O1
Last red LED = 1.150.O32

**Dip Switch Settings:**

| | On | Off |
|---|---|---|
| 1-8 | Not Used | Not Used |

# 9.11.4 SCS-8 (8 FAN CONTROLS)




Example: Annunciator address 150

First red LED = 1.150.O1
Last red LED = 1.150.O32

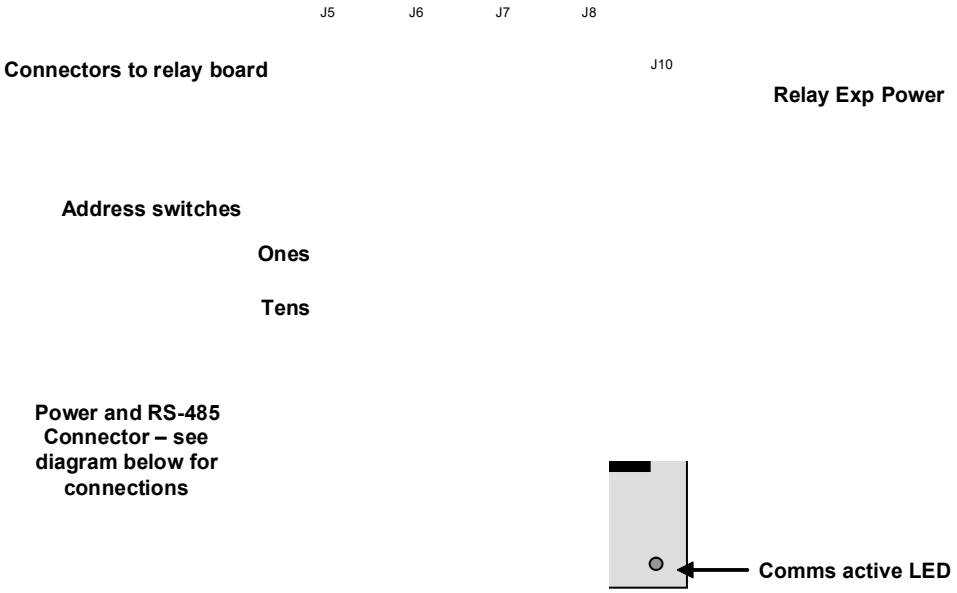
First switch (RUN) = 1.150.I1
First switch (STOP) = 1.150.I3

**Dip Switch Settings:**

| | On | Off |
|---|---|---|
| 1-7 | Not Used | Not Used |
| 8 | 120 Ohm EOL resistor selected | No EOL resistor selected (set for AFP-2800/2802) |

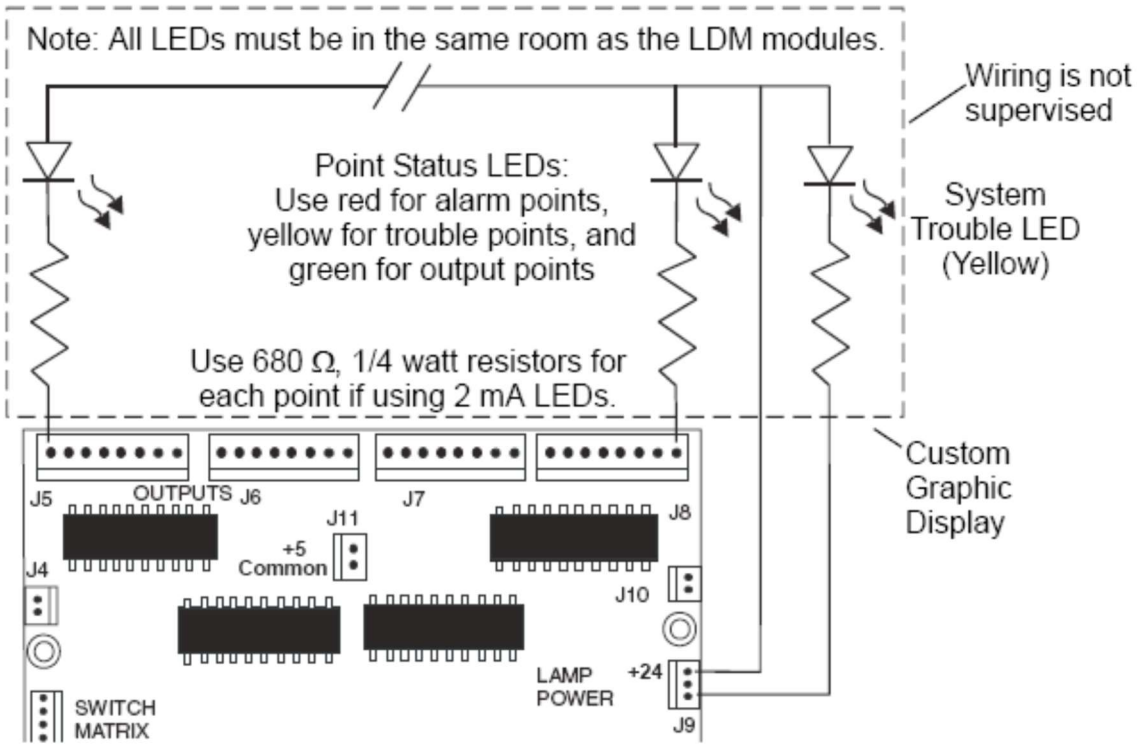
**Note: EOL resistor can be enabled by dip switch 8 on SCS-8. When used on AFP-2800/2802 ensure that the EOL resistor is not enabled as it is not required.**

## 9.11.5 LDM-32 (EXPANSION RELAY DRIVER BOARD)

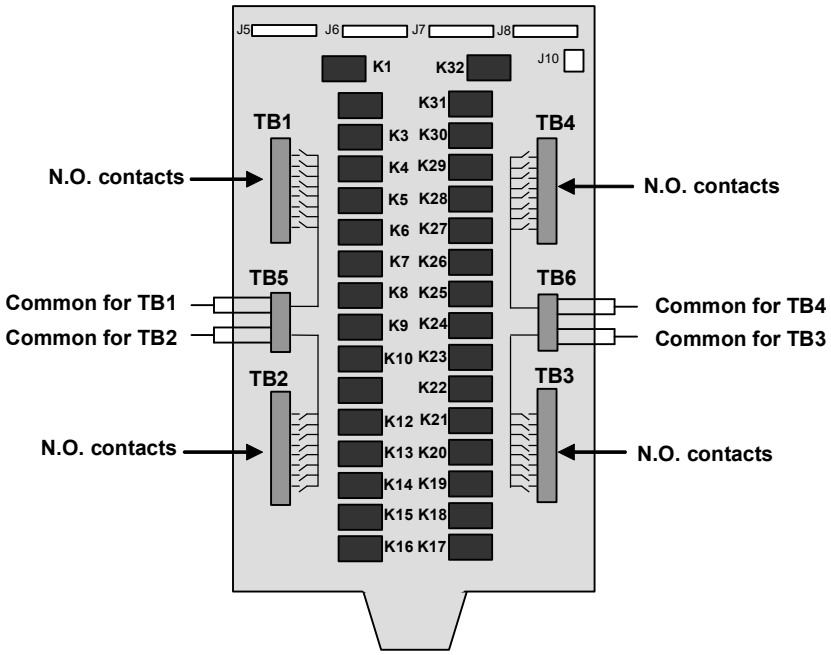


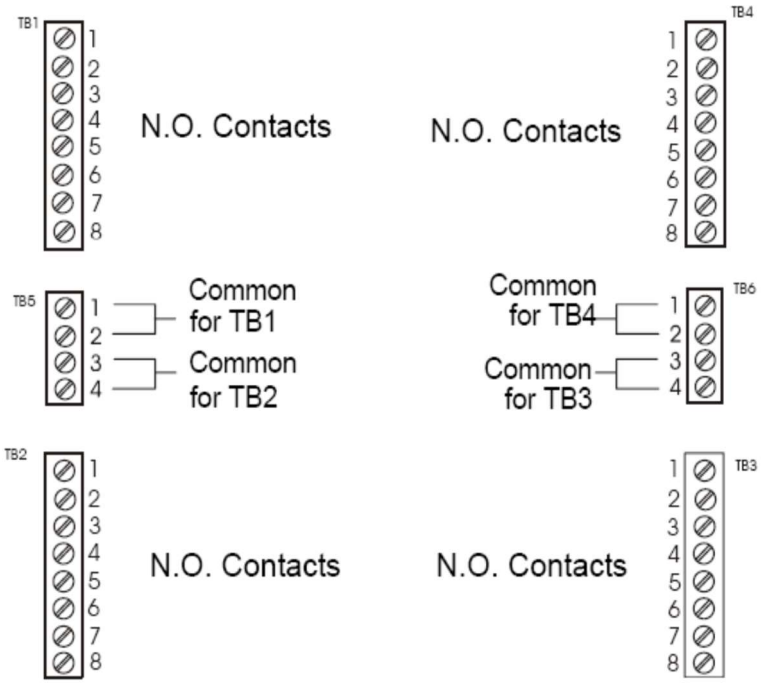

**Dip Switch Settings:**

| | On | Off |
|---|---|---|
| 1-8 | Not Used | Not Used |



## 9.11.6 LDM-R32 (32 EXPANSION RELAYS)




**Connections:**

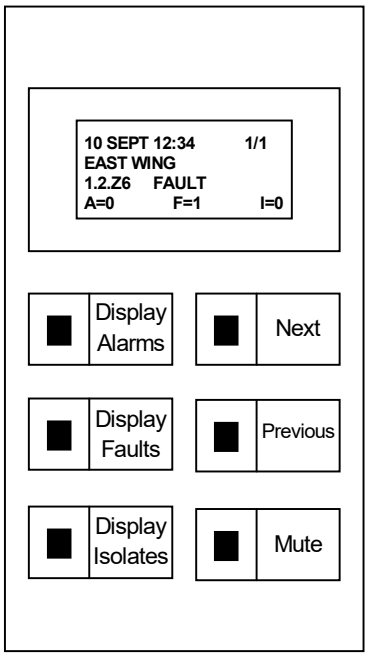
J5, J6, J7 and J8 on the LDM-R32 connect to J5, J6, J7 and J8 on the LDM-32 respectively
J10 on the LDM-R32 connects to J10 (Relay Exp) on LDM-32
Relay contacts are on Terminal Blocks TB1 – TB6 as shown in the diagram above

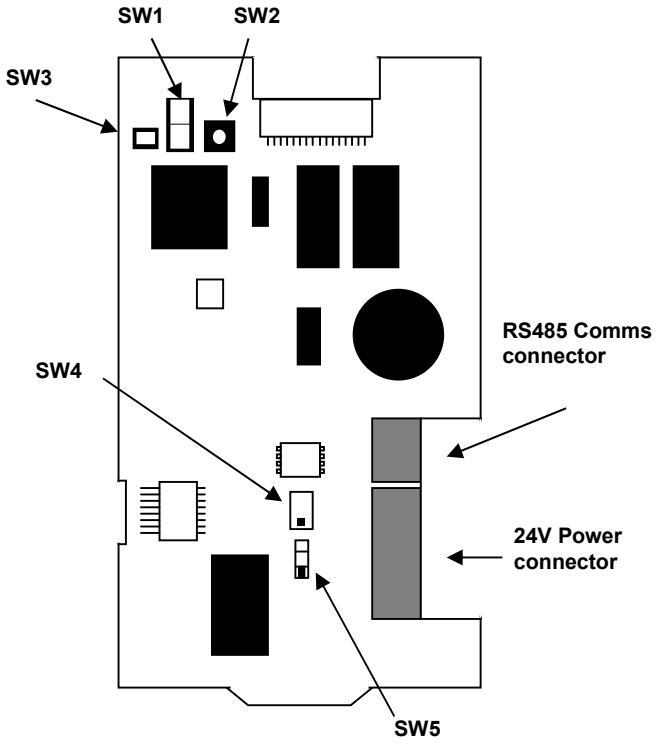
**Example addressing:**

If annunciator address is 50, then relay K1 point address will be 1.150.O1 and relay K32 point address will be 1.150.O32

**Notes: Relay contacts are rated at 1 Amp**

## 9.11.7 LCD80 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 Terminal Mode:**

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 201 – 239. Setting all switches to off will take the LCD-80 offline.

