⚡ Simplex

4100 / 4120
FIRE ALARM SYSTEM

INSTALLATION INSTRUCTIONS
FOR CONTRACTOR
(LT0281)

Volume 2 of 3

MANUFACTURER'S DETAILS

APPROVALS: AUSTRALIAN STANDARD AS1603.4
SSL CERTIFICATE OF COMPLIANCE NUMBER 127

The 4100 Fire Indicator Panel is manufactured by:

Simplex International Pty Ltd
140 Old Pittwater Road
Brookvale N.S.W 2100 Australia
ACN: 008 435 443

Phone: (02)-9466-2333

Notice: The contents of this document is subject to change without notice

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NOTICE

FIRST-TIME INSTALLERS OF SIMPLEX 4100+ FIRE ALARM PANELS

AFTER READING THE INFORMATION CONTAINED IN THIS MANUAL, CALL YOU LOCAL SIMPLEX REPRESENTATIVE BEFORE PROCEEDING TO CONNECT FIELD WIRING!

CAUTION

DO NOT APPLY AC OR BATTERY POWER TO THE 4100+ SYSTEM (UNLESS IN THE PRESENCE OF A SIMPLEX TECHNICAL REPRESENTATIVE).

AMENDMENTS TO 4100 /4120 INSTALLATION MANUAL

ISSUE	SECTION/PAGES AMENDED	DATE AMENDED	COMMENTS	ECN No.
1	NIL	04-05-97	Original - File: 41M002.doc	

RELATED DOCUMENTATION

This manual is part of a three volume set relating to the 4100/4120 Fire Alarm Panel. The following lists the documentation relating to the 4100/4120 Fire Alarm Panel

Volume 1   4100/4120 Fire Indicator Panel - Operator Manual. This manual describes the operating procedures for a typical 4100/4120 Fire Indicator Panel.
4100 Fire Indicator Panel Operator Manual - Part No/Document No: 4100-M001
4120 Fire Indicator Panel Operator Manual - Part No/Document No: 4100-M004

Volume 2   4100/4120 Fire Indicator Panel - Installation Manual. This manual describes the procedures for installing and commissioning a typical 4100/4120 Fire Indicator Panel.
Part No/Document No: 4100-M002

Volume 3   4100/4120 Fire Indicator Panel - Technical Manual. This manual contains technical descriptions of the various components of a typical 4100/4120 Fire Indicator Panel .
Part No/Document No: 4100-M003

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FIGURES

TABLES

CONTRACTOR INSTALLATION INSTRUCTIONS

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* * * IMPORTANT * * *

THE INSTALLER IS RESPONSIBLE FOR SAFEGUARDING ALL 4100+ MATERIAL SHIPPED TO THE JOB SITE.

DURING SYSTEM INSTALLATION, STORE ALL 4100+ ITEMS (INCLUDING ALL DOCUMENTATION) IN A CLEAN, DRY AND SAFE PLACE UNTIL NEEDED.

* * * * * * * * * * * *

NOTIFY APPROPRIATE PERSONNEL (BUILDING OCCUPANTS, FIRE DEPARTMENT, MONITORING FACILITY, ETC.) IF AN EXISTING SYSTEM MUST BE SHUT DOWN WHILE THE 4100+ SYSTEM IS BEING INSTALLED.

INTRODUCTION

This publication provides a logical sequence of procedures to follow when installing a 4100+ system. Throughout this publication, you are often referred to the documentation listed below. In such cases, notes describing use of the documents will generally follow immediately after the reference.

Supplied Documentation

The envelope that contained this publication also contains the following documents:

- *4100+/4120/UT Back Box Installation Instructions (Pub. No. FA4-21-203)*
- *Factory Documentation (packed in a clear plastic envelope)*
- *4100 Field Wiring Diagram (841-731)*
- *Field Wiring Diagrams, Smoke Detectors (841-687)*
- *Field Wiring Diagrams, MAPNET II$^{®}$ Devices (841-804)*
- *4100/4100+ Fire Alarm Operating Instructions (Pub. No. FA4-31-201)*

Except for the last publication, all of the above documents are required for system installation.

INSTALLATION PROCEDURE

NOTES:

> A. *Indexes for the* **4100 Field Wiring Diagram** *are found on the first page of the document.*
>
> B. *All wiring must be in accordance with local codes.*
>
> C. *A page entitled "GENERAL WIRING PRECAUTIONS" is included in the* **4100 Field Wiring Diagram**.

If possible, proceed through the installation process in the sequence that follows.

1. Inventory the delivered equipment.

---

* * * IMPORTANT * * *

The contractor **IS NOT** responsible for inventorying or installing daughter cards, or for interconnecting panel components.

- All cartons that contain daughter cards are to be opened, inventoried, and installed by Simplex personnel.

- In addition to the envelope that contained this publication and the material listed in the Packaging Information section of the *Factory Documentation*, supplied material includes an envelope labelled *System Hardware*, as shown in Figure 1.

SYSTEM HARDWARE

OPEN CAREFULLY

748-200
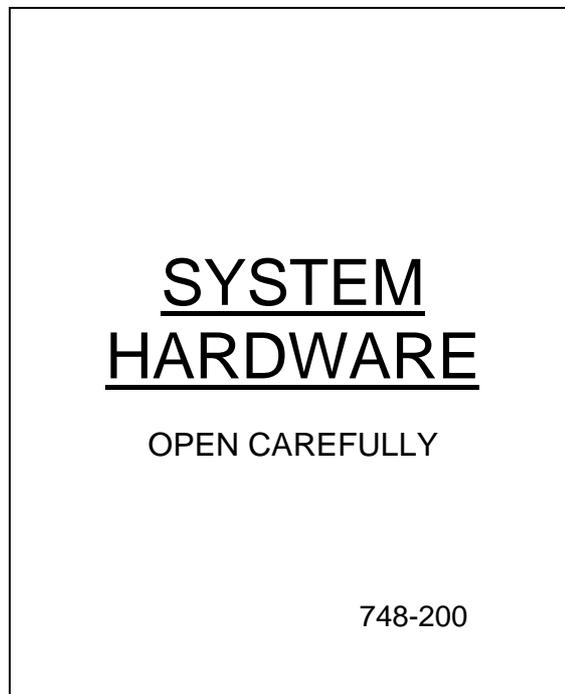
Ω Simplex   SIMPLEX TIME RECORDER CO.
GARDNER, MA 01441 U.S.A.

570210-A

Figure 1
System Hardware Envelope Label

2. **Install the back box.**

    *   Use the *4100+/4120/UT Back Box Installation Instructions* (Pub. No. FA4-21-203).

3. **Install and tag all system wiring.**

    *   See the *SYSTEM POINT SUMMARY* Report (Figure 7) and the appropriate page in the *4100 Field Wiring Diagram* (841-731).

4. **Install the peripheral devices and E.O.L. resistors.**

    *   See the Point Type column in the SYSTEM POINT SUMMARY Report for device type.

NOTES:

A. The **748-200 System Hardware** *envelope contains the required resistors.*

    *   *3.3K (monitor zone) resistors are colour coded orange, orange, red (and have a gold tolerance band); 10K (Notification appliance [signal] circuit) resistors are colour coded brown, black, orange (and also have a gold tolerance band).*

    *   *Resistors other than those described above will be used by the Simplex Technical Representative (T.R.) during installation checkout.*

B. *Wire peripherals in accordance with the appropriate* **4100 Field Wiring Diagram (841-731).**

    *   *Wire a MAPNET II® device in accordance with the appropriate* **MAPNET II® Field Wiring Diagram (841-804).** *Then,* **SET THE DEVICE'S ADDRESS SWITCHES** *(Figure 2).*

C. *A MAPNET II® device's address is represented by the final digit(s) in the zone's name.*

    Examples: *The device that connects to a zone named M1-2 must have its switches set to address 2; the device that connects to a zone named M1-117 must have its switches set to address 117.*

    *   *See Table 1 for a complete listing of MAPNET II® addresses.*

D. *Use a small screwdriver or ball point pen to set device address switches.*

E. *After setting the device address, mark the device's address label (Figure 3) to agree with the address switches.*
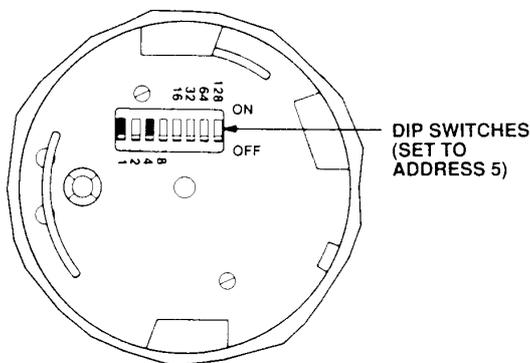
Figure 2	Figure 3
Location of DIP Switches on Typical Device	**Device Address Label**

