

# OPERATION / INSTALLATION & PROGRAMMING MANUAL

## AFP-2800 LCD-80 Fire Alarm Panel

Revision 1.01  
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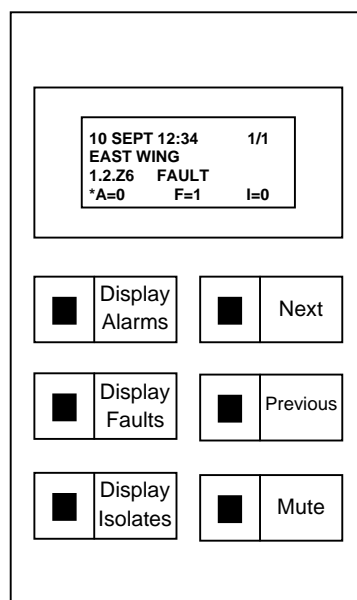
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# 1.1 LCD-80 SPECIFICATIONS

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

# 1.2 LCD-80 – TERMINAL MODE

The LCD80 is an alphanumeric display module that acts as a remote display interface to the AFP-2800. It displays Alarm, Fault and Isolate lists. A local buzzer will sound for any alarm or fault (this buzzer can be disabled if required). The AFP-2800 can support up to 32 LCD80 units on Ring 1. Refer to page 10 & **Error! Bookmark not defined.** for connection, addressing and set-up details.



## 1.2.1.1 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.

## 1.2.1.2 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.

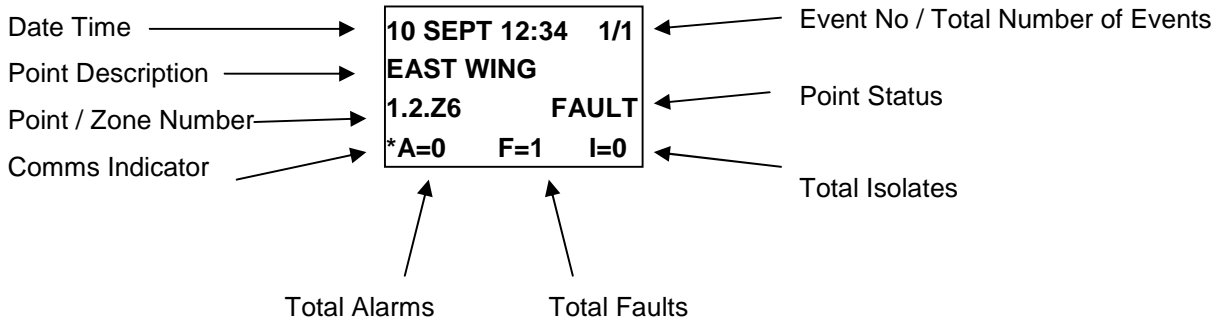
### 1.2.1.3 EVENT SOUNDER

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.  
 Switch 3 of DIP switch SW1 will enable (ON) or disable (OFF) the buzzer for isolates.  
 Switches 4 to 8 should be in the OFF position for terminal mode.

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

### 1.2.1.4 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 10<sup>th</sup> 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 10<sup>th</sup> 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.

### 1.2.1.5 SPECIAL MESSAGES

#### ALL SYSTEMS NORMAL

The system is 100% normal with no alarms, faults, or isolates.

#### COMMS FAILURE \*

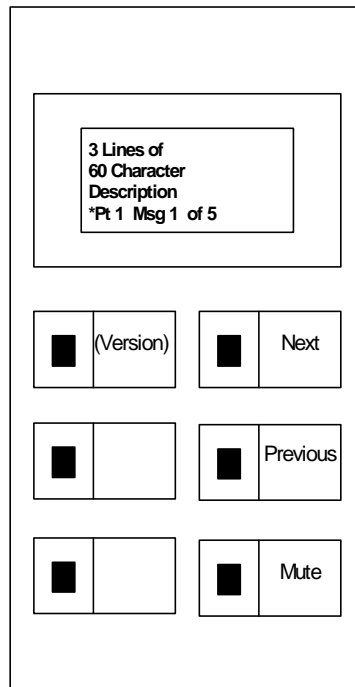
This messages flashes and appears when the LCD80 has not been polled by the CPU in over 10 seconds

#### 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

# 1.3 ANNUNCIATOR MODE

The LCD80 (Annunciator Mode) is an alphanumeric display module that acts as a remote display interface to the AFP-2800. It displays pre-programmed messages of 60 characters each which are activated via a script event in the AFP2800. 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 can support up to 32 LCD80 units on Ring 1. Refer to page **Error! Bookmark not defined.** for connection and set-up details.



