Shield Omega - X Panel Installation Manual

Shield Fire, Safety and Security Ltd.
Shield Omega - X Panel Installation Manual

SH3514-00, Revision E03.04
Issue Date: 1 April 2014

Underwriters Laboratories (UL)

File number (S 8485)

Fire Alarm Equipment

Shiled Fire, Safety and Security Ltd.

The Shield Omega - X Panel is suitable as follows:

- Local Signaling Unit
- Releasing for Omega - X Panels only. Non-Releasing for Omega - X Panels.
- Types of signaling services are automatic fire alarm, manual fire alarm, waterflow alarm and sprinkler supervisory.
- Style 4, 6 or 7 for Signaling Line Circuits
- Style Y for Notification Appliance Circuits
- Non-coded Signaling, DACT requires Integrated Dialer
- Remote Station (RS) Protected Premises Unit (PPU) Omega - N no communication on models SA-P20XX and SA-P2EXX and SA-P4LXX and SA-P4EXX and each of these models with a Modem Dact SA-DACT
- Central Station (CS) Protected Premises Unit (PPU) Omega - N no communication on models SA-P20XX and SA-P2EXX and SA-P4LXX and SA-P4EXX and each of these models with a Modem Dact SA-DACT
- Proprietary (P) Protected Premises Unit (PPU) provides releasing, non-releasing and Omega - N no communication on models SA-P20XX and SA-P2EXX and SA-P4LXX and SA-P4EXX and each of these models with a Modem Dact SA-DACT

FCC

Shield Fire, and Safety Ltd.

This equipment complies with Part 68 of the FCC rule and the requirements adopted by the ACTA. On the Inside cover of this equipment is a label that contains, among other information, a product identifier US:KNTAL00BASA-FACP. If requested, this number must be provided to the telephone company.

The Integrated Dialer is incorporated on the Main Board of the Omega - X Panel to provide TELCO communication on certain models.
Connect permissive data equipment to TELCO line 1 and line 2 of the Omega - X Panel using independent RJ31X jacks. Reference Section 3, Installation, Connecting Communication, page 25 of this manual for details concerning these connections.

Reference the following:
- ATIS Technical Report No. 5 for connector details
- Facility Interface Code 02LS2
- Service Order Code 9.0Y

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug must be used. It is designed to be connected to a compatible modular jack that is also compliant. See installation instructions for details.

This product's REN is 0,0. The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. The REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). The REN is separately shown on the door label.

If the terminal equipment Fire Alarm Control Panel causes harm to the telephone network., the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical. the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in it's facilities. equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment Fire Alarm Control Panel, for repairs or warranty information, please contact Shield Fire, Safety and Security Ltd 29th Floor, Reg us Suite, One Canada Square Canary Wharf, London, E14 5DY, UK Tel:+44 0 2077121610. If the equipment is causing harm to the telephone network., the telephone company may request that you disconnect the equipment until the problem is resolved.

Reference Section 5, Maintenance and Repair of this manual for details describing standby battery and fuse replacement. No other user serviceable components are contained within this assembly. Contact Shield Fire, Safety and Security Ltd technical support for diagnostic assistance when necessary. Reference Section 1, Introduction of this manual for details describing technical support, Return Material Authorization (RMA), Warranty Returns, Advanced Replacements and the Product Return Address.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this Fire Alarm Control Panel does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

Reference the Loop Explorer Configuration Manual, Section 4, Programming, page 10 for details describing the programming of this assembly.

NFPA

Shield Fire, Safety and Security Ltd

Install this product in accordance with NFPA 13, NFPA 72 and NEC 70 and all local codes.

Short Circuit Isolator Modules protect SLC loop devices from single-loop-shorts. SLC loops must be wired with Short Circuit Isolator Modules to comply with NFPA 72, Class A Style 7. SLC loop connections must include closed nippling and conduit nippling to maintain compliance with individual enclosures under NFPA 72, Class A, Style 7 requirements. Closed nippling encloses individual devices on SLC loops and conduit nippling encloses wiring between these individual enclosures. For Class A, Style 6 compliance, the Short Circuit Isolator Modules may be located at strategic locations based on the discretion of the designer or installer.

The NFPA requires that two dedicated and independent TELCO lines feed communication features such as the Integrated Dialer.

Install SLC detectors with spacing as specified in section 90.19 of UL 864, 9th edition where units employing the multiple detector operation shall include guidelines for installing of a minimum of two detectors in each protected space and to reduce the detector installation spacing to 0.7 times the linear spacing in accordance with National Fire Alarm Code, NFPA 72. Also reference 55.3.1 and 55.3.2 of UL 864, 9th edition for these detector spacing requirements.

All field wiring should be installed using fire rated cables according to the NFPA 72. Riser conductors shall be installed in accordance with the survivability from attack by fire requirements in National Fire Alarm Code, NFPA 72, Sections 6.8.6.3, and 6.9.4. Riser conductors shall employ either a 2 hour rated cable system, or meet requirements approved by the AHJ, or installation of the Supervised Output Module using NFPA Style 7 configuration.”

FM Global Technologies LLC (FM APPROVALS)

Shield Fire, Safety and Security Ltd

Shield Fire, Safety and Security Ltd.
Shield Omega - X Panel Installation Manual

SH3514-00, Revision E03.04
Issue Date: 1 April 2014

Contents

Contents

Contents

Contents

Contents

Section 1
Introduction

Notice to Users, Installers, Authorities Having Jurisdiction, and other involved parties. This product incorporates field-programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864 9th Edition, certain programming features or options must be limited to specific values or not used at all as indicated below.

Program Feature or Option	Permitted in UL 864 ? (Y / N)	Possible Settings	Settings Permitted In UL 864
AC Fail Delay	Yes	0 - 24 hours	1 - 3 hours
Alarm Verification	Yes	5 - 60 seconds	60 second
Disable Buzzer	Yes	Enable / Disable	Enable
Disable Ground Trouble	Yes	Enable / Disable	Enable
Set Buzzer Silence Access Level	Yes	1 or 2	2
NAC Output Delay Stage 1	No	0 - 5 minutes	0 minutes
NAC Output Delay Stage 2	No	0 - 5 minutes	0 minutes
Photoelectric Smoke Sensor Delay	No	0 -120 seconds	0 seconds
Ionization Smoke Sensor Delay	Yes	0 -120 seconds	0 seconds
Duct Detector	Yes	0 -120 seconds	0 seconds
Duct Detector with Relay	Yes	0 -120 seconds, 0 - 5 seconds	0 seconds
Contact Module Delay (All models)	Yes	0 -120 seconds	0 seconds
Relay Module Delay	Yes	0 - 5 seconds	0 seconds
Supervised Output Module Delay	Yes	0 - 5 seconds	0 seconds

Reference Appendix B, “Equipment List” for model designations of the devices contained in this table.

This manual describes 2 loop and 4 loop models of the Shield Omega - X Panel. Two loop models include the No Communication SA-P20, the Network Interface Card (Omega - N) SA-P2E. Four loop models include the No Communication with Loop Expansion SA-P4L, the Network Interface Card (Omega - N) with Loop Expansion SA-P4E.

A list of Documentation Updates will be displayed.

This section describes:

- Using This Manual
- Related Documentation
- Document Conventions
- If You Need Help
- Contacting Shield For Repair

The figure below illustrates the Omega - X Panel: **Figure 1-1**

Omega - X Panel

Using This Manual

The following sections provide instructions for installing, testing and troubleshooting the Omega - X panel.

Section 1	**Introduction** provides document conventions, the technical help-line, repair and return information.
Section 2	**Overview** provides a summary features of the Omega - X Panel.
Section 3	**Installation** describes how to setup, install and test the Omega - X Panel.
Section 4	**Front-Panel Menu** describes how to operate the Omega - X Panel from its front-panel.
Section 5	**Maintenance and Repair** describes how to perform routine service and repair on the Omega - X Panel.
Appendix A	**Specifications** provides characteristics of the Omega - X Panel.
Appendix B	**Equipment List** provides model numbers for Shield Omega - X Panels, loop replacement parts and compatible Notification Appliances.
Appendix C	**Current Draw Worksheet** provides an example for recording and calculating the current draw of the Omega - X Panel and its Signaling Line Circuits, Initiation Devices and Notification Appliances.
Appendix D	**Front Door Label** is a copy of the Omega - X Panel front door label.
Appendix E	**Operating Instructions** provides an overview of Omega - X Panel status and control instructions.
Glossary	**Glossary** contains definitions for terminology used in the Omega - X Panel Installation Manual.

Related Documentation

The following documents shall be used to provide additional information for installing the Omega - X Panel:

- 16 Channel I/O Interface Installation Manual, SH3512-00
- Omega - R Installation Manual, SH3510-00
- Omega - M Installation Manual, SH3513-00
- Omega - N Installation Manual, SH3511-00

Document Conventions

This document contains conventions for part numbers and writing style.

Part Numbers

Part numbers are provided in Section 1, Appendix B and Appendix D of this manual. Refer to Appendix D, Door Label for diagram summary of information contained in this manual. Refer to Appendix B, Equipment List for a complete list of part numbers required for completing this installation.

Writing styles

Before you begin using the Omega - X Panel, familiarize yourself with the stylistic conventions used in this manual:

Bold type	Indicates text that you must type exactly as it appears or indicates a default value.
Italic type	Denotes a displayed variable, a variable that you must type, or is used for emphasis.
Courier font	Indicates text displayed on a computer screen.

If You Need Help

If you need technical support contact Shield at +44 1708 377731 or e-mail elv@shieldglobal.com.
Shield technical support is available Monday through Friday, 8:00 AM to 5:00 PM.

Limited Returns and Repairs Policy

In-Warranty Items

All equipment supplied by Shield is provided with a warranty, these warranties are between Shield (the Seller) and the company that placed the order upon the seller (the Buyer). The warranty Period is valid for 36 months from the delivery date and is non-transferable.

Damaged Goods

In the event of damage to equipment during transit or any defect in the quality of goods, the Buyer shall Notify Shield within seven days of delivery.The goods may then be returned to the Customer Service Department of Shield for repair, or replacement parts may be supplied (by arrangement).

Component Failure

In the event of a defect of the supplied equipment during the warranty period, due to defective materials or workmanship, then replacement parts shall be supplied to the Buyer using the Service Replacement Item (SRI) scheme.

Service Replacement Items

The Buyer shall request the replacement part(s) required from the Customer Service Department. This Request shall be made by fax to +44 1708 347637 or e-mail to elv@shieldglobal.com and shall include the Parts required the panel Works Order (W/O) Number and the required delivery address.

If the Buyer is not aware of the required replacement part(s), additional advice may be obtained from the Technical Support Department. Once the SRI has been approved, items are normally dispatched for next day delivery subject to stock availability.

SRI parts are supplied on the following terms and conditions:

- SRI parts are loan items and are not available for resale.
- All SRI parts must be returned to the Customer Service department of Shield within 14 days of delivery.
- Any SRI parts that have not been returned within 28 days of delivery will be invoiced at the price given in the Shield Price List, less discount.
- Any returned items that are found to have failed due to fair wear and tear, willful damage, negligence, abnormal working conditions, misuse or alteration or repair without the Suppliers approval or failure to follow the sellers instructions will be subjected to a repair fee of up to the price given in the Shield Price List, less discount.
- Any returned items that are not part of the original equipment or are not in warranty will be invoiced at the price given in the Shield Price List, less discount where applicable.
- All SRI parts shall be returned in the same packaging as the replacement parts were supplied in. Failure to ensure that adequate anti-static precautions are taken during the replacement of parts, or in the return of SRI parts may result in an invoice of up to the price given in the Shield Price List, less discount.
- Any SRI parts returned without the completed SRI delivery report or any SRI reference documentation will be invoiced at the price given in the Shield Price List, less discount. The right to receive Service Replacement Items is regularly reviewed and may be withdrawn from persistent abusers of this facility. Shield reserve the right not to supply SRI items without prior notice.

Out Of Warranty Items

Shield provides a test and repair facility for most standard and special build products. This facility can also recondition control panels, subject to availability of components.

Customer Repairs

Items for repair shall be returned to the Customer Service Department of Shield. Any items returned for repair must be accompanied with the following:

- A request for repair work to be undertaken.
- A customer contact name.
- Details of the company requesting the repair.
  Failure to supply the required information will result in the returned items being quarantined for a period not exceeding 60 days. If the items are not identified within 60 days of receipt, then Shield reserves the right to dispose of these items or return them.

A written quotation will be provided for all items to be repaired that are not included in the repair prices section of the Shield Price list. No repairs or refurbishment will be undertaken without prior authorisation from the customer and a written order for the repair work. Returned equipment will be held awaiting authorisation for a period not exceeding 60 days from the date of quotation. After this period, Shield reserves the right to dispose of these items or return them.

Repair Warranties

Repaired items are not covered by the normal Warranties and Liability conditions. Subsequent failures of repaired items will only be covered if the failure is due to a material or workmanship defect directly associated with the repair and for a period not exceeding three months from the date of the repair. Shield are under no liability if the repaired or replaced components are found to have failed due to fair wear and tear, willful damage, negligence, abnormal working conditions, misuse or alteration or repair without approval or failure to follow the sellers instructions.

Items Returned For Credit

Items shall only be accepted for credit by written approval with the Operation Manager of Shield. Items will only be eligible for credit in the first 3 months from the supply date.

Before any items are returned for credit, an RMA reference number must be obtained from the Sales / Operations Department. This number must be used for any correspondence relating to the goods. All goods Returned for credit must be approved before receipt.Written approval will then be issued using a Goods Return Application Form. A copy of this form must be supplied with the returned goods. The RMA reference number must be clearly marked on the outer packaging when returning goods to the company. Goods must be returned to Shield within 30 days of the issue of the Goods Return Application Form. Only items listed on this from must be returned under the RMA reference. Items returned without prior request for an RMA reference may be returned to the customer.

Failure to supply the required information will result in the returned items being quarantined for a period not exceeding 60 days. If the items are not identified within 60 days of receipt, then Shield reserves the right to dispose of these items.

Any items returned for credit will be tested and returned to a production release condition. Any material and labour costs associated with this process shall be deducted from the credit amount in accordance with the Returned Goods Policy in the Shield price list and at the discretion of the Managing Director.

Shield Fire, Safety and Security Ltd.
Redburn House, 2A Tonbridge Road,
Romford, Essex – RM3 8QE, United Kingdom
Tel: +44 1708 377731, Fax: +44 1708 347637,
E-mail: Shielduk@shieldglobal.com

Section 2
Overview

Models of the Shield Omega - X Panel operate SLC devices using Apollo protocol.

The Omega - X Panel accepts a variety of industry standard devices for FACP monitoring and reporting. Link the Omega - X Panel with other panels using the proprietary Omega - N to monitor conditions between panels. Provide reports concerning these conditions to monitoring-centers using a standard TELCO line.

Points and Addresses

Points and addresses are fundamental to the operation of Omega - X monitoring and reporting. Devices are identified as points when connected to the Omega - X Panel. Device points are assigned addresses when configured on the Omega - X Panel using the Loop Explorer application. Each Omega - X Panel supports a maximum of 126 points per loop without subpoints or 381 points per loop when utilizing subpoints.

Omega - X Panels support a point and subpoint maximum of 800 addresses per panel.
Do not exceed this 800 address maximum when assigning subpoints to points on Omega - X Panels.

Contact ID Address Restrictions

Address restrictions effect all models of the Omega - X Panel when using the Contact ID format for monitoring-center communication.

CAUTION !

Do not assign analog-sounder-bases using the Contact ID digital communication format. The address range provided by the Contact ID format is not large enough to accept the range of addressing required for reporting analog-sounder-base status.

The Contact ID format limits reporting to an address of 99. Configuration features in the eSP Discovery application restrict the use of the Contact ID format when selecting addresses above 99. The Contact ID format can be used for devices other than analog-sounder-bases as long as the device address and sub address are below 99.

FACP reporting can be changed from point reporting to zone reporting when the limit of 99 addresses per loop cannot be avoided. Zone reporting can be used to resolve address assignments in excess of 99 but doing so reduces overall reporting granularity.

Models of the Omega - X Panel can be programmed for the SIA or Contact ID digital communication format. The SIA and Contact ID format provides status monitoring and reporting to industry-standard receivers at the monitoring-center.

Both of these digital communication formats provide a range of addressing for device-points and sub-points on the Omega - X Panel. The SIA format allows full reporting from all device-points and sub-points. The Contact ID format provides a limited range of reporting from device-points. The eSP Discovery application uses an open protocol to assign device addresses to the Omega - X Panel.

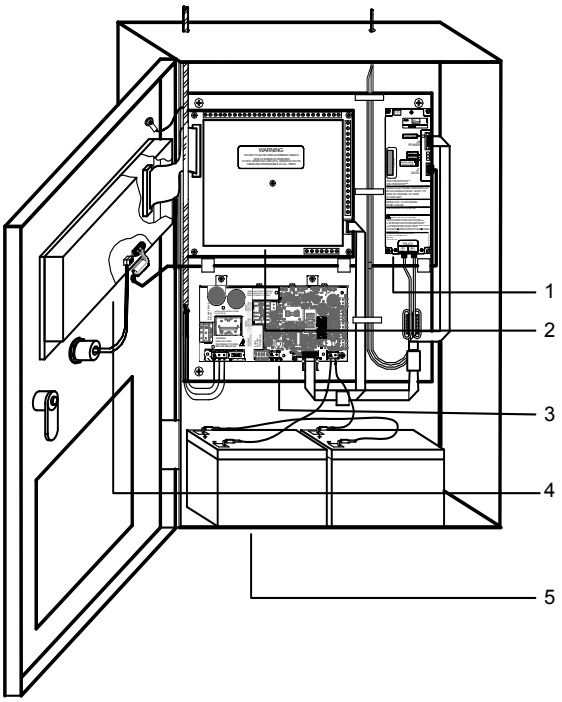
Reference Appendix B, “Equipment List” for all models effected by restrictions of the Contact ID format.

Hardware Features

All Omega - X Panels contain a 4 Amp OEM 1 Power Supply, Control Unit Board, Batteries and Panel Annunciator Board.

The figure below illustrates internal components of the Omega - X Panel:

Figure 2-1
Internal Components



Key	Description
1	Modem-DACT
2	Control Unit Board
3	4 Amp OEM 1 Power Supply
4	Panel Annunciator Board
5	Batteries

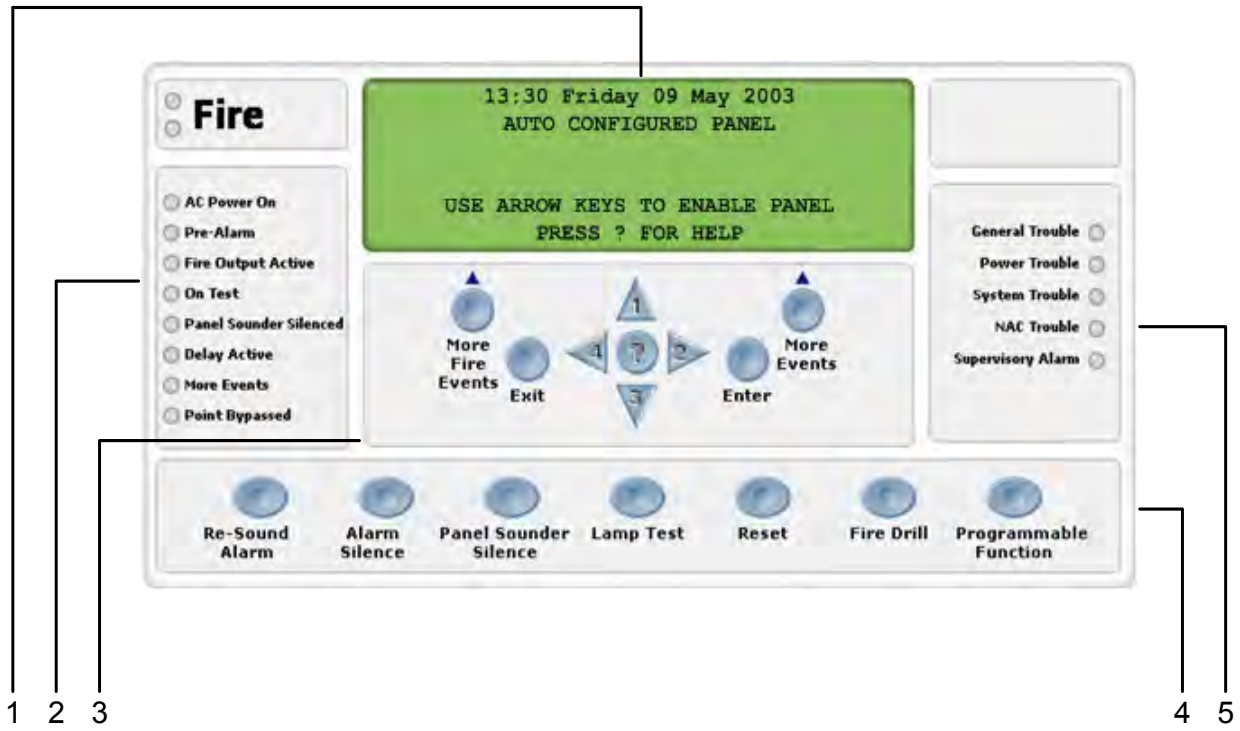
Panel Controls and Indicators

The Omega - X front-panel contains the following controls and indicators:

- LCD display
- Upper-control-pad
- Lower-control-pad
- Left-panel-indicators
- Right-panel-indicators

The figure below illustrates the Omega - X front-panel:

Figure 2-2
Controls and Indicators



Key	Description
1	LCD display
2	Left-panel-indicators
3	Upper-control-pad
4	Lower-control-pad
5	Right-panel-indicators

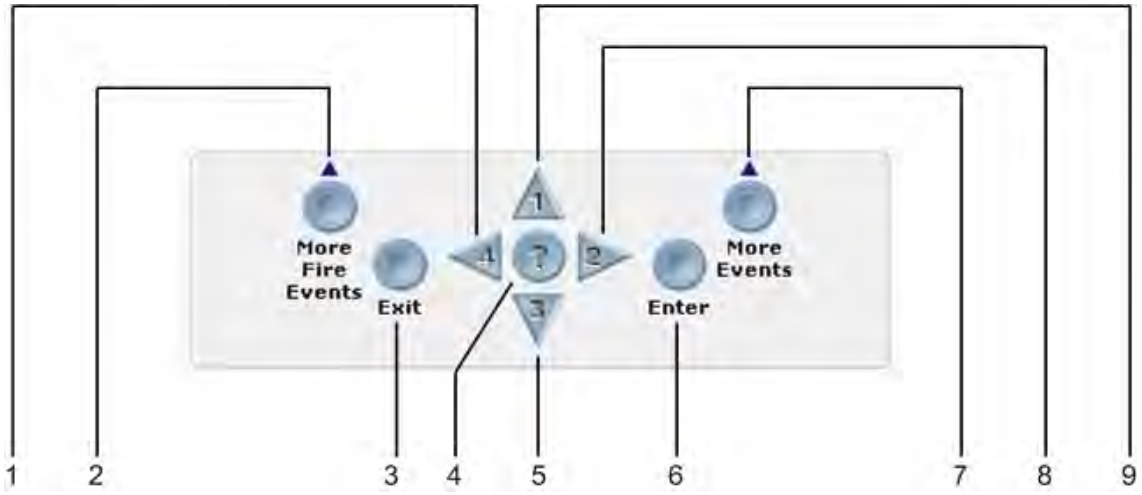
Controls

The Omega - X contains upper-panel and lower-panel control-pads.

Upper-Control-Pad

The figure below illustrates the Omega - X upper-control-pad:

Figure 2-1
Upper-Control-Pad

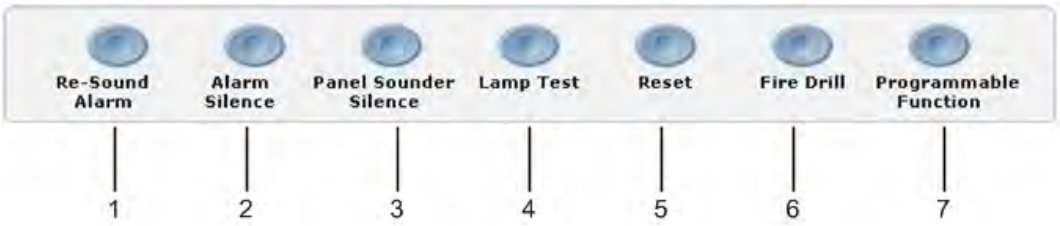


Key	Name	Description
1	Central keypad number four	Navigates menu selections to the left.
2	More Fire Events	Displays the number of alarms present on the Omega - X Panel and overrides the display provided by menu navigation.
3	Exit	Cancels the current menu selection.
4	Central keypad question mark	Provides a “help screen” for the current menu display and also displays status. For example, recommendations are displayed during alarm or fault conditions. If a menu function is accessed then help relating to that function will be displayed.
5	Central keypad number three	Navigates menu selections down.
6	Enter	Enables the menu selection.
7	More Events	Displays the number of events present and overrides menu navigation. Provides event status for Fire, Pre-Alarm, Trouble, Disablements and Other.
8	Central keypad number two	Navigates menu selections to the right.
9	Central keypad number one	Navigates menu selections up.

Lower-Control-Pad

The figure below illustrates the Omega - X lower-control-pad:

Figure 2-4
Lower-Control-Pad



Key	Name	Description
1	Re-Sound Alarm	Re-sounds the alarm when sounders are muted using the Alarm Silence button.
2	Alarm Silence	Silences NACs connected to the Omega - X Panel after receiving authorization through Access Level 2.
3	Panel Sounder Silence	Mutes the internal buzzer of the Omega - X Panel. No other sounder outputs are affected by this operation.
4	Lamp Test	Tests front-panel indicators and the internal buzzer by illuminating all LEDs while darkening the front-panel display and sounding the buzzer.
5	Reset	Resets latching inputs such as fire and pre-alarm events after receiving authorization through Access Level 2. Fault events are non-latching inputs and cannot be cleared by the Reset button. Non-latching inputs are cleared when faults are cleared.
6	Fire Drill	Provides a fire drill for the Omega - X Panel after receiving authorization through Access Level 2. During the drill: • The “On Test” LED illuminates continuously • The “Fire” LEDs blink • The internal buzzer sounds intermittently • The display provides the message, “FIRE DRILL:FIRE DRILL ZONE 00* To stop the fire drill: 1 Press 4 to display the “SET ACCESS LEVEL 2 MENU”. 2 Provide Access Level 2 authorization. 3 Press Reset or Fire Drill on the lower-control-pad.
7	Programmable Function	Activates inputs, outputs or actions defined in the configuration by the customer.

Indicators

The Omega - X contains left and right panel-indicators.

Left-Panel-Indicators

The figure below illustrates left-panel-indicators:

Figure 2-5
Left-Panel-Indicators

Key	LED	Color
1	Fire, NAC Output State - Flashing = NACs Activated - ON Continuous = NACs silenced - OFF = Panel and NACs Reset	Red
2	Fire, NAC Output State - Flashing = NACs Activated - ON Continuous = NACs silenced - OFF = Panel and NACs Reset	Red
3	AC Power On	Green
4	Pre Alarm	Yellow
5	Fire Output Active	Red
6	On Test	Yellow
7	Panel Sounder Silenced	Yellow
8	Delay Active	Yellow
9	More Events	Yellow
10	Point Bypassed	Yellow

Right Panel Indicators

The figure below illustrates right panel indicators:

Figure 2-1
Right Panel Indicators

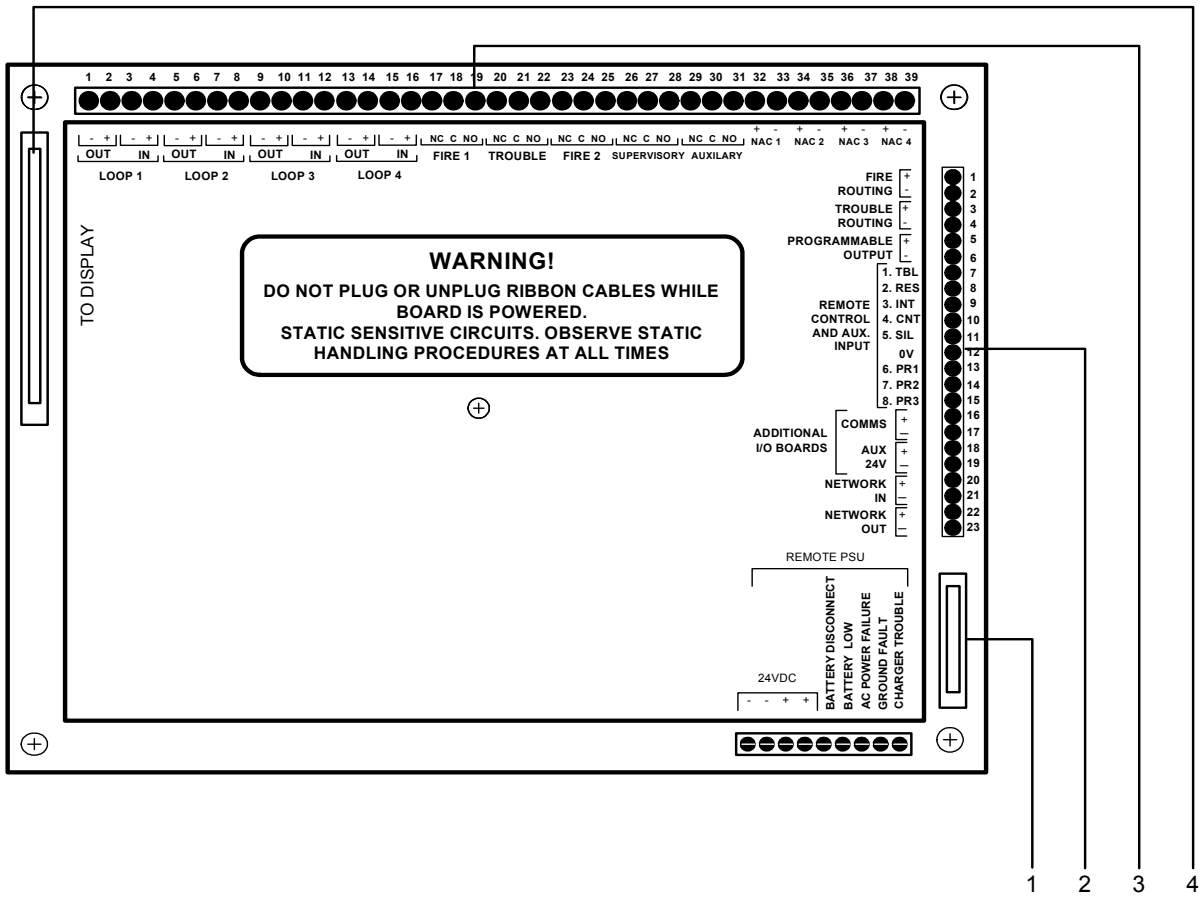
Key	Description	Color
1	General Trouble	Yellow
2	Power Trouble	Yellow
3	System Trouble	Yellow
4	NAC Trouble	Yellow
5	Supervisory Alarm	Yellow

Device Connections

The Omega - X Panel provides connections for Signaling Line Circuits (SLCs), Notification Appliances (NACs) and Output Circuits. It also provides an auxiliary 24 VDC power source. These connections are provided on vertical and horizontal terminal strips of the Control Unit Board. The horizontal strip is “Terminal Strip X1”. The vertical strip is “Terminal Strip X2”.

