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June 2006

# ARIES™ Fire Alarm/Suppression Control Unit

## Installation, Operation, and Maintenance Manual




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 **Kidde**  
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June 2006

**ARIES™**  
**Fire Alarm/Suppression**  
**Control Unit**

**Installation, Operation, and**  
**Maintenance Manual**

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# FOREWORD

**Note:** This Manual, P/N 06-236530-001, is to be used by qualified and factory-trained personnel, knowledgeable of NFPA standards and any other applicable standards in effect.

This manual is intended to clearly and accurately describe the installation, operation and maintenance of the ARIES Fire Alarm/Suppression Control Unit.

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# TERMS AND ABBREVIATIONS

AAM:	Addressable Alarmline Module	LCD:	Liquid Crystal Display
AC:	Alternating Current	LED:	Light Emitting Diode
ACT:	ARIES Configuration Tool	MEA:	Materials and Equipment Acceptance Division of the City of New York
ADA:	Americans with Disabilities Act	NAC:	Notification Appliance Circuit
AH:	Ampere Hour	N.C.:	Normally Closed
AHJ:	Authority Having Jurisdiction	NEC:	National Electrical Code
AI:	Addressable Monitor Module	NFPA:	National Fire Protection Association
AO:	Addressable Relay	N.O.:	Normally Open
ASM	Addressable Signal Module	PALM:	PEGAsys Addressable Loop Module
ATM-L:	Annunciator Driver Module	PAS:	Positive Alarm Sequence
ATM-R:	Relay Driver Module	PCB:	Printed Circuit Board
AWG:	American Wire Gauge	pF:	Pico-farads
BPM:	Beats per Minute	P/N:	Part Number
CPU:	Central Processing Unit	RAM:	Random Access Memory
CSFM:	California State Fire Marshal	RDCM:	Remote Display/Control Module
DACT:	Digital Alarm Comm. Transmitter	RRM:	Remote Release Module
DC:	Direct Current	RF:	Radio-Frequency
EOC:	Event Output Control	SLC:	Signaling Line Circuit
EOLD:	End of Line Device	SMPS:	Switching Mode Power Supply
FM/FMRC:	Factory Mutual (Research Corporation)	TB:	Terminal Block
Ft.:	Feet	UL/ULI:	Underwriters Laboratories, Inc.
HSD:	High Sensitivity Smoke Detector	V:	Volts
HSSD:	High Sensitivity Smoke Detector	Vac:	Volts AC
Hz:	Hertz (Frequency)	Vdc:	Volts DC
IRI:	Industrial Risk Insurers	VRMS:	Volts Root Mean Square

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# SAFETY SUMMARY

This entire manual must be read and understood before installation.

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

*Several different sources of power can be connected to this fire alarm control unit.*

## WARNING



**Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by servicing while the unit is energized. Do not attempt to install, service, or operate this control unit until this manual is read and understood.**

*System Re-acceptance Test after Re-Programming:* **To ensure proper system operation, this system must be retested in accordance with NFPA 72 Chapter 10 after any programming change. Re-acceptance testing is also required after any addition or deletion of system components, and after any modification, repair or adjustment to system hardware or wiring.**

## CAUTION



**All components, circuits and system operations known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.**

This system meets UL/FM requirements for operation at 32°-120°F (0 to 49°C) and at a relative humidity of 93% (non-condensing) @ 90°F (32.2°C). However, the useful life of the system's standby batteries and the electronic components may be adversely effected by continuous operation at these environmental limits. Therefore, it is recommended that this system and its peripherals be installed in an environment with a nominal room temperature of 60-80°F.

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

Do not install electronic assemblies prior to mounting and attaching conduit for field wiring to the enclosure. Before making modifications, verify that they will not interfere with battery and printed circuit board locations. Do not over tighten screw terminals. Over tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

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

Follow the instructions in this manual. These instructions must be followed to avoid damage to the control unit and associated equipment. System operation and reliability depend upon proper installation.

**Fire Alarm System Limitations** *While installing a fire alarm system may make lower insurance rates possible, it is not a substitute for fire insurance!*

An automatic fire alarm system – typically made up of smoke detectors, heat detectors, manual pull stations, notification appliances, and a fire alarm control unit with remote-notification capability – can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

Any fire alarm system may fail for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in walls, on roofs, or on the other side of closed doors. Smoke detectors on one level also may not sense a fire on

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## SAFETY SUMMARY (CONT.)

another level or floor of a building. A second floor detector, for example, may not sense a first floor or basement fire.

Furthermore, all types of smoke detectors, both ionization and photoelectric types, have sensing limitations. No type of smoke detector can sense every kind of fire caused by carelessness and safety hazards such as smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson.

Notification appliances, such as bells, may not alert people if these appliances are located on the other side of closed or partly open doors or are located on another floor of a building.

A fire alarm system will not operate without electrical power. If AC power fails, the system will operate from standby batteries only for a specified time.

Rate-of-Rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested by a qualified fire protection specialist as recommended in NFPA 72, Chapter 10.

Auxiliary Equipment used in the system may not be technically compatible with the control unit. It is essential to use only equipment listed for service with your control unit.

Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled.

The most common cause of fire alarm malfunctions, however, is inadequate maintenance. All devices and system wiring should be tested and maintained by professional fire alarm installers following written procedures supplied with each device. System inspection and testing should be scheduled monthly or as required by national and/or local fire codes. Adequate written records of all inspections should be kept.

### **GENERAL SAFETY NOTICES** *The following must be observed to maintain personnel safety.*

The following general safety notices supplement specific warnings and cautions appearing in the manual. The safety precautions in this section must be understood and applied during operation and maintenance. This manual is to be used by trained distributors/technicians. The entire manual should be read and fully understood prior to installation.

### **FIRST AID**

Any injury, no matter how slight, should never go unattended. Always obtain first aid or medical attention immediately.

### **GENERAL PRECAUTIONS**

The following general safety precautions are to be observed at all times:

1. All electrical components associated with equipment shall be installed and grounded in accordance with NEC and local regulatory requirements.
2. Special precautionary measures are essential to prevent applying power to equipment at any time maintenance work is in progress.
3. Before working on electrical equipment, use a voltmeter to ensure that system is not energized.
4. When working near electricity, do not use metal rulers, flashlights, metallic pencils, or any other objects having exposed conductive material.
5. When connecting a meter to terminals for measurement, use a voltage range higher than expected voltage to be measured.



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## CAUTIONS AND WARNINGS

### CAUTION



A caution identifies a procedure, practice, or statement, which, if not strictly followed, could result in programming errors, impairment of equipment operation, or equipment damage.

### WARNING



A warning identifies an operating or maintenance procedure, practice, condition or statement, which, if not strictly followed, could result in personal injury or death.

**NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION AND ALL 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, certain programming features or options must be limited to specific values or not used at all as indicated below:

<b>Program Feature or Option</b>	<b>Permitted in UL 864 (Y/N)</b>	<b>Possible Settings</b>	<b>Settings Permitted in UL 864</b>
Ionization Detectors reporting as supervisory initiating devices	N	0.5 – 1.5% per foot	Report as alarm initiating devices only
Photoelectric Detectors reporting as supervisory initiating devices	N	0.5 – 3.5% per foot	Report as alarm initiating devices only
Abort switches may be set up to operate in any of the following ways: 1. Reset to initial delay setting. Resume countdown for entire delay period. 2. Count down to 10 seconds and hold. Resume countdown at 10 seconds. 3. Hold at time remaining. Resume countdown at remaining time period. 4. Same as #2, except disable abort function if countdown timer has started. 5. Special New York City operation.	Y (#2 only)	1 – 300 second delay	1 – 60 second delay
Delayed off premises trouble transmissions for AC power loss.	Y	0 – 12 hours	0 – 3 hours
Monitor module acting as a silence switch.	Y	May be used as a stand alone initiating device, or may be used with visible indication that shows when outputs are silenced.	Must have visible indication at monitor module that outputs have been silenced.
Monitor module acting as an acknowledge switch.	Y	May be used as a stand alone initiating device, or may be used with a display that shows when events are being acknowledged.	Must have visible display at monitor module that shows what is being acknowledged.
Network Settings Network Reset Event	N	'Check' to enable remote Reset. No 'Check' to disable remote Reset.	'Check' to enable remote Reset.

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# CHAPTER 1

## SYSTEM OVERVIEW

### 1-1 SYSTEM DESCRIPTION

The ARIES™ Fire Alarm/Suppression Control Unit is an intelligent control unit in a compact housing for fire suppression system and/or fire-alarm system applications. The control unit uses a single printed circuit board (PCB) design and a switching power supply. A keypad display membrane (hereinafter referred to as the display) is mounted to the PCB for system status and user operation.

The ARIES has one signaling line circuit (SLC) that can communicate with up to 255 intelligent devices.

See Figure 1-1 for a typical fire suppression system application.

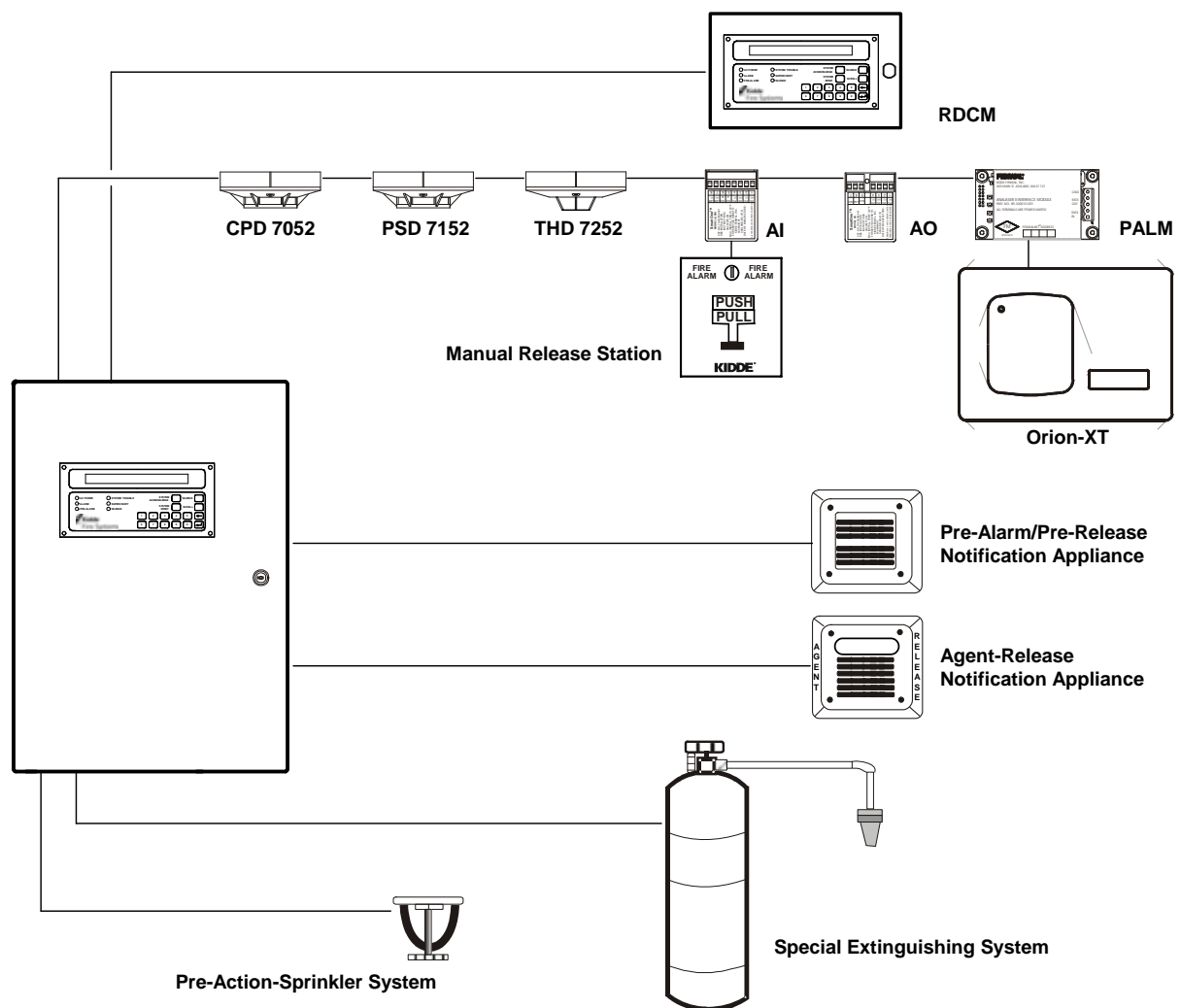


Figure 1-1. Typical ARIES System

The ARIES coordinates the operations of the varied components of a protected-premises fire protection or notification system. These operations include:

- Interpreting initiating signals from automatic detectors or monitor modules. Initiating signals can be any of the following:
  - Automatic detector pre-alarm
  - Automatic detector alarm
  - Manual alarm
  - Manual extinguishing-system release
  - Extinguishing-system abort
  - Sprinkler-system waterflow
  - Sprinkler-system supervisory
  - Point-specific trouble report
- Annunciating the initiating-device report, or any other system event, via the display and associated peripheral annunciation equipment
- Notifying the occupants of an emergency situation
- Activating control equipment to aid with building evacuation or to prepare an area for special-extinguishing-system discharge
- Discharging the special-extinguishing system, if necessary
- Actuating ancillary equipment to call the fire department
- Warning of any trouble condition that could inhibit alarm transmission or annunciation or whose occurrence could prevent the system from carrying out its mission.

### 1-1.1 Standard Features

The following standard features are incorporated in the control unit's single-printed-circuit-board design:

- One (1) signaling-line circuit (SLC) for Class-A, Style -6 or -7 or Class-B, Style-4 operation
- 255 intelligent-device capacity
- Two (2) notification-appliance circuits (NACs) for Class-A, Style-Z or Class-B, Style-Y operation. Each NAC is capable of creating the following master-coded patterns for audible notification appliances: 60 beats per minute (bpm), 120 bpm, temporal pattern per ANSI S3.41, and steady activation.
- Two (2) releasing circuits for actuators or solenoid-operated control heads and valves
- Two (2) field-configurable outputs for notification appliances or solenoid-operated control heads and valves. Each output operates in Class-A, Style-Z or Class-B, Style-Y manner when configured as a NAC, and is capable of creating the following master-coded patterns for audible notification appliances: 60 beats per minute (bpm), 120 bpm, temporal pattern per ANSI S3.41, and steady activation.
- One (1) unpowered, Form-C relay contact for trouble conditions
- Three (3) programmable, unpowered, Form-C relay contacts
- One (1) RS-485 communications circuit for remote-display units or annunciator-driver modules
- One (1) USB-style communications port for device capability
- Two (2) RS-232 serial-style communications ports.
- One (1) network-interface-card connector for integration of up to 32 control units in full peer-to-peer operation
- One (1) operator interface with 80-character liquid-crystal display, status-indicating LEDs and control/numeric keys

A switching power supply is located behind the printed-circuit board and supplies 5.4 A @ 24 Vdc to support the basic control unit and its associated peripheral devices and to charge the standby battery. The switching power supply is user-configurable to operate from either 120 or 240 Vac, 50/60 Hz primary power.

## 1-2 CONTROL UNIT COMPONENTS

The ARIES System includes:

- Display
- Printed Circuit Board (PCB)
- Cabinet
- Power Supply/Battery Charger Assembly

Optional devices includes:

- Remote Display/Control Module (RDCM)
- ATM Series Driver Module (ATM-L/-R)
- Intelligent Interface Module (IIM)
- Network Interface Card (NIC)
- Fiber-Optic Converter Card (OCC)
- Trim Ring

### 1-2.1 Display

The display (Figure 1-2) has control switches, system status LEDs, an 80 character (2 x 40) LCD for event annunciation and an integral numeric keypad. The keypad is used for entering the security password and navigating through the user menus.

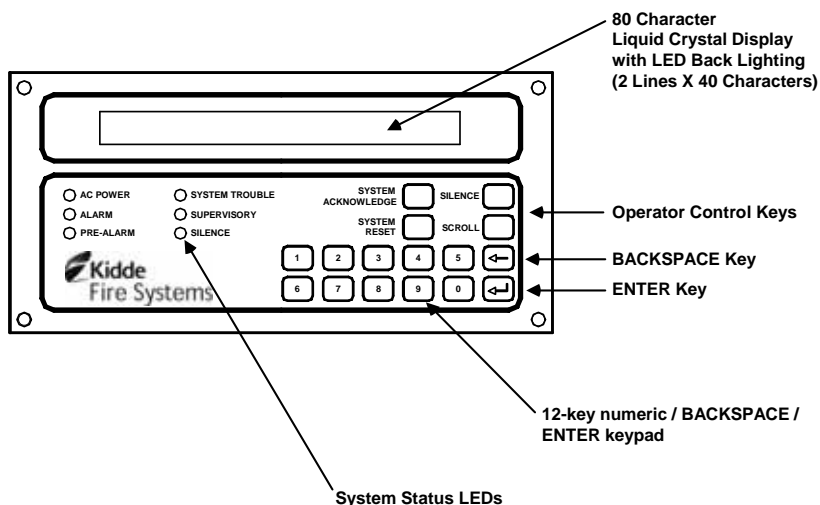


Figure 1-2. ARIES Display

The following paragraphs describe the different parts of the display.

#### 1-2.1.1 LCD AND LEDs

A window for the 80-character (two lines by 40 characters each) LCD and six system-status LEDs. The six system-status LEDs are:

- Power On (green)
- Alarm (red)
- Pre-Alarm (yellow)

- Trouble (yellow)
- Supervisory (yellow)
- Silence (yellow)

### 1-2.1.2 OPERATOR CONTROL KEYS

The operator control keys are:

- Acknowledge
- Silence
- Reset
- Scroll

### 1-2.1.3 DIGIT AND FUNCTIONALITY KEYS

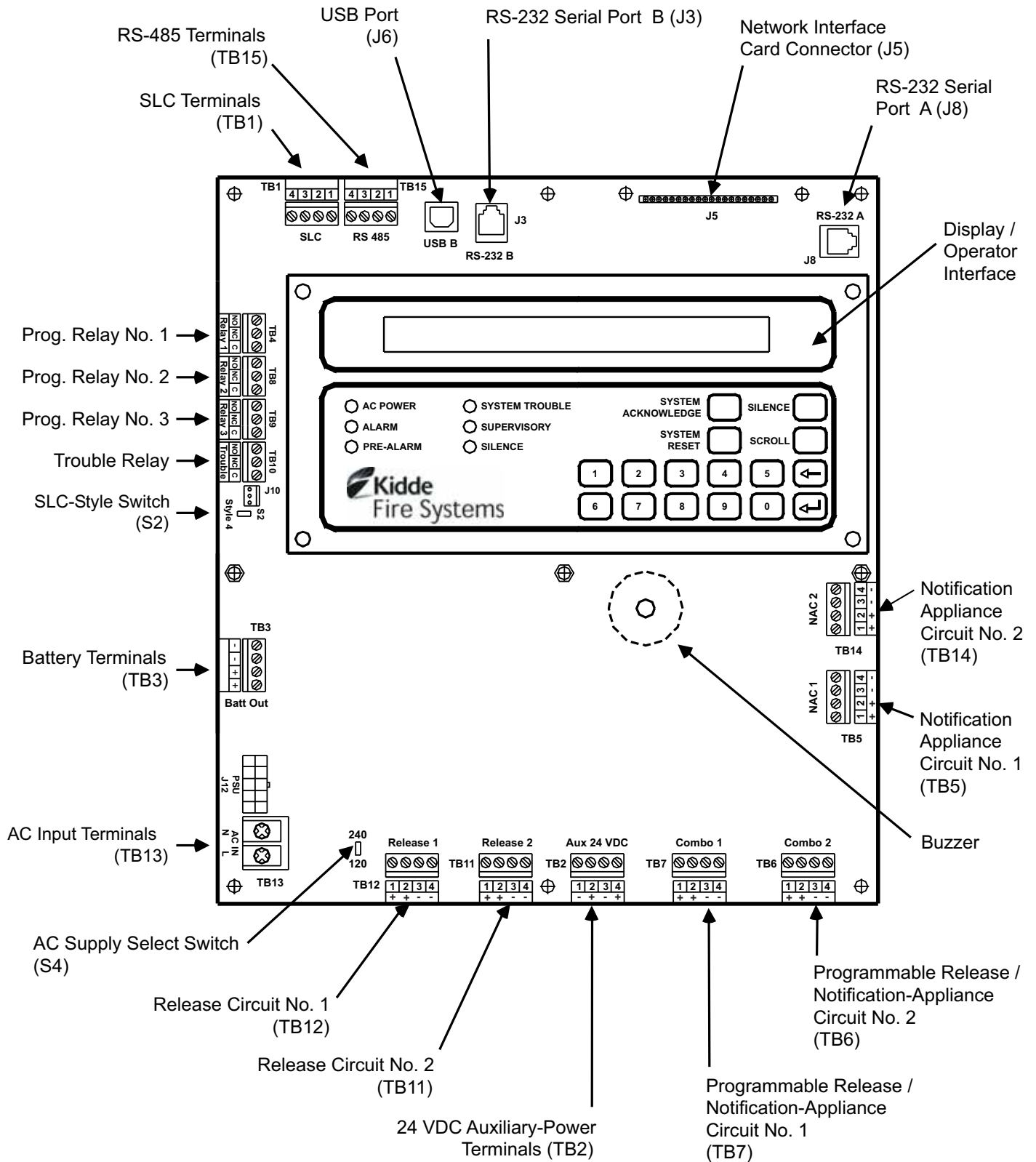
The 12-position keypad has the following digit and functionality keys:

- Digits, 0-9
- Backspace
- Enter

Refer to Chapter 3 for system operations using the display.

## 1-2.2 Printed-Circuit Board (PCB)

The ARIES's Printed Circuit Board (PCB) contains the system's central processing unit (CPU) and all of the primary circuits. The PCB is packaged separately and shipped inside the control-unit's enclosure. Figure 1-3 shows the layout of the PCB, including terminals for external components, the operator interface, and connectors.



**Note:** Polarities shown reflect the condition when the circuit is either active or in the alarm state.

Figure 1-3. ARIES Control Unit Printed Circuit Board

## 1-2.3 ARIES Cabinet

The PCB mounts in a compact (19.50" x 14.25" x 5.00") cabinet. The cabinet is key locked, and provides space for two batteries (up to 12 AH).

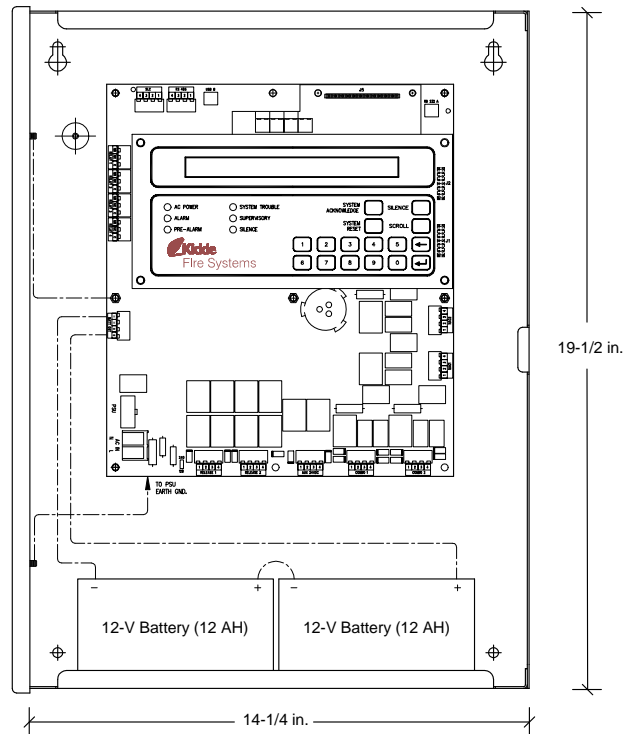


Figure 1-4. ARIES Cabinet

## 1-2.4 Power-Supply/Battery-Charger Assembly

The power-supply/battery-charger assembly is an AC to DC switching power-supply unit that provides a total output of 5.4 A @ 27 Vdc. The power supply unit is user configurable for either 120 Vac or 220/240 Vac, 50/60 Hz line voltage and its DC output is both filtered and regulated. The power supply/battery-charger assembly can charge standby batteries of up to 70 AH capacity.

The power-supply/battery-charger assembly is packaged separately and shipped inside the control unit's enclosure. Figure 1-5 shows the placement of the power-supply/battery-charger assembly in the ARIES's back box.

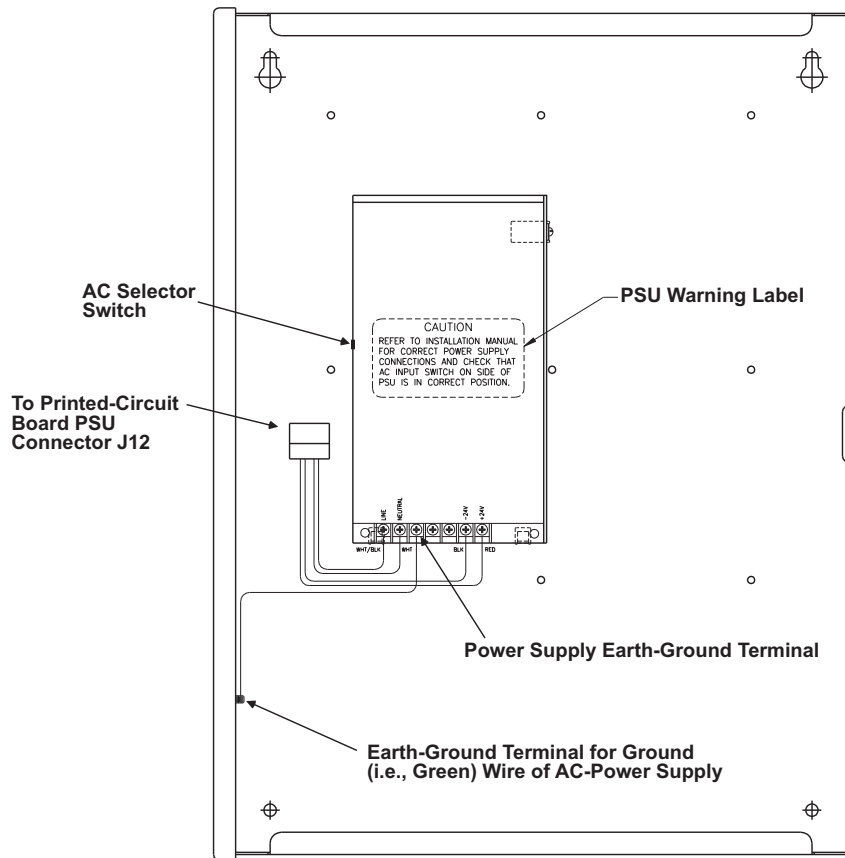


Figure 1-5. Power-Supply Assembly

1-2.4.1 BATTERIES

The cabinet provides space for two 12-AH batteries. Use a separate battery enclosure, P/N 76-100010-001, for 17-AH or larger batteries. Batteries must be ordered separately.

1-3 OPTIONAL DEVICES

Several optional devices and modules can be used with the ARIES.

1-3.1 Remote Display/Control Module (RDCM)

The remote display control module permits system events to be displayed, and operator intervention to be accomplished, from more than one location in a facility. Remote display control module, Model RDCM, is a duplicate of the ARIES's Display/Control Module and allows full operator intervention and system control.

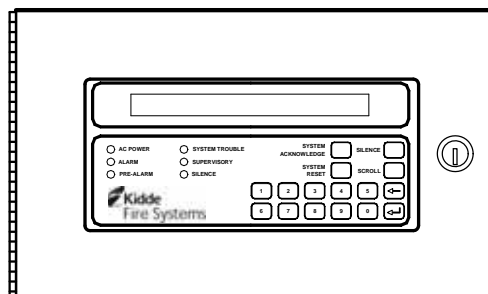


Figure 1-6. Remote Display/Control Module

**1-3.2 ATM Series Driver Modules**

The ATM Series Driver Modules permit third-party graphical annunciators and large numbers of auxiliary relays to be used with the ARIES. Two types of driver modules can be used, Models ATM-L and ATM-R.

The ARIES supports up to 16 ATM-L or ATM-R Driver Modules, or any combination of these two modules, together with RDCMs, that does not exceed 31 total addresses.

**1-3.2.1 MODEL ATM-L ANNUNCIATOR DRIVER MODULE**

The Model ATM-L Annunciator Driver Module provides the ARIES with up to 32 programmable, supervised LED outputs for graphical or tabular annunciators, along with 6 system-level LED outputs and 5 system-level input circuits for functional switches.

The system-level LEDs correspond to the following general conditions: Module Power, Pre-Alarm, Alarm, Alarm Silence, Supervisory, and Trouble.

The input circuits for functional switches provide for the following operator intervention: System Reset, Event Acknowledgement, Alarm Silence, Fire Drill, and Lamp Test.

**1-3.2.2 MODEL ATM-R RELAY DRIVER MODULE**

The Model ATM-R Relay Driver Module (Figure 1-7) can activate up to 32 programmable, supervised relays.

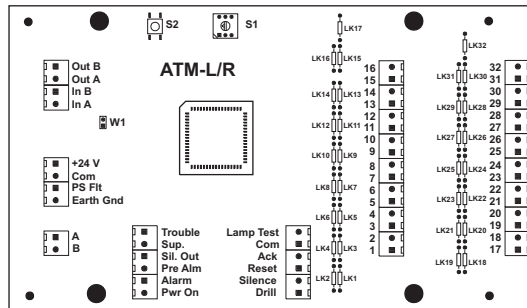


Figure 1-7. Model ATM-R Relay Driver Module

**1-3.3 Network Interface Card (NIC)**

The Network Interface Card (NIC), shown in Figure 1-8, allows up to 32 ARIES Control Units to be combined into an integrated, peer-to-peer network for annunciation, event output control, and operator intervention. The NIC regenerates and boosts network communications between ARIES Control Units and electrically isolates the networked control units from each other.



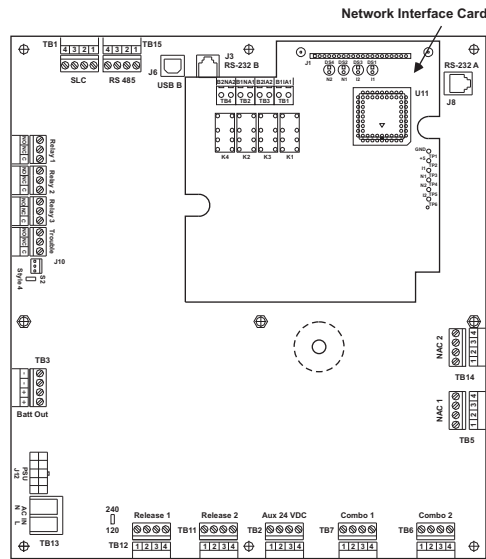


Figure 1-8. Network Interface Card (shown mounted to PCB)

**1-3.4 Intelligent Interface Module (IIM)**

The Intelligent Interface Module (IIM), shown in Figure 1-9, provides a communications link to a network up to 127 ORION-XT Detectors for centralized data exchange, alarm reporting, detector configuration, and history-log downloading.

Refer to the ORION-XT Installation, Operation and Maintenance Manual (Part Number 77.100) for a complete description of the Intelligent Interface Module.

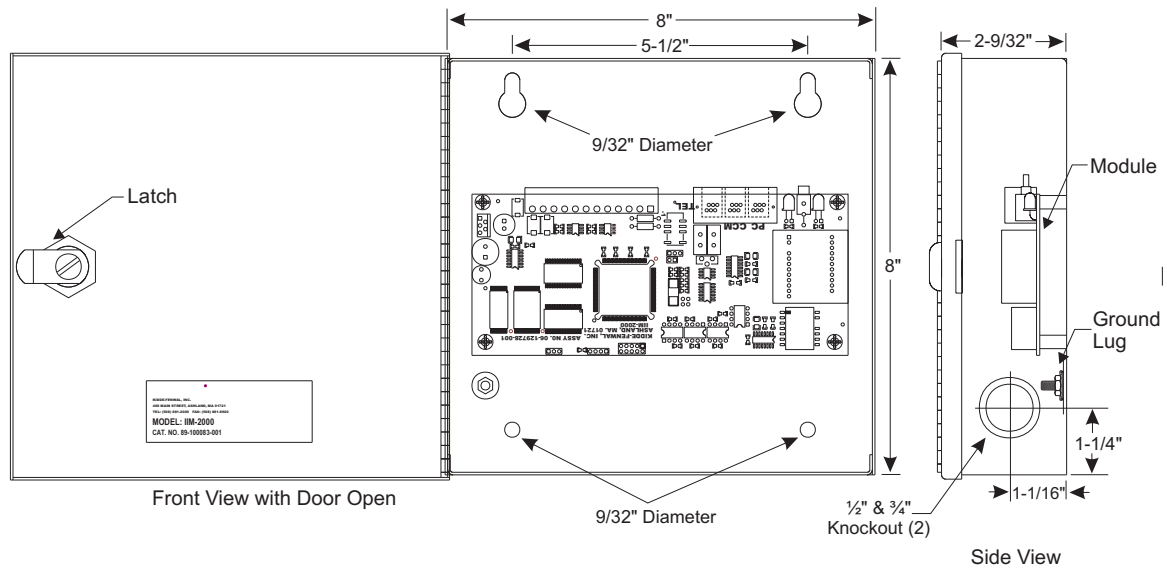


Figure 1-9. Intelligent Interface Module

**1-3.5 Fiber Optic Converter Card**

The Fiber Optic Converter Card (OCC), shown in Figure 1-10, converts electrical signals from the Network Interface Card into light pulses for data transmission over 62.5/125 μm duplex fiber optic media. The OCC permits distances of up to 1 mile (5,280 ft.) between networked ARIESSs.

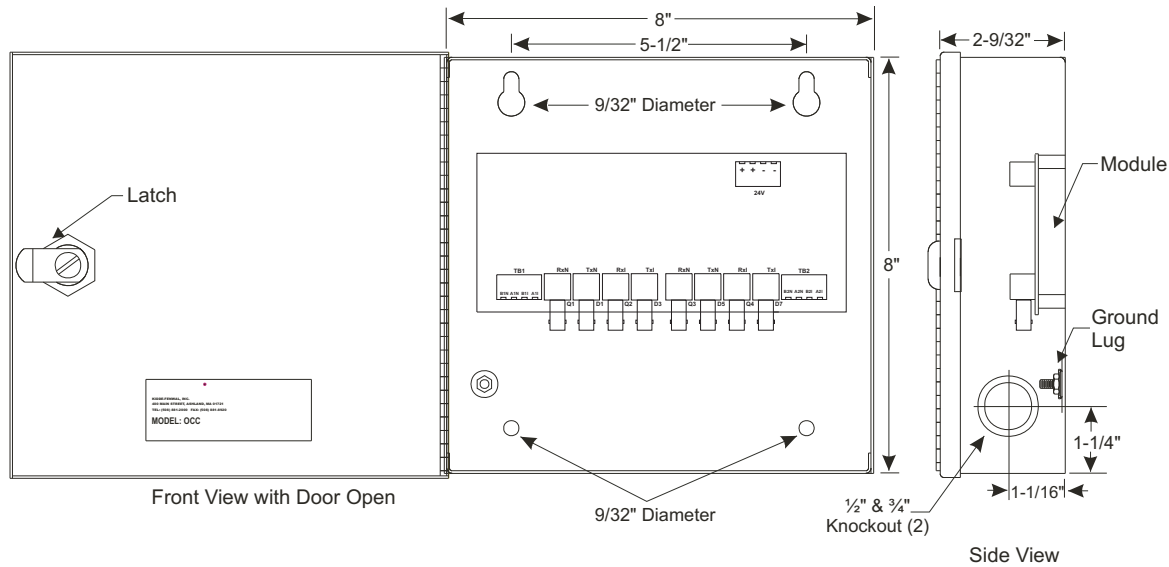


Figure 1-10. Fiber Optic Converter Card

**1-3.6 Trim Ring**

A trim ring (Figure 1-11) is available to semi-flush mount the control unit.

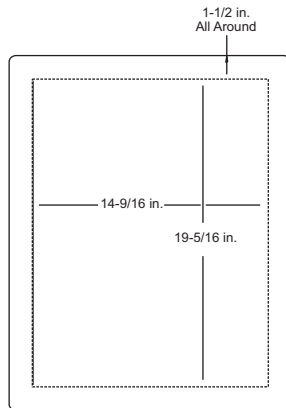


Figure 1-11. Trim Ring

**1-4 SMARTONE™ DETECTORS**

The ARIES uses the SmartOne™ Series of intelligent smoke and heat detectors. These detectors have their own data transceivers, micro-controllers, micro-controller memory, and algorithms that allow the detectors to determine whether a normal, pre-alarm, alarm, or trouble condition exists at their monitoring locations. Each detector continuously transmits its current status to the ARIES through the signaling line circuit, and responds to control unit polling and inquiries by the address that is set in the detector using the Handheld Programmer, P/N 74-200013-001, or using the ARIES's display. The pre-alarm and alarm thresholds are programmable for each detector.

A blinking LED on an intelligent detector indicates communications between the detector and the control unit.

**1-4.1 SmartOne Ionization Smoke Detector, Model CPD-7052**

The Model CPD-7052 Ionization Smoke Detector is a low-profile, intelligent smoke detector that uses an ionization sensing chamber. This detector can be utilized for open-area coverage or can be mounted in a duct with air velocities up to 2,000 feet per minute.

Ionization detectors respond best to small smoke particles characteristic of flaming fires, and are used primarily in areas where such fires are anticipated. They are also used in special extinguishing systems as one criterion to release the extinguishing agent. See Figure 1-12.

**Note:** Older-style Model CPD-7040 Ionization Detectors may be used with the ARIES Control Unit.

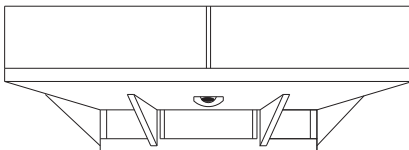


Figure 1-12. SmartOne™ Smoke Detector

**1-4.2 SmartOne Photoelectric Smoke Detector, Model PSD-7152**

The Model PSD-7152 Photoelectric Smoke Detector is a low-profile, intelligent smoke detector that uses a light-scattering sensing chamber. This detector can be utilized for open-area coverage or can be mounted in a duct with air velocities up to 4,000 feet per minute.

Photoelectric detectors respond best to large smoke particles characteristic of smoldering fires, and are used primarily in areas where such fires are anticipated and in high-velocity underfloor applications. They are also used in special extinguishing systems as one criterion to release the extinguishing agent. See Figure 1-12.

**Note:** Older-style Model PSD-7140 Photoelectric Detectors may be used with the ARIES Control Unit.

**1-4.3 SmartOne Thermal Detector, Model THD-7252**

The Model THD-7252 Thermal Detector is a low-profile, intelligent heat detector that uses a thermistor sensing chamber for fast response. This detector can be used for open-area coverage on low (< 10 ft.), flat ceilings with a spacing up to 70 ft. Smaller coverage is required for high ceilings and ceilings with structural obstructions.

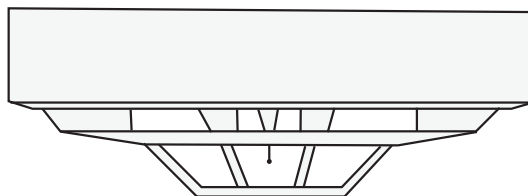


Figure 1-13. THD-7252 Thermal Detector

### 1-4.4 Detector Bases

Two detector bases are available.

#### 1-4.4.1 FLANGED DETECTOR BASE, MODEL 6SB

The Model 6SB Detector Base is used in applications where the detector's installed appearance is a primary consideration. This base mounts to standard 3-, 3½-, and 4-inch electrical boxes.

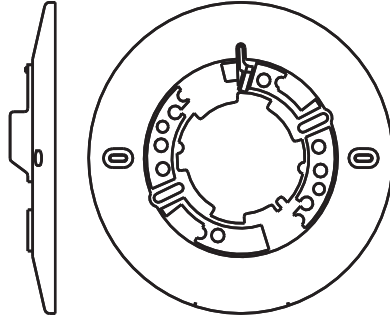


Figure 1-14. 6SB Detector Base (Flanged)

#### 1-4.4.2 FLANGELESS DETECTOR BASE, MODEL 4SB

The Model 4SB Detector Base is used in underfloor applications, or in applications where the detector's installed appearance is not a primary consideration. This base mounts to standard 3- or 3½-inch electrical boxes.

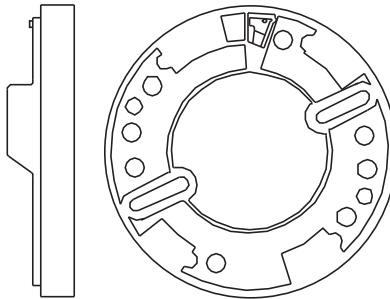


Figure 1-15. 4SB Detector Base (Flangeless)

### 1-4.5 Detector Base Adapter, Model MA-002

The Model MA-002 Detector Base Adapter allows the low-profile SmartOne detectors to be retrofitted into the older-style SmartOne detector base, P/N 70-400000-001.

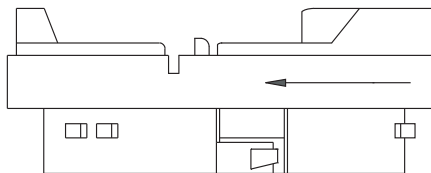


Figure 1-16. MA-002 Detector Base Adapter

### 1-4.6 Duct Housing, Model DH-2000

The Model DH-2000 Duct Housing is used to enclose an intelligent smoke detector that is monitoring for smoke in an air duct and is located outside of the duct. The duct housing is used with inlet and outlet tubes that allow the air in the duct to be sampled uniformly and transported to the enclosed smoke detector for obscuration-level measurement.

**Note:** Older-style DH-4000 Duct Housings with Model CPD-7040 Ionization Detectors or Model PSD-7140 Photoelectric Detectors may be used with the ARIES Control Unit.

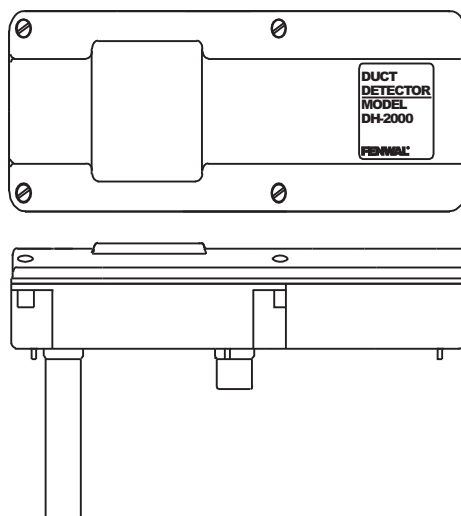


Figure 1-17. DH-2000 Duct-Detector Housing

## 1-5 SMARTONE ADDRESSABLE MODULES

SmartOne addressable modules are of three general types:

- **Monitor Modules.** These modules provide a uniquely-identifiable interface between the ARIES and an initiating device.
- **Relay Module.** This module supplies an unpowered, Form-C contact at a point-specific address.
- **Control Modules.** These modules provide a uniquely-identifiable interface between the ARIES and conventional notification appliances such as horns and strobes.

Each addressable module continuously transmits its current status to the ARIES Control Unit via the signaling line circuit, and responds to control unit polling, inquiries, and activation commands by the address that is set in the module using the Handheld Programmer, P/N 74-200013-001, or using the ARIES's display.

### 1-5.1 Addressable Monitor Module, Model AI

The Model AI Addressable Monitor Module is used to monitor conventional, unpowered, contact-type initiating devices through a Class-B, Style-B initiating device circuit. The AI, P/N 70-4070X8-001, is used to monitor normally-open, contact-type initiating devices such as manual stations, waterflow switches, and supervisory switches. The AI, P/N 70-4070X8-002, is used to monitor normally-closed, contact-type initiating devices such as older-style supervisory switches.

The AI Modules are designed to be mounted in the electrical box of the device being monitored.

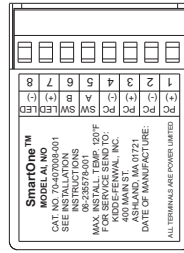


Figure 1-18. AI Monitor Module

**Note:** Older-style Monitor Modules, P/N 70-40700X-00X, may be used with the ARIES Control Unit.

### 1-5.2 ORION-XT Interface Module, Model PALM

The Model PALM ORION-XT Interface Module is a monitor module that enables a High Sensitivity Smoke Detector (HSSD) to report pre-alarm, alarm, and trouble signals to the ARIES Control Unit via its signaling line circuit. The AIM mounts inside the ORION-XT detector housing.

**Note:** The PALM address cannot be set via the Handheld Programmer. Use either the OCS Software or the ARIES' display to set the PALM's address.

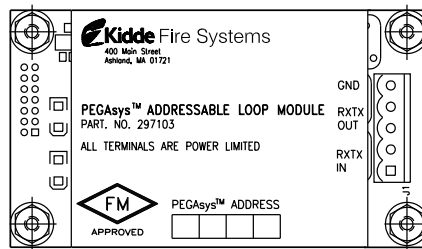


Figure 1-19. ORION-XT Interface Module

### 1-5.3 Addressable AlarmLine Module, Model AAM

The Model AAM Addressable AlarmLine Module is a monitor module that enables an AlarmLine sensor cable to report pre-alarm and alarm or overheat events, and trouble signals to the ARIES through the signaling line circuit. The AAM, P/N 73-100001-001, is equipped with a metal cover plate for mounting to a 4" square electrical box. P/N 73-100003-001, is a surface-mount, NEMA-4 enclosure for the AAM.

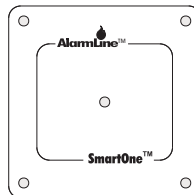


Figure 1-20. Addressable AlarmLine Module

### 1-5.4 Addressable Relay Module, Model AO

The Model AO Addressable Relay Module provides an unpowered, Form-C contact for remote control applications. The AO Module is designed to be mounted in the electrical box of the device being controlled.