TABLE 1
MAPNET II® Addresses

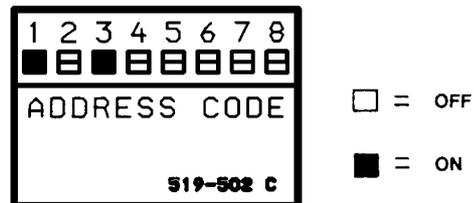| SW1-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8		
ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	=	ADDRESS 1
OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	=	ADDRESS 2
ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	=	ADDRESS 3
OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	=	ADDRESS 4
ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	=	ADDRESS 5
OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	=	ADDRESS 6
ON	ON	ON	OFF	OFF	OFF	OFF	OFF	=	ADDRESS 7
OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	=	ADDRESS 8
ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	=	ADDRESS 9
OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	=	ADDRESS 10
ON	ON	OFF	ON	OFF	OFF	OFF	OFF	=	ADDRESS 11
OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	=	ADDRESS 12
ON	OFF	ON	ON	OFF	OFF	OFF	OFF	=	ADDRESS 13
OFF	ON	ON	ON	OFF	OFF	OFF	OFF	=	ADDRESS 14
ON	ON	ON	ON	OFF	OFF	OFF	OFF	=	ADDRESS 15
OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	=	ADDRESS 16
ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	=	ADDRESS 17
OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	=	ADDRESS 18
ON	ON	OFF	OFF	ON	OFF	OFF	OFF	=	ADDRESS 19
OFF	OFF	ON	OFF	ON	OFF	OFF	OFF	=	ADDRESS 20
ON	OFF	ON	OFF	ON	OFF	OFF	OFF	=	ADDRESS 21
OFF	ON	ON	OFF	ON	OFF	OFF	OFF	=	ADDRESS 22
ON	ON	ON	OFF	ON	OFF	OFF	OFF	=	ADDRESS 23
OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	=	ADDRESS 24
ON	OFF	OFF	ON	ON	OFF	OFF	OFF	=	ADDRESS 25
OFF	ON	OFF	ON	ON	OFF	OFF	OFF	=	ADDRESS 26
ON	ON	OFF	ON	ON	OFF	OFF	OFF	=	ADDRESS 27
OFF	OFF	ON	ON	ON	OFF	OFF	OFF	=	ADDRESS 28
ON	OFF	ON	ON	ON	OFF	OFF	OFF	=	ADDRESS 29
OFF	ON	ON	ON	ON	OFF	OFF	OFF	=	ADDRESS 30
ON	ON	ON	ON	ON	OFF	OFF	OFF	=	ADDRESS 31
OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	=	ADDRESS 32
ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	=	ADDRESS 33
OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	=	ADDRESS 34
ON	ON	OFF	OFF	OFF	ON	OFF	OFF	=	ADDRESS 35
OFF	OFF	ON	OFF	OFF	ON	OFF	OFF	=	ADDRESS 36
ON	OFF	ON	OFF	OFF	ON	OFF	OFF	=	ADDRESS 37
OFF	ON	ON	OFF	OFF	ON	OFF	OFF	=	ADDRESS 38
ON	ON	ON	OFF	OFF	ON	OFF	OFF	=	ADDRESS 39
OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	=	ADDRESS 40
ON	OFF	OFF	ON	OFF	ON	OFF	OFF	=	ADDRESS 41
OFF	ON	OFF	ON	OFF	ON	OFF	OFF	=	ADDRESS 42
ON	ON	OFF	ON	OFF	ON	OFF	OFF	=	ADDRESS 43
OFF	OFF	ON	ON	OFF	ON	OFF	OFF	=	ADDRESS 44
ON	OFF	ON	ON	OFF	ON	OFF	OFF	=	ADDRESS 45
OFF	ON	ON	ON	OFF	ON	OFF	OFF	=	ADDRESS 46
ON	ON	ON	ON	OFF	ON	OFF	OFF	=	ADDRESS 47
OFF	OFF	OFF	OFF	ON	ON	OFF	OFF	=	ADDRESS 48
ON	OFF	OFF	OFF	ON	ON	OFF	OFF	=	ADDRESS 49
OFF	ON	OFF	OFF	ON	ON	OFF	OFF	=	ADDRESS 50
ON	ON	OFF	OFF	ON	ON	OFF	OFF	=	ADDRESS 51
OFF	OFF	ON	OFF	ON	ON	OFF	OFF	=	ADDRESS 52
ON	OFF	ON	OFF	ON	ON	OFF	OFF	=	ADDRESS 53
OFF	ON	ON	OFF	ON	ON	OFF	OFF	=	ADDRESS 54
ON	ON	ON	OFF	ON	ON	OFF	OFF	=	ADDRESS 55
OFF	OFF	OFF	ON	ON	ON	OFF	OFF	=	ADDRESS 56
ON	OFF	OFF	ON	ON	ON	OFF	OFF	=	ADDRESS 57
OFF	ON	OFF	ON	ON	ON	OFF	OFF	=	ADDRESS 58
ON	ON	OFF	ON	ON	ON	OFF	OFF	=	ADDRESS 59
OFF	OFF	ON	ON	ON	ON	OFF	OFF	=	ADDRESS 60
ON	OFF	ON	ON	ON	ON	OFF	OFF	=	ADDRESS 61
OFF	ON	ON	ON	ON	ON	OFF	OFF	=	ADDRESS 62
ON	ON	ON	ON	ON	ON	OFF	OFF	=	ADDRESS 63
OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	=	ADDRESS 64
ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	=	ADDRESS 65
OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	=	ADDRESS 66
ON	ON	OFF	OFF	OFF	OFF	ON	OFF	=	ADDRESS 67
OFF	OFF	ON	OFF	OFF	OFF	ON	OFF	=	ADDRESS 68
ON	OFF	ON	OFF	OFF	OFF	ON	OFF	=	ADDRESS 69
OFF	ON	ON	OFF	OFF	OFF	ON	OFF	=	ADDRESS 70
ON	ON	ON	OFF	OFF	OFF	ON	OFF	=	ADDRESS 71
OFF	OFF	OFF	ON	OFF	OFF	ON	OFF	=	ADDRESS 72
ON	OFF	OFF	ON	OFF	OFF	ON	OFF	=	ADDRESS 73
OFF	ON	OFF	ON	OFF	OFF	ON	OFF	=	ADDRESS 74
ON	ON	OFF	ON	OFF	OFF	ON	OFF	=	ADDRESS 75
OFF	OFF	ON	ON	OFF	OFF	ON	OFF	=	ADDRESS 76
ON	OFF	ON	ON	OFF	OFF	ON	OFF	=	ADDRESS 77
OFF	ON	ON	ON	OFF	OFF	ON	OFF	=	ADDRESS 78
ON	ON	ON	ON	OFF	OFF	ON	OFF	=	ADDRESS 79
OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	=	ADDRESS 80
ON	OFF	OFF	OFF	ON	OFF	ON	OFF	=	ADDRESS 81
OFF	ON	OFF	OFF	ON	OFF	ON	OFF	=	ADDRESS 82
ON	ON	OFF	OFF	ON	OFF	ON	OFF	=	ADDRESS 83
OFF	OFF	ON	OFF	ON	OFF	ON	OFF	=	ADDRESS 84
ON	OFF	ON	OFF	ON	OFF	ON	OFF	=	ADDRESS 85
OFF	ON	ON	OFF	ON	OFF	ON	OFF	=	ADDRESS 86
ON	ON	ON	OFF	ON	OFF	ON	OFF	=	ADDRESS 87
OFF	OFF	OFF	ON	ON	OFF	ON	OFF	=	ADDRESS 88
ON	OFF	OFF	ON	ON	OFF	ON	OFF	=	ADDRESS 89
OFF	ON	OFF	ON	ON	OFF	ON	OFF	=	ADDRESS 90
ON	ON	OFF	ON	ON	OFF	ON	OFF	=	ADDRESS 91
OFF	OFF	ON	ON	ON	OFF	ON	OFF	=	ADDRESS 92
ON	OFF	ON	ON	ON	OFF	ON	OFF	=	ADDRESS 93
OFF	ON	ON	ON	ON	OFF	ON	OFF	=	ADDRESS 94
ON	ON	ON	ON	ON	OFF	ON	OFF	=	ADDRESS 95
OFF	OFF	OFF	OFF	OFF	ON	ON	OFF	=	ADDRESS 96
ON	OFF	OFF	OFF	OFF	ON	ON	OFF	=	ADDRESS 97
OFF	ON	OFF	OFF	OFF	ON	ON	OFF	=	ADDRESS 98
ON	ON	OFF	OFF	OFF	ON	ON	OFF	=	ADDRESS 99
OFF	OFF	ON	OFF	OFF	ON	ON	OFF	=	ADDRESS 100
ON	OFF	ON	OFF	OFF	ON	ON	OFF	=	ADDRESS 101
OFF	ON	ON	OFF	OFF	ON	ON	OFF	=	ADDRESS 102
ON	ON	ON	OFF	OFF	ON	ON	OFF	=	ADDRESS 103
OFF	OFF	OFF	ON	OFF	ON	ON	OFF	=	ADDRESS 104
ON	OFF	OFF	ON	OFF	ON	ON	OFF	=	ADDRESS 105
OFF	ON	OFF	ON	OFF	ON	ON	OFF	=	ADDRESS 106
ON	ON	OFF	ON	OFF	ON	ON	OFF	=	ADDRESS 107
OFF	OFF	ON	ON	OFF	ON	ON	OFF	=	ADDRESS 108
ON	OFF	ON	ON	OFF	ON	ON	OFF	=	ADDRESS 109
OFF	ON	ON	ON	OFF	ON	ON	OFF	=	ADDRESS 110
ON	ON	ON	ON	OFF	ON	ON	OFF	=	ADDRESS 111
OFF	OFF	OFF	OFF	ON	ON	ON	OFF	=	ADDRESS 112
ON	OFF	OFF	OFF	ON	ON	ON	OFF	=	ADDRESS 113
OFF	ON	OFF	OFF	ON	ON	ON	OFF	=	ADDRESS 114
ON	ON	OFF	OFF	ON	ON	ON	OFF	=	ADDRESS 115
OFF	OFF	ON	OFF	ON	ON	ON	OFF	=	ADDRESS 116
ON	OFF	ON	OFF	ON	ON	ON	OFF	=	ADDRESS 117
OFF	ON	ON	OFF	ON	ON	ON	OFF	=	ADDRESS 118
ON	ON	ON	OFF	ON	ON	ON	OFF	=	ADDRESS 119
OFF	OFF	OFF	ON	ON	ON	ON	OFF	=	ADDRESS 120
ON	OFF	OFF	ON	ON	ON	ON	OFF	=	ADDRESS 121
OFF	ON	OFF	ON	ON	ON	ON	OFF	=	ADDRESS 122
ON	ON	OFF	ON	ON	ON	ON	OFF	=	ADDRESS 123
OFF	OFF	ON	ON	ON	ON	ON	OFF	=	ADDRESS 124
ON	OFF	ON	ON	ON	ON	ON	OFF	=	ADDRESS 125
OFF	ON	ON	ON	ON	ON	ON	OFF	=	ADDRESS 126
ON	ON	ON	ON	ON	ON	ON	OFF	=	ADDRESS 127

NOTES:

A. *Address zero (all switches turned OFF) is not a valid address.*

B. *Switch number 8 is never turned ON.*

5. **Remove the option bay door.** (See Figure 4.)

a. (If applicable) Mark the top of the ribbon cable. Then pull the cable straight out of its connector.

b. Remove the hair-pin cotter pins (item 1) from the upper clevis pins (item 2). Then push the clevis pins inward and lower the door.

c. Free the lower end of the retainer cable (item 3) by removing the screw and washer (items 4 and 5).

d. Remove the hair-pin cotter pins (item 6) from the lower clevis pins (item 7). Then push the clevis pins inward and remove the door.

e. Store the door and its hardware in a safe, clean and dry place until all wires are terminated in the 4100+ panel.
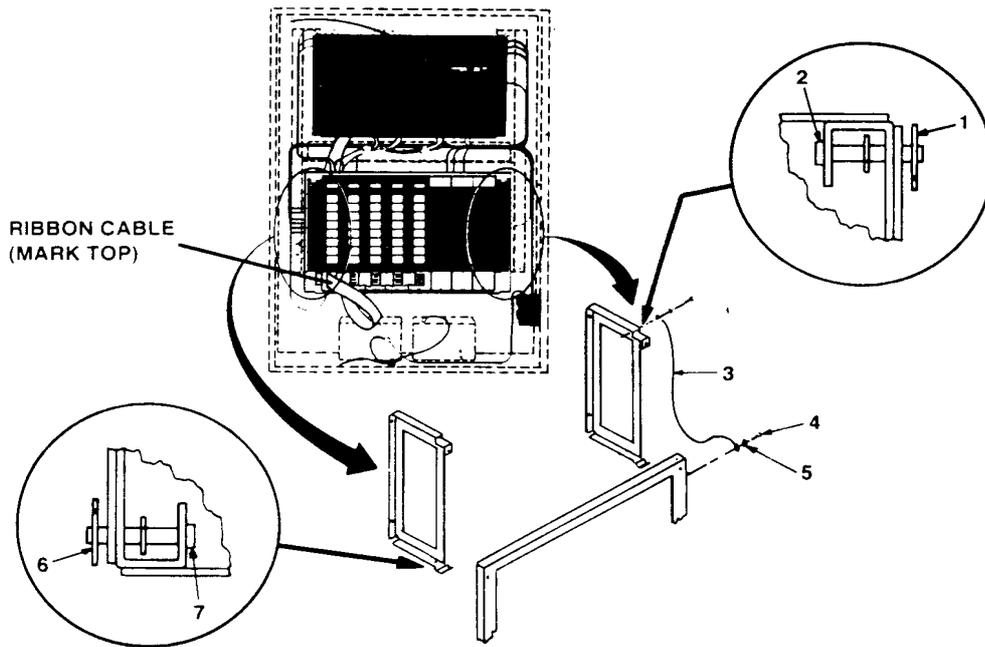
Figure 4
Removing the Option Bay Door

6.   **Check and terminate all zone (ZN), MAPNET Loops (MAP A , MAP B) and signal (SIG) wiring.**

NOTES:

A.   *Use the* **CARD SUMMARY BY LOCATION** *Report (Figure 6) to determine the location of the motherboard on which each specific circuit terminates.*

- *A stock-on "ADDRESS" label on each motherboard identifies that board's number.*

B.   *The above report is found within the computer printout portion of the* **Factory Documentation**.

C.   *Use the terminal identifiers to find specific terminals.*

- *See Figure 18 (Custom Terminal Wiring Identifiers) for typical custom terminal wiring identifiers.*

D.   *Check each circuit for voltages, shorts or opens as follows:*

1.   *With the meter set on* **300VAC**, *read the voltage across the circuit.*

- *Meter must read 0 volts.*

2.   *With the meter set on 60VDC, read the voltage across the circuit again (this time in both directions).*

- *Meter must read 0 volts.*

3.   *With the meter set on* **OHMS x 10** *and its (+) and (−) leads connected to the circuit's (+) and (−) wires respectively, check resistance.*

- *Readings must compare favourably with those shown in Table 2.*

- *If reading indicates an open in a circuit that includes a smoke detector, make sure the detector head(s) are properly mounted and seated.*

  – *Circuits always read "open" (infinity) if detector power is absent and separately-powered devices (four-wire smoke detectors) are involved.*

E.   *Connect the wires to their terminals.*

TABLE 2
Acceptable Zone and Signal Circuit Meter Readings

Circuit Type	*Meter Reading*
Style B (formerly Class B) Initiating Device (Zone) Circuit	
From zone + to zone – (each zone)	3.3K ohms
From zone + to ground	Infinity
From zone – to ground	Infinity
Style D (formerly Class A) Initiating Device (Zone) Circuit	
From zone + to zone – (each zone)	Infinity
From zone + to ground	Infinity
From zone – to ground	Infinity
From zone + OUT to + IN	Less than 50 ohms
From zone – OUT to – IN	Less than 50 ohms
Style Y (formerly Class B) Notification Appliance Circuit (each signal circuit)	
From + to ground	Infinity
From – to ground	Infinity
Resistance across circuit	
In one direction	10K ohms
In opposite direction	Less than 200 ohms
Style Z (formerly Class A) Notification Appliance Circuit (each signal circuit)	
From + to ground	Infinity
From – to ground	Infinity
From + OUT to + IN	Less than 50 ohms
From – OUT to – IN	Less than 50 ohms
Resistance across circuit	
In one direction	Infinity
In opposite direction	Less than 200 ohms
Shielding	
Shield to ground	Infinity
Shield to –	Infinity
Shield to +	Infinity
MAPNET II® Loops (ZAMs and IAMs)	
From MAPNET II® + to ground	Infinity
From MAPNET II® – to ground	Infinity

7. **Check and terminate all remaining circuits (AC power, AUX, FB, City, MAPNET II®, etc.).**

8. **Dress the panel wiring.**

   • Use the tie wraps in the System Hardware envelope to neatly dress the panel wiring.

9. **Install the option bay door.**

10. **Call your local Simplex Branch Office (listed in the Yellow Pages) to install the printed circuit boards and test the system.**

> **ONLY SIMPLEX REPRESENTATIVES ARE AUTHORISED TO APPLY**
> **AC OR BATTERY POWER TO THE 4100+ SYSTEM.**

PROGRAMMER'S REPORT

The Programmer's Report is used to identify peripheral connections within the panel and specifies system operational data.