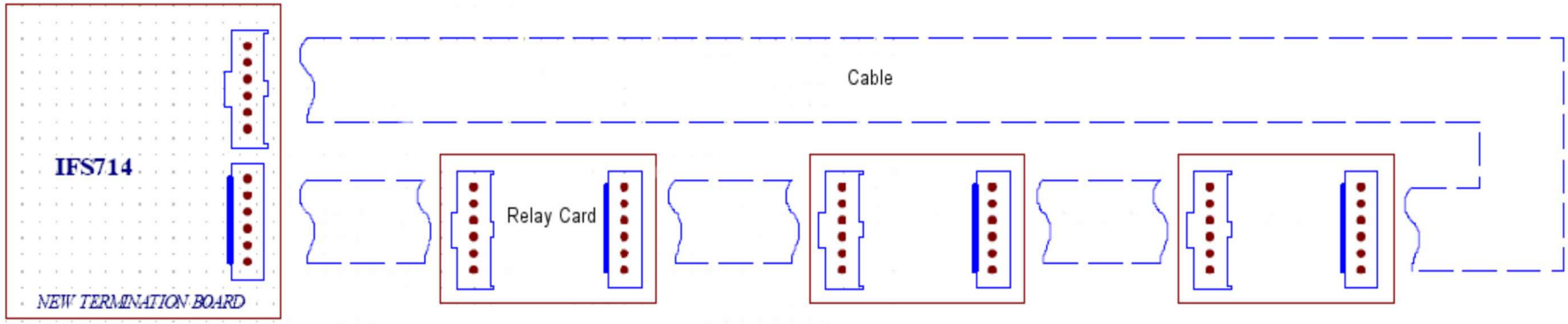
| SW3-1 | SW3-2 | SW2 | Actual Address |
|---|---|---|---|
| OFF | OFF | 1 – 9 | 201 – 209 |
| ON | OFF | 0 – 9 | 210 – 219 |
| OFF | ON | 0 – 9 | 220 – 229 |
| ON | ON | 0 – 9 | 230 – 239 |

**Addressing Annunciator Mode:**

SW2 & SW3 set the address as per the table below. Note that "100" is added to the actual values of SW2 & SW3 to give an address in the range 101 – 139. Setting all switches to off will take the LCD-80 offline.

| SW3-1 | SW3-2 | SW2 | Actual Address |
|---|---|---|---|
| OFF | OFF | 1 – 9 | 101 – 109 |
| ON | OFF | 0 – 9 | 110 – 119 |
| OFF | ON | 0 – 9 | 120 – 129 |
| ON | ON | 0 – 9 | 130 – 139 |