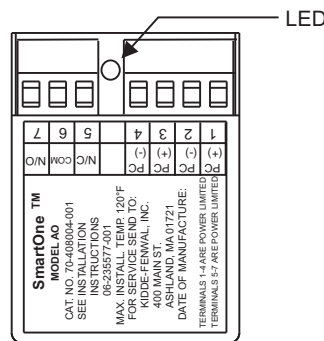


Figure 1-21. AO Relay Module

**Note:** Older-style Relay Modules, P/N 70-40800X-000, may be used with the ARIES Control Unit.

### 1-5.5 Addressable Signal Module, Model ASM

The Addressable Signal Module permits notification appliances to be controlled by commands issued via the ARIES's SLC. The ASM is supplied with a thermoplastic mounting cover and is designed to mount in a standard 4-11/16" electrical box or a 4" square, extra-deep electrical box.

**Note:** Set the ASM to the audio mode and install the end-of-line resistors across the trouble-monitoring and output circuits before you address the ASM with the Handheld Programmer or the ARIES's display. Return the module to the Auxiliary Mode before you use the ASM with the ARIES.

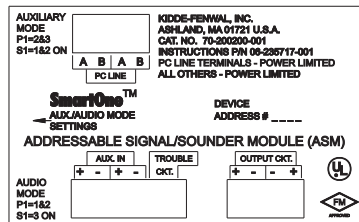


Figure 1-22. ASM Addressable Signal Module

### 1-5.6 Remote Releasing Module

The Remote Releasing Module (RRM) provides the ability to remotely activate extinguishing-system control devices (for example, electro-explosive actuators and solenoid valves). Connection is via the SmartOne-compatible Control Panel's Signalling Line Circuit (SLC). The module is field-programmable using the Control Panel keypad or Hand-Held Programmer.

A maximum of 64 RRM's can be activated consecutively via the ARIES Control Panel. Up to 16 RRM's can be configured in a group for simultaneous activation. The ARIES SLC can support up to 4 groups.

The RRM is intended for indoor dry location use, and is available in two models, one for mounting in a standard electrical box and a second model for mounting in suitable UL-864 Listed cabinets.

**P/N 70-60000-001: Standard Mounting**

- North American 4-11/16 in. electrical box with a double gang plaster ring (Rayco Model 841 or equivalent), 1/2 in. raised
- 4 in. square, 2-1/8 in. deep electrical box

**P/N 70-60000-002: In-Cabinet Mounting**

- Any suitable UL-864 Listed enclosure with no other electronics.

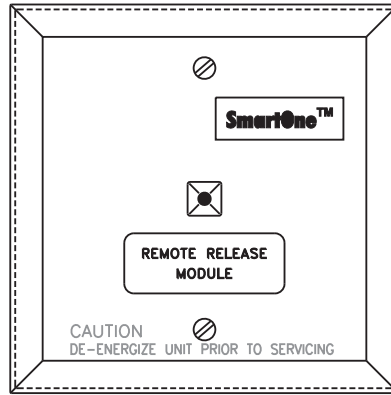


Figure 1-23. Remote Releasing Module

The following power supplies are compatible with the Remote Releasing Module.

Table 1-1. Compatible RRM Power Supplies

Description	Manufacturer	Part Number
Multi-Zone Power Supply Assembly (used with P/N: 77-297107-000 enclosure and cables)	Kidde	77-297106-000
24 VDC, 1 A Auxiliary Power Output of ARIES Control Unit, qty 2 (See Note)	Kidde	76-600000-001
24Vdc, 3A Power Supply, red enclosure	Altronix	AL400ULXR
24Vdc, 3A Power Supply, grey enclosure	Altronix	AL400ULX
24Vdc, 6A Power Supply, red enclosure	Altronix	AL600ULXR
24Vdc, 6A Power Supply, grey enclosure	Altronix	AL600ULX
24Vdc, 8A Power Supply, red enclosure	Altronix	AL1024ULXR
24Vdc, 8A Power Supply, grey enclosure	Altronix	AL1024ULX

**Note:** Both auxiliary circuits may be wired together to obtain 2 A at 24 VDC, and the maximum load on the RRM output should not exceed 2 A.

Altronix power supplies may be ordered through an authorized Altronix dealer. For a list of dealers, visit [www.altronix.com](http://www.altronix.com) or call (888)-258-7669.

When Installing the RRM, refer to the RRM Installaton Sheet. Also, see Paragraph 2-11 for the release circuit wiring instructions, and Appendix E for rating guidelines for power-limited and non power-limited wiring. For configuration instructions, refer to the ARIES Configuration Software User’s Guide (P/N 06-236530-002).



**1-6 ISOLATOR MODULES**

Isolator modules are automatic switches that open a segment of the signaling line circuit when a short-circuit fault is detected in that segment. The remainder of the signaling line circuit continues to function normally and is unaffected by the short-circuit fault. The isolator modules will close and resume normal operation when the short-circuit fault is removed.

Isolator module, P/N 74-200012-002, is supplied with a plastic cover plate for mounting to a single-gang electrical box. Isolator module, P/N 74-200012-004, is designed to mount in the electrical box for the Model 6SB detector base.

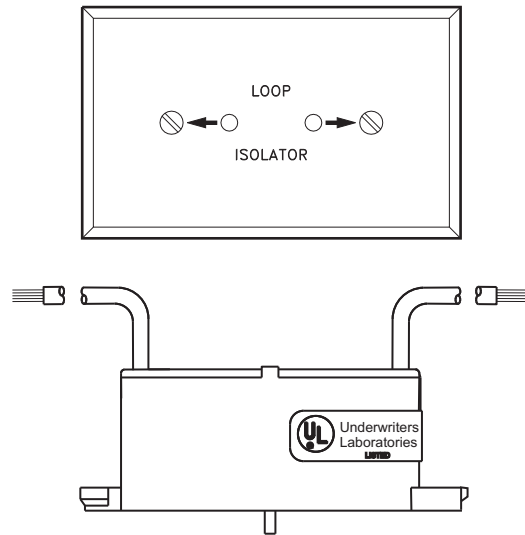


Figure 1-24. Isolator Modules

### 1-7 SPECIFICATIONS

#### 1-7.1 Electrical Specifications

The electrical specifications for the ARIES are as follows:

##### 1-7.1.1 PRIMARY AC POWER

Primary AC connections are made through AC input-power terminals, TB 13, on the ARIES main PCB. Wire size is #14 AWG minimum with 600 Vac insulation.

- 120 Vac, 50/60 Hz, 3.2 A, or
- 240 Vac, 50/60 Hz, 1.6 A

Primary power is selected by the setting of slide switch on the side of the power supply and by the setting of Switch S4 on the printed-circuit board. Refer to Paragraph 2-5 and Paragraph 2-7.

**Note:** Physically disconnect the standby battery and remove primary AC power if the power supply is accidentally short-circuited. Resume normal operations by restoring the AC power and physically reconnecting the standby battery after correcting the short-circuit fault.

##### 1-7.1.2 BATTERY AND CHARGING CIRCUIT

Only use sealed, lead-acid batteries. Maximum battery charging circuit capacity is 70 AH. (Batteries larger than 12 AH require P/N 76-100010-001 or other UL Listed battery cabinet.) Refer to Appendix A, Table A-3, for estimated standby times.

- Charging Circuit Voltage: 27.0 Vdc (nominal)
- Charging Circuit Current: 6.0 A (maximum)

##### 1-7.1.3 SIGNALING LINE CIRCUIT

Connections between the control unit, the signaling line circuit, and the associated SmartOne peripheral devices are supervised and power-limited.

- Wiring
  - Class B, Style 4
  - Class A, Style 6
  - Class A, Style 7 (Note: Requires Isolator Modules.)
- Voltage: 24 Vdc nominal
- Maximum Resistance: 40 ohms
- Maximum Capacitance: 0.5  $\mu$ F
- Maximum Current: 350 mA (short circuit)

#### 1-7.2 Mechanical Specifications

The mechanical specifications for the ARIES are as follows:

- 14¼ in. wide x 19 in. high x 5 in. deep (enclosure only)
- 14¼ in. wide x 19-5/32 in. high x 5-1/16 in. deep

#### 1-7.3 Environmental Specifications

The environmental specifications for the ARIES are as follows:

- Temperature: 32°F - 120°F
- Humidity: 93% at 90°F (non-condensing)

**1-7.4 Notification-Appliance and Releasing Circuits**

All circuits are power-limited except where noted.

NAC Rating Regulated 24 Vdc

NAC Wiring Class A, Style Z  
Class B, Style Y

**Note:** NACs suitable for synchronized and non-synchronized notification appliances. Use polarized notification appliances only. The maximum number of synchronized devices is 25.

Max. Wiring Voltage Drop: 2 V (for NACs)  
Varies (for Releasing Circuits)  
Refer to Paragraph 2-9 through  
Paragraph 2-11

Operating Voltage: 24 Vdc (nominal)

Max. NAC Current: 1.5 A

Max. Rel. Ckt. Current: 2.4 A

Max. Current for all external devices: 5.0 A

**Note:** External devices include notification appliances, releasing solenoids, SLC initiating and control devices, and all devices powered from the 24 Vdc Auxiliary-Power Terminals (TB 2).

NAC End-of-Line Resistor: 10 K, 0.5 W

Releasing Circuits: Releasing circuits are not power-limited when actuators are used or when In-Line Device is not used for solenoid valves

Use In-Line Device, P/N 06-220023-001, to make a single-solenoid or dual-solenoid releasing circuit power-limited

**1-7.5 Relays**

The three programmable relays and the trouble relay can be used for either power-limited or non-power-limited circuits. Contact ratings for these relays are:

- 1.0 A @ 30 Vdc (resistive)
- 0.5 A @ 30 Vdc (inductive)
- 0.5 A @ 120 Vac (inductive).

**1-7.6 Auxiliary Outputs**

The auxiliary outputs are power limited.

- Operating Voltage Range: 18.8 - 27.6 Vdc
- Maximum Current: 1.0A (each circuit)
- Maximum Current for all external devices: 5.0A

**Note:** External devices include notification appliances, releasing solenoids, SLC initiating and control devices, and all devices powered from the 24 Vdc Auxiliary Power Terminals (TB 2). All applicable compatible devices contained in this manual may be used.

### 1-7.7

#### Electrical Supervision

- A short circuit from any field-wiring terminal (except AC-Power-Input Terminals and Form-C Relay Terminals) to earth ground will create a “Ground-Fault” trouble condition.
- An open circuit in the wiring for the SLC, the outputs (NACs, release circuits, and combination circuits), the RS-485 communications circuit, and the battery-charging circuit will create an “Open” trouble condition.
- A short circuit between conductors in the wiring for the SLC, the outputs (NACs, release circuits, and combination circuits), the RS-485 communications circuit, and the battery-charging circuit will create a “Short” trouble condition.
  - Exception: Release circuits and combination circuits wired as non-power-limited.
- Impedance values for open-circuit and short-circuit conditions are:
  - open circuit:     infinite ohms
  - short circuit:    zero (0) ohms

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# CHAPTER 2

## INSTALLATION

This chapter is intended for system installers. It provides information necessary to successfully prepare for and install the ARIES™ Fire Alarm/Suppression Control Unit. The system design is based on the requirements of Kidde Fire Systems, Underwriters Laboratories (UL), the Factory Mutual System (FM), and codes and standards of the National Fire Protection Association. In all cases, the installation must meet the requirements of the local Authority Having Jurisdiction (AHJ).

Refer also to the Installer's Wiring Diagram, P/N 06-236406-002, that is packaged with the control unit.

### 2-1 PREPARING FOR INSTALLATION

Complete the following preparation procedures before installing the control unit.

#### 2-1.1 Control-Unit Components

Check the contents of the ARIES shipping carton to ensure that you have received the following components:

- Enclosure w/Door, P/N 06-220019-002
- Power Supply, P/N 06-118394-001
- Circuit-Board Assembly with Display, P/N 76-600000-004
- Hardware Kit, P/N 06-220024-001
- Operating Instructions, P/N 06-236406-001
- Installation/Configuration Kit, P/N 76-600000-008, containing
  - User Disk, P/N 06-220075-002, that includes
    - Installation, Operation, and Maintenance Manual
    - Configuration Program User's Guide
    - Application Drawing
  - Installer's Wiring Diagram, P/N 06-236406-002

#### 2-1.2 Materials/Tools Required

The materials listed below are not supplied with the system, but are required for installation.

- The ACT Configuration Software is provided on a separate CD, (P/N 06-220109-002)
- No. 10 or 1/4" mounting bolts to mount the control unit cabinet
- Electrical conduit for AC input power and field circuits
- Electrical junction boxes (as required)
- Wire-nuts and crimp-on terminals (as required)
- Wrist ground strap

### 2-1.3 Determining Installation Location

Choose a location in an area that allows easy access for operation and maintenance of the system. If a location has been designated by an architect and/or fire-prevention authority, plan your installation according to that location. It is important that the location of the system be clean, dry, vibration-free, and maintained within the operating limits.

### 2-2 CODES AND STANDARDS

Use the following codes, standards and practices when installing the ARIES System:

- NFPA 70, National Electric Code, Articles
  - 250 Grounding
  - 300 Wiring Methods
  - 725 Remote Control, Signaling, and Power-Limited Circuits
  - 760 Fire Protective Signaling Systems
  - 800 Communications Circuits
- NFPA 72, National Fire Alarm Code
- NFPA 12, Standard on Carbon Dioxide Extinguishing Systems
- NFPA 12A, Standard on Halon 1301 Fire Extinguishing Systems
- NFPA 13, Standard for the Installation of Sprinkler Systems
- NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection
- NFPA 16, Standard for the Installation of Foam Water Sprinkler and Foam Water Spray Systems
- NFPA 17, Standard for Dry Chemical Extinguishing Systems
- NFPA 17A, Standard for Wet Chemical Extinguishing Systems
- NFPA 2001, Standard for Clean Agent Fire Extinguishing Systems
- Local building codes
- Insurance requirements
- Requirements of local AHJ

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## 2-3 INSTALLATION OVERVIEW

The following paragraphs provide an overview of installation steps once the system is unpacked and site preparation is completed.

### 2-3.1 Step One: Installing the Control Unit Back Box and Preparing Electrical Wiring

The control unit back box can be either surface or semi-flush mounted. For full mounting and installation procedures, see Paragraph 2-4.

In addition to back box mounting, the site must be prepared with appropriate electrical wiring before system installation can begin.

- **Removing knockouts.**

Knockouts must be removed from the control-unit back box to enable the connection between the conduit and the back box. Consult approved electrical installation drawings for connection information.

- **Installing conduit.**

Route properly-sized conduit from the control-unit back box to locations designated on the approved layout drawings for peripheral devices. Refer to the locations of the automatic and manual initiating devices, notification appliances, remote display/control modules, control heads for the extinguishing system, and addressable relay modules on the system drawings.

- **Electrical Boxes.**

Install an electrical box at each designated location for peripheral devices such as automatic and manual initiating devices, notification appliances, control heads for the extinguishing system, and addressable relay modules. Refer to the installation instructions included with the peripheral devices for the proper types of electrical boxes.

- **Electrical wiring**

Route the properly-sized and required wiring through conduit from the control unit to the field devices. Observe the wiring manufacturer's recommended minimum bending radii for all internal-control-unit and external wiring. Use appropriate equipment to check and record the wiring for insulation resistance to earth ground. Measure and record the wiring resistance for all external circuits. Also measure and record the SLC wiring capacitance. Refer to the approved electrical installation drawings and to the recommendations in this manual.

- **Wiring Connections and SmartOne Devices.**

Mount and make wiring connections to the peripheral devices as shown in their installation instructions. Be sure that all SLC-based SmartOne devices have been electronically addressed prior to installation.

### 2-3.2 Step Two: Installing the ARIES Power Supply and Main PCB

- Install the ARIES power supply and main printed-circuit board.
- Dress and connect field wiring to the ARIES Control Unit's main printed-circuit board as shown on the approved system drawings and as illustrated in this manual.

### 2-3.3 Step Three: Connecting AC Power and Standby Battery

Apply AC power, then connect the standby battery.

### 2-3.4 Step Four: Auto-Configuring the System

Auto-configure the system as directed in Paragraph 3-2.5.2.4.28, or run the AutoLearn Procedure as shown in Paragraph 3-2.5.2.4.26. Print out the list of SLC-based initiating devices and addressable control and/or relay modules detected by

these procedures and compare this list to the approved set of SLC devices. Correct any inconsistencies and/or trouble messages.

### **2-3.5 Step Five: Uploading the Application Program and Performing the Pre-Test**

Upload the site-specific application program, and pre-test the system in accordance with the approved sequence of operation. Be sure that extinguishing-system actuation devices are not connected to the extinguishing system during pre-testing.

### **2-3.6 Step Six: Performing Final System Test and Commissioning the System**

Final test and commission the system in the presence of the owner and the authority having jurisdiction. Be sure that extinguishing-system actuation devices are not connected to the extinguishing system during final testing.

### **2-3.7 Step Seven: Installing the Actuation Devices and Extinguishing System**

Connect the actuation devices to the extinguishing system per the procedures in the applicable agent-storage-container installation manual.

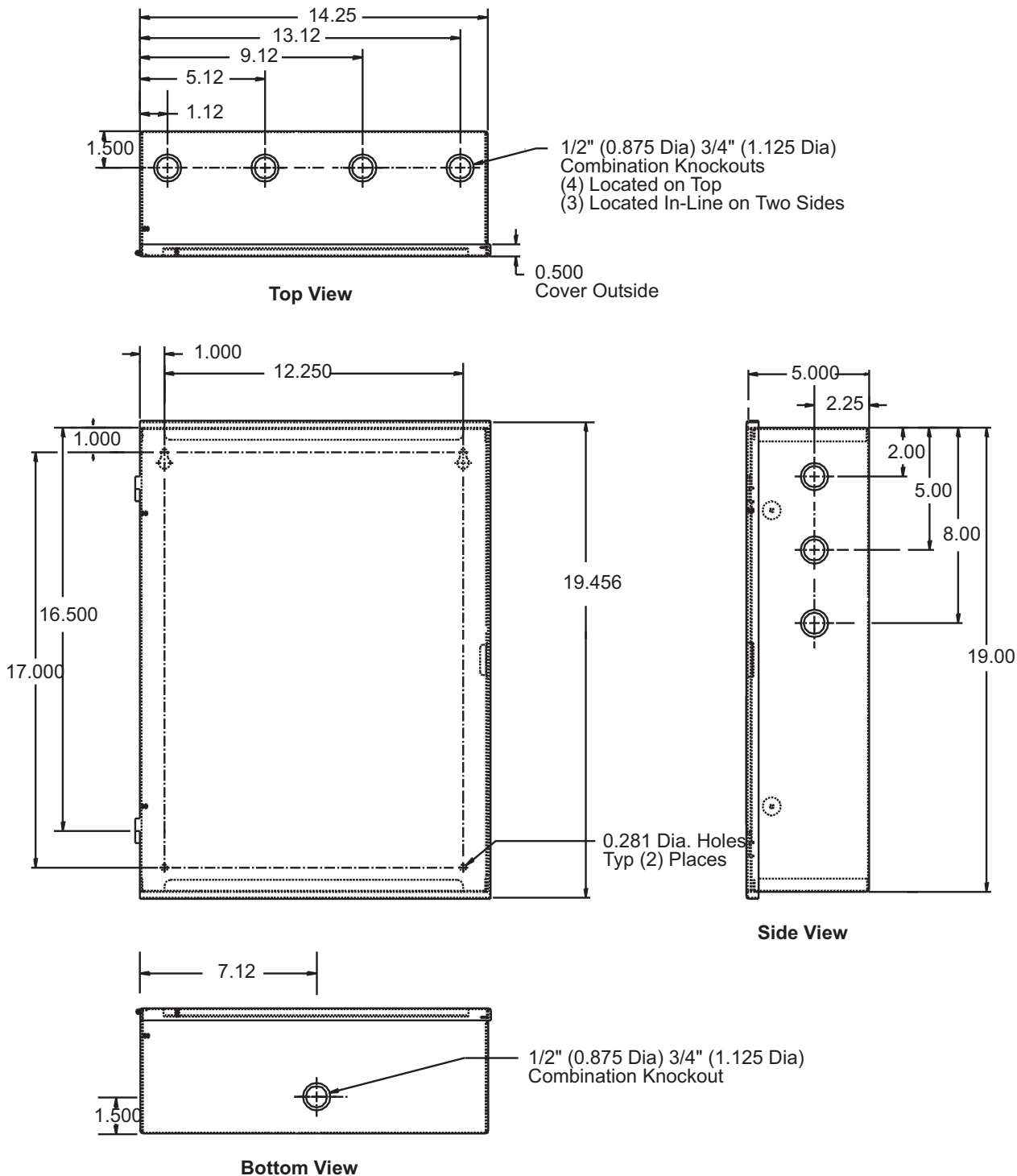
### **2-3.8 Step Eight: Performing Final Installation Procedures**

Install the front door when testing is completed, all appropriate occupancy certificates have been secured, the end user has been thoroughly trained in the system operation, and the system is armed and ready for service. Lock the front door and give the key to the end user's designated personnel.



2-4 MOUNTING THE CABINET/ENCLOSURE

The control unit can be surface or semi-flush mounted. Figure 2-1 shows the control-unit-enclosure dimensions. All dimensions are in inches.



Note: All dimensions are in inches.

Figure 2-1. Enclosure Dimensions

## 2-4.1 Preparing the Enclosure for Wall Mounting

For either mounting configuration:

1. Remove the keys from the envelope taped to the top of the enclosure and open the door to the control unit.
2. Disconnect the ground wire that connects the enclosure door to the back box.
3. Remove the control unit front door first by unlocking it and rotating the door approximately 90° from its closed position.
4. Lift up the door to allow the door's hinge pins to clear the mating-hinge sockets on the back box.
5. Remove the separately packaged power supply, printed-circuit board, and plastic bag (i.e., ship kit) containing installation hardware, and set them and the front door aside in a safe location to prevent damage.
6. Locate the top of the cabinet approximately 66" above the floor so that the control unit's display is positioned at a convenient height for viewing system events and for entering operator commands.

## 2-4.2 Surface Mounting

To surface mount the control unit:

1. Mark and pre-drill holes for four mounting bolts using the dimensions shown in Figure 2-2. The installer must supply the mounting bolts (up to size 1/4-20). There are two holes and two keyhole slots in the enclosure's rear panel that serve as a template for surface mounting.

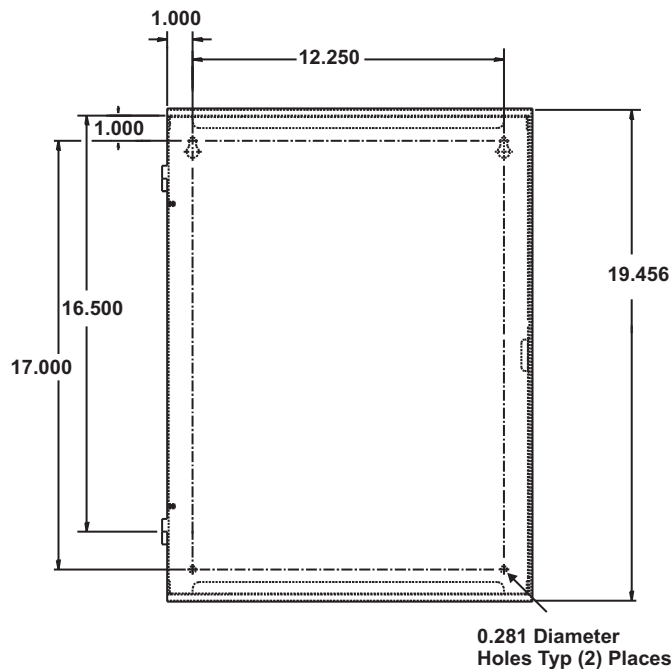


Figure 2-2. Back Box Mounting Dimensions

2. Insert the upper two fasteners in the wall. Leave approximately 1/4" protruding for both screws.
3. Slip upper keyholes of the back box over the two protruding screws. Tighten the screws.
4. Insert and tighten the two lower screws.
5. Attach wiring conduit to the enclosure via the enclosure knockouts, and pull the required number of wires through the conduit to the enclosure. Leave

approximately 2 to 3 feet of wire length in the enclosure for future internal connections.

### 2-4.3 Semi-Flush Mounting

To semi-flush mount the control unit:

1. Cut and plumb an opening approximately 14.25" wide by 19" high in the wall on which the control unit will be semi-flush mounted.

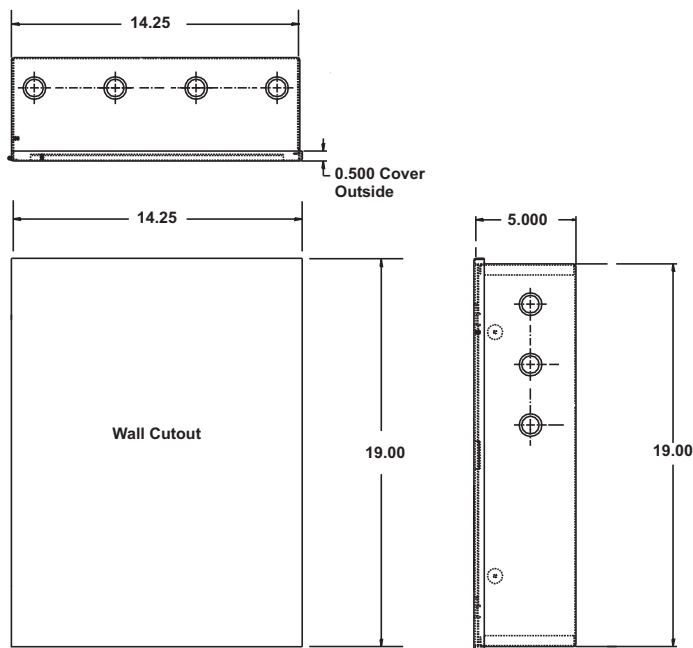


Figure 2-3. Semi-Flush Mounting Dimensions

2. Position and plumb the back box in the opening made in Step 1. Ensure that the front edge of the back box is at least 3/4 inches from the surface of the wall. Refer to Figure 2-3. Secure the back box to the wall with appropriate mounting bolts (up to size 1/4-20).
3. Attach wiring conduit to the enclosure through the enclosure knockouts, and pull the required number of wires through the conduit to the enclosure. Leave approximately 2 to 3 feet of wire length in the enclosure for future internal connections.

## 2-5 INSTALLING THE POWER SUPPLY



**Use a ground strap to prevent static discharge that could damage the power supply.**

**Note:** Make sure the control unit location is dry and that the enclosure is free of construction dust and metal shavings prior to installing the power supply.

1. Remove the power supply unit from its shipping carton.
2. Connect the wire harness that is packaged in the installation kit. Next connect the fork end of the green ground wire that is also part of the installation kit to the earth-ground terminal of the power supply. Refer to Figure 2-4 for wire harness and earth-ground connections.

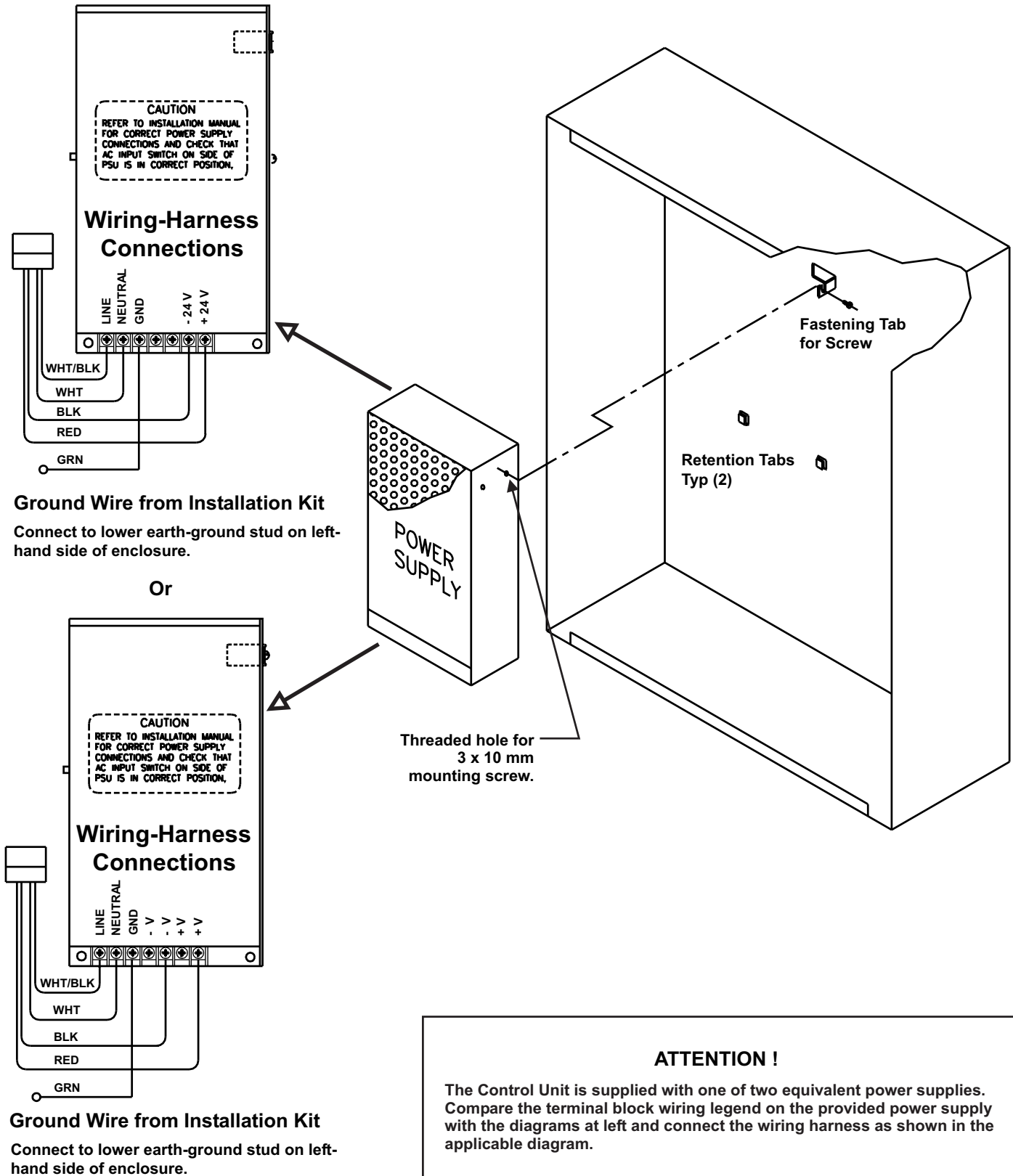


Figure 2-4. Power Supply Unit

3. Locate the 3 x 10 mm mounting screw in the installation kit and thread it part way into the lower of the two threaded holes of the power supply unit. See Figure 2-4.
4. Ensure that the power supply unit AC-input-voltage selector switch is set to the proper position for either 120 Vac or 220/240 Vac. See Figure 2-5.

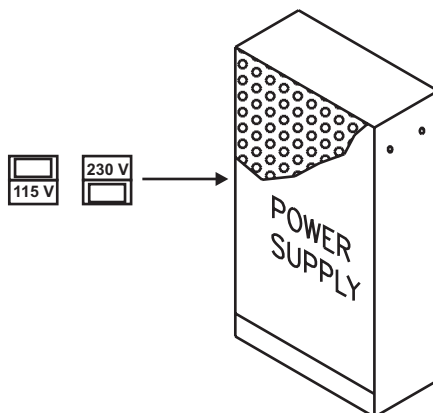


Figure 2-5. Primary Power Selection Switch

5. Locate the two power-supply-unit retention tabs and the fastening tab in the enclosure's back panel.
6. Position the power-supply unit with the wire harness down, and then slide it onto the retention tabs. The 3 x 10 mm mounting screw should slide into the slot of the fastening tab at the same time.
7. Tighten the screw onto the fastening tab.
8. Connect the ring end of the power supply's green ground wire to the lower earth-ground stud on the left side of the enclosure.

## 2-6 INSTALLING THE PRINTED CIRCUIT BOARD (PCB)



**Use a ground strap to prevent static discharge that could damage sensitive components on the main PCB.**

Refer to Figure 2-6 before you unpack and install the PCB within the enclosure.

**Note:** Make sure the control unit location is dry and that the enclosure is free of construction dust and metal shavings prior to installing the PCB.

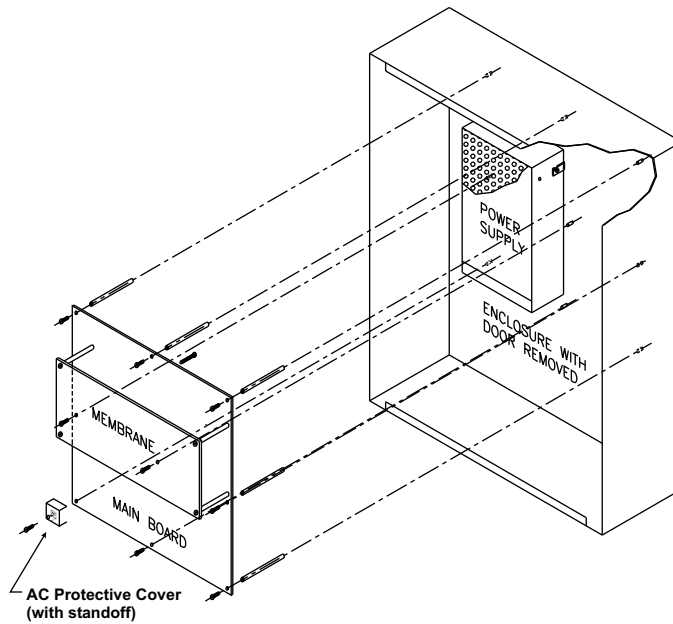


Figure 2-6. PCB Installation

1. Locate the nine (9) 2-1/4" aluminum standoffs in the installation kit and screw one securely into each of the nine (9) threaded PEMs in the back surface of the enclosure.
2. Slip on a wrist ground strap and clip the ground strap to the earth ground in the enclosure. Do not remove the PCB from its shipping carton unless you have established a common earth-ground potential among yourself, the enclosure, and the PCB's shipping carton.
3. Remove the PCB from its shipping carton and position each of its nine (9) mounting holes over one of the aluminum standoffs so that the AC-input terminal block is in the lower-left corner.
4. Secure the PCB to the standoffs using the eight (8) short washer-and-screw assemblies supplied in the installation kit.

**Note:** Do not tighten the screws at this time.

The PCB mounting hole in the lower left corner utilizes a longer nylon screw that also holds the AC Safety Cover in place. See Section 2-7.1.

5. Refer to Figure 2-7 and place the free end of the longer of the two factory-installed Earth-Ground wires under the screw assembly of the main printed-circuit board as shown before tightening. Tighten the remaining eight screws. Be careful not to over-tighten.
6. Plug the harness from the power-supply unit into Connector J12 in the lower-left-hand corner of the PCB.

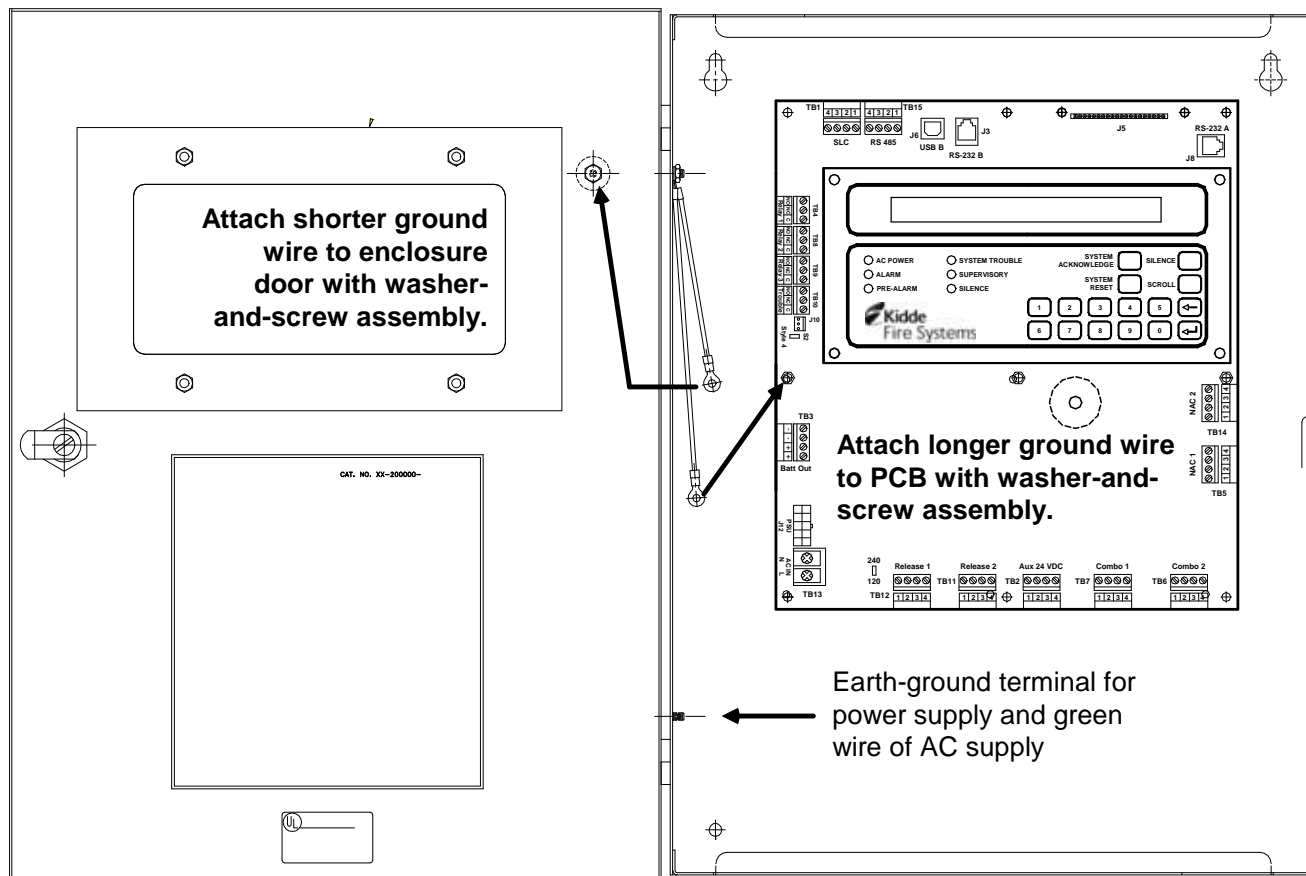


Figure 2-7. PCB-to-Cabinet Grounding Diagram

**2-7 AC AND DC POWER CONNECTIONS**

The control unit uses commercially- or end-user-provided AC power as the primary power source, together with a 24 Vdc standby battery (when required by local codes and/or Authority Having Jurisdiction [AHJ] requirements).



**Two different sources of power can be connected to the control unit. Disconnect both sources of power and critical components such as control heads for special extinguishing systems and addressable pilot relays controlling facility-power shutoff before servicing the control unit. The control unit and associated equipment may be damaged by connecting wiring while the control unit is energized.**



**Use caution when connecting power. High-voltage and AC-powered circuits are present in the control unit. Be sure to adequately ground the control unit to reduce the risk of electrical shock.**

**2-7.1 AC Power Connection**

The primary AC power for the ARIES Control Unit is 120 Vac, 50/60 Hz, 3.2 A or 220/240 Vac, 50/60Hz, 1.6A. The default power configuration is 120 Vac and will require resetting for 220/240 Vac operation. Configuration of primary AC power requires that the power-selection switch on the side of the power supply be set correctly before the power

supply is installed in the enclosure, and that Switch S4 in the lower-left corner of the printed-circuit board be set to agree with the primary AC power being used. Refer to Paragraph 2-5.

Over-current protection for this circuit must comply with Article 760 of the National Electrical Code (NEC) and/or the local electrical code. Use a grounded power cord of #14 AWG or larger wire with 600 Vac rating to make the AC power connection to the control unit. Follow the procedure below to make AC power connections.

1. Disconnect all power sources from the control unit and the AC power cord
2. Run AC-input wiring to the left side of the enclosure, and preferably, use the lowest of the three knock-outs on the left-hand side as the entry point for primary power.
3. Connect the primary power earth-ground (green) wire to the lower Earth Ground stud on the left inside of the enclosure.
4. Connect the neutral (white) wire to the Main Circuit Board Terminal Block TB13 labeled 'N' (Neutral).
5. Connect the hot (black) wire to the Main Circuit Board Terminal Block TB13 labeled 'L' (Line).
6. Remove the AC Safety Cover, 3/4" nylon spacer, and 1-1/8" nylon screw from the installation kit. Fold the cover along its scored lines and install it over the AC power input terminals, as shown in Figure 2-8.

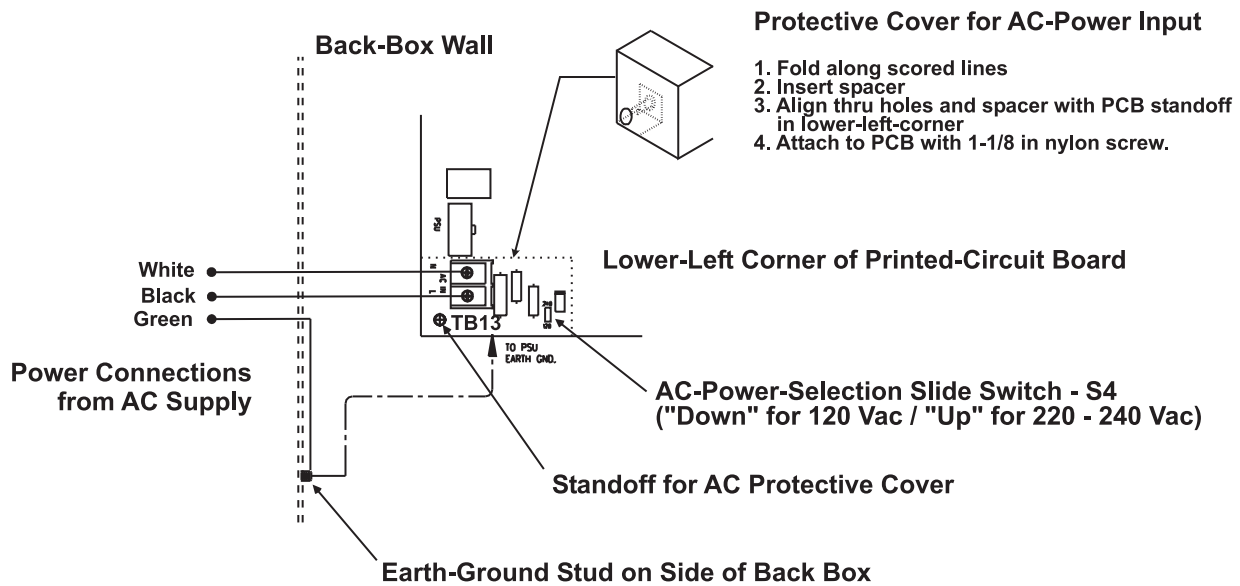


Figure 2-8. Primary-Power Connections

7. Set AC-Power-Selection Switch S4 on the main printed-circuit board to correspond to the AC input power (120 Vac, 50/60 Hz, or 220/240 Vac, 50/60 Hz) being used.

### 2-7.2

#### DC Power Connection



**Batteries contain sulfuric acid that can cause severe burns to the skin and eyes and can damage clothing. Immediately flush areas of the skin or eyes that have been contacted with sulfuric acid for 15 minutes with water and seek medical attention promptly.**

**Note:** Observe polarity when connecting the battery to the control unit.

To connect the standby battery to the control unit:



1. Calculate the size of the battery required for the application. Refer to Appendix A for the proper procedure.
2. Connect two 12-volt, series-wired batteries of the required ampere-hour (AH) capacity to printed-circuit board Terminals TB3 using the battery cable. See Figure 2-9.

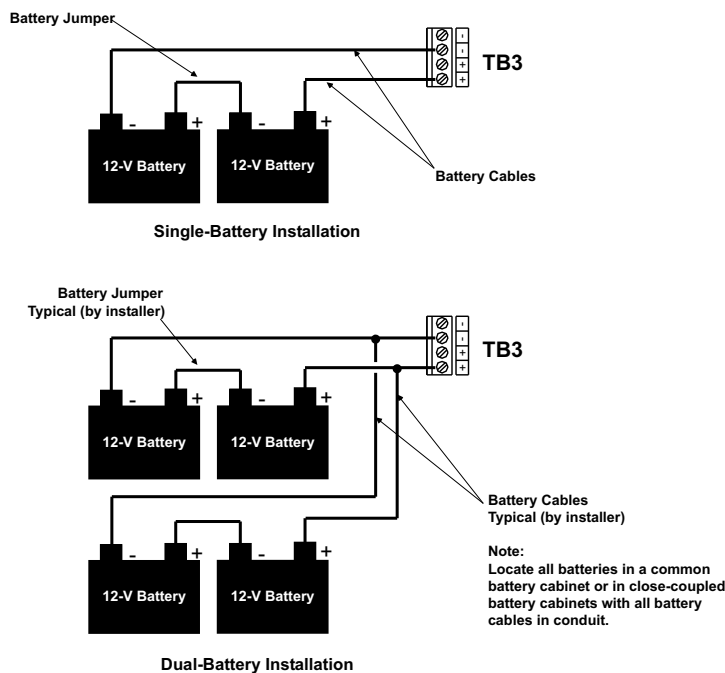


Figure 2-9. Standby Battery Connections

**2-8 SIGNALING LINE CIRCUIT**

The signaling line circuit (SLC) is the communications path between the ARIES Control Unit and the SmartOne field devices. The SLC can be wired to meet NFPA 72 Class-A, Style-6 and -7 or Class-B, Style-4 requirements.