The 13 sections within the Programmer's Report are shown in Figures 5 through 17, and explained in each section.

1. General Information (see Figure 5)

This section contains branch office required information. It details branch personnel involved with the system, system power data, agency, and software information. The software revision must match the system CFIG chip label for proper operation of the LCD display.

```
-------------------------------------------------------------------------------
XYZ BUILDING 1                  GENERAL INFORMATION                  Page   1
909015J node:1 rev:1                               05:20:54, THU, 08-MAY-97
-------------------------------------------------------------------------------
4100 Fire Alarm System                                              GENERAL
Simplex Time Recorder Co.                                              INFO

Node Number: 1
System Type: 4100+

           Job Filename :  909015J
              Job Title :  XYZ BUILDING 1
           Order Number :
               Customer :  ACME FIRE ALARMS
       Customer Contact :  JOE FLAME
             Contractor :
            Salesperson :
          Branch Number :  909
        Branch Location :  PERTH
          Programmed by :  GF

         Agency Approval :  NONE
          NFPA Standard :  NONE
       Standby Generator? :  NO
Hours of Standby Battery :

Comments :
         :


             Job Rev : 1
           Built Rev : 0
          Built Date :  ---

                         Current     As Built
                         -------     --------
        Programmer Rev : 7.02          ---
    System Defaults Rev : 77           ---
  Database (DBF) Format : 79           ---
           CFIG Format : 0            ---
```

Figure 5
General Information

2. Card Summary by Location (see Figure 6)

The Card Summary by Location shows the number of cards within the system. This page should be used to verify delivery of system cards from the factory. It also shows a decimal card number which is the address for that printed circuit board. Addresses 3 and 9 are shown below on Custom Terminal Wiring Identifiers.

```
    -------------------------------------------------------------------------
    XYZ BUILDING 1              CARD SUMMARY BY LOCATION              Page   3
    909015J node:1 rev:1                               05:20:54, THU, 08-MAY-97
    -------------------------------------------------------------------------
                                                                         CARD
    CARD LOCATION LISTING:                                            LOCATION

    LOCAL CONTROLLER UNIT:

        DAUGHTER CARDS:

            Card     Card Type                            Zone Range
            -----    ------------------------------------ ----------------
              0      (7003) 4100+ Master Controller
              1      (3003) 8 Pt, 3 Amp Relay w/ Feedback AUX3-10
              2      (3003) 8 Pt, 3 Amp Relay w/ Feedback AUX11-18
              3      (0112) 2120/RS232 Interface          RS232-1, RS232-2
              4      (6005) Power Supply/Charger
              6      (0110) MAPNET Interface              M1-1 - 127
              7      (0110) MAPNET Interface              M2-1 - 127
              8      (0140) 4120 Network Interface

        ANNUNCIATORS:

        Annun Card     Card Type                            Zone Range
        ----- -----    ------------------------------------ ----------------
          0     0      64 LED / 64 Sw Controller
                5      (0301) 64 LED / 64 Sw Controller


    NO REMOTE CARDS IN SYSTEM
```

Figure 6
Card Summary by Location

3. System Point Summary (see Figure 7)

The System Point Summary is of primary importance to the installer. Simplex personnel must provide this information prior to installation. Call your local Simplex branch office, which is listed in the Yellow Pages, and request this information be provided. This is used in conjunction with the Layout pages, to determine wiring terminations and the information shown below.

3.1 Zone Name

Zone names reference the custom label to specific points for actual customer wiring. They include monitor zones (ZNx), signals (SIGx), auxiliary relays (AUXx), 24 point I/O (PMx) and feedback (FBx) numbers. Zones, signals, relays, feedbacks, etc., are shown in numerical sequence.

3.2 Address

Each printed circuit board requires a unique address. Address 0 identifies the master termination module. Up to 119 addresses, one per printed circuit board, may be used in a system. Addresses may or may not be in sequential order, but the report always starts with address 0. Two address labels are used for each mother/daughter board combination. The mother board will have its unique address label next to the P.C. board connector. The daughter board will have an identical label.

3.3   Custom Label

The custom label identifies a location within the building or area, and contains additional information concerning each circuit. Also included with the custom label is the corresponding zone name. This ties the custom label to a zone name and allows the installer to identify where field wires are terminated, according to zone name.

Examples:
```
6TH FLOOR NORTH WING EXHAUST FANS    FB25
1ST FLOOR SOUTH WING VISUALS          SIGNAL 2
3RD FLOOR EAST WING STROBES           SIGNAL 40
```

3.4   Point Type

This is the type of device (indicating appliance, initiating device, relays, etc.) connected to each circuit. Each device type is abbreviated. An operational description may also be included in the abbreviation.

Example:
```
AHUM (Air Handling Unit Monitor)
 PRI (Primary Elevator Capture)
```

The installer should use the System Point Summary when marking wires to the 4100 panel. These markings should include zones (ZNx+, ZNx--), signals (SIGx), etc., for each circuit within the system. Marking each wire in this matter will facilitate termination and checking of the wiring in the 4100 panel.

NOTE: *The SYSTEM POINT SUMMARY Report is found within the computer printout portion of the **Factory Documentation**.*

4100/4120 INSTALLATION MANUAL

```
--------------------------------------------------------------------------------
XYZ BUILDING 1              SYSTEM POINT SUMMARY                  Page   4
909015J node:1 rev:1                             05:20:54, THU, 08-MAY-97
--------------------------------------------------------------------------------
                                                            POINT SUMMARY
System Point Summary (ascending by zone name):                       ZONE


                                              Device   Point   PNIS
Zone Name  Custom Label                       Type     Type    Code
---------  ------------------------------------ ------- ------- -----------
  AUX3     BATTERY TEST OUTPUT    AUX3                          RELAY
  AUX4     SYSTEM FAULT           AUX4                          RELAY
  AUX5     FIP BRIGADE ALARM      AUX5                          RELAY
  AUX6     SIP BRIGADE ALARM      AUX6                          RELAY
  AUX7     FIP ISOLATE BRIGADE SIGNAL    AUX 7                  RELAY
  AUX8     FIP ALARM STAFF CALL          AUX8                   RELAY
  AUX9     FIRE ALARM BELL        AUX9                          RELAY
  AUX10    SIP ALARM STAFF CALL          AUX10                  RELAY
  AUX11    SECURITY ACCESS O/RIDE     AUX11                     RELAY
  AUX12    LEVEL 1 MDH OUTPUT         AUX12                     RELAY
  AUX13    LEVEL 2 MDH OUTPUT         AUX13                     RELAY
  AUX14    LEVEL 3 MDH OUTPUT         AUX14                     RELAY
  AUX15    FIP ALARM TO SIP ISOLATE   AUX15                     RELAY
  AUX16    SPARE                          AUX16                 RELAY
  AUX17    SPARE                          AUX17                 RELAY
  AUX18    SPARE                          AUX18                 RELAY
  FB3      ***** DOOR SWITCH *****  FEEDBACK PT FB3             ONOFF
  FB4      AUX RELAY CARD 4 FEEDBACK PT FB4                     ONOFF
  FB5      AUX RELAY CARD 4 FEEDBACK PT FB5                     ONOFF
  FB6      AUX RELAY CARD 4 FEEDBACK PT FB6                     ONOFF
  FB7      AUX RELAY CARD 4 FEEDBACK PT FB7                     ONOFF
  FB8      AUX RELAY CARD 4 FEEDBACK PT FB8                     ONOFF
  FB9      AUX RELAY CARD 4 FEEDBACK PT FB9                     ONOFF
  FB10     FIP MCP                  FEEDBACK PT FB10            ONOFF
  FB11     AUX RELAY CARD 2 FEEDBACK PT FB11                    ONOFF
  FB12     AUX RELAY CARD 2 FEEDBACK PT FB12                    ONOFF
  FB13     AUX RELAY CARD 2 FEEDBACK PT FB13                    ONOFF
  FB14     AUX RELAY CARD 2 FEEDBACK PT FB14                    ONOFF
  FB15     AUX RELAY CARD 2 FEEDBACK PT FB15                    ONOFF
  M1-1     LEVEL 1 SOUTH DIRECTOR OF NURSING   Z1  SPHOTO  SMOKE
  M1-2     LEVEL 1 SOUTH STAFF RM              Z1  SPHOTO  SMOKE
  M1-3     LEVEL 1 SOUTH LAUNDRY               Z1  OHEAT   HEAT
  M1-4     LEVEL 1 SOUTH BEDSIT 12 BATHROOM    Z1  OHEAT   HEAT
  M1-5     LEVEL 1 SOUTH BEDSIT 12             Z1  SPHOTO  SMOKE
  M1-6     LEVEL 1 SOUTH KITCHEN STORE RM      Z1  SOHEAT  HEAT
  M1-7     LEVEL 1 SOUTH KITCHEN               Z1  SOHEAT  HEAT
  M1-8     LEVEL 1 SOUTH KITCHEN               Z1  SOHEAT  HEAT
  M1-9     LEVEL 1 SOUTH KITCHEN               Z1  SOHEAT  HEAT
  M1-10    LEVEL 1 SOUTH DINING RM             Z1  SPHOTO  SMOKE
  M1-11    LEVEL 1 SOUTH MALE TOILET           Z1  OHEAT   HEAT
  M1-12    LEVEL 1 SOUTH FEMALE TOILET         Z1  OHEAT   HEAT
  M1-13    LEVEL 1 SOUTH CLEANERS RM           Z1  SPHOTO  SMOKE
```

Figure 7
SYSTEM POINT SUMMARY Report

NOTES:

A. *Custom label information tells you where the circuit goes.*

B. *At both ends of each circuit, tag wires with zone name and polarity (in cases where polarity applies).*

- *For example, SIG 3+ and SIG 3-.*

C. *T-tapping is permitted only for Style 4 (formerly Class B) MAPNET II® circuits.*

All MAPNET II® circuits have zone names that begin with "M".

4. System Options Summary (see Figure 8)

The System Options Summary lists all standard system operations. Enabled operations are shown with the word "YES".

```
-------------------------------------------------------------------------------
XYZ BUILDING 1                    SYSTEM OPERATION                    Page   2
909015J node:1 rev:1                                    05:20:54, THU, 08-MAY-97
-------------------------------------------------------------------------------
                                                                      OPTIONS
                                                                      SUMMARY


Standard System Operations      Enabled?  Settings
--------------------------      --------  -----------------------------------
 Alarm Silence Inhibit.......    NO
 Time Limit Signal Control...    NO
 System Trouble Reminder.....    NO
 Dedicated Waterflow Signals.    NO
 Sprinkler Supv. Operation...    NO
 Alarm Verification Setup....    NO
 Individual Acknowledge .....    NO      GLOBAL
 Elevator Recall Operation...    NO
 Non-Steady Audible Evac Sig.    NO
 Non-Steady Visual  Evac Sig.    NO
 Door Holder Operation.......    NO

Expanded System Operations      Enabled?  Settings
--------------------------      --------  -----------------------------------
 24-Hr Time/Date Format......    NO      12 HOUR
 Coding Group Configuration..    NO
 Audio Coding Configuration..    NO
 Audio Option Configuration..    NO
 Walk Test by Group.........     NO
 Non-General Alarm Operation.    NO
 Pre-Programmed User Lists...    YES      *
 Temperature in Centigrade...    YES
 Default Local Mode.........     YES
 Paging Channel Selection....    NO


Other Selections                Enabled?  Settings
--------------------------      --------  -----------------------------------
 Access Levels                            *
 Non-Default Passcodes           YES
 City Connect                             Form 'C' Dry Contact
 Custom Control                  YES      Program: 3, 4, 5, 6, 7

 * Operation ENABLED. See Options Detail Report for full description.
```