## 1.3.1.1 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.

## 1.3.1.2 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.

### 1.3.1.3 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.

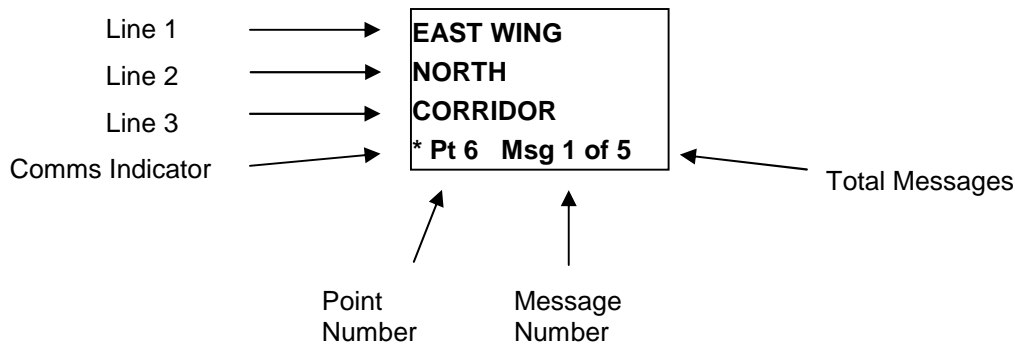
(Note: Activation of this switch prevents the LCD80 from communicating with the FIP.)

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.

### 1.3.1.4 DISPLAY

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



In the above example, 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.

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

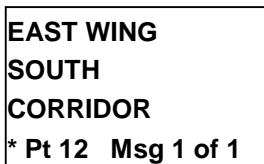
### 1.3.1.5 SPECIAL MESSAGES

#### 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



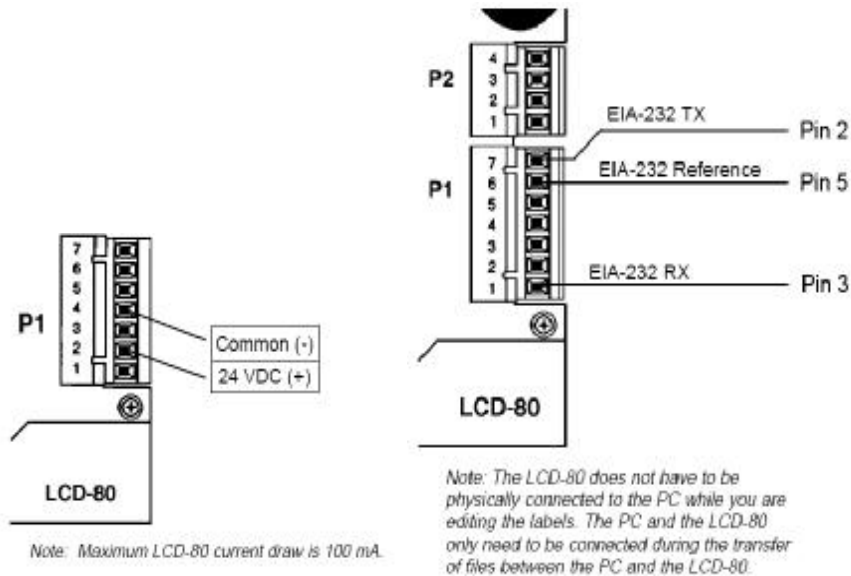
### 1.3.1.6 PROGRAMMING

The LCD80 Annunciator Mode pre-programmed messages can be programmed in via a laptop using the AFP2800 PC Interface Program. Each required message must be activated via a script in the AFP2800 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:** Pin 4 (DTR) is connected to pin 6 (DSR) in the 9 pin connector housing.