The SLC can accommodate any combination of up to 255 devices, which include SmartOne automatic initiating devices, monitor modules, relay modules, and control modules.

**2-8.1 SLC Wiring Requirements**

All SLC wiring must be twisted, unshielded, low-capacitance, fire-alarm-system wire. Refer to Appendix B for recommended wire types.

**2-8.1.1 CLASS-B, STYLE-4 WIRING REQUIREMENTS**

The total wiring resistance from the control unit to the end of each individual branch line cannot exceed 40 ohms. Use the following procedure to determine the wiring resistance.

1. Short the ends of each branch line one at a time. Measure the resistance from the terminating points at the control unit to the end of the branch line. See Figure 2-10.
2. Remove the shorting jumper after each branch-line resistance measurement.

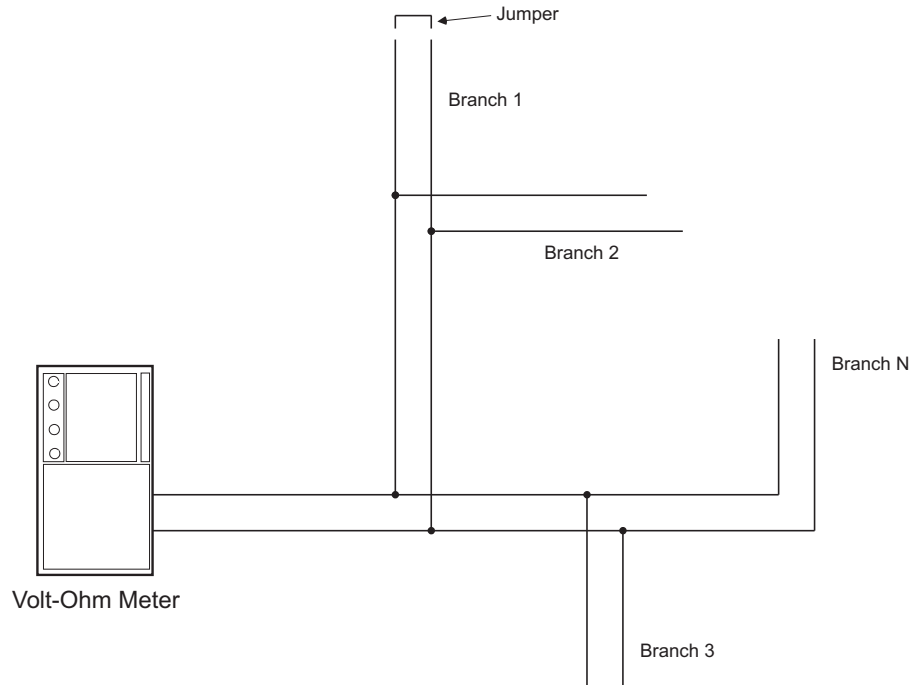


Figure 2-10. Measuring Class-B SLC Wiring Resistance

The total wiring capacitance cannot exceed  $0.5 \mu\text{F}$ . Use the following procedure to determine the wiring capacitance.

1. Ensure that the ends of each branch line are open circuited.
2. Measure the capacitance from the terminating points at the control unit using a capacitance meter. See Figure 2-11.

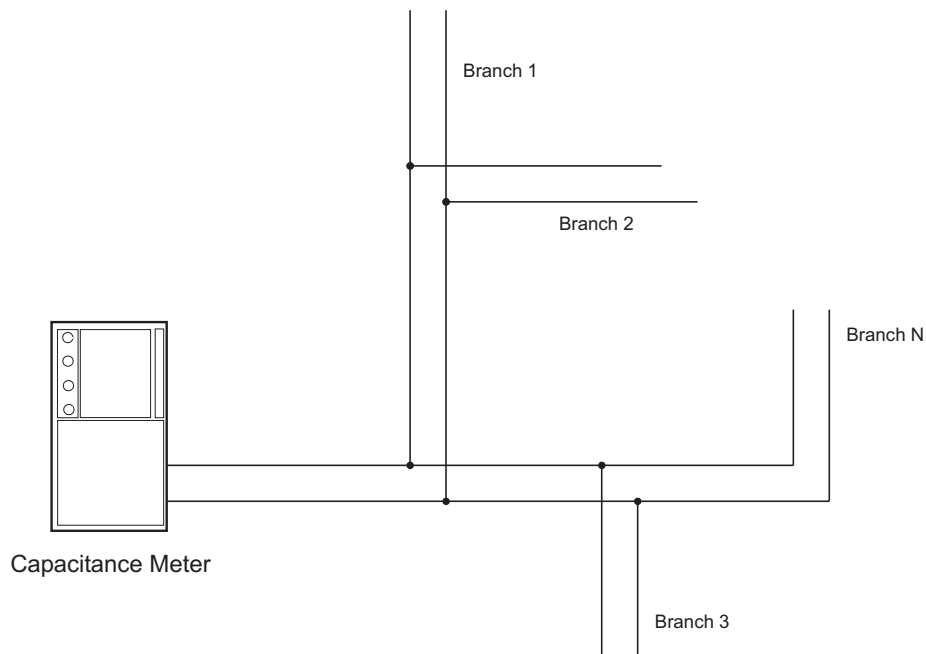
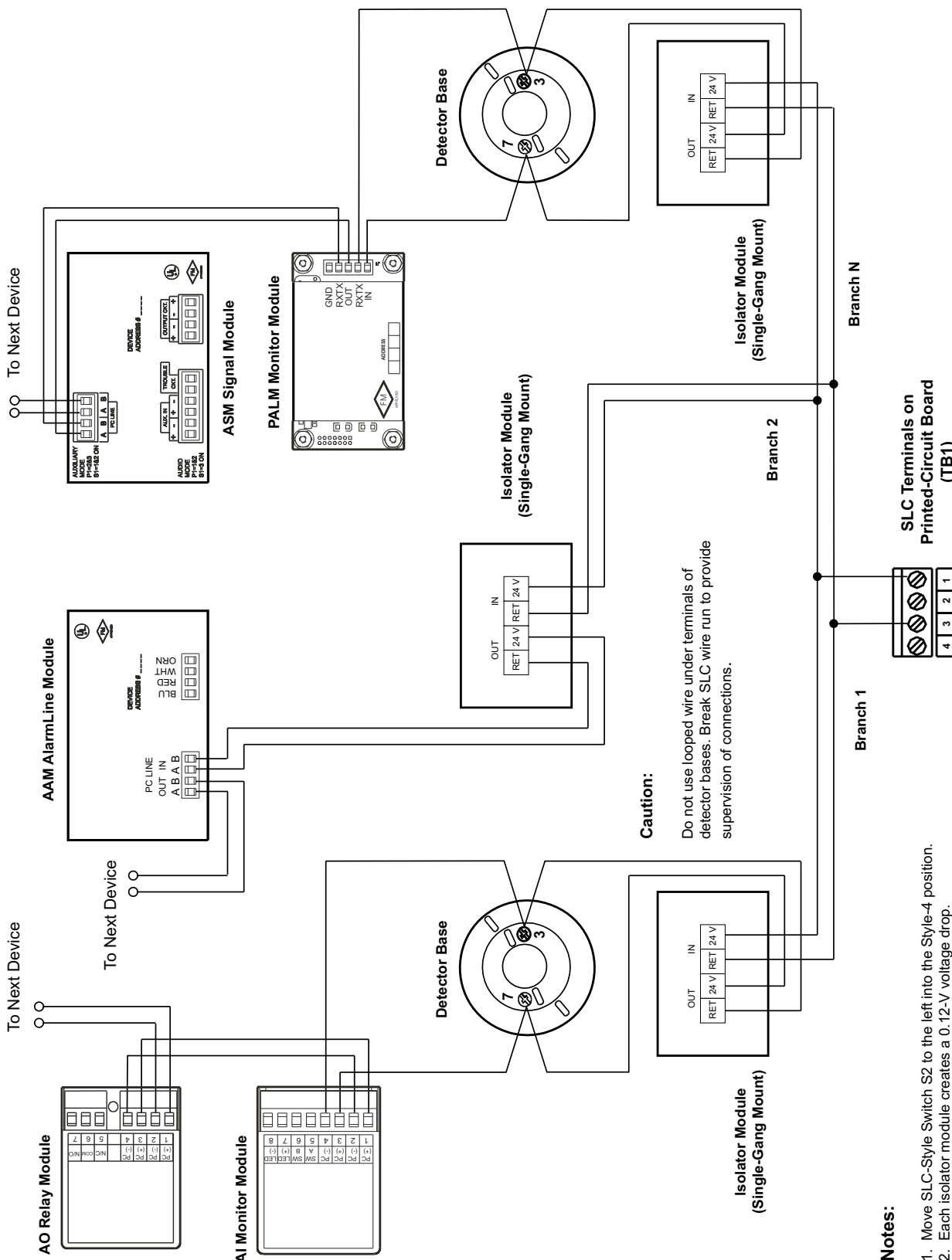


Figure 2-11. Measuring Class-B SLC Wiring Capacitance

Figure 2-12 shows typical wiring for a Class-B, Style-4 signaling line circuit. Make sure that the SLC-Selector Switch S2 is moved to the left into the Style-4 position. Refer to Figure 1-3.

**Note:** Isolator modules are not required for a Class-B, Style-4 signaling line circuit. A maximum of 30 SmartOne devices can be installed between a pair of isolator modules.



**Notes:**

1. Move SLC-Style Switch S2 to the left into the Style-4 position.
2. Each isolator module creates a 0.12-V voltage drop.

Figure 2-12. Class-B, Style-4 Signaling Line Circuit

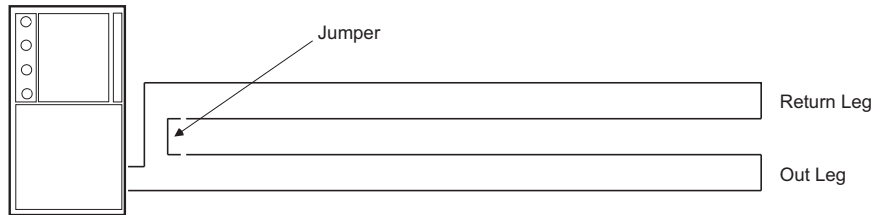
## 2-8.1.2

### CLASS-A, STYLE-6 WIRING REQUIREMENTS

**Note:** The following resistance reading **MUST** be taken **PRIOR** to the installation of any peripheral device.

The total wiring resistance from the start of the “Out” leg to the end of the “Return” leg cannot exceed 40 ohms. Use the following procedure to determine the wiring resistance.

1. Short the “Out” and “Return” legs as shown in Figure 2-13. Measure the resistance using the other two terminating points at the control unit
2. Remove the shorting jumper after the resistance measurement.



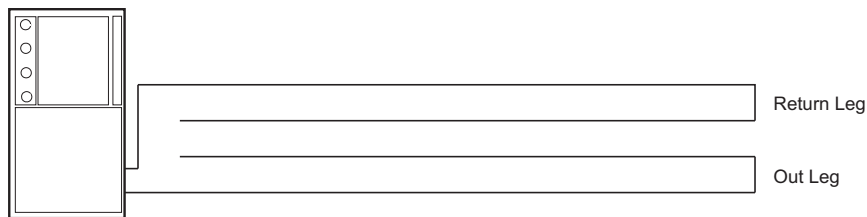
Volt-Ohm Meter

Figure 2-13. Measuring Class-A SLC Wiring Resistance

The total wiring capacitance cannot exceed 0.5  $\mu$ F. Use the following procedure to determine the wiring capacitance.

**Note:** The following capacitance reading **MUST** be taken **PRIOR** to the installation of any peripheral device.

1. Measure the capacitance using the wiring that will connect to control unit terminals TB1-1 and TB1-3 (Terminals TB1-2 and TB1-4 **MUST** remain disconnected from the control unit) as shown in Figure 2-14.



Capacitance Meter

Figure 2-14. Measuring Class-A SLC Wiring Capacitance

Figure 2-15 shows typical wiring for a Class-A, Style-6 signaling line circuit. Make sure that the SLC-Selector Switch S2 is moved to the right into the Style-6 position. Refer to Figure 1-3

**Note:** Isolator modules are not required for a Class-A, Style-6 signaling line circuit. A maximum of 30 SmartOne devices can be installed between a pair of isolator modules.

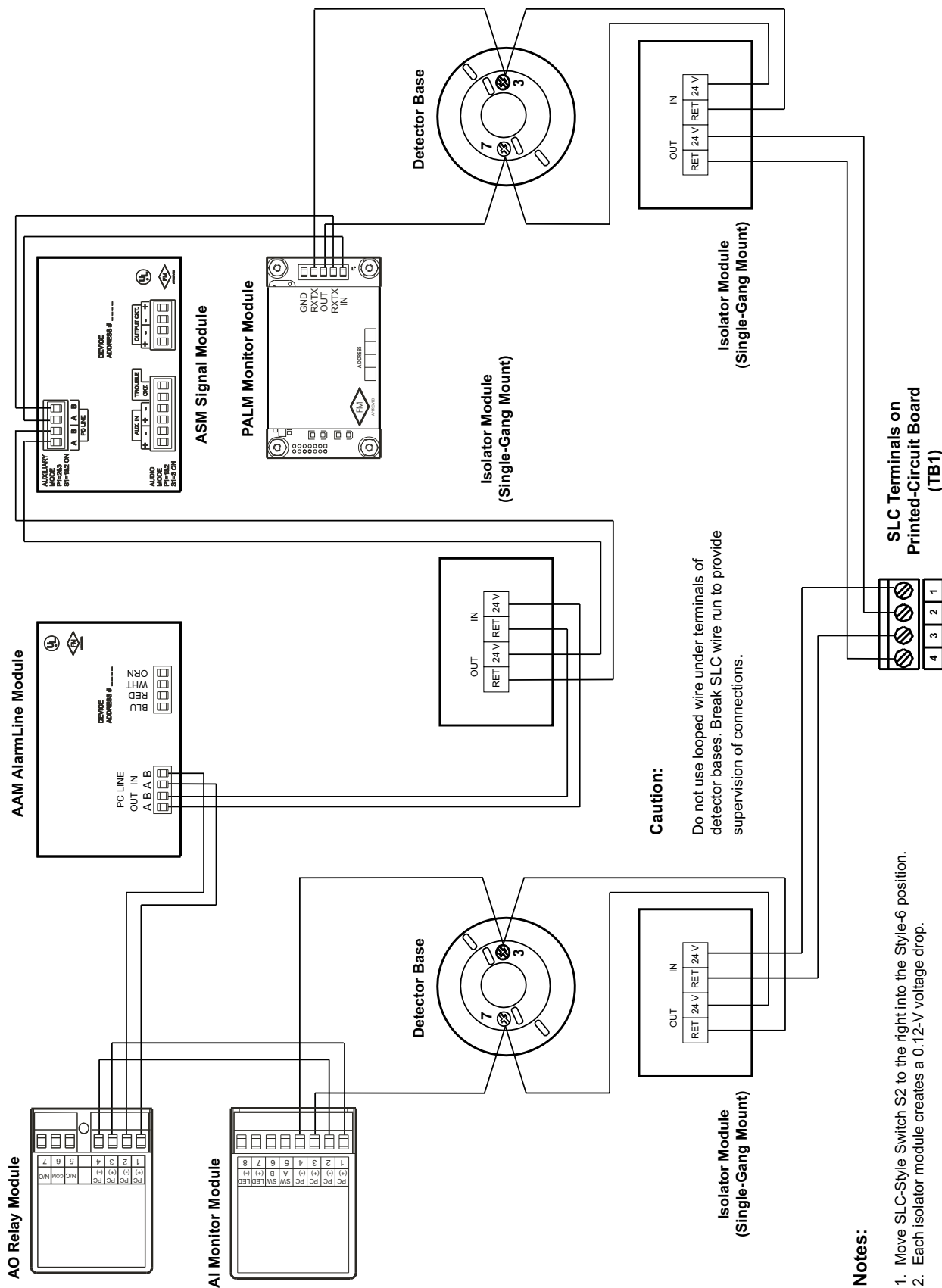


Figure 2-15. Class-A, Style-6 Signaling Line Circuit

A Class-A, Style-7 signaling line circuit requires a pair of isolator modules for each SmartOne device as shown in Figure 2-16. Make sure that the SLC-Selector Switch S2 is moved to the right into the Style-6 position. Refer to Figure 1-3.

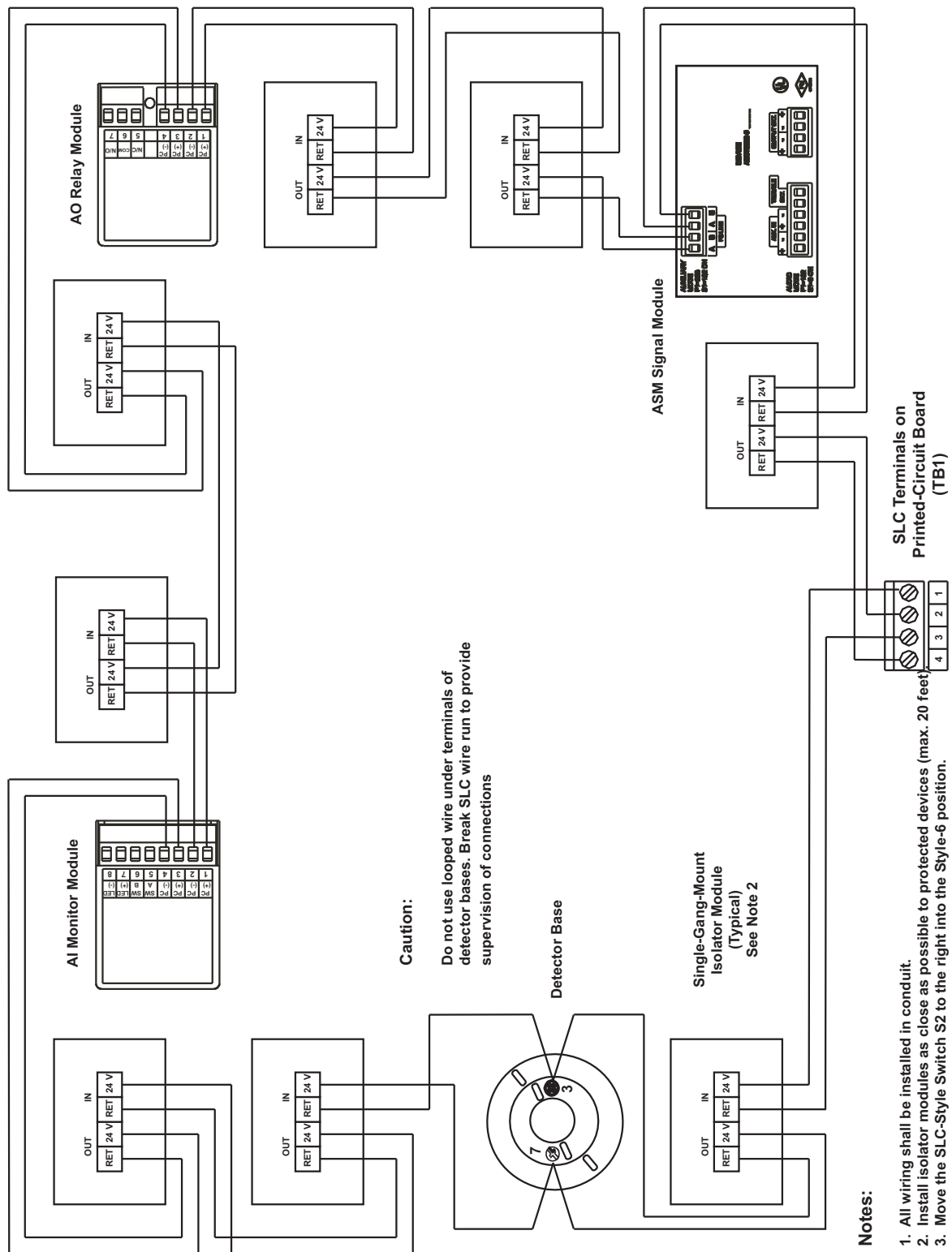


Figure 2-16. Class-A, Style-7 Signaling Line Circuit

2-9 NOTIFICATION APPLIANCE CIRCUITS

The ARIES Control Unit has two notification-appliance circuits (NACs) that are labeled NAC1 and NAC2. These circuits have field-wiring connections that terminate at TB5 and TB14, respectively. Each NAC can supply up to 1.5 A of current at a nominal 24 Vdc for polarized notification appliances. Total current output of the ARIES power supply must not exceed 5.4 A.

Both circuits are supervised, power limited, and are compatible with conventional, UL-Listed, 24-Vdc notification appliances. They can also be used with the following synchronizable horns and strobes:

- MT Series Multi-Tone Horns and Horn/Strobes
- NS Series Horn/Strobes
- NH Series Horns
- RSS(P) Series Strobes

The NS Series notification appliances provide the option to use silenceable horns and non-silenceable strobes on the same NAC. Refer to the ARIES Programmer's Guide to configure one or both NACs for use with the NS Series notification appliances.

Figure 2-17 shows typical wiring for a Class-A, Style-Z notification appliance circuit.

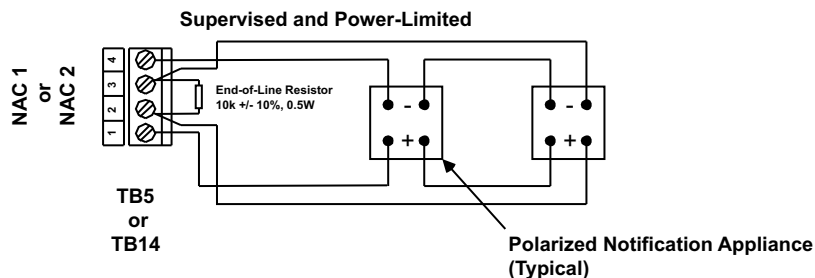


Figure 2-17. Class-A, Style-Z Notification-Appliance Circuit

Figure 2-18 shows typical wiring for a Class-B, Style-Y notification appliance circuit.

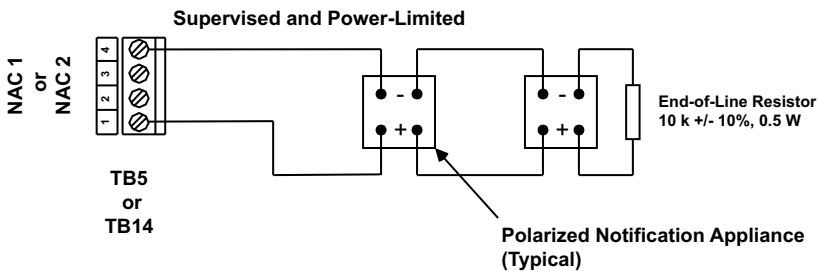


Figure 2-18. Class-B, Style-Y Notification-Appliance Circuit

Use Figure 2-19 to estimate the maximum length of wire as a function of notification-appliance current for both NACs.

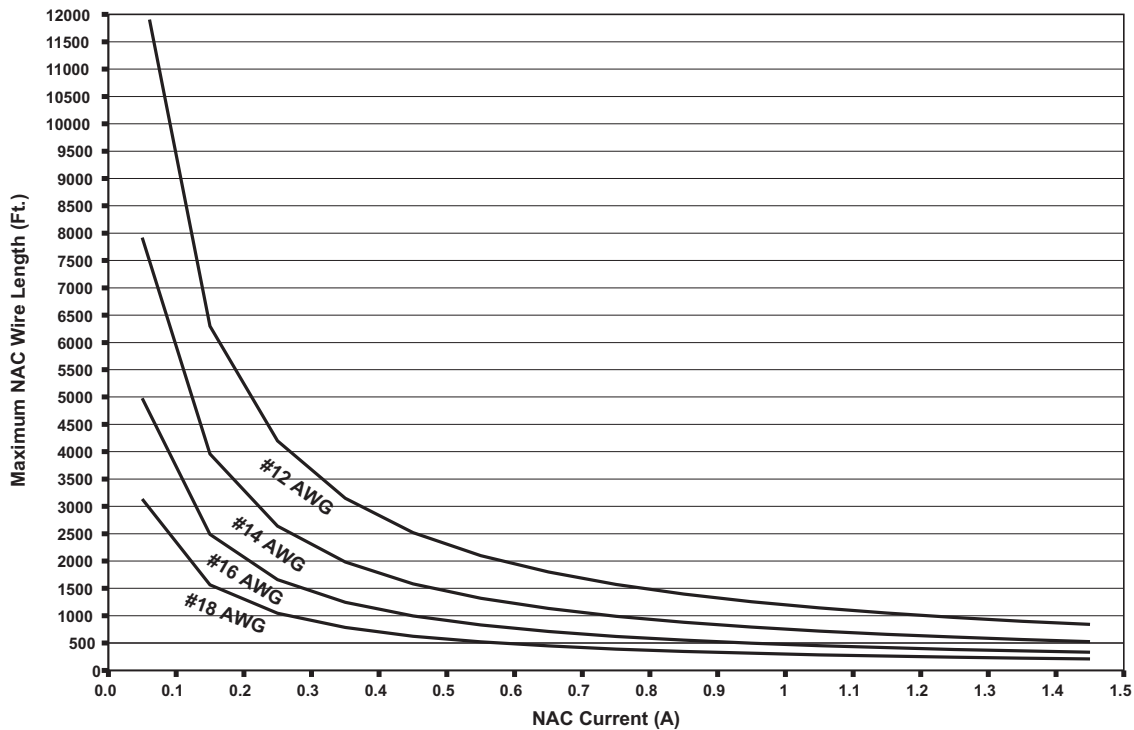


Figure 2-19. Wiring Length vs. Notification-Appliance Current

## 2-10 COMBINATION CIRCUITS

The ARIES Control Unit has two combination circuits that can be used either as notification-appliance circuits (NACs) or as releasing circuits for solenoid valves. The combination circuits are labeled Combo1 and Combo2. These circuits have field-wiring connections that terminate at TB7 and TB6, respectively.

### 2-10.1 Combination Circuits used as NACs

Each combination circuit can supply up to 1.5 A of current at a nominal 24 Vdc for polarized notification appliances when configured as a NAC. Total current output of the ARIES power supply must not exceed 5.4 A.

Both combination circuits are supervised and power limited when configured as NACs. They are compatible with conventional, UL-Listed, 24-Vdc notification appliances. They can also be used with the following synchronizable horns and strobes:

- MT Series Multi-Tone Horns and Horn/Strobes
- NS Series Horn/Strobes
- NH Series Horns
- RSS(P) Series Strobes

The NS Series notification appliances provide the option to use silenceable horns and non-silenceable strobes on the same NAC. Refer to the ARIES Programmer's Guide to configure one or both combination circuits as NACs and to configure them for use with the NS Series notification appliances.



Figure 2-20 shows typical wiring for a combination circuit wired as a Class-A, Style-Z notification appliance circuit.

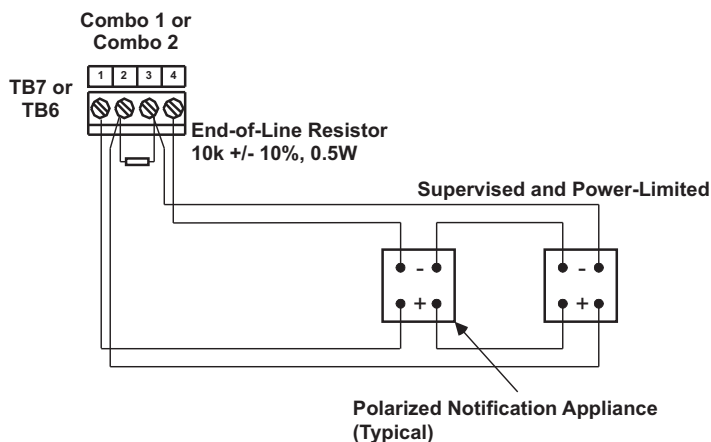


Figure 2-20. Combination Circuit used as Class-A, Style-Z NAC

Figure 2-21 shows typical wiring for a combination circuit wired as a Class-B, Style-Y notification appliance circuit.

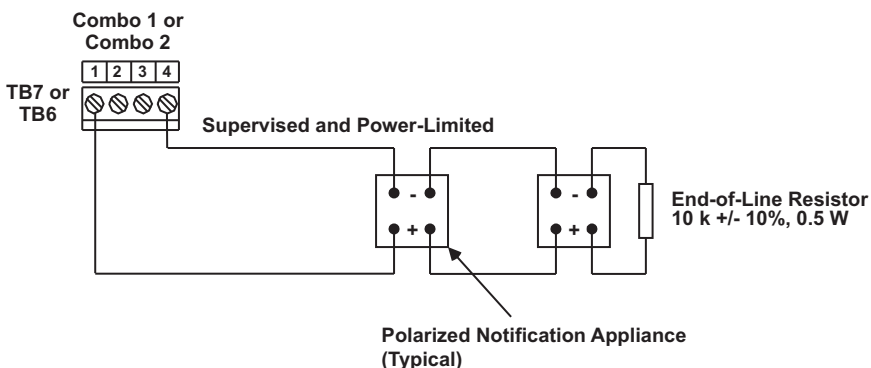


Figure 2-21. Combination Circuit used as Class-B, Style-Y NAC

Use Figure 2-19 to estimate the maximum length of wire as a function of notification-appliance current for a combination circuit used as a NAC.

**2-10.2 Combination Circuits used as Releasing Circuits**

Each combination circuit can be configured as a releasing circuit to activate either one Kidde control head or one pre-action-sprinkler or deluge-sprinkler valve. Total current output of the ARIES power supply must not exceed 5.4 A.

Both combination circuits are supervised and power limited when configured as releasing circuits and when the in-line device, P/N 06-220023-001, is wired in series with the solenoid valve. The compatible control heads and solenoid valves are listed in Appendix C. Refer to the ARIES Programmer’s Guide to configure one or both combination circuits as releasing circuits.

Route non-power limited wiring at least 1/4 inch away from all power-limited wiring.



**Ensure that all releasing devices are physically disconnected from the releasing circuits before performing any system testing or maintenance.**

Figure 2-22 shows a combination circuit wired for releasing. Refer to Appendix C for further information.

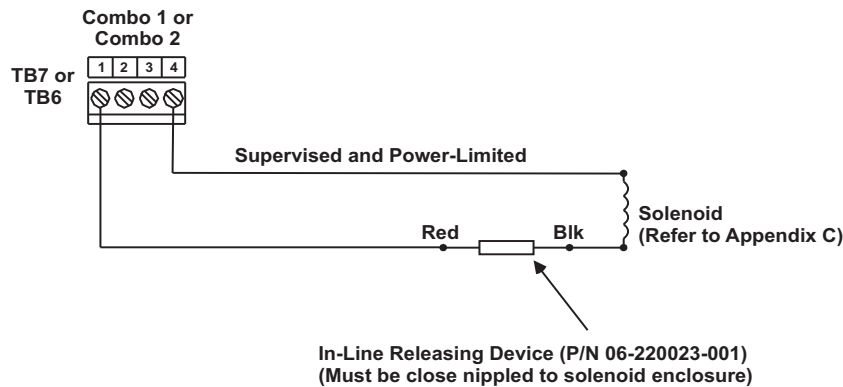


Figure 2-22. Combination Circuit used as Releasing Circuit

### 2-11 RELEASING CIRCUITS

The ARIES has two releasing circuits that can be configured to actuate extinguishing systems through any of the following ways:

- Single actuator assembly
- Single control head or solenoid valve
- Two series-supervised, parallel-actuated control heads or solenoid valves.

The release circuits are labeled Release1 and Release2 and have field-wiring connections that terminate at TB12 and TB11, respectively.



**Ensure that all releasing devices are physically disconnected from the releasing circuits before performing any system testing or maintenance.**

#### 2-11.1 Releasing Circuits for Actuator Assembly



**Actuator assembly is a non-explosive device. Do not remove the shorting cap from the cable connector until the field-wiring connections are to be made. Physical abuse or static-electricity discharge could cause inadvertent actuator actuation. The installer must establish a common electrical potential with the actuator assembly before either removing or inserting the shorting cap.**

Figure 2-23 shows an actuator assembly connected to a releasing circuit. Each releasing circuit is capable of actuating one actuator assembly.

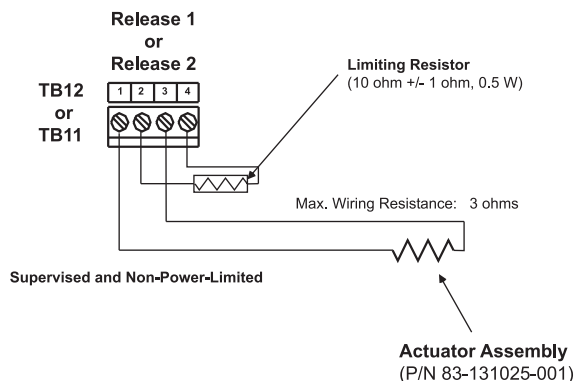


Figure 2-23. Releasing-Circuit Wiring for Actuator

**2-11.2 Releasing Circuits for Single Control Head or Solenoid Valve**

Each releasing circuit can be configured to activate either one Kidde control head or one pre-action-sprinkler or deluge-sprinkler valve. Total current output of the ARIES power supply must not exceed 5.4 A. Figure 2-24 shows a releasing circuit wired for single-control-head or single-solenoid-valve actuation.

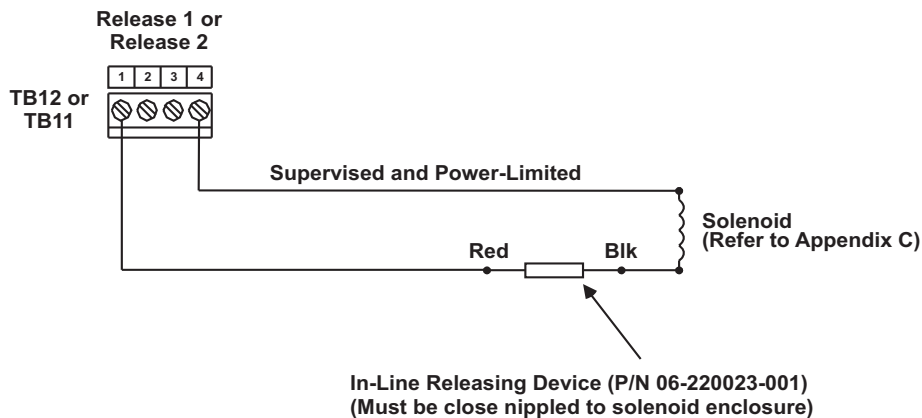


Figure 2-24. Releasing-Circuit Wiring for Single Solenoid

A releasing circuit is supervised and power limited when the in-line device, P/N 06-220023-001, is wired in series with the single control head or solenoid valve. See Appendix C for compatible control heads and solenoid valves. Refer to the ARIES Programmer’s Guide to configure the releasing circuits for single-control-head or single-solenoid-valve actuation.

Route non-power-limited wiring at least 1/4 inch away from all power-limited wiring.

**2-11.3 Releasing Circuits for Dual Control Heads or Solenoid Valves**

Each releasing circuit can be configured to activate either dual Kidde control heads or dual pre-action-sprinkler or deluge-sprinkler valves that do not exceed the maximum release circuit current of 2.5A. It can also activate combinations of Kidde control heads and/or pre-action/deluge sprinkler valves that do not exceed the maximum release circuit current of 2.5A. Total current output of the ARIES power supply must not exceed 5.4 A. Figure 2-25 shows a releasing circuit wired for dual-control-head or dual-solenoid-valve actuation.

**Note:** Total combined control head and/or solenoid current must not exceed 2.5A (continuous output).

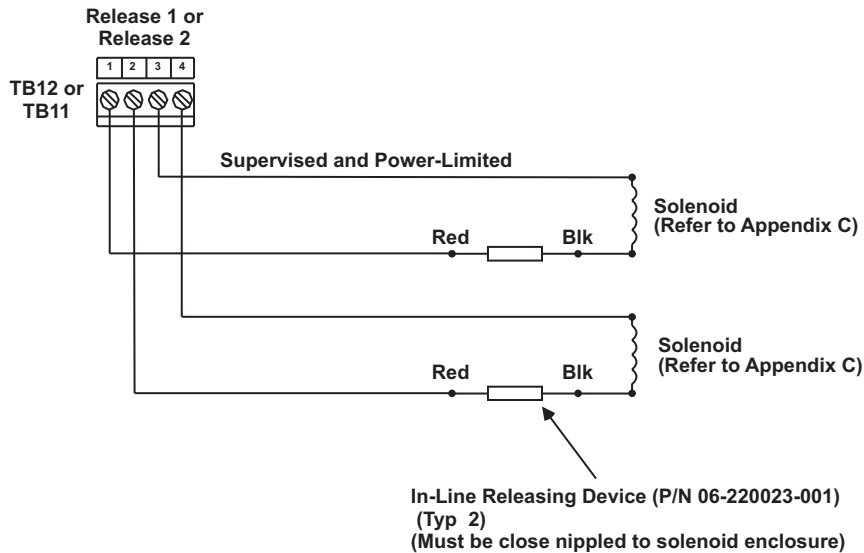


Figure 2-25. Releasing-Circuit Wiring for Dual Solenoids

A releasing circuit is supervised and power limited when the in-line device, P/N 06-220023-001, is wired in series with each of the two control heads or solenoid valves. See Appendix C for compatible control heads and solenoid valves. Refer to the ARIES Programmer's Guide to configure the releasing circuits for dual-control-head or dual-solenoid-valve actuation.

Route non-power-limited wiring at least 1/4 inch away from all power-limited wiring. Do not attach power-limited and non-power-limited wiring to the same terminal block.

**2-12 AUXILIARY POWER OUTPUTS**

Figure 2-26 shows the auxiliary-power terminals on the main printed-circuit board. Both outputs are configurable for either resettable or non-resettable operation. Refer to the ARIES Programmer's Guide to configure the auxiliary-power outputs.

Both auxiliary-power outputs are power-limited.

**Note:** Each output 1.0 A (max.) @ 24 Vdc (nominal)

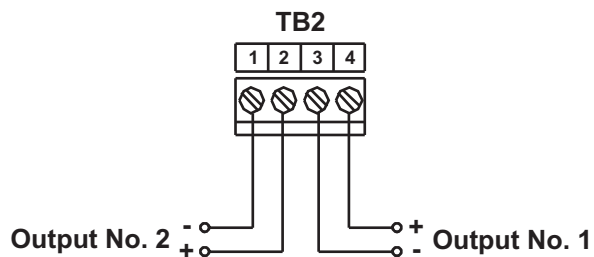


Figure 2-26. Auxiliary-Power Terminals

**2-13 RS-485 COMMUNICATIONS CIRCUIT**

The ARIES Control Unit can communicate with up to 31 peripheral devices via its RS-485 communications circuit. The peripheral devices are listed below, along with the maximum numbers for each particular type of device. The total number of peripheral devices cannot exceed 31.

Table 2-1. ARIES Control Unit Maximum Peripheral Devices

Device	Maximum Number
Model RDCM Remote Display Control Module	15
Model ATM-L Annunciator Driver Module	16
Model ATM-R Relay Driver Module	16

The RS-485 communications circuit is power-limited. Figure 2-27 shows typical interconnections among the ARIES Control Unit and the peripheral devices using a single communications channel.

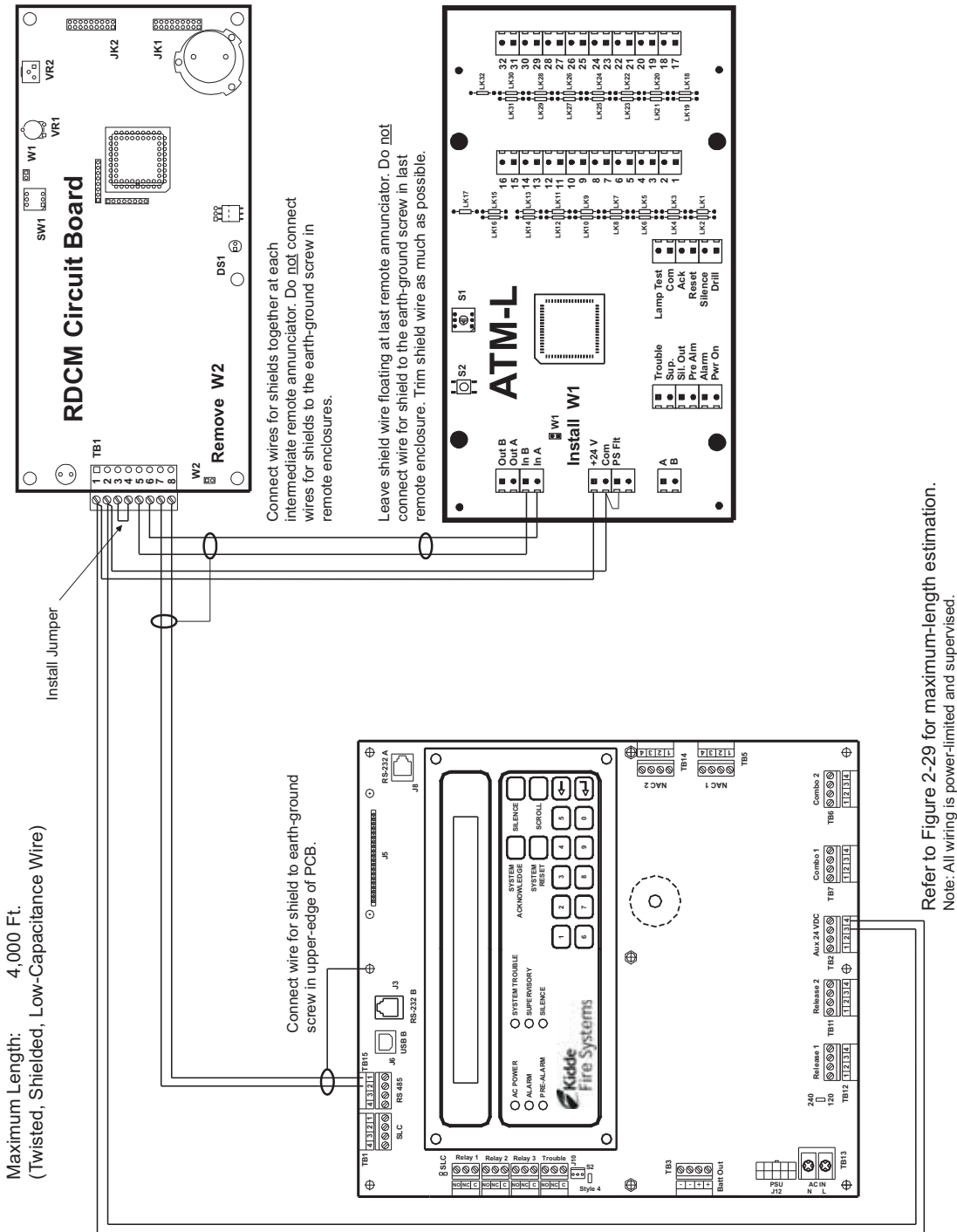


Figure 2-27. Single-Channel RS-485 Wiring to Peripheral Devices

Figure 2-28 shows typical interconnections among the ARIES Control Unit and the peripheral devices using a dual-channel communications circuit.

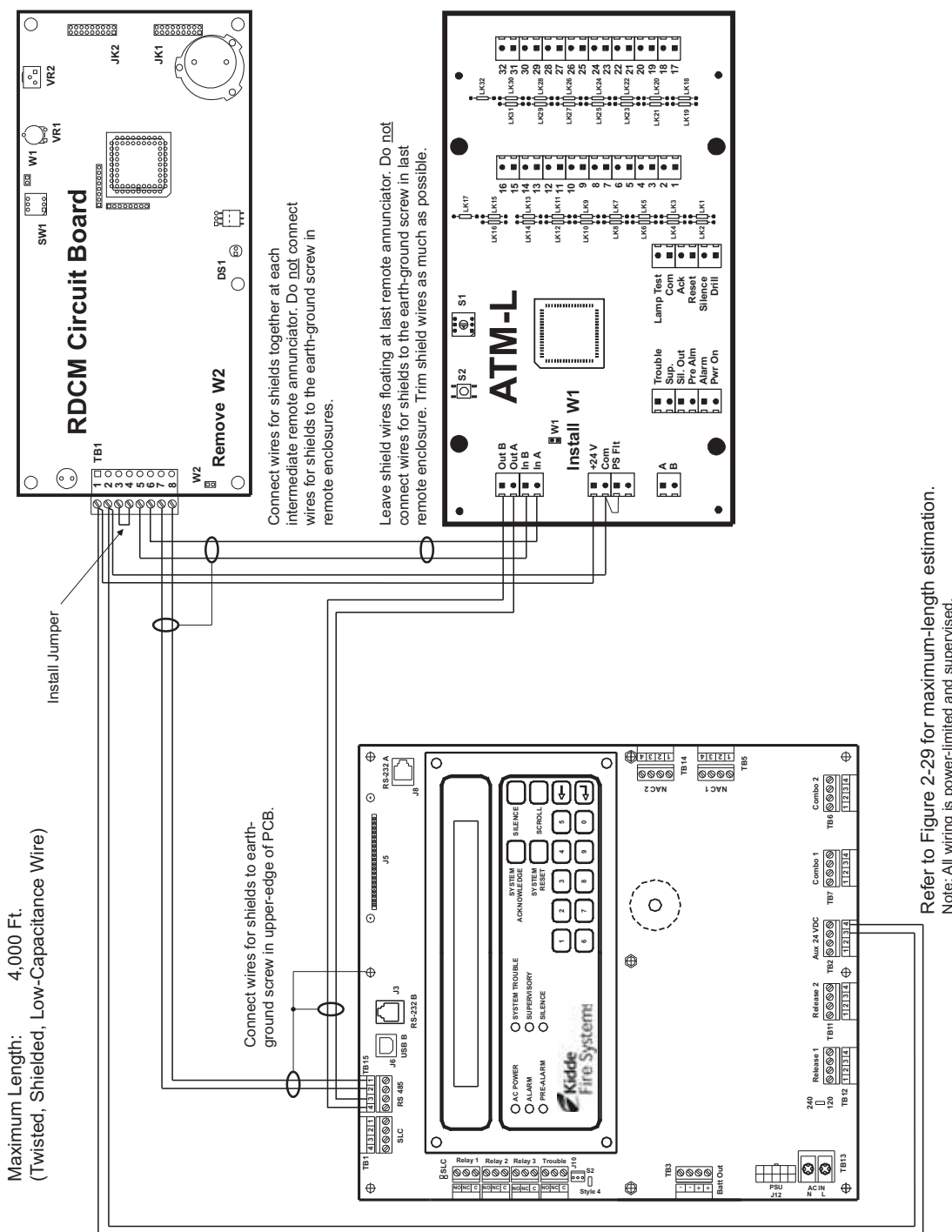


Figure 2-28. Dual-Channel RS-485 Wiring to Peripheral Devices

## Installation

Use Figure 2-29 to estimate the maximum length of wire that can be connected to an Auxiliary-Power Output as a function of RS-485 peripheral-devices current.