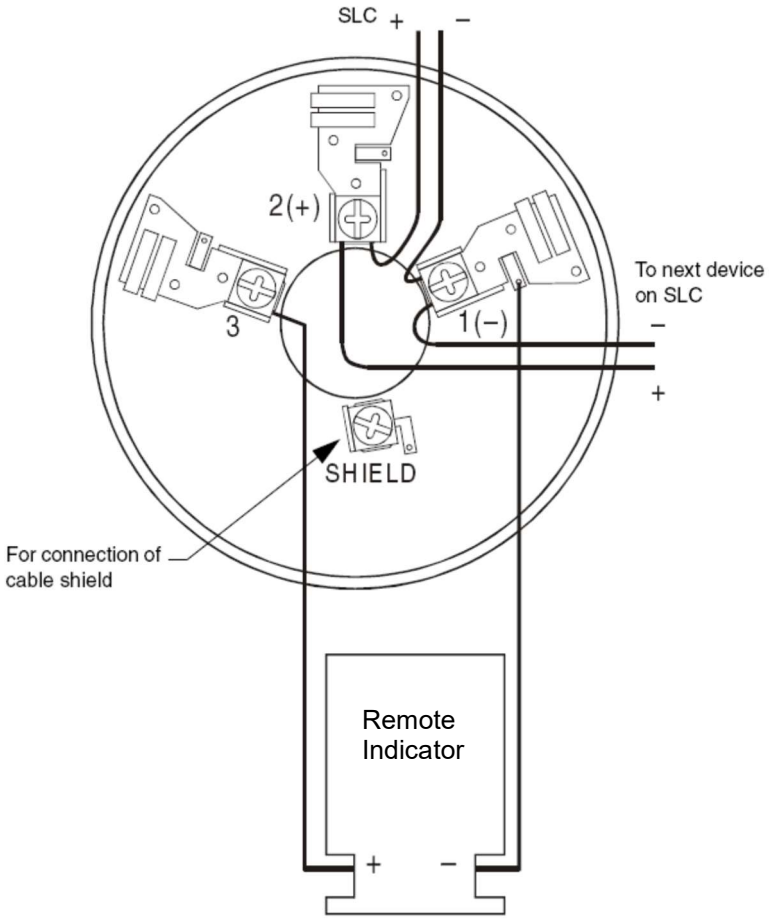
# 9.12 PANEL EXPANSION RELAYS



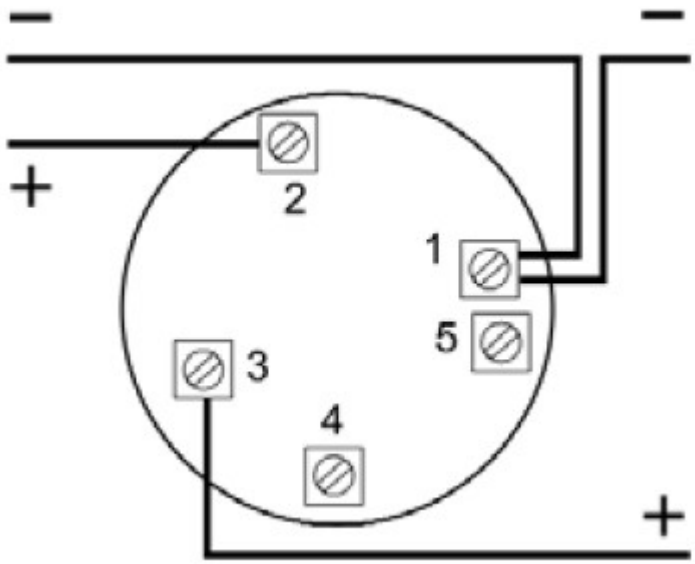
# 9.13 Analog Addressable Devices

## 9.13.1 Detector Bases

### 501 Detector Base

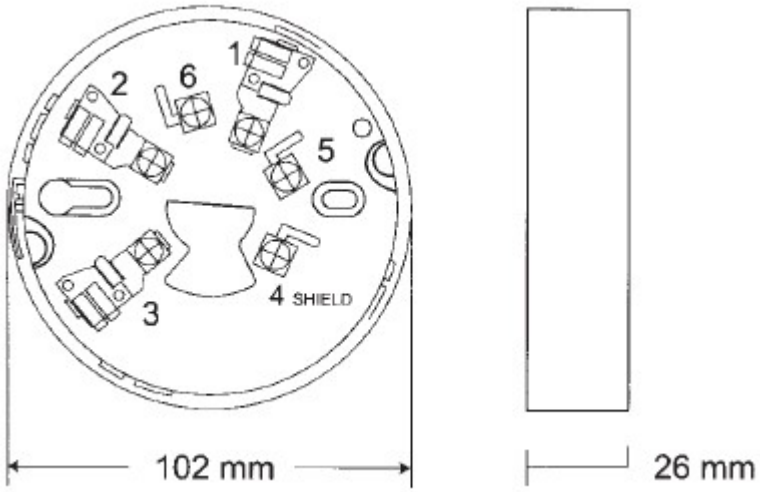


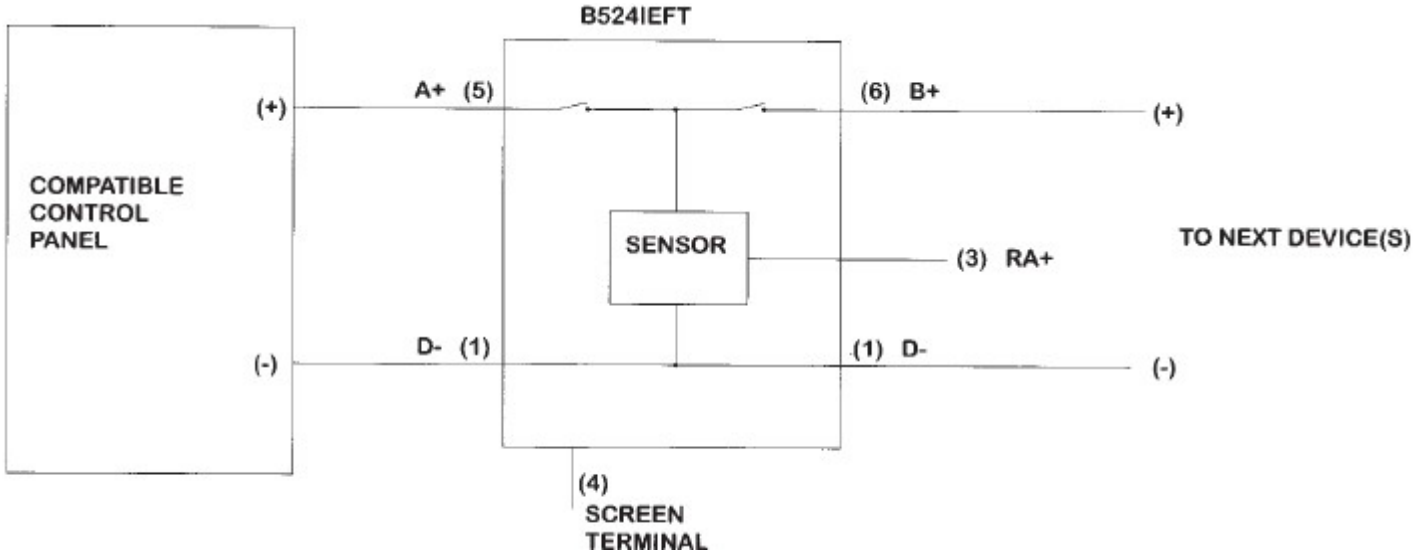

### LPB-W Sounder/Strobe base



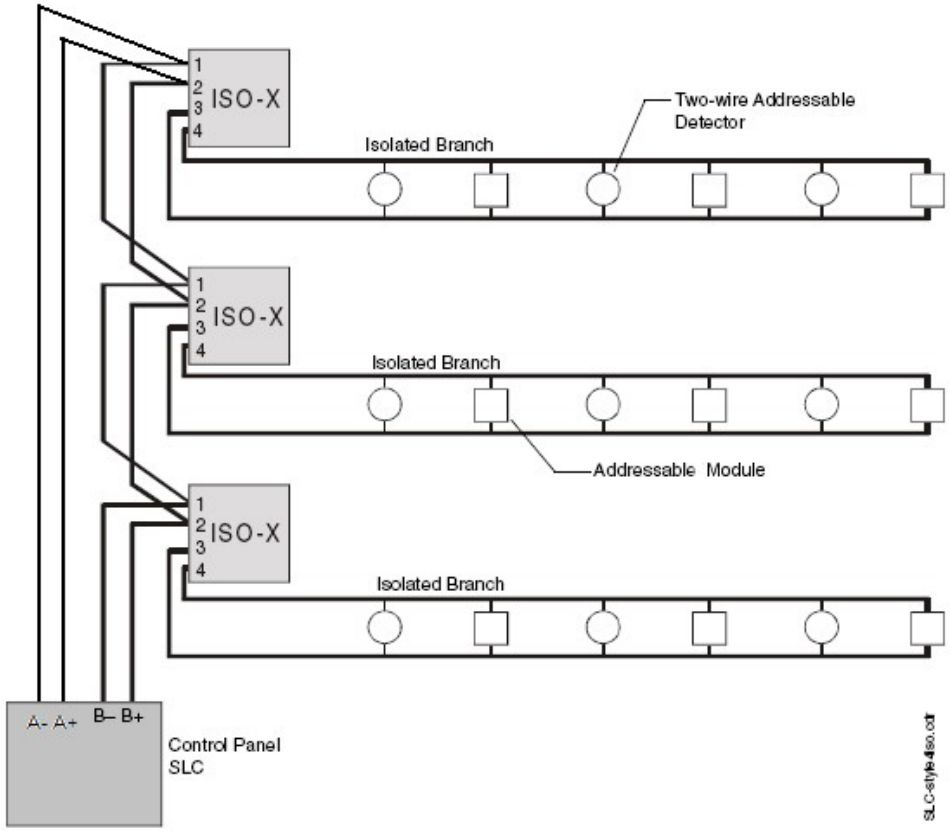

| Terminal | Function |
|---|---|
| T1 | Negative |
| T2 | Positive in |
| T3 | Positive out |
| T4 | Remote LED (Detector base sounders only) |
| T5 | Shield |