Figure 8
SYSTEM OPTIONS Summary

5. Card Detail Report (see Figure 9)

The Card Detail Report shows detailed information regarding each printed circuit board as well as software cards (pseudos) in the system. Custom information is shown for each type of card, such as card number, card address (binary), circuits on the card, circuit types, custom labels, and coding information, if applicable.

```
------------------------------------------------------------------------------
XYZ BUILDING 1                CARD DETAIL REPORT                    Page  12
909015J node:1 rev:1                              04:39:17, WED, 14-MAY-97
------------------------------------------------------------------------------
CARD  No:   6                                                         MAPNET
(0110) MAPNET Interface                                                CARD
                                                                          6


        Dev.      Pt.
Pt.     Type      Type        Custom Label                    PNIS Code
---    ------    --------     ----------------------------    -----------
 1     SPHOTO    SMOKE        LEVEL 1 SOUTH DIRECTOR OF NURSING    Z1
 2     SPHOTO    SMOKE        LEVEL 1 SOUTH STAFF RM              Z1
 3     OHEAT     HEAT         LEVEL 1 SOUTH LAUNDRY               Z1
 4     OHEAT     HEAT         LEVEL 1 SOUTH BEDSIT 12 BATHROOM    Z1
 5     SPHOTO    SMOKE        LEVEL 1 SOUTH BEDSIT 12             Z1
 6     SOHEAT    HEAT         LEVEL 1 SOUTH KITCHEN STORE RM      Z1
 7     SOHEAT    HEAT         LEVEL 1 SOUTH KITCHEN               Z1
 8     SOHEAT    HEAT         LEVEL 1 SOUTH KITCHEN               Z1
 9     SOHEAT    HEAT         LEVEL 1 SOUTH KITCHEN               Z1
10     SPHOTO    SMOKE        LEVEL 1 SOUTH DINING RM             Z1
11     OHEAT     HEAT         LEVEL 1 SOUTH MALE TOILET           Z1
12     OHEAT     HEAT         LEVEL 1 SOUTH FEMALE TOILET         Z1
13     SPHOTO    SMOKE        LEVEL 1 SOUTH CLEANERS RM           Z1
14     SPHOTO    SMOKE        LEVEL 1 SOUTH CORRIDOR              Z1
15     SPHOTO    SMOKE        LEVEL 1 SOUTH CORRIDOR              Z1
16     SPHOTO    SMOKE        LEVEL 1 CENTRAL CORRIDOR            Z2
17     SPHOTO    SMOKE        LEVEL 1 CENTRAL VISITORS RM         Z2
18     SPHOTO    SMOKE        LEVEL 1 CENTRAL RECREATION RM       Z2
19     SPHOTO    SMOKE        LEVEL 1 CENTRAL RECREATION RM       Z2
20     SPHOTO    SMOKE        LEVEL 1 CENTRAL CORRIDOR            Z2
21     OHEAT     HEAT         LEVEL 1 CENTRAL TOILET              Z2
22     SPHOTO    SMOKE        LEVEL 1 CENTRAL BEDSIT 1            Z2
23     SPHOTO    SMOKE        LEVEL 1 CENTRAL BEDSIT 2            Z2
24     SPHOTO    SMOKE        LEVEL 1 CENTRAL BEDSIT 3            Z3
25     SPHOTO    SMOKE        LEVEL 1 CENTRAL BEDSIT 4            Z3
26     SPHOTO    SMOKE        LEVEL 1 CENTRAL CORRIDOR            Z3
27     SPHOTO    SMOKE        LEVEL 1 CENTRAL TREATMENT RM        Z3
28     SPHOTO    SMOKE        LEVEL 1 CENTRAL PAN RM              Z3
29     OHEAT     HEAT         LEVEL 1 CENTRAL TOILET              Z3
30     SPHOTO    SMOKE        LEVEL 1 CENTRAL CORRIDOR            Z3
31     OHEAT     HEAT         LEVEL 1 CENTRAL SWITCHBOARD CUPBOARD Z3
32     SPHOTO    SMOKE        LEVEL 1 CENTRAL SUN RM              Z3
33     PHOTO     SMOKE        LEVEL 1 CENTRAL LIFT MOTOR RM       Z4
34     SPHOTO    SMOKE        LEVEL 1 WEST BEDSIT 5               Z5
35     SPHOTO    SMOKE        LEVEL 1 WEST BEDSIT 6               Z5
36     SPHOTO    SMOKE        LEVEL 1 WEST BEDSIT 7               Z5
37     SPHOTO    SMOKE        LEVEL 1 WEST BEDSIT 8               Z5
38     SPHOTO    SMOKE        LEVEL 1 WEST BEDSIT 9               Z5
39     SPHOTO    SMOKE        LEVEL 1 WEST BEDSIT 10              Z5
40     SPHOTO    SMOKE        LEVEL 1 WEST BEDSIT 11              Z5
```

Figure 9
CARD DETAIL Report

6. **Annunciator Report** (see Figures 10 and 11)

The Local Annunciator Report is shown first (if applicable), followed by the Remote Annunciator Report (if applicable). The first page of these reports shows the controller/card number, position, and the type of display cards selected. The next pages will show the point, switch mode, reference address, reference custom label, and the reference type. A typical Local Annunciator Report is shown in Figure 7.

```
--------------------------------------------------------------------------------
XYZ BUILDING 1                    CARD DETAIL REPORT                    Page  11
909015J node:1 rev:1                               04:39:17, WED, 14-MAY-97
--------------------------------------------------------------------------------
CARD  No:   5                                                             LED/SW
(0301) 64 LED / 64 Sw Controller                                           CARD
UNIT No:  0                                                                    5


addr 00000101
sw1  12345678


CONTROLLER CARD CONFIGURATION DETAIL:

Controller
 Card No       Display Card        Display Card Type
----------     ------------        ----------------------------
     5              1               L403 - 8 Momen Sw/8 Red LED
                    2               L405 - 8 Momen Sw/16 Red-Yel LED
                    3               L405 - 8 Momen Sw/16 Red-Yel LED
                    4               L405 - 8 Momen Sw/16 Red-Yel LED
                    5               0409 - Blank Display Card
                    6               0409 - Blank Display Card
                    7               0409 - Blank Display Card
                    8               0102 - Battery Meters (amp/volt)
                    9               0409 - Blank Display Card
                   10               0409 - Blank Display Card
                   11               0409 - Blank Display Card
                   12               0409 - Blank Display Card
                   13               0409 - Blank Display Card
                   14               0409 - Blank Display Card
                   15               0409 - Blank Display Card
                   16               0409 - Blank Display Card
```

Figure 10
LOCAL ANNUNCIATOR Report

7. Digital Pseudo Point Summary (see Figure 11)

The Digital Pseudo Point Summary shows all digital pseudo points within the system. It also identifies the custom labels, and pseudo type for each digital pseudo point within the system.

```
--------------------------------------------------------------------------
XYZ BUILDING 1            DIGITAL PSEUDO POINT SUMMARY              Page  10
909015J node:1 rev:1                              05:20:54, THU, 08-MAY-97
--------------------------------------------------------------------------
CARD  No: 128                                          DIGITAL SUMMARY
256 Point Digital Pseudo                                      P0 - P45


 Point      Custom Label                             Type       PNIS Codes
 -------    ----------------------------------       ---------  ----------
  P0        SYSTEM RESET KEY                         UTILITY
  P1        ALARM SILENCE KEY                        UTILITY
  P2        FRONT PANEL LAMPTEST CONTROL (ANNUNC. 0) UTILITY
  P3        FIRE ALARM DETECT                        UTILITY
  P4        GLOBAL ACKNOWLEDGE ENABLE                UTILITY
  P5        SET SERVICE PSEUDO VALUES                UTILITY
  P6        ALARM SILENCE                            UTILITY
  P7        EXTRA CARD IN THE SYSTEM                 TROUBLE
  P8        KEYPAD ACTIVE                            UTILITY
  P9        SYSTEM OUT OF CQB'S                       TROUBLE
  P10       CODED INPUT ACTIVE                       UTILITY
  P11       UNACKNOWLEDGED FIRE ALARM EXISTS         UTILITY
  P12       UNACKNOWLEDGED SUPERVISORY EXISTS        UTILITY
  P13       UNACKNOWLEDGED TROUBLE EXISTS            UTILITY
  P14       SYSTEM DISABLED - PROGRAMMER DOWNLOAD    TROUBLE
  P15       CFIG RAM WRITE PROTECT MISSING (SW1-1)   TROUBLE
  P16       SMPL PROGRAM 0 - SYSTEM DEFAULT          UTILITY
  P17       SMPL PROGRAM 1 - DEFAULT AUDIO           UTILITY
  P18       SMPL PROGRAM 2 - SYSTEM OPTIONS (CODING) UTILITY
  P19       SMPL 3 - TEST AND MESSAGE HOUSE KEEPING  UTILITY
  P20       SMPL 4 - GENERAL ALARM AND ACF CONTROL   UTILITY
  P21       SMPL-  AZF 1 TO 24 ALARM EQUATIONS       UTILITY
  P22       SOUNDER EQUATIONS                        UTILITY
  P23       PAGER EQUATIONS HOSTEL 1 & 2             UTILITY
  P24       CODING GROUP 0 ACTIVE                    UTILITY
  P25       CODING GROUP 1 ACTIVE                    UTILITY
  P26       CODING GROUP 2 ACTIVE                    UTILITY
  P27       CODING GROUP 3 ACTIVE                    UTILITY
  P28       CODING GROUP 4 ACTIVE                    UTILITY
  P29       CODING GROUP 5 ACTIVE                    UTILITY
  P30       CODING GROUP 6 ACTIVE                    UTILITY
  P31       CODING GROUP 7 ACTIVE                    UTILITY
  P32       COLD START                               TROUBLE
  P33       WARM START                               TROUBLE
  P34       CITY DISCONNECT                          TROUBLE
  P35       MANUAL EVACUATION SWITCH INPUT           UTILITY
  P36       ELEVATOR BYPASS                          TROUBLE
  P37       DOORHOLDER BYPASS                        TROUBLE
  P38       CONTROL POINT BYPASS                     TROUBLE
  P39       SYSTEM EXECUTING FROM RAM                TROUBLE
  P40       AUTOMATIC DETECTOR RESET                 UTILITY
  P41       MASTER FIRE ALARM ACK KEY                UTILITY
  P42       MASTER SUPERVISORY ACK KEY               UTILITY
  P43       MASTER TROUBLE ACK KEY                   UTILITY
  P44       CODING BUS DISABLE SWITCH                UTILITY
  P45       DRILL SWITCH INPUT                       UTILITY
```

```
--------------------------------------------------------------------------------
XYZ BUILDING 1        DIGITAL PSEUDO POINT SUMMARY                  Page  11
909015J node:1 rev:1                            05:20:54, THU, 08-MAY-97
--------------------------------------------------------------------------------
CARD  No: 128                                              DIGITAL SUMMARY
256 Point Digital Pseudo                                     P46 - P91
                                                             continued


Point      Custom Label                               Type        PNIS Codes
-------    --------------------------------------     ---------   -----------
 P46       DOOR HOLDER TRIGGER                        UTILITY
 P47       SIGNALS/VISUALS ACTIVE                     UTILITY
 P48       MANUAL EVACUATION                          FIRE
 P49       SYSTEM AT ACCESS LEVEL 1 OR GREATER        UTILITY
 P50       SYSTEM AT ACCESS LEVEL 2 OR GREATER        UTILITY
 P51       SYSTEM AT ACCESS LEVEL 3 OR GREATER        UTILITY
 P52       SYSTEM AT ACCESS LEVEL 4                   UTILITY
 P53       SYSTEM LIST OVERFLOW - WARM START NEEDED    TROUBLE
 P54       NETWORK MIKE KEYED                         UTILITY
 P55       CRT KEYPAD INACTIVITY TIMER DISABLE        UTILITY
 P56       CITY CIRCUIT STD TROUBLE RELAY OPERATION   UTILITY
 P57       KEYPAD INACTIVITY TIMER DISABLE            UTILITY
 P58       SYSTEM TIME/DATE INVALID OR NOT SET        TROUBLE
 P59       ALARM VERIFICATION TALLY LIMIT EXCEEDED    TROUBLE
 P60       ALARM VERIFICATION GROUP 0 ACTIVE          UTILITY
 P61       ALARM VERIFICATION GROUP 1 ACTIVE          UTILITY
 P62       ALARM VERIFICATION GROUP 2 ACTIVE          UTILITY
 P63       ALARM VERIFICATION GROUP 3 ACTIVE          UTILITY
 P64       ALARM VERIFICATION GROUP 4 ACTIVE          UTILITY
 P65       ALARM VERIFICATION GROUP 5 ACTIVE          UTILITY
 P66       ALARM VERIFICATION GROUP 6 ACTIVE          UTILITY
 P67       ALARM VERIFICATION GROUP 7 ACTIVE          UTILITY
 P68       FIRST STAGE TIMER EXPIRED                  UTILITY
 P69       THE EVAC MESSAGE HAS PLAYED                UTILITY
 P70       WALK TEST GROUP 0 ENABLED                  TROUBLE
 P71       WALK TEST GROUP 1 ENABLED                  TROUBLE
 P72       WALK TEST GROUP 2 ENABLED                  TROUBLE
 P73       WALK TEST GROUP 3 ENABLED                  TROUBLE
 P74       WALK TEST GROUP 4 ENABLED                  TROUBLE
 P75       WALK TEST GROUP 5 ENABLED                  TROUBLE
 P76       WALK TEST GROUP 6 ENABLED                  TROUBLE
 P77       WALK TEST GROUP 7 ENABLED                  TROUBLE
 P78       ALARM SILENCE/ALARM CUTOUT PSEUDO          UTILITY
 P79       RESET SPKRS WHEN AUDIO CODING COMPLETE     UTILITY
 P80       MASTER MICROPHONE KEYED                    UTILITY
 P81       REMOTE MICROPHONE 1 KEYED                  UTILITY
 P82       REMOTE MICROPHONE 2 KEYED                  UTILITY
 P83       REMOTE MICROPHONE 1 READY TO TALK          UTILITY
 P84       REMOTE MICROPHONE 2 READY TO TALK          UTILITY
 P85       VTG 1 - ACTIVE                             UTILITY
 P86       VTG 2 - ACTIVE                             UTILITY
 P87       EVACUATION MESSAGE ON                      UTILITY
 P88       EVACUATION MESSAGE OFF                     UTILITY
 P89       EVACUATION MESSAGE LED                     UTILITY
 P90       ALERT MESSAGE ON                           UTILITY
 P91       ALERT MESSAGE OFF                          UTILITY
```

```
--------------------------------------------------------------------------------
XYZ BUILDING 1           DIGITAL PSEUDO POINT SUMMARY                 Page  15
909015J node:1 rev:1                              05:20:54, THU, 08-MAY-97
--------------------------------------------------------------------------------
CARD  No: 129                                              DIGITAL SUMMARY
256 Point Digital Pseudo                                    P256 - P406


Point      Custom Label                                Type       PNIS Codes
-------    ------------------------------------------  ---------  ----------
 P256      ***** BELL ISOLATED BY DOOR SWITCH *****    SUPERV
 P257      BRIGADE TEST                                UTILITY
 P258      ALARM TEST                                  UTILITY
 P259      FAULT TEST                                  UTILITY
 P260      BATTERY TEST                                UTILITY
 P261      ****** ACF'S ISOLATED BY KEYBOARD ******    SUPERV
 P262      BRIGADE 1 TEST POINT                        UTILITY
 P263      BRIGADE 2 TEST POINT                        UTILITY
 P265      ZONE ISOLATED                       AZF1    SUPERV
 P266      ZONE ISOLATED                       AZF2    SUPERV
 P267      ZONE ISOLATED                       AZF3    SUPERV
 P268      ZONE ISOLATED                       AZF4    SUPERV
 P269      ZONE ISOLATED                       AZF5    SUPERV
 P270      ZONE ISOLATED                       AZF6    SUPERV
 P271      ZONE ISOLATED                       AZF7    SUPERV
 P272      ZONE ISOLATED                       AZF8    SUPERV



--------------------------------------------------------------------------------
XYZ BUILDING 1           DIGITAL PSEUDO POINT SUMMARY                 Page  17
909015J node:1 rev:1                              05:20:54, THU, 08-MAY-97
--------------------------------------------------------------------------------
CARD  No: 130                                              DIGITAL SUMMARY
256 Point Digital Pseudo                                    P512 - P567


Point      Custom Label                                Type       PNIS Codes
-------    ------------------------------------------  ---------  ----------
 P512      DEFAULT AZF EQUATION INPUT                  UTILITY
 P513      FIP ALARM TEST                              FIRE
 P514      FIP FAULT TEST                              TROUBLE
 P515      FIP MCP                             AZF1    FIRE
 P521      ALARM POINTS 0 DELAY                AZF1    UTILITY
 P522      ALARM POINTS 0 DELAY                AZF2    UTILITY
 P523      ALARM POINTS 0 DELAY                AZF3    UTILITY
 P524      ALARM POINTS 0 DELAY                AZF4    UTILITY
 P525      ALARM POINTS 0 DELAY                AZF5    UTILITY
 P526      ALARM POINTS 0 DELAY                AZF6    UTILITY
 P527      ALARM POINTS 0 DELAY                AZF7    UTILITY
 P528      ALARM POINTS 0 DELAY                AZF8    UTILITY
```