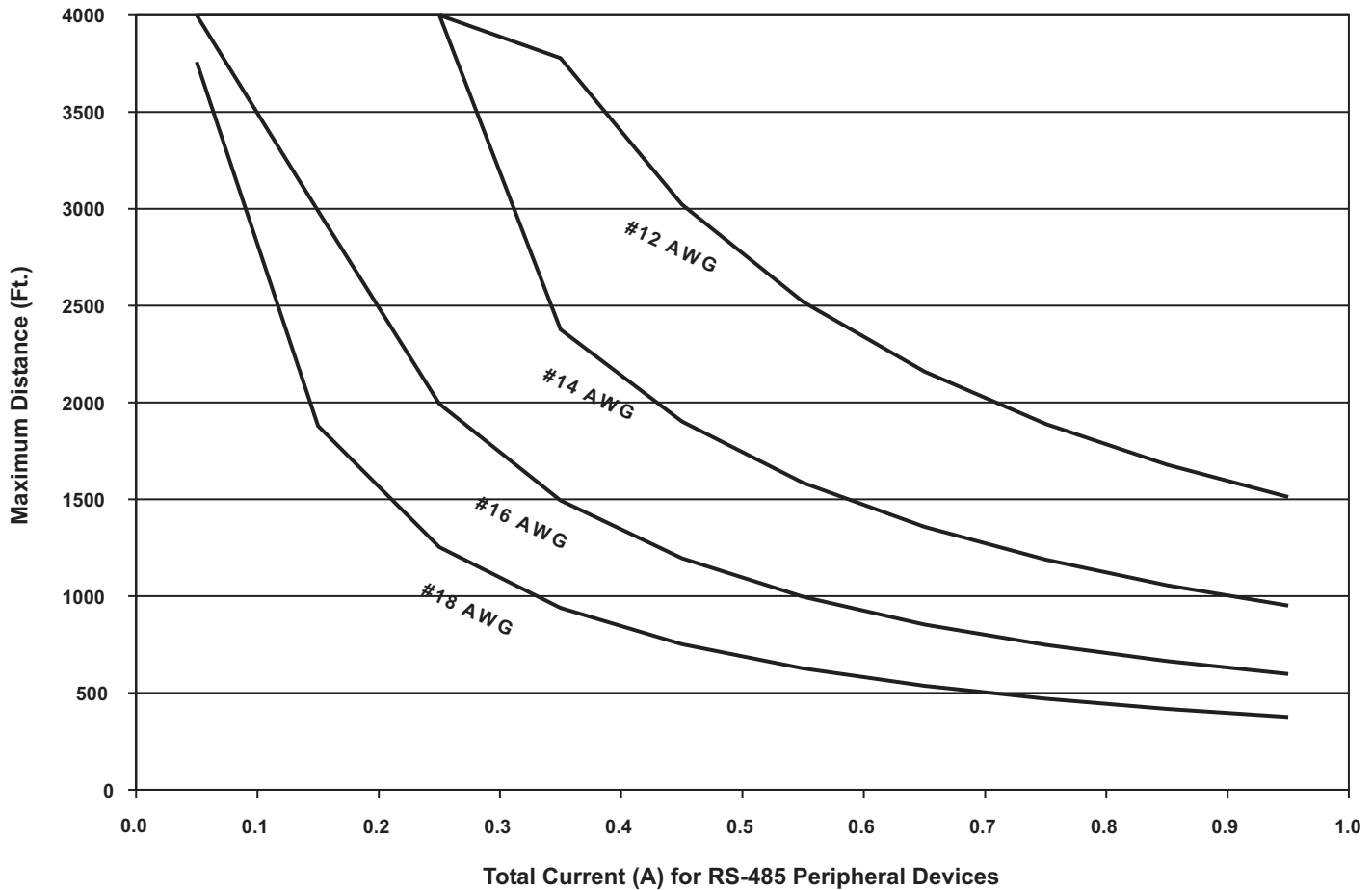


Figure 2-29. 24 Vdc-Power Wiring Length vs. Peripheral-Devices Current

Refer to the installation manuals for the remote display module and driver modules for address selection and additional point-to-point-connection details. The numbers of peripheral devices for a particular application are specified via the ARIES Programmer's Guide.

### 2-14 RELAYS

The ARIES Control Unit has three Form-C, programmable relays and one Form-C, trouble relay as shown in Figure 2-30. All of these relays have the following contact ratings:

- 1.0 A @ 30 Vdc (resistive)
- 0.5 A @ 30 Vdc (inductive)
- 0.5 A @ 120 Vac (inductive)

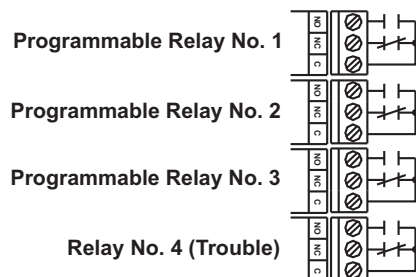


Figure 2-30. Programmable and Trouble Relays



**2-15 RS-232 COMMUNICATIONS PORT**

The ARIES Control Unit has two RS-232 communications ports (J3/RS232B and J8/RS232A) to connect to the Intelligent Interface Module (IIM) and various third-party supplementary devices such as serial printers and graphical monitoring systems.

**Note:** It is recommended that the RS232B port (J3) be used when only a single RS232 port is necessary.

- 9600 Baud Rate
- No Parity
- 8 Bit Word Length
- 1 Start Bit
- 1 Stop Bit

The RS-232 connection to the main printed-circuit board is via an RJ12 socket. The following signals are communicated via the RJ12 socket's pins:

Table 2-2. RJ12 Socket Pin Signals

Signal	Designation	Pin No.
Transmit Data	TX	1
Signal Ground	Gnd	5
Request to Send	RTS	3
Clear to Send	CTS	4
Receive Data	RX	6

**Note:** Pin No. 2 is not used.

The RS-232 communications port can be connected to its associated supplementary device with a standard RS-232 cable of up to 50 feet in length.

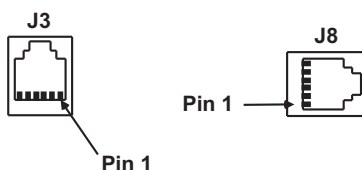


Figure 2-31. RS-232 Communications Ports

## 2-16 USB COMMUNICATIONS PORT

The ARIES Control Unit has one USB communications port to act as a device for a laptop computer being used to upload and download a system configuration or to download the event logs.

The USB port connects to the laptop computer via a standard USB cable.

**Note:** When using the USB port, the ground fault circuitry is not functional. The USB port is to be used to download configurations and operating system software only. It is not intended to be used on a permanent basis. A ground fault will be reported if the USB cable is connected and no communications activity has occurred for 30 minutes. Do not connect or disconnect the USB cable while the control unit is powering up on system startup or initializing after a new configuration upload.

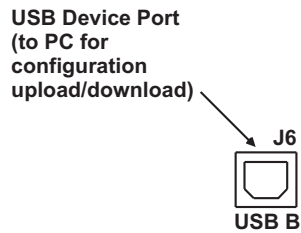


Figure 2-32. USB Communications Port

## 2-17 NETWORK INTERFACE CARD

The Network Interface Card (NIC) contains the circuitry for data communications between networked ARIES Control Units. One NIC is required for each networked control unit, and the control units transmit and receive messages via the RS-485 format.

The NIC supports Class-B, Style-4 or Class-A, Style-7 interconnecting wiring, and acts as a repeater to boost and regenerate the communications signals. One wire on each communications channel is an isolated, floating RS-485 transceiver and the other wire is a non-isolated, grounded RS-485 transceiver. This isolates the chassis of the networked control units to enable ground-fault detection and to eliminate ground loops.

Specifications for the NIC are provided in Table 2-3.

Table 2-3. Network Interface Card Specification

Description	Specification
Part Number	74-600000-009
Weight	.34 lb/.15 Kg
Input Voltage (From Main PCB)	5.0 VDC
Input Current	300 mA Max @ 5 VDC, 70 mA from 24 VDC Supply
Electrical Field Connections	UL Recognized Terminal Blocks for wire size 26 - 12 AWG
Data Ports	EIA/TIA-485
Baud Rate	9600 Baud
Temperature Range	0 - 50 Deg C
Humidity Range	0 - 93% RH, non-condensing

## 2-17.1 How to Install a NIC

Refer to Figure 2-33 before you install the NIC and perform the following procedure to install the NIC on the ARIES's printed-circuit board.



**Remove AC and DC power from the control unit before you install a NIC.**

1. Slip on a wrist ground strap and connect the clip to the earth ground in the enclosure. Do not remove the NIC from its shipping carton unless you have established a common earth-ground potential among yourself, the enclosure, and the NIC's shipping carton.
2. Remove the four screws holding the keypad / display to the main PCB. Carefully pull out the keypad/display from its connectors to the PCB and set aside in a clean, dry location.
3. Remove the NIC from its shipping carton and locate the three plastic standoffs included in the installation kit. Insert these standoffs into the three mounting holes in the PCB as shown in Figure 2-33.
4. Carefully insert the NIC into the 20-pin connector J5 and attach it to the three plastic standoffs.
5. Secure the upper left-hand corner of the NIC with the long screw and spacer supplied with the installation kit. The spacer will separate the NIC and the PCB and the screw will connect to the chassis. Do not over-tighten the screw.
6. Carefully plug the display into its receptacles on the PCB and re-attached with the four screws. Be sure that the display pins and the PCB receptacles are properly aligned.
7. Connect network wiring as shown in Paragraph 2-17.2.

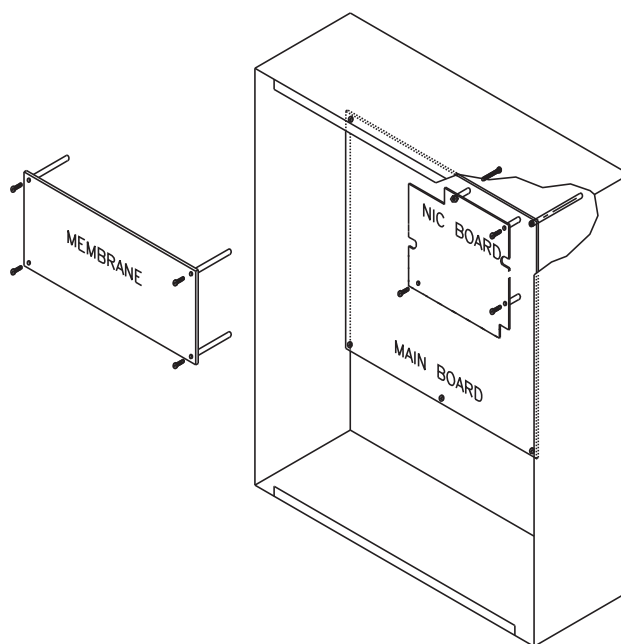


Figure 2-33. NIC Installation

## 2-17.2 Network Wiring

Typical Class-B, Style-4 and Class-A, Style-7 wiring are shown in Figure 2-34 and Figure 2-35, respectively.

**Note:** Do not T-Tap the network wiring. Use serial wiring style only. Do not run wiring back from Node N to Node 1.

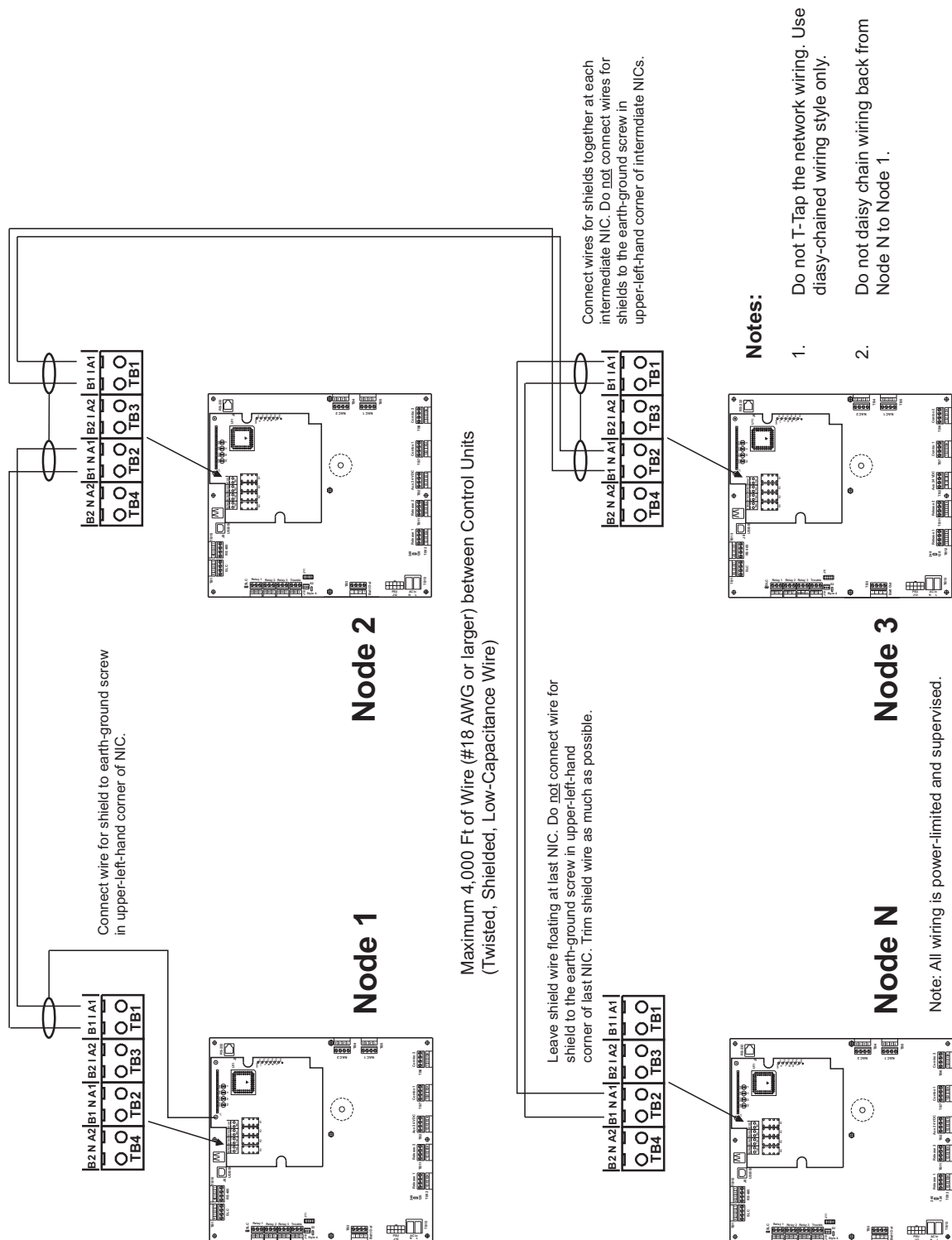


Figure 2-34. Class-B, Style-4 Network Wiring

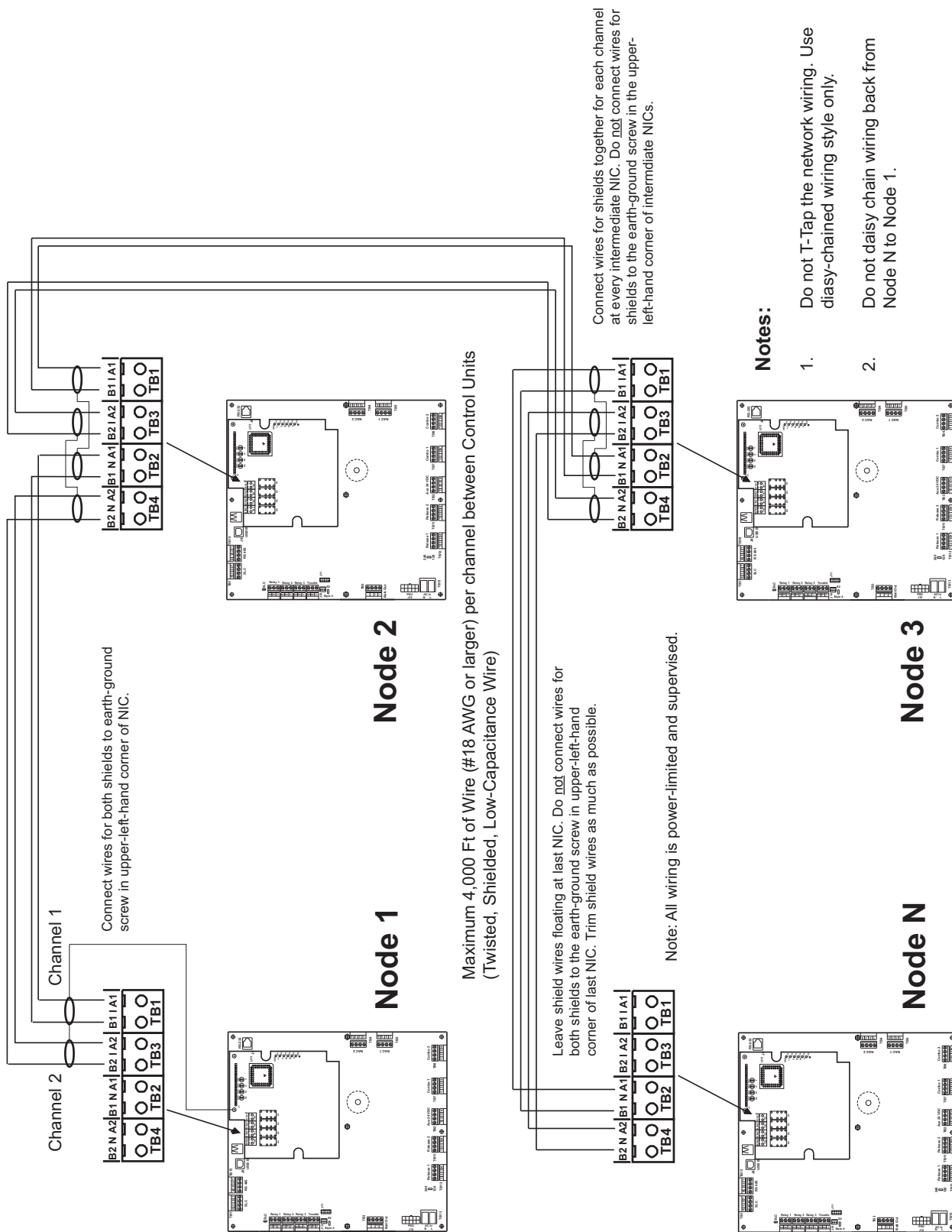


Figure 2-35. Class-A, Style-7 Network Wiring

### 2-18 FIBER-OPTIC CONVERTER CARD

The Fiber-Optic Converter Card allows networked ARIES Control Units to be interconnected using fiber-optic medium. Use one OCC to terminate each end of a fiber-optic communications-channel(s) segment. The ARIES networking structure supports a mixture of fiber-optic and twisted-wire interconnections among networked control units.

Specifications for the Fiber-Optic Converter Card are provided in Table 2-4.

Table 2-4. Fiber-Optic Converter Card Specification

Description	Specification
Part Number	74-600000-006
Weight	3.3 lb/1.5 Kg
Finish	Dark Blue (Color 35044 of Fed Std 595A)
Input Voltage	24 VDC Nominal, 18 VDC Min, 28 VDC Max <b>NOTE:</b> Must be connected to a power supply listed for fire-protective signaling use only.
Input Current	200 mA Max
Electrical Connections	UL Recognized Terminal Blocks for wire size 26 – 12 AWG
Fiber-Optic Connections	Type 'ST'
Data Ports	EIA/TIA-485
Baud Rate	9600 Baud
Optical Link Distance	5280 ft (With no more than 4 dB/km cable attenuation)
Temperature Range	0 – 50 Deg C
Humidity Range	0 – 93% RH, non-condensing

The OCC Cabinet should be located as required in the same room as its parent Control Unit for convenient wiring connections (24 VDC and RS485 communications).

Typical Class-B, Style-4 and Class-A, Style-7 interconnections using a mixture of media are shown in Figures 2-36 through 2-39.

Figure 2-36 shows a typical single-channel system using 62.5/125  $\mu\text{m}$  duplex fiber-optic media.

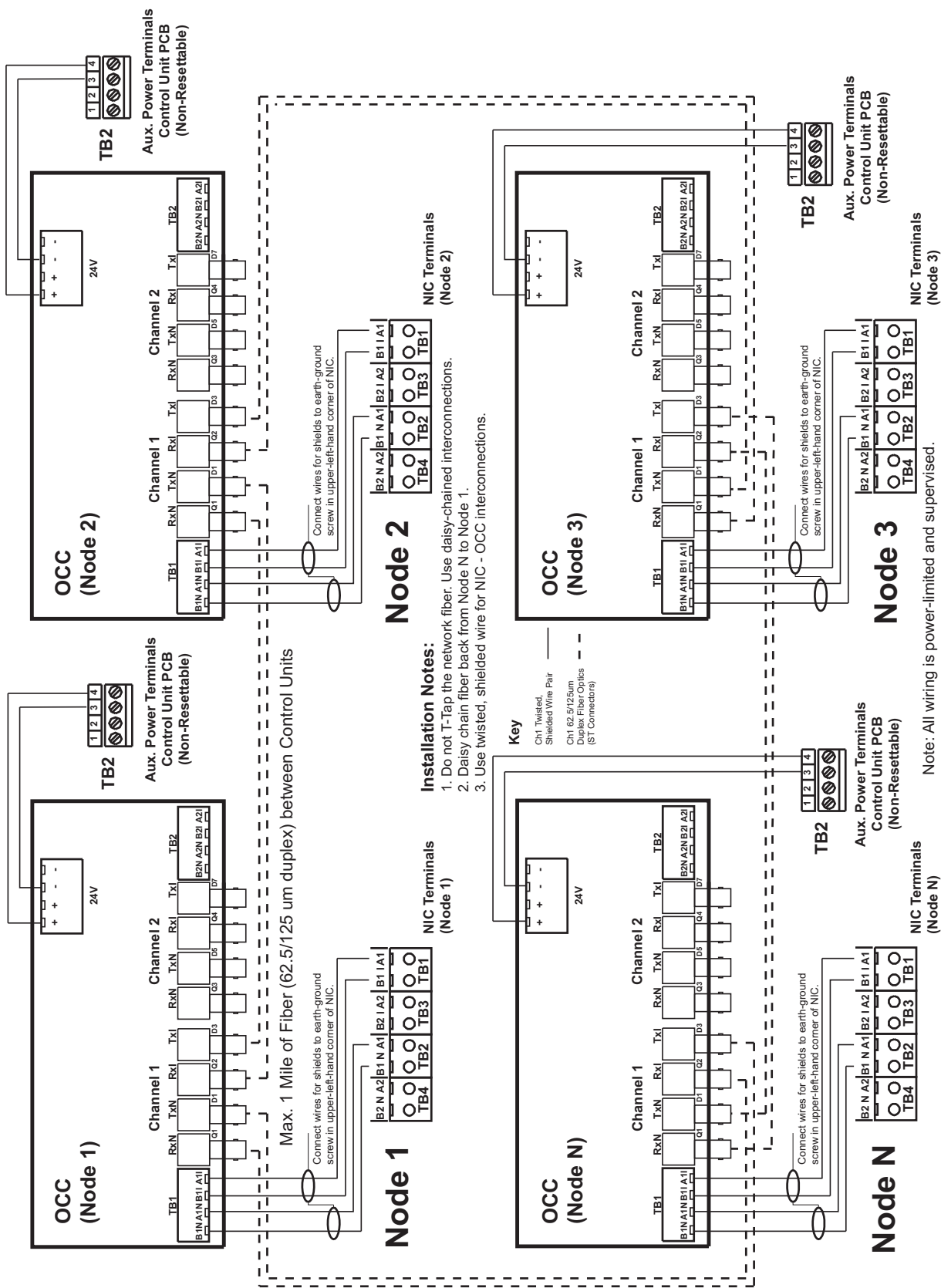


Figure 2-36. Typical Single-Channel System using 62.5/125 μm Duplex Fiber-Optic Media

Figure 2-37 shows the same single-channel system, but using a combination of 62.5/125  $\mu\text{m}$  duplex fiber-optic media and twisted, shielded, low-capacitance wiring.

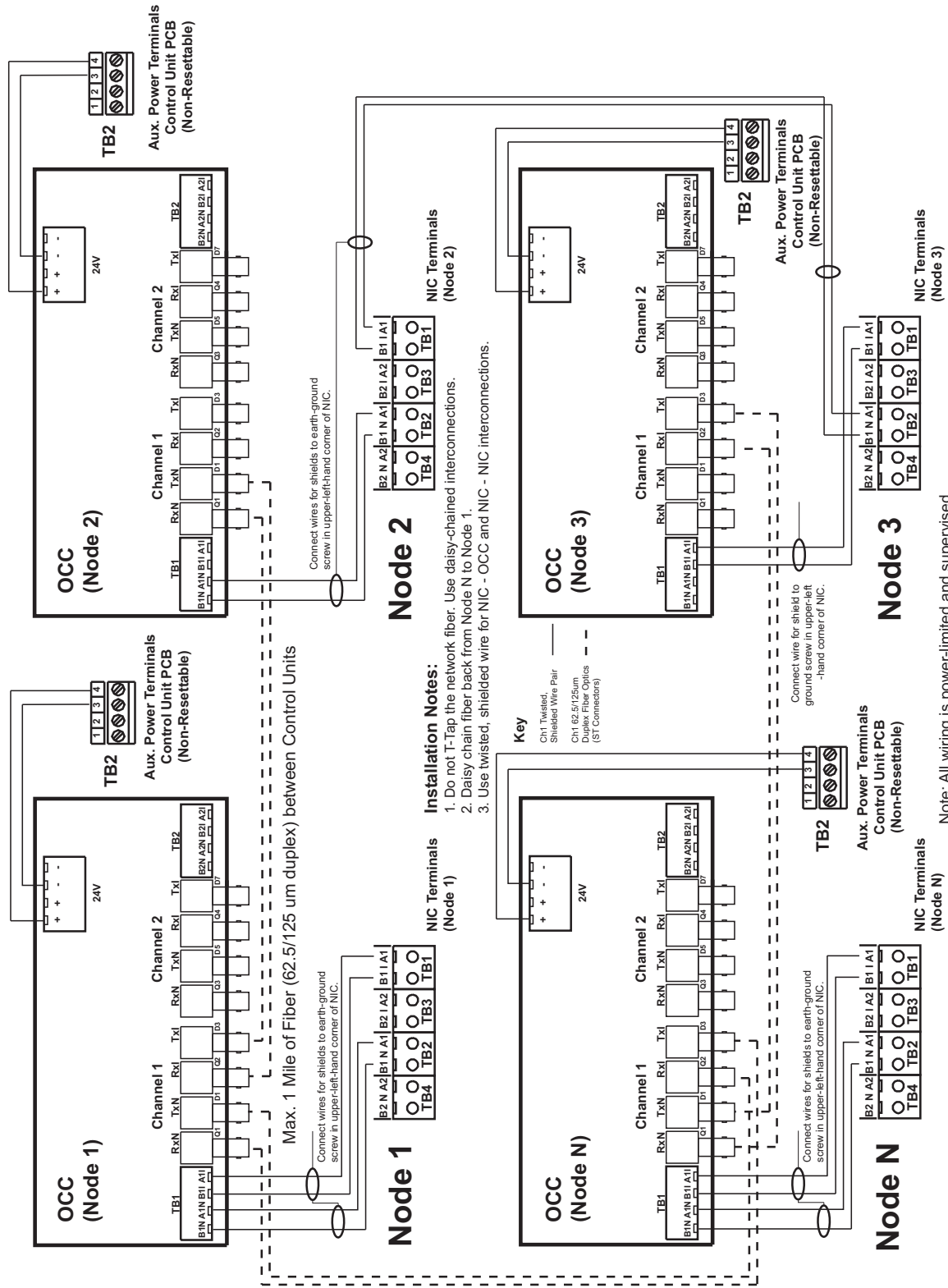


Figure 2-37. Typical Single-Channel System using Combination Twisted, Shielded and Fiber-Optic Media



Figure 2-38 shows a typical dual-channel system using 62.5/125  $\mu\text{m}$  duplex fiber-optic media.

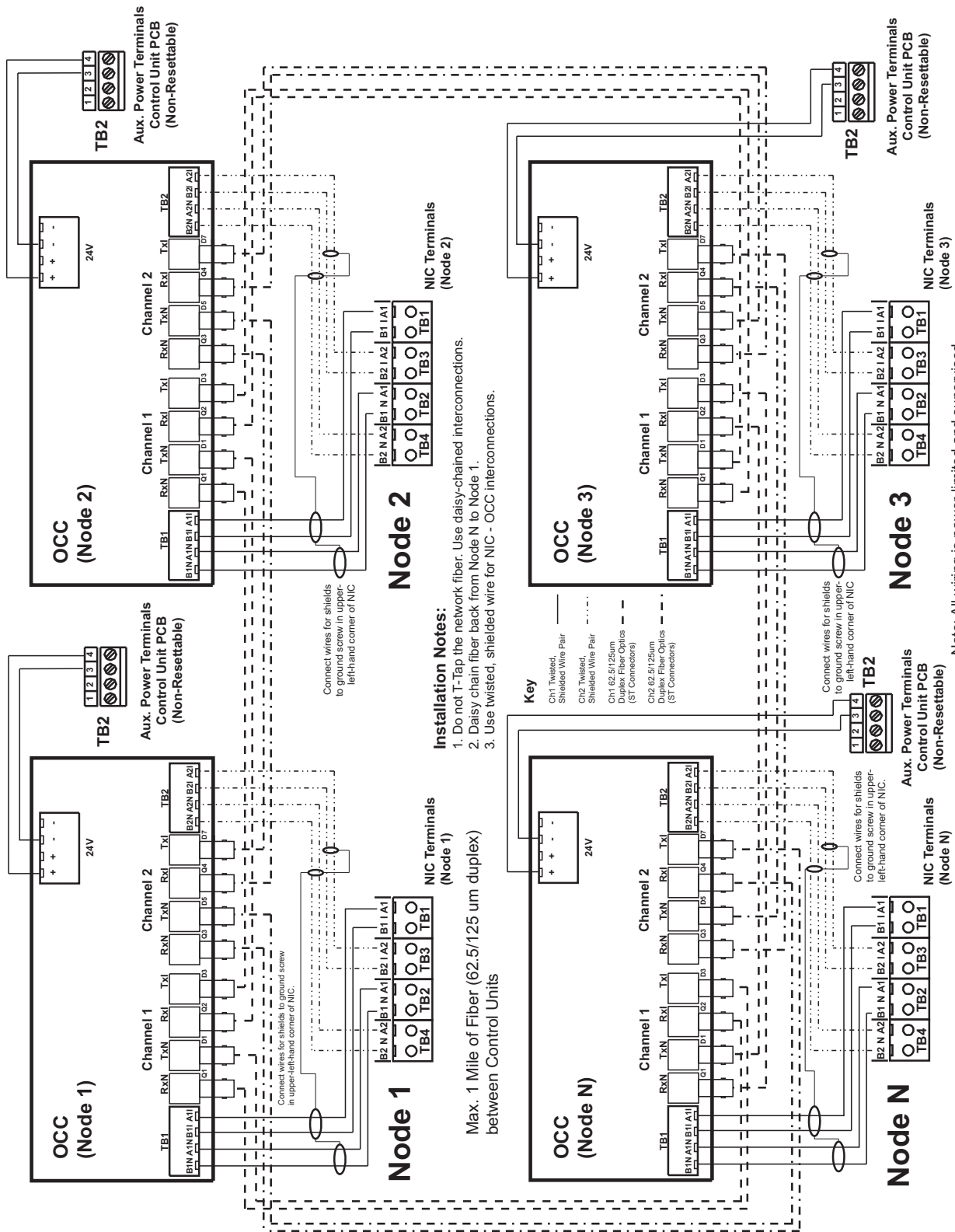


Figure 2-38. Typical Dual-Channel System using 62.5/125  $\mu\text{m}$  Duplex Fiber Optic Media

Figure 2-39 shows the same dual-channel system, but using a combination of 62.5/125  $\mu\text{m}$  duplex fiber-optic media and twisted, shielded, low-capacitance wiring.

Use ST connectors to attach the fiber-optic media to the OCCs.

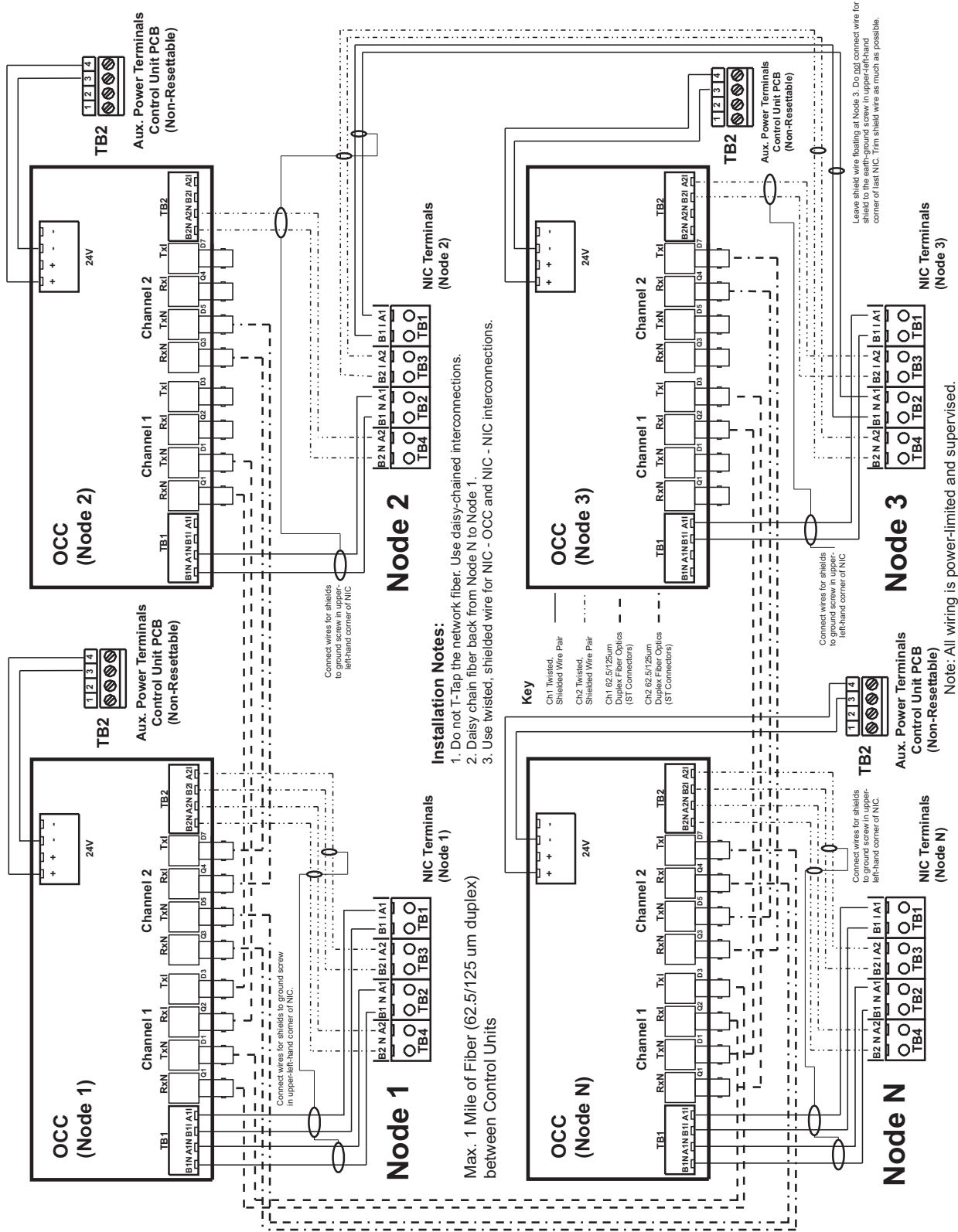


Figure 2-39. Typical Dual-Channel System using Combination Twisted, Shielded and Fiber Optic Media

2-19 INTELLIGENT INTERFACE MODULE

The interconnection of the Intelligent Interface Module to the ARIES Control Unit is shown in Figure 2-40. Refer to the ORION XT Installation, Operation and Maintenance Manual (Publication 77.100) for additional details.

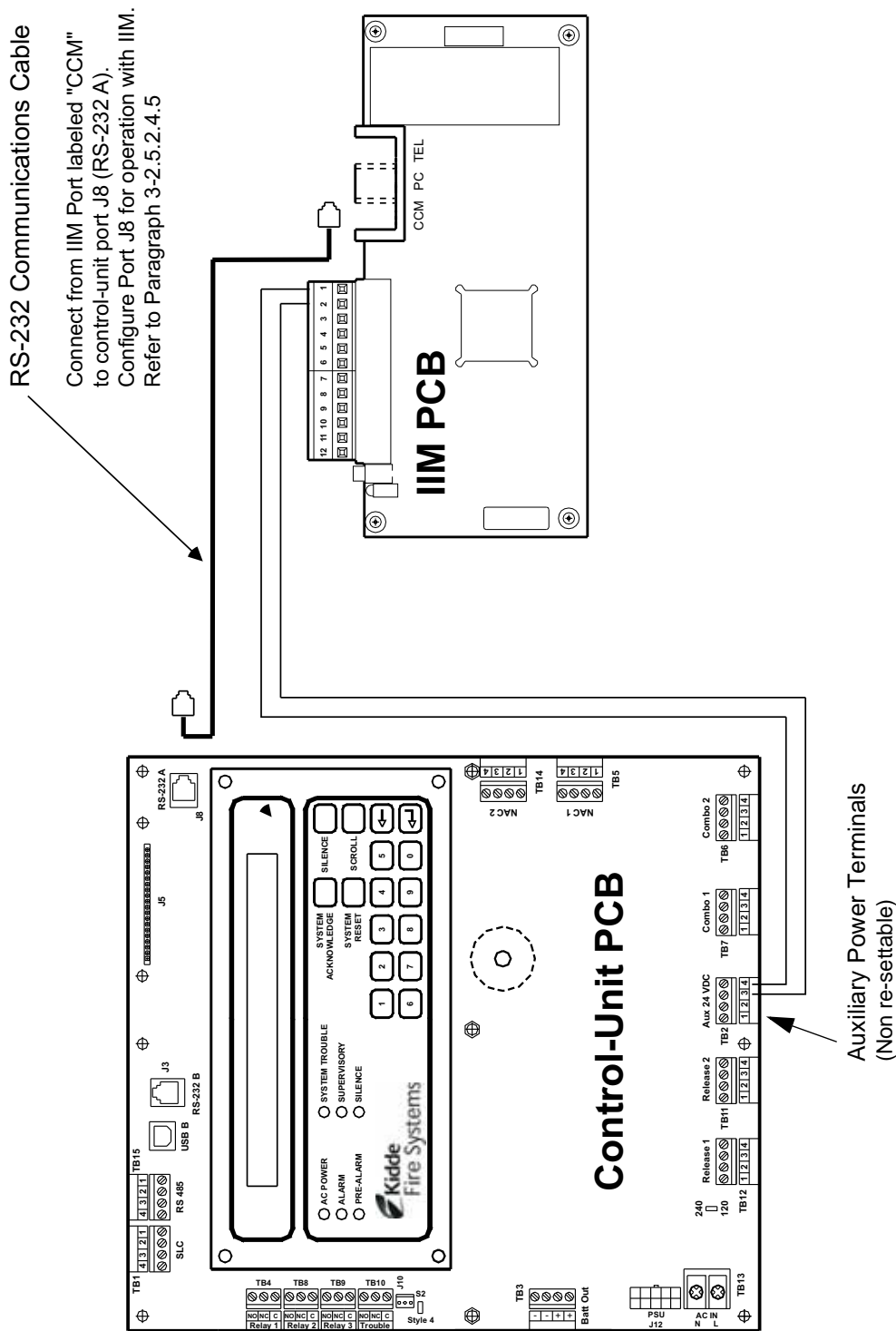


Figure 2-40. Interconnection of IIM

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# CHAPTER 3

## SYSTEM OPERATIONS

### 3-1 ARIES SYSTEM OPERATIONS OVERVIEW

This chapter addresses operation of individual and networked ARIES™ Fire Alarm/Suppression Control Unit.

The control unit uses field-programmable software. Refer to the Configuration Software User's Guide in P/N 76-600000-008 for instructions on how to program the ARIES System.

### 3-2 SYSTEM OPERATION

This section instructs the end-user how to operate an ARIES Control Unit, including how to distinguish the different operating states, how to use the operator keys, and what the status indicating LEDs mean.

Refer also to the Operating Instructions, P/N 06-236406-001, that are packaged with the control unit.

#### 3-2.1 Operating States

The control unit has two operating modes: Normal and Off-Normal. Normal Mode is characterized by the absence of any initiating signals from either automatic detectors or monitor modules, and by the absence of trouble conditions. Off-Normal Mode is triggered by system events or operator interrogation via the keypad. Off-Normal Mode operating states are listed in Table 3-1.

Table 3-1. Off-Normal Mode Operating States

Operating State	Triggering Event(s)
Access-Via-Menu	A operator uses the keypad to isolate initiating devices and/or outputs, list configuration settings and the application program, adjust configuration settings, or manually initiate testing procedures.
Trouble	A report of a problem that could prevent the ARIES System from proper operation. Typical trouble signals include: Lack of response from a configured device on the signaling line circuit; Internal fault reported by a SmartOne detector; Loss of monitoring integrity of the installation conductors; Power-supply fault; and/or Loss of primary AC power.
Alarm	An automatic spot-type smoke or heat detector or a high-sensitivity smoke detector senses a fire signature that is greater than the detector's programmable alarm threshold, or when a monitor module programmed as a manual-alarm, manual-release, waterflow or general-alarm point activates.
Pre-Alarm	An automatic spot-type smoke, heat detector or a high-sensitivity smoke detector senses a fire signature that is greater than a programmable, lower-level warning threshold but less than the detector's programmable alarm threshold.
Supervisory	A monitor module detects a condition such as gate-valve closure, low air pressure or water level, or pump failure that could impair the operation of a building's sprinkler system. It also enters this state when an operator isolates any initiating or control devices or control-unit-based output circuits. This mode is primarily event-driven.

3-2.2 Outputs Activation

The ARIES System operation is control by events. Control-unit-based or signaling-line-circuit-based outputs are activated by user-specified operating instructions contained in the system's event output control (EOC) program. The EOC program is triggered by any event that transitions the system from the Normal Mode to an event-driven, Off-Normal operating state.

**Note:** All alarm events must be annunciated by public-mode notification.

3-2.3 Operator Keys

Operator keys for the ARIES System are located on the display inside the control unit. The control unit door must be open to access the operator keys.

Figure 3-1 shows the location of the operator keys and status indicating LEDs on the display. Table 3-2 lists the names and functions of the operator keys on the display.

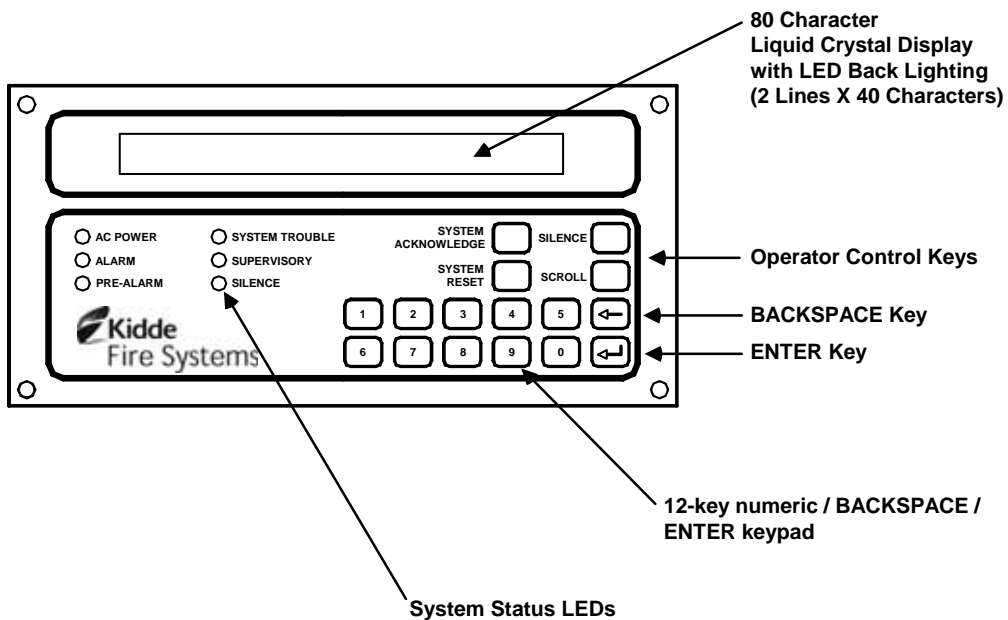


Figure 3-1. Display Panel

Table 3-2. Operator Control Keys and Functions

BUTTON	FUNCTION
<ACKNOWLEDGE>	The <ACKNOWLEDGE> Key allows the operator to signal the ARIES System Control Unit that a new event currently being displayed is understood. The control unit's audible notification appliance will silence and all flashing Pre-Alarm, Alarm, Supervisory, or Trouble LEDs will light steadily when all active events have been acknowledged.
<SILENCE>	Pressing the <SILENCE> Key after all current alarm events have been acknowledged shuts off any active, silenceable control-unit-based or signaling-line-circuit-based outputs, such as notification-appliance circuits or control modules.  <b>Note:</b> There is a 10-second buffer period during which subsequent presses of the <SILENCE> Key are intentionally ignored. A subsequent key press will only be acted upon after at least 10 seconds have elapsed since the previous key press.
<RESET>	The <RESET> Key restores the ARIES System to Normal Mode after all alarm system events have been acknowledged and have ceased reporting alarm conditions.
<SCROLL>	The <SCROLL> Key allows the operator to view all currently-active events by time of occurrence. Also used to navigate through the menu options.
NUMERIC KEYPAD (0-9)	Used to enter passwords, navigate through the menu options, and specify numeric operating data.
<BACKSPACE>	Used to exit the menu system and to delete incorrect entries.
<ENTER>	Used as the <ENTER> Key for the menu system.