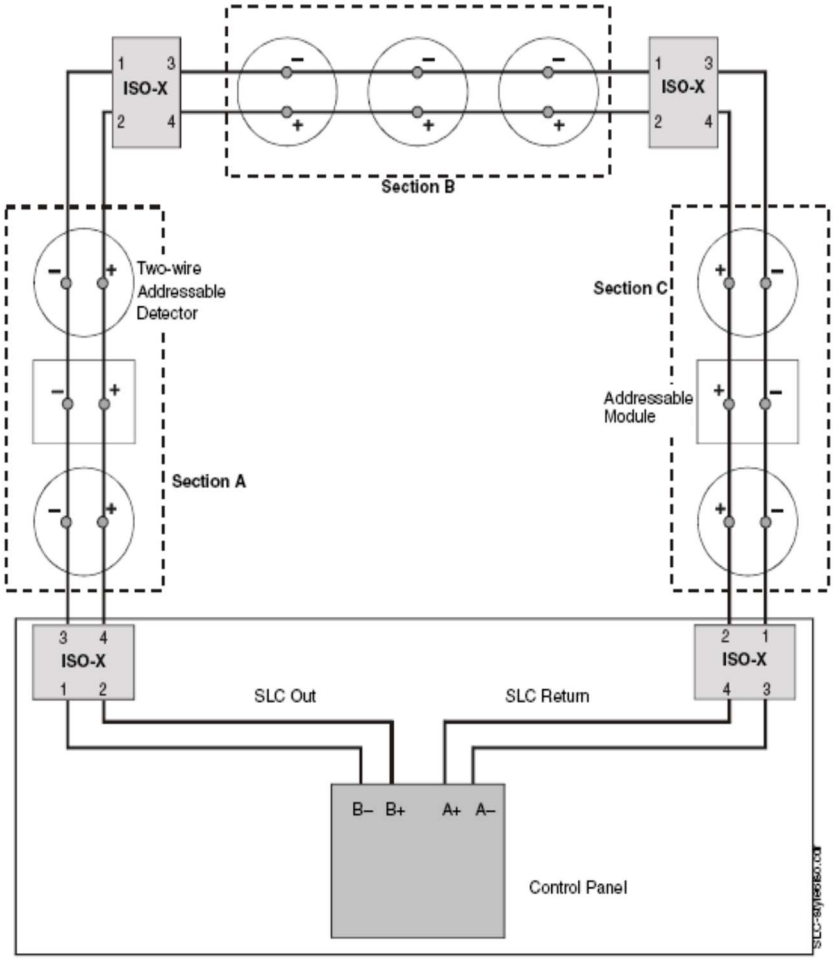
## 9.13.2 B5241EFT ISOLATOR BASE



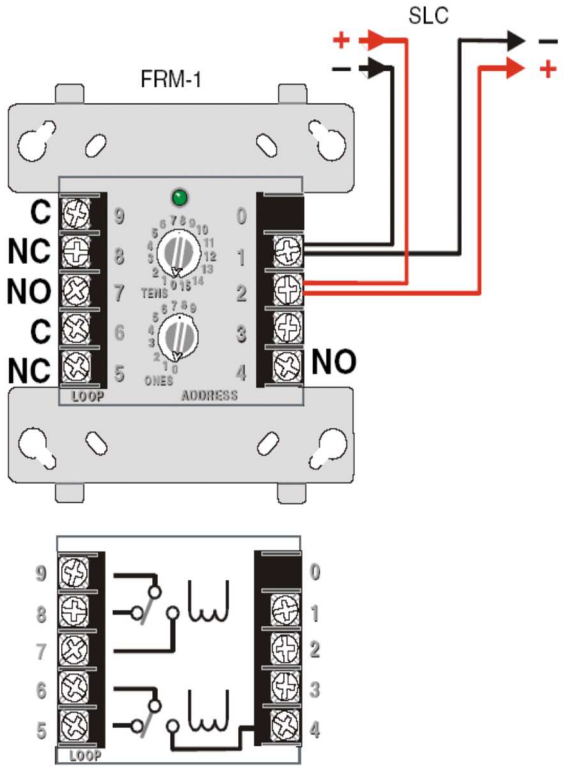



## 9.13.3 ISOLATION MODULE ISO-X

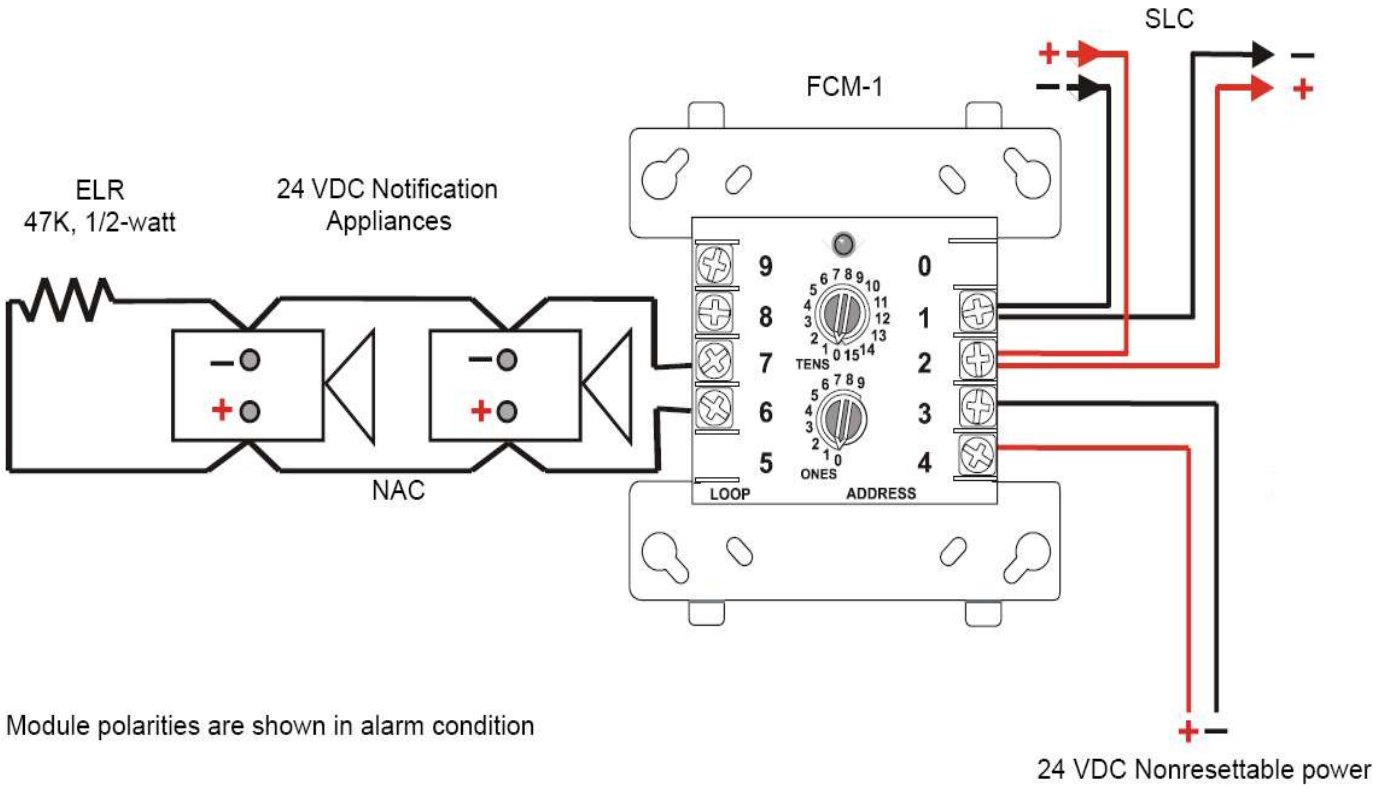


## 9.13.4 RELAY MODULE FRM-1

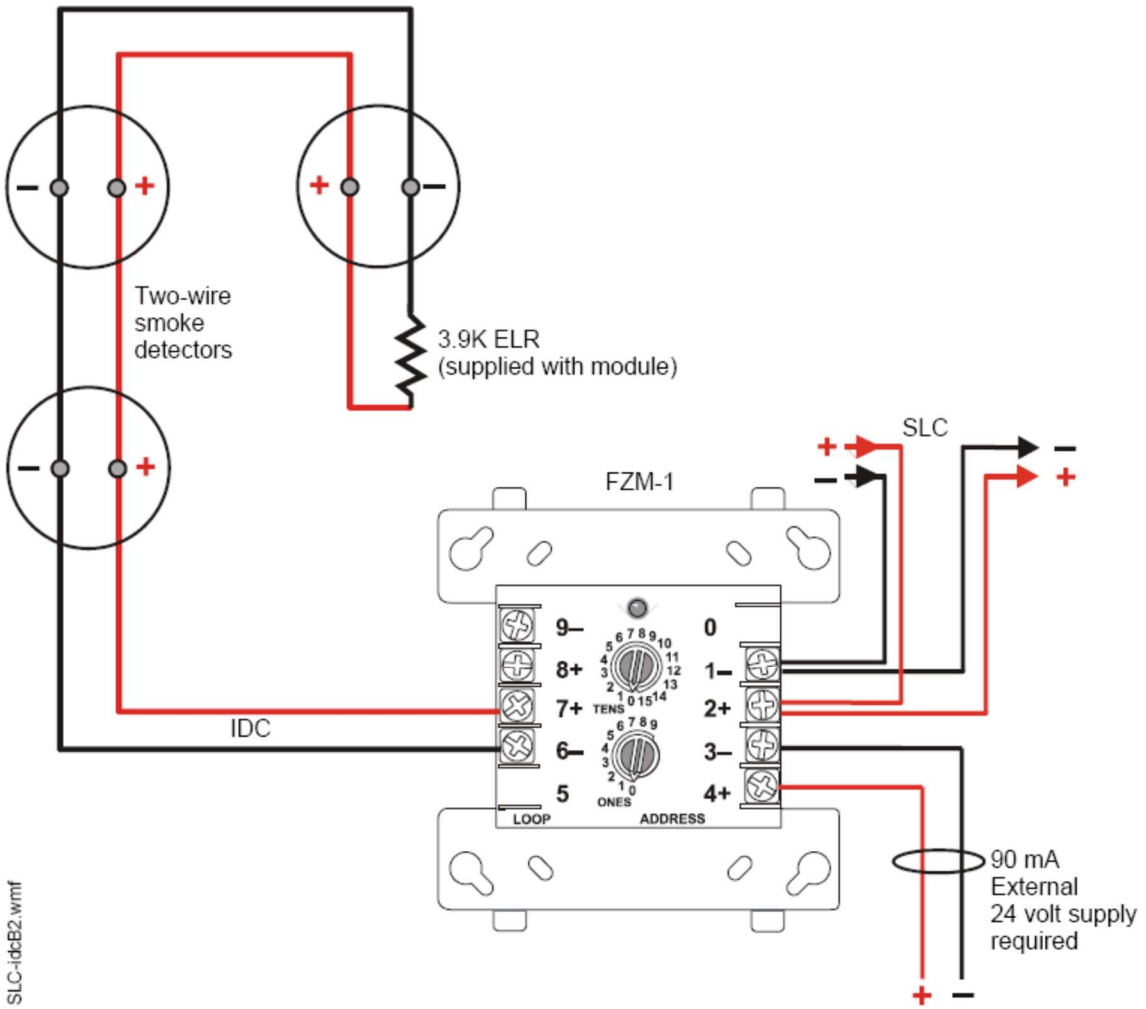


## 9.13.5 CONTROL MODULE FCM-1

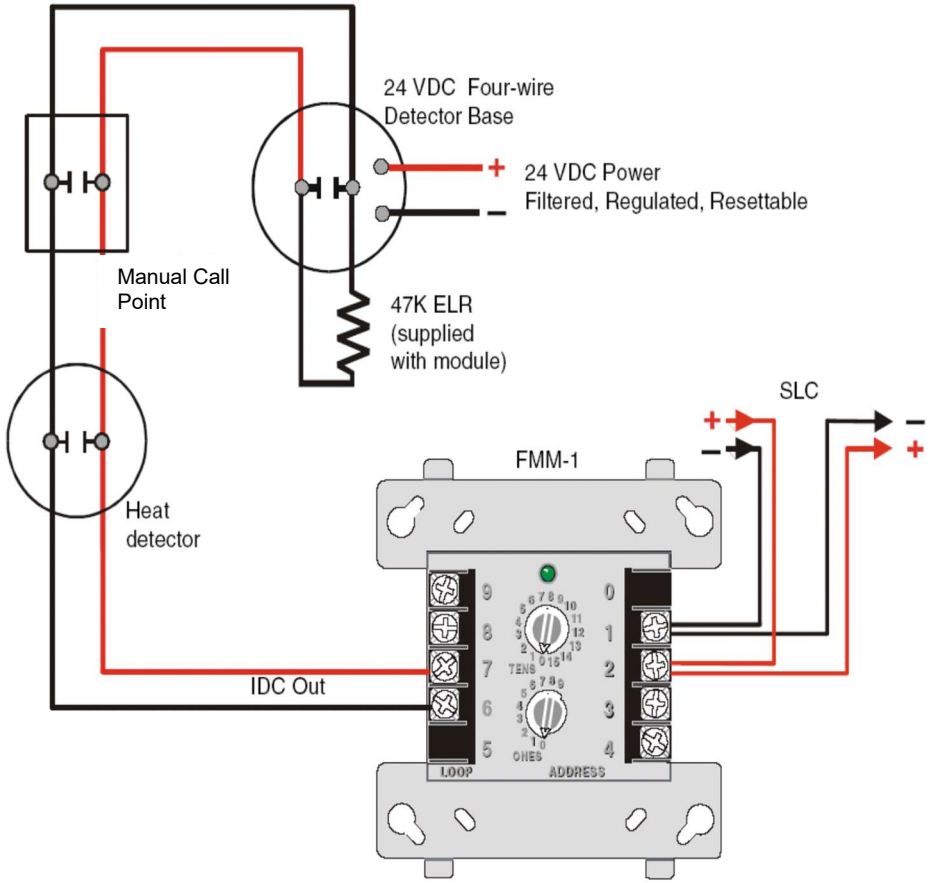



Module polarities are shown in alarm condition