Figure 11
DIGITAL PSEUDO POINT SUMMARY

8. **Analog Pseudo Point Summary** (see Figure 12)

The Analog Pseudo Point Summary shows all analog pseudo points within the system. It also identifies the custom labels and pseudo type for each analog pseudo point within the system.

```
--------------------------------------------------------------------------------
XYZ BUILDING 1              ANALOG PSEUDO POINT SUMMARY                 Page  24
909015J node:1 rev:1                              05:20:54, THU, 08-MAY-97
--------------------------------------------------------------------------------
CARD  No: 144                                              ANALOG SUMMARY
256 Point Analog Pseudo                                          A0 - A45


Point        Custom Label                            Type
-------      ----------------------------------      ---------
 A0          NUMBER OF SYSTEM FIRE ALARMS            ANALOG
 A1          NUMBER OF SYSTEM SUPERVISORIES          ANALOG
 A2          NUMBER OF SYSTEM TROUBLES               ANALOG
 A3          NUMBER OF OLD (UNCLEARED) FIRE ALARMS   ANALOG
 A4          NUMBER OF OLD (UNCLEARED) SUPERVISORIES ANALOG
 A5          NUMBER OF OLD (UNCLEARED) TROUBLES      ANALOG
 A6          CURRENT HOUR                            ANALOG
 A7          CURRENT MINUTE                          ANALOG
 A8          CURRENT SECOND                          ANALOG
 A9          CURRENT DAY                             ANALOG
 A10         CURRENT MONTH                           ANALOG
 A11         CURRENT YEAR                            ANALOG
 A12         CURRENT ACCESS LEVEL                    ANALOG
 A13         ACCESS LEVEL TIMEOUT                    TIMER
 A14         SYSTEM RESET WINDOW TIMER               TIMER
 A15         SYSTEM RESET WINDOW TIMER SETPOINT      ANALOG
 A16         DETECTOR RESET PULSE TIMER              TIMER
 A17         4-WIRE RESET RELAY PULSE TIMER          TIMER
 A18         FIRE ALARM CLEAR DELAY TIMER            TIMER
 A19         FIRE ALARM CLEAR DELAY TIMER SETPOINT   ANALOG
 A20         FIRE ALARM CLEAR PULSE TIMER            TIMER
 A21         SYSTEM RESET PULSE TIMER                TIMER
 A22         ALARM SILENCE INHIBIT TIMER             TIMER
 A23         ALARM SILENCE INHIBIT TIMER SETPOINT    ANALOG
 A24         FIRE ALARM CUTOUT TIMER                 TIMER
 A25         FIRE ALARM CUTOUT TIMER SETPOINT        ANALOG
 A26         FIRE ALARM CUTOUT SILENCE PULSE TIMER   TIMER
 A27         TROUBLE REMINDER CYCLE TIMER            TIMER
 A28         TROUBLE REMINDER OFF-TIME SETPOINT      ANALOG
 A29         TROUBLE REMINDER ON-TIME SETPOINT       ANALOG
 A30         DOOR HOLDER ALARM DROP TIMER            TIMER
 A31         DOOR HOLDER ALARM DROP TIMER SETPOINT   ANALOG
 A32         DOOR HOLDER BROWNOUT DROP TIMER         TIMER
 A33         DOOR HOLDER BROWNOUT DROP TIMER SETPOINT ANALOG
 A34         SYSTEM STARTUP PULSE TIMER              TIMER
 A35         FIRE ALARM AUDIBLE SIGNAL OPERATION     ANALOG
 A36         FIRE ALARM VISUAL SIGNAL OPERATION      ANALOG
 A37         ALARM VERIFICATION - RETARD TIME        ANALOG
 A38         ALARM VERIFICATION - RESET TIME         ANALOG
 A39         ALARM VERIFICATION - CONFIRMATION TIME  ANALOG
 A40         ALARM VERIFICATION - TALLY LIMIT        ANALOG
 A41         WALK TEST ABORT TIMEOUT SETPOINT        ANALOG
 A42         WALK TEST REACTIVATE DELAY SETPOINT     ANALOG
 A43         MONITOR ZONE ENABLE DELAY SETPOINT      ANALOG
 A44         CODED INPUT TIMEOUT SETPOINT            ANALOG
 A128        PRI2 ALARM CLEAR PULSE TIMER            TIMER
 A129        PRIORITY 2 RESET PULSE TIMER            TIMER
```

Figure 12
ANALOG PSEUDO POINT SUMMARY

9. Point List Summary (see Figure 13)

The Point List Summary identifies the number of pseudo lists within the system. These lists are in numerical sequence, contain a description, and identify the number of points within each list.

```
--------------------------------------------------------------------------------
XYZ BUILDING 1                  POINT LIST SUMMARY                    Page  27
909015J node:1 rev:1                               05:20:54, THU, 08-MAY-97
--------------------------------------------------------------------------------
CARD  No: 160                                                     POINT LIST
256 Point List Pseudo                                            L0 - L42



        List Name  Description                              Points
        ---------  ---------------------------------------- ------
          L0       CODING GROUP 0 SIGNALS/RELAYS (NON-PNIS) EMPTY
          L1       CODING GROUP 1 SIGNALS/RELAYS            EMPTY
          L2       CODING GROUP 2 SIGNALS/RELAYS            EMPTY
          L3       CODING GROUP 3 SIGNALS/RELAYS            EMPTY
          L4       CODING GROUP 4 SIGNALS/RELAYS            EMPTY
          L5       CODING GROUP 5 SIGNALS/RELAYS            EMPTY
          L6       CODING GROUP 6 SIGNALS/RELAYS            EMPTY
          L7       CODING GROUP 7 SIGNALS/RELAYS            EMPTY
          L8       FIRE ALARM SIGNALS OFF ON SILENCE        EMPTY
          L9       FIRE ALARM SIGNALS OFF ON RESET          EMPTY
          L10      FIRE ALARM RELAYS OFF ON SILENCE         EMPTY
          L11      FIRE ALARM RELAYS OFF ON RESET           EMPTY
          L12      FIRE ALARM VISUALS OFF ON SILENCE        EMPTY
          L13      FIRE ALARM VISUALS OFF ON RESET          EMPTY
          L14      TROUBLE RELAYS OFF ON CLEAR              EMPTY
          L15      TROUBLE RELAYS OFF ON ACKNOWLEDGE        EMPTY
          L16      RELAYS PULSED ON SYSTEM (DETECTOR) RESET EMPTY
          L17      DOOR HOLDER CONTROL RELAYS               EMPTY
          L18      GENERAL FIRE ALARM MONITOR ZONES          239
          L19      PRIMARY ELEVATOR RECALL MONITOR ZONES      1
          L20      ALTERNATE ELEVATOR RECALL MONITOR ZONES  EMPTY
          L21      PRIMARY ELEVATOR CAPTURE RELAYS          EMPTY
          L22      ALTERNATE ELEVATOR CAPTURE RELAYS        EMPTY
          L23      WATERFLOW ALARM MONITOR ZONES            EMPTY
          L24      WATERFLOW SIGNALS OFF ON SILENCE         EMPTY
          L25      WATERFLOW SIGNALS OFF ON RESET           EMPTY
          L26      SPRINKLER SUPERVISORY MONITOR ZONES      EMPTY
          L27      SPRINKLER SUPERVISORY SIGNALS/RELAYS     EMPTY
          L28      USER SYSTEM LISTS                         22
          L29      EDITABLE GENERAL ALARM SYSTEM LISTS       22
          L30      ALARM VERIFICATION GROUP 0               EMPTY
          L31      ALARM VERIFICATION GROUP 1               EMPTY
          L32      ALARM VERIFICATION GROUP 2               EMPTY
          L33      ALARM VERIFICATION GROUP 3               EMPTY
          L34      ALARM VERIFICATION GROUP 4               EMPTY
          L35      ALARM VERIFICATION GROUP 5               EMPTY
          L36      ALARM VERIFICATION GROUP 6               EMPTY
          L37      ALARM VERIFICATION GROUP 7               EMPTY
          L38      4 WIRE MONITOR ZONES                     EMPTY
          L39      NOT USED                                 EMPTY
          L40      WALK TEST GROUP 0                         239
          L41      WALK TEST GROUP 1                        EMPTY
          L42      WALK TEST GROUP 2                        EMPTY

        NOTE: * Indicates Auto List Generation disabled for system list.
```

Figure 13
POINT LIST SUMMARY

10. Point List Detail (see Figure 14)

The Point List Detail identifies each list (with points identified) within the Point List Summary. It shows the list number, points within the list, custom point labels, and type of device connected to the circuit.

```
--------------------------------------------------------------------------------
XYZ BUILDING 1                    POINT LIST DETAIL                 Page  32
909015J node:1 rev:1                                 05:20:54, THU, 08-MAY-97
--------------------------------------------------------------------------------
CARD  No: 160    L18                                               POINT LIST
256 Point List Pseudo
LIST  No:  18                                                             L18
                                                                    continued
Description: GENERAL FIRE ALARM MONITOR ZONES


                                                   Device  Point
Point        Custom Point Label                    Type    Type
-----------  ------------------------------------- ------- -------
M1-1         LEVEL 1 SOUTH DIRECTOR OF NURSING   Z1  SPHOTO  SMOKE
M1-2         LEVEL 1 SOUTH STAFF RM              Z1  SPHOTO  SMOKE
M1-3         LEVEL 1 SOUTH LAUNDRY               Z1  OHEAT   HEAT
M1-4         LEVEL 1 SOUTH BEDSIT 12 BATHROOM    Z1  OHEAT   HEAT
M1-5         LEVEL 1 SOUTH BEDSIT 12             Z1  SPHOTO  SMOKE
M1-6         LEVEL 1 SOUTH KITCHEN STORE RM      Z1  SOHEAT  HEAT
M1-7         LEVEL 1 SOUTH KITCHEN               Z1  SOHEAT  HEAT
M1-8         LEVEL 1 SOUTH KITCHEN               Z1  SOHEAT  HEAT
M1-9         LEVEL 1 SOUTH KITCHEN               Z1  SOHEAT  HEAT
M1-10        LEVEL 1 SOUTH DINING RM             Z1  SPHOTO  SMOKE
```