3-2.4 Status Indicating LEDs

Table 3-3 lists the names and functions of the system status LEDs on the display.

Table 3-3. System Status LEDs and Functions

LED	COLOR	FUNCTION
Power On	Green	A steady LED indicates primary AC power is on at acceptable levels. An unlit LED indicates unacceptable AC power levels or AC power is disconnected.
Alarm	Red	A flashing LED indicates one or more unacknowledged alarm events, or that a previously-acknowledged non-latching alarm device has issued an alarm-off report. A steady LED indicates all alarm events and alarm-off reports have been acknowledged. The LED turns off when the control unit is reset if all current alarm events and alarm-off messages have been acknowledged and none of the alarm-initiating devices are reporting alarms.
Pre-Alarm	Yellow	A flashing LED indicates unacknowledged pre-alarm events. A steady LED indicates all current pre-alarm events have been acknowledged. The LED turns off when the control unit receives pre-alarm-off messages from all alarm-initiating devices that had reported a pre-alarm.
Trouble	Yellow	A flashing LED indicates unacknowledged trouble events. A steady LED indicates all trouble events have been acknowledged. The LED turns off when the control unit receives trouble-off messages from all SLC or IIM devices or control-unit monitoring circuitry that had reported trouble conditions.
Supervisory	Yellow	A flashing LED indicates one or more unacknowledged supervisory events. A steady LED indicates all supervisory events have been acknowledged. The LED turns off when the control unit receives supervisory-off messages from all initiating devices that had reported supervisory conditions.
Silence	Yellow	A steady LED indicates the Silence Key has been pressed after all current alarm events have been acknowledged. The LED turns off when 1) the control unit is reset, or 2) the Silence key is pressed to toggle on any previously-silenced NACs and SLC-based modules. The Silence key will repeatedly toggle the NACs and SLC-based modules off and on and the Silence LED will track the activation state of the NACs and modules until the control unit is reset.



### 3-2.5 Operating Instructions

The following paragraphs give general operating instructions for a stand-alone system.

#### 3-2.5.1 NORMAL OPERATION

There are no active events such as alarms or troubles during Normal Mode operation. The control unit continuously monitors all initiating devices and supervised circuits for any changes of state.

The LCD display shows the "System Status Normal" message, the time and date, and an optional user-defined custom message as shown in Figure 3-2.

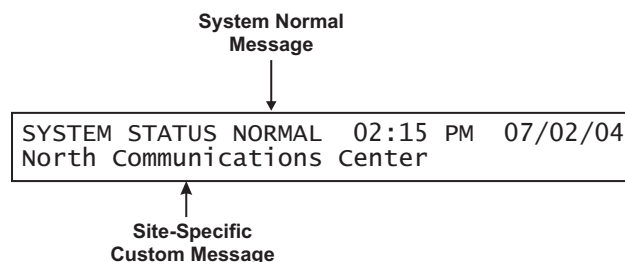


Figure 3-2. Normal Operation Display

#### 3-2.5.2 MENU OPERATION

The ARIES has a built-in menu structure. This menu structure has been implemented to aid users with system operating functions. The following paragraphs describe the menu structure, how to access the menu, menu functions, and how to exit the menu.

An operator can use menu operation to:

- Isolate initiating devices and/or outputs
- List configuration settings and the application program
- Adjust configuration settings
- Initiate manual testing procedures

An operator cannot use menu operation if:

- He is attempting to access the main menu via an RDCM while another operator already has access to the system
- Another operator already has access to the system through the configuration program's terminal-emulation mode (Refer to the ARIES Programming Guide for information on terminal-emulation mode.)

Any of the following events cancel Menu operation:

- An alarm signal
- An operator presses the <Backspace> Key at the main menu.
- A period of 60 seconds elapses from the last pressed key.

3-2.5.2.1 Menu Functions

**Note:** The control unit continuously monitors all initiating devices and outputs for any state change while in menu operation.

The main menu functions are shown in Figure 3-3.

Most functions will require additional data to be entered to implement the function, such as a device address or desired alarm threshold.

1: ISOLATE	2: LIST
3: SET	4: TEST

Figure 3-3. Main Menu Functions

Table 3-4 lists and provides a brief description of typical functions that can be performed using the ARIES System's menus. Figure 3-4 contains the ARIES main menu functions and top-level displays.

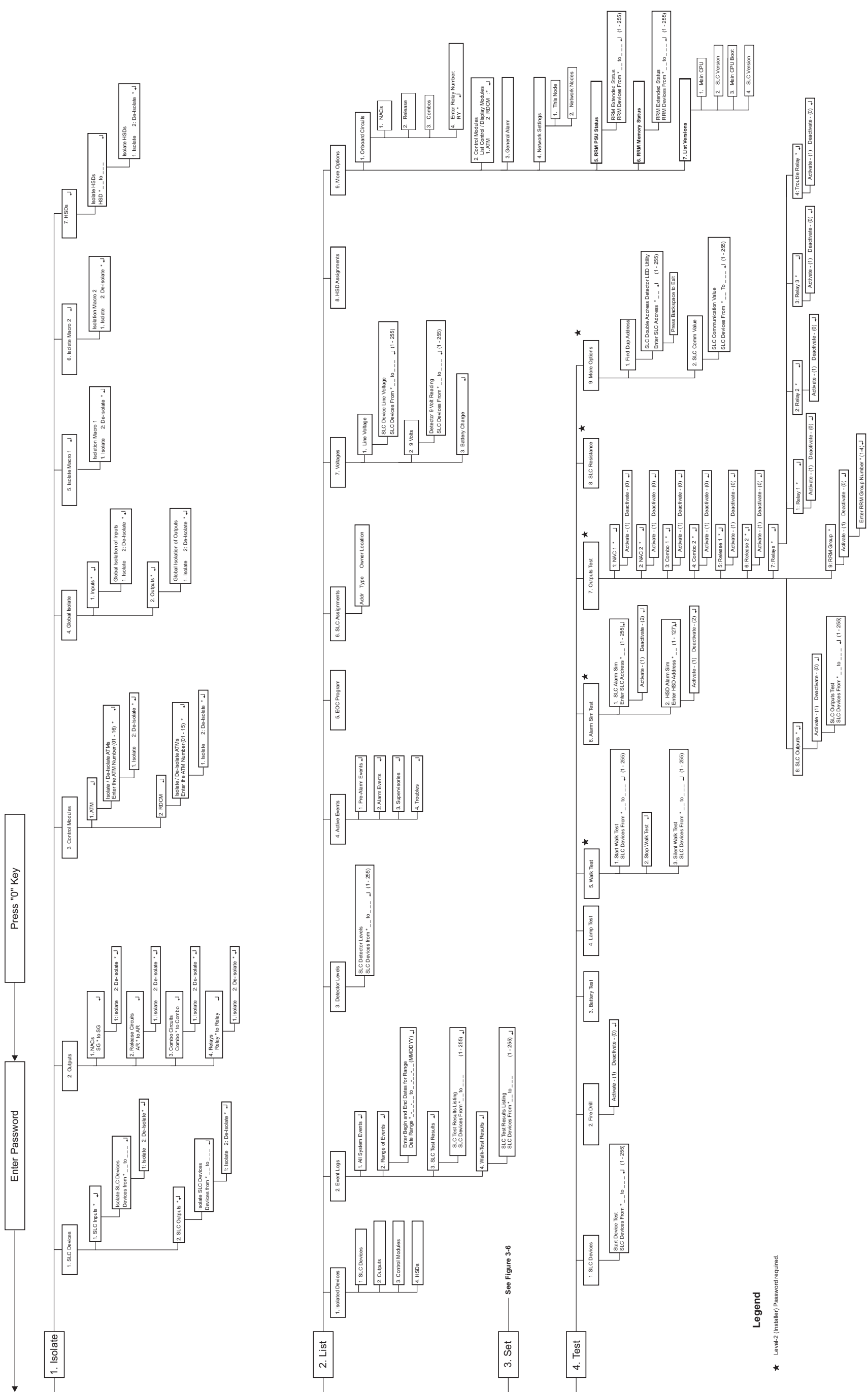
Table 3-4. Main Menu Functions and Descriptions

Menu	Function	Description
Isolation	Device and Circuit Isolation	The isolation commands prevent the ARIES Control Unit from acting upon signals from initiating devices or from issuing activation commands to control-unit-based and SLC-based outputs. The initiating devices and outputs remain operational, but are disconnected from the control unit in the sense that events reported by isolated initiating devices are ignored by the control unit and commands to activate are ignored by isolated outputs and control modules.
List	Listing of Events and System Settings	The list commands are used to view the set of isolated initiating devices and control-unit-based and SLC-based outputs. These commands are also used to display configuration settings for automatic initiating devices, to display the list of devices on the SLC and on the Intelligent Interface Module, and to view lower-level events that are not displayed due to the occurrence of higher-level events.
Set	Change Operating Parameters	The set commands allow the installer to change the sensitivity settings for Smart-One automatic initiating devices, to address and register initiating and control devices, to activate a set of networked control units or to define global operating parameters such as Global Acknowledgement of trouble and supervisory events. These commands are also used to trigger automatic configuration routines such as AutoLearn and AutoSetup.
Test	Confirming Proper Operation	The test commands enable service personnel to test the SmartOne initiating devices for the ability to transmit alarm signals. You can also perform alarm-simulation tests for the system's application program and can command on control modules connected to the SLC.



Figure 3-4. ARIES Menu Functions and Top-Level Displays

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**Legend**

★ Level-2 (installer) Password required.

Figure 3-5. Menu Functions









## 3-2.5.2.2 Isolate Menu Functions

The Isolate functions prevent the ARIES Control Unit from acting upon signals from initiating devices or from issuing activation commands to control unit-based and SLC-based outputs. The initiating devices and outputs remain operational, but are disconnected from the control unit in the sense that events reported by isolated initiating devices are ignored by the control unit and commands to activate are ignored by isolated outputs and control modules.

A Supervisory signal will occur after each Isolation command is executed, and will remain in effect until all Isolation commands are subsequently cancelled by their corresponding De-Isolation commands.

For Top-Level Isolate Menu Functions, refer to Figure 3-4. For the complete Isolate-Menu tree, refer to Figure 3-5.

The following paragraphs list the Isolate Menu functions.

## 3-2.5.2.2.1 How to Isolate SLC Devices

**Purpose:** To prevent initiating and trouble signals from selected SmartOne automatic detectors and monitor modules from being processed and acted upon by the ARIES Control Unit. Also to prevent selected SmartOne control and relay modules from carrying out activation instructions issued by the ARIES Control Unit.

**Note:** An SLC device can only be isolated if it is not in either a trouble or alarm condition.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press 1 Key	Select "SLC Devices" option
5	Press 1 Key for SLC inputs or 2 Key for SLC outputs. Press "Enter" Key to confirm selection.	Select "SLC Inputs" or "SLC Outputs."
6	Use keypad to enter single device or range of devices to isolate. Press "Enter" Key to confirm selection.	Get prompt to Isolate or De-Isolate
7	Press 1 Key and then press "Enter" Key to confirm selection.	Execute Isolation Routine for single device or range of devices entered in Step 5.
8	Press "Backspace" Key (as required)	Exit Menu System
9	Press "Acknowledge" Key.	Silence buzzer and change Supervisory LED from flashing to steady

3-2.5.2.2.2 How to De-Isolate SLC Devices

Purpose: To enable the ARIES Control Unit to process initiating and trouble signals from previously-isolated SmartOne automatic detectors and monitor modules. Also to enable previously-isolated SmartOne control and relay modules to execute activation instructions issued by the ARIES Control Unit.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press 1 Key	Select "SLC Devices" option
5	Press 1 Key for SLC inputs or 2 Key for SLC outputs. Press "Enter" Key to confirm selection.	Select "SLC Inputs" or "SLC Outputs."
6	Use keypad to enter single device or range of devices to isolate. Press "Enter" Key to confirm selection.	Get prompt to Isolate or De-Isolate
7	Press 2 Key and then press "Enter" Key to confirm selection.	Execute De-Isolation Routine for single device or range of devices entered in Step 6.
	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.2.3 How to Isolate Control-Unit-Based Outputs

Purpose: To prevent selected control-unit-based outputs from carrying out activation instructions issued by the ARIES Control Unit.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press 2 Key	Select "Outputs" option
5	Press 1 Key for NACs or Press 2 Key for Release Circuits or Press 3 Key for Combo Circuits Press 4 Key for Relays	Select output to isolate
6	Use keypad to enter single output or range of outputs to isolate. Press "Enter" Key to confirm selection.	Get prompt to Isolate or De-Isolate
7	Press 1 Key and then press "Enter" Key to confirm selection	Execute Isolation Routine for single output or range of outputs entered in Step 6.
8	Press "Backspace" Key (as required)	Exit Menu System
9	Press "Acknowledge" Key	Silence buzzer and change Supervisory LED from flashing to steady.

## 3-2.5.2.2.4 How to De-Isolate Control-Unit-Based Outputs

Purpose: To enable previously-isolated control-unit-based outputs to execute activation instructions issued by the ARIES Control Unit.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press 2 Key	Select "Outputs" option
45	Press 1 Key for NACs or Press 2 Key for Release Circuits or Press 3 Key for Combo Circuits Press 4 Key for Relays	Select output to de-isolate
6	Use keypad to enter single output or range of outputs to de-isolate. Press "Enter" Key to confirm selection.	Get prompt to Isolate or De-Isolate
7	Press 2 Key and then press "Enter" Key to confirm selection	Execute De-Isolation Routine for single output or range of outputs entered in Step 6.
8	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.2.5 How to Isolate High-Sensitivity Smoke Detectors (HSSDs)

Purpose: To prevent initiating and trouble signals from selected HSSDs connected to an IIM from being processed and acted upon by the ARIES Control Unit.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 7 Key	Select "HSDs" option
6	Use keypad to enter single HSSD or range of HSSDs to isolate. Press "Enter" Key to confirm selection	Get prompt to Isolate or De-Isolate
7	Press 1 Key and then press "Enter" Key to confirm selection.	Execute Isolation Routine for single HSSD or range of HSSDs entered in Step 6.
8	Press "Acknowledge" Key	Silence buzzer and change Supervisory LED from flashing to steady
9	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.2.6 How to De-Isolate High-Sensitivity Smoke Detectors (HSSDs)

To enable initiating and trouble signals from previously-isolated HSSDs connected to an IIM to be processed and acted upon by the ARIES Control Unit.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 7 Key	Select "HSDs" option
6	Use keypad to enter single HSSD or range of HSSDs to de-isolate. Press "Enter" Key to confirm selection	Get prompt to Isolate or De-Isolate
7	Press 2 Key and then press "Enter" Key to confirm selection.	Execute De-Isolation Routine for single HSSD or range of HSSDs entered in Step 6.
8	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.2.7 How to Isolate Remote-Annunciator Modules

Purpose: To prevent selected remote-annunciator modules from displaying messages or from carrying out activation instructions issued by the ARIES Control Unit.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press 3 Key	Select "Control Modules" option
5	Press 1 Key for ATMs or Press 2 Key for RDCMs Press "Enter" Key to confirm selection.	Select module to isolate
6	Use keypad to enter module to isolate. Press "Enter" Key to confirm selection.	Execute Isolation Procedure for module
7	Press 1 Key	Select Isolation Routine
8	Press "Backspace" Key (as required)	Exit Menu System
9	Press "Acknowledge" Key	Silence buzzer and change Supervisory LED from flashing to steady

## 3-2.5.2.2.8 How to De-Isolate Remote-Annunciator Modules

Purpose: To enable previously-isolated remote-annunciator modules to display messages or to execute activation instructions issued by the ARIES Control Unit.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press 3 Key	Select "Control Modules" option
5	Press 1 Key for ATMs or Press 2 Key for RDCMs Press "Enter" Key to confirm selection.	Select module to de-isolate
6	Use keypad to enter module to de-isolate. Press "Enter" Key to confirm selection.	Execute De-Isolation Procedure for module
7	Press 2 Key	Select De-Isolation Routine
8	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.2.9 How to Globally Isolate Initiating Devices

Purpose: To prevent initiating and trouble signals from all SLC-based and IIM-based initiating devices from being processed and acted upon by the ARIES Control Unit

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select "Global Isolate" option
6	Press 1 Key and then press "Enter" Key to confirm selection.	Select "Inputs"
7	Press 1 Key and then press "Enter" Key to confirm selection.	Execute Isolation Routine for all initiating devices
8	Press "Backspace" Key (as required)	Exit Menu System
9	Press "Acknowledge" Key	Silence buzzer and change Supervisory LED from flashing to steady

**3-2.5.2.2.10 How to Globally De-Isolate Initiating Devices**

Purpose: To enable the ARIES Control Unit to process initiating and trouble signals from all previously-isolated SLC-based and IIM-based initiating devices

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select "Global Isolate" option
6	Press 1 Key and then press "Enter" Key to confirm selection.	Select "Inputs"
7	Press 2 Key and then press "Enter" Key to confirm selection.	Execute De-Isolation Routine for all initiating devices
8	Press "Backspace" Key (as required)	Exit Menu System

**3-2.5.2.2.11 How to Globally Isolate System Outputs**

Purpose: To prevent all SLC-based and control-unit-based outputs (including relays) from being activated by the ARIES Control Unit

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select "Global Isolate" option
6	Press 2 Key and then press "Enter" Key to confirm selection.	Select "Outputs"
7	Press 1 Key and then press "Enter" Key to confirm selection.	Execute Isolation Routine for all output devices and circuits
8	Press "Backspace" Key (as required)	Exit Menu System
9	Press "Acknowledge" Key	Silence buzzer and change Supervisory LED from flashing to steady

## 3-2.5.2.2.12 How to Globally De-Isolate System Outputs

Purpose: To enable the ARIES Control Unit to activate all previously-isolated SLC-based and control-unit-based outputs (including relays)

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select "Global Isolate" option
6	Press 2 Key and then press "Enter" Key to confirm selection.	Select "Outputs"
7	Press 2 Key and then press "Enter" Key to confirm selection.	Execute De-Isolation Routine for all output devices and circuits
8	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.2.13 How to Execute a User-Defined Inputs/Outputs Isolation Routine

Purpose: To perform multiple input and/or output isolations via a single menu selection. The inputs and/or outputs to be isolated are assigned to an "isolation macro" that is defined via the ARIES Configuration Program. The ARIES Configuration Program permits two "isolation macros" to be defined. Each macro can process up to ten separate isolation commands. The specific isolation commands are executed when either the "Isolation Macro 1" or "Isolation Macro 2" menu options are selected. The isolation lists can include any of the following: initiating devices, control modules, or control-unit-based outputs individually or by address range. This includes automatic initiating devices, monitor modules, control modules, releasing circuits, notification-appliance circuits, combination notification-appliance / releasing circuits, and programmable relays. Refer to the ARIES Programming Guide for the procedure to assign initiating devices, control modules, or control-unit-based outputs to either "Isolation Macro 1" or "Isolation Macro 2".

**Note:** Selecting the isolation-macro option for a second time will execute a de-isolation routine for all the devices and/or circuits that were isolated by the execution of the isolation macro. The isolation macros toggle the devices in the command lists between the isolated and non-isolated states.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press the "Enter" Key	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 5 Key or Press 6 Key (Installer) or Press 6 Key or 7 Key (Owner)	Select "Isolation Macro 1", or Select "Isolation Macro 2"
6	Press 1 Key and then press "Enter" Key to confirm selection.	Execute isolation of Macro 1 or Isolation of Macro 2
7	Press "Backspace" Key (as required)	Exit Menu System
8	Press "Acknowledge" Key	Silence buzzer and change Supervisory LED from flashing to steady

3-2.5.2.2.14 How to De-Isolate Isolation Macro 1 or Isolation Macro 2

Purpose: To de-isolate the multiple input and/or output isolations performed via Isolation Macro 1 or Isolation Macro 2.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 1 Key	Enter Isolate-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 5 Key or Press 6 Key	Select "Isolation Macro 1" Select "Isolation Macro 2"
6	Press 2 Key and then press "Enter" Key to confirm selection.	Execute de-isolation of Isolation Macro 1 or de-isolation Macro 2
7	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.3 List Menu Functions

The List functions are used to view the set of isolated initiating devices and control unit-based and SLC-based outputs. These functions are also used to display configuration settings for automatic initiating devices, to display the list of devices on the SLC and on the Intelligent Interface Module and to view lower-level events that are not displayed due to the occurrence of higher-level events.

For Top-Level List Menu Functions, refer to Figure 3-4. For the complete List-Menu tree, refer to Figure 3-5.

The following paragraphs describe the List Menu functions.



## 3-2.5.2.3.1 How to List Isolated Devices

Purpose: To view the list of isolated devices and output circuits.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press 1 Key	Access "Isolated Devices" option
5	Press 1 Key for "SLC Devices" or Press 2 Key for "Outputs" or Press 3 Key for "Control Modules" or Press 4 Key for "HSDs"	Select devices or circuits to view
6	Press "Scroll" Key (as required)	Move through list of isolated devices or circuits
7	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.3.2 How to List the Entire Contents of the System Event Log

Purpose: To view the history of system events.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press 2 Key	Access "Event Logs" option
5	Press 1 Key	Select All System Events
6	Press "Scroll" Key (as required)	Move through list of system events
7	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.3.3 How to List the Contents of the System Event Log by Dates

Purpose: To view the history of system events by selected dates.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press 2 Key	Access "Event Logs" option
5	Press 2 Key and then press "Enter" Key to confirm selection	Select Range of Events
6	Enter Start Date and End Date. Use month-day-year format. Press "Enter" Key to confirm selection.	Specify date range
7	Press "Scroll" Key	Move through list of selected system events
8	Press "Backspace" Key (as required)	Exit Menu System

**3-2.5.2.3.4 How to List the Most-Recent Test Results for the Initiating Devices on the SLC**

Purpose: To view the most-recent test results for the initiating devices on the SLC. These tests confirm the abilities of the initiating devices to create and transmit alarm signals that can be properly interpreted and processed by the ARIES Control Unit.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
5	Press 2 Key	Access "Event Logs"
6	Press 3 Key	Select SLC Test Results
7	Enter starting SLC address and ending SLC address. Use XXX format for addresses. Press "Enter" Key to confirm address range.	View most-recent test results Report format is: Addr TP Date/Time Pass/Fail where: "Addr" is the device address "TP" is the device type "Date/Time" is test time "Pass/Fail" shows test result.
8	Press "Scroll" Key	Move through test results
9	Press "Backspace" Key (as required)	Exit Menu System

**3-2.5.2.3.5 How to List Most-Recent Walk-Test Results for the Initiating Devices on the SLC**

Purpose: To view the most-recent walk-test results for the initiating devices on the SLC.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press 2 Key	Access "Event Logs"
5	Press 4 Key	Select "Walk Test Results"
6	Enter starting SLC address and ending SLC address. Use XXX format for addresses. Press "Enter" Key to confirm address range.	View most-recent test results Report format is: Addr TP Date/Time Pass/Fail where: "Addr" is the device address "TP" is the device type "Date/Time" is test time "Pass/Fail" shows walk-test result.
7	Press "Scroll" Key	Move through walk-test results
8	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.3.6 How to List a Range of Automatic Detector Sensitivity Settings

Purpose: To view the pre-alarm and alarm thresholds for a range of automatic detectors and to view the fire signatures being currently measured by the detectors. This procedure fulfills the intent of NFPA 72 (2002) Paragraph 10.4.3.2.4, Part (4) as a test to ensure that each smoke detector is within its listed and marked sensitivity range.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press 3 Key	Access "Detector Level" option
5	Enter Start Address and End Address. Use XXX format for address. Press "Enter" Key to confirm address selection.	View detectors' pre-alarm and alarm thresholds and levels of fire signatures being measured. Format for smoke detectors is: Addr TP Pre-Alm Alm Level Format for heat detectors is: Addr. TP Pre-Alm Level where: "Addr" is the device address "TP" is the device type "Pre-Alm" is pre-alarm setting in either %/Ft. or °F "Alm" is alarm setting in either %/Ft. or °F "Level" is current reading in either %/Ft. or °F
6	Press "Scroll" Key (as required)	Move through list of selected detectors
7	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.3.7 How to List Active Events

Purpose: To view the list of active events by event type. Use this option to view lower-level events such as trouble events whose display is suppressed by the concurrent occurrence of higher-level events.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Access "Active Events" option
6	Press 1 Key for Pre-Alarm Events or Press 2 Key for Alarm Events or Press 3 Key for Supervisory Events or Press 4 Key for Trouble Events.	Select event type to view
7	Press "Scroll" Key (as required)	Move through list of selected events
8	Press "Backspace" Key (as required)	Exit Menu System

**3-2.5.2.3.8 How to List the Application Program**

Purpose: To view the Event-Output-Control (EOC) part of the system configuration file.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 5 Key	Access EOC Program option
6	Press "Scroll" Key	Move through EOC lines
7	Press "Backspace" Key (as required)	Exit Menu System

**3-2.5.2.3.9 How to List the Devices on the SLC**

Purpose: To view the registered devices on the SLC

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Access "SLC Assignments" option
6	Press "Scroll" Key (as required)	Move through SLC devices Format for display is: Addr                    Type                    Owner Location Where: "Addr" is the device address "Type" is the device type "Owner Location" is the device location
7	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.3.10 How to List a Range of SLC Device Voltages

Purpose: To view the SLC line voltages for a range of initiating and/or control devices.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key Twice	Access additional options
5	Press 7 Key	Access "Voltages" option
6	Press 1 Key	Select "Line Voltage"
7	Enter Start Address and End Address. Use XXX format for address. Press "Enter" Key to confirm address selection.	View devices' line voltages Format for devices is: Addr                      Type                      Voltage
8	Press "Scroll" Key (as required)	Move through selected devices
9	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.3.11 How to List a Range of SLC Devices' 9-Volt Levels

Purpose: To view the internal power-supply voltages for a range of SLC initiating and/or control devices.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key Twice	Access additional options
5	Press 7 Key	Access "Voltages" option
6	Press 2 Key	Select "9 volt"
7	Enter Start Address and End Address. Use XXX format for address. Press "Enter" Key to confirm address selection.	View devices' 9-Volt levels Format for devices is: Addr            Type            9-Volt Level
8	Press "Scroll" Key	Move through selected devices
9	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.3.12 How to View the Values of the Battery Voltage and Current

Purpose: to view the latest current and voltage values of the battery.

**Note:** This command can only be used if battery supervision is enable.  
See Paragraph 3-2.5.2.4.61.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key Twice	Access additional options
5	Press 7 Key	Access "Voltages" option
6	Press 3 Key	Select "Battery Charge" The battery voltage and current readings display.
7	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.3.13 How to Ascertain that the Standby-Battery is being Recharged

Purpose: To determine if the standby battery is being recharged

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key twice	Access additional options
5	Press 7 Key	Access "Voltages" option
6	Press 3 Key	Determine if the standby-battery is being recharged
7	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.3.14 How to List the HSSDs on the IIM

Purpose: To view the registered High-Sensitivity Smoke Detectors (HSSDs) on the Intelligent Interface Module (IIM)

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key twice	Access additional options
5	Press 8 Key	Access "HSD Assignments"
6	Press "Scroll" Key (as required)	Move through HSSDs on IIM Format for display is: Address Location Where: "Address" is the HSSD address "Location" is the HSSD location
7	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.3.15 How to List the Control Units in a Network

Purpose: To view the members (i.e., nodes) of a networked system.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key twice	Access additional options
5	Press 9 Key	Access "More Options"
6	Press 4 Key and then press "Enter" Key to confirm selection.	Access "Network Settings"
7	Press 2 Key	Access "Network Nodes"
8	Press "Scroll" Key (as required)	Scroll through comma separated lists.
9	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.3.16 How to List the Control Units Network Settings

Purpose: To view the settings for members (i.e., nodes) of a networked system.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press 9 Key	Access "More Options"
5	Press 4 Key	Access "Network Settings"
6	Press 1 Key	Access "This Node"
7	Press "Scroll" Key (as required)	Move through the various settings for this node
8	Press "Backspace" Key (as required)	Exit Menu System

**3-2.5.2.3.17 How to View the Configurable Parameters for the Control Unit's On-Board Outputs**

Purpose: To determine how the control unit's on-board outputs are programmed.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key twice	Access additional options
5	Press 9 Key	Access "More Options" option
6	Press 1 Key	Access "Onboard Circuits" option
7	Press 1 Key for NACs, or Press 2 Key for Release Circuits, or Press 3 Key for Combo Circuits, or Press 4 Key for Programmable Relays	Select on-board output type
8	Enter on-board output number	View output's configurable parameters
9	Press "Backspace" Key, and repeat Step 8	View another output of the type selected in Step 7
10	Press "Backspace" Key twice, and repeat Steps 7 and 8	View another output type
11	Press "Backspace" Key (as required)	Exit Menu System



## 3-2.5.2.3.18 How to List the Remote Display Modules Connected to this Control Unit

Purpose: To view the list of remote-display modules connected to a ARIES Control Unit

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key twice	Access additional options
5	Press 9 Key	Access "More Options"
6	Press 2 Key	Select "Control Modules"
7	Press 1 Key for ATM or Press 2 Key for RDCM. Press "Enter" Key to confirm selection.	Select display modules to view
8	Press "Scroll" Key (as required)	Move through list of selected modules
9	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.3.19 How to View the PSU Statu of Remote Release Modules

Purpose: To get diagnostic information concerning the power supply unit status of RRM modules. Contact Kidde Technical Support if RRM units are not functioning properly.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter Set-Menu branch
4	Press "Scroll" Key twice	Access additional options
5	Press 9 Key	Select "More Options"
6	Press 5 Key	Select "RRM PSU Status"
7	Use keypad to enter single module or range of modules Press "Enter" Key to confirm selection.	Specify the RRM modules to view
8	Press "Backspace" Key (as required)	Exit Menu System

**3-2.5.2.3.20 How to View the Memory Status of Remote Release Modules**

Purpose: To get diagnostic information concerning the memory status of RRM modules. Contact Kidde Technical Support if RRM units are not functioning properly.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter Set-Menu branch
4	Press "Scroll" Key twice	Access additional options
5	Press 9 Key	Select "More Options"
6	Press 5 Key	Select "Configuration"
7	Press "Scroll" Key	Access additional options
8	Press 6 Key	Select "RRM Memory Status"
9	Use keypad to enter single module or range of modules Press "Enter" Key to confirm selection.	Specify the RRM modules to view
10	Press "Backspace" Key (as required)	Exit Menu System

**3-2.5.2.3.21 How to List General Alarms**

Purpose: To access the General Alarm output list.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter List-Menu branch
4	Press "Scroll" Key twice	Access additional options
5	Press 9 Key	Select "More Options"
6	Press 3 Key	Select "General Alarm"
7	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.3.22 How to Determine the Control-Unit Firmware Versions

Purpose: To determine the firmware versions resident in the control unit.

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 2 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional Menu options
5	Press 9 Key	Select "Globals" option
6	Press "Scroll" Key	Access additional Globals-Menu options
7	Press 7 Key	Select "List Versions" option
8	Press 1 Key for Main CPU, or Press 2 Key for SLC Version, or Press 3 Key for Main CPU Boot, or Press 4 Key for SLC Boot	View installed version of firmware
9	Press "Backspace" Key (optional)	Return to Step 8 and make another selection
10	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.4 Set Menu Functions

The Set functions allow the installer to change the sensitivity settings for SmartOne automatic initiating devices, to address and register initiating and control devices, or to define global operating parameters such as Global Acknowledgment of trouble and supervisory events. These commands are also used to trigger automatic configuration routines such as AutoLearn and AutoSetup.

For Top-Level Set Menu Functions, refer to Figure 3-4. For the complete Set-Menu tree, refer to Figure 3-6.

The following paragraphs list the Set Menu functions.

3-2.5.2.4.1 How to Set the Time

Purpose: To set the correct time for an ARIES Control Unit. (Use either Steps 6a or 6b in table).

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 1 Key	Access "Time / Date" option
5	Press 1 Key	Access "Set Time" option
6a	Press 1 Key	Select AM/PM format
6a.1	Enter correct time in HH:MM format where HH is hour (0 - 12) MM is minute (0 - 59).	Set time
6a.2	Press "Enter" Key to confirm selection	
6a.3	Press 1 Key for "AM or 2 Key for "PM	Specify AM or PM
6a.4	Press "Enter Key to complete time entry	
6b	Press 2 Key and then press "Enter" Key to selection Military Time	Select Military format
6b.1	Enter correct time in HH:MM format where: HH is hour (0 - 24) MM is minute (0 - 59)	Set time
6b.2	Press "Enter" Key to confirm selection	
7	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.2 How to Set the Date

Purpose: To set the correct date for an ARIES Control Unit

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 1 Key	Access "Time / Date" option
5	Press 2 Key	Access "Set Date" option
6	Enter correct date in MM-DD-YY format where: MM is month (1 - 12) DD is day (1 - 31) YY is year (00 - 99)	Set date
7	Press "Enter" Key to confirm selection	
8	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.4.3 How to Set the Display to Show the Standby-Battery Condition

Purpose: To replace the "System Status Normal" message on the display with the standby-battery charging voltage and current. The display will have the following typical appearance:

<b>PS: 25.5 V 1 mA</b>	<b>02:15 PM 07/02/04</b>
<b>North Communications Center</b>	

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 1 Key	Access "Time / Date" option
5	Press 1 Key	Enable battery-charging display
6	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.4.4 How to Set the Display to Not Show the Standby-Battery Condition

Purpose: To replace the standby-battery charging voltage and current with the "System Status Normal" message on the display.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 9 Key	Access "Battery" option
5	Press 2 Key	Disable battery-charging display
6	Press "Backspace" Key (as required)	Exit Menu System

### 3-2.5.2.4.5 How to Configure the Communications Ports

Purpose: To change the RS-232 communications ports for use with a serial printer, The laptop or desktop computer (PC), and/or terminal emulator. Both RS-232 communications ports default to interface with either a PC or a terminal emulator with the following communications settings: 9600 Baud Rate, No Parity, 8-Bit Word Length, 1 Start Bit, 1 Stop Bit.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 2 Key	Access "Port Control" option
5	Press 1 Key for Port J8 (RS-232 A) or Press 2 Key for Port J3 (RS-232 B)	Select port to configure
6	Press 1 Key for a Printer or Press 2 Key for IIM or Press 3 Key for ICM Press "Enter" Key to confirm selection.	Select optional device being used
7	Press "Backspace" Key (as required)	Exit Menu System
8	Wait until "Initializing Configuration" message disappears from the display.	

### 3-2.5.2.4.6 How to Change an SLC Device Address

Purpose: To create or change an SLC device address using the ARIES keypad. All SLC devices are shipped with the default address of 000. This address must be changed to a valid address in the range 1 to 255 before the device can be used on the SLC. Only one device with address 000 can be connected to the SLC when using this procedure to initially address a new device. This procedure can also be used to re-address a previously addressed device. Be sure to de-register the previous address after the device is re-addressed.

**Note:** An SLC device can only have its address changed if it is not in either a trouble or alarm condition.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press 1 Key	Select "Device Address Change"
6	Use keypad to enter default address 000 for new device or enter existing address to be changed. Press "Enter" Key to confirm selection.	Specify address to be changed
7	Use keypad to enter target address for new device or enter altered address for existing device. Press "Enter" Key to confirm selection.	Specify target address
8	Press "Backspace" Key (as required)	Exit Menu System
9	Wait until "Initializing Configuration" message disappears from the display.	

#### 3-2.5.2.4.7 How to Change an Ionization Detector's Pre-Alarm and Alarm Thresholds

Purpose: To change the pre-alarm and alarm thresholds of one or more ionization detectors. The ionization detector is UL Listed and FM Approved for alarm reporting anywhere within the obscuration range of 0.5 to 1.5 percent per foot when used for an open-area application. Alarm thresholds can be set in 0.1 percent-per-foot increments. A pre-alarm threshold can also be set anywhere within the obscuration range of 0.5 to 1.4 percent per foot, but must be less than the detector's alarm threshold. Two additional alarm-reporting ranges are defined for special applications. The in-duct range refers to detector placement in an air duct. The DH-2000 range refers to detector placement in a DH-2000 Duct Housing with associated sampling tubes to monitor the air in either a supply- or return-air duct. The alarm ranges for these special applications are as follows:

Application	Pre-Alarm/Alarm Range (%/foot)
In-duct	0.5 - 1.0
DH-2000	0.5 - 1.0

Ionization detectors can be automatically programmed to change alarm thresholds by time of day if they are configured for day/night operation. The night alarm thresholds must be less than the corresponding day thresholds.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press 2 Key	Select "Configuration"
6	Press 1 Key	Select Ionization Detectors
7	Press 1 Key	Select alarm thresholds
8	Press 1 Key for Fixed or Press 2 Key for Day/Night Settings.	Select fixed (i.e., not variable) thresholds or select day/night (i.e. variable by time of day) thresholds
9	Use keypad to enter single detector or range of detectors to change pre-alarm/alarm thresholds. Press "Enter" Key to confirm selection.	Specify detectors to change
10	Press 1 Key for Open Area or Press 2 Key for Induct or Press 3 Key for DH-2000 Press "Enter" Key to confirm selection.	Specify detector application
11	Use keypad to enter pre-alarm threshold. Press "Enter" Key to confirm selection.	Set pre-alarm threshold
12	Use keypad to enter alarm threshold. Press "Enter" Key to confirm selection.	Set alarm threshold. This is the day alarm threshold when using day/night settings.
12A	Use keypad to enter night alarm threshold. Press "Enter" Key to confirm selection.	Set night alarm threshold (day/night only)
13	Wait until "Updated Thresholds for Devices" message disappears from the display.	
14	Press "Backspace" Key (as required)	Exit Menu System



## 3-2.5.2.4.8 How to Change an Ionization Detector's Supervisory Alarm Threshold



**This application is not UL Listed or FM Approved**

Purpose: To change the alarm threshold of one or more ionization detectors reporting as supervisory initiating devices. The ionization detector can be programmed to report a supervisory condition anywhere within the obscuration range of 0.5 to 1.5 percent per foot when used in an open-area application. Supervisory alarm thresholds can be set in 0.1 percent-per-foot increments. One additional supervisory-reporting range is defined for a special application. The Induct/DH-2000 range refers to detector placement in a DH-2000 Duct Housing with associated sampling tubes to monitor the air in either a supply- or return-air duct or to detector placement in a duct. The supervisory-alarm range for this special application is 0.5 to 1.0 percent per foot.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press 2 Key	Select "Configuration"
6	Press 1 Key	Select Ionization Detectors
7	Press 2 Key	Select supervisory thresholds
8	Use keypad to enter single detector or range of detectors to change supervisory alarm threshold. Press "Enter" Key to confirm selection	Specify detectors to change
9	Press 1 Key for Open Area or Press 2 Key for In-duct/DH-2000. Press "Enter" Key to confirm selection.	Specify detector application
10	Press 1 Key for "Fixed" or Press 2 Key for "Day/Night" settings. Press "Enter" Key to confirm selection	Select fixed (i.e., not variable) thresholds or select day/night (i.e., variable by the time of day) thresholds
11	Use keypad to enter supervisory-alarm threshold. Press "Enter" Key to confirm selection.	Set supervisory-alarm threshold. This is the day alarm threshold when using day/night settings.
11A	Use keypad to enter night supervisory-alarm threshold. Press "Enter" Key to confirm selection.	Set night supervisory-alarm threshold (day/night only).
12	Wait until "Updated Thresholds for Devices xx" message disappears from the display.	
13	Press "Backspace" Key (as required)	Exit Menu System

### 3-2.5.2.4.9 How to Change a Photoelectric Detector's Pre-Alarm and Alarm Thresholds

Purpose: To change the pre-alarm and alarm thresholds of one or more photoelectric detectors. The photoelectric detector is UL Listed and FM Approved for alarm reporting anywhere within the obscuration range of 0.5 to 3.5 percent per foot when used for an open-area application. Alarm thresholds can be set in 0.1 percent-per-foot increments. A pre-alarm threshold can also be set anywhere within the obscuration range of 0.2 to 3.4 percent per foot, but must be less than the detector's alarm threshold. Two additional alarm-reporting ranges are defined for special applications. The in-duct range refers to detector placement in an air duct. The DH-2000 range refers to detector placement in a DH-2000 Duct Housing with associated sampling tubes to monitor the air in either a supply- or return-air duct. The alarm ranges for these special applications are as follows:

<b>Application</b>	<b>Pre-Alarm Range (%/ft.)</b>	<b>Alarm Range (%/ft.)</b>
In-duct	0.2 - 1.9	0.5 - 2.0
DH-2000	0.2 - 1.9	0.5 - 2.0

Photoelectric detectors can be automatically programmed to change alarm thresholds by time of day if they are configured for day/night operation. The night alarm thresholds must be less than the corresponding day thresholds.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press 2 Key	Select "Configuration"
6	Press 2 Key	Select Photoelectric Detectors
7	Press 1 Key	Select alarm thresholds
8	Press 1 Key for Fixed or Press 2 Key for Day/Night Settings.	Select fixed (i.e., not variable) thresholds or select day/night (i.e. variable by time of day) thresholds
9	Use keypad to enter single detector or range of detectors to change pre-alarm/alarm thresholds. Press "Enter" Key to confirm selection	Specify detectors to change
10	Press 1 Key for Open Area or Press 2 Key for In-duct or Press 3 Key for DH-2000 Press "Enter" Key to confirm selection.	Specify detector application
11	Use keypad to enter pre-alarm threshold. Press "Enter" Key to confirm selection.	Set pre-alarm threshold
12	Use keypad to enter alarm threshold. Press "Enter" Key to confirm selection.	Set alarm threshold. This is the day alarm threshold when using day/night settings.
12A	Use keypad to enter night alarm threshold. Press "Enter" Key to confirm selection.	Set night alarm threshold (day/night only)
13	Wait until "Updated Thresholds for Device x" message disappears from the display.	
14	Press "Backspace" Key (as required)	Exit Menu System



**This application is not UL Listed or FM Approved**

Purpose: To change the alarm threshold of one or more photoelectric detectors reporting as supervisory initiating devices. The photoelectric detector can be programmed to report a supervisory condition anywhere within the obscuration range of 0.5 to 3.5 percent per foot when used in an open-area application. Supervisory alarm thresholds can be set in 0.1 percent-per-foot increments. One additional supervisory-reporting range is defined for a special application. The in-duct/DH-2000 range refers to detector placement in a DH-2000 Duct Housing with associated sampling tubes to monitor the air in either a supply- or return-air duct or to detector placement in a duct. The supervisory-alarm range for this special application is 0.5 to 2.0 percent per foot.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press 2 Key	Select "Configuration"
6	Press 2 Key	Select Photoelectric Detectors
7	Press 2 Key	Select supervisory threshold
8	Use keypad to enter single detector or range of detectors to change supervisory alarm threshold. Press "Enter" Key to confirm selection	Specify detectors to change
9	Press 1 Key for Open Area or Press 2 Key for In-duct/DH-2000 Press "Enter" Key to confirm selection.	Specify detector application
10	Press 1 Key for "Fixed" or Press 2 Key for "Day/Night" settings. Press "Enter" Key to confirm selection	Select fixed (i.e., not variable) thresholds or select day/night (i.e., variable by the time of day) thresholds
11	Use keypad to enter supervisory-alarm threshold. Press "Enter" Key to confirm selection.	Set supervisory-alarm threshold. This is the day alarm threshold when using day/night settings.
11A	Use keypad to enter night supervisory-alarm threshold. Press "Enter" Key to confirm selection.	Set night supervisory-alarm threshold (day/night only).
12	Wait until "Updated Thresholds for Devices xx" message disappears from the display.	
13	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.11 How to Change a Thermal Detector's Pre-Alarm and Alarm Thresholds

Purpose: To change the pre-alarm and alarm thresholds of one or more thermal detectors. The thermal detector is UL Listed and FM Approved for alarm reporting anywhere in the range of 135° F to 155°F when used with a 50-foot spacing, or anywhere in the range of 135°F to 145°F when used with a 70-foot spacing. Alarm thresholds can be set in 1F° increments. A pre-alarm threshold can also be set anywhere within the temperature range of 80°F to 135°F, but must be less than the detector's alarm threshold.