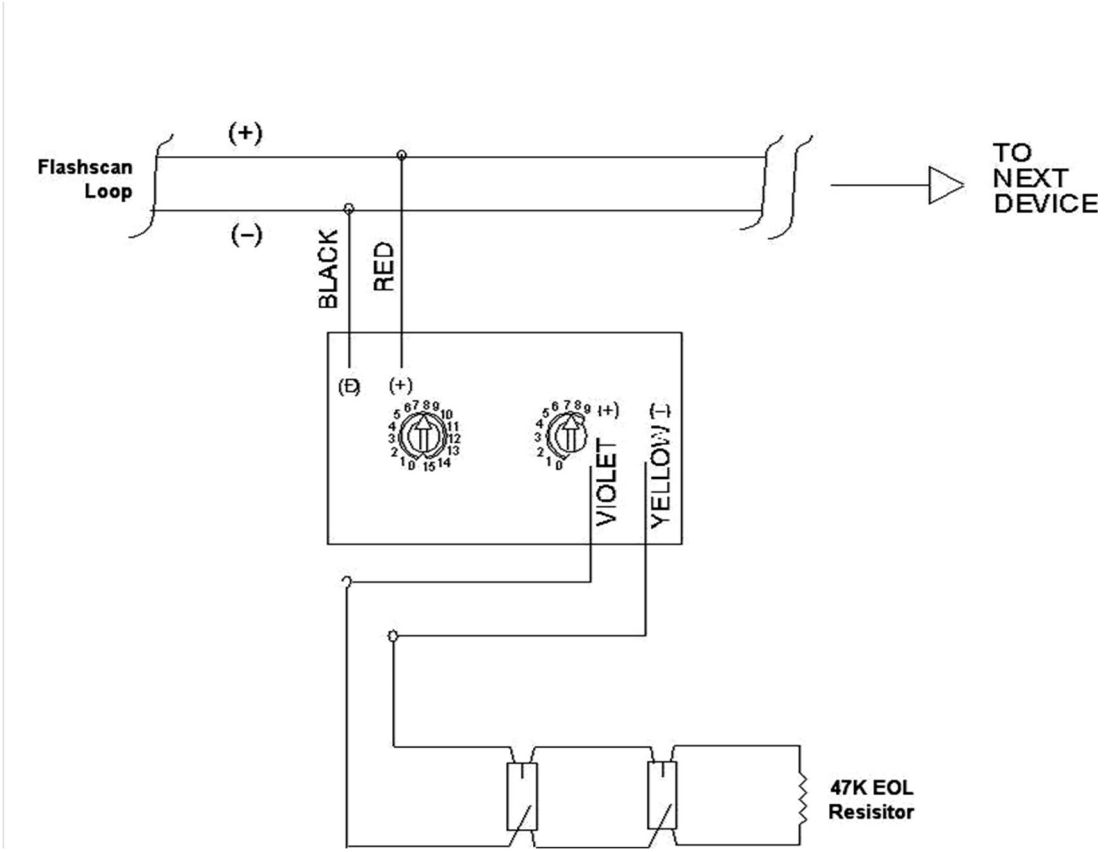
## 9.13.6 ZONE MODULE FZM-1



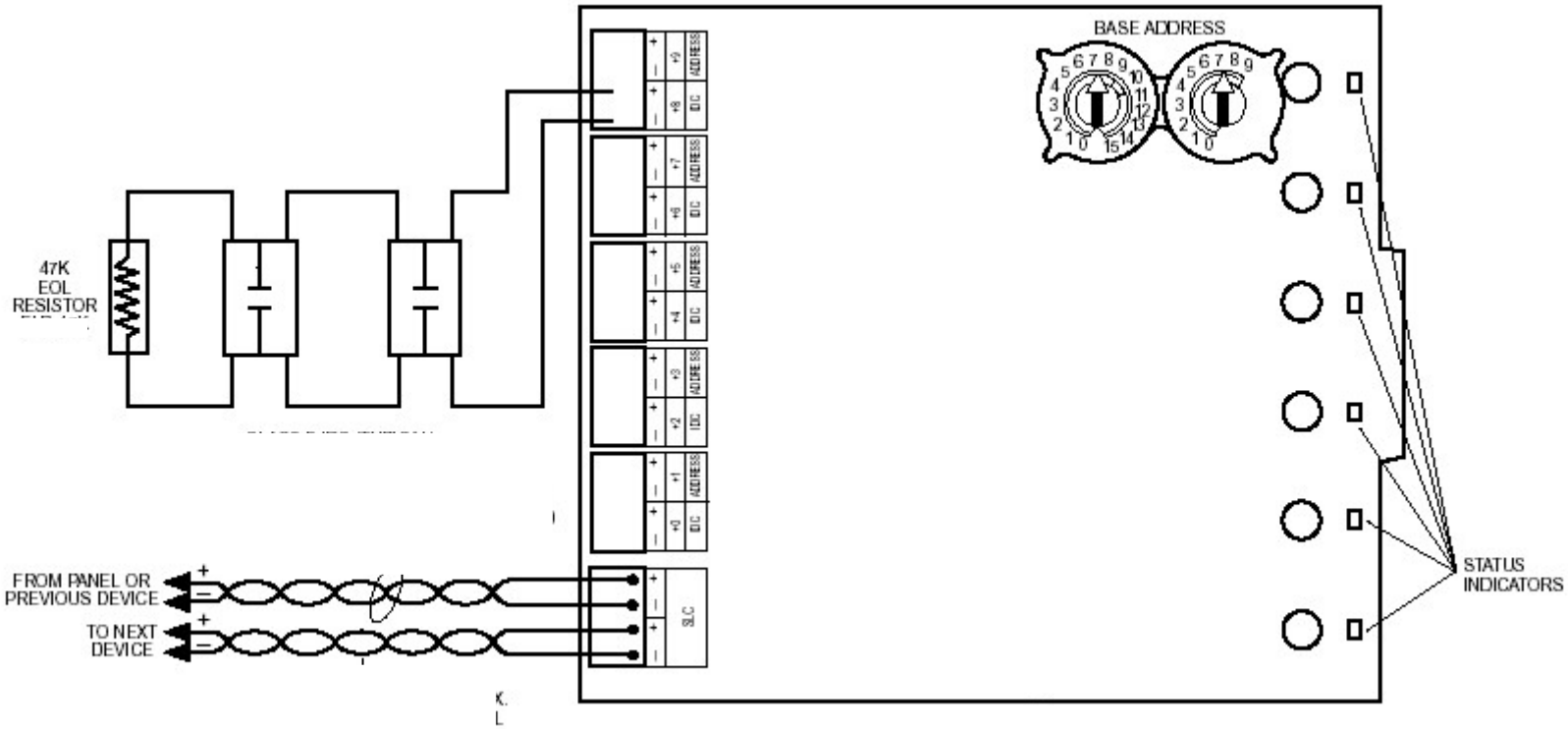
## 9.13.7 MONITOR MODULE FMM-1



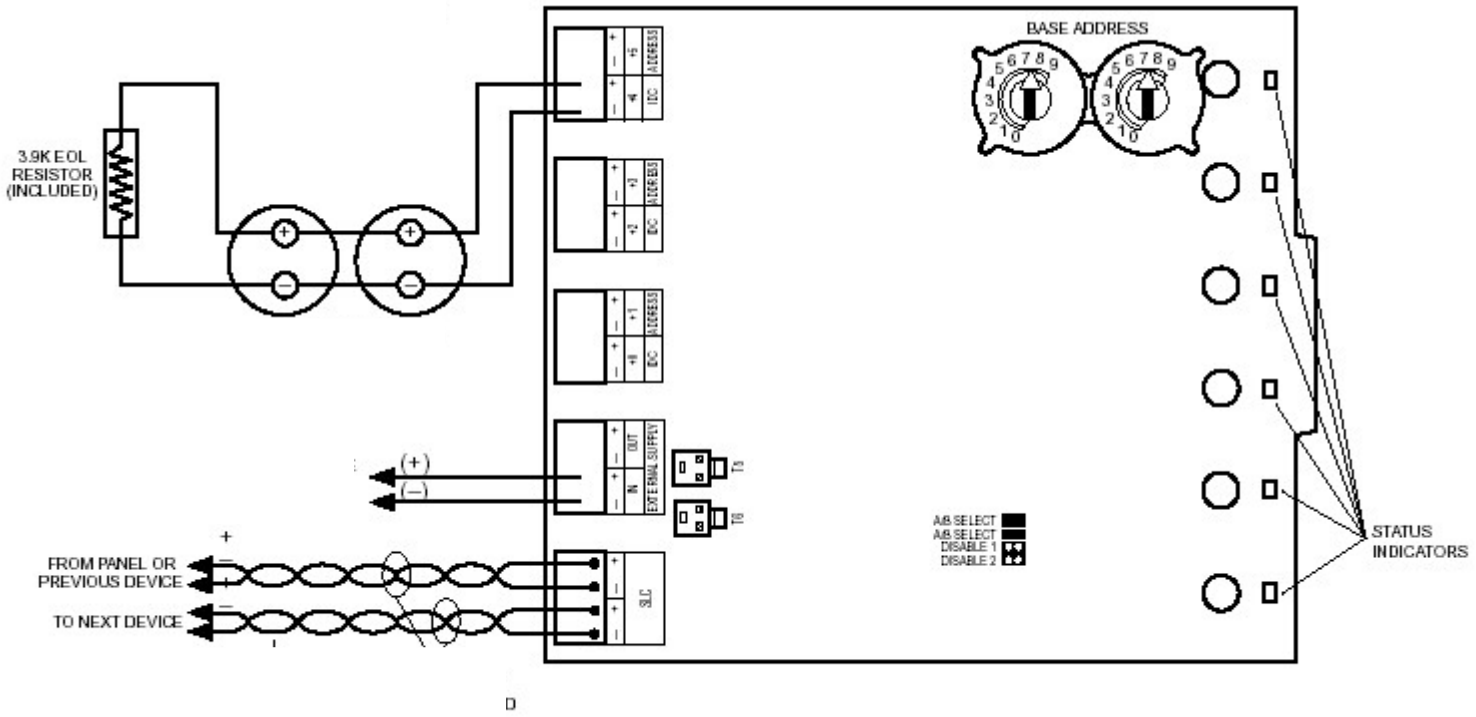
## 9.13.8 MINI MONITOR MODULE FMM-101



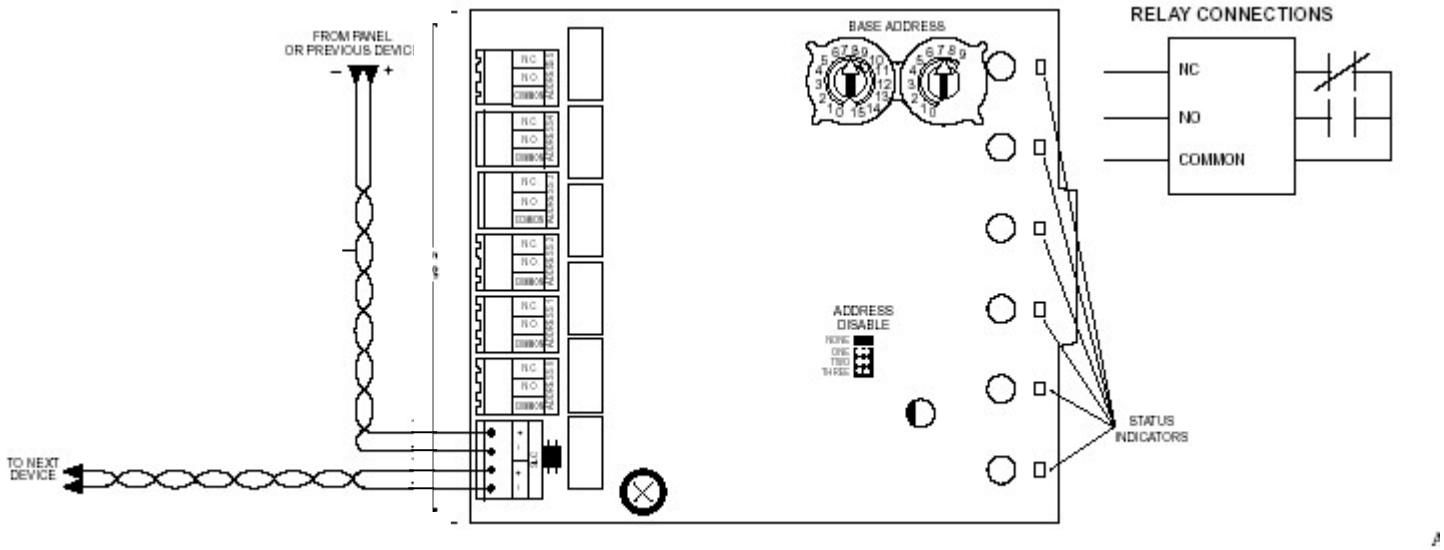
## 9.13.9 XP10-M (10 x Monitor Module)



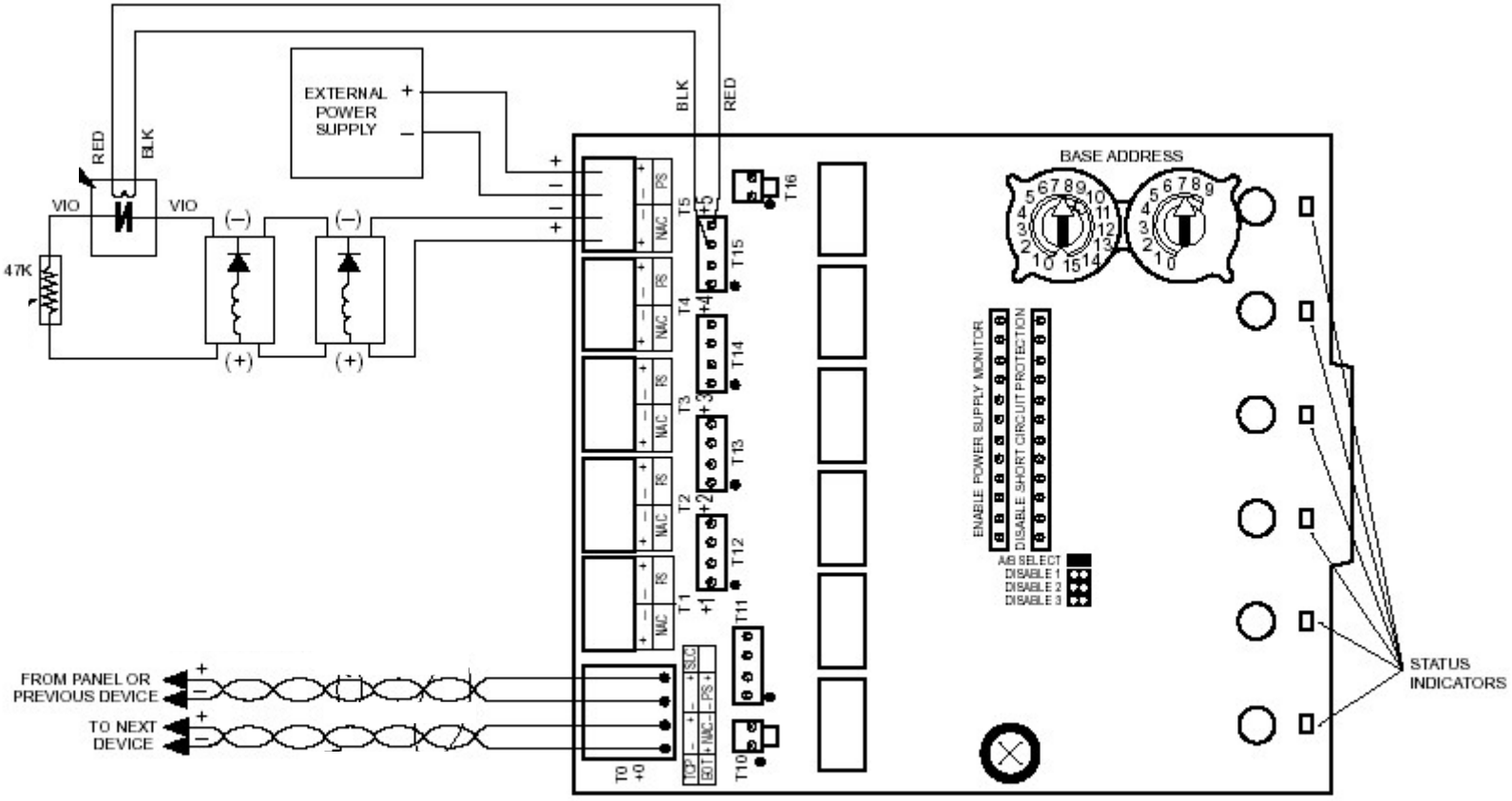
## 9.13.10 XP6-MA (6 x Conventional Zone Interface Module)