**Figure 14
POINT LIST DETAIL**

11. Options Detail Report (see Figure 15)

The Options Detail Report specifies the options selected for the system. Also included in this report is a list of the passcode assignment levels for the various system functions.

```
-------------------------------------------------------------------------------
XYZ BUILDING 1                  OPTIONS DETAIL REPORT                Page 153
909015J node:1 rev:1                               05:20:54, THU, 08-MAY-97
-------------------------------------------------------------------------------
                                                                    OPTIONS
                                                                  PASSCODES

                                          Protection
            Display Function              Level
            ---------------------------------------  ----------
            Alarm Silence                 1
            System Reset                  1
            Change Time and Date          1
            Panel Control Key 1           2
            Panel Control Key 2           2
            Panel Control Key 3           2
            Panel Control Key 4           2
            Panel Control Key 5           1
            ON/OFF/AUTO Keys              3
            ARM/DISARM Keys               4
            Change TrueAlarm Sensitivities 3
            DISABLE/ENABLE Keys           3
            Clear Trouble Log             2
            Clear Alarm Log               2
            Enter/exit Walk Test mode     2
            Clear Alarm Verification tallies 3
            * Fire Alarm Acknowledge      1
            * Priority 2 Acknowledge      1
            * Supervisory Acknowledge     1
            * Trouble Acknowledge         1
            * Alarm List/Display Time     1
            * Change Point Status         4
            * Run Diagnostics             4
            * Display Diagnostics         4
            * Remote Download             4
            * Display Idle Time           4
            * Memory Access               4

            NOTE: * Indicates protected functions not on order sheet.


                                                  PROTECTION SCALE
                                                    Level 1 - Lo
                                                    Level 4 - Hi
```

Figure 15
OPTIONS DETAIL REPORT

12. Network Interface Report (see Figure 16)

The Network Interface Report specifies the network points associated with the node and identifies them as either Pubilic Points or External Points (points referenced from other nodes).

```
--------------------------------------------------------------------------------
XYZ BUILDING 1             NETWORK INTERFACE REPORT                   Page 154
909015J node:1 rev:1                               5:20:54, THU, 08-MAY-97
--------------------------------------------------------------------------------

 Network Node             :       1
 Network Filename         :    SXNET
 Master Timekeeper        :      YES
 Annunciate Missing Node  :      YES


          Point        Device  Point
  Pt Typ  Name         Type    Type     Custom Label
 ---- --- ----------- ------- ------- ---------------------------------------

    1 PUB  1:1          COMNTBL TROUBLE  COMMON TROUBLE POINT FOR NODE: 1
    2 PUB  P210         DIGITAL UTILITY  NETWORK DETECTOR RESET
    3 PUB  P211         DIGITAL UTILITY  NETWORK SYSTEM RESET
    4 PUB  P212         DIGITAL UTILITY  DETECTOR/SYSTEM RESET
    5 PUB  P217         DIGITAL UTILITY  NETWORK SIGNAL SILENCE
    6 PUB  P132         DIGITAL TROUBLE  ANALOG SENSOR ALMOST DIRTY LOG ENABLE
    7 PUB  P134         DIGITAL TROUBLE  CLEAR ANALOG SENSOR PEAK VALUE
    8 PUB  P214         DIGITAL TROUBLE  CLEAR VERIFICATION TALLIES
    9 PUB  P187         DIGITAL UTILITY  VTG & AMPLIFIER TROUBLE DISABLE
   10 PUB  P47          DIGITAL UTILITY  SIGNALS/VISUALS ACTIVE
   11 PUB  P85          DIGITAL UTILITY  VTG 1 - ACTIVE
   12 PUB  P220         DIGITAL UTILITY  NETWORK PRIORITY 2 RESET
   13 PUB  P221         DIGITAL UTILITY  SIGNALS ACTIVE - OFF ON SILENCE
   14 PUB  P204         DIGITAL UTILITY  SIGNALS SILENCED
  256 EXT  2:1          COMNTBL TROUBLE  COMMON TROUBLE POINT FOR NODE: 2
  512 EXT  2:P601       DIGITAL UTILITY  M1-1 ALARM
  513 EXT  2:P602       DIGITAL UTILITY  M1-2 ALARM
  514 EXT  2:P603       DIGITAL UTILITY  M1-3 ALARM
  515 EXT  2:P604       DIGITAL UTILITY  M1-4 ALARM
  516 EXT  2:P605       DIGITAL UTILITY  M1-5 ALARM
  517 EXT  2:P606       DIGITAL UTILITY  M1-6 ALARM
  518 EXT  2:P607       DIGITAL UTILITY  M1-7 ALARM
  519 EXT  2:P608       DIGITAL UTILITY  M1-8 ALARM
  520 EXT  2:P609       DIGITAL UTILITY  M1-9 ALARM
  521 EXT  2:P610       DIGITAL UTILITY  M1-10 ALARM
  522 EXT  2:P611       DIGITAL UTILITY  M1-11 ALARM
  523 EXT  2:P612       DIGITAL UTILITY  M1-12 ALARM
  524 EXT  2:P613       DIGITAL UTILITY  M1-13 ALARM
  525 EXT  2:P614       DIGITAL UTILITY  M1-14 ALARM
  526 EXT  2:P615       DIGITAL UTILITY  M1-15 ALARM
  527 EXT  2:P616       DIGITAL UTILITY  M1-16 ALARM
  528 EXT  2:P617       DIGITAL UTILITY  M1-17 ALARM
  529 EXT  2:P618       DIGITAL UTILITY  M1-18 ALARM
  530 EXT  2:P619       DIGITAL UTILITY  M1-19 ALARM
  531 EXT  2:P620       DIGITAL UTILITY  M1-20 ALARM
  532 EXT  2:P621       DIGITAL UTILITY  M1-21 ALARM
  533 EXT  2:P622       DIGITAL UTILITY  M1-22 ALARM
```

Figure 16
NETWORK INTERFACE REPORT

13. Custom Control Equation Listing (see Figure 17)

The Custom Control Equation Listing displays the line by line Custom Control equations for the system.

```
--------------------------------------------------------------------------------
XYZ BUILDING 1              CUSTOM CONTROL EQUATION LISTING           Page 158
909015J node:1 rev:1                                      05:20:54, THU, 08-MAY-97
--------------------------------------------------------------------------------
                                                               CUSTOM CONTROL
                                                                 EQU DETAIL

Program: 3                                                           Program: 3


Label: AIU TEST EQUATION 1                                          Equation 1

    COMMENTS:
    INPUTS:
      The ON state of:
        0-5-1          SWITCH         Master's I/O Control Switch 1
      AND NOT the ON state of:
        P257           UTILITY        BRIGADE TEST
        P258           UTILITY        ALARM TEST
        P259           UTILITY        FAULT TEST
        P260           UTILITY        BATTERY TEST
    OUTPUTS:
      HOLD points ON pri=9,9
        P257           UTILITY        BRIGADE TEST
        P262           UTILITY        BRIGADE 1 TEST POINT
        AUX5           RELAY          FIP BRIGADE ALARM    AUX5
      PRINT to Panel
        "BRIGADE TEST HAS BEEN INITIATED"
        "BRIGADE TEST HAS BEEN INITIATED"
        ""
        ""
        ""
    END:

Label: AIU TEST EQUATION 2                                          Equation 2

    COMMENTS:
    INPUTS:
      The ON state of:
        P257           UTILITY        BRIGADE TEST
      DELAY for 20 secs, running timer is A256
    OUTPUTS:
      HOLD points OFF pri=9,9
        P262           UTILITY        BRIGADE 1 TEST POINT
        AUX5           RELAY          FIP BRIGADE ALARM    AUX5
      PRINT to Panel
        "          PLEASE WAIT"
        "          PLEASE WAIT"
    END:
```

Figure 17
CUSTOM CONTROL EQUATION LISTING

FIELD WIRING DIAGRAMS

The Field Wiring Diagrams (841-731) are used when wiring peripheral devices to the 4100 panel. These diagrams provide a pictorial reference on how to terminate wiring on all motherboards in a 4100 system.

Field Wiring Diagrams (841-687) should be available for the installer during installation of all peripheral devices (auxiliary relays, indicating appliances, initiating devices, etc.).

Sheet 1 of both Field Wiring Diagrams is an index, which should be used to identify the correct sheet, for an installation procedure.

BRIGADE CONFIGURATION AND CONNECTION

The Brigade connection point for all 4100/4120 Fire Alarm Panels is taken from the Auxillary Relay Card which is normally located next to the CPU card in the top bay.

The Auxillary Relay card contains Eight Relays numbetred Aux3 to Aux10 and these are allocated as follows:

> Aux 3   Battery test output
> Aux 4   System Fault
> Aux 5   Brigade Alarm 1
> Aux 6   Brigade Alarm 2
> Aux 7   Isolate
> Aux 8   Spare
> Aux 9   Bell
> Aux 10 Spare

Marked on the termination label are the connections N.O (Normally Open), N.C. (Normally Closed) and C (Common). These connections are in the de-energised state.

The Fault relay is always held on, in a failsafe mode, by the software. It can be optioned to operate on a general panel fault, if specified by softawre.

The Brigade output is operated by software to energise when an alarm condition exists. It can also be software controlled to be fail safe if required.

The Isolate Relay is operated when a zone is isolated. Thsi output is not totally dedicated for this purpose and can be configured to be used as an ancillary output.

Aux 8 and Aux 10 relays are spare and can be configured as additional ancillary outputs ie Door holder output, air con shutdown, etc

INSTALLATION CHECKLIST FOR SIMPLEX TECHNICAL REPRESENTATIVE

Step		Procedure	Page
☐	1.	Use the Packing List in the "Layout" pages to verify delivery/availability of all required system hardware. This includes the printed circuit boards.	16
☐	2.	Unlock, then open the panel door. Remove the retainer by removing the top and bottom screws, then squeeze and pull the two black plastic tabs located on the upper part of the retainer. Lift the retainer from the back box.	
☐	3.	Visually inspect the 4100 system. Verify that all wiring is connected to the panel, to include the unified ground.	16
☐	4.	Use a volt/ohmmeter to check system wiring. This includes all wiring to the panel, local and remote annunciators, etc. Check the AC power input to the power supply. Repair required circuits prior to powering up the system.	18
☐	5.	Check jumpers, switches, capacitors and resistors on all system printed circuit boards. Match the address label on the motherboard to the address label on the daughter board, then install each daughter board.	20
☐	6.	Install all wiring harnesses and cables (except battery). This includes auxiliary relay and signal cables.	28
☐	7.	Apply power to the system.	40
		• If the system is trouble-free, perform "System Test Procedures".	41
		• If the system displays abnormal conditions, perform troubleshooting procedures.	A1

VISUAL INSPECTION

A visual inspection of the panel should be performed prior to installation of printed circuit boards, as they obstruct the view of panel terminations when installed. Visually inspect for the following:

(a)   Neat terminations within the panel.

(b)   System wiring is complete and unused circuits are terminated.

(c)   Terminations are tight.

(d)   Ribbon cables from CPU board are properly installed (both ends).

(e)   Battery cable is connected to the battery test facility P9 of the power master supply or P1 of an expansion power supply.

(f)   Green ground screw is connected to a unified building ground.

(h)   Inspect local and remote annunciators connections.

(i)   Verify that system is clean and free from wire clippings.

(j)   Switches are in the proper position (toggle switches are down).

(k)   Verify that the configuration chip, and revision shown in the main menu, match the Programmer's Report then check the following:

(i)	File name	(8 digits - example: 809005A)
(ii)	Order number	(X digits - example: XXXXX)
(iii)	Revision number	(3 digits - example: 006)
(iv)	Date	(9 digits - example: 07-JUL-88)

INSTALL PRINTED CIRCUIT BOARDS

There are several types of motherboards and printed circuit boards for the 4100 system. Each printed circuit board must be plugged into its proper motherboard for power and communications with the CPU.

Each 4100 printed circuit board has an 8 bit DIP switch (SW1) which is used to set its address and communication baud rate. Verify each address and baud rate prior to installation of each board. The system may contain up to 119 printed circuit cards (each has its own address). The CPU board is always address 0. Each printed circuit board address is a binary address which corresponds with a Custom Terminal Wiring Identifier (white label) on its motherboard, daughterboard and the Programmer's Report. Match the address label on the motherboard to the address label on the daughterboard, then install each daughterboard. Table 3 (page 26) shows a binary switch setting table which may be used to determine binary address and baud rate. Dip switch positions 2 through 8 are used for addressing, while dip switch position 1 is used for baud rates selection.

Check switch settings, jumpers and resistors on each printed circuit board prior to installation.

Use the Custom Terminal Wiring Identifiers (same address on motherboard and daughterboard), Layout pages and the Programmer's Report to determine proper address and placement for each printed circuit board. The dip switch on each board has been set to its correct binary address at the factory. This binary address corresponds with a Custom Terminal Wiring Identifier (label) on each motherboard. Match the address on the daughter card with the address label on the motherboard, then insert the card. See Figure 6 (Card Detail Report) for card address example and Figure 18 for an example of a Custom Terminal Wiring Identifier (address 5 for card #5 is shown).