The alarm ranges for the thermal detectors are summarized below:

Spacing (ft.)	Pre-Alarm Range (°F)	Alarm Range (°F)
50	80 - 135	135 - 155
70	80 - 135	135 - 145

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press 2 Key	Select "Configuration"
6	Press 3 Key	Select Thermal Detectors
7	Use keypad to enter single detector or range of detectors to change pre-alarm/alarm thresholds. Press "Enter" Key to confirm selection.	Specify detectors to change
8	Press 1 Key for 50-ft. Spacing or Press 2 Key for 70-ft. Spacing. Press "Enter" Key to confirm selection.	Specify detector application
9	Use keypad to enter pre-alarm threshold. Press "Enter" Key to confirm selection.	Set pre-alarm threshold
10	Use keypad to enter alarm threshold. Press "Enter" Key to confirm selection.	Set alarm threshold
11	Wait until "Updated Thresholds for Device x" message disappears from the display.	
12	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.12 How to Change the Configuration of an Addressable AlarmLine Module

Purpose: To change one or more of the following Addressable AlarmLine Module (AAM) operating characteristics for a single module or range of modules: pre-alarm and alarm thresholds as defined by the module's variable-threshold-setting switch; pre-alarm reporting; alarm or overheat reporting

**Note:** The AAM will create an "Overheat" message on the display if its alarm threshold is exceeded and it is configured for overheat reporting. The control unit buzzer will also activate.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press 2 Key	Select "Configuration"
6	Press 4 Key	Select AlarmLine
7	Use keypad to enter single module or range of modules to change configuration settings. Press "Enter" Key to confirm selection.	Specify modules to change
8	Use keypad to enter variable-alarm-threshold switch setting. Press "Enter" Key to confirm selection.	Specify pre-alarm/alarm thresholds based upon footage and ambient conditions.
9	Press 1 Key to enable pre-alarm reporting or Press 2 Key to disable pre-alarm reporting. Press "Enter" Key to confirm selection.	Enable/Disable pre-alarm reporting
10	Press 1 Key to enable alarm reporting or Press 2 Key to select overheat reporting. Press "Enter" Key to confirm selection.	Select type-of-event reporting
11	Wait until "Updated Thresholds for Device x" message disappears from the display.	
12	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.4.13 How to Configure a Remote Release

Purpose: To change one or more of the following Remote Release Module (RRM) operating characteristics for a single or range of modules: solenoid and actuator.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press 2 Key	Select "Configuration"
6	Press "Scroll" Key	Access additional options
7	Press 5 Key	Select "Remote Release"
8	Use keypad to enter single module or range of modules to change configuration settings. Press "Enter" Key to confirm selection.	Specify modules to change
9	Press 1 Key for solenoid or Press 2 Key for actuator	Specify Remote Release application.
10	Wait until "x RRM(s) Updated" message disappears from the display.	Enable/Disable pre-alarm reporting
11	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.14 How to Manually Register SLC Devices

Purpose: The ARIES Control Unit needs to know which SLC addresses (of the 255 possible addresses) will be occupied by a SmartOne detector, monitor module, relay module or control module. The Registration Procedure enters an occupied address into the control-unit's configuration memory for each SLC device that it encounters during execution. The SLC devices must be uniquely addressed prior to execution of the Registration Procedure.

The SLC devices are assigned the following default-operating parameters:

SLC Device	Default Operating Parameters
Ionization Detectors	0.8% per foot Pre-alarm Threshold 1.0% per foot Alarm Threshold Latching Operation Activates General-Alarm List
Photoelectric Detectors	1.5% per foot Pre-alarm Threshold 2.0% per foot Alarm Threshold Latching Operation Activates General-Alarm List
Heat Detectors	120°F Pre-Alarm Threshold 135°F Alarm Threshold Latching Operation Activates General-Alarm List ITLCO/CTLCO Off
Monitor Modules (AIs)	Alarm-Initiating Device Latching Operation Activates General-Alarm List
Monitor Modules (PALMs)	Alarm-Initiating Device Latching Operation Activates General-Alarm List
Monitor Modules (AAMs)	Alarm-Initiating Device Latching Operation Activates General-Alarm List
Relay Modules (AOs)	Non-Silenceable Operation In General-Alarm List
Control Modules (ASMs)	Non-Silenceable Operation Enabled for Drill Activation Activates in Walk Test
Remote Release Modules (RRMs)	Solenoid, On Until Reset

The activation of any initiating device will activate the outputs in the general-alarm list.

**Note:** SLC devices are also automatically registered and configured for operation by the AutoLearn or AutoSetup Routines, or by a configuration upload via the ARIES Configuration Program.

Exception: PALMS require additional configuration via the OCS Program, and AAMs require additional configuration via the SET Menu or the ACT Configuration Program after an AutoLearn Procedure. Refer to Paragraph 3-2.5.2.4.12 to configure AAMs via the SET Menu.





The Registration Procedure shall not be used to configure a system. It is primarily a procedure to create a database of SLC devices. Owner locations are not assigned during the Registration Procedure.

**Note:** Wait for each SLC device to report a "Not-Registered" trouble message and ensure that all these trouble messages have been acknowledged before proceeding with the Registration Procedure.

Execute the De-Registration Procedure before re-registering any previously-registered addresses.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press 3 Key	Select "Registration"
6	Use keypad to select address or range of addresses to register. Press "Enter" Key to confirm selection.	Specify addresses to register
7	Wait until "Device Registration" message disappears from the display.	Devices register or fail.
8	Exit Menu System	

3-2.5.2.4.15 How to Manually De-Register SLC Devices

Purpose: To remove one or more SLC devices from the ARIES Control Unit's configuration memory. The de-registered device(s) must be physically removed from the SLC prior to or following the execution of the De-Registration Procedure.



**Remove all references to the de-registered devices from the system's application (i.e., EOC) program.**

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press "Scroll" Key	Access additional options
6	Press 4 Key	Select "De-Registration"
7	Use keypad to select address or range of addresses to de-register. Press "Enter" Key to confirm selection.	Specify addresses to de-register
8	Wait until "Device DeRegistration" message disappears from the display.	Devices de-register or fail.
9	Exit Menu System	

3-2.5.2.4.16 How to Disable the Flashing LEDs on SmartOne Detectors

Purpose: To prevent one or more SmartOne detector LEDs from flashing in standby operation. LEDs will only illuminate in alarm condition. The detectors' default-LED operation is flashing.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press "Scroll" Key	Access additional options
6	Press 5 Key	Select "Blink Control"
7	Use keypad to select address or range of addresses to disable LED flashing. Press "Enter" Key to confirm selection.	Specify addresses to disable flashing LEDs in normal operation
8	Press 1 Key and then press "Enter" Key to confirm selection.	Disable flashing LEDs
9	Wait until the message appears in the display, completed or failed.	Number of detectors are shown.
10	Exit Menu System	

## 3-2.5.2.4.17 How to Enable the Flashing LEDs on SmartOne Detectors

Purpose: To enable one or more SmartOne detector LEDs to resume flashing in standby operation. The flashing LEDs were disabled in a prior blink-control operation.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press "Scroll" Key	Access additional options
6	Press 5 Key	Select "Blink Control"
7	Use keypad to select address or range of addresses to re-enable detector-LED flashing. Press "Enter" Key to confirm selection.	Specify addresses to enable flashing LEDs in normal operation
8	Press 2 Key and then press "Enter" Key to confirm selection.	Re-enable flashing LEDs
9	Wait until the message appears in the display, completed or failed.	Number of detectors are shown.
10	Exit Menu System	

## 3-2.5.2.4.18 How to Replace an SLC Device

Purpose: To replace an existing device on an SLC with a new device.

**Note:** Before performing the following procedure, remove the "old" device and connect the "new" device to the SLC. The "old" device must report as "trouble open" and the "new" device must report as "unregistered" to ensure that the devices have different addresses.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press 3 Key	Access "SLC Devices" option
5	Press "Scroll" Key	Access additional options
6	Press 6 Key	Select "Replace Device"
7	Enter the address of the device being replaced and then press "Enter" Key to confirm selection.	Specify "Address to be Replaced (1-255)"
8	Enter the address of the new device being added and then press "Enter" Key to confirm selection.	Specify "Address of Replacement Device (0-255)"
9	Press 1 key to keep the current settings for the new device or press 2 key to use the default settings.	Select "Use Existing" or "Set Default" for the settings of the new device.
10	Exit Menu System	

## 3-2.5.2.4.19 How to Activate Day/Night Operation for SmartOne Smoke Detectors

Purpose: To enable one or more SmartOne smoke detectors to automatically adjust alarm thresholds by time of day.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select "Programming" option
6	Press 1 Key	Select "Day/Night" option
7	Press 1 Key	Select option to specify range of smoke detectors to operate in "Set Detectors"
8	Use keypad to enter single address or range of smoke-detector addresses to operate via day/night mode. Press "Enter" Key to confirm selection.	Specify addresses to operate in day / night mode.
9	Press 1 Key and then press "Enter" Key to confirm selection.	Enable "Day / Night" mode
10	Wait until the "Detectors Deactivated" message appears on the display.	Number of detectors deactivated shown.
11	Press "Backspace" Key (as required)	Exit Menu System

### 3-2.5.2.4.20 How to De-Activate Day/Night Operation for SmartOne Smoke Detectors

Purpose: To disable one or more SmartOne smoke detectors from automatically adjusting alarm thresholds by time of day.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select "Programming" option
6	Press 1 Key	Select "Day/Night" option
7	Press 1 Key	Select option to specify range of smoke detectors to operate in "Set Detectors".
8	Use keypad to enter single address or range of smoke-detector addresses to operate with fixed alarm thresholds. Press "Enter" Key to confirm selection.	Specify addresses to operate in day mode only.
9	Press 2 Key and then press "Enter" Key to confirm selection.	Disable "Day / Night" mode
10	Wait until the "Detectors Deactivated" message appears on the display.	Number of detectors deactivated shown.
11	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.21 How to Change the Day/Night Periods for Smoke Detectors

Purpose: To change daytime and nighttime periods for smoke detectors.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Access "Programming" option
6	Press 1 Key	Select "Day/Night" option
7	Press 2 Key	Select "Set Periods" option
8	Enter daytime start in military format (HH:MM) Press "Enter" Key to confirm day-start time.	Specify day-start time
9	Enter nighttime start in military format (HH:MM) Press "Enter" Key to confirm night-start time.	Specify night-start time
10	Wait until "Day/Night Periods Programmed" message disappears from display.	
11	Press "Backspace" Key (as required)	Exit Menu System
12	Wait until "Initializing Configuration" message disappears from display	Resume normal operations

3-2.5.2.4.22 How to Activate Day/Night Alarm Thresholds for Smoke Detectors

Purpose: To activate daytime and nighttime alarm thresholds for smoke detectors.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Access "Programming" option
6	Press 1 Key	Select "Day/Night" option
7	Press 3 Key	Select "Activate" option
8	Press 1 Key and then press "Enter" Key to confirm selection	Activate day/night settings for weekdays
9	Press 1 Key and then press "Enter" Key to confirm selection	Activate day/night settings for weekends
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing Configuration" message disappears from display	Resume normal operations

## 3-2.5.2.4.23 How to De-Activate Day/Night Alarm Thresholds for Smoke Detectors

Purpose: To de-activate daytime and nighttime alarm thresholds for smoke detectors.

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Access "Programming" option
6	Press 1 Key	Select "Day/Night" option
7	Press 3 Key	Select "Activate" option
8	Press 2 Key and then press "Enter" Key to confirm selection	De-activate day/night settings for weekdays
9	Press 2 Key and then press "Enter" Key to confirm selection	De-activate day/night settings for weekends
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing Configuration" message disappears from display	Resume normal operations

## 3-2.5.2.4.24 How to Change the Owner's Password

Purpose: To change the owner's password from its current setting. The factory-default setting is 973480.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password 973480; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select Programming option
6	Press 2 Key	Select "Passwords" option
7	Press 1 Key	Select Owner's option
8	Use keypad to enter new password. Press "Enter" Key to confirm selection.	Specify new owner's password
9	Use keypad to re-enter new password. Press "Enter" Key to confirm selection	Confirm new owner's password
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing-Configuration" message disappears from the display.	Resume Normal Operation

3-2.5.2.4.25 How to Change the Installer's Password

Purpose: To change the installer's password from its current setting. The factory-default setting is 186591.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password 186591; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select Programming option
6	Press 2 Key	Select "Passwords" option
7	Press 2 Key	Select Installer's option
8	Use keypad to enter new password. Press "Enter" Key to confirm selection.	Specify new installer's password
9	Use keypad to re-enter new password. Press "Enter" Key to confirm selection	Confirm new installer's password
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing-Configuration" message disappears from the display.	Resume Normal Operations

3-2.5.2.4.26 How to Run the AutoLearn Procedure

Purpose: The primary purpose of the AutoLearn Procedure is to execute a Registration Procedure for all currently unregistered SLC devices.

This option registers any currently unregistered SLC devices, and if no Event-Output-Control programming exists in the control unit's memory, will update the general-alarm list by adding all on-board NACs and Combination Circuits (if configured as NACs) and all SLC-based AOs and ASMs. All general-alarm outputs are configured for silenceable operation.

**Note:** The dedicated releasing circuits and combination circuits, when programmed as releasing circuits, are never included in the general-alarm list.



**The AutoLearn Procedure shall not be used to configure a system. It is primarily a procedure to create a database of SLC devices and to build a general-alarm list of outputs. Owner locations are not assigned during the AutoLearn Procedure.**

**Note:** Wait for each SLC device to report a "Not-Registered" trouble message and ensure that all these trouble messages have been acknowledged before proceeding with the AutoLearn Procedure.



Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select Programming option
6	Press 3 Key	Activate "AutoLearn"
7	Wait until "AutoLearning Devices on SLC" message disappears from the display.	Exit Menu System and Resume Normal Operations.

#### 3-2.5.2.4.27 How to Obtain the Manufacturer's Code

Purpose: If the owner's or installer's code for the panel is lost, the installer or owner must use this command to obtain the manufacturer's code. They must then contact Kidde Technical Support and recite this code to the Technical Support Representative in order to receive a temporary password. The installer or owner can login with this password for up to 5 days and should change the password immediately.

Step	Action	Result
1	Press and hold down the 4 key	The Manufacturer's Code displays. Write down this code and contact Kidde Technical Support.

#### 3-2.5.2.4.28 How to Run the AutoSetup Procedure

Purpose: The AutoSetup Procedure executes a Registration Procedure for all unregistered SLC devices and, in addition, configures the system for operation as a waterless fire-suppression system. The following operating characteristics are assigned to the ARIES Control Unit and its associated SLC devices.

##### 1. SLC Device Assignments

Automatic activation of the extinguishing system will be via crossed-zoned alarm-initiating signals generated by combinations of automatic initiating devices assigned to any of the first 100 addresses on the SLC. One half of the crossed-zoned alarm-initiating system will consist of any automatic initiating device addressed within the range of 001 through 050. The other half of the crossed-zoned automatic-initiating system will consist of any automatic initiating device addressed within the range of 051 through 100.

Spot-type detectors from each half of the crossed-zoned detection system must be alternated throughout the protected area.

The extinguishing system will be manually activated by monitor modules (i.e., AIs) configured as manual-release stations. Operation of a manual-release station will cause all alarm and shutdown devices to operate as if the system had operated automatically and will cause an immediate activation of the fire-extinguishing system. Operation of a manual-release station will override the operation of all abort switches. Each monitor module

with address within the range of 101 through 105 will be assigned as a manual-release station.

Abort switches will, when operated, interrupt the countdown delay for the activation of the extinguishing system and prevent the operation of any alarms and control functions associated with the discharge of the extinguishing agent. The abort switches must be momentary, dead-man-type devices that require a constant force to remain engaged and active. Abort switches will be configured to reset the countdown timer to the full delay period. Each monitor module with address within the range of 106 through 110 will be assigned as an abort station.

Each AO output module with address within the range of 111 to 115 will be assigned as a pre-alarm output point.

Each AO output module with address within the range of 116 to 120 will be assigned as a pre-release output point.

Each AO output module with address within the range of 121 to 125 will be assigned as a release output point.

### 2. Sequence of Operation

The ARIES will progress through the pre-alarm, pre-release, and release states as defined in Paragraph 3-2.5.8.1. The time delay between the pre-release and the release states will be 30 seconds.

### 3. Control-Unit-Based Outputs Assignments

Control-unit-based outputs will be assigned to the pre-alarm, pre-release, and release states as follows:

#### Pre-Alarm State

- NAC No. 1 (steady activation)
- programmable Relay No. 1
- the owner-location field on the LCD will display the word "Pre-Alarm"

#### Pre-Release State

- NAC No. 2 (steady activation)
- programmable Relay No. 2
- the owner-location field on the LCD will display the word "Pre-Release" concurrently with the continuously-decremented countdown timer
- deactivate NAC No. 1

#### Release State

- Release Circuit No. 1
- Release Circuit No. 2
- Combination NAC/Releasing Output No. 1 as a NAC (steady activation)
- Combination NAC/Releasing Output No. 2 as a release circuit
- programmable Relay No. 3
- the owner-location field on the LCD will display the word "Agent Release"



**Owner locations are not assigned during the AutoSetup Procedure. The Abort operation in this setup is not UL Listed.**

**Note:** Wait for each SLC device to report a "Not-Registered" trouble message and ensure that all these trouble messages have been acknowledged before proceeding with the AutoSetup Procedure.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select "Programming"
6	Press "Scroll" Key	Access additional options
7	Press 4 Key	Activate "AutoSetup"
8	Wait until "Configuring Basic Suppression System and Initializing Configuration" messages disappear from the display.	Exit Menu System and Resume Normal Operations.

#### 3-2.5.2.4.29 How to Activate Alarm Verification for Smoke Detectors

Purpose: To activate alarm-verification for one or more smoke detectors. Refer to Paragraph 3-2.5.5.3.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select Programming option
6	Press "Scroll" Key	Access additional options
7	Press 5 Key	Select "Alarm-Verification" option
8	Press 1 Key and then press "Enter" Key to confirm selection.	Activate alarm verification
9	Use keypad to enter single address or range of smoke-detector addresses to be verified. Press "Enter" Key to confirm selection.	Specify addresses to be verified
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing Configuration" message disappears from the display.	Resume Normal Operations

3-2.5.2.4.30 How to De-Activate Alarm Verification for Smoke Detectors

Purpose: To de-activate alarm-verification for one or more smoke detectors. See Paragraph 3-2.5.5.3 for the description of alarm verification.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select Programming option
6	Press "Scroll" Key	Access additional options
7	Press 5 Key	Select "Alarm-Verification" option
8	Press 2 Key and then press "Enter" Key to confirm selection.	De-activate alarm verification
9	Use keypad to enter single address or range of smoke-detector addresses for verification to be de-activated. Press "Enter" Key to confirm selection.	Specify addresses for verification to be de-activated
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing Configuration" message disappears from the display.	Resume Normal Operations

3-2.5.2.4.31 How to Activate Positive-Alarm Sequence for Smoke Detectors

Purpose: To activate positive-alarm sequence for one or more smoke detectors. See Paragraph 3-2.5.5.1 for the description of positive-alarm sequence.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select Programming option
6	Press "Scroll" Key	Access additional options
7	Press 6 Key	Select "Positive-Alarm Sequence"
8	Press 1 Key and then press "Enter" Key to confirm selection.	Activate positive-alarm sequence
9	Use keypad to enter single address or range of smoke-detector addresses for positive-alarm sequence. Press "Enter" Key to confirm selection.	Specify addresses for Positive-Alarm Sequence
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing Configuration" message disappears from the display.	Resume Normal Operations

3-2.5.2.4.32 How to De-Activate Positive-Alarm Sequence for Smoke Detectors

Purpose: To de-activate positive-alarm sequence for one or more smoke detectors. See Paragraph 3-2.5.5.1 for the description of positive-alarm sequence.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select Programming option
6	Press "Scroll" Key	Access additional options
7	Press 6 Key	Select "Positive-Alarm Sequence"
8	Press 2 Key and then press "Enter" Key to confirm selection.	De-activate positive-alarm sequence
9	Use keypad to enter single address or range of smoke-detector addresses for PAS to be de-activated. Press "Enter" Key to confirm selection.	Specify addresses for positive-alarm sequence to be de-activated
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing Configuration" message disappears from the display.	Resume Normal Operations

3-2.5.2.4.33 How to Clear the System Event Log

Purpose: To remove all previously recorded system events from the ARIES event log.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select Programming option
6	Press "Scroll" Key twice	Access additional options
7	Press 7 Key	Select "Clear Events"
8	Press 1 Key and then press "Enter" Key to confirm selection.	Select and clear system event log
9	Wait until "Event Log Clear in Progress" message disappears from the display.	
10	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.34 How to Clear the Contents of the SLC-Initiating Devices Test Log

Purpose: To remove the most-recently recorded results of initiating devices tests from the SLC Test Log. All initiating devices are tested once per day to confirm that they can transmit an acceptable event-detection signal. The results of the most-recently-transmitted event signal are recorded in the SLC Test Log.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional Set-Menu options
5	Press 4 Key	Select Programming option
6	Press "Scroll" Key twice	Access additional Programming-Menu options
7	Press 8 Key	Select "Clear Tests" option
8	Press 1 Key	Select "Clear SLC Tests"
9	Enter starting SLC address and ending SLC address. Use XXX format for addresses. Press "Enter" Key to confirm address range to clear.	Specify range of SLC initiating devices to have test results cleared
10	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.35 How to Clear the Contents of the Walk-Test Log

Purpose: To remove the most-recently recorded results of initiating-devices walk tests from the Walk-Test Log. The results of the most-recently-conducted walk tests are recorded in the Walk-Test Log.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional Set-Menu options
5	Press 4 Key	Select "Programming" option
6	Press "Scroll" Key twice	Access additional Programming-Menu options
7	Press 8 Key	Select "Clear Tests" option
8	Press 2 Key	Select "Clear Walk Tests"
9	Enter starting SLC address and ending SLC address. Use XXX format for addresses. Press "Enter" Key to confirm address range to clear.	Specify range of SLC initiating devices to have walk-test results cleared
10	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.4.36 How to Resynchronize the Network

Purpose: To restore uniformity of event display among the members of a networked ARIES system.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 4 Key	Select Programming option
6	Press "Scroll" Key twice	Access additional options
7	Press 9 Key	Select "Resynchronize Network"
8	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.4.37 How to Activate Global Acknowledge

Purpose: To enable the "Acknowledge" Switch to process any combination of up to 30 unacknowledged supervisory or trouble events.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 5 Key	Select "Globals"
6	Press 1 Key	Select "Global Acknowledge"
7	Press 1 Key and then press "Enter" Key to confirm selection.	Activate global acknowledge
8	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.38 How to Change the Smoke-Detectors' Alarm-Verification-Delay Period

Purpose: To change the period of time that the ARIES Control Unit will wait for a second, confirming signal from a smoke detector (or any other alarm-initiating device) that an alarm condition exists.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 5 Key	Select "Globals"
6	Press 2 Key	Select "Alarm Verification"
7	Use the keypad to enter the new verification time and press "Enter" Key to confirm selection.	Set verification time (max.120 seconds)
8	Press "Backspace" Key (as required)	Exit Menu System
9	Wait until "Initializing Configuration" message disappears from the display.	

3-2.5.2.4.39 How to Change the Smoke-Detectors' Positive-Alarm-Sequence Investigation Period

Purpose: To change the period of time that the ARIES Control Unit will wait for the occupants to investigate a smoke-detector's positive-alarm-sequence report before it executes the smoke-detector's programmed alarm actions. The operator must reset the control unit before this time period expires or the programmed alarm actions will occur.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 5 Key	Select "Globals"
6	Press 3 Key	Select "PAS"
7	Use the keypad to enter the new investigation time and press "Enter" Key to confirm selection.	Set investigation time (max. 180 seconds)
8	Press "Backspace" Key (as required)	Exit Menu System
9	Wait until "Initializing Configuration" message disappears from the display.	Resume normal operation.



3-2.5.2.4.40 How to Configure the Control Unit for Central-Station Operation

Purpose: To allocate the programmable relays for off-premises signal transmission to a central station. Programmable Relay No. 1 is automatically configured to activate for any alarm condition, and Programmable Relay No. 2 is automatically configured to activate for any supervisory condition. Refer to Appendix F.

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional Set-Menu options
5	Press 5 Key	Select "Globals" option
6	Press "Scroll" Key	Access additional Globals-Menu options
7	Press 4 Key	Select "Central Station" option
8	Press 1 Key, then press "Enter" Key to confirm selection.	Activate Central-Station option
9	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.41 How to Configure the Global Alarm Acknowledge

Purpose: When this feature is enabled, when the operator presses the "Acknowledge" key, all current alarms are acknowledged. If this feature is disabled, the operator must acknowledge each alarm individually.

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional Se-Menu options
5	Press 5 Key	Select "Globals" option
6	Press "Scroll" Key	Access additional Globals-Menu options
7	Press 5 Key	Select "Global Alarm Ack" option
8	Press 1 Key to turn on Global Alarm Acknowledgement or Press 2 Key to turn off Global Alarm Acknowledgement, then press "Enter" Key to confirm selection.	Activate or Deactivate Global Alarm Acknowledge option
9	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.42 How to Set the Nightly Test Time

Purpose: To set the time, once per night, when the panel performs a SLC device test.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional Set-Menu options
5	Press 5 Key	Select "Globals" option
6	Press "Scroll" Key	Access additional Globals-Menu options
7	Press 6 Key	Select "Nightly Test Time" option
8	Enter the nightly test time in HH:MM format where: HH is hour (0 - 24) MM is minute (0 - 59)	Set the nightly test time
9	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.43 How to Configure Networked Control Units for Style-7 Communications

Purpose: To enable networked control units to utilize the redundant communications channel (Channel 2) for Style-7 operation.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press 1 Key	Select "Style" option
7	Press one of the following: 1 Key 2 Key 3 Key	Selects Channel 1 Selects Channel 2 Selects both Channel 1 and 2
8	Press 1 Key	Enable channel(s) selected in Step 7
9	Press "Enter" Key to confirm enabling selection.	Selected channel(s) enabled
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

## 3-2.5.2.4.44 How to Disable Style-7 Communications for Networked Control Units

Purpose: To prevent networked control units from utilizing the redundant communications channel (Channel 2) for Style-7 operation.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press 1 Key	Select "Style" option
7	Press one of the following: 1 Key 2 Key 3 Key	Selects Channel 1 Selects Channel 2 Selects both Channel 1 and 2
8	Press 2 Key	Disable channel(s) selected in Step 7
9	Press "Enter" Key to confirm selection.	Selected channel(s) disabled
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

### 3-2.5.2.4.45 How to Change a Networked Control Unit's Node Number

Purpose: To change a control unit's network-node-number assignment.



Ensure that this procedure does not introduce a duplicate-node address. Also check the system programming to ensure that all other control units in the network reference the changed node number correctly. For example, if the node number was changed from 2 to 3, be sure that all other control units in the network that react to initiating signals from this control unit have this node number changed from 2 to 3 in their event-output-control programs. See the Configuration Program User's Guide for event-output-control programming.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press 2 Key	Select "Node Number"
7	Use keypad to enter new node number and press "Enter" Key to confirm selection.	Specify new node number
8	Press "Backspace" Key (as required)	Exit Menu System
9	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

## 3-2.5.2.4.46 How to Change a Networked Control Unit's Group Number

Purpose: To change a control unit's network-group number assignment.



Ensure that this procedure does not introduce an incorrect network grouping. For example, if the group number was changed from 2 to 3, be sure that it operates correctly with all other control units in Group 3.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press 3 Key	Select "Group"
7	Use keypad to enter new group number and press "Enter" Key to confirm selection.	Specify new group number
8	Press "Backspace" Key (as required)	Exit Menu System
9	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

### 3-2.5.2.4.47 How to Add One or More Control Units to a Network

**Purpose:** To include additional control units in an existing network or to start initial network communications between two or more control units.

**Note:** This procedure must be performed to start network operations. Network communications will not begin after all configurations have been uploaded unless this procedure is performed. Use Node No. 1 to start initial network communications.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press "Scroll" Key	Access additional options
7	Press 4 Key	Select "Add/Remove Nodes"
8	Press 1 Key and then press "Enter" Key to confirm selection.	Select Add Node
9	Use keypad to enter single node or range of nodes and press "Enter" Key to confirm selection.	Specify node(s) to be added and execute procedure
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

## 3-2.5.2.4.48 How to Remove One or More Control Units from a Network

Purpose: To permanently remove control units from an existing network.



**Check the system programming to ensure that all other networked control units do not reference the removed control unit(s). For example, if Node 2 was removed, be sure that all other networked control units that reacted to initiating signals from this control unit have this node number removed from their event-output-control programs. See Configuration Program User's Guide for event-output-control programming.**

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press "Scroll" Key	Access additional options
7	Press 4 Key	Select "Add/Remove Nodes"
8	Press 2 Key and then press "Enter" Key to confirm selection.	Select Remove Node
9	Use keypad to enter single node or range of nodes and press "Enter" Key to confirm selection.	Specify node(s) to be removed and execute procedure
10	Press "Backspace" Key (as required)	Exit Menu System
11	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

### 3-2.5.2.4.49 How to Enable a Networked Control Unit to be Remotely Reset by Another Control Unit

Purpose: To allow a networked control unit to be remotely reset by other control units in the network. This procedure enables the control unit to be reset as follows:

1. By any other control unit when no sub-groups are used
2. By any other control unit in its group when sub-groups are used
3. By the master mode (i.e., Group 0)

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press "Scroll" Key	Access additional options
7	Press 5 Key	Select "Reset"
8	Press 1 Key and then press "Enter" Key to confirm selection.	Select "Enable"
9	Press "Backspace" Key (as required)	Exit Menu System
10	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete



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### 3-2.5.2.4.50 How to Prevent a Networked Control Unit from Being Remotely Reset by Another Control Unit

Purpose: To prevent a networked control unit from being remotely reset by other control units in the network. This procedure restricts control unit reset to the control unit itself.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press "Scroll" Key	Access additional options
7	Press 5 Key	Select "Reset"
8	Press 2 Key and then press "Enter" Key to confirm selection.	Select "Disable"
9	Press "Backspace" Key (as required)	Exit Menu System
10	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

### 3-2.5.2.4.51 How to Enable Outputs on a Networked Control Unit to be Remotely Silenced by Another Control Unit

Purpose: To allow the silenceable outputs on a networked control unit to be silenced by other control units in the network. This procedure enables the outputs to be silenced as follows:

1. By any other control unit when no sub-groups are used
2. By any other control unit in the group when sub-groups are used
3. By the master mode (i.e., Group 0)

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press "Scroll" Key	Access additional options
7	Press 6 Key	Select "Silence"
8	Press 1 Key and then press "Enter" Key to confirm selection.	Select "Enable"
9	Press "Backspace" Key (as required)	Exit Menu System
10	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

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### 3-2.5.2.4.52 How to Prevent the Outputs on a Networked Control Unit from Being Remotely Silenced by Another Control Unit

Purpose: To prevent the silenceable outputs on a networked control unit from being silenced by other control units in the network. This procedure restricts silencing of the outputs to the control unit itself.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press "Scroll" Key	Access additional options
7	Press 6 Key	Select "Silence"
8	Press 2 Key and then press "Enter" Key to confirm selection.	Select "Disable"
9	Press "Backspace" Key (as required)	Exit Menu System
10	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

### 3-2.5.2.4.53 How to Enable a Networked Control Unit to Process Event Messages Broadcast by other Networked Control Units

Purpose: To allow a networked control unit to process and act upon event messages broadcast from other networked control units. This procedure enables the control unit to process messages as follows:

1. From any other control unit when no sub-groups are used
2. From any other control unit in the group when sub-groups are used



**Check the system programming to ensure that all other network control units that react to specific initiating signals from this control unit have this node number referenced in their event-output-control programs. See the Configuration Program User's Guide for event-output-control programming.**

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press "Scroll" Key twice	Access additional options
7	Press 7 Key	Select "Log Events"
8	Press 1 Key	Select "Log All Events"
9	Press "Backspace" Key (as required)	Exit Menu System
10	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

### 3-2.5.2.4.54 How to Prevent a Networked Control Unit from Processing Event Messages Broadcast by other Networked Control Units

Purpose: To prevent a networked control unit from processing and acting upon event messages broadcast by other control units in the network. This procedure restricts event display and output control to events monitored by the control unit itself.



**Check the system programming to ensure that all other network control units that react to specific initiating signals from this control unit have this node number removed from their event-output-control programs. See the Configuration Program User's Guide for event-output-control programming.**

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press "Scroll" Key twice	Access additional options
7	Press 7 Key	Select "Log Events"
8	Press 2 Key and then press "Enter" Key to confirm selection.	Select "Log Group Events"
9	Press "Backspace" Key (as required)	Exit Menu System
10	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

#### 3-2.5.2.4.55 How to Configure a Network Time Synch Period

Purpose: Sets how often the master panel performs a time sync with the slave panels.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press "Scroll" Key twice	Access additional options
7	Press 8 Key	Select "Time Sync Period"
8	Enter a valid time sync period and then press "Enter" Key to confirm selection.	Specify Time Sync Period.
9	"Change Time Sync Time Sync Updated" message displays.	Time Sync setting complete
10	Press "Backspace" Key	Exit Menu System

3-2.5.2.4.56 How to Isolate a Networked Control Unit

Purpose: To prevent a networked control unit from broadcasting event messages and control commands to other networked control units and to prevent the control unit from processing and acting upon event messages and control commands broadcast from other networked control units.

A Supervisory signal will occur after each Isolation command is executed, and will remain in effect until all Isolation commands are subsequently cancelled by their corresponding De-Isolation commands.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press "Scroll" Key twice	Access additional options
7	Press 9 Key	Select "Isolate/De-Isolate Node"
8	Press 1 Key and then press "Enter" Key to confirm selection.	Select "Isolate"
9	Press "Backspace" Key (as required)	Exit Menu System
10	Press "Acknowledge" Key	Silence buzzer and change Supervisory LED from flashing to steady

3-2.5.2.4.57 How to De-Isolate a Networked Control Unit

Purpose: To enable a networked control unit to broadcast event messages and control commands to other networked control units and to enable the control unit to process and act upon event messages and control commands broadcast from other networked control units.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Network" option
6	Press "Scroll" Key twice	Access additional options
7	Press 9 Key	Select "Isolate/De-Isolate Node"
8	Press 2 Key and then press "Enter" Key to confirm selection.	Select "De-Isolate"
9	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.4.58 How to Register Remote-Annunciator Modules

Purpose: To add one or more remote-annunciator modules

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 7 Key	Select "Control Modules" option
6	Press 1 Key	Select Registration Routine
7	Press 1 Key for ATMs or Press 2 Key for RDCMs. Press "Enter" Key to confirm selection.	Select module type to register
8	Use keypad to enter single module or range of modules to register. Press "Enter" Key to confirm selection.	Execute Registration Procedure for single module or range of modules entered in this step
9	Press "Backspace" Key (as required)	Exit Menu System
10	Wait until "Initializing Configuration" message disappears from the display.	Resume Normal Operations

## 3-2.5.2.4.59 How to De-Register Remote-Annunciator Modules

Purpose: To remove one or more remote-annunciator modules

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 7 Key	Select "Control Modules" option
6	Press 2 Key	Select De-Registration Routine
7	Press 1 Key for ATMs or Press 2 Key for RDCMs. Press "Enter" Key to confirm selection.	Select module type to de-register
8	Use keypad to enter single module or range of modules to de-register. Press "Enter" Key to confirm selection.	Execute De-Registration Procedure for single module or range of modules entered in this step
9	Press "Backspace" Key (as required)	Exit Menu System
10	Wait until "Initializing Configuration" message disappears from the display.	Resume Normal Operations

3-2.5.2.4.60 How to Reset Remote-Annunciator Modules

Purpose: To remove any off-normal indications from remote-annunciator modules that did not clear after a reset command

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 7 Key	Select "Control Modules" option
6	Press 3 Key	Select Reset ATM/RDCM
7	Press 1 Key	Execute reset command
8	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.61 How to Enable Battery Supervision

Purpose: To restore battery supervision that was disabled by the procedure in Paragraph 3-2.5.2.4.62.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate Menu Access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key three times	Access additional Set-Menu options
5	Press 9 Key (Installer)	Select "Battery" option
6	Press 3 Key	Select "Disable Battery" option
7	Press 1 Key, then press "Enter" Key	Select "Enable Battery" Connection
8	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.4.62 How to Disable Battery Supervision

Purpose: To disable battery supervision for systems that are not using a standby battery for secondary power.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 3 Key	Enter Set-Menu branch
4	Press "Scroll" Key three times	Access additional Set-Menu options
5	Press 9 Key (Installer)	Select "Disable-Battery" option
6	Press 2 Key, then press "Enter" Key	Select Disable Battery Connection
7	Press "Backspace" Key (as required)	Exit Menu System
8	Press "Backspace" Key (as required)	Exit Menu System



## 3-2.5.2.4.63 How to Register an Intelligent Interface Module (IIM)

Purpose: To inform the ARIES Control Unit that it will be configured with an Intelligent Interface Module. The IIM must be registered in the control unit's configuration memory to work correctly.

**Note:** The IIM is also automatically registered when included in a configuration upload via the ARIES Configuration Program.



**The IIM Registration Procedure shall not be used to configure the HSSDs connected to the IIM. This is primarily a procedure to store the IIM in the ARIES's configuration memory. The HSSDs connected to the IIM shall be configured with the LaserNET Configuration Program.**

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Select the local node then press "Enter" or a select a remote node number, press "Enter" then enter the remote node's password.	Access applicable control unit (if networked system)
4	Press 3 Key	Enter Set-Menu branch
5	Press "Scroll" Key twice	Access additional options
6	Press 8 Key	Select "HSDs" option
7	Press 1 or 2 Key to select the port the IIM is connected to and then press "Enter"	Select "RS232A" or "RS232B" Assign port to IIM
8	Press "Backspace" Key (as required)	Exit Menu System
9	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

## 3-2.5.2.4.64 How to De-Register an Intelligent Interface Module (IIM)

Purpose: To remove an Intelligent Interface Module from the ARIES Control Unit's configuration memory.

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Select the local node then press "Enter" or a select a remote node number, press "Enter" then enter the remote node's password.	Access applicable control unit (if networked system)
4	Press 3 Key	Enter Set-Menu branch
5	Press "Scroll" Key twice	Access additional options
6	Press 8 Key	Select "HSDs" option
7	Press 3 Key	Select register HSDs
8	Use keypad to enter single HSSD or range of HSSDs to register. Press "Enter" Key to confirm selection.	Specify single HSSD or range of HSSDs to be registered
9	Press "Backspace" Key (as required)	Exit Menu System
10	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

## 3-2.5.2.4.65 How to Register High-Sensitivity Smoke Detectors (HSSDs)

Purpose: To inform the ARIES Control Unit of the quantity and addresses of the HSSDs that will be connected to the IIM.

**Note:** The HSSDs are also automatically registered when included with the IIM in a configuration upload via the ARIES Configuration Program.



**This Registration Procedure shall not be used to configure the HSSDs. This is primarily a procedure to store these detectors in the ARIES's configuration memory. The HSSDs shall be configured with the LaserNET Configuration Program.**

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Select the local node then press "Enter" or a select a remote node number, press "Enter" then enter the remote node's password.	Access applicable control unit (if networked system)
4	Press 3 Key	Enter Set-Menu branch
5	Press "Scroll" Key twice	Access additional options
6	Press 8 Key	Select "HSDs" option
7	Press 3 Key	Select register HSDs
8	Use keypad to enter single HSSD or range of HSSDs to register. Press "Enter" Key to confirm selection.	Specify single HSSD or range of HSSDs to be registered
9	Press "Backspace" Key (as required)	Exit Menu System
10	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

3-2.5.2.4.66 How to De-Register High-Sensitivity Smoke Detectors (HSSDs)

Purpose: To remove HSSDs connected to an IIM from the ARIES Control Unit's configuration memory.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password	Gain access to menus
3	Select the local node then press "Enter" or a select a remote node number, press "Enter" then enter the remote node's password.	Access applicable control unit (if networked system)
4	Press 3 Key	Enter Set-Menu branch
5	Press "Scroll" Key twice	Access additional options
6	Press 8 Key	Select "HSDs" option
7	Press 4 Key	Select de-register HSDs
8	Use keypad to enter single HSSD or range of HSSDs to de-register. Press "Enter" Key to confirm selection.	Specify single HSSD or range of HSSDs to be de-registered
9	Press "Backspace" Key (as required)	Exit Menu System
10	Wait until "Initializing Configuration" message disappears from the display.	Initialization complete

3-2.5.2.5 Test Menu Functions

The Test functions enable service personnel to test the SmartOne initiating devices for the ability to transmit alarm signals. You can also perform alarm-simulation tests for the system's application program and can command on control modules connected to the SLC.

Test Commands are used to initiate a walk test.

Refer to Figure 3-4 for the Top-Level Test-Menu Functions. Refer to Figure 3-5 for the complete Test-Menu tree.

3-2.5.2.5.1 How to Test SLC Initiating Devices

Purpose: To manually test the capability of one or more SmartOne initiating devices (i.e., detectors and monitor modules) to generate and transmit alarm signals that can be properly interpreted and processed by the ARIES Control Unit.

**Note:** The ARIES Control Unit automatically runs this test once a day for all the configured initiating devices on the SLC. The most current test results for all initiating devices are stored in the SLC Test Results log.



**Physically disconnect the wiring to all agent-release and pre-action-sprinkler circuits and activate the global-isolate-outputs routine before testing any SLC initiating devices. Restore the system to normal operating condition at the conclusion of these tests and any other functional tests that were performed.**

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 5 Key	Select "Alarm Sim Test"
6	Press 1 Key to select SLC Alarm Simulation or Press 2 Key to select HSD Alarm Simulation	Specify device type to be alarm simulated
7	Enter the SLC or HSD Address of the device to test. Use XXX format for address. Press "Enter" Key to confirm address selection.	Specify the address of the device being tested
8	Press 1 Key and Press "Enter" Key	Initiate simulation
9	Press "Acknowledge" and "Silence" Keys (as appropriate)	Execute proper operator procedures
10	Repeat Steps 7 to 9 (as required)	Simulate multiple-device actuations
11	De-activate all simulated initiating devices	See Paragraph 3-2.5.2.5.9
12	Press "Backspace" Key (as required)	Exit Menu System
13	Press "Reset" Switch	Resume Normal Operations

#### 3-2.5.2.5.2 How to Run an Audible Walk Test

**Purpose:** To suspend normal system operation for functional testing of one or more SmartOne initiating devices.

The ARIES Control Unit will not display and act upon alarm reports from initiating devices selected for walk testing. There is no need for the operator to acknowledge, silence, or reset an event initiated during a walk test. The control unit will only energize outputs programmed for walk-test activation for a period of one second following the receipt of an alarm signal from any of the devices selected for walk testing.

Outputs programmable for walk testing include control unit-based NACs and combination circuits configured as NACs and SLC-based output modules (such as ASMs and AOs).

The most-current walk-test results for all initiating devices are stored in the walk-test log. The walk-test mode will automatically end after 30 minutes of inactivity. It can also be ended by a system reset or by the procedure in Paragraph 3-2.5.2.5.4.

Any initiating devices not selected for walk testing will report events as normal. Any alarm reported during a walk test will end the walk-test mode and cause the alarm report to be processed as described in Paragraph 3-2.5.4.



**Physically disconnect the wiring to all agent-release and pre-action-sprinkler circuits before walk testing any SLC initiating devices. Restore the system to normal operating condition at the conclusion of these tests and any other functional tests that were performed.**

<b>Step</b>	<b>Action</b>	<b>Result</b>
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press 5 Key	Select "Walk Test" option
5	Press 1 Key	Select Start Walk Test option
6	Enter starting SLC address and ending SLC address. Use XXX format for addresses. Press "Enter" Key to confirm address range to walk test.	Specify range of SLC initiating devices to be walk tested.
7	Press "Backspace" Key (as required)	Exit Menu System
8	Press "Acknowledge" Key	Make "Trouble" LED light steadily and silence buzzer
9	Message "Walk Test: On Normal Operation Test" appears on the display	System is ready for walk test
10	Initiate an alarm from every device specified in Step 6. Warning: Do not initiate more than one alarm from any initiating device during a walk test.  The address and device type of each initiating device momentarily appears on the display after it is walk tested.	Conduct walk test
11	Conclude walk test after every initiating device specified in Step 6 has been alarmed. Press the "Reset" Switch or refer to Paragraph 3-2.5.2.3.4	
12	List the results of the Walk Test by referring to Paragraph 3-2.5.2.3.5	A successful device test will be indicated by a "Passed" message in the "Walk-Test" Log. An unsuccessful device test will be indicated by a "Failed" message. Functionally test any devices that report a failure to confirm whether or not they are operational. Replace any devices that fail a functional test.

## 3-2.5.2.5.3 How to Run a Silent Walk Test

Purpose: To suspend normal system operation for functional testing of one or more SmartOne initiating devices.

The ARIES Control Unit will operate identically as described in Paragraph 3-2.5.2.5.2 when in a silent walk-test mode, except that it will not energize the outputs programmed for walk-test activation.



**Physically disconnect the wiring to all agent-release and pre-action-sprinkler circuits before walk testing any SLC initiating devices. Restore the system to normal operating condition at the conclusion of these tests and any other functional tests that were performed.**

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press 5 Key	Select "Walk Test" option
5	Press 3 Key	Select Silent Walk Test option
6	Enter starting SLC address and ending SLC address. Use XXX format for addresses. Press "Enter" Key to confirm address range to walk test.	Specify range of SLC initiating devices to be walk tested.
7	Press "Backspace" Key (as required)	Exit Menu System
8	Press "Acknowledge" Key	Make "Trouble" LED light steadily and silence buzzer
9	Message "Walk Test: On Normal Operation Test" appears on the display	System is ready for walk test
10	Initiate an alarm from every device specified in Step 6. Warning: Do not initiate more than one alarm from any initiating device during a walk test.  The address and device type of each initiating device momentarily appears on the display after it is walk tested.	Conduct walk test
11	Conclude walk test after every initiating device specified in Step 6 has been alarmed. Press the "Reset" Switch or refer to Paragraph 3-2.5.2.5.4	
12	List the results of the Walk Test by referring to Paragraph 3-2.5.2.3.5	A successful device test will be indicated by a "Passed" message in the "Walk-Test" Log. An unsuccessful device test will be indicated by a "Failed" message. Functionally test any devices that report a failure to confirm whether or not they are operational. Replace any devices that fail a functional test.