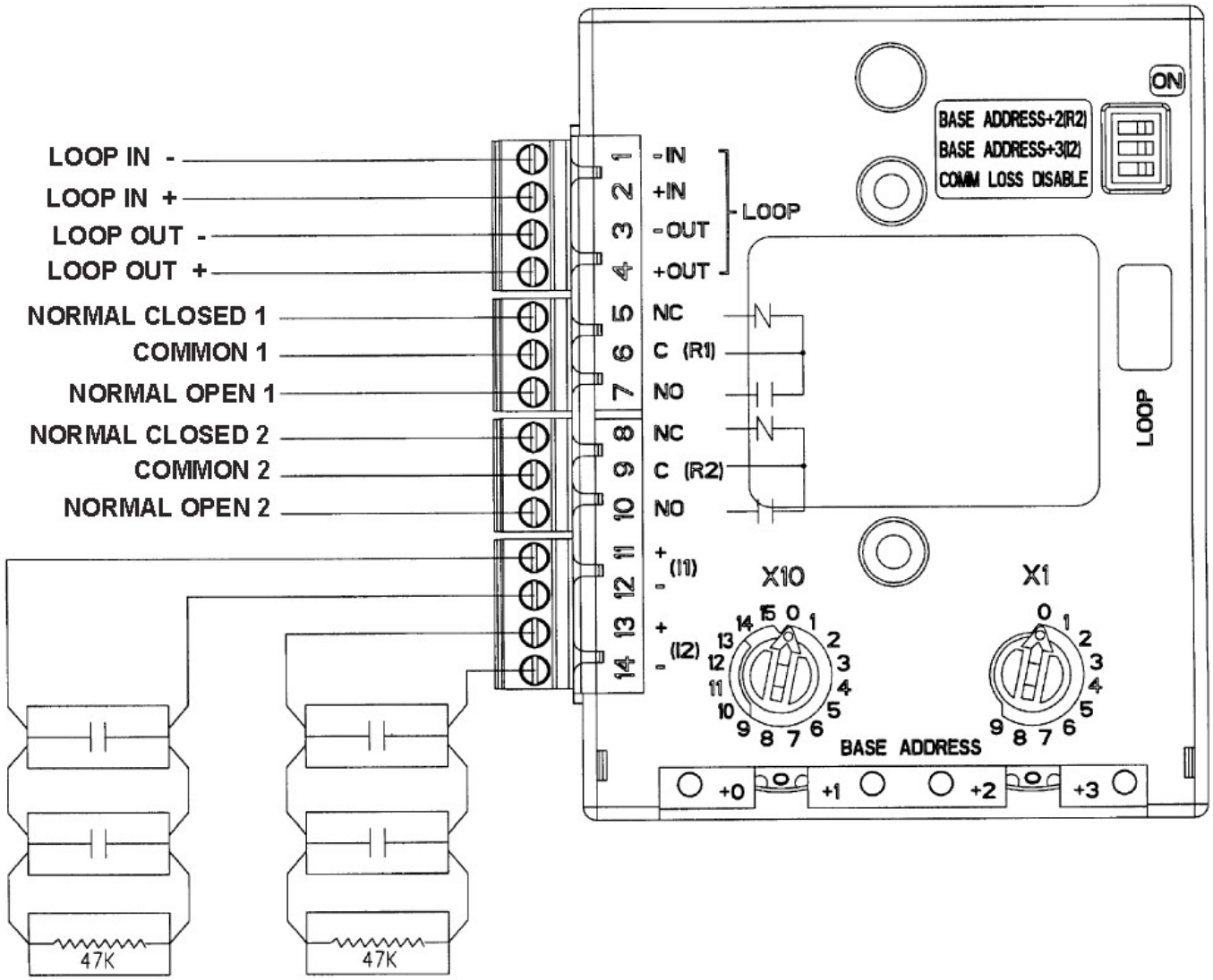
## 9.13.11 XP6-R (6 x Relay Module)



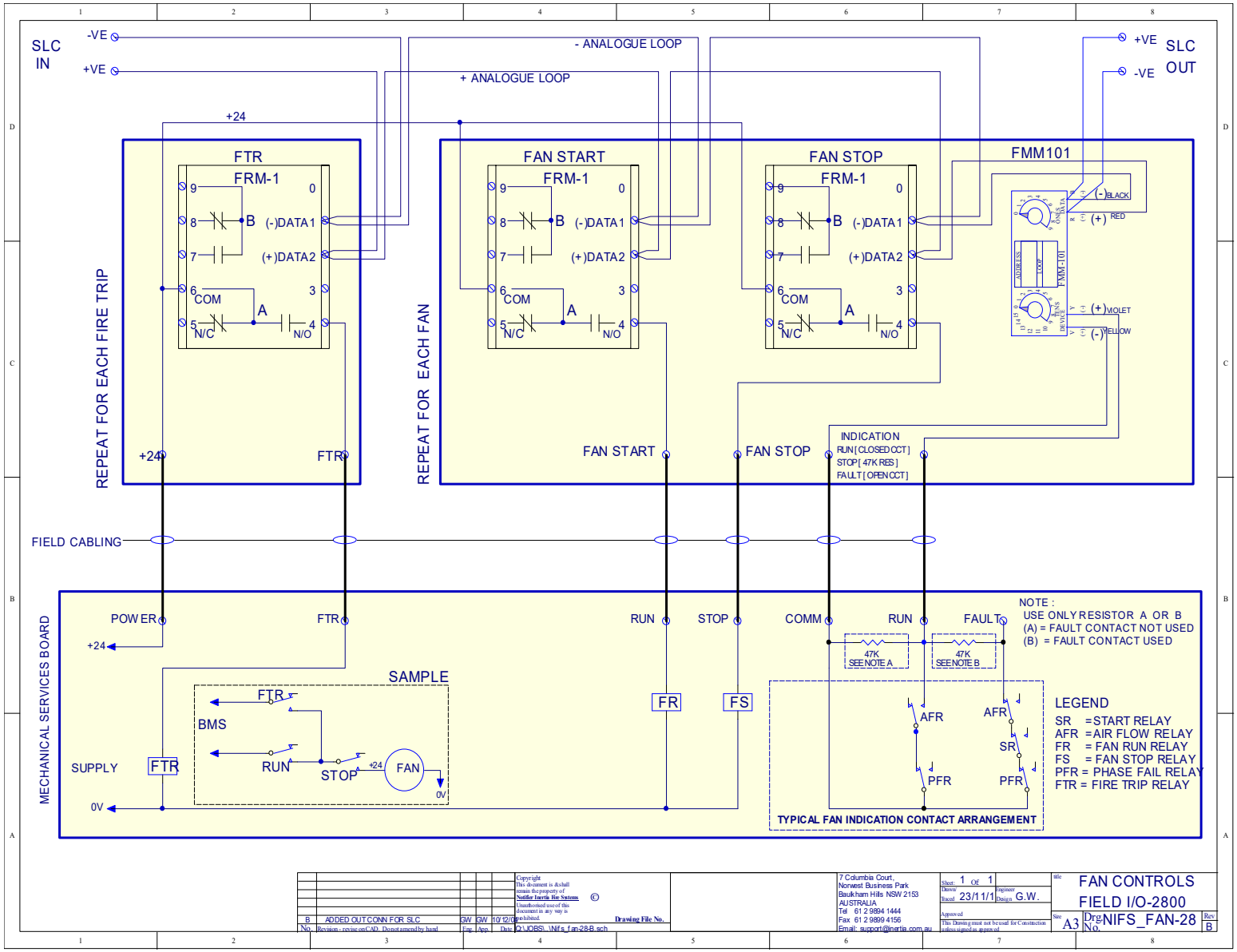
## 9.13.12 XP6C (6 x Control Module)