The figure below illustrates Omega - X Panel terminal connections on the Control Unit Board:

Figure 2-1
Control Unit Board Terminal Connections



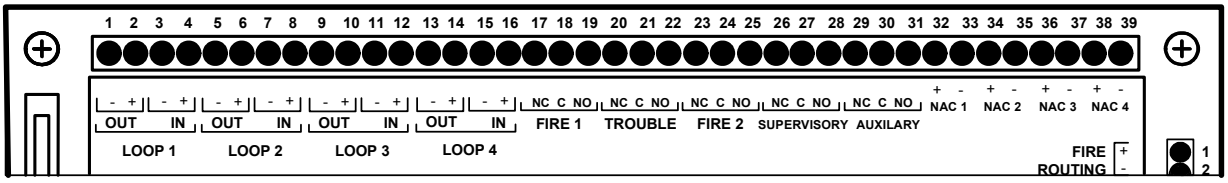
Key	Name	Description
1	Jack J2	The Jack J2 connection provides 24VDC power from the 4 Amp OEM 1 Power Supply.
2	Terminal Strip X2	The vertical terminal strip provides connections for output devices and auxiliary 24 VDC power.
3	Terminal Strip X1	The horizontal terminal strip provides connections for SLC and NAC devices.
4	Jack J1	The Jack J1 connection provides data and power to the Panel Annunciator Board.

Terminal Strip X1

Terminal strip X1 provides SLC connections on pins 1 through 16 and NAC connections on pins 32 through 39.

The figure below illustrates terminal strip X1.

Figure 2-8
Terminal Strip X1

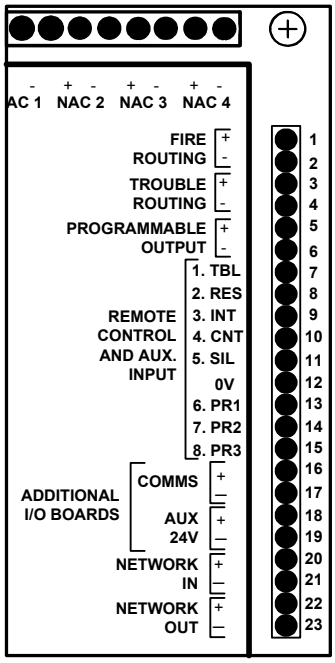


Terminal Strip X2

Terminal strip X2 provides output connections on pins 1 through 6 and auxiliary 24 VDC on pins 18 and 19.

The figure below illustrates terminal strip X2.

Figure 2-9
Terminal Strip X2



4 Amp OEM 1 Power Supply

The 4 Amp OEM1 Power Supply is supplied with all Omega - X Panels and meets UL 864, 9th edition. It provides a 112 Watt (4 Amp) off-line switch-mode power-source for the Omega - X Panel as well as a charger for the standby batteries. The 4 Amp OEM1 Power Supply can operate at 120 or 240 VAC. A jumper connection is provided on the power supply to switch between these operating voltages. Connecting the jumper provides 120 VAC operation and removing it provides 240 VAC operation.

Reference Section 3,"Installation","Wiring the 4 Amp OEM1 Power Supply" for locating and removing the jumper connection.

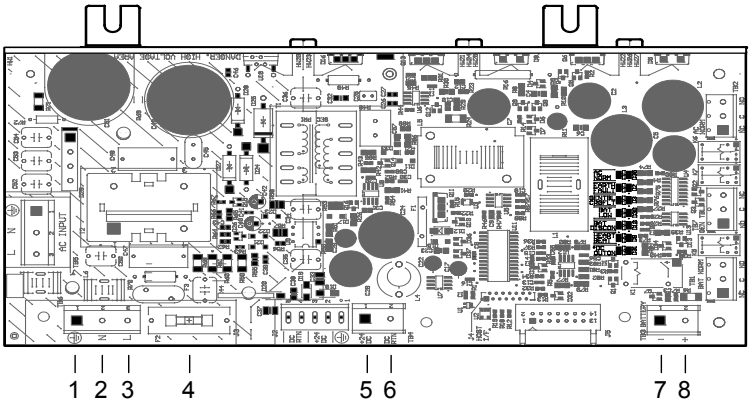
Features of the 4 Amp OEM 1 Power Supply include:

Battery-backup	Provides battery power to the load when the AC input of the 4 Amp OEM 1 Power Supply falls below the rated level. The voltage at the load remains within the specified range during these switching-transitions.
Battery-boost	Boosts voltage to the DC output (TB4) when the battery voltage drops due to a low-battery condition.
Short-circuit protection	Provides a shut down on the load side of the 4 Amp OEM 1 Power Supply when the load-current exceeds the maximum level.
Automatic-retry	Restores output to the load when operating conditions return to nominal levels. This feature restores voltage levels at the load following conditions such as over-current and battery depletion.
Status	Provides an LED status display for normal and fault conditions. Normal conditions occur when the 4 Amp OEM 1 Power Supply is operating in an acceptable range. Fault conditions occur when the 4 Amp OEM 1 Power Supply is not operating in an acceptable range.
FACP Supervision	The AC input to the 4 Amp OEM 1 Power Supply is supervised by the Omega - X Panel.

Connections

The figure below illustrates connections of the 4 Amp OEM 1 Power Supply:

Figure 2-10
Connections



TB4 is not power limited.

1 TB6 - Input for AC earth ground.

2 TB6 - Input for AC neutral (N).

3 TB6 - Input for AC line (L).

4 F2 - Fuse shall be replaced with the type identified in the Appendix A, Specifications.

5 TB4 - DC output for +24 VDC.

6 TB4 - DC output for DC RTN.

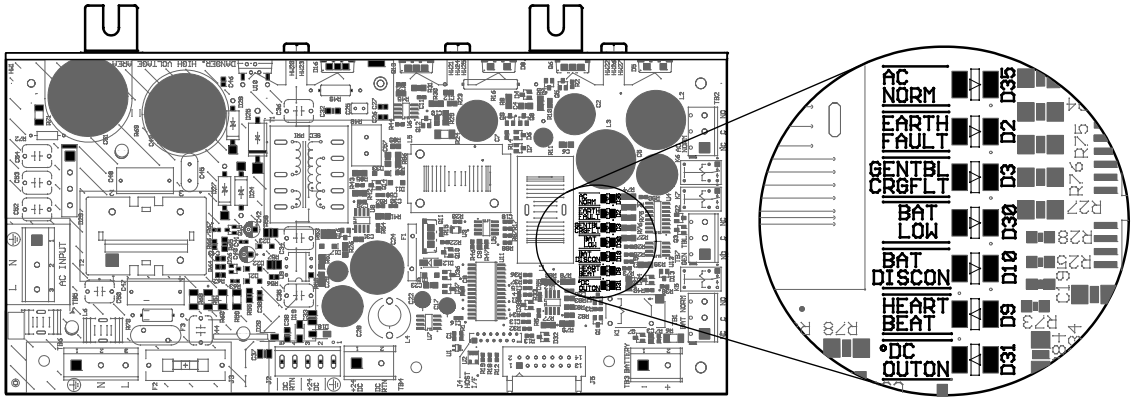
7 TB3 - (-) battery.

8 TB3 - (+) battery.

Indicators

The figure below illustrates LED indicators of the 4 Amp OEM 1 Power Supply.

Figure 2-11
LED Indicators



The table below describes indicators of the 4 Amp OEM 1 Power Supply:

Table 2-1
Indicators

LED	Normal	Fault	Description
AC NORM	Green	Off	The AC Normal LED identifies the status of the AC input at TB6.
EARTH FAULT	Off	Yellow	The Earth Fault LED identifies the status of the DC output TB4.
GENTBL CRGFLT	Off	Yellow	The General Trouble Charge Fault LED identifies the status of the battery charging output at TB3.
BAT LOW	Off	Yellow	The Battery Low LED identifies the voltage-level status of the battery.
BAT DISCON	Off	Yellow	The Battery Disconnect LED identifies the connection status of the battery.
HEART BEAT	Flashing Yellow	Not Flashing	The Heart Beat LED identifies the health of the 4 Amp OEM 1 Power Supply.
DC OUTON	Green	Off	The DC Output On LED identifies the presence of 24 VDC at TB4.

Section 3
Installation

This section provides instructions for connecting the cables, mounting and testing the Omega - X Panel for installation.

General Installation Checklist

To complete the installation:

1. Create a plan and checklist for installing the Omega - X Panel.
2. Remove the Omega - X Panel from its packaging and check its contents. Determine the
3. battery capacity of the Omega - X Panel.
4. Mark the location for anchoring the Omega - X Panel to the premises-wall. Remove the
5. door from the Omega - X Panel.
6. Remove the back-plate from the Omega - X Panel.
7. Remove the knock-out tabs from the cabinet of the Omega - X Panel.
8. Anchor the empty cabinet of the Omega - X Panel to the premises-wall.
9. Thread the power-cable into the left-top-side of the Omega - X Panel and secure it.
10. Thread the TELCO cable into the right-top-side of the Omega - X Panel cabinet and secure it.
11. Remove debris from inside the cabinet of the Omega - X Panel.
12. Replace the back-plate in the cabinet of the Omega - X Panel.
13. Replace the door on the Omega - X Panel.
14. Connect initiating devices, notification appliances and signalling circuits.
15. Connect cabling for Omega - X Panel serial data, TELCO and power.
16. Test the Omega - X Panel installation.

Install this product in accordance with NFPA 72, the National Electrical Code and all local codes.

Before You Begin

Before you begin the installation, take a few minutes to review the installation information, gather the required items, and complete the tasks listed below to make the installation as quick and easy as possible.

1. Create a plan and checklist before beginning the installation process. Planning can reduce the number of problems that can occur during installation.
2. Select a mounting site for the Omega - X Panel that is suitable for its operating environment. The Omega - X Panel installation site should be clean and dry and not subject to shock or vibration. Ensure that the Omega - X Panel environment is free from wire ends, knockout discs and any other debris.

CAUTION!

The Omega - X Panel installation must be performed by qualified personnel familiar with electronic components. Electronic components within the Omega - X Panel are vulnerable to damage from electrostatic discharge. Ground straps must be worn by installers before handling Omega - X Panel circuit boards to prevent electrostatic discharge damage.

3 Verify that you received the following items with the Omega - X Panel:

Item	Quantity	Description
4 Amp OEM 1 Power Supply	1	The 4 Amp OEM 1 Power Supply is the power-source for the Omega - X Panel. All Omega - X Panels contain a 4 Amp OEM 1 Power Supply.
Control Unit Board	1	The Control Unit Board provides connections for two loop addressable monitoring. It also provides input and output connections for alarm and sensor devices. All Omega - X Panels contain a Control Unit Board.
Panel Annunciator Board	1	The Panel Annunciator Board provides Omega - X Panel control and display. All Omega - X Panels contain a Panel Annunciator Board.
Omega - X Panel Install Manual	1	The Omega - X Panel Installation Manual contains installation instructions for mounting, cabling and testing the Omega - X Panel.

4 Acquire the following items that are not included with the Omega - X Panel, but may be required for the installation:

Item	Quantity	Description
Modem-DACT	1	Provides TELCO reporting features to the monitoring-center. *The "No Communication" model of the Omega - X does not contain TELCO reporting features such as those provided on the Modem-DACT.*
Omega - N Interface	1	The Omega - N Interface is an optional feature for networking communication between Omega - X Panels. Up to sixty-four Omega - X Panels can be networked with the Omega - N Interface. Networks using the Omega - N Interface can be configured to provide messaging on remote annunciators as well to operate control panel devices. The Omega - N Interface connects to the Panel Annunciator Board of the Omega - X Panel and is held in place by two stand-off-screws.

Item	Quantity	Description
Ribbon Power Cable	1	The Ribbon Power Cable connects the Omega - X Panel to the 4 Amp OEM 1 Power Supply. The Ribbon Power Cable contains three 14 pin IDC connectors. One end of this cable connects to the 4 Amp OEM 1 Power Supply. The second end of this cable connects to the Control Unit Board. The third end of this cable connects to the Modem-DACT.
Dual phone Cable	1	Connects TELCO to Lines 1 and 2 of the Modem-DACT.
Mounting Hardware	1	The mounting hardware that secures the Omega - X Panel to the premises-wall is not provided in the Omega - X Panel packaging.
Ground Strap	1	A ground strap is required for handling Omega - X Panel circuit boards. *The ground strap is not provided in the Omega - X Panel packaging.*

CAUTION!

Disconnect power before removing Omega - X Panel circuit boards. Never insert or remove circuit boards while the Omega - X Panel power is on. The Omega - X Panel can be damaged if its circuit boards are removed while under power.

Determining System Current Draw

Determine the current draw of the fire alarm system for alarm and standby conditions. Use these maximum current values to obtain the battery capacity of the fire alarm system as well as to confirm the operating constraints of the system.

Standby-Battery Capacity

Perform the installation only after calculations have been completed for a suitable battery size.
Battery standby-hours are dependant on battery capacity and load of the FACP system. *Reference Appendix C, Calculations to determine the standby-battery capacity of the system.*

Operating Constraints

Installation of the FACP must include the operating constraints of the system to maintain continuous signal monitoring and reporting. Operating constraints are based on the current-driving capability of the Omega - X outputs and the external loading caused by devices and cabling.

External loads connected to the Omega - X outputs must be chosen within the driving limits of each output. The loading placed on these outputs can be caused by individual or multiple combinations of signaling line circuits, notification appliances and initiating devices. Cabling is also an external loading property on the Omega - X outputs. Select cabling size and length based on the type of circuit connected to the output of the Omega - X Panel.

Reference Appendix A, Specifications and Appendix C, Calculations to determine specific operating constraints for devices and cabling connected to the Omega - X Panel.

Wiring the 4 Amp OEM 1 Power Supply

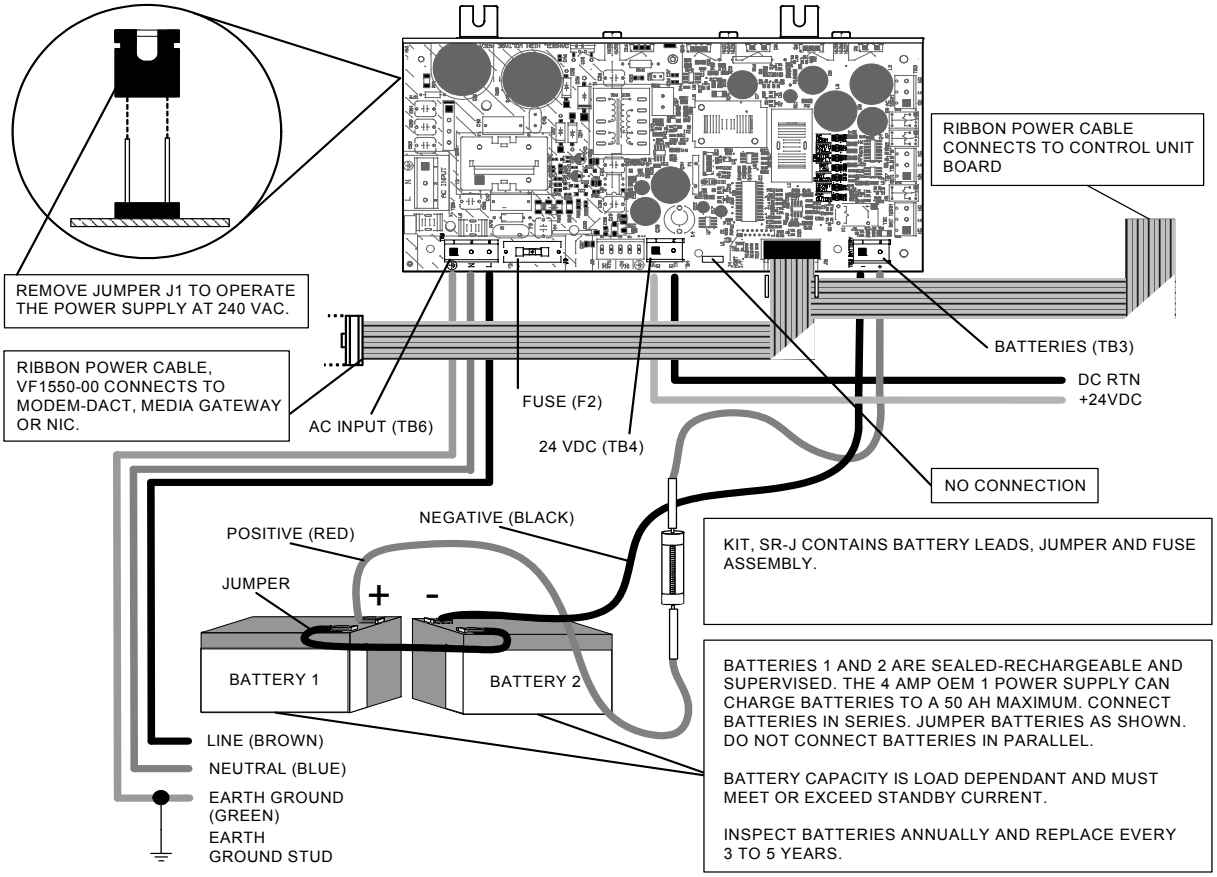
Provide an AC power connection to terminal block TB6. Protect AC power to branch circuits with a 20 Amp fuse. The 4 Amp OEM 1 Power Supply can operate at 120 or 240 VAC. The J1 jumper connection on the power supply provides 120 VAC operation. Removing jumper J1 provides 240 VAC operation.

To connect AC power to the 4 Amp OEM 1 Power Supply:

1. Connect a wire from the ground-terminal of TB6 to earth-ground.
2. Connect a wire from the ground-terminal of TB6 to the ground-stud of the cabinet.
3. Connect a wire from the neutral-terminal (N) of TB6 to the neutral of the power-source.
4. Connect a wire from the line-terminal (L) of TB6 to the line of the power-source.
5. Remove jumper J1 from the power supply to provide 240 VAC operation.
   Connect jumper J1 to the power supply to provide120 VAC operation.

The figure below illustrates connections of the 4 Amp OEM 1 Power Supply:

Figure 3-1
Wiring the 4 Amp OEM 1 Power Supply



Connecting Standby-Batteries

To provide a backup function for the Omega - X Panel, connect the standby-batteries and apply 120 VAC power to the input of the 4 Amp OEM 1 Power Supply. This process allows the Omega - X Panel to identify the presence of the batteries for supervising and charging. The standby-batteries can be connected before or after providing power to the Omega - X Panel.

Connect two batteries to the 4 Amp OEM 1 Power Supply in series. Do not parallel batteries together to obtain a higher Ampere Hour rating. Refer to Figure 3-1 for an illustration of this connection.
To connect batteries:

1. Connect the negative terminal of Battery 2 to TB3, pin 1.
2. Connect the negative terminal of Battery 1 to the positive terminal of Battery 2.
3. Connect the positive terminal of Battery 1 to TB3, pin 2.

Reference Section 5, "Maintenance and Repair for replacement requirements for the standby-batteries".
FM Approval requires secondary power to provide a minimum of 90 hours of standby operation followed by a minimum of 10 minutes of alarm operation.

Connecting 24VDC Devices

Refer to Figure 3-1 for an illustration of this connection.
To connect 24 VDC devices to the 4 Amp OEM 1 Power Supply:

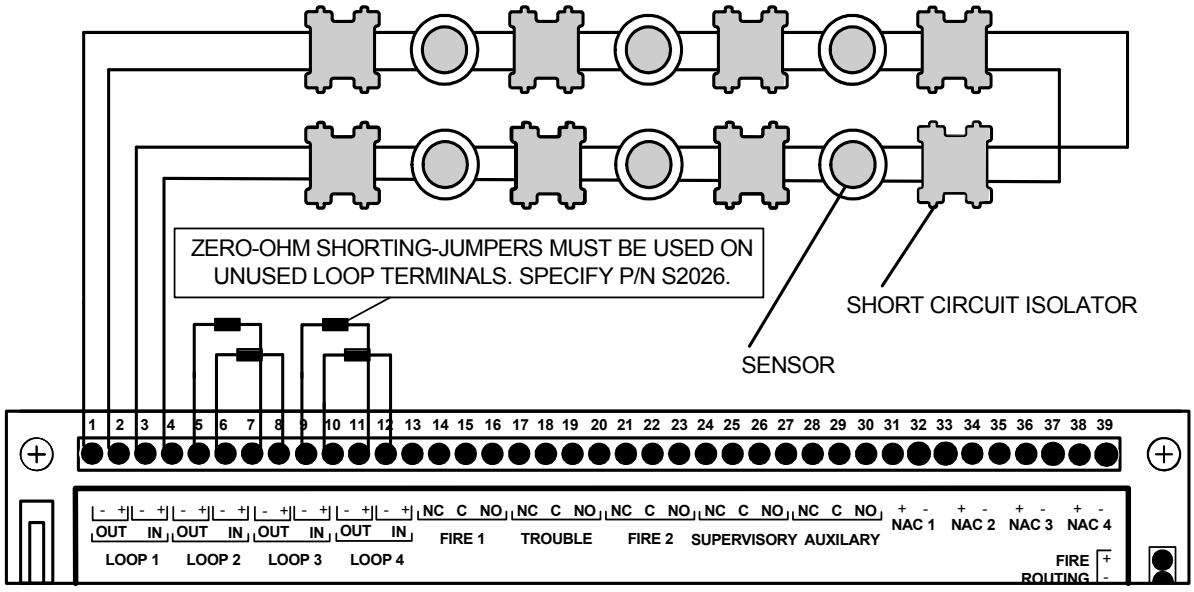
1. Disconnect the battery and shut the power off at the 120 VAC source.
2. Connect + 24 DC to terminal block TB4, pin 1.
3. Connect DC RTN to terminal block TB4, pin 2.
4. Re-connect the battery and restore power at the 120 VAC source.

Connecting Class A Loops

Connect Class A loops to terminal-strip X1 on 2 and 4 loop models of the Omega - X Panel. Terminals 1 through 8 of terminal-strip X1 are assigned to 2 loop models of the Omega - X Panel. Terminals 1 through 16 of terminal-strip X1 are assigned to 4 loop models of the Omega - X Panel.

Terminate unused Loops of the Omega - X Panel with zero-ohm shorting-jumpers. Connect zero-ohm shorting-jumpers on the Omega - X Panel from OUT (-) to IN (-) and OUT (+) to IN (+). The Omega - X Panel provides a trouble signal when unused loops are not terminated. SLC Loops 1 though 4 of the Omega - X Panel are supervised. The figure below illustrates a Class A Style 7 connection on Loop 1 with eight short-circuit-isolators and six sensors:

Figure 3-2
Class A Style 7 Connection



Reference manufacturer specifications for Short Circuit Isolator Module and Sensor connections.
The Loop termination jumpers shown are provided in Resistor Kit (8) Zero Ohm.

End Of Line Resistors (EOLRs) are not used on Class A, style 6 or 7 loops.

Reference Appendix A, Specification for wire gage and length requirements for Class A SLC connections.

SLC loops must be wired with Short Circuit Isolator Modules to comply with NFPA 72, Class A Style 7. Short Circuit Isolator Modules protect SLC loop devices from single-loop-shorts.

During an SLC loop short-circuit:

- The closest Short Circuit Isolator Modules to the short-circuit activate and respond by lighting their LED.
- Devices between the Short Circuit Isolator Modules are isolated and inoperative.
- Other devices on the SLC loop remain operational.
- The Shield Omega - X Panel indicates a trouble condition.

To install Class A, Style 6 and Style 7 SLC loops:

- Do not use T-taps on Class A SLC loops.
  T-taps are not permitted for use on Class A SLC loops.
- Do not permit outgoing loops and return-side loops to share the same conduit or cable.
  Rout outgoing and return-side loops separately.
- Refer to NFPA 72 for additional Class A requirements.

NFPA 72, Style 7

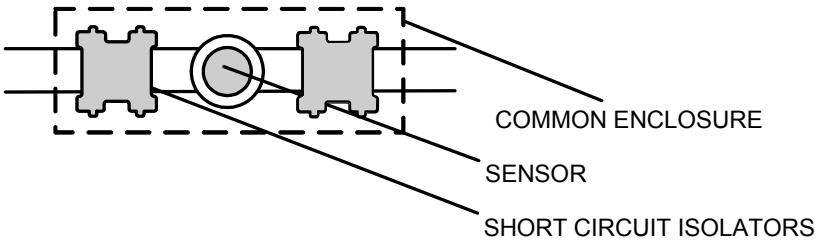
Connect wiring in compliance with NFPA 72, Class A, Style 7 requirements.
For Class A, style 7 compliance, each device must be wired in a Closed Nipple with two surrounding Short Circuit Isolator Modules. The two Short Circuit Isolator Modules and the addressable device are enclosed individually or are shared in a common enclosure. If they are enclosed individually, the individual enclosures must be joined by "closed-nippling".

When using Class A, Style 7 wiring, the Short Circuit Isolator Module must be installed before and after each addressable device on the SLC loop. The wiring from the control panel to the first Short Circuit Isolator Module and from the last Short Circuit Isolator Module back to the control panel must be contained in conduit.
Short Circuit Isolator Modules shall be connected less than five feet from Loops of the Omega - X Panel to maintain compliance with Class A, Style 7 requirements. Closed Nipple devices share a common enclosure and include single housings or raceways.

Common Enclosure

The figure below illustrates the "common enclosure" type of Closed Nipple connection containing two short circuit isolator modules and a sensor:

Figure 3-3
Common Enclosure

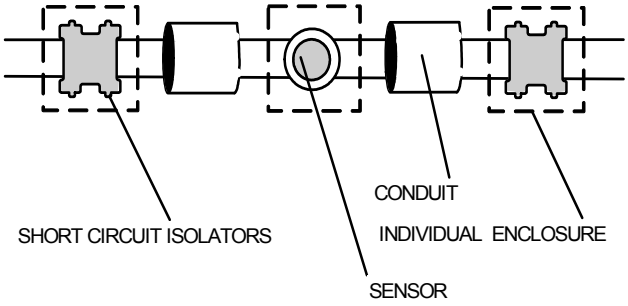


Reference manufacturer specifications for Short Circuit Isolator Module and Sensor connections.