3-2.5.2.5.4 How to End Walk Test

Purpose: To terminate a walk test.

**Note:** The walk-test mode will automatically end after 30 minutes of inactivity. It can also be stopped by a system reset.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press 5 Key	Select "Walk Test" option
5	Press 2 Key	End walk test
6	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.5.5 How to Activate a Fire Drill

Purpose: To manually activate one or more NACs and/or control modules that are programmed for operation during a fire drill.

**Note:** Each NAC or control module must be programmed for drill operation via the ARIES Configuration Program. The fire drill must be ended via a menu operation or a system reset before the system can be returned to normal operating condition.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press 5 Key	Select "Fire Drill"
5	Press 1 Key, then Press "Enter" Key	Initiate fire drill
6	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.5.6 How to End a Fire Drill

Purpose: To manually conclude a fire drill.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press 2 Key	Select "Fire Drill"
5	Press "Enter" Key	Stop fire drill
6	Press "Backspace" Key (as required)	Exit Menu System



## 3-2.5.2.5.7 How to Run a Battery Test

Purpose: To measure the standby battery's open-circuit voltage and the power-supply unit's output voltage.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press 3 Key	Run battery test. The following voltages are measured: (1) battery open-circuit (2) power-supply output
5	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.5.8 How to Run an Alarm-Simulation Test

Purpose: To activate system outputs by simulating an initiating-device event during system testing. The initiating device is not activated. The ARIES system outputs are activated as if the simulated initiating device had actually reported an alarm condition.

The simulated alarm report causes execution of the control unit's application program and activates any outputs in the general-alarm list. Event acknowledgment, alarms silencing, and a system reset are required to return the system to normal operating condition.

**Note:** The simulated alarm report must be manually de-activated via a menu operation before the system can be reset and returned to normal operating condition.

The alarm-simulation test can be run concurrently for multiple devices to test counting and crossed-zoned applications. Subsequent alarm acknowledgment and silencing are required. Each simulated initiating device must be manually de-activated via the menu before the control unit can be reset.



**Isolate all releasing outputs using the Isolate function and physically disconnect the wiring to all agent-release, pre-action-sprinkler and auxiliary control circuits before running any alarm-simulation test(s). Restore the system to normal operating condition at the conclusion of these tests and any other functional tests that were performed.**

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Alarm Sim Test"
6	Press 1 Key to select SLC Alarm Simulation or Press 2 Key to select HSD Alarm Simulation	Specify device type to be alarm simulated
7	Enter the SLC or HSD Address of the device to test. Use XXX format for address. Press "Enter" Key to confirm address selection.	Specify the address of the device being tested
8	Press 1 Key and Press "Enter" Key	Initiate simulation
9	Press "Acknowledge" and "Silence" Keys (as appropriate)	Execute proper operator procedures
10	Repeat Steps 7 to 9 (as required)	Simulate multiple-device actuations
11	De-activate all simulated initiating devices	See Paragraph 3-2.5.2.5.9
12	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.5.9 How to De-Activate an Alarm-Simulation Test

Purpose: To report an "alarm-off" message from an initiating device whose activation was simulated.

**Note:** Each simulated alarm report must be manually de-activated via this menu operation before the system can be returned to normal operating condition.



**Isolate all releasing outputs using the Isolate function and physically disconnect the wiring to all agent-release, pre-action-sprinkler and auxiliary control circuits before running any alarm-simulation test(s). Restore the system to normal operating condition at the conclusion of these tests and any other functional tests that were performed.**

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Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key	Access additional options
5	Press 6 Key	Select "Alarm Simulation Test"
6	Use keypad to enter initiating device to report "alarm off." Press "Enter" Key to confirm selection.	Specify device to issue "alarm-off" message
7	Press 0 Key and Press "Enter" Key	Initiate "alarm-off" message
8	Press "Acknowledge" Key	Make Alarm LED flash steadily
9	Repeat Steps 6 to 8 (as required)	Report "alarm-off" for all simulated initiating devices
10	Press "Backspace" Key (as required)	Exit Menu System
11	Press "Reset" Switch	Return to Normal Operating Condition

3-2.5.2.5.10 How to Activate Control-Unit-Based Outputs

Purpose: To manually activate control-unit outputs during system testing to confirm proper operation.

**There is no indication at the control unit that an output is activated. Be sure to de-activate the output after proper operation has been confirmed.**



**Ensure that the outputs will not activate suppression systems or critical facility operations such as computer power. Physically disconnect all agent-release and pre-action-sprinkler circuits and bypass all affected power-off circuits before activating any outputs if the outputs are activating suppression systems or are shutting off power. Restore the system to normal operating condition at the conclusion of all output activation and any other functional tests.**

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key	Access additional Test-Menu options
5	Press 7 Key	Select "Output Test" option
6	Press 1 Key for NAC 1, or Press 2 Key for NAC 2, or Press 3 Key for Combo 1, or Press 4 Key for Combo 2, or Press 5 Key for Release 1, or Press 6 Key for Release 2, or Press 7 Key for Relays, or Press 8 Key for SLC Outputs, or Press 9 Key for RRM Group	Specify output to activate
6a	Press 1 Key for Relay 1, or Press 2 Key for Relay 2, or Press 3 Key for Relay 3, or Press 4 Key for Trouble Relay  (if Relays selected in Step 6)	Specify relay to activate
7	Press 1 Key and then press "Enter" Key	Initiate output activation specified in Step 6 and 6a
8	Return to Step 6 and make another selection (optional)	Activate additional outputs
9	De-activate all outputs after confirming proper operation	See Paragraph 3-2.5.2.5.11
10	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.5.11 How to De-Activate Control-Unit-Based Outputs

Purpose: To manually de-activate control-unit outputs that were activated during system testing.

**There is no indication at the control unit that an output is activated. Be sure to de-activate the output after proper operation has been confirmed.**



**Ensure that the outputs will not activate suppression systems or critical facility operations such as computer power. Physically disconnect all agent-release and pre-action-sprinkler circuits and bypass all affected power-off circuits before activating any outputs if the outputs are activating suppression systems or are shutting off power. Restore the system to normal operating condition at the conclusion of all output activation and any other functional tests.**

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key	Access additional Test-Menu options
5	Press 7 Key	Select "Output Test" option
6	Press 1 Key for NAC 1, or Press 2 Key for NAC 2, or Press 3 Key for Combo 1, or Press 4 Key for Combo 2, or Press 5 Key for Release 2, or Press 6 Key for Release 2, or Press 7 Key for Relays, or Press 8 Key for SLC Outputs, or Press 9 Key for RRM Group	Specify output to de-activate
6a	Press 1 Key for Relay 1, or Press 2 Key for Relay 2, or Press 3 Key for Relay 3, or Press 4 Key for Trouble Relay  (if Relays selected in Step 6)	Specify relay to de-activate
7	Press 0 Key and then press "Enter" Key	Initiate output de-activation specified in Step 6 and 6a
8	Return to Step 6 and make another selection (optional)	De-activate additional outputs
9	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.5.12 How to Activate Control Modules (i.e., as AO, ASM or RRM)

Purpose: To manually activate one or more control modules during system testing to confirm the proper operation of control functions via AOs, NAC operation via ASMs or RRM.

**Note:** All control modules must be manually de-activated via a menu operation or a system reset before the system can be returned to normal operating condition.

**There is no indication at the control unit that an output is activated. Be sure to de-activate the output after proper operation has been confirmed.**

**Ensure that the control modules are not activating suppression systems or controlling critical facility operations such as computer power. Physically disconnect the wiring to all agent-release and pre-action-sprinkler circuits and bypass all affected power-off circuits before activating any control modules if the control modules are activating suppression systems or are shutting off power. Restore the system to normal operating condition at the conclusion of all control-module activations and any other functional tests.**



Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key	Access additional Test-Menu options
5	Press 7 Key	Select "Output Test" option
6	Press "Scroll" Key twice	Access additional Outputs-Test options
7	Press 8 Key	Select "SLC Outputs"
8	Press 1 Key and then press "Enter" Key	
9	Enter starting SLC address and ending SLC address. Use XXX format for addresses. Press "Enter" Key to confirm address range of control modules to activate.	Specify range of control modules and activate.
10	Return to Step 8 and make another selection (optional)	Activate additional control modules
11	De-activate all control modules after confirming proper operation	See Paragraph 3-2.5.2.5.14
12	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.5.13 How to De-Activate Control Modules (i.e., AO or ASM)

Purpose: To manually de-activate one or more control modules that were activated during system testing.

**Note:** Each control module must be manually de-activated via this menu operation or a system reset before the system can be returned to normal operating condition.



There is no indication at the control unit that an output is activated. Be sure to de-activate the output after proper operation has been confirmed.

Ensure that the control modules are not activating suppression systems or controlling critical facility operations such as computer power. Physically disconnect the wiring to all agent-release and pre-action-sprinkler circuits and bypass all affected power-off circuits before activating any control modules if the control modules are activating suppression systems or are shutting off power. Restore the system to normal operating condition at the conclusion of all control-module activations and any other functional tests.

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key	Access additional Test-Menu options
5	Press 7 Key	Select "Output Test" option
6	Press "Scroll" Key twice	Access additional Outputs-Test options
7	Press 8 Key	Select "SLC Outputs"
8	Enter starting SLC address and ending SLC address. Use XXX format for addresses. Press "Enter" Key to confirm address range of control modules to de-activate.	Specify range of control modules to de-activate.
9	Press 2 Key and then press "Enter" Key	Initiate control-module de-activation specified in Step 8
10	Return to Step 8 and make another selection (optional)	De-activate additional control modules
11	Press "Backspace" Key (as required)	Exit Menu System

#### 3-2.5.2.5.14 How to Activate Remote Release Modules

Purpose: To manually activate one or more remote release modules during system testing to confirm the proper operation.

**Note:** All remote release modules must be manually de-activated via a menu operation or a system reset before the system can be returned to normal operating condition.



There is no indication at the control unit that an output is activated. Be sure to de-activate the output after proper operation has been confirmed.

Ensure that the remote release modules are not activating suppression systems. Physically disconnect the wiring to all agent-release and pre-action-sprinkler circuits if the control modules are activating suppression systems. Restore the system to normal operating condition at the conclusion of all RRM activations and any other functional tests.

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key	Access additional Test-Menu options
5	Press 7 Key	Select "Output Test" option
6	Press "Scroll" Key twice	Access additional Outputs-Test options
7	Press 9 Key	Select "RRM Group"
8	Press 1 Key and then press "Enter" Key	Activate "RRM Group Devices"
9	Press 1, 2, 3 or 4 Key for the RRM group and then press "Enter" Key.	Select the applicable RRM group.
10	De-activate all control modules after confirming proper operation	See Paragraph 3-2.5.2.5.15
11	Press "Backspace" Key (as required)	Exit Menu System

### 3-2.5.2.5.15 How to De-Activate Remote Release Modules

Purpose: To manually de-activate one or more RRM's that were activated during system testing.

**Note:** Each RRM must be manually de-activated via this menu operation or a system reset before the system can be returned to normal operating condition.

**There is no indication at the control unit that an output is activated. Be sure to de-activate the output after proper operation has been confirmed.**



**Ensure that the remote release modules are not activating suppression systems. Physically disconnect the wiring to all agent-release and pre-action-sprinkler circuits if the control modules are activating suppression systems. Restore the system to normal operating condition at the conclusion of all RRM activations and any other functional tests.**



Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key	Access additional Test-Menu options
5	Press 7 Key	Select "Output Test" option
6	Press "Scroll" Key twice	Access additional Outputs-Test options
7	Press 9 Key	Select "RRM Group"
8	Press 2 Key and then press "Enter" Key	De-activate "RRM Group Devices"
9	Press 1, 2, 3 or 4 Key for the RRM group and then press "Enter" Key.	Select the applicable RRM group and deactivate.
10	Press "Backspace" Key (as required)	Exit Menu System

#### 3-2.5.2.5.16 How to Activate Remote Release Modules

Purpose: To manually activate one or more remote release modules during system testing to confirm the proper operation.

**Note:** All remote release modules must be manually de-activated via a menu operation or a system reset before the system can be returned to normal operating condition.

**There is no indication at the control unit that an output is activated. Be sure to de-activate the output after proper operation has been confirmed.**



**Ensure that the remote release modules are not activating suppression systems. Physically disconnect the wiring to all agent-release and pre-action-sprinkler circuits if the control modules are activating suppression systems. Restore the system to normal operating condition at the conclusion of all RRM activations and any other functional tests.**

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key	Access additional Test-Menu options
5	Press 7 Key	Select "Output Test" option
6	Press "Scroll" Key twice	Access additional Outputs-Test options
7	Press 9 Key	Select "RRM Group"
8	Press 1 Key and then press "Enter" Key	Activate "RRM Group Devices"
9	Press 1, 2, 3 or 4 Key for the RRM group and then press "Enter" Key.	Select the applicable RRM group.
10	De-activate all control modules after confirming proper operation	See Paragraph 3-2.5.2.5.15
11	Press "Backspace" Key (as required)	Exit Menu System

### 3-2.5.2.5.17 How to De-Activate Remote Release Modules

**Purpose:** To manually de-activate one or more RRM's that were activated during system testing.

**Note:** Each RRM must be manually de-activated via this menu operation or a system reset before the system can be returned to normal operating condition.

**There is no indication at the control unit that an output is activated. Be sure to de-activate the output after proper operation has been confirmed.**



**Ensure that the remote release modules are not activating suppression systems. Physically disconnect the wiring to all agent-release and pre-action-sprinkler circuits if the control modules are activating suppression systems. Restore the system to normal operating condition at the conclusion of all RRM activations and any other functional tests.**

Step	Action	Result
1	Press 0 Key	Initiate Menu Access
2	Enter Password; press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key	Access additional Test-Menu options
5	Press 7 Key	Select "Output Test" option
6	Press "Scroll" Key twice	Access additional Outputs-Test options
7	Press 9 Key	Select "RRM Group"
8	Press 2 Key and then press "Enter" Key	De-activate "RRM Group Devices"
9	Press 1, 2, 3 or 4 Key for the RRM group and then press "Enter" Key.	Select the applicable RRM group and deactivate.
10	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.5.18 How to Run a Lamp Test

Purpose: To test the LEDs on the keypad/display.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key Twice	Access additional "Test-Menu" options
5	Press 4 Key	Run LED test. Confirm that all LEDs illuminate.
6	Press "Backspace" Key (as required)	Exit Menu System

## 3-2.5.2.5.19 How to Measure SLC Resistance

Purpose: To measure the SLC line resistance.

**Note:** The SLC line resistance cannot be measured for Class-B SLCs with T-Tapping.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key Twice	Access additional "Test-Menu" options
5	Press 8 Key	Select "SLC Resistance" option. Record resistance reading that appears in the display. Resistance cannot exceed 40 ohms.
6	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.5.20 How to Find a Duplicate Address

Purpose: To clear the trouble message that appears when two SLC devices have been accidentally assigned the same address. The location of the affected SLC devices can be found by instructing the control unit to modify the doubly addressed devices LED pulse pattern.

**Note:** Only one address can be selected at a time if more than one double-address trouble exists.

Step	Action	Result
1	Press 0 Key	Initiate menu access
2	Enter Password; Press "Enter" Key	Gain access to menus
3	Press 4 Key	Enter Test-Menu branch
4	Press "Scroll" Key twice	Access additional "Test-Menu" options
5	Press 9 Key	Select "More Options"
6	Press 1 Key	Select "Find Dup Address" option
7	Enter duplicate SLC address when message "SLC DOUBLE ADDRESS LED SELECTION UTILITY" is displayed. Use XXX format for address. Press "Enter" Key to confirm duplicate address. The lower line of the display changes to "PRESS BACKSPACE TO EXIT"	Specify duplicate address and initiate double-address LED-selection utility.  The devices with the duplicate address will flash their LEDs twice every 2 to 3 seconds. Locate the devices and correct the addressing problem.  The control unit will continuously execute the double-address LED-selection utility until manually cancelled by a press of the "Backspace" Key.
8	Press "Backspace" Key at the prompt "PRESS BACKSPACE TO EXIT".	End double-address LED-selection utility after the devices with duplicate addresses have been located and addresses corrected.
9	Press "Backspace" Key (as required)	Exit Menu System

3-2.5.2.6 System Passwords

Password entry is required for all menu operations.

The ARIES System provides two distinct levels of program protection, as required by UL Standard 864. The user can only access the menu system by entering a valid password. Typical valid passwords consist of six digits, but may be up to eight characters in length.

There are two security levels:

- Level One, reserved for the system owner. This is the lowest-level security.
- Level Two, reserved for the system installer. This is medium-level security.

Passwords can consist of up to eight numeric characters (0 - 9) which allows access from the display. Alphanumeric characters can only be used with the ACT program; however, if used, they will lock out any possible entry to the menus from the display. Refer to the ARIES Programming Guide for the procedure to create alphanumeric passwords. Table 3-5 describes the different password levels and their functions.

Table 3-5. Password Levels and Descriptions

Password Level	Description
1	Level 1 passwords permit the owner to isolate devices and circuits, view events and system configuration, set certain parameters such as the time and date, and run low-level tests such as a battery-voltage check.
2	Level 2 passwords permit the installer to access to all of the options available to the owner, plus many more options that include changes to device configuration such as smoke-detector sensitivity settings and expanded testing capabilities such as alarm-simulation testing.

If alphanumeric passwords are necessary for a particular application, it is recommended that the Level One password be numeric and the Level Two password be alphanumeric so as to allow the user to retrieve system information (system information lists) and also to prevent a user from changing any programmed system parameters.

The ARIES System provides protection from unauthorized entry to the system menus by utilizing two levels of default passwords—Level One and Level Two. This feature provides two separate passwords which increases the security of the system. Default passwords are set when the system is shipped from KIDDE. Table 3-6 lists the default passwords.

Table 3-6. ARIES Password Levels

Level	Description	Password
1	Owner	973480
2	Installer	186591

Passwords can be changed following installation. Each password can be up to eight alphanumeric characters in length. Use the menu to select the "Set Programming Password" option to change the default numeric passwords.

3-2.5.3 TROUBLE STATE

The ARIES enters the Trouble State when an event occurs such as an open in a supervised installation conductor or a Level-1 or -2 Pre-Alarm reported by a high-sensitivity smoke detector (HSSD) communicating through the Intelligent Interface Module (IIM).

The upper line of the LCD display shows the trouble event by the device or circuit address, the type of trouble event and its state change, and the device or circuit type. The lower line indicates the up-to-40-character message assigned to the device or circuit using the ARIES configuration program.

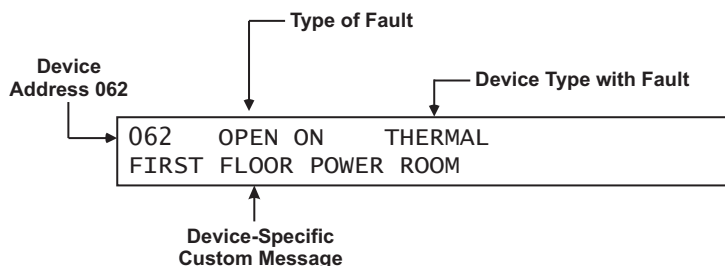


Figure 3-7. Typical Trouble Message Display

The following actions also occur when any trouble condition is reported:

- The Trouble LED on the display flashes
- The internal buzzer pulses
- The Trouble Relay de-energizes to transfer the Trouble contacts
- The trouble event is stored in the event log
- The trouble message is transmitted to peripheral devices such as RDCMs and ATM-Ls, if applicable
- The trouble message is communicated via the RS-232 ports.
- Point- or group-specific and general trouble outputs activate, including previously silenced outputs.

### 3-2.5.3.1 What to Do When a Trouble Occurs

Press the <ACKNOWLEDGE> Key to change the Trouble LED from flashing to steady and to silence the internal buzzer.

It will be necessary to press the <ACKNOWLEDGE> Key once for each trouble report if multiple unacknowledged trouble events are present and the multiple-trouble-event-acknowledgment-option has not been selected. (See Paragraph 3-2.5.2.4.37 to enable the multiple trouble event acknowledgment options.)

Each acknowledged trouble event (or block of events when the multiple-trouble-event-acknowledgment option is used) will disappear from the display. The display changes to indicate the next unacknowledged trouble event in the case of multiple trouble events. The active troubles can be manually displayed in order of occurrence using the <SCROLL> Key at this time after all trouble events have been acknowledged. A summary of the number of active trouble events will be displayed as shown in Figure 3-8 at the conclusion of each manual scroll cycle.

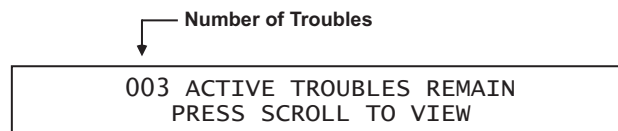


Figure 3-8. Typical Message After Trouble Manual Scroll Cycle

A trouble event that occurs after all previous trouble events are acknowledged will re-initialize the Trouble State as defined in Paragraph 3-2.5.3.

### 3-2.5.3.2 Trouble Resound

The internal buzzer will resound if one or more acknowledged trouble conditions are still active 24 hours after they were acknowledged. The display will show the following message:



Figure 3-9. 24-Hour Trouble Reminder Message

Press the <ACKNOWLEDGE> Key to silence the buzzer. The resound trouble signal will also be automatically retransmitted to the supervising station. Retransmission is accomplished by energizing the trouble relay for one minute and then de-energizing it.

### 3-2.5.3.3 How to Reset the Control Unit After a Trouble Condition

Trouble conditions are non-latching, except for an open circuit in an SLC configured for Class-A, Style-6 or -7 operation. There is no indication that a trouble event has cleared when multiple, acknowledged troubles are present. The only indication will be that the trouble event as depicted in Figure 3-7 has disappeared from the set of manually scrolled events and that the total number of troubles displayed in Figure 3-8 has decreased.

The system will automatically return to normal operations when all of the trouble events have cleared if events were non-latching troubles.

Press the <Reset> switch to return to normal operations after an open circuit in an SLC configured for Class-A wiring has been repaired.

### 3-2.5.4 ALARM STATE

The Alarm State occurs when the ARIES receives an emergency signal from an alarm-initiating device such as a smoke detector, a manual release station, or a waterflow switch, or a Level-2 Alarm signal reported by a high-sensitivity smoke detector (HSSD) communicating through the Intelligent Interface Module (IIM).

The upper line of the LCD display shows the event by the device address, the change of state, and the device type. The lower line indicates the up-to-40-character message assigned to the initiating device using the ARIES configuration program.

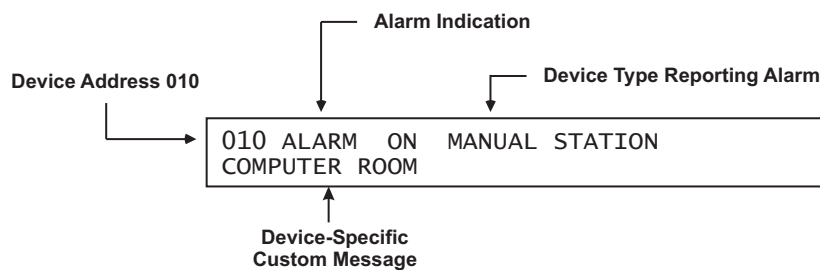


Figure 3-10. Typical Alarm Message Display

The following actions also occur when any alarm condition is reported:

- The Alarm LED on the display flashes
- The internal buzzer sounds continuously
- The alarm event is stored in the event log
- The alarm message is transmitted to peripheral devices such as RDCMs and ATM-Ls, if applicable
- The alarm message is communicated via the NIC and RS-232 ports, as applicable
- Point- or group-specific and general-alarm outputs will activate, including previously-silenced outputs.

#### 3-2.5.4.1 What to Do When an Alarm Occurs

Press the <ACKNOWLEDGE> Key to change the Alarm LED from flashing to steady illumination and to silence the internal buzzer.

It will be necessary to press the <ACKNOWLEDGE> Key once for each device in alarm if multiple unacknowledged alarm events are present. All alarm acknowledgments are logged.

The display changes to indicate the next unacknowledged alarm event in the case of multiple alarm events.

The active alarms and acknowledged alarm-initiating devices can then be manually displayed, in the format of Figure 3-10, in order of occurrence

using the <SCROLL> Key. A summary of the number of active alarm events will be displayed as shown in Figure 3-11 at the conclusion of each manual scroll cycle.

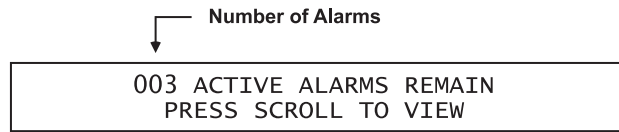


Figure 3-11. Typical Message After Manual Alarm Scroll Cycle

### 3-2.5.4.2 Alarm Silencing

Press the <Silence> Key to de-activate any silenceable outputs such as NACs and SLC-based signal or relay modules after all alarms have been acknowledged. Outputs are made silenceable through the ARIES configuration program. The control unit will display the following message for 5 to 10 seconds.



Figure 3-12. Outputs Silenced Message

You may then manually scroll through the list of active and acknowledged alarm-initiating devices, by using the <SCROLL> Key, after the message in Figure 3-12 is displayed. A summary of the number of active alarm events will be displayed as shown in Figure 3-11 at the conclusion of each manual scroll cycle.

The Silence LED will illuminate when the <Silence> Key is pressed after all alarms have been acknowledged. A subsequent press of the <SILENCE> Key will re-activate any outputs that were silenced if no new alarm events have been reported since the outputs were silenced. The Silence LED will also go out. This toggling capability will remain in effect until the control unit is reset.

**Note:** The toggling capability is only available for stand-alone panels.

A silence command that caused all silenceable outputs to de-activate will be overridden by a subsequent alarm report. All silenced outputs associated with the subsequent alarm-initiating device will reactivate, and the Silence LED will go out. You will need to press the <SILENCE> Key again to de-activate any active, silenceable outputs.

**Note:** There is a 10-second buffer period during which subsequent presses of the <SILENCE> Key are intentionally ignored. A subsequent key press will only be acted upon after at least 10 seconds have elapsed since the previous key press.



### 3-2.5.4.3 Non-Latching Operation

Some SmartOne alarm devices can be configured for non-latching operation. Non-latching operation refers to the special way that Alarm Off messages from initiating devices are processed by the ARIES Control Unit. Each SmartOne alarm-initiating device (such as a smoke detector) transmits an Alarm On message when it detects a fire signature in excess of its configured threshold value. An AI Monitor Module monitoring a normally-open contact detects a contact closure from the contact.

The SmartOne automatic alarm-initiating devices and monitor modules also transmit Alarm Off messages when the detected fire signature drops below the configured threshold value and when the contact closure is removed, respectively. The ARIES Control Unit always displays every Alarm On message, but will not display an Alarm Off message unless the alarm device is configured for non-latching operation. Each Alarm Off message from a non-latching initiating device is treated as a system event that requires operator intervention.

### 3-2.5.4.4 ARIES Alarm-Off Messages

The ARIES Control Unit will only display an Alarm Off message from an alarm-initiating device such as a smoke detector if the device is configured for non-latching operation.

The upper line of the LCD display shows the event by the device address, the change of state, and the device type. The lower line indicates the up-to-40-character message assigned to the alarm-initiating device using the ARIES configuration program.

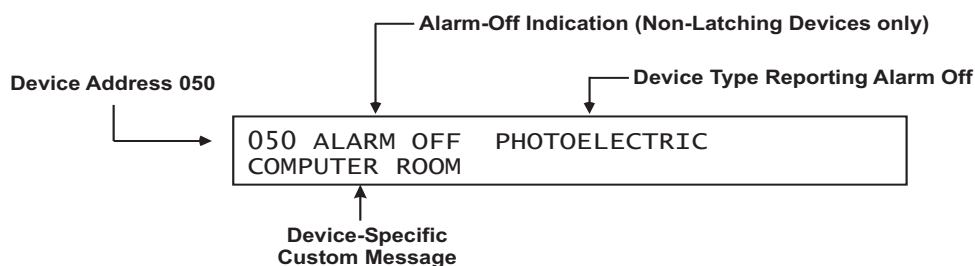


Figure 3-13. Typical Alarm Off Message

The following actions also occur when any Alarm Off condition is reported by a non-latching, alarm-initiating device:

- The Alarm LED on the display flashes
- The internal buzzer pulses
- The Alarm Off event is stored in the event log

**Note:** All Alarm Off messages are logged, regardless of whether the initiating device is configured for non-latching or latching operation.

- The Alarm Off message is transmitted to peripheral devices such as RDCMs and ATM-Ls, if applicable
- The Alarm Off message is communicated via the RS-232 ports

- 3-2.5.4.5 What to Do When an Alarm-Off Message is Displayed
- Press the <ACKNOWLEDGE> Key to change the Alarm LED from flashing to steady and to silence the internal buzzer.
- It will be necessary to press the <ACKNOWLEDGE> Key once for each alarm off report if multiple unacknowledged Alarm Off events are present. All Alarm Off acknowledgments are logged. Each corresponding Alarm On message will be removed from the list of active, manually scrolled alarm messages after its Alarm Off message is acknowledged.
- The display will show the following message if all the alarm devices are configured for non-latching operation, each activated alarm device has transmitted an Alarm Off message that has been acknowledged and no releases are being reported.

NO ACTIVE ALARMS REMAIN  
PRESS RESET TO RETURN TO NORMAL

Figure 3-14. Message After All Alarm-Off Reports are Acknowledged

- The system will then resume normal latching-alarm-event annunciation. You may manually scroll through the list of active and acknowledged latching-alarm-initiating devices using the <SCROLL> Key if both latching and non-latching alarm reports have been received. They will be displayed using the format of Figure 3-10. A summary of the number of active latching alarm events will be displayed as shown in Figure 3-11 at the conclusion of each manual scroll cycle.
- 3-2.5.4.6 When to Use Non-Latching Initiating Devices
- Use non-latching alarm-initiating devices to prevent an inadvertent release of an extinguishing system as the result of a transitory event that can mimic a fire signature such as an air-conditioning-system leak or the initial start-up of a heating system in the fall. The real or mimicked fire signatures that trigger a countdown to release for an extinguishing system must be present for the entire countdown-delay period in order to release the extinguishing system when non-latching alarm-initiating devices are used. The extinguishing-system release will be aborted if a non-latching device reports an Alarm Off message prior to the expiration of the countdown timer.

- 3-2.5.4.7 Alarm Display Limitation
- The ARIES Control Unit can display a maximum of 64 active alarm messages by manually scrolling through them. All alarms in excess of 64 will be processed by the Control Unit even though they are not displayed, and all outputs will be activated as programmed in the Control Unit's application program.
- The LCD will display the following message if a new alarm report is received and the alarm-display limitation has been exceeded:

MORE THAN 64 ALARMS  
PRESS SCROLL TO VIEW

Figure 3-15. Alarm Events Buffer Full Message for New Alarm Event

The normal control unit actions will also occur when any non-displayed alarm condition is reported. These actions include:

- Flashing Alarm LED on the display
- Continuously sounding internal buzzer
- Logging of the alarm event
- Transmittal of the buffer-full message to peripheral devices such as RDCMs, if applicable
- Communication of the alarm message via the RS-232 ports
- Activation of point- or group-specific and general-alarm outputs, including previously-silenced outputs.

Press the <ACKNOWLEDGE> Key to resume normal alarm-event manual scrolling.

The following message will appear at the end of each manual scroll cycle when more than 64 alarm events are active:

MORE THAN 64 ALARMS  
PRESS SCROLL TO VIEW

Figure 3-16. Alarm Events Buffer Full Message After Manual Scroll Cycle

#### 3-2.5.4.8 How To Reset the Control Unit After an Alarm Condition

The ARIES Control Unit will not reset and resume normal operations unless it has received Alarm Off messages from all previously alarmed initiating devices. This means, for example, that:

- All automatic initiating devices such as smoke detectors are measuring obscuration levels below their programmed alarm thresholds
- All manual stations have been reset and are in non-activated positions
- Sprinkler system water has been shut off and all waterflow switches have stopped reporting discharge conditions

Press the <RESET> Key to resume normal operations after all alarm-initiating devices have transmitted Alarm Off messages.

**Note:** It is possible that one or more trouble and/or supervisory messages will be reported after the system-reset operation is performed. For example, a special extinguishing system may need to be recharged or a sprinkler gate valve may be in an off-normal position. Servicing personnel must take prompt action to restore the system to normal operating conditions.



**Do not use the following special smoke-detector configurations for releasing applications.**

Two special alarm states are positive alarm sequence and alarm verification.

#### 3-2.5.5.1 Positive Alarm Sequence

The Positive Alarm Sequence (PAS) is designed to give on-site personnel time to investigate a fire-alarm report from a smoke detector and to prevent an evacuation signal from being generated in the event of a spurious fire-signature detection or an inconsequential fire-alarm report. See Chapter 6 of NFPA 72, National Fire Alarm Code, 2002 Edition, for further details. Refer to the ARIES User's Programming Guide to configure a smoke detector for PAS operation.

The PAS State occurs when the ARIES Control Unit receives an emergency signal from a smoke detector configured for PAS.

The upper line of the LCD display shows the event by the device address, the change of state, and the device type. The lower line indicates the up-to-40-character message assigned to the alarm-initiating device using the ARIES configuration program.

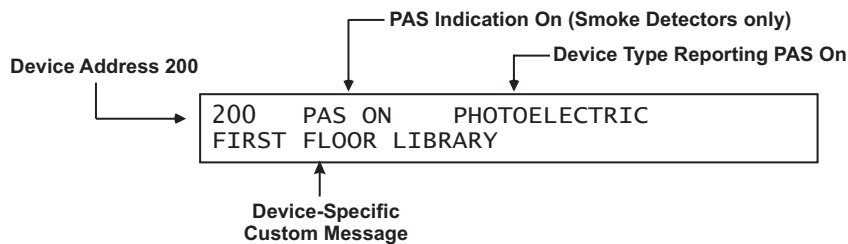


Figure 3-17. Typical PAS Message Display

The following actions also occur when any PAS event is reported:

- The internal buzzer pulses
- The PAS event is stored in the event log
- The PAS message is transmitted to peripheral devices such as RDCMs, if applicable
- The PAS message is communicated via the RS-232 ports

#### 3-2.5.5.2 What to Do When PAS Occurs

You must press the <ACKNOWLEDGE> Key within 15 seconds of receipt of the PAS report to prevent a PAS condition from changing to an alarm condition as described in Paragraph 3-2.5.5.1. The internal buzzer will silence and the display will change to the appearance in Figure 3-18 if the <ACKNOWLEDGE> Key is pressed within 15 seconds of receipt of the PAS report. PAS acknowledgments are logged.

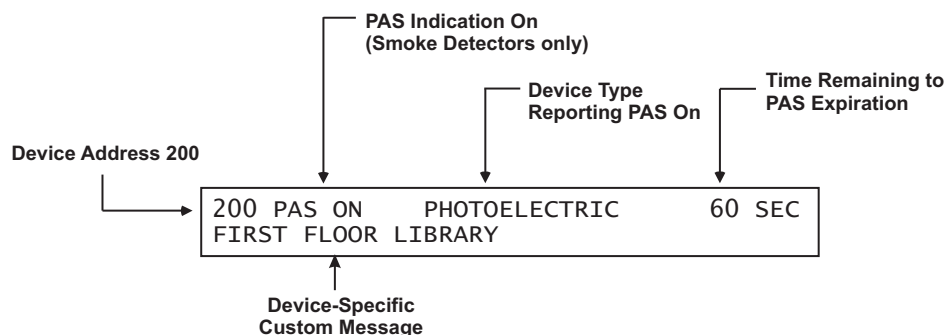


Figure 3-18. PAS Acknowledgment Message

The upper line of the LCD display shows the time remaining to investigate the PAS report before the PAS event transitions to an alarm condition. The investigation time will continually decrease in one-second intervals. The control unit will return to Normal Operation if you press the <RESET> Key or the smoke detector reports an Alarm Off message at any time prior to the expiration of the investigation period. A PAS de-activation event is stored in the event log if an Alarm Off message is reported.

3-2.5.5.3 Alarm Verification

Alarm verification allows a fire-alarm system to delay generating an evacuation signal when an alarm report is received from a smoke detector. The fire-alarm system will wait for a second alarm report from the smoke detector that issued the initial alarm report or another alarm signal from any other alarm-initiating device before it generates the evacuation signal. The fire-alarm system will resume normal operations if it does not receive a second alarm report from the smoke detector or another alarm signal within the user-defined alarm-verification period. See Chapter 6 of NFPA 72, National Fire Alarm Code, 2002 Edition for details. Refer to the ARIES User's Programming Guide to configure a smoke detector for alarm verification.

The Alarm Verification State occurs when the ARIES Control Unit receives an emergency signal from a smoke detector configured for alarm verification.

The upper line of the LCD display shows the event by the device address, the change of state, and the device type. The lower line indicates the up-to-40-character message assigned to the alarm-initiating device using the ARIES configuration program.

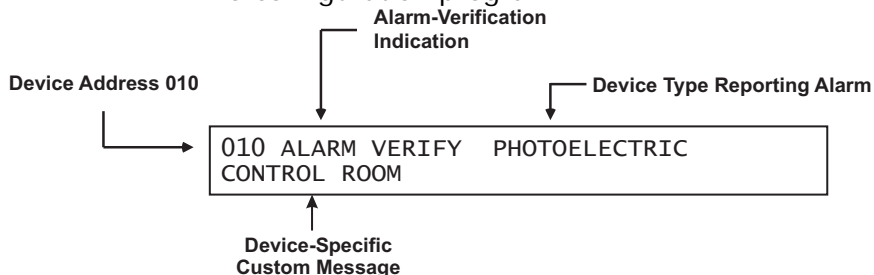


Figure 3-19. Typical Alarm Verification Message Display

The following actions also occur when an alarm verification is reported:

- The internal buzzer pulses
- The alarm verification event is stored in the event log
- The alarm verification message is transmitted to peripheral devices such as RDCMs, if applicable
- The alarm verification message is communicated via the RS-232 ports

3-2.5.5.4 What to Do When Alarm Verification Occurs

Press the <ACKNOWLEDGE> Key to silence the internal buzzer. The display will change to the appearance in Figure 3-20. Acknowledgments of alarm verifications are logged.

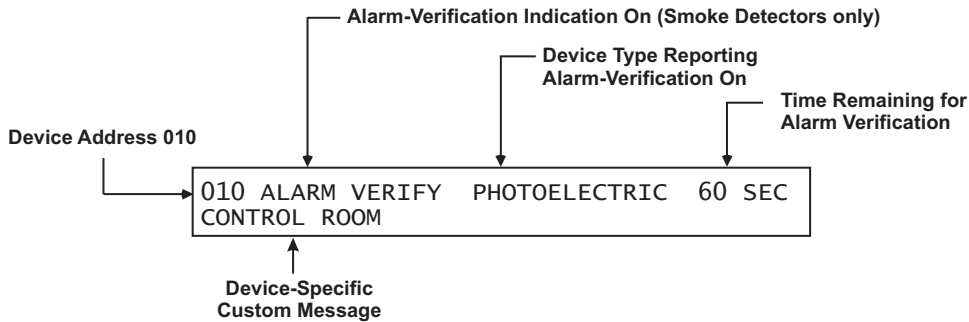


Figure 3-20. Alarm Verification Acknowledgment Message

The upper line of the LCD display shows the verification time remaining to receive an alarm confirmation signal from the smoke detector. The verification time will continually decrease in one-second intervals. The control unit will return to Normal Mode if the smoke detector does not reconfirm the alarm condition or if no other alarm-initiating device reports at any time prior to the expiration of the verification period. A verification off event is stored in the event log if neither an alarm reconfirmation nor a secondary-alarm message is reported.

3-2.5.6 SUPERVISORY STATE

The ARIES Control Unit enters the Supervisory State when an initiating event occurs such as a monitor module report of a low-air-pressure condition in a pre-action-sprinkler system. It also occurs when any SLC-based initiating or control device, an IIM initiating device, or any control unit based output circuit, is isolated.

The upper line of the LCD display shows the supervisory event by the device address, the state change, and the device type. The lower line indicates the up-to-40-character message assigned to the supervisory device using the ARIES configuration program.

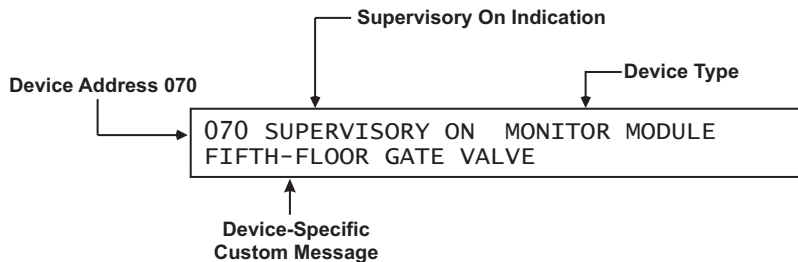


Figure 3-21. Typical Supervisory Message Display

The following actions also occur when any supervisory condition is reported:

- The Supervisory LED flashes
- The internal buzzer pulses
- The supervisory event is stored in the event log
- The supervisory message is transmitted to peripheral devices such as RDCMs and ATM-Ls, if applicable
- The supervisory message is communicated via the RS-232 ports
- Point- or group-specific and general supervisory outputs will activate, including previously-silenced outputs.

#### 3-2.5.6.1 What to Do When a Supervisory Event Occurs

Press the <ACKNOWLEDGE> Key to change the Supervisory LED from flashing to steady and to silence the internal buzzer.

It will be necessary to press the <ACKNOWLEDGE> Key once for each supervisory event if multiple unacknowledged supervisory events are present and the multiple-supervisory-event-acknowledgment option has not been selected. See Paragraph 3-2.5.2.4.37 to enable the multiple-supervisory-event-acknowledgment option.

Each acknowledged supervisory event (or block of supervisory events when multiple event acknowledgment is used) will disappear from the display after acknowledgment. The display changes to indicate the next unacknowledged supervisory event in the case of multiple supervisory events. The active supervisory events can be manually displayed in order of occurrence using the <SCROLL> Key at this time after all supervisory events have been acknowledged. A summary of the number of active supervisory events will be displayed as shown in Figure 3-22 at the conclusion of each manual scroll cycle.

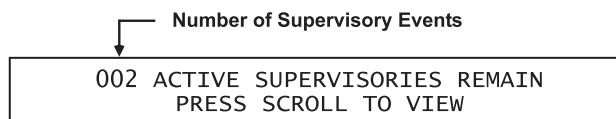


Figure 3-22. Message After Supervisory Manual Scroll Cycle

A supervisory event that occurs after all previous supervisory events have been acknowledged will re-initialize the Supervisory State as defined in Paragraph 3-2.5.6.

#### 3-2.5.6.2 How To Reset the Control Unit After a Supervisory Condition

Supervisory conditions are user configurable to be non-latching or latching. There is no indication that a supervisory event has cleared when multiple, acknowledged supervisory events are present regardless of whether the supervisory event is configured for latching or non-latching operation. The only indication will be that the supervisory event as depicted in Figure 3-21 has disappeared from the set of manually scrolled events and that the total number of supervisory events displayed in Figure 3-22 has decreased.

The system will automatically return to the Normal Mode when all of the supervisory events have cleared if the monitor modules that reported the events were configured to be non-latching, or if all isolated SLC and IIM devices and control-unit-based circuits are restored to normal-operating condition.

Press the <RESET> switch to resume normal operations after a latching supervisory event has cleared.

## 3-2.5.7

### PRE-ALARM STATE

The Pre-Alarm State occurs when a SmartOne automatic initiating device (such as a smoke detector) senses a fire signature that is below its configured alarm-threshold value but above a lower-threshold value called the “pre-alarm” threshold. The ARIES can also enter the Pre-Alarm State if it receives a Pre-Alarm Level-1 or -2 signal reported by a high-sensitivity smoke detector (HSSD) communicating through the Intelligent Interface Module (IIM).

The upper line of the LCD display shows the pre-alarm event by the device address, the change of state, and the device type. The lower line indicates the up-to-40-character message assigned to the alarm device using the ARIES configuration program.

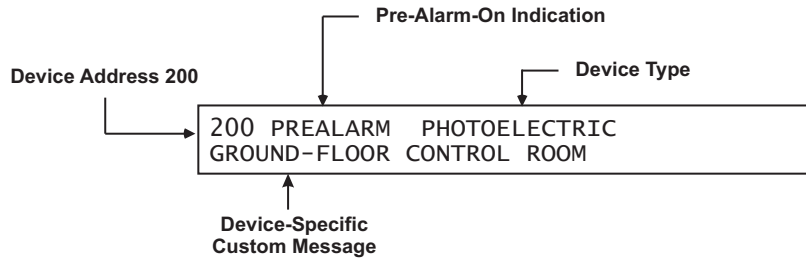


Figure 3-23. Typical Pre-Alarm-Message Display

The following actions also occur when any pre-alarm condition is reported:

- The Pre-Alarm LED flashes
- The internal buzzer pulses
- The pre-alarm event is stored in the event log
- The pre-alarm message is transmitted to peripheral devices such as RDCMs and ATM-Ls, if applicable
- The pre-alarm message is communicated via the RS-232 ports
- Point- or group-specific and general pre-alarm outputs will activate, including previously-silenced outputs.



### 3-2.5.7.1 What to Do When a Pre-Alarm Occurs

Press the <ACKNOWLEDGE> Key to change the Pre-Alarm LED from flashing to steady illumination and to silence the internal buzzer. It will be necessary to press the <ACKNOWLEDGE> Key more than once to change the Pre-Alarm LED from flashing to steady illumination and to silence the internal buzzer if multiple unacknowledged pre-alarm events are present. All pre-alarm acknowledgments are logged.

The display changes to indicate the next unacknowledged pre-alarm event in the case of multiple pre-alarm events.