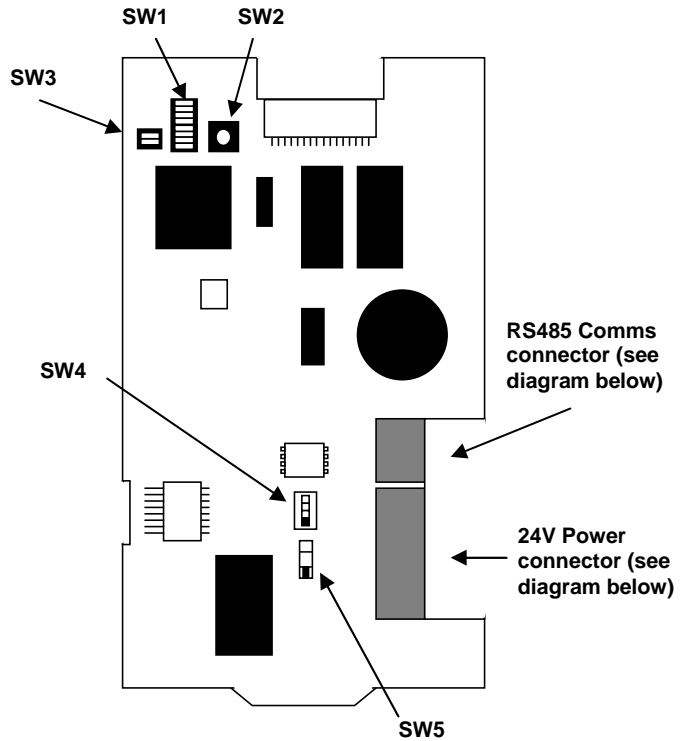
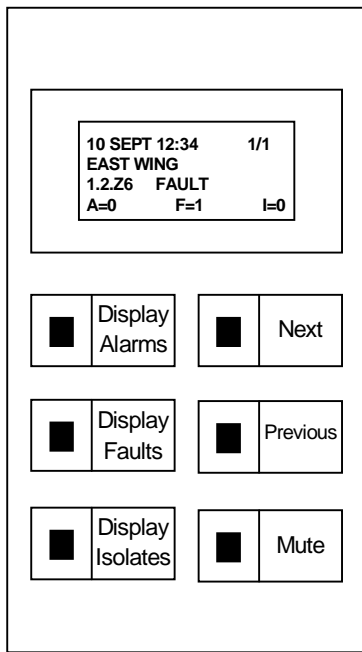
Downloading new Labels:

- 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.

# 1.4 LCD-80 DIPSWITCH SETTINGS



**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. Setting DIP Switch 3 of SW1 to OFF will disable the buzzer for Isolates. 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	220 – 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	120 – 139



# 1.5 RECOMMENDED CABLING REQUIREMENTS

## Applies to:

- Ring 1 Communication lines
- Annunciator Communication lines

## Requirements:

Style	<b>Minimum 0.75mm<sup>2</sup> x 2 core Twisted Pair Shielded</b> communications cable (+ separate 2 core cable for 24VDC module power )
Max distance	Communications cable: 1000M between modules with 1.5mm <sup>2</sup> cable (24VDC power cable distance will be determined by voltage drop)
Notes:	<ul style="list-style-type: none"><li>• Maximum of 16 annunciators between any two modules</li><li>• Fire rated cables may be required as per AS1670, AS1668, AS2118</li></ul>

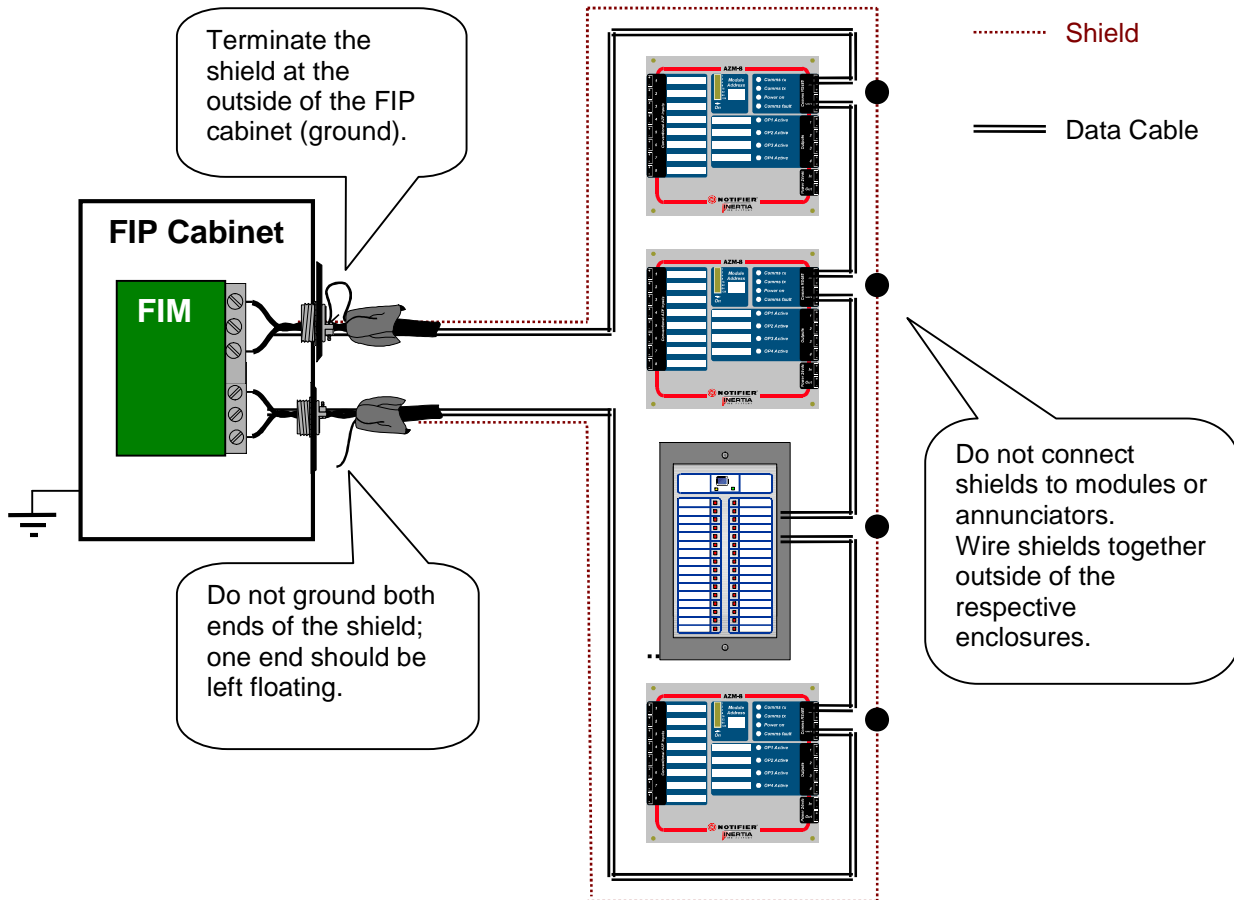
**Note:** When Annunciators or Field Modules are powered from external power supplies, use a separate conductor to connect the main power supply common terminal (-0V) to the remote power supplies common terminal (-0V).