Individual Enclosures

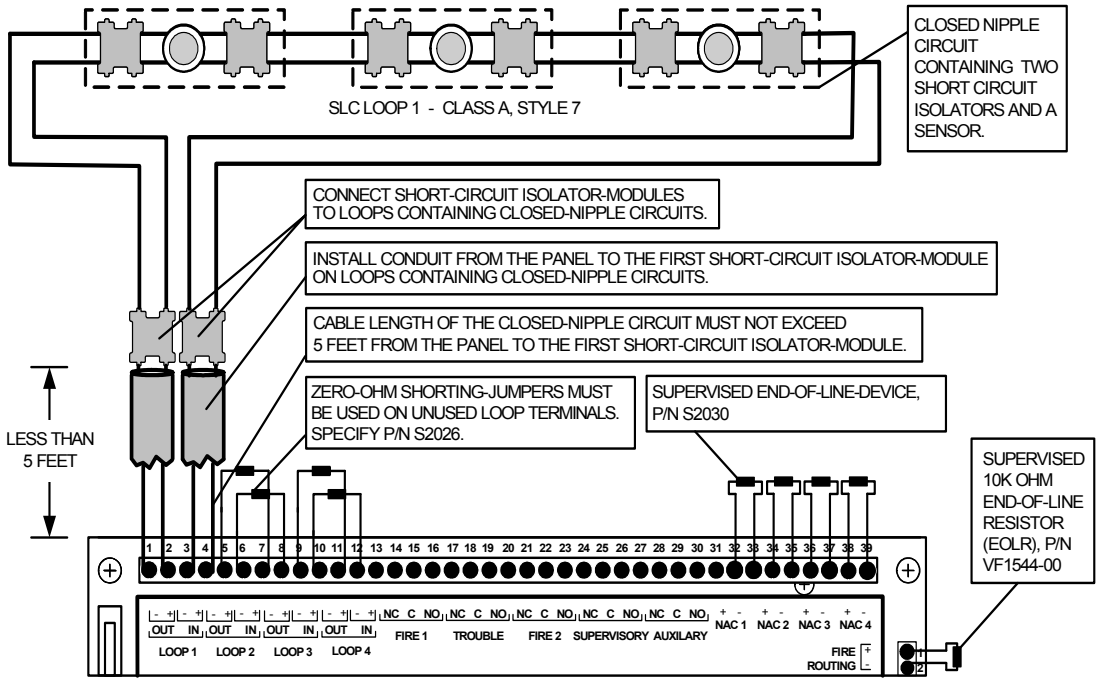
Closed Nipple devices that are enclosed individually are connected by “nippling”.
The figure below illustrates the “individual enclosure” type of Closed Nipple connection containing two short circuit isolator modules and a sensor.

Figure 3-4
Individual Enclosure



Reference manufacturer specifications for Short Circuit Isolator Module and Sensor connections.
The figure below illustrates three Closed Nipples on SLC Loop 1.

Figure 3-5
Class A, Style 7 Wiring Example



Reference manufacturer specifications for Short Circuit Isolator Module and Sensor connections.
Connect Short Circuit Isolator Modules less than five feet from Loops of the Omega - X Panel to maintain compliance with Class A, style 7 requirements.

NFPA 72, Style 6

For Class A, Style 6 compliance, the Short Circuit Isolator Modules may be located at strategic locations based on the discretion of the designer or installer.

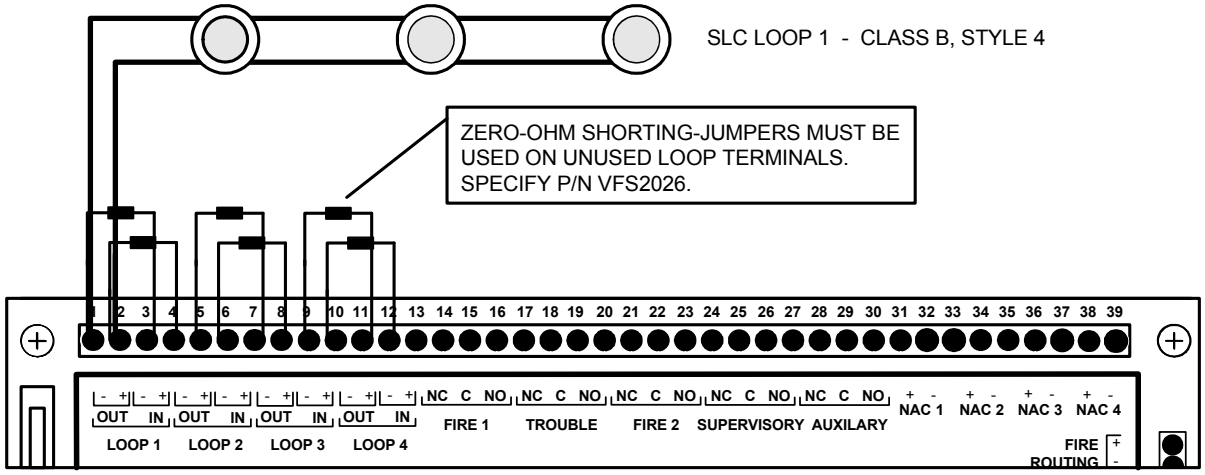
Connecting Class B Loops

Connect Class B loops to terminal-strip X1 on 2 and 4 loop models of the Omega - X Panel. Pins 1 through 8 of terminal-strip X1 are assigned to 2 loop models of the Omega - X Panel. Pins 1 through 16 of terminal-strip X1 are assigned to 4 loop models of the Omega - X Panel.

Terminate unused Loops of the Omega - X Panel with zero-ohm shorting-jumpers. Connect zero-ohm shorting-jumpers on the Omega - X Panel from OUT (-) to IN (-) and OUT (+) to IN (+). The Omega - X Panel provides a trouble signal when unused loops are not terminated.

The figure below illustrates Class B connections on Loop 1 of a 4 loop Omega - X Panel.

Figure 3-6
Class B Connections



Reference manufacturer specifications for Short Circuit Isolator Module and Sensor connections.
The Loop termination jumpers shown are provided in Resistor Kit (8) Zero Ohm.

End Of Line Resistors (EOLRs) are used on Class B loops.
Reference Appendix A, Specification for wire gage and length requirements for Class B SLC connections.

Installing SLC Devices

This section describes installation requirements and constraints for SLC devices on the Omega - X Panel. The SLC devices described in this section include detectors, addressable notification appliances and output modules.

Detector Spacing

Install SLC detectors with spacing requirements specified in section 90.19 of UL 864, 9th edition where units employing the multiple detector operation shall include guidelines for installing of a minimum of two detectors in each protected space and to reduce the detector installation spacing to 0.7 times the linear spacing in accordance with National Fire Alarm Code, NFPA 72. Also reference 55.3.1 and 55.3.2 of UL 864, 9th edition for these detector spacing requirements.

Addressable Notification Appliances and Output Modules

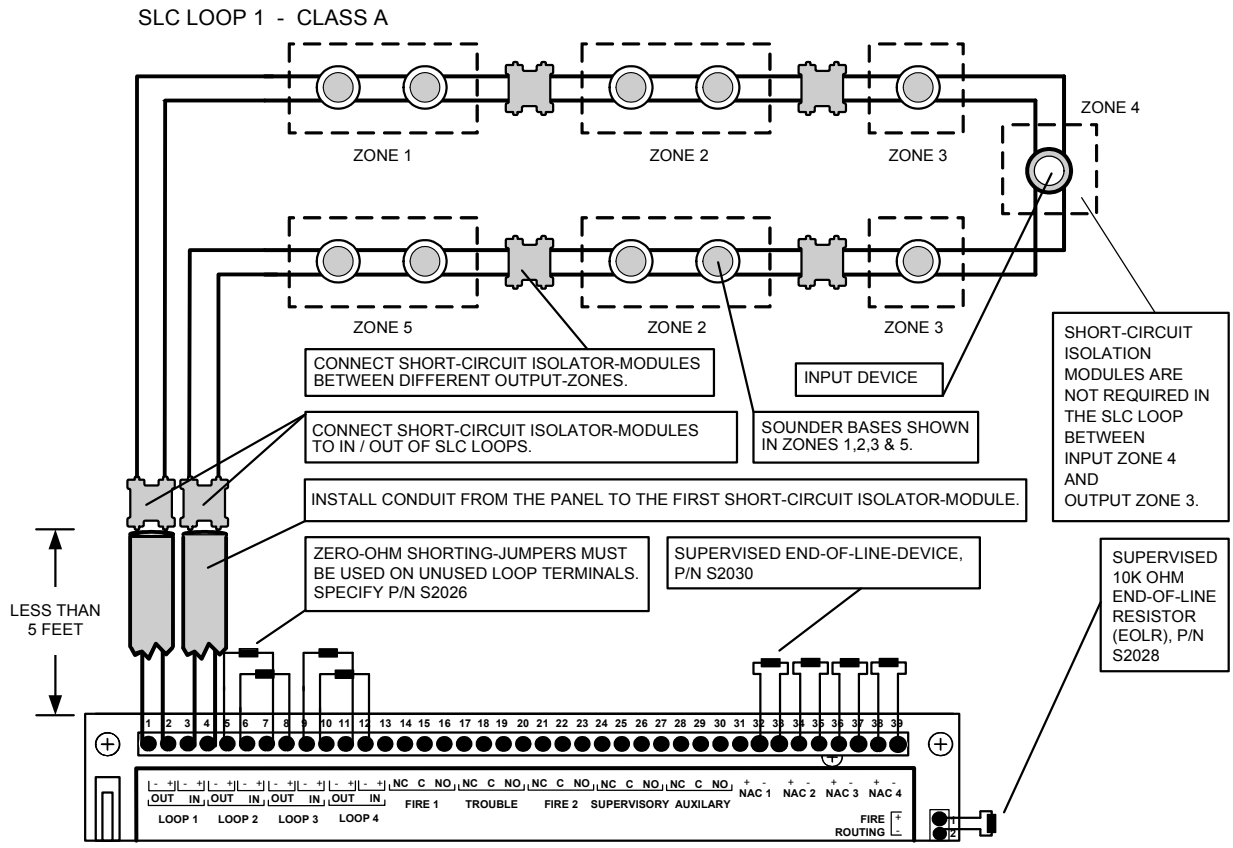
Addressable notification appliances or modules shall be installed so not more than one notification zone is affected by a fault condition. Install devices on an SLC loop of the Omega - X Panel containing one of the following methods to meet this requirement:

- Perform an SLC loop installation that does not contain output devices.
- Perform an SLC loop installation where output devices are in one zone.
- Perform an Class A, Style 7 SLC loop installation where output devices are in different zones.
- Perform a Class A SLC loop installation with output devices in separate zones, short-circuit-isolators on SLC Loops and output devices on SLC loops with separate notification zones.

Reference "Connecting Class A Loops" for example-circuits containing these features

The figure below illustrates an example of this Class A SLC loop connection:

Figure 3-7
Class A SLC Loop Connection



Section 51.4.3 of UL 864, 9th edition specifies that a single break, single ground, or wire-to-wire fault on the installation conductors of a signaling line circuit for use with addressable notification appliances or modules shall not affect operation of more than one notification zone.

Silencing Notification Appliances

Notification Appliance (NA) silencing on the Omega - X Panel meets exception 1, item 33.3.4. of UL 864, 9th edition. Individual NA zones can be re-sounded by addressable loops on the Omega - X Panel after receiving the global silence command for multiple NA zones.
Exception 1 states,"When a system is intended to provide signaling service to two or more physically separated buildings or zones, re-energizing of the notification appliance circuits only on a zone basis meets the intent of the requirement."

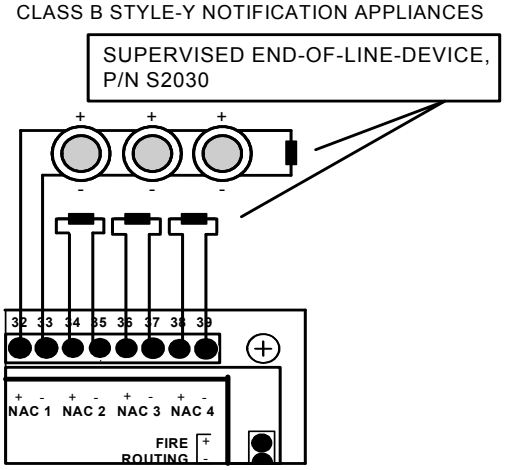
Connecting NAC Devices

Connect Notification Appliances to NAC channels 1 through 4 of terminal-strip X1. NAC channels 1 through 4 are supervised and are provided on terminals 32 through 39 of terminal-strip X1.
NAC channels 1 through 4 are authorized for use with UL listed Fire Protection Service Valves.
To install Notification Appliance Circuits (NACs) on the Omega - X Panel:

1. Connect Notification Appliances and End-Of-Line-Devices to the NAC channel.
2. Connect End-Of-Line-Devices to unused NAC channels.
3. Maintain the limit for maximum wire length of the circuit.

The figure below illustrates an example of Class B, Style Y Notification Appliances on NAC 1.

Figure 3-9
Connecting NAC Devices



Synchronized device connections to the Omega - X Panel require special conditions when installing audible and visual Notification Appliances:

Audible Devices	The installation of synchronized-audible Notification Appliances on one NAC output shall not be installed in hearing range of another group of synchronized-audible Notification Appliances on another NAC output.
Visual Devices	The installation of synchronized-visual notification appliances on one NAC output shall not be installed in line-of-sight of another group of synchronized-visual Notification Appliances on another NAC output.

Reference Appendix B "Equipment List" for synchronization devices that are UL listed and authorized for use with the Omega - X Panel.

Connecting Output Devices

The Omega - X Panel provides connections for output devices on Fire Routing, Trouble Routing, Programmable Output and Aux 24V. Connect only compatible devices to these Omega - X Panel outputs.
Fire Routing, Trouble Routing and Programmable Output are supervised and special application outputs. These outputs are common, zonal and programmable.
The Omega - X Panel also provides relay contacts for operating output devices. Relay contacts are provided on terminal strip X1 for Fire 1, Trouble, Fire 2, Supervisory and Auxiliary.

Fire Routing and Trouble Routing

Fire Routing and Trouble Routing outputs are monitored for open and short-circuit fault conditions when using 10K End Of Line Resistors (EOLRs). Fire Routing and Trouble Routing outputs are protected by 500mA self-resetting-fuses. Connect polarized circuits to these voltage reversing outputs on terminals 1 through 4 of terminal-strip X2.

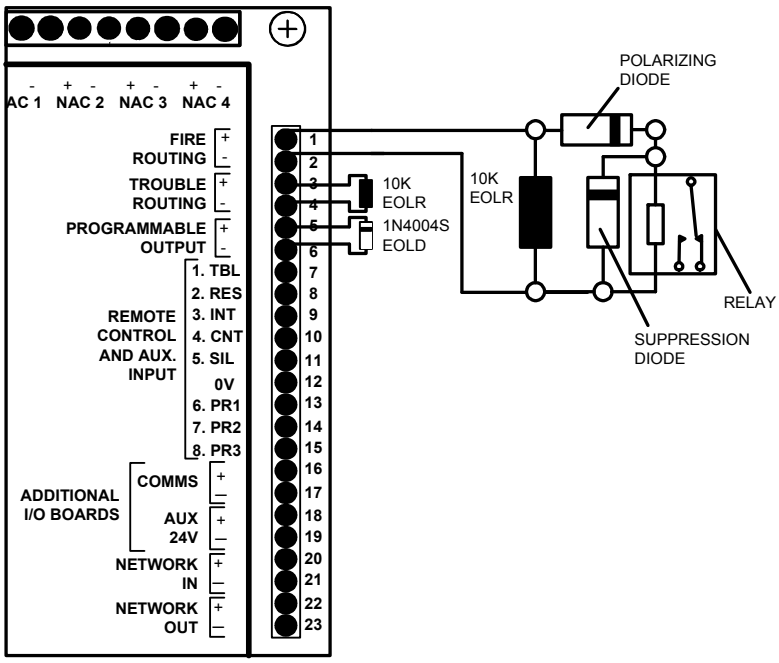
Configure these outputs using the Omega - X front-panel-display. Set configurations to operate and supervise devices connected to these outputs.

Provide cabling connections to these outputs using:

- 3 volt maximum line loss
- 18 AWG or 16 AWG copper cabling
- 850 Ft. maximum for 18 AWG
- 1400 Ft. maximum for 16 AWG

The figure below illustrates an example of a Fire Routing output containing a relay circuit:

Figure 3-10
Fire Routing and Trouble Routing



Programmable Output

The Programmable Output can be configured using the front-panel-display of the Omega - X Panel. *The Programmable Output does not operate when it is not configured.*

The Programmable Output is protected by a 1.1 Amp self-resetting fuse.
Connect polarized and suppressed circuits to this voltage reversing output on terminals 5 and 6 of terminal-strip X2.

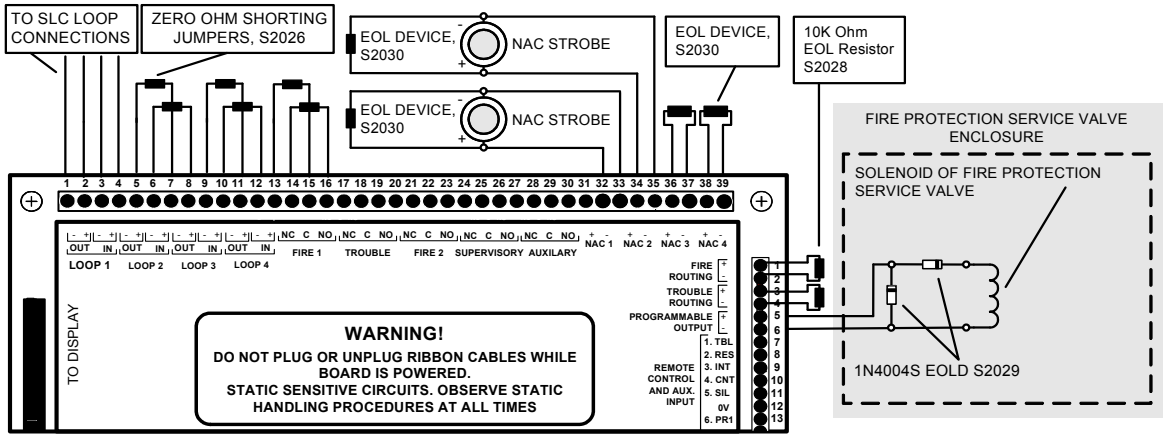
Configure these outputs using the Omega - X front-panel-display. Set configurations to operate and supervise devices connected to these outputs. *The Programmable Output is programmable and a Special Application Output.*

Provide cabling connections to these outputs using:

- 3 volt maximum line loss
- 18 AWG or 16 AWG copper cabling
- 850 Ft. maximum for 18 AWG
- 1400 Ft. maximum for 16 AWG

Reference Appendix B, "Equipment List" for a list of devices authorized for this output.
The figure below illustrates an example of a Fire Protection Service Valve on the Programmable Output:

Figure 3-11
Programmable Output



Auxiliary 24 VDC

The Auxiliary 24 VDC power-source can be used to operate expansion-boards or low-current auxiliary-devices. Devices connected to this output must not draw current in excess of 500 mA. Connect circuits to this 24 VDC output on terminals 18 and 19 of terminal-strip X2. The Auxiliary 24 VDC output is authorized for use with UL listed Fire Protection Service Valves. The Auxiliary 24 DC power-source does not provide a polarized output for monitoring. This output cannot be configured through the Omega - X front-panel-display.

The AUX 24 VDC connection is a Common Output. It provides a Special Application Output to solenoid devices and a regulated output to all other devices.
Provide cabling connections to these outputs using:

- 3 volt maximum line loss
- 18 AWG or 16 AWG copper cabling
- 850 Ft. maximum for 18 AWG
- 1400 Ft. maximum for 16 AWG

Reference Appendix B, "Equipment List" for the list of devices authorized for this output.

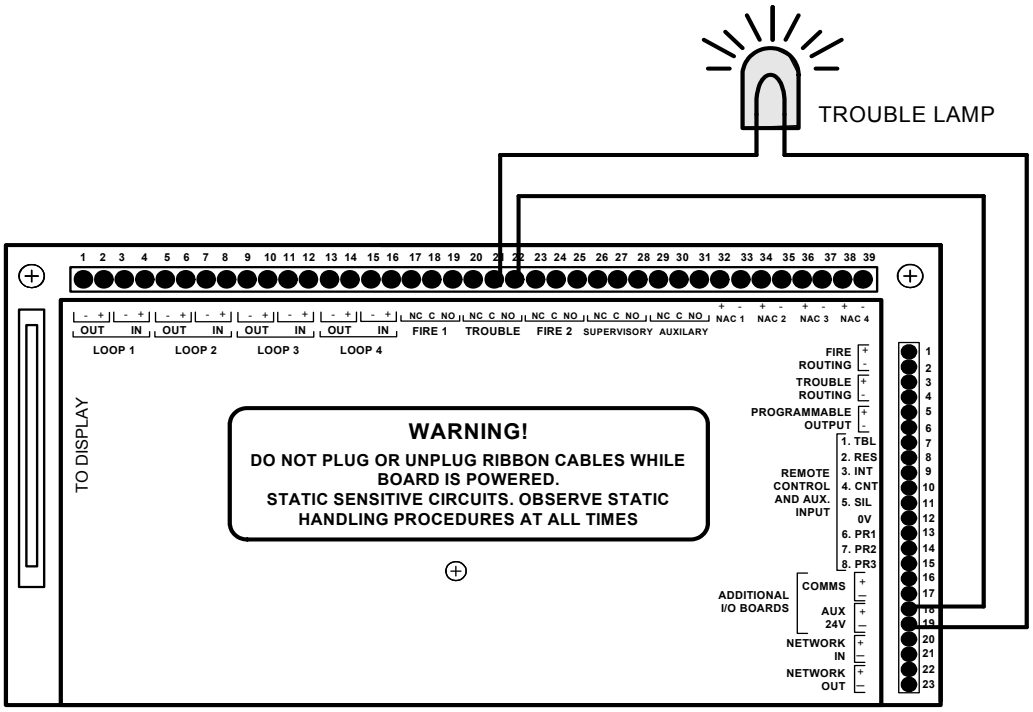
Relay Contacts

Relay contacts are located on terminal strip X1 of the Omega - X Panel and include:

Fire 1	This relay provides normally closed and normally open contact-actuation during fire conditions as a default operation.
Trouble	This relay provides normally closed and normally open contact-actuation during trouble conditions as a default operation.
Fire 2	This relay provides normally closed and normally open contact-actuation during fire conditions as a default operation.
Supervisory	This relay provides normally closed and normally open contact-actuation during supervisory conditions.This relay is not programmable.
Auxiliary	This relay provides normally closed and normally open contact-actuation during auxiliary conditions as a default operation.

The figure below illustrates an example circuit using the normally-open contacts of the trouble relay:

Figure 3-12
Trouble Relay Example



The figure above illustrates a trouble-condition caused by the absence of end-of-line resistors and end-of-line-devices on terminals of the Omega - X Panel.

Connecting Remote Control And Aux. Inputs

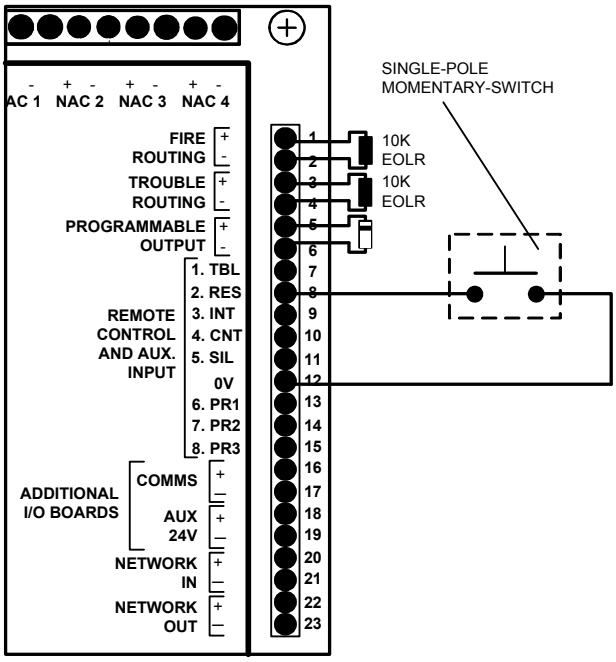
The table below describes default settings for unsupervised inputs on terminal-strip X1:

Terminal Designation	Operation	Description Of Default Operating Condition
1. TBL	Trouble	Provides a trouble input on the Omega - X Panel.
2. RES	Reset	Provides a reset input on the Omega - X Panel.
3. INT	Auxiliary	Provides an auxiliary input on the Omega - X Panel.
4. CNT	Emergency	Provides an emergency input on the Omega - X Panel.
5. SIL	Silence	Provides a silence input on the Omega - X Panel.
0V	Common	Completes the circuit path for trouble, reset, auxiliary, continuous, silence, programmable input 1, programmable input 2 and programmable input 3.
6. PR1	Programmable Input 1	Provides a transparent input on the Omega - X Panel.
7. PR2	Programmable Input 2	Provides a transparent input on the Omega - X Panel.
8. PR3	Programmable Input 3	Provides a transparent input on the Omega - X Panel.

These inputs and outputs are non-supervised and should not be used for life safety functionality.

The figure below illustrates an example connection of a panel-reset on the Remote Control And Aux. Inputs:

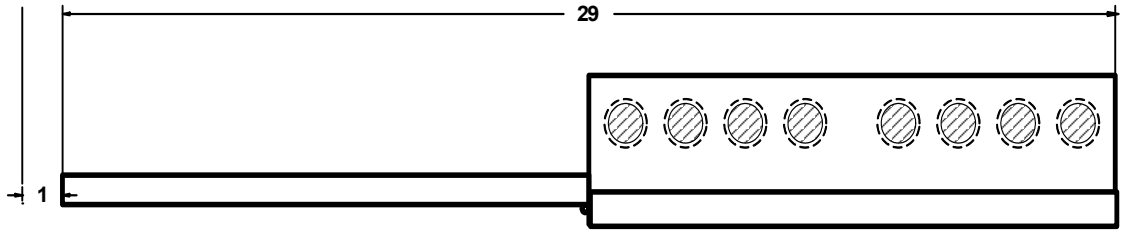
Figure 3-13
Remote Control And Aux. Inputs



Mounting the Omega - X Panel

Select a mounting location that provides adequate room for opening the door of the Omega - X Panel. Provide a minimum of 1” clearance beyond the door-edge when anchoring the Omega - X Panel. The figure below illustrates the door clearance requirement:

Figure 3-16
Door Clearance Requirements



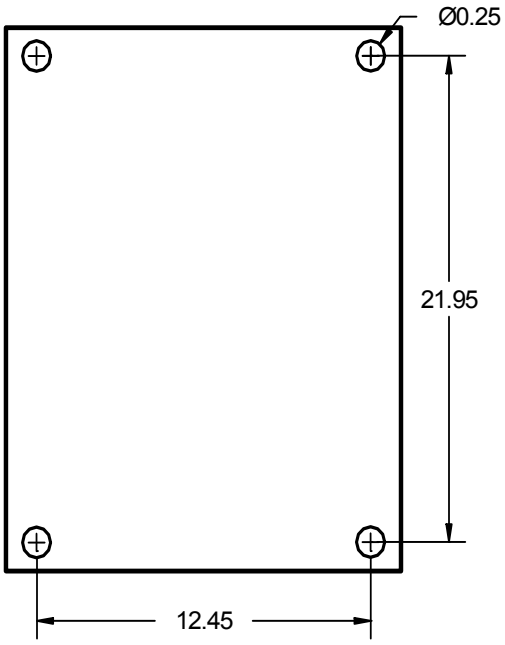
To mount the Omega - X Panel:

- Mark the Location
- Prepare for Mounting
- Anchor the Omega - X Panel
- Wire AC Power and TELCO
- Provide Final Connections
- Test the Installation

Marking the Location

Mark hole locations on the premises-wall for mounting the Omega - X Panel. The figure below illustrates the hole marking requirements:

Figure 3-17
Hole Marking Requirements

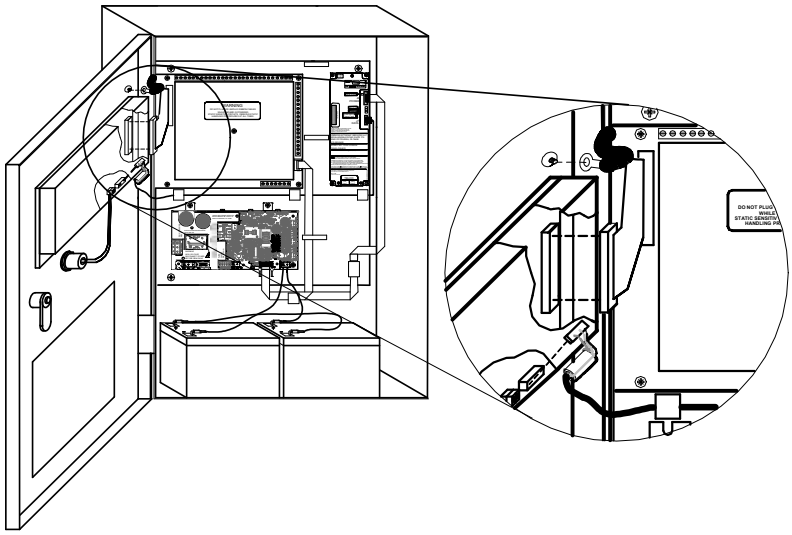


Preparing for Mounting

To prepare the Omega - X Panel for mounting:

1 Remove the ground lug, DC power and serial-cable from the Panel Annunciator Board.

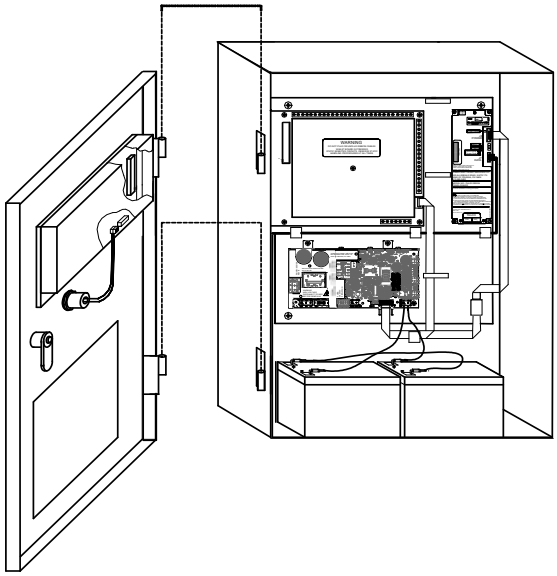
The figure below illustrates removing cables from the cabinet of the Omega - X Panel.
Figure 3-18
Removing the Cables



The style and placement of cable-ties in the illustrations are shown for reference only.