## 9.13.13 FDMR-1 (2 x MONITOR & 2 x RELAY)

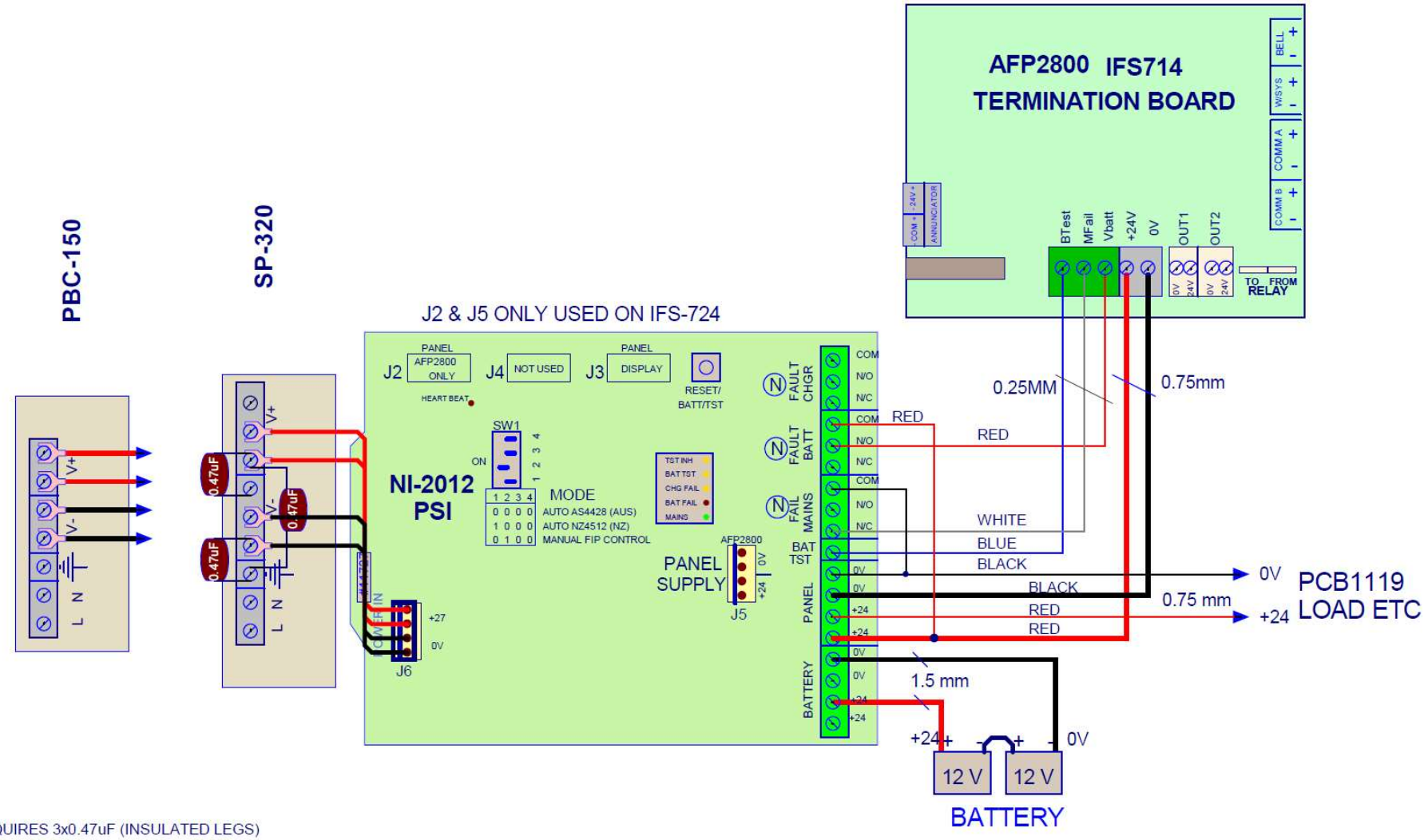


## 9.13.14 FAN CONTROLS CONNECTION DIAGRAM

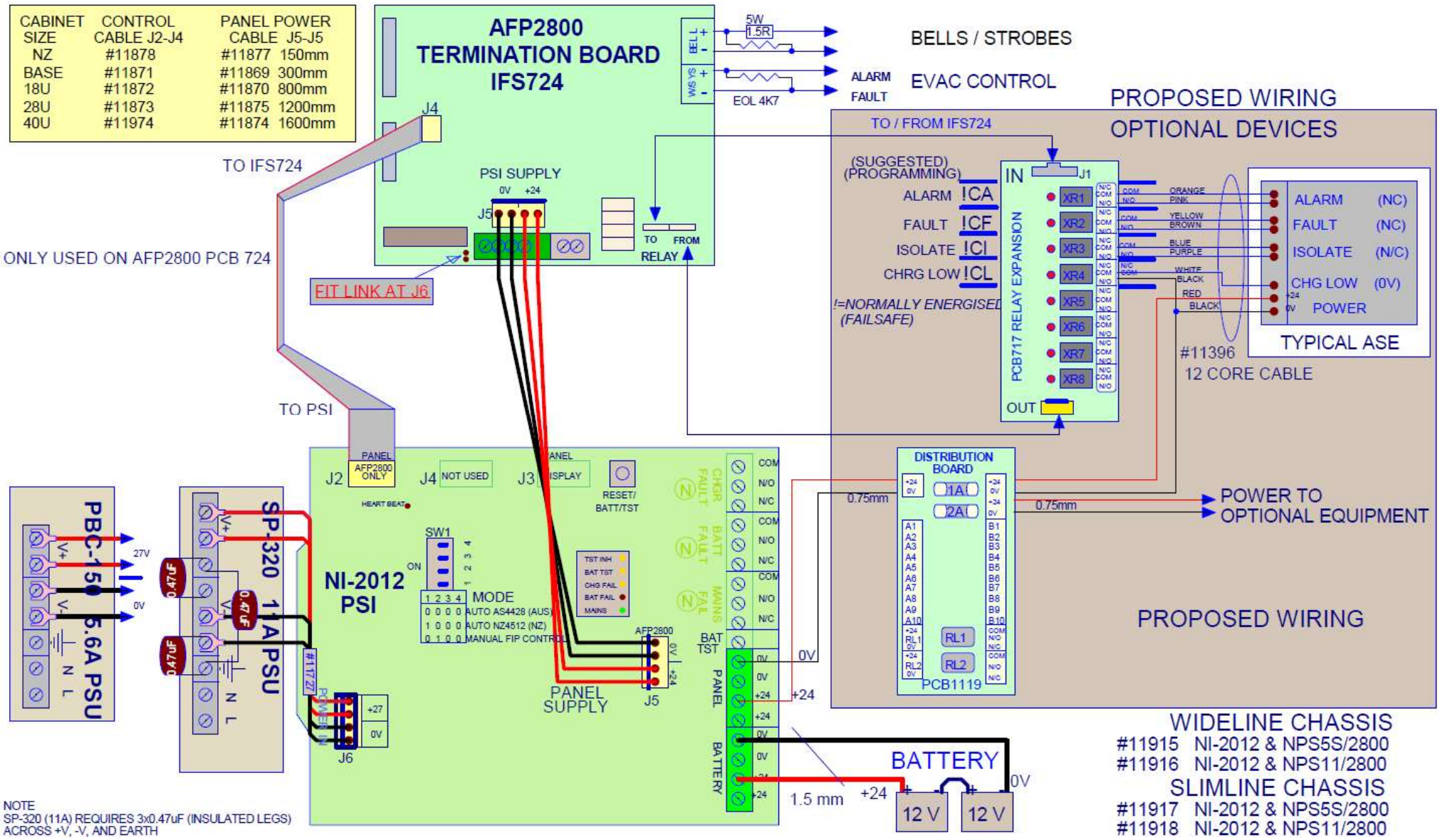


# 9.14 NPS Power Supply Connections

## 9.14.1 Connection to IFS-714 Termination Board



## 9.14.2 CONNECTION TO IFS-724 TERMINATION BOARD



# 9.15 NCA-2 PROGRAMMING AND OPERATION

**Note: Refer to DOC-01-043 – NCA-2 Manual for detailed instructions on NCA-2 operation.**

## 9.15.1 TERMINOLOGY DIFFERENCES BETWEEN NCA-2 AND AFP-2800

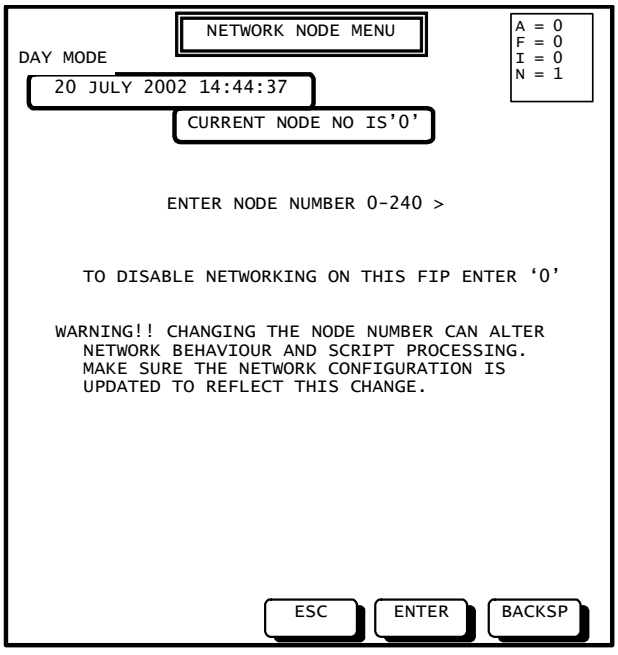
| Term or Function on the AFP-2800 | Equivalent Term or Function on the NCA-2/AFP-3030 |
|---|---|
| Netpoint | Logic Zone |
| Isolate | Disable |

## 9.15.2 NETWORKING WITH NCA-2

With firmware version 7 or above, the AFP-2800 can be networked with a NCA-2 via NOTI.FIRE.NET, with the NCA-2 as the control node. The NCA-2 can be used as the control and display for both AFP-3030 and AFP-2800 panels.

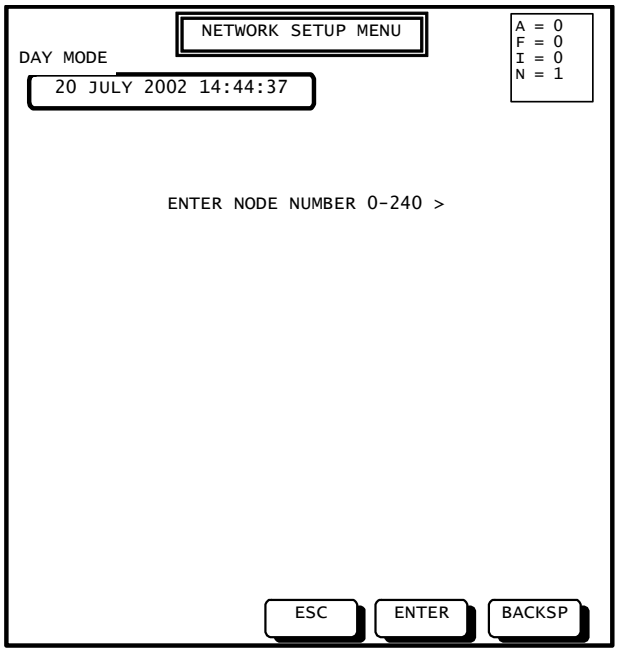
**Note: Direct control and communication between an AFP-3030 and the AFP-2800 panel is not recommended. If any communication is required between an AFP-3030 panel and the AFP-2800, it is recommended to use Logic Zones/Netpoints with the NCA-2 as the relay station.**

In order to work with a NCA-2 panel, the AFP-2800 panel must be set to receive actions from the NCA-2 node. The AFP-2800 can also be set to receive from another AFP-2800 panel if control across AFP-2800 panels is needed, however, the NCA-2 should be used as the master in the network.



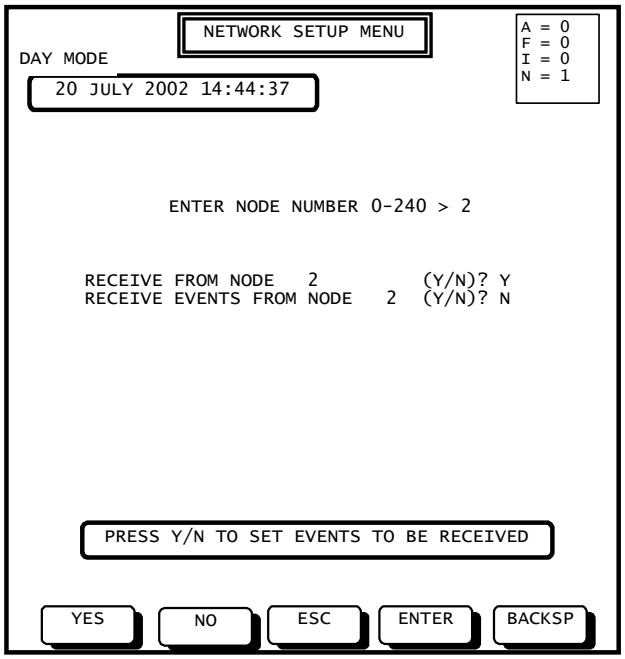

**Actions:**

- From the *Service Menu* (see 7.3.2), select **Network > Network** to access the *Network Node Menu*, pictured at left.




**Actions:**

- Enter the non-zero node number for the NCA-2, from which the AFP-2800 will receive events.
- In this example, the NCA-2 is Node 2 on the network.




**Actions:**

- Return to the *Service Menu* and select **Network > Receive** to set up the events accepted from other nodes.
- Set the AFP-2800 to receive actions from the NCA-2, shown in this example as Node 2.
- Leave 'Receive Events from Node 2 (Y/N)?' set to 'N'.

## 9.15.3 Basic Operations

### 9.15.3.1 Acknowledgement of Events By NCA-2

Fault and alarm events can be acknowledged by pressing the "SILENCE BUZZER" button or the "SILENCE/RESOUND ALARM" button on the NCA-2 ("MUTE ALARM DEVICE" button on the New Zealand NCA-2NZ.)

### 9.15.3.2 Disable/Enable Devices

**Disabling devices:**

- If the device is already listed in the Fault List, or the Other List, highlighting the device event and then pressing the "DISABLE" button on the NCA-2 will disable the highlighted device.
- If the panel is in alarm, the panel must first be silenced by pressing the "SILENCE/RESOUND ALARM" button. Pressing the "DISABLE" button on the NCA-2 after silencing the panel should then disable ALL active alarms.
- Devices can also be disabled from the Disable/Enable menu on the NCA-2. To access the menu, press the DISABLE/ENABLE soft key from the Main Menu on the NCA-2.

**Enabling devices:**

- If the device is disabled, press the "DISABLE SCROLL" button on the NCA-2 to display the Disable List. Highlighting the device in the Disable List and pressing the "DISABLE" button will re-enable the device.

- Devices can also be enabled from the Disable/Enable menu on the NCA-2. To access the menu, press the DISABLE/ENABLE soft key from the Main Menu on the NCA-2.

#### 9.15.3.3 Reset Alarms and Events

**To reset individual points:**

- If the device is listed on the Other List, highlighting the device event and then pressing the "RESET" button on the NCA-2 will reset the highlighted device.

**To reset the panel:**

- Pressing the "RESET" button on the NCA-2 when there are alarm events on the panel will reset all devices that are active or in alarm.

#### 9.15.3.4 Silence Buzzer

When there are fault or alarm events on the AFP-2800 panel:

- pressing the "SILENCE BUZZER" button on the NCA-2, OR;
- pressing the "SILENCE/RESOUND ALARM" button on the NCA-2

will acknowledge all alarm and fault events on the AFP-2800 and silence the buzzer.