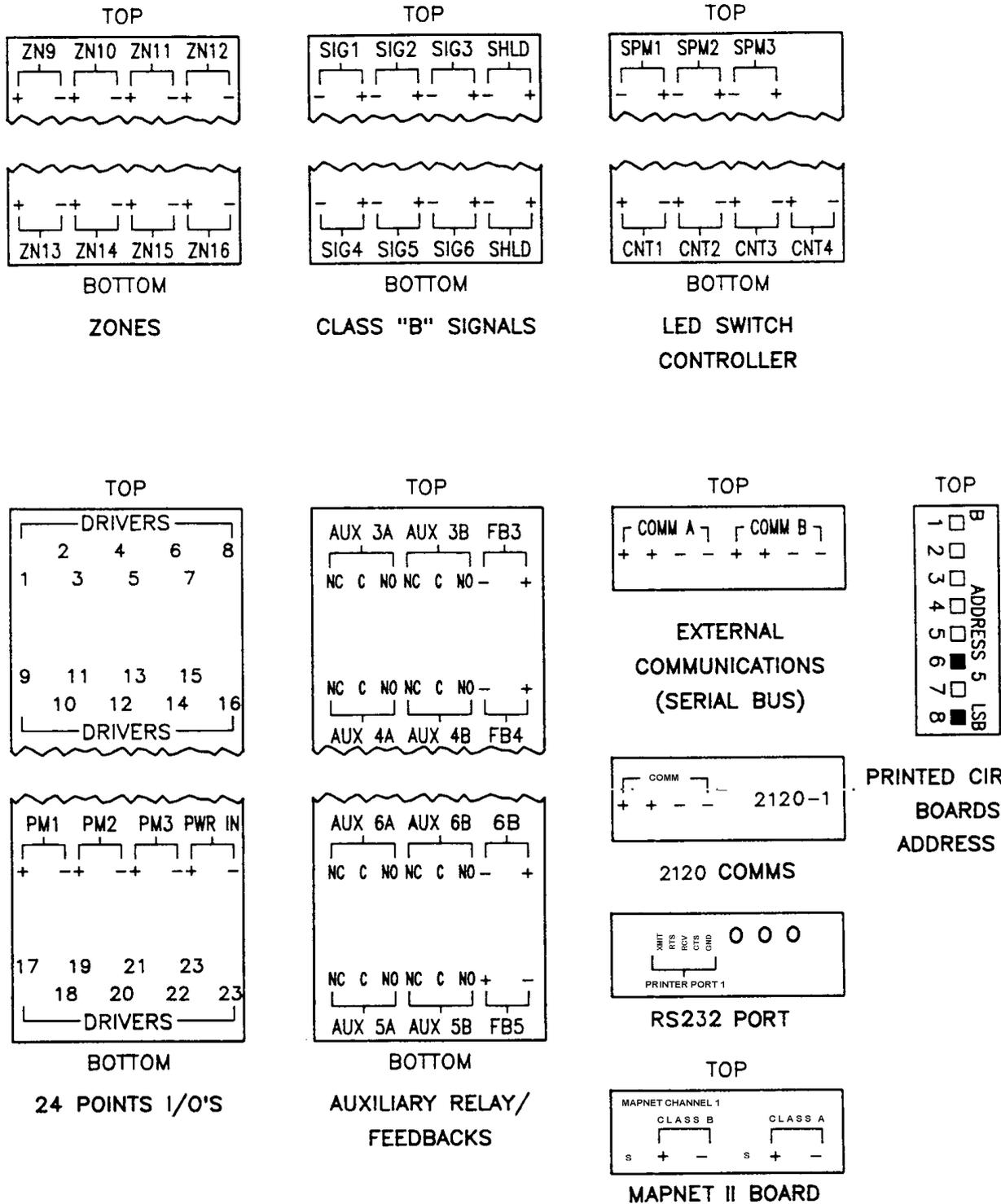Install the printed circuit boards from left to right, and from top to bottom.

TOP

ZN9	ZN10	ZN11	ZN12
+	− +	− +	− +	−

+	− +	− +	− +	−
ZN13	ZN14	ZN15	ZN16

BOTTOM

ZONES

TOP

SIG1	SIG2	SIG3	SHLD
−	+ −	+ −	+ −	+

−	+ −	+ −	+ −	+
SIG4	SIG5	SIG6	SHLD

BOTTOM

CLASS "B" SIGNALS

TOP

SPM1	SPM2	SPM3
−	+ −	+ −	+

+	− +	− +	− +	−
CNT1	CNT2	CNT3	CNT4

BOTTOM

**LED SWITCH
CONTROLLER**

TOP

DRIVERS

	2	4	6	8
1	3	5	7	

9	11	13	15
	10	12	14	16

DRIVERS

PM1	PM2	PM3	PWR IN
+	− +	− +	− +	−

17	19	21	23
	18	20	22	23

DRIVERS

BOTTOM

24 POINTS I/O'S

TOP

AUX 3A	AUX 3B	FB3
NC C NO	NC C NO −	+

NC C NO	NC C NO −	+
AUX 4A	AUX 4B	FB4

AUX 6A	AUX 6B	6B
NC C NO	NC C NO −	+

NC C NO	NC C NO +	−
AUX 5A	AUX 5B	FB5

BOTTOM

**AUXILIARY RELAY/
FEEDBACKS**

TOP

COMM A		COMM B	
+	+ − −	+ + − −

**EXTERNAL
COMMUNICATIONS
(SERIAL BUS)**

COMM		2120−1
+ + − −		

2120 COMMS

XMIT RTS RCV CTS GND	O O O
PRINTER PORT 1	

RS232 PORT

TOP

MAPNET CHANNEL 1		
	CLASS B	CLASS A
s	+ −	s + −

MAPNET II BOARD

TOP

	B
1 □	
2 □	
3 □	ADDRESS 5
4 □	
5 □	
6 ■	
7 □	
8 ■	LSB

**PRINTED CIRCUIT
BOARDS
ADDRESS 5**

**Figure 18
Custom Terminal Wiring Identifiers**

TABLE 3
Printed Circuit Board Addresses

1	2	3	4	5	6	7	8
MSB							LSB
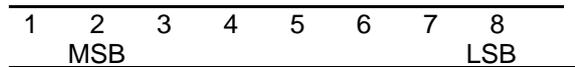
Side View of Dip Switch
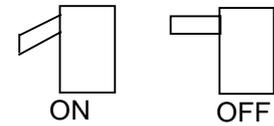
ON   OFF

SW-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8	
	CPU MODULE IS ALWAYS ADDRESS 0						CPU	= ADDRESS 0
U	ON	ON	ON	ON	ON	ON	OFF	= ADDRESS 1
S	ON	ON	ON	ON	ON	OFF	ON	= ADDRESS 2
E	ON	ON	ON	ON	ON	OFF	OFF	= ADDRESS 3
D	ON	ON	ON	ON	OFF	ON	ON	= ADDRESS 4
	ON	ON	ON	ON	OFF	ON	OFF	= ADDRESS 5
F	ON	ON	ON	ON	OFF	OFF	ON	= ADDRESS 6
O	ON	ON	ON	ON	OFF	OFF	OFF	= ADDRESS 7
R	ON	ON	ON	OFF	ON	ON	ON	= ADDRESS 8
	ON	ON	ON	OFF	ON	ON	OFF	= ADDRESS 9
B	ON	ON	ON	OFF	ON	OFF	ON	= ADDRESS 10
A	ON	ON	ON	OFF	ON	OFF	ON	= ADDRESS 11
U	ON	ON	ON	OFF	OFF	ON	ON	= ADDRESS 12
D	ON	ON	ON	OFF	OFF	ON	OFF	= ADDRESS 13
	ON	ON	ON	OFF	OFF	OFF	ON	= ADDRESS 14
R	ON	ON	ON	OFF	OFF	OFF	OFF	= ADDRESS 15
A	ON	ON	OFF	ON	ON	ON	ON	= ADDRESS 16
T	ON	ON	OFF	ON	ON	ON	OFF	= ADDRESS 17
E	ON	ON	OFF	ON	ON	OFF	ON	= ADDRESS 18
	CONTINUES TO A BINARY 119							
ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	= ADDRESS 119

TABLE 4
All Expansion Cards

DIP SWITCH SW1									
ADDRESS AND BAUD RATE SELECT									
SWITCH POSITION	#1	#2	#3	#4	#5	#6	#7	#8	
	BRS	**MSB**						**LSB**	

BRS = BAUD RATE SELECT
0-9600 baud (INTERNAL/REMOTE)

ON = 0
OFF = 1

TABLE 5
24 Point Graphic I/O Card Pluggable Resistors
(632-789)

PLUGGABLE RESISTOR SETTINGS			
DRIVE #	**RESISTOR #**	**INPUT**	**OUTPUT**
1	20	3.3K .5W	20 OHM 1W
2	21	3.3K .5W	20 OHM 1W
3	22	3.3K .5W	20 OHM 1W
4	23	3.3K .5W	20 OHM 1W
5	24	3.3K .5W	20 OHM 1W
6	25	3.3K .5W	20 OHM 1W
7	26	3.3K .5W	20 OHM 1W
8	27	3.3K .5W	20 OHM 1W
9	28	3.3K .5W	20 OHM 1W
10	29	3.3K .5W	20 OHM 1W
11	30	3.3K .5W	20 OHM 1W
12	31	3.3K .5W	20 OHM 1W
13	32	3.3K .5W	20 OHM 1W
14	33	3.3K .5W	20 OHM 1W
15	34	3.3K .5W	20 OHM 1W
16	35	3.3K .5W	20 OHM 1W
17	36	3.3K .5W	20 OHM 1W
18	37	3.3K .5W	20 OHM 1W
19	38	3.3K .5W	20 OHM 1W
20	39	3.3K .5W	20 OHM 1W
21	40	3.3K .5W	20 OHM 1W
22	41	3.3K .5W	20 OHM 1W
23	42	3.3K .5W	20 OHM 1W
24	43	3.3K .5W	20 OHM 1W
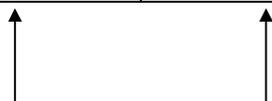
For Input Contact Monitors   For Relays LED/Lamps

NOTE: Systems are shipped from the factory with 3.3K OHM resistors. Use 3.3K OHM resistors for contact monitors and 20 OHM resistors for RELAY or LED/lamp outputs.

CPU/MAIN POWER SUPPLY BOARDS WITH COMPONENTS

1.   Power-Up Procedures

When power is first applied to the panel, or when the processor has been reset, the system will self-test the integrity of its memory and verify proper card installation. At the end of the self-test, the system will display "SYSTEM STARTUP IN PROGRESS" followed by at least two fault conditions (battery and time and date). After the battery is connected and the time and date has been entered, the system should then display the message "SYSTEM IS NORMAL" along with the time and date.

Notes: (i)   When a printed circuit board is not properly inserted, the system will display a fault condition.

(ii)   When a printed circuit board is inserted, but configured incorrectly or not defined in software, the system will display a fault condition, normal operation will be suspended for that card until the fault has been corrected.

(iii)   Other failures will cause a message to be displayed to the operator, may cause the system to become inoperative and the tone alert to sound continuously.
Refer Appendic A for a list of Fault Messages and likely causes and rectification

To power up the 4100 system, perform the following steps:

(a)   Ensure that the mains isolate switch is OFF <u>and batteries are disconnected</u>. Ensure that 240V AC supply is connected to the panel from the mains distribution board.

(b)   Turn the panel mains isolate switch ON. When the green Power LED turns on (after approximately 30 seconds), <u>connect the batteries.</u>

(c)   Acknowledge all abnormal conditions by pressing the appropriate "ACK" (Alarm and Fault) pushbutton(s). Press the "ACK" pushbutton to review all abnormal conditions within each list. Once all abnormal conditions are cleared, press the "CLR" key.

(d)   Set the correct time and date. The system should then display "SYSTEM IS NORMAL" followed by the time and date.

(e)   Repair/restore all abnormal conditions. (refer Appendix A - Trouble shooting Procedures)

2. System Test Procedures

Note: These procedures should be followed when the system is first installed, during periodic tests, or as required by local code. Check local codes to determine how frequently your system should be tested. Always inform appropriate personnel that you will be testing the system (city Fire Brigade, customer, etc.).

2.1 Battery Test

The battery test is performed to determine battery status. To test the batteries, perform the following procedures:

(a) Unlock, then open the panel door and remove the retainer.

(b) Read the battery labels. If either battery is more than 4 years old, replace the battery(s).

(c) Press the battery test key, the system will load the battery for one minute and signal a fault if the test fails.

2.2 Brigade Test

Press the Brigade test key to activate the brigade alarm relay and send an alarm signal to the fire brigade

2.3 Alarm Test

Press the Alarm test key to perform an alarm test on all zones.
Note: Under Alarm Test, the brigade relay will operate as well as any other ancillary outputs that have been programmed to operate under alarm conditions. It may be necessary to use the ACF Isolate function to isolate the ancillary outputs is these are not to be activated.