2 Remove the door from the Omega - X Panel.

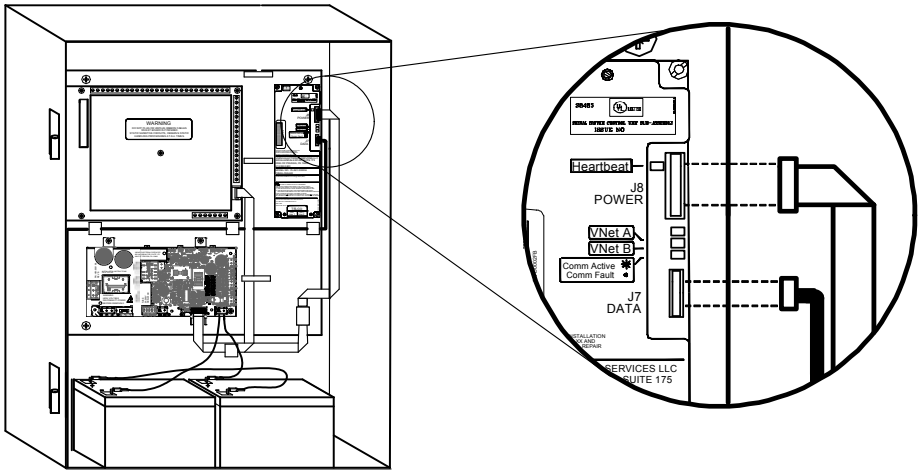
The figure below illustrates removing the door from the Omega - X Panel: **Figure 3-19**
Removing the Door



3 Remove DC power and serial-cable connectors from optional features such as the Modem-DACT,

The figure below illustrates removing cable connections from this circuit board:

Figure 3-20
Removing Power and serial-cables



The step described above is not required on the "No Communication" model of the Omega - X Panel.

4 Remove the cable-ties holding the AC power-cable to the back-plate of the Omega - X Panel.

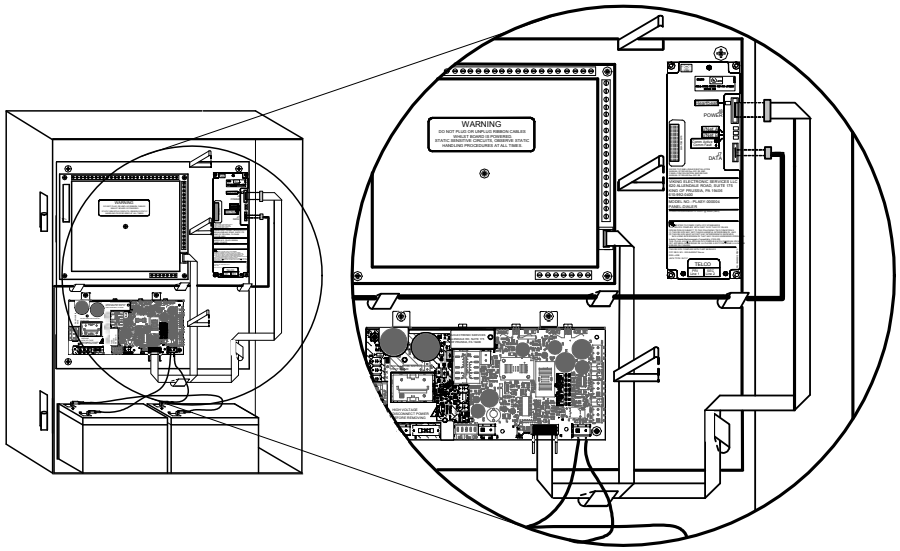
5 Remove the cable-ties holding the DC power-cable to the back-plate of the Omega - X Panel.

6 Remove the connector of the DC power-cable from the 4 Amp OEM 1 Power Supply.

7 Remove the connector of the DC power-cable from the Control Unit Board.

The figure below illustrates removing cables ties and the power-cable connections:

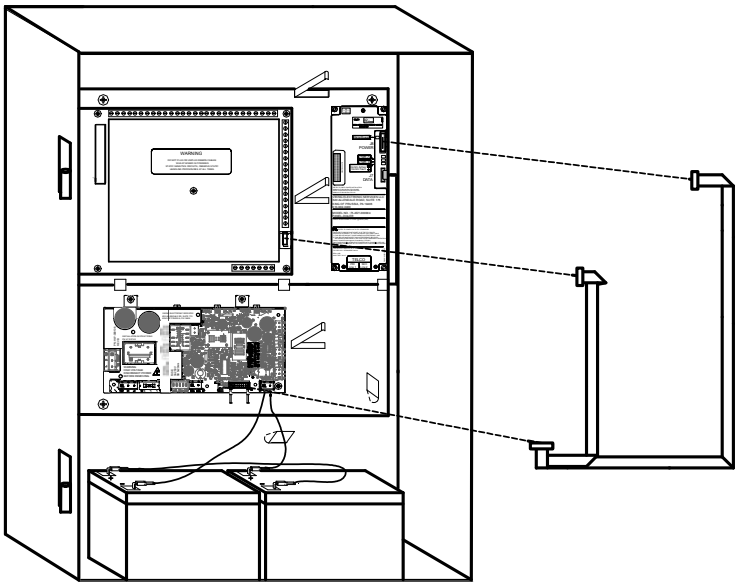
Figure 3-21
Removing Cable Connections



8 Remove the DC power-cable from the Omega - X Panel.

The figure below illustrates removing the power-cable from the Omega - X Panel:

Figure 3-22
Removing the Power-Cable

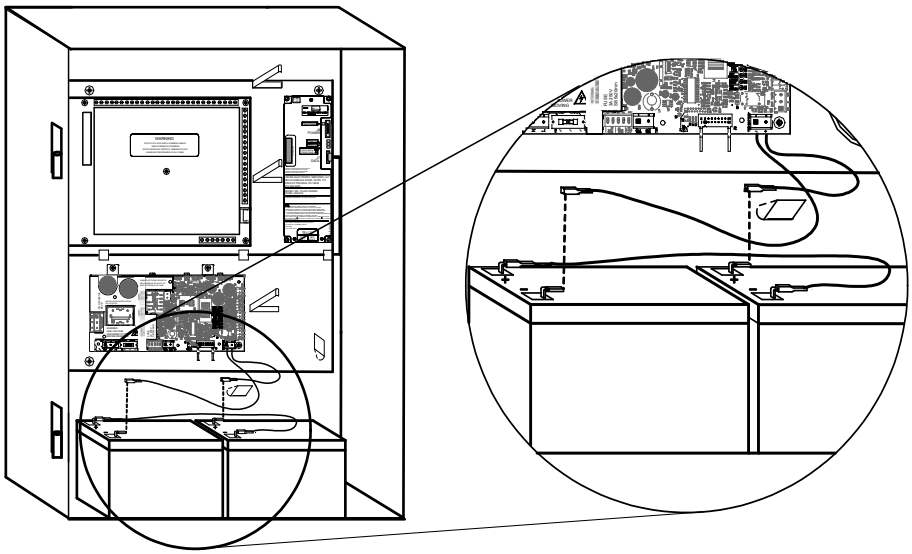


The DC power-cable provided on the "No Communication" model of the Omega - X Panel contains two 14 pin IDC connectors.

9 Remove the cables connecting the batteries to the Omega - X Panel.

The figure below illustrates removing cables from the batteries of the Omega - X Panel:

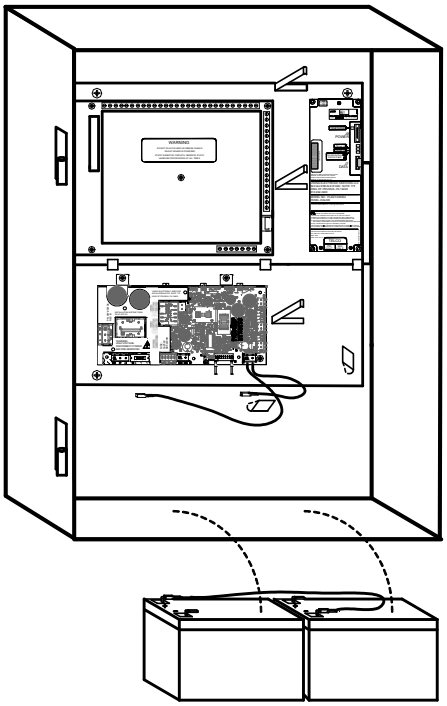
Figure 3-23
Removing Battery Cables



10 Remove the batteries from the Omega - X Panel.

The figure below illustrates removing the batteries from the cabinet of the Omega - X Panel:

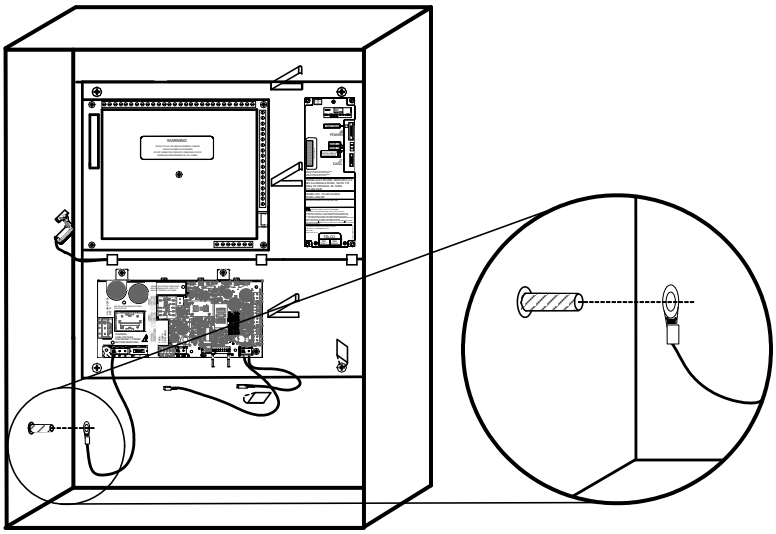
Figure 3-24
Removing Battery Cables



11 Remove the ground-wire from the retaining-bolt at the lower-left-side of the Omega - X cabinet.

The figure below illustrates removing the ground-wire from the retaining-bolt:

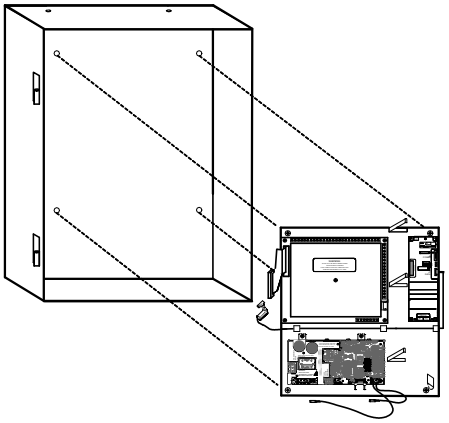
Figure 3-25
Removing the Ground-Wire



12 Remove the back-plate from inside the Omega - X Panel.

The figure below illustrates removing the back-plate from the Omega - X Panel:

Figure 3-26
Removing the Back-Plate



Anchoring the Omega - X Panel

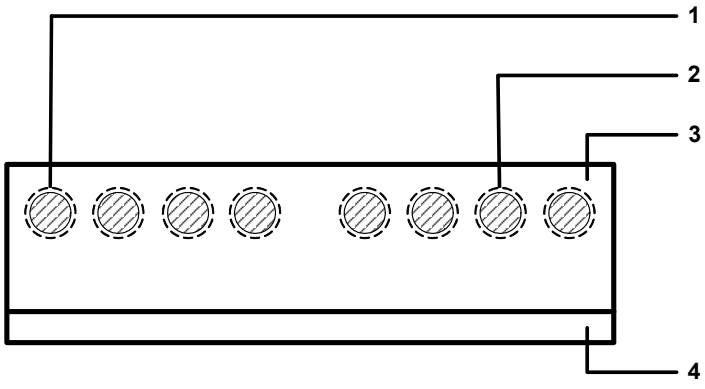
Drill holes in the premises-wall for anchoring the Omega - X Panel and then anchor the empty cabinet to the wall using the mounting hardware to secure it.

Wiring AC Power and TELCO

1 Remove the top-left and top-right knockout tabs from the cabinet.

The figure below illustrates removing knockout tabs:

Figure 3-27
Removing Knockout Tabs



Key	Description
1	Remove this tab to feed the AC power-cable.
2	Remove this tab to feed the TELCO cable.
3	Top-rear of the Omega - X Panel.
4	Top-front of the Omega - X Panel. Front-panel door flange shown.

CAUTION!

Avoid routing SLC cabling through the same conduit as 120 VAC lines.

2 Thread the AC power-cable into the top-left-hole provided from the knockout-tab.

3 Thread the TELCO cable into the top-right-hole provided from the knockout-tab.

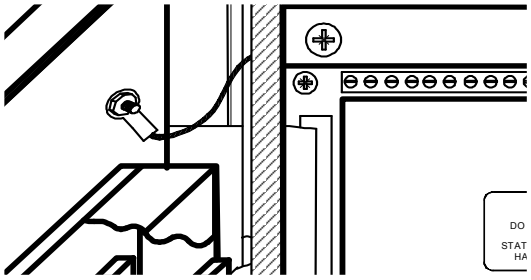
4 Replace the Omega - X Panel back-plate.
Refer to Section 3, "Preparing for Mounting".

5 Replace the Omega - X Panel door.
Refer to Section 3, "Preparing for Mounting".

6 Secure a ground-wire from the ground-lug on the top-left-side of the Omega - X Panel cabinet to the ground-lug on the inside of the Omega - X Panel door.

The figure below illustrates the ground-wire connection on the cabinet door:

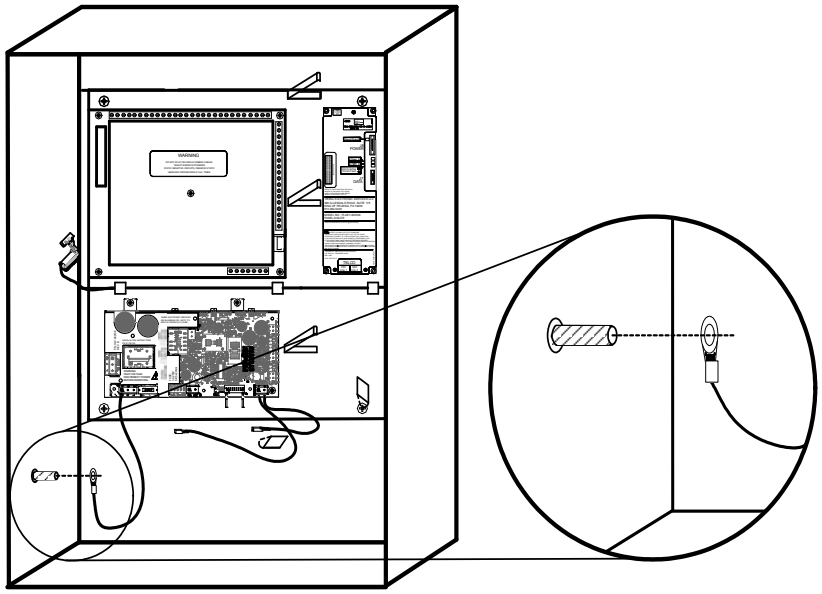
Figure 3-28
Ground wire connection



7 Secure a ground-wire from TB6, terminal 1 of the 4 Amp OEM 1 Power Supply to the ground-lug on the bottom-left-side of the Omega - X Panel cabinet.

The figure below illustrates securing the ground-wire connection on the cabinet door:

Figure 3-29
Securing the ground wire connection



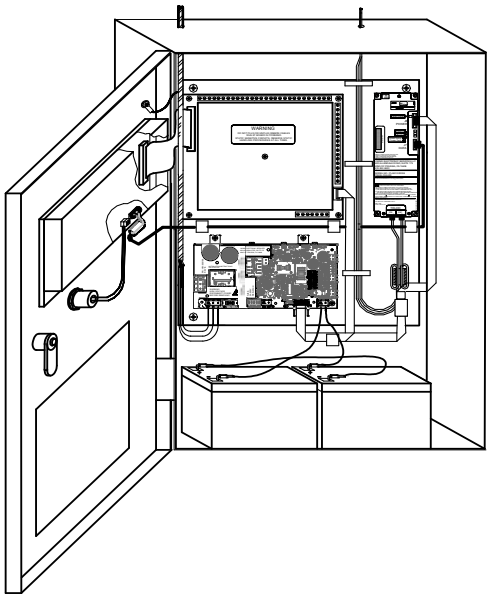
8 Connect cabling for serial data, TELCO and DC power.

Refer to installation manuals for the Media Gateway, NIC and Modem-DACT Ethernet when connecting cabling for these features. *The "No Communication" option of the Omega - X Panel does not include the TELCO connections provided in models of the Media Gateway, NIC and Modem-DACT Ethernet.*

9 Connect initiating devices, notification appliances and signalling circuits.
Refer to the "Omega - X Panel Configuration and Repair Manual".

10 Secure the remaining cables inside the Omega - X Panel cabinet.

The figure below illustrates securing and dressing the cables inside the Omega - X Panel:
Figure 3-30
Securing and Dressing Cables



Testing the Installation

Perform the following before testing the Omega - X Panel:

1 Disconnect loops, sounder circuits, hard I/Os, inputs and outputs from the panel.

2 Confirm that correct connections exist between the batteries and the 4 Amp OEM 1 Power Supply.

3 Apply AC power to the Omega - X Panel.

4 Verify that the panel display illuminates.

5 Confirm Auto Learn and Logon.

CAUTION!

The Omega - X Panel buzzer may activate following AUTO LEARN. This buzzer activation indicates that an installation error condition exists. Disable the buzzer after determining the cause of the alarm and then fix the installation problem.

6 Test the Omega - X Panel lamps.

7 Verify polarity and then connect the batteries to the panel.

8 Verify polarity and then connect the loops, sounder circuits, hard I/Os, inputs and outputs to the panel.

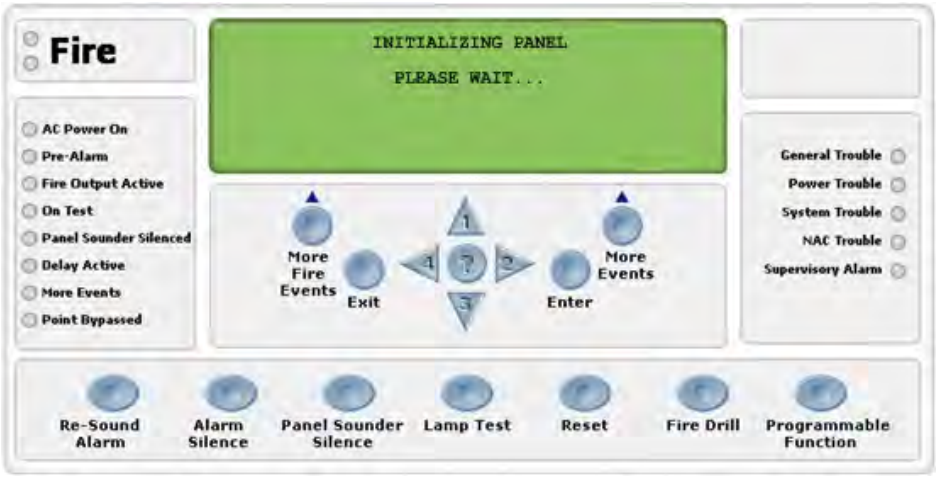
Confirming a Successful Installation

The Omega - X Panel installation is successful when it completes the following sequence of front-panel displays:

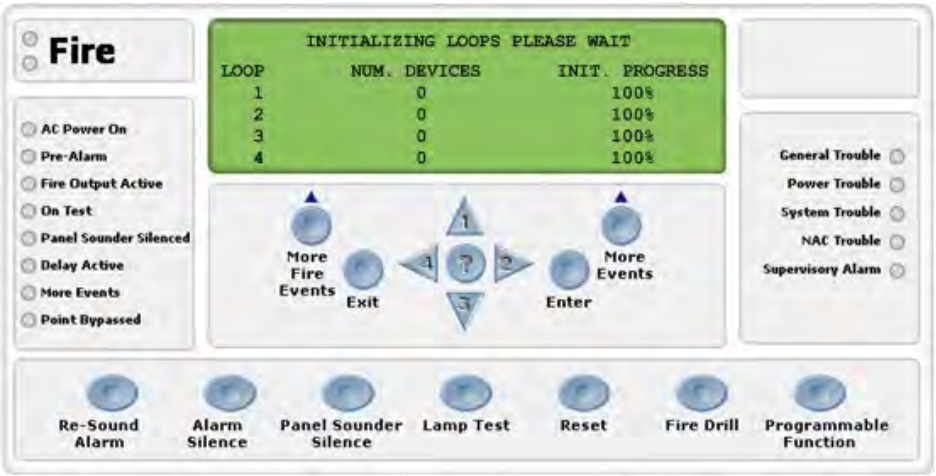
1	Panel Initialization	Tests internal hardware and firmware responsible for operating loop devices.
2	Loop Initialization	Configures the Omega - X Panel to existing loop conditions.
3	Normal-Standby	Displays the Main Menu after a successful boot process.

The front-panel displays shown are intended for reference only.

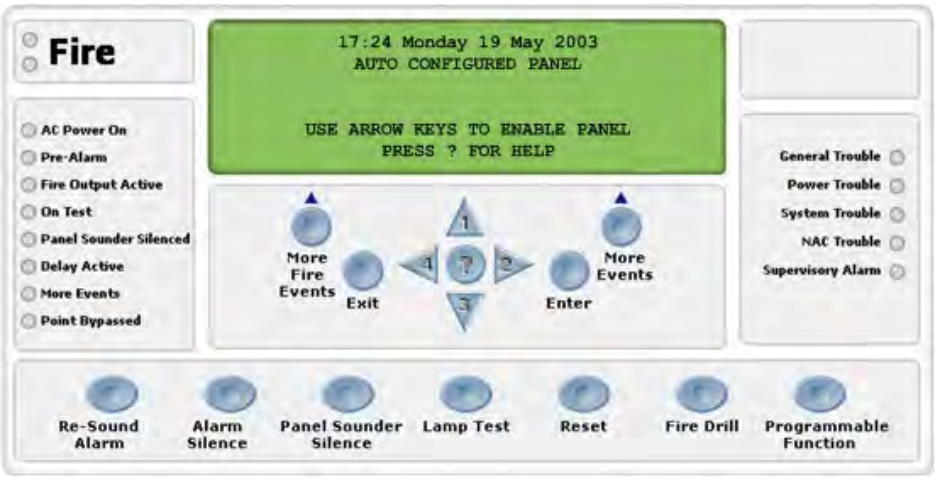
Panel initialization



Loop initialization



Normal-Standby



Initializations performed during the booting process are complete when the Main Menu display appears. Display of the Main Menu indicates that the Omega - X Panel is operating properly and that the installation was successful. *This is the Normal Standby condition of the Omega - X Panel.*

Testing the Panel Lamps

1 Press the lamp test button to light the front-panel lamps.

2 Verify that all front-panel lamps are lit.

Contact the help desk if front-panel lamps do not light.
Reference Section 2, "Overview" for a description of Lamp Test operation.

Trouble-Silence Test

This test confirms the silencing operation of the Omega - X Panel during a trouble condition. To perform the Trouble-Silence Test:

1 Confirm that the Omega - X Panel is in the Normal-Standby mode before performing this test.

The Normal-Standby mode is shown below:

```
          17:24 Monday 19 May 2003
            AUTO CONFIGURED PANEL


       USE ARROW KEYS TO ENABLE PANEL
             PRESS ? FOR HELP
```

The first line of the message format contains the time, day and date.
The second line of the format contains a default or user defined message.

2 Remove the black-lead from the negative terminal of the standby-battery in the Omega - X Panel.

The following conditions occur on the front-panel of the Omega - X Panel:

- The General Trouble LED flashes yellow.
- The Power Trouble LED flashes yellow.
- The internal sounder annunciates.
- The LCD display provides the following message to identify this condition:

```
ALM=000  TBL=0002  SUP=000  OOS=000  REL=00
                * TROUBLE *
NODE=1 PANEL NAME
Low battery voltage
                                  More Events
```

In the example display above the trouble condition is identified by * TROUBLE * and “TBL=0002”. TBL=0002 indicates that two trouble conditions exist. The first trouble condition, “Low battery voltage” is displayed above. The second trouble condition, “battery disconnected” is displayed in the MORE EVENTS menu.

3 Identify the second trouble condition on the Omega - X Panel.

To display the second trouble condition on the Omega - X Panel:

1 Press More Events on the front-panel of the Omega - X.
2 Press 3 on the central-key-pad to scroll down to “MORE TROUBLE”.
3 Press 2 on the central-key-pad to display “battery disconnected”.

```
            MORE TROUBLE 001/002
                * TROUBLE *
NODE=1 PANEL NAME
Battery disconnected
Use UP/DOWN arrow keys to scroll events
```

4 Silence the sounder on the Omega - X Panel.

Press the Panel Sounder Silence button on the front-panel to silence the internal alarm of the Omega - X Panel. The following conditions occur on the front-panel of the Omega - X Panel:

- The General Trouble LED flashes yellow.
- The Power Trouble LED flashes yellow.
- The internal sounder does not annunciate.
- The LCD display provides the following message to identify this condition:

```
ALM=000  TBL=0002  SUP=000  OOS=000  REL=00
               * TROUBLE *
NODE=1 PANEL NAME
Low battery voltage
                                 More Events
```

5 Re-connect the black-lead to the negative terminal of the standby-battery in the Omega - X Panel.

The LCD display provides the following message to identify the return to the normal-standby condition:

```
          17:24 Monday 19 May 2003
            AUTO CONFIGURED PANEL


       USE ARROW KEYS TO ENABLE PANEL
              PRESS ? FOR HELP
```

Troubleshooting

This section describes how to troubleshoot using the 4 Amp OEM 1 Power Supply and the Front-Panel Menu.

4 Amp OEM 1 Power Supply

Troubleshoot the 4 Amp OEM 1 Power Supply when the Front-Panel Menu of the Omega - X Panel is not displaying messages after receiving power. The 4 Amp OEM 1 Power Supply performs self-testing during the powering process. Visually inspect the 4 Amp OEM 1 Power Supply to confirm that it is secure in the cabinet before beginning the test. Also inspect the cabling for secure terminations, proper dressing and lack of pinching.
Test the 4 Amp OEM 1 Power Supply to confirm that it's functioning correctly by inspecting its LEDs during the powering and operating process.

CAUTION!

The 4 Amp OEM 1 Power Supply will not operate on battery power until primary power connections are complete. Connect primary power to the 4 Amp OEM 1 Power Supply before connecting the batteries.

Powering

Perform the following tests:

1. Confirm that connections are complete as described in the installation portion of this procedure.
2. Apply AC power to the input of the 4 Amp OEM 1 Power Supply.
3. Confirm that the following LED status conditions exist after the 4 Amp OEM 1 Power Supply receives power:
   - AC NORM - Green
   - HEART BEAT - Flashing Yellow
   - DC OUTON - Green
   - BAT LOW - This LED may turn on during the powering process to indicate a low battery voltage condition. This LED will turn off when the battery voltage is above the BAT LOW condition.
   - All other LEDs are off
4. Monitor the status LEDs for the fault conditions described below and follow the recommended action when the 4 Amp OEM 1 Power Supply does not provide the status indications described in step 3.

Status LEDs	Normal	Fault	Recommended Action for Fault Condition
AC NORM	Green	Off	Check fuse F2, source power and input wiring (TB6).
EARTH FAULT	Off	Yellow	Remove wiring from TB4. If fault clears check device wiring.
GENTBL CRGFLT	Off	Yellow	Check wiring integrity to the standby batteries. Replace the batteries. This LED condition can also be related to an internal fault on the 4 Amp OEM 1 Power Supply.
BAT LOW	Off	Yellow	Check the condition of the batteries. Battery voltage may be below 24 VDC. This LED condition may occur when batteries are low.
BAT DISCON	Off	Yellow	Check wiring integrity and polarity to the standby batteries.
HEART BEAT	Flashing Yellow	Not Flashing	Internal fault condition. Disconnect batteries and cycle the power input feeding the 4 Amp OEM 1 Power Supply at TB6.
DC OUTON	Green	Off	Check wiring at the DC output (TB4).

Contact Shield if fault conditions cannot be resolved using the methods recommended.