The EIA-485 circuit must be wired using a twisted-shielded pair 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 V<sub>RMS</sub> or motor control circuits. All enclosures, including the FIP cabinet, must be connected to electrical earth! Never use the shield as an earthing conductor.

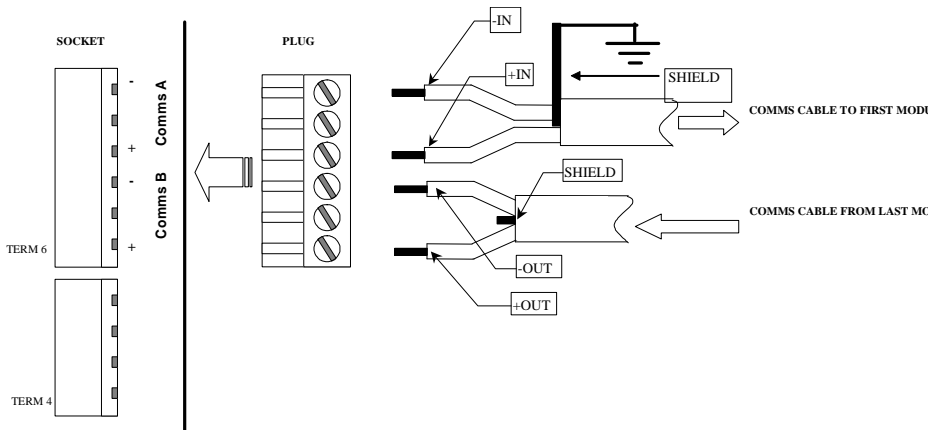
Terminate the shield at the outside of the FIP cabinet (ground). Where this is not possible, the shield must be terminated to physical ground immediately adjacent to cable entry. Between Field modules, connect shields together outside of their respective enclosures. Make sure that the shield is only 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.