2.4 Lamp Test

The lamp test pushbutton on the control panel is used to determine local lamp failures within the system. Only lamps on the 4100 control panel will illuminate along with the five function and acknowledge LEDs. All segments on the LCD will also change. Perform the following procedures to determine lamp failure:

(a) Press the "LAMP TEST" pushbutton.

All LEDs should illuminate (lamps should stay illuminated as long as the pushbutton is depressed). Holding the Lamp Test pushbutton in for more than three seconds will test the piezo.

(b) Perform an individual lamp test on all remote annunciators, to include the 24 point I/Os, RCUs, SCUs and LED/switch modules.

(c) Remove and replace defective lamp(s).

Note: The serial annunciator lamps/LEDs will not illuminate during the lamp test.

2.5   Remounting Retainer

(a)   Install the retainer assembly onto the back box assembly utilising the two bottom hook-tabs and secure it by using two plastic squeeze release tabs located on the upper centre of the retainer assembly.

(b)   Install two screws to secure the retainer assembly, one at the top centre of the retainer assembly and the other at the bottom centre of the retainer assembly.

   Note: The two screws must be installed to ensure proper ESD (electro-static discharge) protection.

(c)   Close and lock the door assembly.

APPENDIX A

TROUBLESHOOTING PROCEDURES

A.   General Troubleshooting Information

Before troubleshooting the system, notify the customer and monitoring facility that you are repairing the system and may trip an alarm. Local codes may require notification of additional personnel, therefore check local codes for these requirements.

Tools required are a multimeter, side cutting pliers, IC removal/insertion tool (optional) and two sizes of screwdriver to accomplish these procedures. It is also recommended that Field Wiring Diagrams be used as required.

B.   Troubleshooting Chart

The "Voltage Chart" shown on the following page contains voltage readings for various motherboard terminals and connectors and is to be used as required. Do not take voltage readings on the system printed circuit board IC's.

When troubleshooting the 4100 system, check the obvious things first. These are the LEDs, toggle switches, dip switch settings, power, clipped jumpers, resistors, city jumpers and wiring to include contractor installed field wiring, all of which are located in the fire alarm panel. Perform a visual inspection of the panel.

The following indications should be observed on the fire alarm panel.

(i)   Normal LED indications.

   (a)   Green "Power" LED is illuminated.

   (b)   All other LEDs are OFF.

   Note: If the green power LED is not illuminated, check the AC input voltage.

(ii)   Toggle switches are in the down (normal) position.

(iii)   Fuses are good and are the correct values.

(iv)   Ensure dip switches are properly set.

(v)   Field wiring is correct (see Field Wiring Diagrams).

(vi)   Correct jumpers and resistors are clipped.

(vii)   Ribbon cables are properly installed.

If the alphanumeric display shows an abnormal indication on a module, troubleshoot that circuit/printed circuit board first. Check the return field wiring to that printed circuit board to ensure proper voltage and signals are present. If these signals and voltages are incorrect, the printed circuit board is probably defective.

If the visual inspection of the panel was normal, and the voltages are correct, the next step in sectionalisation is to test the return field wires from the peripheral devices. This is the next section to troubleshoot because proper voltage terminals are accessible which allows these checks to be made quickly. Check for incorrect voltage or signal with voltmeter. If an incorrect reading is observed, you know the defective printed circuit board is the one you are testing.

If the voltage and signals are correct on the return field wiring, the next step is to localise the trouble by swapping printed circuit boards of the same type. Perform the following procedure to swap printed circuit boards:

1.   Disconnect battery power.

2.   Turn system power OFF (AC).

3.   Remove the suspected printed circuit board from the motherboard.

4.   Remove a printed circuit board of the same type from the system (when available) or from branch stock.

5.   Set the "good" printed circuit board address to match the white "address label" on the motherboard (where the "bad" printed circuit card was located). If a printed circuit board is swapped from within the system, set the "bad" printed circuit board address to match the white "address label" on the motherboard (where the "good" printed circuit board was located).

6.   Install both printed circuit boards ("good" and "bad").

7.   Apply AC power to the system.

8.   Apply DC power to the system.

9.   "ACK" all abnormal conditions.

If the visual indications change, the problem is in the "bad" printed circuit board. If the symptoms do not change, check inputs and outputs from the now "good" printed circuit board.

Voltages and signals on the terminals should match the Voltage Chart shown below.. Note the voltages given in the chart are with reference to the negative (-) of the 24V power Supply. When field wiring is removed, remove and mark one wire at a time. Ensure that the wiring is properly replaced to prevent additional fault indications. Use the Voltage Chart as required.

	Positive Terminal	Negative Terminal	
MONITOR CIRCUIT	28 VDC	3 VDC	Normal Circuit
	28 VDC	6-18 VDC	Current Limited Alarm
	28 VDC	28 VDC	Short Circuit Alarm
	28 VDC	0 VDC	Open Circuit
SIGNAL CIRCUIT	7 VDC	28 VDC	Normal Circuit
	28 VDC	0 VDC	Alarm Condition
	0 VDC	28 VDC	Open Circuit
	16 VDC	28 VDC	Installed Reverse Polarity
SUPERVISED ANNUNCIATOR	28 VDC	25 VDC	Normal Circuit
	28 VDC	0 VDC Pulsing	Alarm Condition
	0 VDC	0 VDC	Lost Annunciation Common
	28 VDC	0 VDC	Open Circuit

Figure A1
Voltage Chart

10. Verify the ground status of the system by connecting the negative (black) lead of a voltmeter to the Earth Ground and connect the positive (red) lead of the voltmeter to the positive (+) terminal of the 24V DC supply and check for the following readings:

Voltage Reading	Circuit Status
12-14V DC	Normal
6-12V DC	Partial Negative Ground
15-21V DC	Partial Positive Ground

APPENDIX B

4100 Fault Messages

1.   CARD TROUBLES

If the LCD displays ... *Wrong Card   Abnormal*

❍   1st Line Shows Card Expected at this Address.

Reprogram System or Insert Proper Daughter Card.

If the LCD displays ... *Extra Card   Abnormal*

❍   A Daughter Card is/was installed but not Programmed.

Reprogram System or Remove Extra Daughter Card.

✱   Warm Start is Necessary to Clear this Trouble Condition. Press the CPU Reset Switch located on the Master Controller Board.

If the LCD displays ... *Card Missing/Failed*

❍   Identify Card from LCD.

❍   Is Communication Trouble LED illuminated on Card ?

❍   Check Dipswitch Setting with Programmer's Report.

❍   Check for 8VDC & 24VDC at Motherboard Harness P3.

❍   Check for Serial Comm at Motherboard Harness P2.

✷   If ALL Daughter Cards Report Missing/Failed Check Serial Comm fuse on Master Controller Board (F6).

☞   If this Trouble only Occurs upon Alarm, Alarm Silence or System Reset it may be Caused by Unsuppressed Relays, Door Magnets, High Current Loads, etc.

2. BATTERY TROUBLES

If the LCD displays ... *Master Battery Backup Status is Trouble*

❍ Check connector P9 on Master Power Supply.

❍ Check that Batteries Terminals are Connected.

❍ Check Fuse(s) in the Battery Harness.

❍ Check for Charger Output at Battery Harness Terminals with the Batteries Disconnected.

❍ Measure Battery voltage with Terminals from Harness Disconnected. (>18 VDC)

❍ Test Batteries under load for 1 minutes. (>23 VDC)

3.   EARTH GROUNDS

If the LCD displays ... *Master Earth Status is Trouble*

❍   Is Ground on Positive/Negative side of Power Supply ?

❍   If a Positive Ground ... Remove half of the Motherboards.

    Isolated to a Row ... Remove half of the Daughter cards.

❍   If a Negative Ground ... Check Power, MAPNET and Shields.

❍   Ground could be Internal to the Control Panels.

If the LCD displays ... *MAPNET Ground Fault Status is Abnormal*

❍   Determine which MAPNET Power Supply is Reporting Ground.

❍   Verify that JW2 is Installed and JW1 is Removed unless only 2 Wire Devices are used.

❍   Disconnect MAPNET Communication Lines.

❍   Disconnect MAPNET Power Supply Connector P4.

4.   ANNUNCIATOR TROUBLES

If the LCD displays ...

> ***Card X, Led (Switch) Display Slot X***
> ***Card Defined But Not Inserted***

○   Annunciator Display Card Programmed in Software but not connected via the Ribbon Cable.

If the LCD displays ...

> ***Card X, Led (Switch) Display Slot X***
> ***Card Not Defined But Inserted***

○   Annunciator Display Card not Programmed in Software but connected via the Ribbon Cable.

✳   Check ribbon cable or Verify Annunciator Programming.

5.   MAPNET TROUBLES

If the LCD displays ... *MAPNET Extra Device Trouble*

❍   Check Trouble Log for Device Number

❍   Add Device to Program if needed

If the LCD displays ... *MAPNET No Answer Trouble*

❍   Determine Device Address and Location

❍   Check Address is set properly

❍   Check for MAPNET Communication (36VDC)

❍   Check for DC Voltage if applicable (24DC)

If the LCD displays ... *MAPNET Bad Answer Trouble*

❍   Check Shield for Open or Ground

❍   Are any Devices sending No Answer Trouble ?

If the LCD displays ... *MAPNET Communication Failed*

❍   Check for 36VDC out of MAPNET Power Supply.

❍   Check for short across the MAPNET Lines (Additional Trouble Message).

If the LCD displays ... *MAPNET Power Supply Status*

❍   Check for Power Harness P4.

If the LCD displays ... *MAPNET Open Circuit Fault*

❍   Check Mapnet communications loop for Open circuit
❍   Locate and repair wiring break

❍   <u>Press the "System Reset" key</u> on the front panel to clear the fault message

If the LCD displays ... *MAPNET Short Circuit Fault*

❍   Check Mapnet communications loop for Short circuit condition
Check that Mapnet wiring to devices has not been reversed

❍   Locate and repair wiring fault

6. RUI TROUBLES

If the LCD displays ... ***RUI Open Circuit Fault***

❍ Check RUI communications loop for Open circuit
❍ Locate and repair wiring break

❍ <u>Press the "System Reset" key</u> on the front panel to clear the fault message

APPENDIX C

GLOSSARY OF 4100 FIRE ALARM SYSTEM TERMS

Alarm Verification Option:

A field-programmed option that causes the CPU to verify (double-check) all alarm initiations originated by smoke detectors before sounding the signals.

Annunciator:

A remotely-located, electrically-powered display, separate from the control panel, containing lamps to indicate the status of the fire alarm system.

Auxiliary (AUX) Relays:

Control relays that energise only during alarm conditions, and that are used to either apply power to or remove power from other equipment during an alarm condition.

Class A Circuit:

An initiating device or indicating appliance circuit within which all components remain fully functional even though a single pen or ground exists in the circuit.

Class B Circuit:

An initiating device or indicating appliance circuit within which some or all components may be disabled when a single open or ground exists in the circuit.

CPU (Central Processing Unit):

That portion of the fire alarm panel which processes alarm and fault information received from throughout the system, and acts on that information in an appropriate manner.

Master Controller Board:

A panel-mounted module consisting of the CPU itself, eight zone (circuit) monitors, two signal (circuit) monitors and two AUX relays.

End-of-Line (E.O.L.) Resistor:

A resistor installed at the electrically furthermost point in a signal or zone circuit.

Fan Control Module:

A panel-mounted module that consists of manual switches which allow fan or damper control circuits to be turned on, turned off, or operated automatically.

Fire Alarm Control Module:

The portion of the fire alarm system which provides the power and contains the circuitry needed for system operation.

Indicating Appliance (Signal) Circuit:

A circuit consisting of one or more indicating appliances.

Indicating Appliance (Signaling Device):

A device which produces an audible and/or visual signal in response to a fire condition - horn, bell, chime, flashing light, etc.

ID - Initiating Device:

A manual or automatic device which, when activated, initiates an alarm - pull station, heat or smoke detector, water flow switch, etc.

Initiating Device (Zone) Circuit:

A circuit consisting of one or more initiating devices.

Local Energy Master Box:

A municipal fire department connection box, mounted externally to the panel, that uses electrical energy from the fire alarm panel to energise its (the master box's) electromagnetic tripping mechanism.

Power Supply Module:

That portion of the fire alarm panel which provides the power needed to operate all panel modules, as well as that needed to operate all electrically-powered initiating devices and all indicating appliances.

Signal Module:

A panel-mounted module which supervises two indicating appliance (signal) circuits.

Silence Inhibit Option:

A field-programmed option which, when entered, prevents all alarm indicating appliances from being silenced, and the system from being reset, until the delay's duration expires.

Supervision:

The continuous electrical checking of fire alarm circuits and components for faults (opens and, in some cases, shorts). For example, 4100 signal circuits are supervised for both opens and shorts, while 4100 zone circuits are supervised for opens only (a zone circuit short causes an alarm condition).

Zone Module:

A panel-mounted module containing the circuitry needed to supervise either four or eight zone circuits for both fault conditions and to monitor the circuits for alarm conditions.