Operating

Monitor LED performance while the Omega - X Panel is operating to determine the health of 4 Amp OEM 1 Power Supply. To monitor LED performance:

1 Complete the test described for powering.

2 Confirm that LED HRT (Heartbeat) is flashing.

3 Confirm that LEDs AC NORM and DC OUTON are lit continuously.

4 Confirm that all other LEDs are not lit.

Front-Panel Menu

Troubleshoot the Omega - X Panel when messages on the front-panel are not consistent with those described in “Confirming a Successful Installation”.
Options on the Front-Panel Menu include:

TEST ZONES	Tests zones 1 to 500 including local NACs, panel outputs and loop outputs.
EVENT LOG	Provides event log view function as well as an event log clear function.
LOOP DATA TEST	Tests devices connected to Omega - X Panel loops.

TEST ZONES

The TEST ZONES menu tests NAC, panel and loop outputs. Options for this menu feature are described below:

Test Zones	Default = 1	Sets the test for zones 1 to 500.
Local NACs	Default = On	Tests Omega - X Panel NACs. Audible and visual notification circuits activate for 3-second durations during this test.
Panel Outputs	Default = Off	Tests Omega - X Panel outputs other than NACs and includes Fire Routing, Trouble Routing and Programmable Output.
Loop Outputs	Default = Off	Tests loop driven outputs other than the loop sounders.

Refer to Section 4, “Front-Panel Menu” for more information about Test Zones.
Test Zones reverts to the MAIN MENU after 25 seconds when there is no navigation activity on the front-panel display.
To troubleshoot using the TEST ZONES menu feature:

1 Press 3 on the upper-control-pad to display the SET ACCESS LEVEL 2 MENU.

```
SET ACCESS LEVEL 2 MENU
Enter Access Level 2 Password
Use numbered arrow keys
*****
Access will automatically expire after
120 seconds if no key is pressed.
ENTER TO PROCECEED – EXIT TO QUIT
```

2 Type the five digit code in the password field and press Enter.
The default password is 22222.

3 Press 3 on the upper-control-pad to display the MAIN MENU.

```
      MAIN MENU – V3.60216LH
>DISABLEMENTS
 VIEW DEVICES
 TEST ZONES
 SET SYSTEM TIME
 SENSOR MAINTENANCE EARLY WARNING
 ACCESS LEVEL 3
```

4 Press 3 on the upper-control-pad to navigate down to TEST ZONES.

```
MAIN MENU – V3.60216LH
 DISABLEMENTS
 VIEW DEVICES
>TEST ZONES
 SET SYSTEM TIME
 SENSOR MAINTENANCE EARLY WARNING
 ACCESS LEVEL 3
```

5 Press 2 on the upper-control-pad to select TEST ZONES.

```
 TEST ZONES MENU
>TEST ZONE: 01 – (NORMAL)
 Use Up/Down arrow keys to select.
 Press > to proceed. Press < to go back.
```

6 Press 1 on the upper-control-pad to select a TEST ZONE from 1 to 500.

7 Press 2 on the upper-control-pad to select the TEST ZONE option for LOCAL NAC: - ON.

```
TEST ZONE: 1

>LOCAL NAC: - ON

 Use Up/Down arrow keys to select.
 Press > to proceed. Press < to go back.
```

8 Press 1 on the upper-control-pad to set LOCAL NAC: - OFF.

9 Press 2 on the upper-control-pad to select the TEST ZONE option for PANEL OUTPUTS: - OFF.

```
TEST ZONE: 1

>PANEL OUTPUTS: - OFF

 Use Up/Down arrow keys to select.
 Press > to proceed. Press < to go back.
```

10 Press 1 on the upper-control-pad to set PANEL OUTPUTS: - ON.

11 Press 2 on the upper-control-pad to select the TEST ZONE option for LOOP OUTPUTS: - OFF.

```
TEST ZONE: 1

>LOOP OUTPUTS: - OFF

 Use Up/Down arrow keys to select.
 Press > to proceed. Press < to go back.
```

12 Press 1 on the upper-control-pad to set LOOP OUTPUTS: - ON.

13 Press 2 on the upper-control-pad to display the test mode for the TEST ZONE:

```
START TEST MODE ?
TEST ZONE: 1
Test Mode will expire after 15 minutes if zone is idle.
Press ENTER to start Test Mode.
Press EXIT to quit.
Press < to go back.
```

14 Press ENTER on the upper-control-pad to begin the test or press EXIT to quit. Test mode runs for 15 minutes.

During the test:

- The “On Test” LED illuminates continuously
- The More events LED illuminates continuously
- The General Trouble LED blinks.
- The internal buzzer sounds intermittently

The front-panel display provides the following message:

```
ZONES IN ALARM=000 TRBL=0001 DISAB=0000
      * TROUBLE *
NODE=1 AUTOLEARN
Test mode
      More Events
```

15 Press ENTER (again) to cancel the test.

Event Log

The Event Log menu can display the Omega - X Panel event log or clear it.
Any condition outside of normal operation of the system generates an entry into the event log. The event log can be used to troubleshoot system problems or verify that activities such as Fire Drills.
Refer to Section 4, "Front-Panel Menu" for more information about Event Log.

Displaying the Event Log

To display the Event Log:

1 Press 3 on the upper-control-pad to display the SET ACCESS LEVEL 2 MENU.

```
SET ACCESS LEVEL 2 MENU
Enter Access Level 2 Password
Use numbered arrow keys
*****
Access will automatically expire after
120 seconds if no key is pressed.
ENTER TO PROCECEED – EXIT TO QUIT
```

2 Type the five digit code in the password field and press Enter.
The default password is 22222.

3 Press 3 on the upper-control-pad to display the MAIN MENU.

```
 MAIN MENU – V3.60216LH
>DISABLEMENTS
 VIEW DEVICES
 TEST ZONES
 SET SYSTEM TIME
 SENSOR MAINTENANCE EARLY WARNING
 ACCESS LEVEL 3
```

4 Press 1 on the upper-control-pad to navigate to ACCESS LEVEL 3.

```
 MAIN MENU – V3.60216LH
 DISABLEMENTS
 VIEW DEVICES
 TEST ZONES
 SET SYSTEM TIME
 SENSOR MAINTENANCE EARLY WARNING
>ACCESS LEVEL 3
```

5 Press 2 on the upper-control-pad to display the SET ACCESS LEVEL 3 MENU:

```
SET ACCESS LEVEL 3 MENU
Enter Access Level 3 Password
Use numbered arrow keys
*****
ENTER TO PROCEED – EXIT TO QUIT
```

6 Type the five digit code in the password field and press Enter.
The default password is 33333.

```
ACCESS LEVEL 3 MENU
>EDIT CONFIGURATION
 SET TIMES
 EVENT LOG
 SYSTEM DISABLEMENTS
 LOOP  DATA TEST
```

7 Press 3 on the upper-control-pad and navigate to EVENT LOG.

```
 ACCESS LEVEL 3 MENU
 EDIT CONFIGURATION
 SET TIMES
>EVENT LOG
 SYSTEM DISABLEMENTS
 LOOP  DATA TEST
```

8 Press 2 on the upper-control-pad to display the VIEW/CLEAR EVENT LOG MENU.

```
     VIEW/CLEAR EVENT LOG MENU
>View Event Log
 Clear Event Log
```

9 Press 2 on the upper-control-pad to display the View Event Log.

```
SELECT EVENT TYPES TO VIEW
>FIRE- 0
 PRE-ALARM- 1
 TROUBLE- 0
 DISABLEMENT- 0
 OTHER EVENTS- 0
 ALL EVENTS- 0
```

10 Press 3 on the upper-control-pad to scroll down the list of event types.

11 Press 2 on the upper-control-pad to display the event type.
Event logs are not displayed when events are shown with zeros in "SELECT EVENT TYPES TO VIEW".
An example of a pre-alarm condition is shown below:

```
VIEW PRE-ALARM EVENTS 001/016
      *PRE-ALARM:HEAT SENSOR ZONE 02 *
ADR=011.00 LOOP=2 ND=1 AUTOLEARN
TIME 10:35 02/18/2004
Pre-Alarm
Use UP/DOWN arrow keys to scroll events
```

12 Press 4 on the upper-control-pad to go back or press Exit to quit.

Clearing the Event Log

The Clear Event Log feature removes the event log from Omega - X Panel memory. To clear the event log:

1 Press 3 on the upper-control-pad to display the SET ACCESS LEVEL 2 MENU.

```
SET ACCESS LEVEL 2 MENU
Enter Access Level 2 Password
Use numbered arrow keys
*****
Access will automatically expire after
120 seconds if no key is pressed.
ENTER TO PROCECEED – EXIT TO QUIT
```

2 Type the five digit code in the password field and press Enter.
The default password is 22222.

3 Press 3 on the upper-control-pad to display the MAIN MENU.

```
 MAIN MENU – V3.60216LH
>DISABLEMENTS
 VIEW DEVICES
 TEST ZONES
 SET SYSTEM TIME
 SENSOR MAINTENANCE EARLY WARNING
 ACCESS LEVEL 3
```

4 Press 1 on the upper-control-pad to navigate to ACCESS LEVEL 3.

```
MAIN MENU – V3.60216LH
 DISABLEMENTS
 VIEW DEVICES
 TEST ZONES
 SET SYSTEM TIME
 SENSOR MAINTENANCE EARLY WARNING
>ACCESS LEVEL 3
```

5 Press 2 on the upper-control-pad to display the SET ACCESS LEVEL 3 MENU:

```
SET ACCESS LEVEL 3 MENU
Enter Access Level 3 Password
Use numbered arrow keys
*****
ENTER TO PROCEED – EXIT TO QUIT
```

6 Type the five digit code in the password field and press Enter.
The default password is 33333.

```
ACCESS LEVEL 3 MENU
>EDIT CONFIGURATION
 SET TIMES
 EVENT LOG
 SYSTEM DISABLEMENTS
 LOOP  DATA TEST
```

7 Press 3 on the upper-control-pad and navigate to EVENT LOG.

```
ACCESS LEVEL 3 MENU
 EDIT CONFIGURATION
 SET TIMES
>EVENT LOG
 SYSTEM DISABLEMENTS
 LOOP  DATA TEST
```

8 Press 2 on the upper-control-pad to display the VIEW/CLEAR EVENT LOG MENU.

```
     VIEW/CLEAR EVENT LOG MENU
>View Event Log
 Clear Event Log
```

9 Press 3 on the upper-control-pad to scroll down to Clear Event Log.

10 Press 2 on the upper-control-pad to display the CLEAR EVENT LOG MENU.

```
CLEAR EVENT LOG MENU
Event Log has 1 entries
Press ENTER to clear Event Log.
Press EXIT to quit.
Press < to go back.
```

11 Press ENTER to clear the Event log.

```
CLEAR EVENT LOG MENU
Event Log has 0 entries
Press ENTER to clear Event Log.
Press EXIT to quit.
Press < to go back.
```

12 Press EXIT to quit or press 4 to go back.

Loop Data Test

The Loop Data Test feature tests loop devices connected on the Omega - X Panel. Refer to Section 4, “Front-Panel Menu” for more information about the Loop Data Test feature.
To perform the Loop Data Test:

1 Press 3 on the upper-control-pad to display the SET ACCESS LEVEL 2 MENU.

```
SET ACCESS LEVEL 2 MENU
Enter Access Level 2 Password
Use numbered arrow keys
*****
Access will automatically expire after
120 seconds if no key is pressed.
ENTER TO PROCECEED – EXIT TO QUIT
```

2 Type the five digit code in the password field and press Enter.
The default password is 22222.

3 Press 3 on the upper-control-pad to display the MAIN MENU.

```
MAIN MENU – V3.60216LH
>DISABLEMENTS
 VIEW DEVICES
 TEST ZONES
 SET SYSTEM TIME
 SENSOR MAINTENANCE EARLY WARNING
 ACCESS LEVEL 3
```

4 Press 1 on the upper-control-pad to navigate to ACCESS LEVEL 3.

```
MAIN MENU – V3.60216LH
 DISABLEMENTS
 VIEW DEVICES
 TEST ZONES
 SET SYSTEM TIME
 SENSOR MAINTENANCE EARLY WARNING
>ACCESS LEVEL 3
```

5 Press 2 on the upper-control-pad to display the SET ACCESS LEVEL 3 MENU:

```
SET ACCESS LEVEL 3 MENU
 Enter Access Level 3 Password
 Use numbered arrow keys
 ****
 ENTER TO PROCEED - EXIT TO QUIT
```

6 Type the five digit code in the password field and press Enter.
The default password is 33333.

```
ACCESS LEVEL 3 MENU
>EDIT CONFIGURATION
 SET TIMES
 EVENT LOG
 SYSTEM DISABLEMENTS
 LOOP DATA TEST
```

7 Press 1 on the upper-control-pad scroll up to LOOP DATA TEST.

```
ACCESS LEVEL 3 MENU
 EDIT CONFIGURATION
 SET TIMES
 EVENT LOG
 SYSTEM DISABLEMENTS
>LOOP DATA TEST
```

8 Press 2 on the upper-control-pad to display the LOOP DATA TEST.

```
LOOP DATA TEST
>SELECT LOOP 1 – (ACTIVE)
 SELECT LOOP 2
```

9 Press 2 on the upper-control-pad to select the ACTIVE loop.

```
 LOOP DATA TEST
>VIEW DATA
 CANCEL TEST
```

10 Press 2 on the upper-control-pad to begin the test using VIEW DATA.

```
LOOP DATA TEST (LOOP: 1)
Start Date : 2/18/2004  10:37:00
Good Readings: 0100800
Bad Readings: 0000000
Current Date: 2/19/2004  10:58:13
```

The test example above indicates that the loop test was started 2/18/2004 at 10:37. It also reveals that over one-hundred-thousand test readings have been recorded since the beginning of the test.

11 Press 4 on the upper-control-pad to back out of the LOOP DATA TEST screen.

```
LOOP DATA TEST
>VIEW DATA
 CANCEL TEST
```

12 Press 3 on the upper-control-pad to scroll down to CANCEL TEST.

13 Press 2 on the upper-control-pad to display the window for stopping the test.

```
      LOOP DATA TEST
PLEASE PRESS ENTER TO STOP TEST
```

14 Press ENTER to cancel the loop test.

```
LOOP DATA TEST
>SELECT LOOP 1
 SELECT LOOP 2
```

15 Press EXIT to return to the main menu.

```
11:12 Thursday February 19 2004
   AUTO CONFIGURED PANEL

USE ARROW KEYS TO ENABLE PANEL
   PRESS ? FOR HELP
```

Section 4
Front-Panel Menu

This section describes the operation of the Front-Panel Menu on the Omega - X Panel. Navigate the menu using the upper-control-pad of the Omega - X Panel.The Omega - X Panel provides navigation of the Front-Panel Menu for Access Level 2 and Access Level 3. Access Level 2 controls front-panel-buttons and menu settings. Access Level 3 controls Omega - X Panel system settings.

To operate the Front-Panel Menu of the Omega - X Panel:

1. Confirm that the display of the Front-Panel Menu does not contain errors after performing AUTO LEARN.
   Reference "Section 3, Troubleshooting" if error messages are displayed on the front-panel.
2. Press 3 on the upper-control-pad to display the SET ACCESS LEVEL 2 MENU.
3. Type the five digit code in the password field and press Enter.
   The default password is 22222.
4. Press 3 on the upper-control-pad to display the MAIN MENU.
5. Press 3 on the upper-control-pad to navigate to LOCAL MENU.
6. Press 2 on the upper-control-pad to select LOCAL MENU and display MAIN MENU.
7. Press 1 on the upper-control-pad to navigate to ACCESS LEVEL 3.
8. Press 2 on the upper-control-pad to select ACCESS LEVEL 3 and display SET ACCESS LEVEL 3 MENU.
9. Type the five digit code in the password field and press Enter.
   The default password is 33333.
10. Press 1 to navigate to ACCESS LEVEL 3 MENU.

The Front-Panel Menu displays the Main Menu when navigation activity stops for more than 25 seconds.

Access Level 2

Access Level 2 provides functions for:

- Disablements
- View Devices
- Test Zones
- Set System Time
- Sensor Maintenance Early Warning
- Access Level 3

```
 MAIN MENU - V3.60236
>DISABLEMENTS
 VIEW DEVICES
 TEST ZONES
 SET SYSTEM TIME
 SENSOR MAINTENANCE EARLY WARNING
 ACCESS LEVEL 3
```

Disablements

The Disablements Menu provides an option for viewing and restoring disabled features as well as setting timed or un-timed disablements for loops, zones, addresses, audible devices and panel I/O:

```
DISABLEMENTS MENU
>DISABLE LOOPS
 DISABLE ZONES
 DISABLE ADDRESSES
 DISABLE AUDIBLE DEVICES
 DISABLE PANEL I/O
 VIEW & RESTORE DISABLED FEATURES
```

The timed function provides a disablement-duration of 30 minutes to 24 hours and stops the disablement when the duration-time expires. The un-timed function provides an infinite disablement that stops when “cleared” on the menu.

Disable Loops

The DISABLE LOOPS function disables loop-devices from reporting fire signals to the Omega - X Panel. This function does not disable loop-devices from reporting trouble and supervisory signals to the Omega - X Panel.

CAUTION!

The DISABLE LOOPS function does not isolate the Omega - X Panel from SLC connections. Disconnect SLC connections to the Omega - X Panel when troubleshooting or when performing wiring changes.

Disable Zones

All detection devices, including manual pull stations, are disabled in the selected zone.

When a device is disabled, the Omega - X Panel ignores the analog value reported by the device. All other faults for the device such as missing device, double address, internal fault, type changed and bad data are still reported by the Omega - X Panel.

Disable Addresses

Any loop device can be disabled using this menu option. Sub-addresses may be individually disabled when using devices with more than one input or output.

When a device is disabled, the Omega - X Panel ignores the analog value reported by the device. All other faults for the device such as missing device, double address, internal fault, type changed and bad data are still reported by the Omega - X Panel.

Disable Audible Devices

This menu option disables all audible device outputs connected to the control panel. An audible device output is defined as any output that has been set to respond to Silence and Evacuate panel commands. Audible device outputs may be directly wired to the control panel (NAC 1, NAC 2, NAC 3 and NAC 4) connections) or loop driven devices.

The NAC Trouble indicator will be illuminated, as well as the Point Bypassed Indicator.

Disable Panel I/O

This menu option disables or enables panel input and output functions. Timed disabling can be set to occur between 30 minutes to 24 hours. Un-timed disabling can be set to occur immediately.

Panel Inputs

Programmable	Default = Enabled	Disables or enables the front-panel Programmable Function button.
Fire Drill	Default = Enabled	Disables or enables the front-panel Fire Drill button.

Panel Outputs

NAC 1	Default = Enabled	Disables or enables NAC 1 on terminal X1 of the Control Unit Board. To set these parameters using the Omega - X Panel Front-Panel Menu: 1 Select ACCESS LEVEL 2 2 Select ACCESS LEVEL 3 3 Select EDIT CONFIGURATION 4 Select EDIT PANEL I/O 5 Select EDIT PANEL OUTPUTS 6 Scroll through the options for NAC CIRCUIT 1
NAC 2	Default = Enabled	Disables or enables NAC 2 on terminal X1 of the Control Unit Board. To set these parameters using the Omega - X Panel Front-Panel Menu: 1 Select ACCESS LEVEL 2 2 Select ACCESS LEVEL 3 3 Select EDIT CONFIGURATION 4 Select EDIT PANEL I/O 5 Select EDIT PANEL OUTPUTS 6 Scroll through the options for NAC CIRCUIT 2
NAC 3	Default = Enabled	Disables or enables NAC 3 on terminal X1 of the Control Unit Board. To set these parameters using the Omega - X Panel Front-Panel Menu: 1 Select ACCESS LEVEL 2 2 Select ACCESS LEVEL 3 3 Select EDIT CONFIGURATION 4 Select EDIT PANEL I/O 5 Select EDIT PANEL OUTPUTS 6 Scroll through the options for NAC CIRCUIT 3
NAC 4	Default = Enabled	Disables or enables NAC 4 on terminal X1 of the Control Unit Board. To set these parameters using the Omega - X Panel Front-Panel Menu: 1 Select ACCESS LEVEL 2 2 Select ACCESS LEVEL 3 3 Select EDIT CONFIGURATION 4 Select EDIT PANEL I/O 5 Select EDIT PANEL OUTPUTS 6 Scroll through the options for NAC CIRCUIT 4

FIRE ROUTING	Default = Enabled	Disables or enables FIRE ROUTING on terminal X2 of the Control Unit Board. To set these parameters using the Omega - X Panel Front-Panel Menu: 1 Select ACCESS LEVEL 2 2 Select ACCESS LEVEL 3 3 Select EDIT CONFIGURATION 4 Select EDIT PANEL I/O 5 Select EDIT PANEL OUTPUTS 6 Scroll through the options for FIRE ROUTING
PROG OUTPUT	Default = Enabled	Disables or enables PROG OUTPUT on terminal X2 of the Control Unit Board. To set this parameter using the Omega - X Panel Front-Panel Menu: 1 Select ACCESS LEVEL 2 2 Select ACCESS LEVEL 3 3 Select EDIT CONFIGURATION 4 Select EDIT PANEL I/O 5 Select EDIT PANEL OUTPUTS 6 Scroll through the options for PROG OUTPUT
TROUBLE ROUTING	Default = Enabled	Disables or enables TROUBLE ROUTING on terminal X2 of the Control Unit Board. To set these parameters using the Omega - X Panel Front-Panel Menu: 1 Select ACCESS LEVEL 2 2 Select ACCESS LEVEL 3 3 Select EDIT CONFIGURATION 4 Select EDIT PANEL I/O 5 Select EDIT PANEL OUTPUTS 6 Scroll through the options for TROUBLE ROUTING

View & Restore Disabled Features

To cancel disablements, scroll through the menu options and toggle disablements to the normal condition. Another way to cancel disablements is to use the View / Restore Disablements option to scroll through active disablements and individually enable each disablement by pressing the Enter button.

View Devices

This menu option is used by experienced personnel to investigate system status and may help in fault finding.

The View Devices option displays addresses connected to each detection circuit. For each address & sub-address, the LCD status display provides the device type, zone and location text.

Analog devices are displayed in the menu with indicators representing the connected device. Digital input devices such as manual pull stations points and switch monitor units are displayed as Normal or Activated. Output devices are displayed as either Off, Intermittent or Continuous.

Status conditions are displayed in the Devices By Loop or View Devices By Zone area of the menu.

Test Zones

Each zone may be individually put into a Test Mode condition.

Test Zone (1 – 500)

When test mode is selected, the devices in the zone may be tested and the Omega - X Panel will automatically reset after 3 seconds.

When a zone is put into test mode, the user is prompted to select a number of test mode options. These options are retained for each zone, but may be changed at any time.

Local NAC On – Off (Default = On)

When set to the ON position, all NAC outputs will sound for the duration of the fire event. The NACs will be muted when the panel automatically resets.
On systems with a high number of Loop powered NACs connected, all NACs may not be able to activate within the 3 second fire period and therefore loop NAC confirmation may be intermittent.

Panel Outputs On – Off (Default = Off)

When selected in the ON position, all panel outputs other than the NACs will operate in accordance with their standard configuration. This includes the Fire and Fire Routing outputs as well as the Alarm relay contact.

Loop Outputs On – Off (Default = Off)

When selected in the ON position, all loop driven outputs other than the loop NAC outputs will operate in accordance with their standard configuration.

Start Test Mode ?

Initiate zone testing using this screen after setting parameters in Test Zone (1 – 500), Local NAC On – Off, Panel Outputs On – Off and Loop Outputs On – Off.
The screen display is:

```
Test Mode will expire after 15 minutes
if zone is idle.
Press ENTER to start Test Mode.
Press EXIT to quit.
Press < to go back,
```

A 15 minute timer begins decrementing when a zone is set in test mode. The test will automatically stop after the timer stops. The timer automatically resets to 15 minutes whenever a device is activated in the zone test.

Include Pull Stations Yes – No (Default = No)

When selected to the ON position, all pull stations will also be included in the Test Mode for the zone. The normal use of this facility is to set the Include Pull Stations to No and test all smoke detection devices in the zone. At this stage, all pull stations will still operate and will take the panel out of test mode. When all devices in the zone have been tested, then the zone is put into test, including pull stations.
All pull stations can then be tested and will operate the test mode when a zone (or zones) has been set to test mode, then a 15 minute timer is started. This timer will decrement and after 15 minutes the zone will be automatically taken out of test mode. Whenever a device is activated in the zone in test, the timer will automatically be reset to 15 minutes.

Set System Time

This menu option sets the panel date and time. Set the system time to log events in the event log. .

Sensor Maintenance Early Warning

This option provides contamination status for Loop 1 through 4.

Events and Status

This section describes events and the status of the front-panel display while operating the Omega - X Panel. The following events are described:

- Fire Event
- Trouble Event
- Pre Alarm Event

Fire Event

In the event of a fire, the twin red FIRE lamps and the appropriate Fire Zone indicator will flash (if connected). Details of the fire activation (address and location text) will be displayed on the front-panel.

Fire warning NACs will sound throughout the building and the panel fire contact, alarm contact and Fire Routing Outputs will be energized. The panel buzzer will be pulsing, but can be silenced by pressing the Silence Buzzer button.

To silence fire NACs, press any of the menu navigation buttons and enter the Access 2 password then press the Enter button. Panel controls will be enabled and will remain enabled for one minute after pressing the last key. Pressing the Alarm Silence button will silence the NACs. The NACs can be started again by pressing the Re-Sound Alarm button. The system can be reset by pressing the Reset button.

Press the More Events button on the front-panel to display the status of more than two fire events.

The maximum Fire event delay setting shall be less than 10 seconds.

Trouble Event

If there is a fault on the system, the yellow General Trouble indicator will flash and there may be other fault LED indications which identify the nature of the fault. The Fault Contact and Fault Routing outputs will energize and the panel buzzer will sound continuously.

Details of the fault will be provided on the front-panel display. The panel buzzer can be silenced at any time by pressing the Silence Buzzer button.

Press the More Events button on the front-panel to display the status of more than two fire events.

The maximum Trouble event delay setting shall be less than 120 seconds.

Pre-alarm Event

Sensors or inputs can generate a pre-alarm. A pre-alarm is used to warn of a slow change in the analog level of detection devices. A smoldering fire can be an example of a condition that can cause a pre alarm event. When a pre-alarm is generated, the control panel will illuminate the pre-alarm LED and will sound the internal buzzer continuously. The address and location of the source of the pre-alarm will be indicated in the LCD status display.

The source of the pre-alarm input should be investigated. The panel buzzer can be silenced at any time by pressing the Silence Buzzer button.

Press the More Events button on the front-panel to display the status of more than two fire events.

The maximum Pre-Alarm event delay setting shall be less than 60 seconds.

Access Level 3

Access Level 3 provides settings for:

- Edit Configuration
- Set Times
- View Event Log
- System Disablements
- Loop Data Test

. Front-Panel Controls

Access Level 2 operates the following front-panel controls:

- Alarm Silence
- Re-sound Alarm
- Reset
- Fire Drill & Programmable Function

Reference “Section 2, Overview” for more information concerning these controls.

This page intentionally left blank.

Section 5
Maintenance and Repair

This appendix provides procedures to maintain and repair the Omega - X Panel. *Reference Appendix B, "Equipment List" to identify Shield part numbers that are required for replacing components described in this section.*

Maintenance

Perform the following procedures to maintain operation of the Omega - X Panel.

Inspecting Batteries

Inspect the standby-batteries annually to determine the connection integrity to the 4 Amp OEM 1 Power Supply and to confirm the voltage capacity available for operating the Omega - X Panel during power failures.
To determine these operating conditions:

1. Confirm that the Omega - X Panel is operating in Normal-Standby mode.
   Reference Section 3, "Installation" for information about the Normal-Standby mode.
2. Confirm that the heart-beat indicator (HEART BEAT) on the 4 Amp OEM 1 1 Power Supply is flashing.
3. Confirm that the disconnected-battery indicator (BAT DISCON) on the 4 Amp OEM 1 1 Power Supply is not illuminated.
4. Confirm that the low-battery indicator (BAT LOW) on the 4 Amp OEM 1 1 Power Supply is not illuminated.

Reference Section 2,"Overview" for heart-beat, disconnected-battery and low-battery indicators on the 4 Amp OEM 1 Power Supply.

Replacing Standby-Batteries

Replace standby-batteries when the service period reaches 3 to 5 years or when the low-battery indicator illuminates on the 4 Amp OEM 1 Power Supply. Specify replacement batteries that are sealed-lead-acid and that are UL recognized.

Removing the Standby-Batteries

To remove the existing standby-batteries:

1. Disconnect the jumper-cable connection between Battery 1 and Battery 2.
2. Disconnect the red-cable from the positive terminal of Battery 1.
3. Disconnect the black-cable from the negative terminal of Battery 2.
4. Remove Battery 1 and Battery 2 from the bottom of the Omega - X Panel cabinet.
5. Re-cycle Battery 1 and Battery 2 according to the manufacturer procedures provided in the packaging of the replacement batteries.