# 1.6 LCD-80 CONNECTION DIAGRAMS:

## 1.6.1 RS485 RING CONNECTION

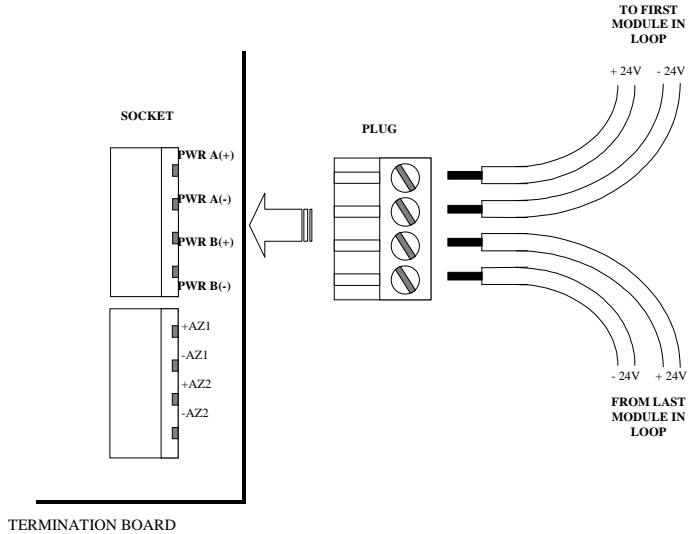


## 1.6.2 MAIN TERMINATION BOARD – CONNECTING RS485



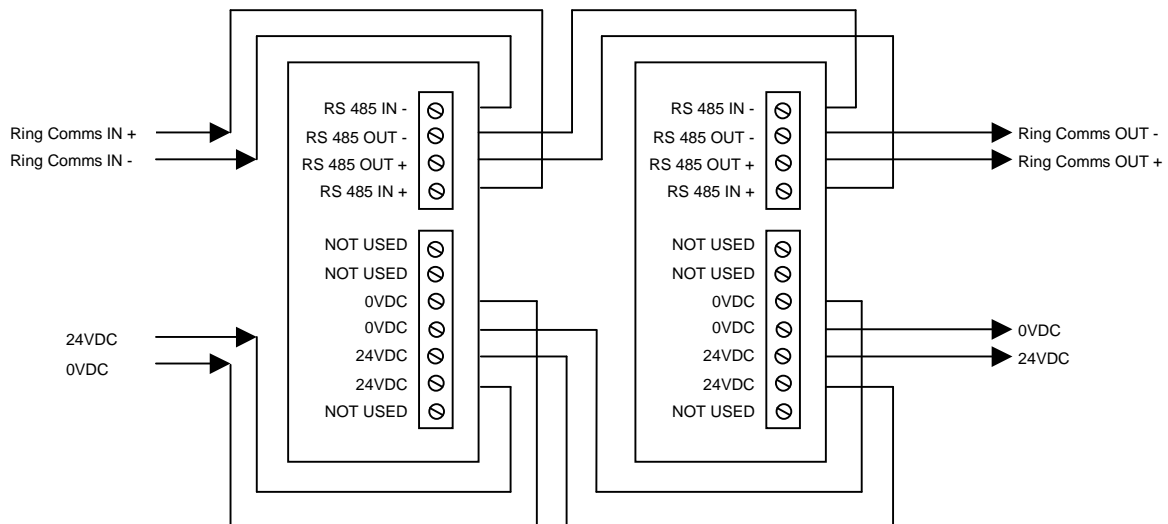
**Note:** Terminate the shield at the outside of the FIP cabinet (ground). Where this is not possible, the shield must be terminated to physical ground immediately adjacent to cable entry. Between Field modules, connect shields together outside of their respective enclosures. Make sure that the shield 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.

## 1.6.3 MAIN TERMINATION BOARD – CONNECTING 24VDC



## 1.6.4 LCD-80 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.

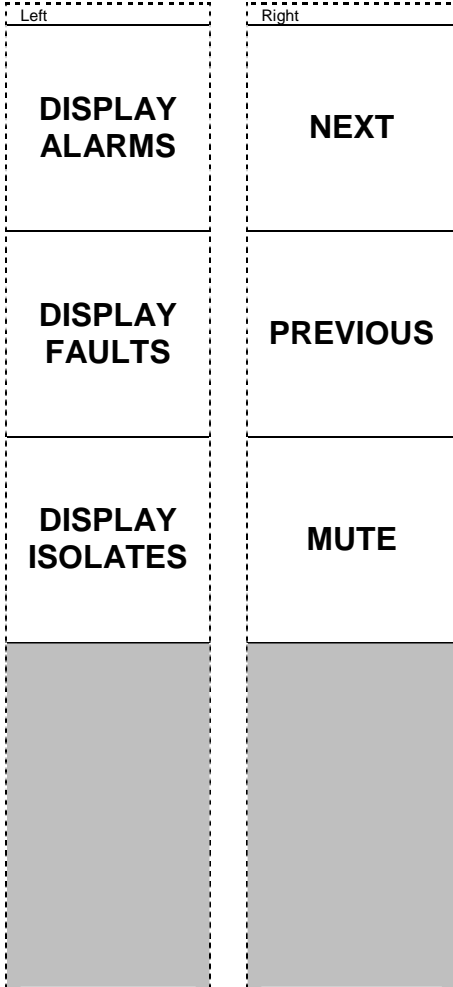


Notes:

- 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 is to be used and 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).

TERMINAL MODE



ANNUNCIATORS MODE