#### 9.15.3.5 Bell Isolate (AUS AFP-2800 only)

This operation on the AFP-2800 can be controlled from a NCA-2 panel, with the Network Bell Isolate Broadcast setting enabled. This output can be forced to 'OFF' by the silence operation from the NCA-2.

#### 9.15.3.6 Warning System Isolate (AUS AFP-2800 only)

Netpoint 902 on the AFP-2800 is used to signal that a Warning System Isolate has been activated on the panel. Similarly, Logic Zone 902 on the NCA-2 is activated when the "ALARM DEVICES DISABLE" button is activated on the panel.

These events can be sent between networked NCA-2 and AFP-2800 panels by mapping Netpoint 902 on the AFP-2800 to Logic Zone 902 on the NCA-2. These events are sent to all mapped panels.

When "ALARM DEVICES DISABLE" is pressed on the NCA-2, any AFP-2800 panels mapped to the NCA-2 will have Warning System Outputs disabled, and the WARNING SYSTEM ISOLATED indicator of the AFP-2800 panel(s) will be lit.

When there is no "ALARM DEVICES DISABLE" event on the network, and no WARNING SYSTEM ISOLATED on a mapped AFP-2800 panel, pressing the "WARNING SYSTEM ISOLATE" button on an AFP-2800 panel will turn on the ALARM DEVICES DISABLE LED on a mapped NCA-2.

The ALARM DEVICES DISABLE LED on the NCA-2 will:

- Blink, if not all mapped panels have ALARM DEVICES DISABLED/WARNING SYSTEM ISOLATED
- be solid on, if all mapped panels have ALARM DEVICES DISABLED/WARNING SYSTEM ISOLATED

When the ALARM DEVICES DISABLE LED on the NCA-2 is blinking, pressing the "ALARM DEVICES DISABLE" button will re-enable/de-isolate the alarm device(s) on all mapped panels.

**Note: The default alarm device on the AFP-2800 panel is the Warning System Output.**

### 9.15.4 Scripting S-State of AFP-2800 points from NCA-2

The S-State is the actual state of the device, which ignores whether the point has been isolated. The S-State is used in scripting with the 'S' pre-operator (see Section 8.1.6 - 'S' Pre-Operator for more information).

The NCA-2 can script to the S-State of AFP-2800 points through Logic Zones.

#### 9.15.4.1 Scripting Example - S-State

The NCA-2 needs to script to the S-State of Loop 1 Detector 2 on an AFP-2800 (set as Node 3).

On the AFP-2800, create a Netpoint as follows:

NPxxxx = SL1D2;

On the NCA-2, the user shall script to the AFP-2800 Netpoint NPxxxx as follows:

N3ZLxxxx

## 9.15.5 SCRIPTING ALARM DEVICES FOR COMPATIBILITY WITH NCA-2

Output modules on the AFP-2800 which are part of the Alarm Devices can be scripted with the following Virtual Points to operate with the NCA-2.

The four Virtual Points shall be programmed on the AFP-2800 as per the following Table.

| Point | Name | Alarmed | Latching | Script |
|---|---|---|---|---|
| VP890 | Alarm Devices Fault | No | No | (Blank) |
| VP891 | Alarm Devices Test | No | No | (Blank) |
| VP892 | Alarm Devices Silenced | No | No | (Blank) |
| VP893 | Alarm Devices Disabled | No | No | (Blank) |

- VP890 is activated when there is a fault on the W/SYS circuit on the APF-2800.
- VP891 is activated when the ALARM DEVICES TEST button is activated on the NCA-2, or when the EVAC TEST button is activated on the AFP-2800 (New Zealand mode).
- VP892 is activated when Alarm Devices are silenced from the NCA-2, or when the SILENCE button is activated on the AFP-2800 (New Zealand mode).
- VP893 is activated when the ALARM DEVICES DISABLE button is activated on the NCA-2 or when the Warn System Isolate button is activated on the AFP-2800 (Australia mode).

Set “Receive from NCA node” to Yes (Menu > Network > Receive) and set “Receive events from NCA node” to No.
Set “Virtual Points added to Active List” (Menu > Global > System) so that active Virtual Points are added to the Non-Alarm list.

### 9.15.5.1 ALARM DEVICES FAULT INDICATION ON THE AFP-2800 AND NCA-2

When the Warning System Output of the AFP-2800 is in fault condition, the ALARM DEVICES FAULT LED on the NCA-2 will be lit.

An internal Virtual Point VP890 is assigned for this operation. This VP is set to:
- ON when an alarm device is in fault
- OFF when alarm devices are not in fault.

This VP can be used in scripts where the status of ALARM DEVICES FAULT is required.

### 9.15.5.2 ALARM DEVICES TEST CONTROL FROM THE NCA-2

When the NCA-2 is in ALARM DEVICES TEST, the default alarm device on the AFP-2800 will turn ON.

An internal Virtual Point VP891 is assigned for this operation. This VP is set to
- ON when ALARM DEVICES TEST is activated from the NCA-2
- OFF when this function is stopped by the NCA-2

The default alarm device output will be switched ON when ALARM DEVICES TEST is active. When this test is not active, the output is controlled by the state of the panel or the script.

Any other devices that perform as an alarm device output on the AFP-2800 must have their script(s) modified to logical “OR” with the new VP, such that:
- when the VP is ON, the output is ON
- when the VP is OFF, the output is controlled by the script.

See Section 9.15.5.5 for example scripting logic.

### 9.15.5.3 ALARM DEVICES SILENCED CONTROL FROM THE NCA-2

An internal Virtual Point VP892 is assigned for this operation. This VP is set to:
- ON when an ALARM DEVICES SILENCED message is received from the NCA-2
- OFF when an ALARM DEVICES ENABLE message is received from the NCA-2

The default alarm device output on the AFP-2800 will be switched OFF when this point is active and the AFP2800 panel is set to receive events form the NCA-2 panel. Any other AFP-2800 outputs that are used as alarm devices must have their script(s) modified to logical “AND” with the inverse of the new VP, such that:

- when the VP is ON, the output is OFF.
- when the VP is OFF, the output is controlled by the script.

See Section 9.15.5.5 for example scripting logic.

### 9.15.5.4 Alarm Devices Disable Control from the NCA-2

When the ALARM DEVICES DISABLE button is pressed on the NCA-2, the default alarm device on the AFP-2800 will turn OFF.

An internal VP893 is assigned for this operation. This VP is set to:

- ON when an alarm device disable function is activated from the NCA-2
- OFF when this function is stopped by the NCA-2

The default alarm device output on the AFP-2800 will be switched OFF when this point is active. When this point is not active, the output will be control by the state of the panel or the script.

Any other AFP-2800 outputs that are used as alarm devices must have their script(s) modified to logical “AND” with the inverse of the new VP, such that:

- when the VP is ON, the output is OFF.
- when the VP is OFF, the output is controlled by the script.

See Section 9.15.5.5 for example scripting logic.

### 9.15.5.5 Scripting Example – Alarm Devices

Scripting for an output module (Loop 1, Module 1) which is part of the Alarm Devices and is activated from Zone 1.

L1M1 = Z1

On the AFP-2800, the user shall script L1M1 as follows:

L1M1 = (Z1 OR VP891) AND !VP892 AND !VP893;

## 9.15.6 “SILENCE” Button (NZ AFP-2800 Only)

When the MUTE ALARM DEVICE button is pressed on the NCA-2, any mapped AFP-2800 panels will have their bell output and warning system output isolated, and the AFP-2800 SILENCE indicator will turn ON.

**Note: The following applies only when all AFP-2800 panels have their Bell Isolate Broadcast enabled under the Network Menu.**

When there is no ALARM DEVICE SILENCE on the network and no SILENCE on a mapped AFP-2800, pressing the SILENCE button on an AFP-2800 panel will turn on the ALARM DEVICE SILENCE indicator on a mapped NCA-2

- If not all mapped panels are isolated, the ALARM DEVICE SILENCE indicator on the NCA-2 will blink.
- If all mapped panels are isolated, the ALARM DEVICE SILENCE indicator on the NCA-2 will be solid on.

**Note: For a New Zealand NCA-2, the MUTE ALARM DEVICE button only performs the ALARM DEVICE SILENCE operation. To turn this operation off, press the RESET button on the NCA-2.**

## 9.15.7 “EVAC TEST” Button (NZ AFP-2800 Only)

When the ALARM DEVICE TEST button is pressed on the NCA-2, the mapped AFP-2800 panels will have their Warning System Output activated. The EVAC TEST indicator of the AFP-2800 panel(s) will also turn on.

When there is no ALARM DEVICE TEST on the network, and no EVAC TEST on a mapped AFP-2800, pressing the EVAC TEST button on an AFP-2800 panel will also turn on the ALARM DEVICE TEST indicator on a mapped NCA-2.

- If not all mapped panels are having an ALARM DEVICE TEST or EVAC TEST, the ALARM DEVICE TEST indicator on the NCA-2 will blink.
- If all mapped panels are having an ALARM DEVICE TEST or EVAC TEST, the ALARM DEVICE TEST indicator on the NCA-2 will be solid on.

**Note: When the ALARM DEVICE TEST indicator is blinking on the NCA-2, pressing the ALARM DEVICE TEST button will switch off the ALARM DEVICE TEST/EVAC TEST on all mapped panels.**

## 9.15.8 BULGIN EVAC AND SILENCE SWITCHES (NZ AFP-2800 ONLY)

**Note: If Bulgin switch control is needed on an AFP-2800 panel that is networked with a NCA-2, only the NCA-2 should be equipped with Bulgin switches; there should be no Bulgin EVAC and Bulgin Silence switches installed on the AFP-2800 panel.**

The BULGIN EVAC operation on the AFP-2800 is controlled by scripting NP998, such that:

- When the Bulgin EVAC Switch on the NCA-2 is ON, NP998 is ON.
- When the Bulgin EVAC Switch on the NCA-2 is OFF, NP998 is OFF.

When the panel is in alarm, turning the Bulgin Silence Switch on the NCA-2 to ON will:

- Silence AFP-2800 panels - the SILENCE LED will turn on, and all bell output and warning system outputs will be disabled.
- Turn on the ALARM DEVICE SILENCE indicator on the NCA-2.

While the Bulgin Silence Switch is ON, if the SILENCE button of any mapped AFP-2800 panels is pressed, all panels will be unsilenced, with the bell and warning system outputs enabled.

When the Bulgin Silence Switch on the NCA-2 is reset to OFF, all alarms on the network are disabled.

## 9.15.9 SUMMARY OF RESERVED NETPOINTS AND VIRTUAL POINTS

The following table summarises the range of Netpoints and Virtual Points that are reserved for specific functions and hence cannot be used for other purposes.

See Section 8.2 for detailed information on these points.

| Point | Reserved for: |
|---|---|
| NP900-902,<br>NP920,<br>NP980 | NCA-2/AFP-2800 communication |
| NP903-919,<br>NP921-NP979,<br>NP981-NP997,<br>NP999 | Acclimate detector Day/Night Mode operation. |
| NP998 | Bulgin EVAC (NZ panels) |
| NP1000 | Panel Day/Night Mode operation. |
| VP890 | Alarm Device Fault |
| VP891 | Alarm Device Test |
| VP892 | Alarm Device Silenced |
| VP893 | Alarm Device Disable |

# Notes

# Notes