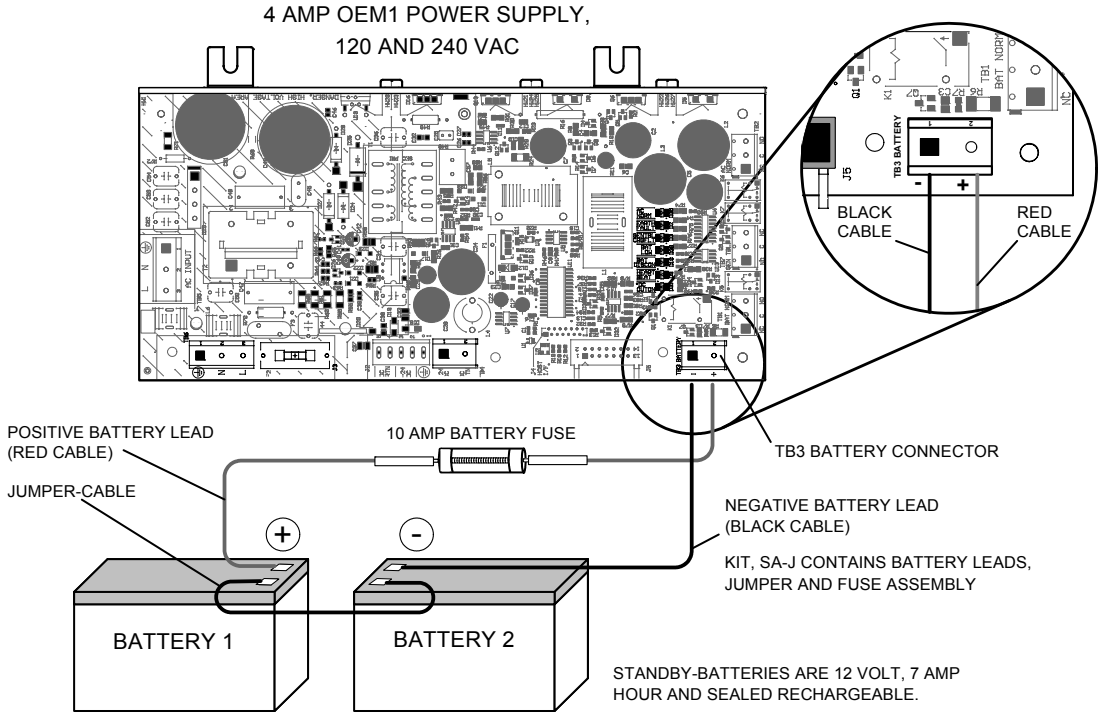
Installing the Standby-Batteries

To install the replacement standby-batteries:

1. Place standby-batteries at the bottom of the Omega - X Panel cabinet.
2. Connect the black-cable from the TB3 BATTERY connector to the negative terminal of Battery 2.
3. Connect the red-cable from the TB3 BATTERY connector to the positive terminal of Battery 1.
4. Connect the jumper-cable from the negative terminal of Battery 1 to the positive terminal of Battery 2.

The figure below illustrates the connection required for installing replacement standby-batteries in the Omega - X Panel:

Figure 5-1
Installing Standby-Batteries



The series connection illustrated above provides the 24 volt standby voltage required by the Omega - X Panel. Do not connect the two batteries in parallel. A parallel connection will not provide the 24 volts required for operating the Omega - X Panel in a standby condition.

Replacing Fuses

A 10 Amp battery fuse and a 3 Amp power-supply fuse are provided to protect the Omega - X Panel against circuit overloads. During the life of the product it may be necessary to replace one or both of the fuses to restore operation to the Omega - X Panel.

Replace a fuse only after replacing the components responsible for causing the fuse failure. Fuse failure is not a condition caused by the fuse. Diagnose and replace components in the fuse-circuit before replacing the fuse and operating the Omega - X Panel.

10 Amp Battery Fuse

Replace the 10 Amp battery-fuse by removing the fuse, the battery wiring and the standby-batteries.

Replace the 3 Amp Power-Supply Fuse by removing it from the housing contained on the circuit board of the 4 Amp OEM 1 Power Supply. Install the replacement fuse in the housing and then test the power supply to determine that it operates.

Removing the 10 Amp Battery-Fuse

To remove the fuse:

1. Disconnect the jumper-cable connection between Battery 1 and Battery 2.
2. Disconnect the red-cable from the positive terminal of the TB3 BATTERY connector.
3. Disconnect the black-cable from the negative terminal of the TB3 BATTERY connector.
4. Dispose of the cables described in steps 1 through 3 above.
5. Remove existing Battery 1 and Battery 2 from the bottom of the Omega - X Panel cabinet and re-cycle them according to the manufacturer guidelines.

Installing the 10 Amp Battery-Fuse

To install the new 10 Amp Battery-Fuse:

1. Mount the new standby-batteries in the base of the Omega - X Panel cabinet.
2. Connect the jumper-cable from the negative terminal of Battery 1 to the positive terminal of Battery 2.
3. Connect the black-cable from the negative terminal of Battery 2 to the negative TB3 BATTERY connector on the 4 Amp OEM 1 Power Supply.
4. Connect the red-cable from the positive terminal of Battery 1 to the positive TB3 BATTERY connector on the 4 Amp OEM 1 Power Supply.
5. Determine that trouble conditions are not reported by the Omega - X Panel following the fuse replacement to confirm that the installation was performed correctly.

3 Amp Power-Supply Fuse

The following procedures describe methods for replacing the 3 Amp power-supply fuse.

Removing the 3 Amp Power Supply Fuse

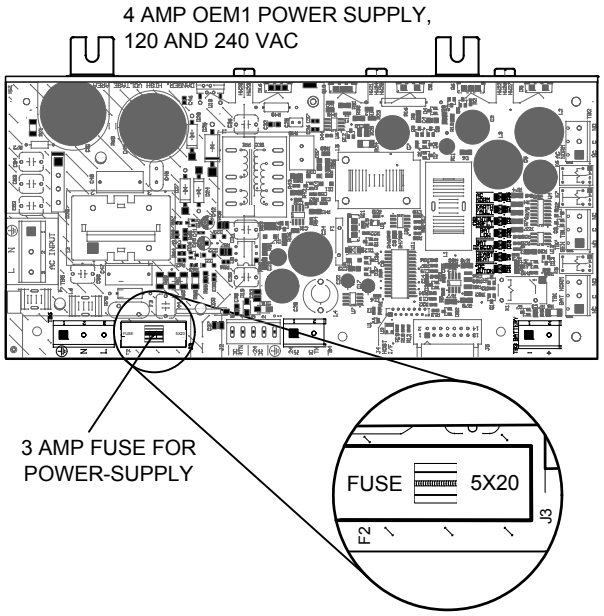
To remove the fuse:

1 Turn off 120 VAC power to the 4 Amp OEM 1 Power Supply.

2 Locate the housing containing the 3 Amp fuse.

The figure below illustrates the location of the 3 Amp fuse on the 4 Amp OEM 1 Power Supply.

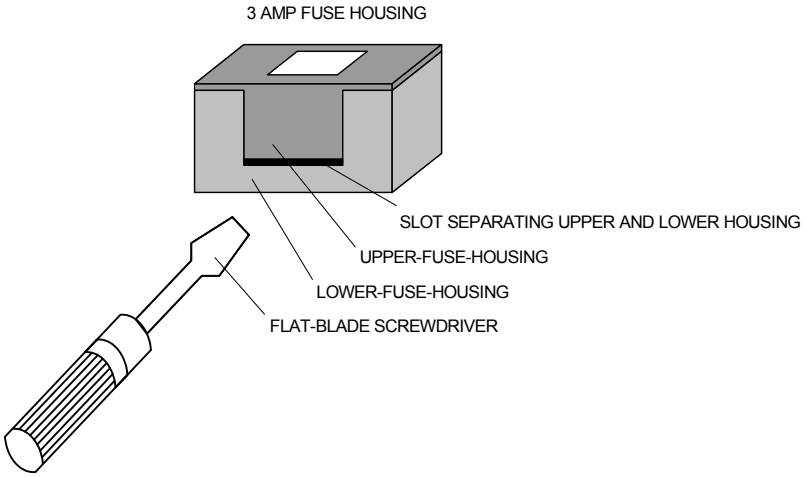
Figure 5-2
3 Amp Fuse Location



3 Gently insert a small-flat-blade-screwdriver into the slot of the fuse-housing.

The figure below illustrates the upper and lower portions of the housing containing the 3 Amp fuse.

Figure 5-3
3 Amp Fuse Housing



4 Slide the length of the screwdriver into the slot of the fuse-housing until the upper-half dislodges from the lower-half of the housing.

5 Remove the fuse from the upper-half of the fuse-housing.

Installing the 3 Amp Power Supply Fuse

To install the new fuse:

1 Insert the fuse in the upper-housing.

2 Center the position of the fuse in the upper-housing.

3 Press the upper-housing on the lower-housing until the halves snap together.

4 Restore 120 VAC power to the 4 Amp OEM 1 Power Supply.

5 Check LED status indicators to confirm that the 4 Amp OEM 1 Power Supply is operating correctly. Confirm that the:

- HEART BEAT is flashing
- DC OUTON is lit continuously
- AC NORM is lit continuously

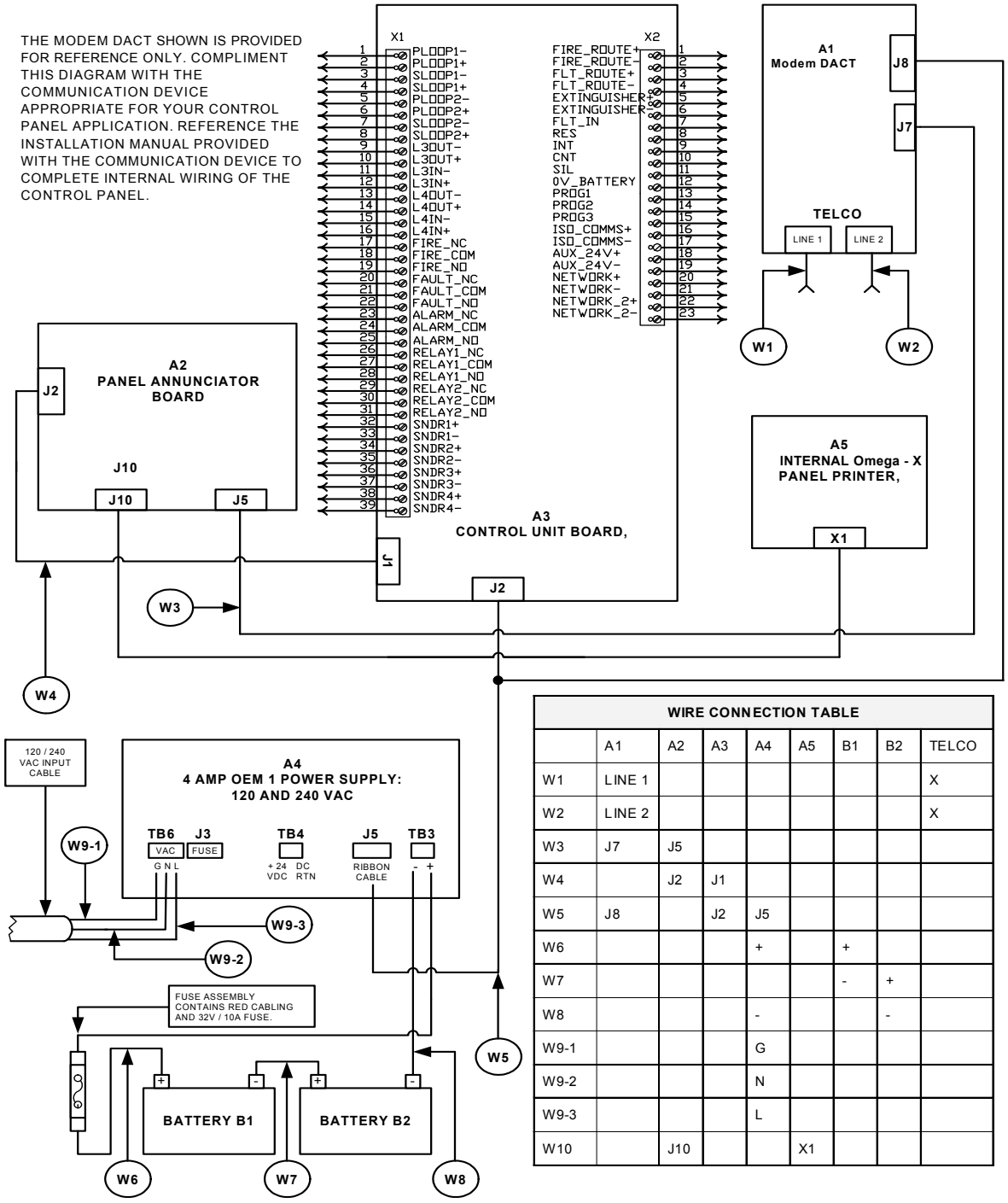
Reference Section 3, “Installation” for diagnostic information when testing a failure condition.

Replacing Internal Components

Replace internal components of the Omega - X Panel during maintenance intervals or following component failures. Connect internal cabling of the Omega - X Panel as illustrated below.

The figure below illustrates internal-component-wiring of the Omega - X Panel:

Figure 5-4
Internal-Component-Wiring



WIRE CONNECTION TABLE								
	A1	A2	A3	A4	A5	B1	B2	TELCO
W1	LINE 1							X
W2	LINE 2							X
W3	J7	J5						
W4		J2	J1					
W5	J8		J2	J5				
W6				+		+		
W7						-	+	
W8				-			-	
W9-1				G				
W9-2				N				
W9-3				L				
W10		J10			X1			

Replacing Cabinet Components

Reference Section 3, "Installation" when replacing the cabinet door or enclosure-box of the Omega - X Panel.

This page intentionally left blank.

Appendix A
Specifications

This appendix provides electrical and environmental specifications for the Omega - X Panel.

Electrical

Electrical specifications for Standby and Alarm current are typical values.

Standby and Alarm Current

Loops	Standby	Alarm (No Load)
2	355mA	650mA
4	455mA	765mA

Earth Fault Indication

A ground fault indication occurs on the Omega - X Panel when a minimum of 30K Ohms exists between earth-ground and either DC RTN or +24 VDC of the power-supply.

SLC Ratings

Terminal	Connection	Rating
1	LOOP 1 (- OUT)	32VDC @ 400mA
2	LOOP 1 (+ OUT)	
3	LOOP 1 (- IN)	32VDC @ 400mA
4	LOOP 1 (+ IN)	
5	LOOP 2 (- OUT)	32VDC @ 400mA
6	LOOP 2 (+ OUT)	
7	LOOP 2 (- IN)	32VDC @ 400mA
8	LOOP 2 (+ IN)	
9	LOOP 3 (- OUT)	32VDC @ 400mA
10	LOOP 3 (+ OUT)	
11	LOOP 3 (- IN)	32VDC @ 400mA
12	LOOP 3 (+ IN)	
13	LOOP 4 (- OUT)	32VDC @ 400mA
14	LOOP 4 (+ OUT)	
15	LOOP 4 (- IN)	32VDC @ 400mA
16	LOOP 4 (+ IN)	

Programmable Relay Contact Ratings

Terminal	Connection	Rating
17	FIRE 1 (NC) Not Supervised	30 VDC @ 1A, 1PF
18	FIRE 1 (C) Not Supervised	30 VDC @ 1A, 1PF
19	FIRE 1 (NO) Not Supervised	30 VDC @ 1A, 1PF
20	TROUBLE (NC) Not Supervised	30 VDC @ 1A, 1PF
21	TROUBLE (C) Not Supervised	30 VDC @ 1A, 1PF
22	TROUBLE (NO) Not Supervised	30 VDC @ 1A, 1PF
23	FIRE 2 (NC) Not Supervised	30 VDC @ 1A, 1PF
24	FIRE 2 (C) Not Supervised	30 VDC @ 1A, 1PF
25	FIRE 2 (NO) Not Supervised	30 VDC @ 1A, 1PF
26	SUPERVISORY (NC) Not Supervised and not programmable	30 VDC @ 1A, 1PF
27	SUPERVISORY (C) Not Supervised and not programmable	30 VDC @ 1A, 1PF
28	SUPERVISORY (NO) Not Supervised and not programmable	30 VDC @ 1A, 1PF
29	AUXILIARY (NC) Not Supervised	30 VDC @ 1A, 1PF
30	AUXILIARY (C) Not Supervised	30 VDC @ 1A, 1PF
31	AUXILIARY (NO) Not Supervised	30 VDC @ 1A, 1PF

Programmable Special Application NAC Outputs

Terminal	Connection	Rating
32	NAC 1 (+)	(19.3 - 25.95) VDC @ 2.5 A
33	NAC 1 (-)	
34	NAC 2 (+)	(19.3 - 25.95) VDC @ 2.5 A
35	NAC 2 (-)	
36	NAC 3 (+)	(19.3 - 25.95) VDC @ 2.5 A
37	NAC 3 (-)	
38	NAC 4 (+)	(19.3 - 25.95) VDC @ 2.5 A
39	NAC 4 (-)	

Reference Appendix B, "Equipment List" for special application devices that are authorized for use with the Omega - X Panel.

Power Output Circuits

Terminal	Connection	Rating
1	FIRE ROUTING (+)	24 VDC @ 500mA
2	FIRE ROUTING (-)	
3	TROUBLE ROUTING (+)	24 VDC @ 500mA
4	TROUBLE ROUTING (-)	
5	PROGRAMMABLE OUTPUT (+)	24 VDC @ 500mA
6	PROGRAMMABLE OUTPUT (-)	

The output connections of FIRE ROUTING, TROUBLE ROUTING and PROGRAMMABLE OUTPUT are supervised and regulated at 24 VDC. The PROGRAMMABLE OUTPUT provides a special application output in the range of 21.37 TO 25.9 VDC when operating solenoid devices. These output connections are common, zonal and programmable.

Unsupervised Inputs

Terminal	Connection	Rating
7	TROUBLE INPUT (TBL) - Not Supervised -	24 VDC @ 2.4mA Input Rating
8	RESET INPUT (RES) - Not Supervised -	24 VDC @ 2.4mA Input Rating
9	INTERMITTENT INPUT (INT) - Not Supervised -	24 VDC @ 2.4mA Input Rating
10	CONTINUOUS INPUT (CNT) - Not Supervised -	24 VDC @ 2.4mA Input Rating
11	SILENCE/ACK INPUT (SIL) - Not Supervised -	24 VDC @ 2.4mA Input Rating
12	DC GROUND (0V) - Not Supervised -	24 VDC @ 2.4mA Input Rating
13	PROGRAMMABLE INPUT 1 (PR1) - Not Supervised -	24 VDC @ 2.4mA Input Rating
14	PROGRAMMABLE INPUT 1 (PR2) - Not Supervised -	24 VDC @ 2.4mA Input Rating
15	PROGRAMMABLE INPUT 1 (PR3) - Not Supervised -	24 VDC @ 2.4mA Input Rating

RS485 Serial Bus

Terminal	Connection	Rating
16	COMMS (+)	(+) DATA 3.3 VDC @ 30 mA
17	COMMS (-)	(-) DATA

Auxiliary 24 VDC

Terminal	Connection	Rating
18	Aux 24V (+)	24 VDC @ 500mA
19	Aux 24V (-)	

The Aux 24 V connection provides a regulated 24 VDC output. This connection provides a special application output in the range of 21.37 to 25.9 VDC when operating solenoid devices.

Omega - N Terminals

Terminal	Connection	Rating
20	NET OUT (+)	(+) DATA 3.3 VDC @ 30 mA
21	NET OUT (-)	(-) DATA
22	NET IN (+)	(+) DATA 3.3 VDC @ 30 mA
23	NET IN (-)	(-) DATA

4 Amp OEM 1 Power Supply

Fuse	3 A, 250 VAC, Slow-Blow, 5 x 20 mm
Input (Supervised)	120 or 240 VAC 50/60Hz
Output Voltage	24 VDC +10%, -15% Regulation over entire load range
Output Current	0 - 4 Amps
Charge Current	Fast Charge: 1.25 A Trickle Charge: 1.25 A (Voltage Limited)
Battery - Charging Type	Two 12 VDC SLA standby-batteries wired in series
Transfer Voltage	VF8115-00: 120 VAC Transfer @ 75 VAC 240 VAC Transfer @ 160 VAC

The specifications above pertain to terminations of the standby-battery at the Omega - X Panel.

AC Line Connection

Connector	Terminal	Description	Voltage	Current
TB6	**L**	AC LINE	110 to 120 VAC @ 50/60Hz 220 to 240 VAC @ 50/60Hz	2.1 A 2 A
	N	AC NEUTRAL		
	E	EARTH GROUND		
TB4	+ 24 VDC	+ 24 VDC	+ 24 VDC	0 - 4 A
	DC RTN	DC RTN	- 24 VDC	
TB3	+	+ 24 VDC	+ 24 VDC	5 A
	-	DC RTN	0 VDC	

Cabling

The following specifications identify the acceptable range of wire gages for field wiring, battery, 24 VDC and AC power connections:

SLC Wiring For Class A and B

Wire Range	Description
18 AWG	3900 Feet
16 AWG	6200 Feet
14 AWG	10,000 Feet

Power

Designation	Terminal	Wire Range	Description
AC Power	TB6 (L, N, E)	14 - 12 AWG	Line, neutral and ground connections
Battery Connection	TB3 (+ / -)	18 - 12 AWG	Positive and negative connections for the standby-batteries
24 VDC	TB4	18 - 12 AWG	Positive and negative connections for the 24 VDC connection on the 4 Amp OEM 1 Power Supply.

Cabling Construction

Grounding Conductors	Install ground conductors with 12 AWG cabling to support branch circuits of the Omega - X Panel.
Branch Circuits	Protect branch circuits from the AC power source with a 20 Amp fuse.
Material	All field wiring should be installed using fire rated cables according to the NFPA.
Cross Sectional Size	The cross sectional size of SLC cables should be determined based on length and the number of devices in use. Connect SLC cabling using a minimum of 1mm cross sectional area.

Operating Environment

Low Temperature	32 +/- 3^{o}F (0 +/- 2^{o}C)	Dry indoor use only
High Temperature	120+/- 3^{o}F (49 +/- 2^{o}C)	Dry indoor use only
Relative Humidity	93% +/- 2% @ 90 +/- 3^{o}F (32 +/- 2^{o}C)	This device functions in an atmosphere of relative humidity up to 93 percent, non-condensing.

Physical Specifications

Dimensions	24”H X 14-1/2”W X 4-3/4”D
Mounting	1/4” Maximum screw diameter

Appendix B
Equipment List

This appendix provides models and supporting equipment for the A-Series of the Shield Omega - X Panel.

Shield Omega - X Panels

The following models are provided for the Shield Omega - X Panel:

Models	Features	Color
SA-P20RX	2 Loop Panel, No Communication	Red
SA-P20GX	2 Loop Panel, No Communication	Gray
SA-P2ERX	2 Loop Panel, Omega - N Interface	Red
SA-P2EGX	2 Loop Panel, Omega - N Interface	Gray
SA-P4LRX	4 Loop Panel, Loop Expansion Module, No Communication	Red
SA-P4LGX	4 Loop Panel, Loop Expansion Module, No Communication	Gray
SA-P4ERX	4 Loop Panel, Omega - N Interface	Red
SA-P4EGX	4 Loop Panel, Omega - N Interface	Gray

“X” shown in the model numbering above denotes enclosure door type where “X” is “3” to include the printer door option or “0” to exclude the printer door option.

Loop Devices and Accessories

The following Apollo loop devices and accessories are authorized for use with the Omega - X

Air Products Models	Loop Devices	
MB-SDRT-AA	Multi-Flex Sounder Base Analog Addressable	
SL-DAA-P	2-Wire Analog Addressable Photoelectric Duct Smoke Detector	
SL-DA-4R-P	4-Wire Analog Addressable Photoelectric Duct Smoke Detector	
Shield Models	**Apollo Models**	**Loop Devices**
S-A4021	**55000-041**	Open Area Sounder, (red) XP95A
S-A4022	**55000-042**	Open Area Sounder, (white) XP95A
S-A4023	**45681-525**	Sounder Beacon Base, (amber) XP95A
S-A4024	**45681-526**	Sounder Beacon Base, (red) XP95A
S-A4049	**55000-859**	Input/ Output Module, 120 VAC, XP95A
S-A4061	**56000-005**	Manual Pull Station, Dual Action, Addressable, Polycarbonate
S-A4062	**56000-006**	Back Box, Polycarbonate
S-A4001	**45681-210**	95A Mounting Base 4"
S-A4002	**45681-211**	95A Isolator Base-SC
S-A4003	**45681-225**	95A Mounting Base 6"
S-A4004	**45681-234**	95A Low Profile Relay Base 6”
S-A4005	**45681-242**	95A Relay Base 4”
S-A4006	**45681-250**	Base 6” E-Z Fit
S-A4007	**45681-321**	95A Base 20D Isolator
S-A4041	**55000-765**	Mini Switch Monitor
S-A4051	**55000-750**	95A Isolator
S-A4042	**55000-790**	95A Dual Priority Switch Monitor Module
S-A4043	**55000-805**	95A Switch Monitor Module
S-A4044	**55000-806**	95A Priority Switch Monitor Module
S-A4045	**55000-820**	95A Switch Monitor Input/Output Module
S-A4046	**55000-825**	95A Sounder Control Module

“X” shown in the Apollo Models above denotes a variable numeric value for package color.

Shield Models	Apollo Models	Loop Devices
S-A4047	**55000-830**	95A Mini Priority Switch Monitor Module
S-A4048	**55000-831**	95A Mini Switch Monitor Module
S-A4050	**55000-863**	95A Relay Output Module
S-A4013	**55000-450**	95A Heat Detector
S-A4012	**55000-550**	Ion Smoke Detector
S-A4011	**55000-650**	Optical Smoke Detector
S-A4014	**55000-886**	Multi Sensor

Replacement Parts

The following Shield replacement parts are provided for the Omega - X

Models	Description
SA-LM2	2 Loop Expansion Module
SA-EI	Omega - N Interface
SA-DACT	Modem DACT
SA-ER	Enclosure Complete - Red
SA-EG	Enclosure Complete - Gray
SA-EDR	Enclosure Door Only - Red
SA-EDG	Enclosure Door Only - Gray
SA-EDPR	Enclosure Door Only, Printer, Red
SA-EDPG	Enclosure Door Only, Printer, Gray
SA-EBR	Enclosure Box Only - Red
SA-EBG	Enclosure Box Only - Gray
SA-PMP	Panel Mounting Plate
SA-PKL	Panel Key Lock Set
SA-PBS	Panel Bonding Strap
SA-PGB	Panel Grounding Block
SA-SO	Panel Standoff Kit
SA-RC	Panel Ribbon Cable Kit
SA-IF	Panel Main AC Input Fuse
SA-J	Battery Leads & Jumper
SH3514-00	Omega - X Installation Manual
SH3618-00	Omega - X Door Label
SH1693-00	Operating Instructions, Omega - X Panel
S2028-6	Resistor Kit (6) 10K Ohm
S2028	EOL Resistor 10K

Models	Description
S2026-8	Resistor Kit (8) Zero Ohm
S2030	EOLD for NAC outputs only
SA-EOLD	EOLD for municipal boxes
SA-CUB	Control Unit Board
SA-PAB	Panel Annunciator Board
SA-RPC	Ribbon Power Cable
SA-DC	Data Cable
SA-DTC	Dual Telephone Cable
SA-SB	Standby-Battery, 12 Volt, 7 AH, two per cabinet
SA-BC	Battery Cabinet
SA-PSU	Power Supply, 120 and 240 VAC, 24 VDC, 4 A
SA-PP	Internal Omega - X Panel Printer
SA-PR	Replacement Printer Paper - 5 Rolls
SA-PC	Internal Printer Cable Only
SA-EVR	Omega - R, Annunciator, Red
SA-EVG	Omega - R, Annunciator, Gray
SA-EVFR	Omega - R, Flush Mount Kit, Red
SA-EVFG	Omega - R, Flush Mount Kit, Gray
SA-IN	16 Channel I/O Interface
SA-GAXX-YYY	The Omega - M is a graphical annunciator. Configure features of this device to assign numeric values to part number variables XX-YYY. Specify model number SH13XX-YYY for the base version of this part. Reference Omega - M Installation Manual, SH3513-00 for configuration features of your application.

Amseco Compatible NAC Devices

The following series of Amseco NAC devices are compatible for use:

Name of Series	Environment	Model Series	Description	Mount
Select-A-Strobe/Chime	Indoor	CM24C	Chime	Ceiling
Select-A-Strobe/Chime	Indoor	SCM24C	Chime Strobe	Ceiling
Select-A-Horn	Indoor/Outdoor	H-1224	Horn	Wall
Select-A-Strobe/Horn	Indoor	SH-1224	Horn Strobe	Wall
Select-A-Strobe/Horn	Outdoor	SH-1224WP	Horn Strobe	Wall
Select-A-Strobe/Horn	Indoor	SH24C-177	H Strobe	Wall/Ceiling
Select-A-Strobe/Horn	Indoor	SH24C-3075110	Horn Strobe	Wall/Ceiling
Speaker/Strobe Square	Indoor/Outdoor	SSS-2	Speaker Strobe	Wall
Speaker/Strobe Square	Indoor/Outdoor	SSS-8	Speaker Strobe	Wall
Speaker/Strobe Round	Indoor/Outdoor	SSR-2	Speaker Strobe	Wall/Ceiling
Speaker/Strobe Round	Indoor/Outdoor	SSR-8	Speaker Strobe	Wall/Ceiling
Speaker/Strobe Round	Indoor	SSC-2	Speaker Strobe	Wall/Ceiling
Speaker/Strobe Round	Indoor	SSC-8	Speaker Strobe	Wall/Ceiling
Select-A-Strobe	Indoor	SL-1224	Strobe	Wall
Select-A-Strobe	Indoor/Outdoor	SL-1224-WP	Strobe	Wall
Select-A-Strobe	Indoor	SL24C-3075110	Strobe	Wall/Ceiling
Select-A-Strobe	Indoor	SL24C-177	Strobe	Wall/Ceiling
Bell/Select-A-Strobe	Indoor	SB24	Bell Strobe	Wall/Ceiling
Select-A-Strobe/Chime	Indoor	SCM24W-153075	Chime Strobe	Wall
Select-A-Strobe/Chime	Indoor	SCM24W-75110	Chime Strobe	Wall
Select-A-Horn	Indoor	H24W	Horn	Wall/Ceiling
Select-A-Strobe/Horn	Indoor	SH24W-1530	Horn Strobe	Wall
Select-A-Strobe/Horn	Indoor	SH24W-75110	Hor Strobe	Wall
Indoor/Outdoor Horn/Strobe	Indoor/Outdoor	SHB24-75	Horn Strobe	Wall
Speaker/Strobe	Ind	SSC25-177	Speaker Strobe	Wall/Ceiling
Select-A-Strobe/Speaker	Indoor	SSC25-3075110	Speaker Strobe	Wall/Ceiling
Speaker/Strobe	Ind	SSC70-177	Speaker Strobe	Wall/Ceiling

Name of Series	Environment	Model Series	Description	Mount
Select-A-Strobe/Speaker	Indoor	SSC70-3075110	Speaker Strobe	Wall/Ceiling
Select-A-Strobe/Speaker	Indoor	SFH45-153075	Speaker Strobe	Wall/Ceiling
Select-A-Strobe/Speaker	Indoor	SFH47-75110	Speaker Strobe	Wall/Ceiling
Select-A-Strobe	Indoor	SL24W-1530	Strobe	Wall
Select-A-Strobe	Indoor	SL24W-75110	Strobe	Wall
Indoor/Outdoor Strobe	Indoor/Outdoor	SLB24-75	Strobe	Wall
Select-A-Strobe	Indoor/Outdoor	SB24	Strobe	Wall/Ceiling
Select-A-Strobe/Horn	Indoor	SH24W-153075	Ho Strobe	Wall
Select-A-Strobe	Indoor	SL24W-153075	Strobe	Wall
Select-A-Strobe	Indoor	ASH-2475110R	Horn Strobe	Wall
Select-A-Strobe	Indoor	RSB24-153075	Strobe	Wall/Ceiling
Select-A-Strobe	Indoor	RSD24-153075	Strobe	Wall/Ceiling
Select-A-Strobe	Indoor	RSD24-75110	Strobe	Wall/Ceiling
Select-A-Strobe	Indoor	SA24 SERIES	Strobe	Wall
Select-A-Strobe	Indoor	SAD24-153075	Strobe	Wall/Ceiling
Select-A-Strobe	Indoor	SAD24-75110	Strobe	Wall

Gentex Compatible NAC Devices

The following series of Gentex NAC devices are compatible for use:

Name of Series	Environment	Model Series	Description	Mount
WSSPK Series	Outdoor	WSSPK24-15/75	Speaker Strobe	Wall
SSPK24WLP Series	Indoor	SSPK24WLP	Speaker Strobe	Wall
SSPKCLP Series	Indoor	SSPK24CLP	Speaker Strobe	Ceiling
Commander4 Series	Indoor	GCC24	Horn Strobe	Ceiling
Commander4 Series	Indoor	GCS24	Strobe	Ceiling
Commander3 Series	Indoor	GEC3-24	Horn Strobe	Wall
Commander3 Series	Indoor	GES3-24	Strobe	Wall
Commander3 Series	Indoor	GEH24	Horn	Wall
Commander2 Series	Indoor	GEC24	Horn Strobe	Wall

Name of Series	Environment	Model Series	Description	Mount
Commander2 Series	Indoor	GES24	Strobe	Wall
Commander2 Series	Indoor	GEH24	Horn	Wall
Outdoor Commander Series	Outdoor	WGEC24	Horn Strobe	Wall
Outdoor Commander Series	Outdoor	WGES24	Strobe	Wall
Outdoor Commander Series	Outdoor	GEH24	Horn	Wall
GX91/GX93 Series	Indoor	GX93	Mini Horn	Wall

Gentex Compatible NAC Devices

The following series of Gentex NAC devices are compatible for use:

Gentex Models	Gentex Part Numbers	Description
GEH24-R	904-1205-002	Horn, Wall Red (GEH)
GEH24-W	904-1207-002	Horn, Wall White (GEH)
GES3-24WR	904-1321-002	Strobe, Wall Red Multi Candela (GES3)
GES3-24WW	904-1319-002	Strobe, Wall White Multi Candela (GES3)
GEC3-24WR	904-1317-002	Horn/Strobe, Wall Red Multi Candela (GEC3)
GEC3-24WW	904-1315-002	Horn/Strobe, Wall White Multi Candela (GEC3)
GCS24CR	904-1213-002	Strobe, Ceiling Red Multi Candela (GCS)
GCS24CW	904-1215-002	Strobe, Ceiling White Multi Candela (GCS)
GCC24CR	904-1209-002	Horn/Strobe, Ceiling Red Multi Candela (GCC)
GCC24CW	904-1211-002	Horn/Strobe, Ceiling White Multi Candela (GCC)
WGEC24-75WR	904-1217-002	Weatherproof Horn/Strobe (Gentex) Red

System Sensor Compatible NAC Devices

The following series of System Sensor NAC devices are compatible :

Name of Series	Environment	Model Series	Description	Mount
SpectrAlert Advance	Indoor	SPS	Speaker Strobe	Wall
SpectrAlert Advance	Indoor	SPSC	Speaker Strobe	Ceiling
SpectrAlert Advance	Outdoor	SPS (K)	Speaker Strobe	Wall
SpectrAlert Advance	Outdoor	SPSC (K)	Speaker Strobe	Ceiling

Name of Series	Environment	Model Series	Description	Mount
SpectrAlert Advance	Indoor	P2	Horn Strobe, 2-Wire	Wall
SpectrAlert Advance	Indoor	P4	Horn Strobe, 4-Wire	Wall
SpectrAlert Advance	Indoor	S	Strobe	Wall
SpectrAlert Advance	Indoor	PC2	Horn Strobe, 2-Wire	Ceiling
SpectrAlert Advance	Indoor	PC4	Horn Strobe, 4-Wire	Ceiling
SpectrAlert Advance	Indoor	SC	Strobe	Ceiling
SpectrAlert Advance	Indoor	H	Horn	Wall/Ceiling
SpectrAlert Advance	Outdoor	P2 (K)	Horn Strobe, 2-Wire	Wall
SpectrAlert Advance	Outdoor	P4 (K)	Horn Strobe, 4-Wire	Wall
SpectrAlert Advance	Outdoor	S (K)	Strobe	Wall
SpectrAlert Advance	Outdoor	PC2 (K)	Horn Strobe, 2-Wire	Ceiling
SpectrAlert Advance	Outdoor	PC4 (K)	Horn Strobe, 4-Wire	Ceiling
SpectrAlert Advance	Outdoor	SC (K)	Strobe	Ceiling
SpectrAlert Advance	Outdoor	H (K)	Horn	Wall/Ceiling
SpectrAlert Advance	Indoor	CH	Chime	Wall/Ceiling
SpectrAlert Advance	Indoor	CHS	Chime Strobe	Wall
SpectrAlert	Indoor	CH24MC	Chime Strobe	Wall
SpectrAlert	Indoor	CH1224	Chime	Wall/Ceiling
SpectrAlert	Indoor	SP2x1224MC	Speaker Strobe	Wall
SpectrAlert	Indoor	SP3x1224MC	Speaker Strobe	Wall
SpectrAlert	Outdoor	SP2R1224MCK	Speaker Strobe	Wall
SpectrAlert		S1224MC	Strobe	Wall
SpectrAlert		P1224MC	Horn Strobe, 4-Wire	Wall
SpectrAlert		H12/24	Horn	Wall/Ceiling

Wheelock Compatible NAC Devices

The following series of Wheelock NAC devices are compatible :

Model Number Series	Description
AMT-12/24	Mutilating - 3 inputs
AMT-241575, AMT-24MCW	Mutilating Strobe - 1575cd or 15,30,75,110 cd, wall
AMT-241575	Mutilating Strobe (NYC) - 1575 cd, wall
AMT-12/24 Audible Only	Mutilating Audible only
AS-121575, AS-241575	Audible Strobe - 1575 cd, wall
AS-24MCW	Audible Strobe - 15,30,75,110 cd, wall
AS-24MCC	Audible Strobe - 15,30,75,95 cd, ceiling
AS-24MCWH	Audible Strobe - 135,185 cd, wall
AS-24MCCH	Audible Strobe - 115,177 cd, ceiling
AH-12, AH-24	Audible
ASWP-2475	Audible Strobe - 180 cd, weatherproof
AHWP	Audible - outdoor
CH70, CH90	Chime
CH70-241575	Chime - 1575 cd, wall
CH70-24MCW	Chime - 15,30,75,110 cd, wall
CH90-24MCC	Chime - 15,30,75,95 cd, ceiling
CH70-MCWH	Chime - 135,185 cd, wall
CH90-MCCH	Chime - 115,177 cd, ceiling
E50-241575W	Speaker Strobe-wall
E50-MCW	Speaker Strobe - 15,30,75,110 cd, wall
E50-MCWH	Speaker Strobe - 135,185 cd, wall
E60-24MCC	Speaker Strobe 15,30,75,95 cd, ceiling
E60-MCCH	Speaker Strobe 115/177 cd, ceiling
E70A, E70B, E90A, E90B	Speaker Strobe - amber or blue lens
E70-241575	Speaker Strobe - 1575 cd, wall
E70-24MCW	Speaker Strobe - 15,30,75,110 cd, wall
E90-24MCC	Speaker Strobe - 15,30,75,95 cd, ceiling

Model Number Series	Description
E70-24MCWH	Speaker Strobe - 135,185 cd, wall
E90-24MCCH	Speaker Strobe - 115,177 cd, ceiling
ET70-241575	Speaker Strobe - 1575 cd, wall
ET70-24MCW	Speaker Strobe - 15,30,75,110 cd, wall
ET90-24MCC	Speaker Strobe - 15,30,75,95 cd, ceiling
ET70-24MCWH	Speaker Strobe - 135,185 cd, wall
ET90-24MCCH	Speaker Strobe - 115,177 cd, ceiling
ET80-24MCW	Speaker Strobe - vandal resist, 15,30,75,110 cd, wall
ET80-24MCWH	Speaker Strobe - vandal resist, 135,185 cd, wall
ET70WP-2475	Speaker Strobe - weatherproof
HS-24	Audible
HS4-241575	Audible Strobe - 1575 cd, wall
HS4-24MCW	Audible Strobe - 15,30,75,110 cd, wall
HS4-24MCWH	Audible Strobe - 135,185 cd, wall
MIZ-24S	Mini Horn - continuous, code-3, sync
MT	Multitone
MT-121575, MT-241575, MT-24MCW	Multitone Strobe - 1575 cd or 15,30,75,110 cd, wall
MTWP-2475	Multitone Strobe - weatherproof
MTWP B or A	Multitone Strobe - weatherproof-Blue or Amber lens
NH	Audible
NS-24MCC	Audible Strobe - 15,30,75,95 cd, ceiling
NS-24MCCH	Audible Strobe - 115, 177 cd, ceiling
NS-24MCW	Audible Strobe - 15,30,75,110 cd, wall
NS-121575, NS-241575	Audible Strobe - 1575 cd, wall
RSS-121575	Strobe-15,75 cd, wall
RSS-241575, RSSP-241575	Strobe - 15,75 cd, wall
RSS-24MCW, RSSP-24MCW	Strobe - 15,30,75,110 cd, wall
RSS-24MCC, RSS-24MCCR	Strobe - 15,30,75,95 cd, ceiling, round or square
RSS-24MCWH, RSSP-24MCWH	Strobe - 135,185 cd, wall

Model Number Series	Description
RSS-24MCCH, RSS-24MCCHR	Strobe - 115,177 cd, ceiling, round or square
S8, S8-24MCC, S8-24MCCH	Speaker or Speaker Strobe - 8-inch, ceiling
SA-S90-24MCC	Speaker Strobe - amplified, 15,30,75,95 cd, ceiling
SA-S70-24MCW	Speaker Strobe - amplified, 15,30,75,115 cd, wall
STH w/opt strobe	Cluster Speakers - with optional DC-MAX strobe
STH MCCH	Cluster Speakers - with 115/177 cd strobe
STH-4R24MCCH110	Cluster Speaker with three strobes
STx	Strobe - 15,15/75,30,75,95,110,135,185 cd, wall
STxC	Strobe - 15,30,60,75,95,115,150,177 cd, ceiling
HSx	Audible Strobe - 15,15/75,30,75,95,110,135,185 cd, wall
HSxC	Audible Strobe - 15,30,60,75,95,115,150,177 cd, ceiling
HNx	Audible, wall
HNxC	Audible, ceiling

Wheelock Models	Description
AH-24-R	Horn, Red (AH)
AH-24-W	Horn, White (AH)
AH-24WP-R	Weatherproof Horn, Red (AH)
NH-12/24-R	Horn, Red (NH)
NH-12/24-W	Horn, White (NH)
MT-12/24-R	Multi Tone Flush Red
MT-12/24-W	Multi Tone Flush White
AMT-12/24-R	Audible Multi Tone Addressable Red
AMT-12/24-W	Audible Multi Tone Addressable White
CH70-24-R	Chime Square, Red
CH70-24-W	Chime Square, White
CH90-24-W	Chime Round White

Wheelock Models	Description
RSS-24MCW-FR	Strobe Wall Multi-Candela Red (RSS)
RSS-24MCW-FW	Strobe Wall Multi-Candela White (RSS)
RSS-241575W-FR	Strobe Wall Mount Red 15/75 cd
RSS-241575W-FW	Strobe Wall Mount White 15/75cd
RSS-24150W-FR	Strobe Wall Mount Red 150cd
RSS-24177W-FR	Strobe Wall Mount Red 177 cd
RSS-24185W-FR	Strobe Wall Mount Red 185cd
RSS-24MCC-FR	Strobe Ceiling Multi-Candela, Red (RSS)
RSS-24MCC-FW	Strobe Ceiling Multi-Candela, White (RSS)
RSS-24MCCR-FR	Strobe Ceiling Multi-Candela, Round, Red (RSS)
RSS-24MCCR-FW	Strobe Ceiling Multi-Candela, Round, White (RSS)
RSS-24MCCH-FR	Strobe Ceiling, 115/177cd, Red (RSS)
RSS-24MCCH-FW	Strobe Ceiling, 115/177cd, White (RSS)
RSS-24MCCHR-FR	Strobe Red Multi Ceiling Round 115/177 cd
RSS-24MCCHR-FW	Strobe White Multi Ceiling Round 115/177 cd
RSS-24MCWH-FR	Strobe, Wall, 135/185cd, Red (RSS)
RSS-24MCWH-FW	Strobe, Wall, 135/185cd, White (RSS)
RSS-24150C-FW	Strobe Ceiling Mount White 150cd
RSS-35288C-FW	Strobe Ceiling Mount White 177cd
RSS-2415CR-FR	Strobe Ceiling Mount Round Red 15cd
RSS-2415CR-FW	Strobe Ceiling Mount Round White 15cd
RSS-2430CR-FR	Strobe Ceiling Mount Round Red 30cd
RSS-2430CR-FW	Strobe Ceiling Mount Round White 30cd
RSS-2475CR-FR	Strobe Ceiling Mount Round Red 75cd
RSS-2475CR-FW	Strobe Ceiling Mount Round White 75cd
RSS-24100CR-FR	Strobe Ceiling Mount Round Red 100cd
RSS-24100CR-FW	Strobe Ceiling Mount Round White 100cd
RSS-24150CR-FW	Strobe Ceiling Mount Round White 150cd
RSS-24177CR-FW	Strobe Ceiling Mount Round White 177cd

Wheelock Models	Description
RSSWP-2475W-FR	Strobe Wall Weatherproof, 75cd, Red
RSSP-24MCW-FR	Strobe Retro Multi-Candela, Red
RSSP-24MCW-FW	Strobe Retro Multi-Candela, White
RSSP-241575W-FR	Strobe Wall Mount Retrofit Plate Red 15/75cd
RSSP-24150W-FR	Strobe Wall Mount Retrofit Plate Red 150cd
RSSP-24177W-FR	Strobe Wall Mount Retrofit Plate Red 177cd
RSSP-24185W-FR	Strobe Wall Mount Retrofit Plate Red 185cd
RSSP-24MCWH-FR	Strobe Wall Mt Red Multi cd 135/185
NS-24MCW-FR	Horn/Strobe, Multi-Candela, Red (NS)
NS-24MCW-FW	Horn/Strobe, Multi-Candela, White (NS)
NS-241575W-FR	Horn/Strobe Wall Mount Flush Red 15/75cd
NS-241575W-FW	Horn/Strobe Wall Mount Flush White 15/75cd
HS4-24MCW-FR	Horn/Strobe 4-Wire, Multi-Candela, Red (NS)
HS4-24MCW-FW	Horn/Strobe 4-Wire, Multi-Candela, White (NS)
HS4-24MCWH-FR	Horn/Strobe Wall 4 Wire Red 135/185 cd
HS4-24MCWH-FW	Horn/Strobe Wall 4 Wire White 135/185 cd
NS-24MCCH-FR	Horn/Strobe, Ceiling, Round, 115/177cd, Red
AS-24MCW-FR	Horn/Strobe, Wall, Multi-Candela, Red (AS)
AS-24MCW-FW	Horn/Strobe, Wall, Multi-Candela, White (AS)
AS-241575W-FR	Audible Strobe Wall Mounted Red 15/75cd
AS-241575W-FW	Audible/Strobe Wall Mounted White 15/75cd
AS-241575W-FW	Audible Strobe Wall Mounted White 15/75cd
ASWP-2475W-FR	Weatherproof Horn/Strobe, Red (AS)
MT-241575W-FR	Audible Multi Tone Strobe Flush Red 15/75cd
MT-2475W-FR	Audible Multi Tone Strobe Flush Red 75cd
MTWP-2475W-FR	Audible Multi Tone Strobe Weatherproof Red 75cd
AMT-241575W-FR	Audible Multi Tone/Strobe Red 15/75cd
AMT-2475W-FR	Audible Multi Tone/Strobe Red 75cd
AS-24MCC-FR	AS Audible Strobe

Wheelock Models	Description
AS-24MCC-FR	Horn/Strobe, Ceiling, Multi-Candela, Red (AS)
AS-24MCC-FW	Horn/Strobe, Ceiling, Multi-Candela, White (AS)
AS-24MCCH-FR	Horn/Strobe, Ceiling, 115/177, Red (AS)
AS-24MCCH-FW	Horn/Strobe, Ceiling, 115/177, Red (AS)
AS-24MCWH-FR	Horn/Strobe, Wall, 135/185, Red (AS)
AS-24MCWH-FW	Horn/Strobe, Wall, 135/185, White (AS)
HSR	Exceder Multi-Candela Horn / Strobe Red Wall Mount
HSW	Exceder Multi-Candela Horn / Strobe White Wall Mount
HSRC	Exceder Multi Candela Horn / Strobe Ceiling Mount Red
HSWC	Exceder Multi Candela Horn / Strobe Ceiling Mount White
STR	Exceder Multi Candela Strobe Wall Mount Red
STW	Exceder Multi Candela Strobe Wall Mount White
STRC	Exceder Multi Candela Strobe Ceiling Mount Red
STWC	Exceder Multi Candela Strobe Ceiling Mount White
HNR	Exceder Horn - Red / Wall Mount
HNW	Exceder Horn - White / Wall Mount
HNRC	Exceder Horn - Red / Ceiling Mount
HNWC	Exceder Horn - White / Ceiling Mount
CH70-24MCW-FR	Chime/Strobe, Wall, Multi-Candela, Red (CH)
CJ70-24MCW-FW	Chime/Strobe, Wall, Multi-Candela, White (CH)
CH70-24MCWH-FR	Chime/Strobe Red Wall 135/185 cd
CH70-24MCWH-FW	Chime/Strobe White Wall 135/185 cd
CH70-241575-FR	Chime/Strobe Square Red 15/75cd
CH70-241575W-FW	Chime/Strobe Square White 15/75cd
CH90-24MCC-FR	Chime/Strobe, Ceiling, Multi-Candela, Red (CH)
CH90-24MCC-FW	Chime/Strobe, Ceiling, Multi-Candela, White (CH)
CH90-2475C-FW	Chime/Strobe Round White 75cd
CH90-24100C-FW	Chime/Strobe Round White 100cd
CH90-24MCCH-FW	Chime/Strobe White Round 15/30/75/95 cd

Wheelock Models	Description
E70-24MCW-FR	Speaker/Strobe, Wall, Multi-Candela, Red (E Series)
E70-24MCW-FW	Speaker/Strobe, Wall, Multi-Candela, White (E Series)
E70-24MCWH-FR	Speaker/Strobe, Wall, 135/185, Red (E Series)
E70-24MCWH-FW	Speaker/Strobe, Wall, 135/185, White (E Series)
E70-241575W-FR	Speaker/Strobe Square 2 watt Red 15/75cd
E70-241575W-FW	Speaker/Strobe Square 2 watt White 15/75cd
E50-24MCW-FR	Speaker/Strobe Wall Mount 2 Watt Multi Candela Red
E50-24MCW-FW	Speaker/Strobe Wall Mount 2 Watt Multi Candela White
E90-24MCC-FR	Speaker/Strobe Round 2 watt Multi-Candela 15/30/75/110 Red
E90-254MCC-FW	Speaker/Strobe Round 2 watt Multi-Candela 15/30/75/110
E90-24MCCh-FW	Speaker/Strobe Ceiling White 115/177 cd
E50-241575W-FR	Speaker/Strobe Square 2 Watt Red 15/75cd
E50-241575W-FW	Speaker/Strobe Square 2 Watt White 15/75cd
E50-24MCWH-FR	Speaker/Strobe Wall Mount 2 Watt High Multi Candela Red
E50-24MCWH-FW	Speaker/Strobe Sq 2 Watt Multi Candela White 135/185
ET70-24MCW-FR	Speaker/Strobe, Wall, Multi-Candela, Red (ET Series)
ET70-24MCW-FW	Speaker/Strobe, Wall, Multi-Candela, White (ET Series)
ET70-24MCWH-FR	Speaker/Strobe Wall Red 135/185 cd
ET70-24MCWH-FW	Speaker/Strobe Wall White 135/185 cd
ET7-241575W-FR	Speaker/Strobe Square 8 watt Red 15/75cd
ET70-241575W-FW	Speaker/Strobe Square 8 watt White 15/75cd
E60-MCC-FR	Speaker/Strobe Ceiling Mount 2 Watt Multi Candela Red
E60-24MCC-FW	Speaker/Strobe Ceiling Mount 2 Watt Multi Candela White
E60-24MCCH-FR	Speaker/Strobe Ceiling Mount 2 Watt High Multi Candela Red
E60-24MCCH-FW	Speaker/Strobe Ceiling Mount 2 Watt High Multi Candela White
ET70WP-2475W-FR	Weatherproof Speaker Strobe, Wall
ET90-24MCC-FW	Speaker/Strobe, Ceiling, Multi-Candela, Red (ET Series)
ET90-24MCCH-FW	Speaker/Strobe White Ceiling 8 Watt 115/177 cd
ET90-24150C-FW	Speaker/STrobe Round 8watt White 150cd

Wheelock Models	Description
ET90-24177C-FW	Speaker/Strobe Round 8 watt White 177cd
ET-1080-LS-24-V	Speaker/Strobe Vandal-Proof 8watt Flush Red 15cd
ET-1080-LS-24-V	Speaker/Strobe Vandal-Proof 8 Watt Flush White 15cd
ET-1080-LSM-24-	Speaker/Strobe Vandal-Proof 8watt Flush Red 15/75cd
ET-1080-LSM-24-	Speaker/Strobe Vandal Proof 8 Watt Flush White 15/75cd
ET-1080-MS-24-V	Speaker/Strobe Vandal Proof 8watt Flush Red 30cd
ET-1080-MS-24-V	Speaker/Strobe Vandal Proof 8watt Flush White 30cd
ET-108-IS-24-VF	Speaker/Strobe Vandal Proof 8 watt Flush Red 75cd
ET-1080-IS-24-V	Speaker/Strobe Vandal Proof 8 watt Flush White 75cd
ET-1080-SLM-24-	Speaker/Strobe Vandal Proof 8watt Flush Red 15/75cd
ET-1080-SLM-24-	Speaker/Strobe Vandal Proof 8 watt Flush White 15/75cd
MIZ-24S-R	Mini Horn, Red
MIZ-24S-W	Mini Horn, White
PS-24-8MC	NAC Extender, 8 Amp, 4 Output, Red

This page intentionally left blank

This page intentionally left blank

Authorized Special Application Devices

Manufacturer	Sync Module	Horn/ Strobe	Maximum Number Of Strobes Per NAC Output	Maximum Line Impedance
System Sensor	MDL	P1224MC	42 @ 2.5 A	2 OHMS
Gentex	AVSMR	GEC3-24WR	32 @ 2.5 A	2 OHMS
Gentex	AVS-44R	GEC3-24WR	32 @ 2.5 A	2 OHMS
Wheelock	DSM-24	RSS-24MCW	41 @ 2.5 A	2 OHMS
Amseco	SMD10-3A	SH24W-153075	28 @ 2.5 A	2.5 OHMS

The values shown above for maximum number of strobes and line impedance are worst case conditions. Authorized special application devices have been tested with the Omega - X Panel for compliance with UL 864, 9th edition. The Omega - X Panel is suitable for single circuit synchronization only.

Appendix C
Calculations

This section describes current-loading and the process for determining the standby-battery rating and the NAC wiring length.

Current-Loading

Current-loading of the Omega - X Panel is limited to the capacity of the 4 Amp OEM 1 power supply. FACP installers must determine the loading placed on the power supply by adding the sum of device-loads to the no-load-alarm current of the Omega - X Panel. The result obtained from this calculation must be below 4 Amps of the 4 Amp OEM 1 power supply so that the Omega - X Panel can operate.

The power supply of the Omega - X is rated at 4 Amp OEM 1s where 1.25 Amps is reserved for charging the standby-batteries and 4 Amps is reserved for operating the control panel and external loads. The 4 Amp reserve of the 4 Amp OEM 1 power supply is the maximum current capacity of the Omega - X Panel. The control panel will not function properly if the operating current of 4 Amps is exceeded.

Current limits are provided in *Appendix A, "Specifications"* for each of the circuit-connections on the Omega - X Panel. Installers must identify the current-draw of each device on the circuit-connection and then compare the sum of these device-currents with the current limit provided for each of the circuit-connections. The total of device-currents must be below the limits provided in *Appendix A, "Specifications"* for each circuit-connection.

The calculation of total-current-loading must include the sum of device-loads on each of the Omega - X circuits. Circuits to be included in this calculation for total-current-loading are:

- Panel standby and alarm currents
- SLC Loops
- NAC Outputs

The current limits provided in Appendix A, "Specifications" are maximums for each of the circuit-connections on the Omega - X Panel. These levels are not intended to be summed together to determine the total-current available from the Omega - X Panel. Refer to these levels only when determining the limit of device-loading on each circuit.

The following example demonstrates the process for determining the total load-current of the Omega - X Panel:

1 Identify the current-draw of each device on the circuit-connection.

2 Add the device-currents together in each circuit-connection.

3 Compare the sum of the device-currents with the current-limit of each circuit-connection to verify that the summed level is below the current-limit value.

4 Add the device-load-currents together that were obtained for each of the circuit-connections:

Circuit-Connection	Current Limit	Device Load Current
SLC Loop 1	250 mA	150 mA
SLC Loop 2	250 mA	50 mA
24V OUT	360 mA	0
AUX 24V	360 mA	0
NAC Channel 1	1.6 A continuous VDC or 900 mA pulse VDC	750 mA continuous VDC
NAC Channel 1	1.6 A continuous VDC or 900 mA pulse VDC	0
Total Device Load		950 mA

5 Add the Total Device Load to the no-load-alarm current of the Omega - X to obtain the Total-Load-Current. Total Device Load + Omega - X No-Load = Total-Load-Current

950 mA + 200 mA = 1.15 A

Total Load Current: 1.15 A

6 Verify that the current level is below 4 Amps:

1.15 A < 4 A

This example demonstrates that device-loading *does not exceed* the current capacity of the Omega - X power supply.

Determining the Standby-Battery Rating

This section provides guidelines for determining the standby-battery rating of the Omega - X Panel.

Battery Rating Equation

The equation below describes the process for determining the Amp-Hour Rating of the standby-batteries:

Battery Rating = (Battery Derating Factor) x [(Standby Amp Hours) + (Alarm Amp Hours)]

Or

Battery Rating = (Battery Derating Factor) x [(24 Hours x Standby-Current) + (5 Minutes x alarm current)]

Where the Battery Derating Factor = 1.2 and 5 minutes = 5 / 60 minutes = 1/12 = .0833 hours.

To determine the battery Amp-Hour-Rating:

1. Record the standby and alarm currents of Devices.
2. Record the standby and alarm currents of NAC Devices.
3. Record the standby and alarm currents of Auxiliary Devices.
4. Total the standby and alarm currents of SLC 1, SLC 2, NAC 1, NAC 2, AUX 24V and 24V OUT.
5. Calculate the Total Standby Amp Hours.
6. Calculate the Total Alarm Amp Hours.
7. Determine Total Amp-Hours by adding the Total Standby Amp Hours with the Total Alarm Amp Hours.
8. Determine the minimum Amp-Hour-Rating for the battery by multiplying the Total Amp-Hours with the Derating Factor (1.20).
9. Select a battery with a rating equal to or greater than the minimum Amp-Hour-Rating determined in step 8.

Complete the worksheets on the following pages to tabulate the total-current-load of the FACP system and to determine the minimum Amp-Hour-Rating for the standby-batteries.

Compare the sum of currents drawn by devices of the system and compare these to the values listed in the table of Appendix C. Select a corresponding standby-battery based on this comparison.

Devices

Description	Quantity	Device State	Device Current (Amps)	Total Current (Amps)
Omega - X Panel - 1 Loop		Standby	200 mA	
		Alarm	200 mA	
Optical Smoke Sensor		Standby		
		Alarm		
Ion Smoke Sensor		Standby		
		Alarm		
95A Heat Sensor		Standby		
		Alarm		
Two-Wire Duct Detector		Standby		
		Alarm		
Four-Wire Duct Detector		Standby		
		Alarm		
95A Sounder Control Module		Standby		
		Alarm		
Mini Switch Monitor		Standby		
		Alarm		

Description	Quantity	Device State	Device Current (Amps)	Total Current (Amps)
95A Switch Monitor Module		Standby		
		Alarm		
95A Relay Output Module		Standby		
		Alarm		
95A Isolator		Standby		
		Alarm		
Total Standby				
Total Alarm				
Total Current				

NAC Devices

NAC DeviceS	Total Standby Current (Amps)	Total Alarm Current (Amps)
NAC 1		
NAC 2		
NAC 3		
NAC 4		

Auxiliary Devices

DeviceS	Total Standby Current (Amps)	Total Alarm Current (Amps)
Total Current		

Tabulating Data

	Category	Instruction	Standby-Current	Alarm-Current
1	Devices	Enter the total standby and alarm current for Devices.	Amps	Amps
2	NAC Devices	Enter the total standby and alarm current for NAC Devices.	Amps	Amps
3	Auxiliary Devices	Enter the total standby and alarm current for Auxiliary Devices.	Amps	Amps
4	Total Standby and Alarm Current	Total the Standby Current of steps 1, 2 and 3. Total the Alarm Current of steps 1, 2 and 3.	Amps	Amps
5	Total Standby Time	Enter a Total Standby Time of 24 or 60 hours.	Hours	
6	Total Standby Amp-Hours	Multiply the Total Standby Time of step 5 by the Total Standby Current of step 4.	AH	
7	Total Alarm Time	Enter a Total Alarm Time in hours, where 5 minutes = .083 hours and 15 minutes = .25 hours.		Hours
8	Total Alarm Amp Hours	Multiply the Total Alarm Time in step 7 with the Total Alarm Current of step 4.		AH
9	Total Amp-Hours	Add the Total Alarm Amp Hours of step 8 with the Total Standby Amp Hours of step 6.		AH
10	Derating factor	The Derating Factor is 1.20.		1.20
11	Minimum Battery Amp-Hour Rating	Multiply the Derating Factor of step 10 (1.20) by the Total Amp-Hours of step 9. The Amp-Hour-Rating of the battery selected must be equal to or greater than the minimum Amp-Hour-Rating obtained in this step. Note: The Maximum battery size is 52.		AH

NAC Wiring Length

Determine the maximum wire length that can safely operate Notification Appliances under worst case conditions. To determine the maximum wire length under worst case conditions:

1 Identify the minimum operating-voltage (Vop_{min}) of Notification Appliances on the NAC channel.

2 Calculate the maximum current of the circuit (I_{max}).

3 Identify the wire-resistance-per-foot of the circuit (R_{wire}).

4 Calculate the maximum wire length (L_{max}) of the circuit.

Sample L_{max} Calculation

Determine the maximum wire length (L_{max}) for three Notification Appliances on NAC channel 1 where,

- The manufacturer data sheet for the strobe indicates that the minimum operating-voltage (Vop_{min}) is 16 VDC.
- The manufacturer data sheet for the strobe indicates that the maximum current-draw (I_{strobe}) is 209mA DC.
- The circuit connection is provided with 18 AWG solid-copper-wire.
- The EOLD in the circuit is 10K Ohms.

To determine the maximum wire length (L_{max}) of this circuit:

1 Identify the minimum operating-voltage (Vop_{min}) of the strobe from the manufacturer data sheet. From the manufacturer data sheet:

$V_{opmin} = 16$ VDC

2 Calculate the total current of the parallel devices in the circuit (I_{total})where,

$[I_{total} = I_{strobe\_1} + I_{strobe\_2} + I_{strobe\_3} + (Vop_{min} / EOLD)]$

$= [(.209 + .209 + .209 + 16 / 10K)] A$

$= (.627 + .0016) A$

$I_{total} = .6286$ A

3 Identify the maximum resistance of the wire gage used in the circuit ($R_{wiremax}$) when using 18 AWG copper. An 18 AWG solid copper wire is 6.385 Ohms at 1000FT using the Resistance Table below:

Gage	Resistance / 1000Ft @ 68F	R_{wire}
18 AWG	**6.385 Ohms**	**0.006385 Ohms / FT**
16 AWG	4.016 Ohms	0.004016 Ohms / FT
14 AWG	2.525 Ohms	0.002525 Ohms / FT

4 The calculation for the minimum output voltage of the NAC is:

$V_{outmin} = V_{panel} \times 85\%$

$= 24 \text{ VDC} \times 85\%$

$V_{outmin} = 20.4 \text{ VDC}$

5 The calculation for voltage-drop across the length of the wire is:

$V_{drop} = V_{outmin} - V_{opmin}$

$= 20.4 \text{ VDC} - 16 \text{ VDC}$

$V_{drop} = 4.4 \text{ VDC}$

6 The calculation for maximum wire length of this circuit is:

$L_{max} = 1/2 \, (V_{drop} / I_{max}) / R_{wire}$

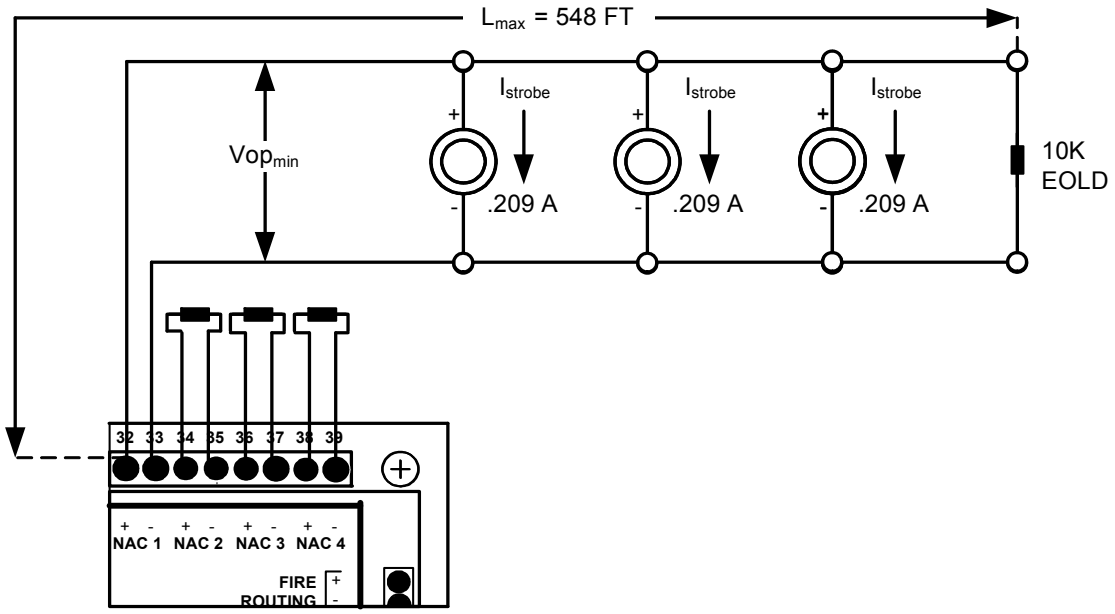
where,

$= 1/2 \, [\, (4.4 / .6286) / (.006385 \text{ Ohms / FT}) \,]$

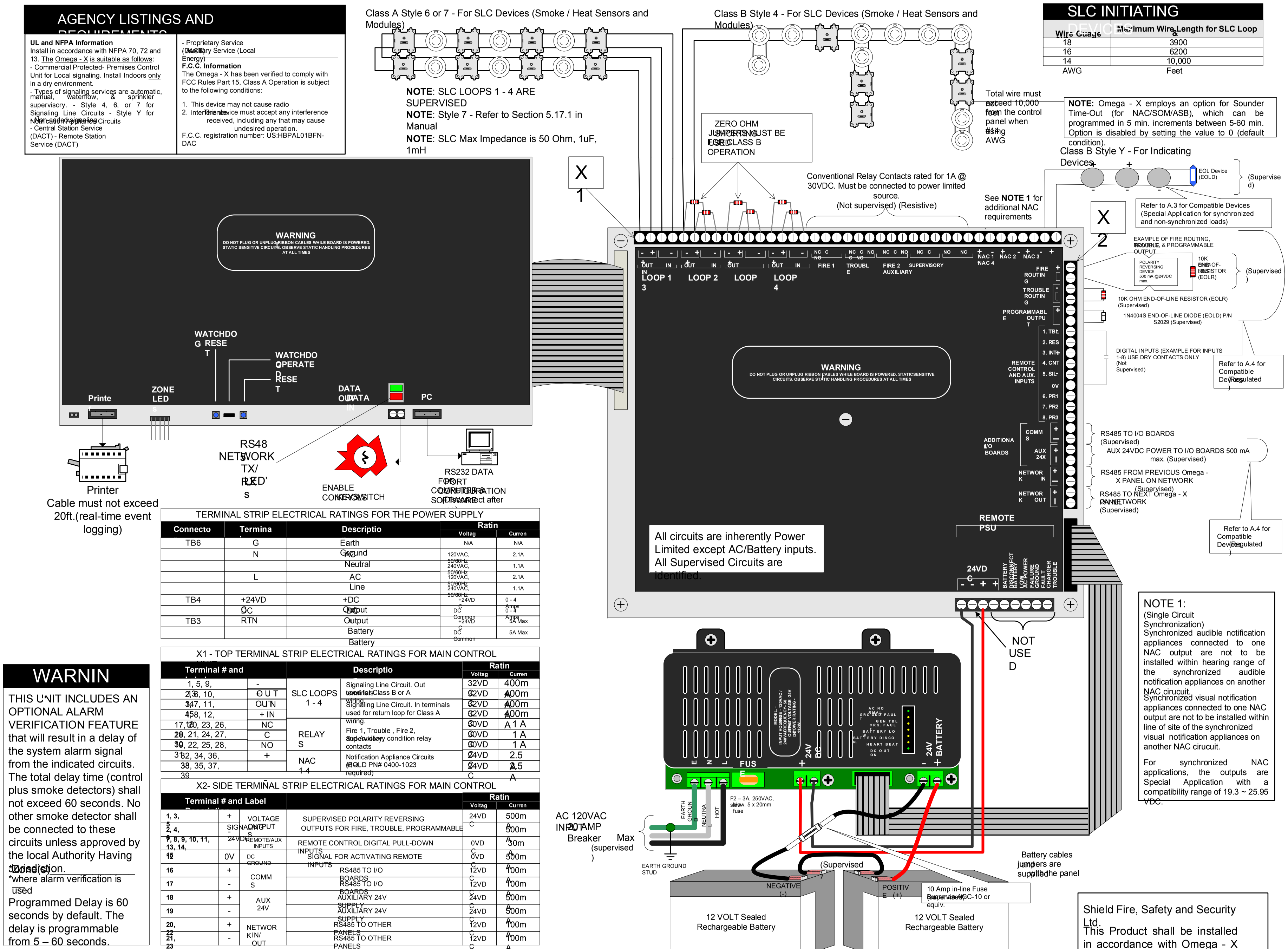
$L_{max} = 548 \text{ FT}$

The figure below illustrates an example circuit for determining maximum wire length where values are provided for minimum operating-voltage of the NAC channel output (Vopmin), maximum current of the circuit (Imax), wire-resistance-per-foot of the circuit (Rwire) and maximum current-draw of the strobe (Istrobe):

Figure C-1
Example Circuit For Determining Maximum Wire Length



This page intentionally left blank.



TERMINAL STRIP ELECTRICAL RATINGS FOR THE POWER SUPPLY

Connector	Terminal	Description	Rating: Voltage	Rating: Current
TB6	G	Earth Ground	N/A	N/A
	N	AC Neutral	120VAC, 50/60Hz	2.1A
			240VAC, 50/60Hz	1.1A
	L	AC Line	120VAC, 50/60Hz	2.1A
			240VAC, 50/60Hz	1.1A
TB4	+24VDC	+DC Output	+24VDC	0 - 4 Amps
	DC	DC Output	DC Common	0 - 4 Amps
TB3	RTN	Battery	+24VDC	5A Max
		Battery	DC Common	5A Max

X1 - TOP TERMINAL STRIP ELECTRICAL RATINGS FOR MAIN CONTROL

Terminal # and Label			Description	Rating: Voltage	Rating: Current
1, 5, 9, 13	- OUT	SLC LOOPS 1 - 4	Signaling Line Circuit. Out terminals Class B or A	32VDC	400mA
2, 6, 10, 14	+ OUT			32VDC	400mA
3, 7, 11, 15	- IN		Signaling Line Circuit. In terminals used for return loop for Class A wiring.	32VDC	400mA
4, 8, 12, 16	+ IN			32VDC	400mA
17, 20, 23, 26	NC	RELAYS	Fire 1, Trouble , Fire 2, Supervisory / Auxiliary condition relay contacts	30VDC	1 A
18, 21, 24, 27	C			30VDC	1 A
19, 22, 25, 28	NO			30VDC	1 A
31, 32, 34, 36	-	NAC 1-4	Notification Appliance Circuits (EOLD PN# 0400-1023 required)	24VDC	2.5 A
38, 35, 37, 39	+			24VDC	2.5 A

X2- SIDE TERMINAL STRIP ELECTRICAL RATINGS FOR MAIN CONTROL

Terminal # and Label			Description	Rating: Voltage	Rating: Current
1, 3, 5	+	VOLTAGE SIGNAL OUTPUTS	SUPERVISED POLARITY REVERSING OUTPUTS FOR FIRE, TROUBLE, PROGRAMMABLE	24VDC	500mA
2, 4, 6	-				500mA
7, 8, 9, 10, 11, 12, 13, 14	24VDC	REMOTE/AUX INPUTS	REMOTE CONTROL DIGITAL PULL-DOWN INPUTS	0VDC	30mA
15	0V	DC GROUND	SIGNAL FOR ACTIVATING REMOTE INPUTS	0VDC	500mA
16	+	COMMS	RS485 TO I/O BOARDS	12VDC	100mA
17	-		RS485 TO I/O BOARDS	12VDC	100mA
18	+	AUX 24V	AUXILIARY 24V SUPPLY	24VDC	500mA
19	-		AUXILIARY 24V SUPPLY	24VDC	500mA
20, 22	+	NETWORK IN/OUT	RS485 TO OTHER PANELS	12VDC	100mA
21, 23	-		RS485 TO OTHER PANELS	12VDC	100mA

Shield Omega - X WIRING DIAGRAM

P/N SH3518-00 DATE 21-March-2014

This page intentionally left blank.

OPERATING INSTRUCTIONS

OPERATING INSTRUCTIONS FOR ALL MODELS OF THE Omega - X

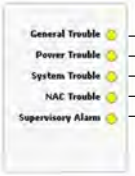
PATENT PENDING

LED INDICATORS

LEFT LED INDICATORS

Key	LED	Color	LED Lit
A	Fire (2)	Red	An alarm or fire drill condition exists. The status condition is provided on the LCD display. The e-LAN buzzer sounds intermittently. Output relays are activated. • Flashing = NACs Activated • On Continuous= NACs silenced • OFF = Panel and NACs Reset
B	AC Power On	Green	AC power is on.
C	Pre-Alarm	Yellow	A pre-alarm condition exists. Pre-alarm status is provided on the LCD display. The e-LAN buzzer sounds continuously.
D	Fire Output Active	Red	An open or short condition exists at the Fire Routing connection located at X2 terminals 1 and 2.
E	On Test	Yellow	A test is in progress
F	Panel Sounder Silenced	Yellow	The Panel Sounder Silence button was depressed. NAC outputs are not affected.
G	Delay Active	Yellow	Warning sounders have been delayed during a fire condition. Press the Alarm Silence button to mute or extend the delay to a second stage delay.
H	More Events	Yellow	A non-fire alarm event exists. The e-LAN buzzer sounds continuously.
I	Point Bypassed	Yellow	LCD menu options have been used to disable devices.

RIGHT LED INDICATORS



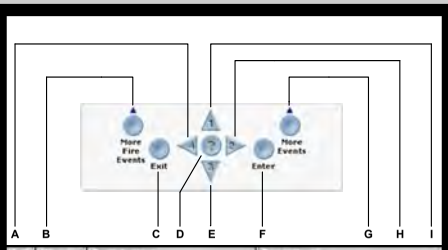
Key	LED	Color	Description
A	General Trouble	Yellow	A General Trouble condition exists when flashing. The General Trouble condition is identified by other lit LEDs. Status is provided on the LCD display. The e-LAN buzzer sounds continuously.
B	Power Trouble	Yellow	A Power Trouble exists. Status is provided on the LCD display. The e-LAN buzzer sounds continuously.
C	System Trouble	Yellow	A system device or circuit is faulty or is disabled. Press the Panel Sounder Silence button to silence the e-LAN buzzer.
D	NAC Trouble	Yellow	A NAC Trouble exists at X1 terminals 32 through 39. Connections at this location are faulty or disabled.
E	Supervisory Alarm	Yellow	Status is provided on the LCD display. The e-LAN buzzer sounds continuously.

SHIELD

LABEL PART NUMBER: SH1693-00, REVISION E04.02
DATE: July 2013

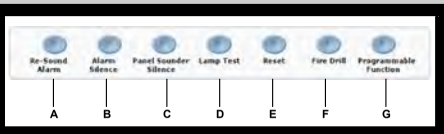
CONTROLS

UPPER CONTROLS



Key	Name	Description	Operation
A	4	Navigates menu selections left.	Press 4 to navigate menu selections left.
B	More Fire Events	Displays the number of alarms present and overrides the display provided by menu navigation. Provides event status for fires.	1 Press the More Fire Events button. 2 Read event on LCD. 3 Press 3 to scroll through events. 4 Press 2 to display event. 5 Press 3 to scroll through events.
C	Exit	Cancels the current menu selection and returns to the main menu.	Press Exit to cancel the current menu selection and return to the main menu.
D	?	Provides a "help screen" for the current menu display and also displays status.	Press ? to provide status for the existing LCD display.
E	3	Navigates menu selections down.	Press 3 navigate menu selections down.
F	Enter	Enables the menu selection.	Press Enter to enable the menu selection.
G	More Events	Displays the number of events and overrides menu navigation. Provides event status for non-fire alarm events.	1 Press the More Events button. 2 Read event on LCD. 3 Press 3 to scroll through events. 4 Press 2 to display event. 5 Press 3 to scroll through events.
H	2	Navigates menu selections right.	Press 2 to navigate menu selections right.
I	1	Navigates menu selections up.	Press 1 to navigate menu selections up.

LOWER CONTROLS



Key	Name	Description	Operation
A	Re-Sound Alarm	Re-sounds e-LAN alarm after the condition is silenced by the Panel Sounder Silence button. Re-sounds NAC alarms silenced by the Alarm Silence button.	1 Press 3 to display "SET ACCESS LEVEL 2 MENU". 2 Provide Access Level 2 authorization. 3 Press Enter 4 Press the Re-Sound Alarm button.
B	Alarm Silence	Silences NACs. Also silences the e-LAN buzzer during the Fire Drill test, troubles and alarms.	1 Press 3 to display "SET ACCESS LEVEL 2 MENU". 2 Provide Access Level 2 authorization. 3 Press Enter 4 Press the Alarm Silence button.
C	Panel Sounder Silence	Mutes the e-LAN buzzer only.	Press the Panel Sounder Silence button.
D	Lamp Test	Tests the e-LAN LEDs, the LCD and the internal buzzer.	Press the Lamp Test button to illuminate all LEDs, darken the front-panel display and sound the e-LAN buzzer.
E	Reset	Resets latching inputs such as fire and pre-alarm events.	1 Press 3 to display "SET ACCESS LEVEL 2 MENU". 2 Provide Access Level 2 authorization. 3 Press Enter 4 Press the Reset button.
F	Fire Drill	Provides a panel Fire Drill. The Fire Drill button can also be configured to perform other functions.	1 Press 3 to display "SET ACCESS LEVEL 2 MENU". 2 Provide Access Level 2 authorization. 3 Press Enter. 4 Press the Fire Drill button. To stop the fire drill: 1 Press 4 to display the "SET ACCESS LEVEL 2 MENU". 2 Provide Access Level 2 authorization. 3 Press Reset or Fire Drill.
G	Programmable Function	The Programmable Function button can be configured to perform other functions.	Requires ACCESS LEVEL 3 to configure the button.

REFERENCE MATERIAL

Omega - X A INSTALLATION MANUAL, VF3514-00, REV. E02.XX

INSTRUCTION PLACEMENT

FRAME THESE INSTRUCTIONS AND PLACE THEM ADJACENT TO THE CONTROL UNIT FOR READY REFERENCE.

IN THE EVENT OF TROUBLE

CONTACT:	
NAME:	
ADDRESS:	
CITY:	
STATE:	
ZIP:	
TELEPHONE:	

OPERATING CHARACTERISTICS

NORMAL-STANDBY

THE FOLLOWING FORMAT APPEARS ON THE FRONT-PANEL-DISPLAY WHEN OPERATING WITHOUT TROUBLES OR ALARMS:

```
TIME, DAY, DATE
DEFAULT OR USER DEFINED MESSAGE

USE ARROW KEYS TO ENABLE PANEL
PRESS ? FOR HELP
```

TROUBLE-SILENCE

THE FOLLOWING CONDITIONS OCCUR AFTER PRESSING THE "PANEL SOUNDER SILENCE" BUTTON TO SILENCE A TROUBLE:

- THE GENERAL TROUBLE LED FLASHES YELLOW.
- THE POWER TROUBLE LED FLASHES YELLOW.
- THE INTERNAL SOUNDER DOES NOT ANNUNCIATE THE LCD DISPLAY PROVIDES A MESSAGE TO IDENTIFY THE TROUBLE CONDITION.

MAINTENANCE AND REPAIR

STANDBY-BATTERY MAINTENANCE

STANDBY BATTERIES ARE SEALED-RECHARGEABLE AND PROVIDE FACP RECOVERY IN THE EVENT OF POWER FAILURE. INSPECT STANDBY BATTERIES AND CONNECTIONS ANNUALLY. REPLACE STANDBY BATTERIES EVERY 3 TO 5 YEARS. CONNECT STANDBY BATTERIES IN SERIES. DO NOT CONNECT STANDBY BATTERIES IN PARALLEL.

REPLACING THE 3 AMP POWER-SUPPLY FUSE

TO REMOVE THE FUSE:	
1	TURN OFF 120 VAC POWER TO THE 4 AMP OEM1 POWER SUPPLY
2	LOCATE THE HOUSING CONTAINING THE 3 AMP FUSE
3	GENTLY INSERT A SMALL-FLAT-BLADE SCREWDRIVER INTO THE SLOT OF THE FUSE-HOUSING
4	SLIDE THE LENGTH OF THE SCREWDRIVER INTO THE SLOT OF THE FUSE-HOUSING UNTIL THE UPPER-HALF DISLODGES FROM THE LOWER-HALF OF THE HOUSING
5	REMOVE THE FUSE FROM THE UPPER-HALF OF THE FUSE-HOUSING.
TO INSTALL THE NEW FUSE:	
1	INSERT THE FUSE IN THE UPPER-HOUSING
2	CENTER THE POSITION OF THE FUSE IN THE UPPER-HOUSING.
3	PRESS THE UPPER-HOUSING ON THE LOWER-HOUSING UNTIL THE HALVES SNAP TOGETHER
4	RESTORE 120 VAC POWER TO THE 4 AMP OEM1 POWER SUPPLY
5	CHECK LED STATUS INDICATORS TO CONFIRM THAT THE 4 AMP OEM1 POWER SUPPLY IS OPERATING CORRECTLY. CONFIRM THAT HEART BEAT IS FLASHING, DC OUTON IS LIT CONTINOUSLY AND AC NORM IS LIT CONTINUOUSLY.

REPLACING THE 10 AMP BATTERY FUSE

TO REMOVE THE FUSE:	
1	DISCONNECT THE JUMPER-CABLE CONNECTION BETWEEN BATTERY 1 AND BATTERY 2.
2	DISCONNECT THE RED-CABLE FROM THE POSITIVE TERMINAL OF THE TB3 BATTERY CONNECTOR.
3	DISCONNECT THE BLACK-CABLE FROM THE NEGATIVE TERMINAL OF THE TB3 BATTERY CONNECTOR.
4	DISPOSE OF THE CABLES DESCRIBED IN STEPS 1 THROUGH 3 ABOVE.
5	REMOVE EXISTING BATTERY 1 AND BATTERY 2 FROM THE BOTTOM OF THE eLAN PANEL CABINET AND RE-CYCLE THEM ACCORDING TO MANUFACTURER GUIDELINES.
TO INSTALL THE NEW FUSE:	
1	MOUNT THE NEW STANDBY-BATTERIES IN THE BASE OF THE eLAN PANEL CABINET.
2	CONNECT THE JUMPER-CABLE FROM THE NEGATIVE TERMINAL OF BATTERY 1 TO THE POSITIVE TERMINAL OF BATTERY 2.
3	CONNECT THE BLACK-CABLE FROM THE NEGATIVE TERMINAL OF BATTERY 2 TO THE NEGATIVE TERMINAL (TB3 BATTERY) OF THE 4 AMP OEM1 POWER SUPPLY.
4	CONNECT THE RED-CABLE FROM THE POSITIVE TERMNAL OF BATTERY 1 TO THE POSITIVE TERMINAL (TB3 BATTERY) OF THE 4 AMP OEM1 POWER SUPPLY.
5	DETERMINE THAT TROUBLE CONDITIONS ARE NOT REPORTED BY THE eLAN PANEL FOLLOWING THE FUSE REPLACEMENT TO CONFIRM THAT THE INSTALLATION WAS PERFORMED CORRECTLY.

This page intentionally left blank.

Glossary

Term	Definition
4 Amp OEM 1 Amp Power Supply	The 4 Amp OEM 1 Amp Power Supply is contained in all Omega - X Panels and provides a 112 Watt (4 Amp) off-line switch-mode power-source and battery charger. Features include regulated 24VDC supply, battery disconnect, battery low, mains fail, earth fault and charger fault.
Control Unit Board	The Control Unit Board is contained in all Omega - X Panels and provides 2 Loop connections for initiating devices and notification appliances.
Data Cable	The Data Cable connects the Panel Annunciator Board to the Modem-DACT Ethernet, Media Gateway and NIC.
Ethernet	The Ethernet provides the configuration path to the Media Gateway.
Heartbeat	The Heartbeat is the status LED provided on the Modem-DACT Ethernet, Media Gateway, NIC and 4 Amp OEM 1 Amp Power Supply. The Heartbeat identifies the booting and operating health of these devices.
Modem-DACT	The Modem-DACTprovides TELCO reporting features to the Omega - X Panel.
Panel Annunciator Board	The Panel Annunciator Board is contained in all Omega - X Panels and provides a serial-data-interface to the Modem-DACT Ethernet and Media Gateway. The Panel Annunciator Board also provides LCD and key pad functions to the Omega - X Panel.
Polarized	Polarized describes the direction of current flow in the supervision diode of the Programmable Output. *Reference Section 3, "Connecting Output Devices".*
Self-Test-Diagnostics	Self-Test-Diagnostics is an LED lighting sequence used on the Modem-DACT Ethernet, Media-Gateway, NIC and 4 Amp OEM 1 Amp Power Supply to indicate the health of the booting process.
Suppression	Suppression describes the effect that the shunt and series diode have on the back EMF surge of the solenoid-valve. *Reference Section 3, "Connecting Output Devices".*
Supervision	Supervision describes the monitoring function that the shunt diode performs when connected across the Programmable Output. *Reference Section 3, "Connecting Output Devices".*
Transparent Input	A transparent input has no effect on the Omega - X Panel.

This page intentionally left blank.

Index

Numerics

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

Z

This page intentionally left blank.