The system will then continue pre-alarm-event annunciation. You may manually scroll through the list of active and acknowledged pre-alarm-initiating devices in order of occurrence by using the <SCROLL> Key. They will be displayed using the format of Figure 3-23.

### 3-2.5.7.2 Pre-Alarm Silencing

Press the <SILENCE> Key to de-activate any silenceable outputs such as control unit-based notification-appliance circuits and SLC-based signal or relay modules after all pre-alarms have been acknowledged. Outputs are made silenceable through the ARIES configuration program. The control unit will display the following message for 5 to 10 seconds:

OUTPUTS SILENCED

Figure 3-24. Outputs-Silenced Message

You may then manually scroll through the list of active and acknowledged pre-alarm-initiating devices after the outputs silenced message in Figure 3-24 is displayed.

The Silence LED will illuminate when the <SILENCE> Key is pressed after all pre-alarm events have been acknowledged. A subsequent press of the <SILENCE> Key will re-activate any outputs that were silenced if no new pre-alarm events were reported. The Silence LED will also go out. This toggling capability will remain in effect until the control unit is reset.

A silence command that caused all silenceable outputs to de-activate will be overridden by a subsequent pre-alarm report. All silenced outputs associated with the subsequent pre-alarm initiating device will reactivate, and the Silence LED will go out. The <SILENCE> Key must be pressed again to de-activate any active, silenceable outputs.

### 3-2.5.7.3 How to Reset the Control Unit After a Pre-Alarm Condition

The ARIES Control Unit resumes normal operations when it receives "Pre-Alarm Off" messages from all previously-alarmed automatic initiating devices unless one or more latching outputs such a control unit based notification appliance circuit has been turned on. This mode of operation ensues regardless of whether the automatic alarm-initiating devices are configured for latching or non-latching operation.

Press the <RESET> switch to resume normal operations if latching outputs have been activated.

### 3-2.5.8 CONCURRENT STATES

It is possible for the ARIES system to be in more than one of the event-driven, Off-Normal Mode states concurrently. In general, any new event, regardless of its type, is prioritized for immediate display, and the control unit's application program runs to activate the outputs, if any, associated with the new event. The ARIES's hierarchy for displaying events will determine whether the details associated with the new event will continue to be displayed after acknowledgment or whether its display will be suppressed due to the presence of other higher-priority events.

The general hierarchy for the display of events is as follows:

- Alarm
- Pre-Alarm
- Supervisory and Trouble

#### 3-2.5.8.1 Alarm Events

An alarm event is a signal indicating an emergency situation that requires an immediate response. However, there are varying degrees of alarm signals, depending on whether the system's primary objective is property protection and mission continuity or whether it is occupant notification and building evacuation.

##### 1. Property Protection/Mission Continuity Alarm Events

A property-protection/mission continuity system is usually installed to suppress a fire in the area that it is protecting. Waterless fire-suppression systems typically progress through multiple, sequential alarm states before the extinguishing system is discharged. The automatic detection system is either crossed-zoned or arranged in a counting zone to ensure that a flaming fire is present at the time of extinguishing-system discharge and for added reliability.

The typical alarm stages of a ARIES System designed for property protection/mission continuity are summarized in Table 3-7.

**Note:** There must be at least two detectors in the protected area when either crossed-zoned or counting-zone automatic detection is used.

Table 3-7. Progressive Alarm States of a ARIES System  
(Designed for Property Protection/Mission Continuity)

State	When Occurs
Pre-Alarm State	<p>The pre-alarm state occurs when any automatic detector that is a member of a crossed-zoned or counting-zone detection system issues an alarm report. The pre-alarm state for a property-protection/mission-continuity system with waterless fire suppression typically refers to the receipt of an alarm signal from a spot-type smoke detector or an HSSD. The pre-alarm state described in Paragraph 3-2.5.7 dealt with essentially a warning signal from an automatic detector that the fire signature at a specific location had exceeded a user-configurable, low-level threshold value. That pre-alarm signal did not create an actual alarm.</p> <p>The pre-alarm state discussed here should not be confused with the pre-alarm state discussed in Paragraph 3-2.5.7.</p> <p>The pre-alarm state must be annunciated by distinctive public-mode notification.</p>
Pre-Release State	<p>The pre-release state occurs when two automatic detectors (one detector from each of the two crossed zones or any two detectors in a counting zone) issue an alarm report. The discharge criterion for the waterless fire-suppression system is attained when the pre-release state occurs. The pre-release state is also referred to as the countdown state because it typically triggers a time-delay period that precedes the discharge of the waterless fire-suppression system.</p> <p>The pre-release state must be annunciated by public-mode notification different from the pre-alarm state public notification mode.</p>
Release State	<p>The release state occurs when the waterless fire-suppression system discharges at the conclusion of the time-delay period.</p> <p>The release state can also be triggered without a time delay by a manual-release station. It is also common practice to trigger a pre-action-sprinkler system concurrently with the discharge of the waterless suppression system.</p> <p>The release state must be annunciated by public-mode notification different from both the pre-alarm-state and pre-release-state public notification modes.</p>
Abort State	<p>The abort state occurs when an abort switch is manually activated to interrupt or prevent the start of the countdown timer whose expiration will trigger the discharge of the waterless fire-suppression system.</p>

## 2. Occupant Notification/Building-Evacuation Alarm Events

An occupant-notification/building-evacuation system is usually installed as required by fire codes to warn the occupants of a building to evacuate because of a fire. This system enters the alarm state when devices such as an automatic detector, a manual-alarm station, or a waterflow switch reports as an alarm event. The ARIES System uses temporal-coded horns and strobes (or other method of non-voice-messaging, public notification acceptable to the authority having jurisdiction) to notify the occupants to evacuate the building.

An occupant-notification/building-evacuation system has two sub-alarm states that are designed to delay the building-evacuation signals or to prevent a transient, non-fire signature from activating the building-evacuation signals. These two sub-alarm states are Positive-Alarm Sequence and Alarm Verification, described previously.

3-2.5.8.2 Hierarchy for Display of Concurrent Events

The hierarchy for the display of concurrent events, from highest to lowest priority, is as follows:

Table 3-8. Priority Levels for Different Types of Concurrent Events

Priority Level	Types of Events
1	Countdown-to-Release Events
2	Release, Alarm, Abort, and PAS-Countdown Events
3	Pre-Alarm Events (per Paragraph 3-2.5.7)
4	Alarm-Verification-Countdown Events
5	Supervisory and Trouble Events, including HSSD warnings reported via the IIM

Lower-level events will not be automatically displayed if higher-level events are active.

3-2.5.8.3 How Concurrent Events Are Displayed

The information shown on the ARIES display will change if the system is in more than one state concurrently.

1. Level-1 Event Display

The upper line of the LCD display shows the time to release for the first suppression zone that has begun to count down after you acknowledge the alarm event (or events) that have triggered the countdown. The time to release will continually decrease in one-second intervals until the expiration of the time-delay period. The lower line indicates the numbers of concurrently-active events for the following Level-1 and Level-2 event types:

- Discharges
- Countdowns to Release
- Aborts
- Alarms
- PAS Countdowns in Progress

Level-2 and lower-level events will not appear on the display as long as any Level-1 event is active and is in process.

Figure 3-25 shows the appearance of the display when a suppression zone has begun to count down.

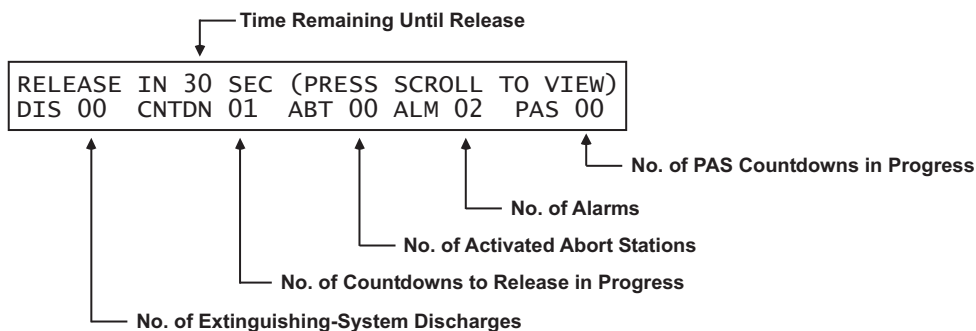


Figure 3-25. Typical Countdown-to-Release Display

The display will show the following message when an extinguishing system has been released:

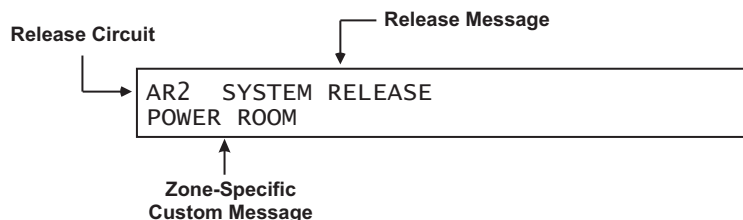


Figure 3-26. Typical Release Message

Press the <ACKNOWLEDGE> Key when the message in Figure 3-26 appears to silence the buzzer. The display will change as shown in Figure 3-27. You may then manually scroll the display using the <SCROLL> Key to show any other suppression zones (successively by order of occurrence, if applicable) that have begun to count down after the release in the first suppression zone. Otherwise, you may manually scroll the display to show the completed Level-1 events and active Level-2 events which will appear as shown in Figure 3-29.

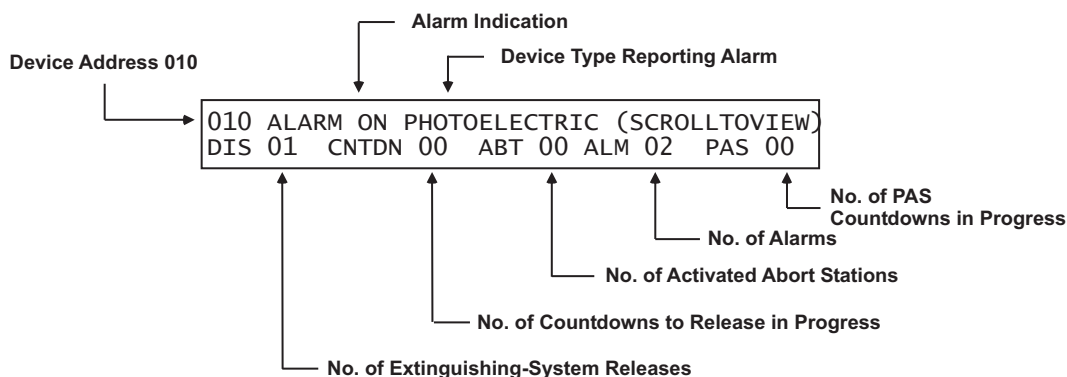


Figure 3-27. Typical Display after Acknowledgment of Release Message

A new event will not automatically override the appearance of the display when a countdown to release is in progress. The appropriate LED on the display will flash and the buzzer will sound when any new system event is reported, and the new event will be logged. The new event will only be displayed when the <ACKNOWLEDGE> Key is pressed.

3-2.5.8.4 What to Do When a Level-1 Message is Displayed

Press the <SCROLL> Key to display the details about the impending special extinguishing system release. There is only the time remaining in the countdown to abort and halt the extinguishing-system release. A successful abort-switch activation will display the following message:

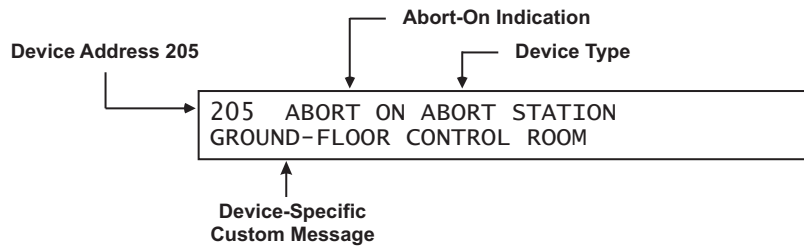


Figure 3-28. Typical Display After Abort-Switch Operation

Press the <ACKNOWLEDGE> key when the message in Figure 3-28 appears to silence the buzzer.

Press the <SCROLL> Key to display the information for the next highest-priority and subsequent events. The display will show the 1st event or "More than 64 Alarms" when all of current Level-2 events have been manually displayed. The upper line of the display will revert to showing the highest-priority event approximately 5 seconds after the last press of the <SCROLL> Key. You may then manually scroll the display among the active Level-2 events.

The appearance of the display when manually scrolling through the completed Level-1 and active Level-2 events is shown in Figure 3-29.

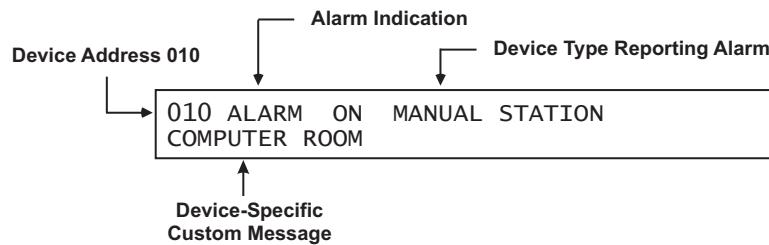


Figure 3-29. Typical Display When Manually Scrolling Through Level-1/-2 Events

3-2.5.8.5 Level-2 Event Display

The upper line of the LCD display shows the activated device or circuit address, the change of state, and the device type that reported the event or the release circuit that has activated. The lower line indicates the following numbers of active or completed Level-1 events and active Level-2 events:

- Discharges
- Countdowns to Release
- Aborts
- Alarms
- PAS Countdowns in Progress

Level-3 and lower-level events will not appear on the display as long as any Level-2 event is active.

Figure 3-30 shows the appearance of the display when more than one type of Level-2 event is active.

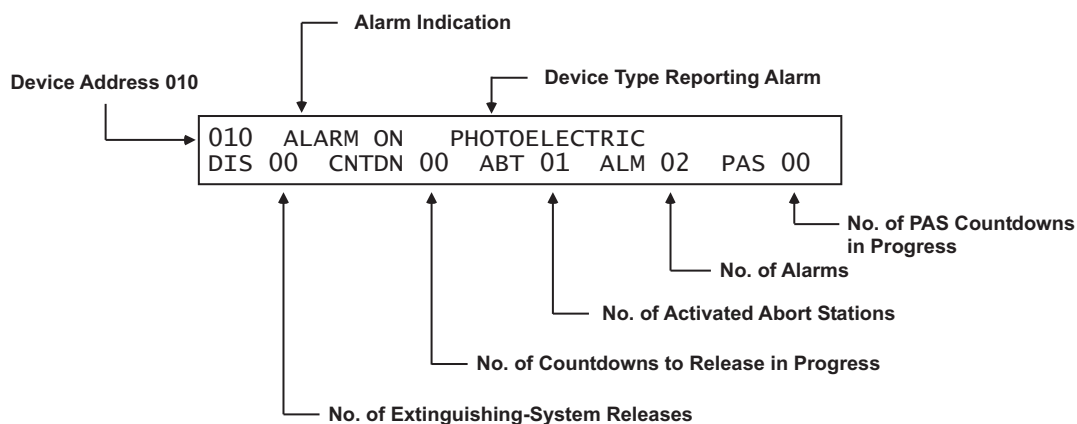


Figure 3-30. Typical Multiple Level-2 Event-Type Display

You may manually scroll the display among the active Level-2 events and completed Level-1 events by using the <SCROLL> Key.

3-2.5.8.6 What to Do When Level-2 Messages are Displayed

Press the <SCROLL> Key to display the information for the highest-priority and subsequent events. The display will show 1st event or "More than 64 Alarms" when all of current Level-2 and completed Level-1 events have been manually displayed. The upper line of the display will revert to showing the highest-priority event approximately 5 seconds after the last press of the <SCROLL> Key. You may then manually scroll the display among the active Level-2 and completed Level-1 events.

The appearance of the display when manually scrolling through the active Level-2 events is shown in Figure 3-31.

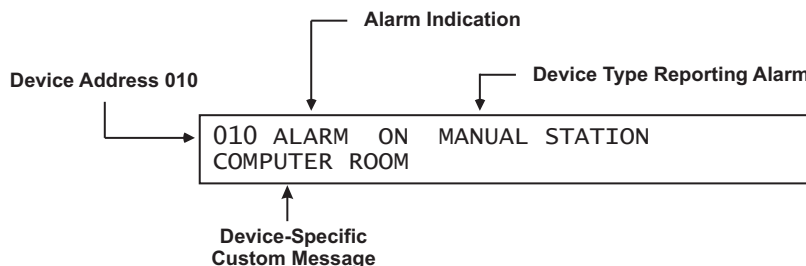


Figure 3-31. Typical Display When Manually Scrolling Through Level-2 Events

3-2.5.8.7 Level-3 and Lower-Level Event Display

The upper line of the LCD display shows the activated device or circuit address, the change of state, and the device or circuit type that reported the event. The lower line indicates the numbers of concurrently-active events for the following Level-3 through Level-5 event types:

- Pre-Alarms
- Alarm-Verification Countdowns
- Supervisory Events
- Troubles

Figure 3-32 shows the appearance of the display when more than one type of Level-3 through Level-5 event is active.

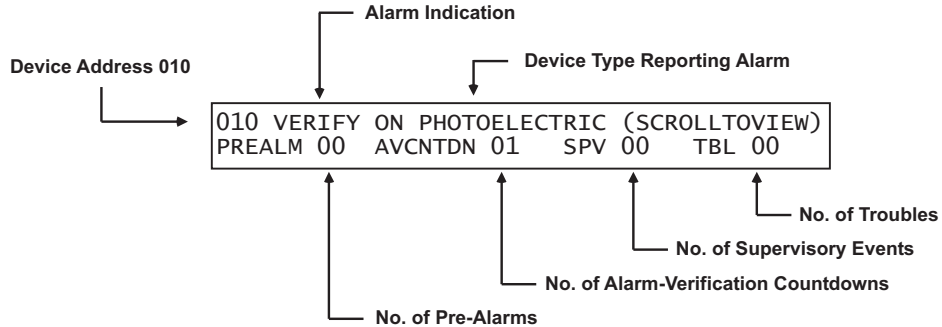


Figure 3-32. Typical Multiple Lower-Level Event Display

You may manually scroll the display among the active lower-level events, according to the priority of events as described in Paragraph 3-2.5.8.7 by using the <SCROLL> Key. Only Level-3 events will scroll if present. Level-4 events scroll if there are no Level-3 events. Supervisory and trouble events scroll if there are no active pre-alarms or alarm verifications.

3-2.5.8.8 What to Do When Level-3 and Lower-Level Messages are Displayed

Press the <SCROLL> Key to display the information for the highest-priority and subsequent events. The display will show the 1st event when all of current Level-3 and lower-level events have been manually displayed. The upper line of the display will revert to showing the highest-priority event approximately 5 seconds after the last press of the <SCROLL> Key. You may then manually scroll the display among the active Level-3 through Level-5 events.

The appearance of the display when manually scrolling through the currently-active Level-3 and lower-level events is shown in Figure 3-33.

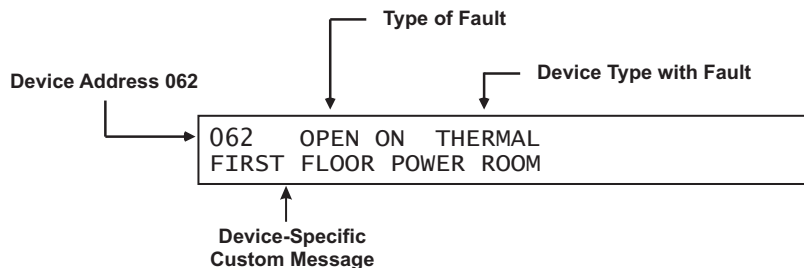


Figure 3-33. Typical Level-3 and Lower-Level Events Display



## 3-2.5.8.9 Level-3 Display Limitations

The ARIES can display a maximum of 300 active trouble, supervisory, pre-alarm, and alarm-verification messages. However, new events in excess of the 300 active reports will be processed by the control unit, and all outputs associated with the 300th (or higher) event will be activated as programmed in the control unit's application program.

The LCD will show the following message if a new trouble, supervisory, pre-alarm, or alarm-verification report is received and the display limitation has been exceeded:

```
> 300 PREALMS/AVCTNDNS/TBLS/SPVS  
PRESS SCROLL TO VIEW
```

Figure 3-34. Lower-Level-Events-Buffer-Full Message for New Event

The normal control unit actions will occur when any non-displayed event is reported. These actions include:

- Flashing of the appropriate LED
- Pulsing of the internal buzzer
- Logging of the event
- Transmittal of the buffer-full message to peripheral devices such as RDCMs, if applicable
- Communication of the event via RS-232 ports
- Activation of point- or group-specific and general state outputs, including previously-silenced outputs

Press the <ACKNOWLEDGE> Key to resume normal manual concurrent-event scrolling. The following message will be displayed at the end of each manual scroll cycle when more than 300 Level-3 and lower-level events are active:

```
> 300 PREALMS/AVCNTDNS/TBLS/SPVS  
PRESS SCROLL TO VIEW
```

Figure 3-35. Lower Level Events Buffer Full Message After Manual Scroll Cycle

3-2.6 System Start-Up



**Do not connect or disconnect the USB cable while the control unit is powering up on system startup or is initializing after a new configuration upload.**

The following paragraphs describe system start-up procedures following a successful installation.

3-2.6.1 PRELIMINARY PROCEDURES

Ensure that the following tasks were successfully completed:

- The ARIES Control Unit is securely mounted in a clean and dry area that has a normal range of environmental temperatures.
- The power supply unit has been configured correctly for the AC supply voltage.
- All field wiring has been checked for continuity, earth grounds, and short circuits. Wiring resistance and capacitance values have been measured and recorded, where appropriate.
- All SLC-based initiating devices and relay/control modules are electronically addressed, or will be addressed shortly after the control unit is powered up. SLC wiring is not connected to the control unit.
- The initiating circuits for all AI Monitor Modules are terminated with 10 k Ohms end-of-line resistors.
- Peripheral devices such as RDCMs and ATMs have their address switches correctly set.
- Field wiring for all control unit-based NACs is terminated with 10 kOhm end-of-line resistors.
- All control heads for special-extinguishing systems, if used, are removed from the agent storage containers.
- All actuator circuits have been replaced by simulated loads.
- Pre-Action/deluge solenoids are removed from the valves that control the distribution of water to the sprinkler heads.

3-2.6.2 INITIAL POWER-UP AND CONTROL-UNIT CHECKOUT

The ARIES power-up procedure is as follows:

1. Close the circuit breaker to apply AC power to the control unit. Verify that the green "Power On" LED illuminates and the display shows this message for approximately 15 seconds:

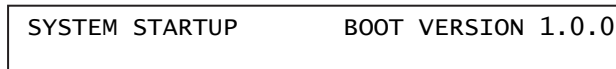


Figure 3-36. Initial Power-Up Message

2. Confirm that the yellow Trouble LED is lit and that the following message appears for 10 to 20 seconds.



Figure 3-37. Initialization Message

3. Connect the standby batteries as shown in Figure 2-9. The display will indicate the following messages:

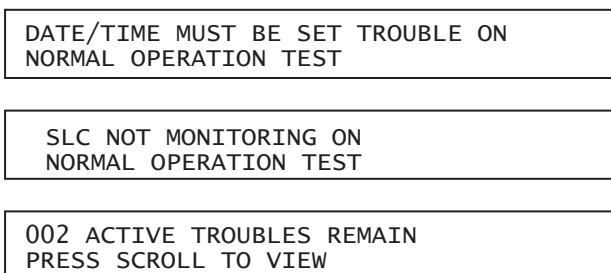


Figure 3-38. Boot-Up Message

Press the <ACKNOWLEDGE> Key to silence the buzzer and change the Trouble LED from flashing to steady illumination.

These messages will scroll for several minutes.

Proceed to Step 4 after the "SLC Not Monitoring On" message disappears and the number of active troubles changes from 002 to 001.

4. Set the time and date as follows:
  - a. Press the 0 Key. This display will show this message:



Figure 3-39. Password Prompt

- b. Press the default Level-1 Password (973480) keys and press the <Enter> Key. The top-level menu will appear:



Figure 3-40. Top-Level Menu Selections

- c. Press the 3 Key to select "SET"



Figure 3-41. Set Menu

- d. Press the 1 Key to select "TIME/DATE"



Figure 3-42. Time/Date Sub-Menu

- e. Press the 1 Key again to select "SET TIME"

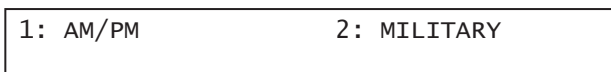


Figure 3-43. Sub-Menu for Time-Display Format

- f. Press the 1 Key again to select "AM/PM" format

```
SET TIME (AM/PM)
ENTER THE TIME *_:_ _ (HH:MM)
```

Figure 3-44. Sub-Menu to Enter Current Time

- g. Enter the time (HH = hours, 0-12; MM = minutes, 0-59) using the digits keys. Press the <Enter> Key to finish your entry.
- h. Press the 1 Key for AM or the 2 Key for PM as indicated below, and then press the <Enter> Key to enter your selection:

```
SET TIME (AM/PM)
1: AM          2: PM *
```

Figure 3-45. Sub-Menu to Complete Current-Time Entry

The display will return to the sub-menu below when you press the <BACKSPACE> Key:

```
1: SET TIME      2: SET DATE
3: BATTERY
```

Figure 3-46. Time/Date Sub-Menu

- i. Press the 2 Key to select "SET DATE"

```
SET DATE
ENTER THE DATE *_-_-_- _ (MM-DD-YY)
```

Figure 3-47. Sub-Menu to Enter Current Date

- j. Enter the date (MM = month, 0-12; DD = day, 0-31, YY = year, 00-99) using the digits keys.
  - k. Press the <ENTER> Key to finish your entry.
5. Press the <BACKSPACE> Key three times to exit from the menu operating state. Confirm that no new trouble messages have appeared on the display.
  6. Remove all power from the control unit by disconnecting the standby battery first and then disconnecting the AC power in anticipation of initially configuring the signaling line circuit.

**Note:** It will be necessary to enter the date and time each time that the ARIES Control Unit is completely powered down.

### 3-2.6.3

#### INITIAL SIGNALING-LINE-CIRCUIT CONFIGURATION

**Note:** The following procedure assumes that all SmartOne devices have been addressed with the Handheld Programmer or via the ARIES keypad. Refer to Appendix D to address SmartOne devices through the Handheld Programmer or to Paragraph 3-2.5.2.4.6 to address SmartOne devices via the ARIES control unit's keypad.

Use this procedure to initially configure and check the number of SmartOne devices connected to the SLC.

1. Connect the wiring for the SLC to Terminal Block TB1. Refer to Figure 1-3. See also Figures 2-12, 2-15, and 2-16 for typical SLC wiring.
2. Power the control unit, and set the time and date, using the procedure outlined in Paragraph 3-2.6.2.
3. All of the SmartOne devices connected to the SLC will report a not-registered trouble message similar to the message shown in Figure 3-48:

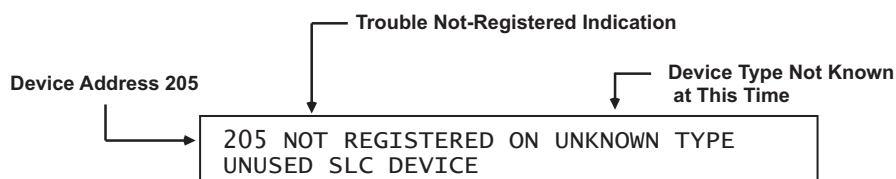


Figure 3-48. Typical Device Not Registered Message

4. Wait for all of the device-not-registered troubles to report. Press the <ACKNOWLEDGE> Key one or more times to silence the control unit buzzer.
5. Confirm that no more trouble messages have been reported.
6. Record the number of currently-active troubles. The number of troubles should be equal to the number of SmartOne devices connected to the SLC.
7. Run the AutoLearn Routine as follows:
  - a. Press the 0 Key. This display will show this message:

```
PLEASE ENTER PASSWORD
* * * * *
```

Figure 3-49. Password Prompt

- b. Press the default Level-2 Password keys (186591) and then press the <Enter> Key. The top-level menu selections will be displayed:

```
1: ISOLATE          2: LIST
3: SET              4: TEST
```

Figure 3-50. Top-Level Menu Selections

- c. Press the 3 Key to select "SET"

```
1: TIME/DATE        2: PORT CONTROL
3: SLC DEVICES     SCROLL FOR MORE
```

Figure 3-51. Set Menu

- d. Press the <SCROLL> Key and then the 4 Key to select "PROGRAMMING"

```
4: PROGRAMMING      5: GLOBALS
6: NETWORK (FUTURE) SCROLL FOR MORE
```

Figure 3-52. Additional Set-Menu Selections

- e. Press 3 to select "AUTOLEARN"

```
1: DAY/NIGHT        2: PASSWORDS
3: AUTOLEARN        SCROLL FOR MORE
```

Figure 3-53. Programming Sub-Menu

Figure 3-54 shows a typical message that displays when the AutoLearn routine is running.

```
AUTO-LEARNING DEVICE ON SLC
AUTO-LEARNING DEVICE 031
```

Figure 3-54. Typical Auto-Learn In-Process Display

The AutoLearn Routine will register and assign a default operating configuration to each device on the SLC. Refer to Paragraph 3-2.5.2.4.26 for a detailed description of the AutoLearn Routine.

- f. The control unit will display the following message when the AutoLearn Routine is finished.

```
AUTO-LEARNING DEVICES ON SLC
REGISTERED XXX DEVICES ON SLC
```

Figure 3-55. Typical Auto-Learn Complete Display

- g. Press the <Backspace> Key as required to exit from the menu operating mode. Wait until the "Initializing Configuration Message" disappears from the display. Confirm that no new trouble messages have appeared on the display.

The ARIES Control Unit is now ready for site-specific programming.

### 3-2.6.4

#### SITE-SPECIFIC PROGRAMMING

Each ARIES System must be uniquely configured for the specific end-user application. System configuration involves assigning an address and operating characteristics to each SmartOne initiating, relay, or control device. It also involves defining what initiating events or combinations of initiating events will activate the various control unit-based output circuits and SLC-based relay and control devices. A site-specific application program can be created in the following two ways.

##### 3-2.6.4.1 System Configuration via the Auto-Setup Routine

The Auto-Setup Routine sets operating parameters for SLC-based devices by the combination of the device's type and address on the SLC. It assigns fixed activation sequences for each control unit-based output circuit and each SLC-based relay and control device by specific-initiating-device report and combinations-of-initiating-device reports.

See Paragraph 3-2.5.2.4.28 for a complete discussion of system configuration through the Auto-Setup Routine.

##### 3-2.6.4.2 System Configuration via the ACT Configuration Program

You can also configure the ARIES System via the ACT Configuration Program for individual site-specific applications. The ACT Configuration Program allows you to set the operating parameters for the SmartOne initiating devices and to create activation sequences for each control unit-based output circuit and each SLC-based relay and control device by specific-initiating-device report and combinations-of-initiating-device reports.

Refer to the ARIES Programming Guide for an explanation of system configuration through the ACT Configuration Program.

## 3-3 NETWORK SYSTEM OPERATION

Multiple ARIES systems can be networked together to form a larger, integrated system for common event reporting, operator control, and outputs activation. A peer-to-peer network can

be created for up to thirty-two (32) ARIES control units. These units perform the following networked fire alarm and/or suppression system operations:

- Event initiation
- Protected premises local and/or remote event annunciation
- Occupant notification by audible and visible signaling appliances
- Process and equipment control to activate safety procedures
- Fire extinguishing system release
- Off-premises transmissions to a central station or a fire department

Each networked control unit supervises its own initiating devices and output circuits. It also manages the input point to output circuit operations specific to its local protected area(s). These operations occur with or without network inter-control unit communications, lack of network communications due to catastrophic fault, or irrespective of the condition of any other control unit in the network.

A typical networked ARIES system is shown in Figure 3-56.

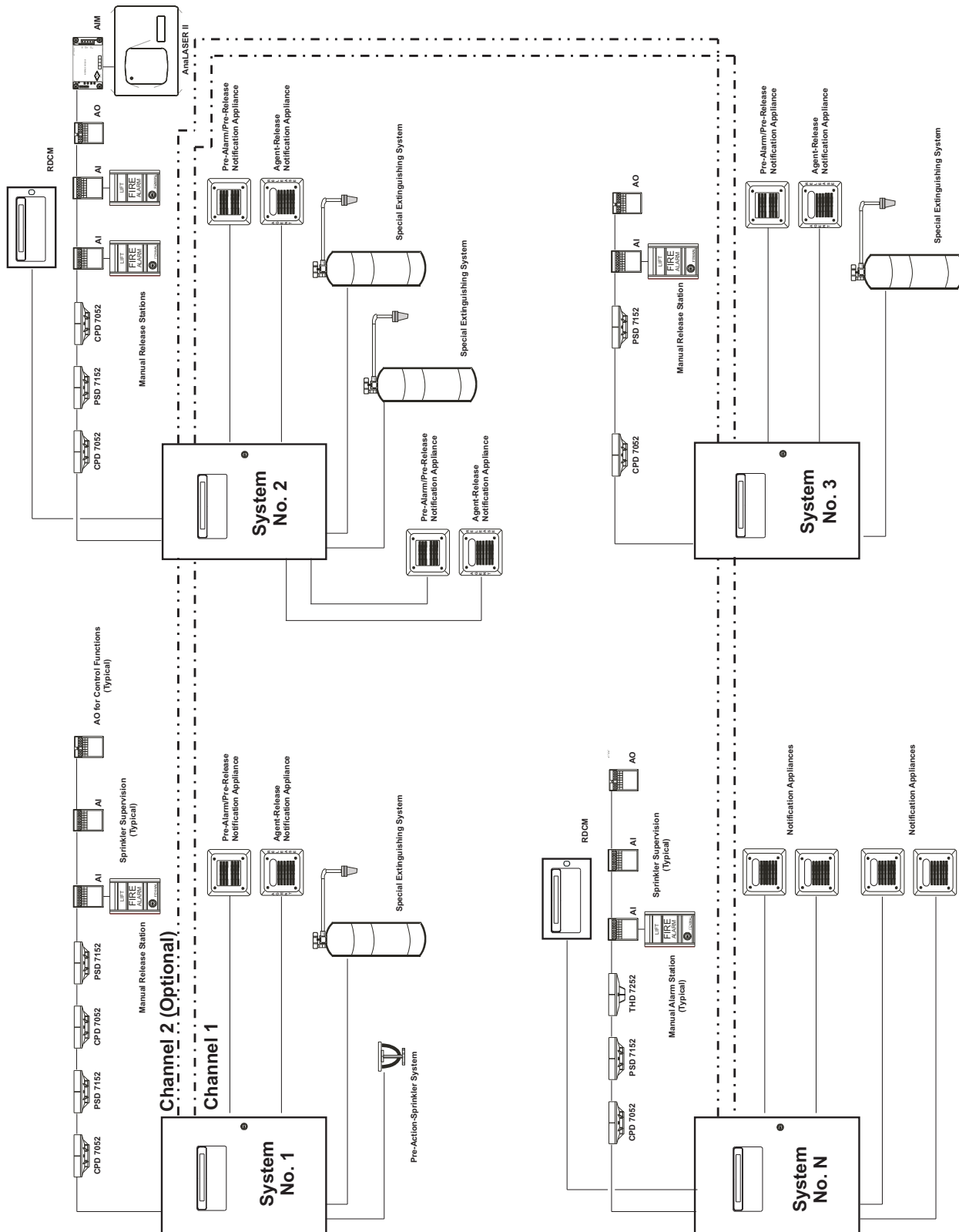


Figure 3-56. Typical Networked ARIES System



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### 3-3.1 Communications

Each networked control unit can communicate with every other control unit in the network. Control unit communication is peer-to-peer via a token-passing protocol. This method ensures that only one control unit is broadcasting at any one time. Network Interface Cards (NICs) integrate two or more control units in a networked configuration.

Networked control units are interconnected using shielded, twisted-wire pair, fiber-optic medium, or mixed transmission media (combination fiber optic or twisted wire pair media). Each NIC regenerates the network communications, and enables control units to be up to 4,000 feet apart when using shielded, twisted-wire pair, and up to 1 mile (5,280 feet) when using a 62.5/125  $\mu\text{m}$  duplex fiber-optic medium.

Network messages and broadcasts are transmitted over either single- or dual-channel communications connections. Dual-channel connections offer a redundant communications path that allows network broadcasting and inter-control-unit functionality with an open- or short-circuit fault or ground fault on one of the channels. Any fault in either a single- or dual-channel communications channel creates a network trouble condition.

### 3-3.2 Network Event Broadcasts

Each networked control unit can be configured to broadcast any event associated with its initiating devices or monitored output circuits:

- Locally to the control unit-of-origin only
- Selectively to a subset of networked control units
- Globally to every control unit within the network.

Network broadcasts extend to all ancillary equipment such as Remote Display Control Modules (RDCMs) and Annunciator Terminal Modules (ATMs) associated with a designated subset of control units when selective event broadcasting is chosen. Network broadcasts extend to all such equipment associated with every control unit when the network is configured for global-event broadcasting.

The default operation for event broadcast is globally to all control units in the network.

### 3-3.3 Operator Control

Operators can acknowledge events, silence notification appliances, and perform resets in three different configurations:

- Locally to the control unit-of-origin only
- Selectively to a subset of the networked control units
- Globally to all control units in the network.

Operator-intervention capability extends to all ancillary equipment such as Remote Display Control Modules (RDCMs) and Annunciator Terminal Modules (ATMs) associated with a designated subset of control units when selective operator control is used. It extends to all such equipment associated with every control unit when the network is configured for global operator control.

### 3-3.4 Event Recording

Each control unit is configurable to record and display events as follows:

- Locally from its directly-monitored peripheral devices and output circuits only
- Selectively from a subset of networked control units
- Globally from all control units in the network

The default operation for event recording and display is globally from all control units in the network.

### 3-3.5 Event Output Control (EOC)

A confirmed event at any control unit can create output control, including extinguishing-system activation, in any of the following ways:

- Locally to its directly controlled peripheral devices and output circuits only
- Selectively to peripheral devices and output circuits controlled by a subset of networked control units

**Note:** This requires EOC code on the remote control units to activate their local outputs.

- Globally to peripheral devices and output circuits controlled by all control units in the network.

**Note:** This requires EOC code on the remote control units to activate their local outputs.

The default operation for event-output control is globally to all control units in the network.

Any control unit can create local output control, including extinguishing system activation, only to its directly controlled peripheral devices and output circuits. Refer to the ARIES Configuration Software User's Guide for information on configuring the EOC for network events.

### 3-3.6 Configuration Uploads/Downloads

The ARIES Configuration Program can upload and download configuration settings and application programs via one control unit to and from any other control unit in the network.

Refer to the ARIES Configuration Software User's Guide for information on configuring the different network settings.

### 3-3.7 Menu Routines

Menu routines for a control unit can be activated:

- Directly from its keypad/display
- Selectively from a subset of the networked control units
- Globally from all control units in the network

#### 3-3.7.1 ACCESSING REMOTE NODE MENUS VIA KEYPAD

When a password is entered on an active network system, the prompt shown in Figure 3-57 is displayed.

PRESS ENTER TO SELECT THE LOCAL NODE  
OR ENTER NETWORK NODE NO. (1 - 32)

Figure 3-57. Network Node Prompt

**Local Node Access** - Press the <Enter> key to select the local node; the response shown in Figure 3-58 is displayed.

1: ISOLATE	2: LIST
3: SET	4: TEST

Figure 3-58. Top-level Menu Selections

**Remote Node Access** - Enter the node number then press the <Enter> key; in response, the password prompt for the remote node is displayed.

---

### 3-3.8 Network Groups

Autonomous sub-networks or groups can be created within a network of ARIES Control Units. These groups can be programmed to selectively interact as separate entities for event reporting, event output control, acknowledgment of events, alarm silencing, and system resets. There are 32 possible groupings, numbered 0 to 31. By default, all control units in the network have no pre-assigned group number.

**Note:** A network is configured for global operations when no groups are defined.

#### 3-3.8.1 CONTROL UNITS WITH A NON-ZERO GROUP NUMBER

A group of networked control units will operate as described below when they are assigned a non-zero group number. Each control unit in a group will be able to:

- Display and log all events that take place in any control unit in the group
- Issue an event-acknowledgment command to all control units in the group for any event that occurs in the group
- Send alarm-silence commands to all control units in the group to de-energize any silenceable outputs that have been activated within the group
- Send reset commands to all control units in the group once all activated initiating devices have transmitted an "alarm-off" message(s) to the affected control unit(s)
- Transmit output-activation commands to any or all other control units in the group for activation of remotely-controlled outputs

#### 3-3.8.2 NETWORK GROUP 0

One control unit in the network can be assigned to Network Group 0. This control unit serves as the master control unit for the network, and is capable of the following interactions with all sub-groups in a selectively-signaling network:

- Displaying and logging all network events from all network groups
- Issuing acknowledge, silence, and reset commands to all control units in all network groups
- Activating its outputs upon any initiating event from all control units in all network groups

Figure 3-59 shows the possible interactions among the various members of a selectively-signaling networked system with groupings and with one control unit designated as the master control unit.

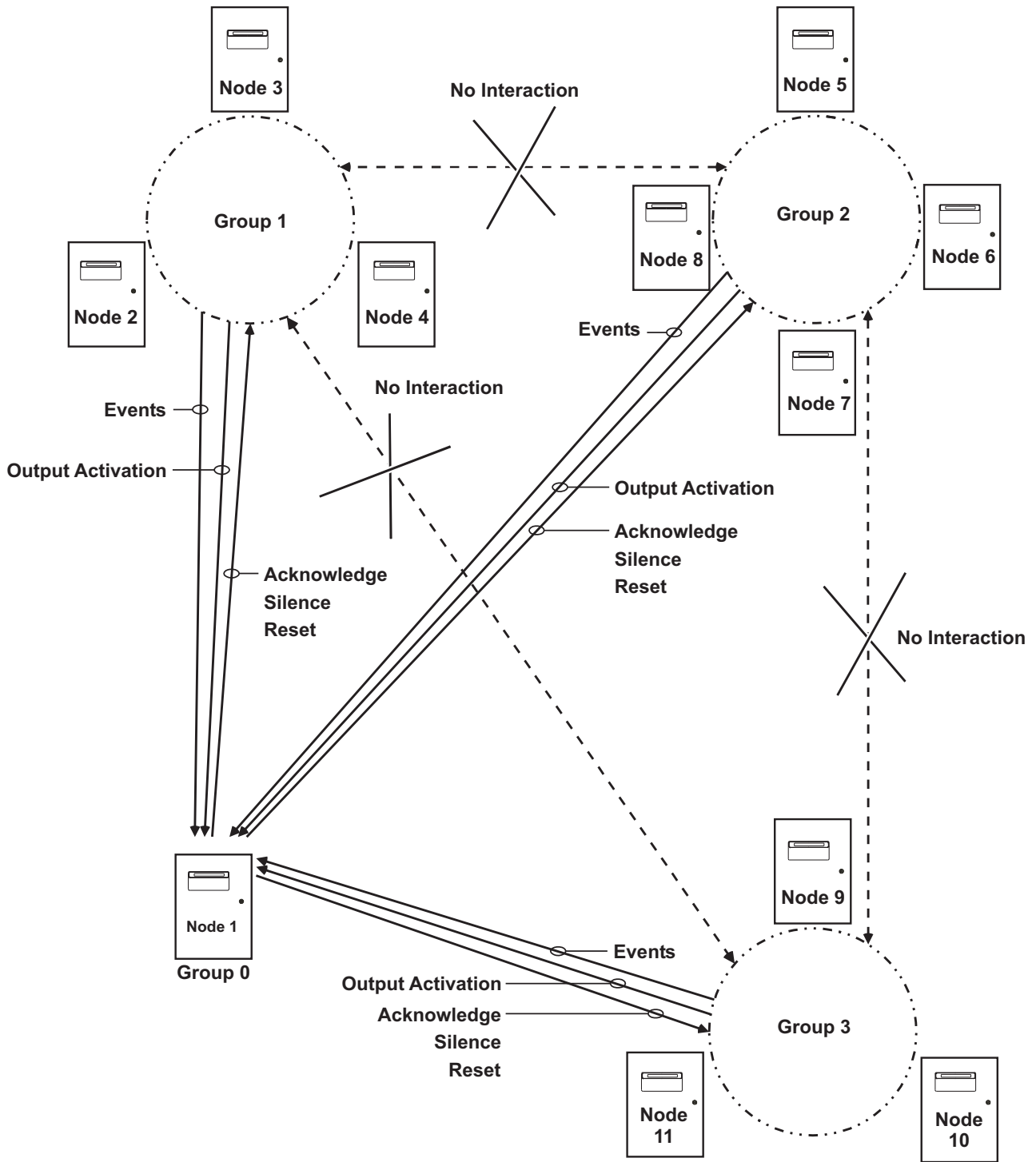


Figure 3-59. Networked Control-Unit Interactions  
Refer to the ARIES Programming Guide to create network groups.

### 3-3.9 Operating States

A network of ARIES Systems has the five distinct Off-Normal operating states discussed in Paragraph 3-2.1. The normal network message display when there are no active system events is as follows:

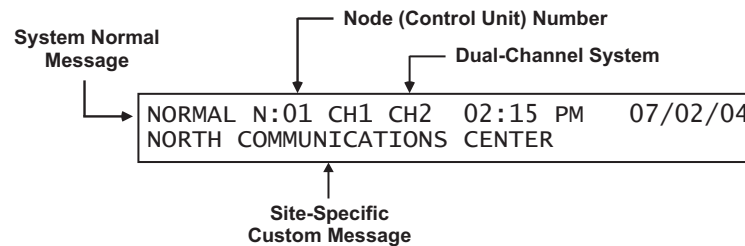


Figure 3-60. Network Normal Message Display

#### 3-3.9.1 OPERATOR-DRIVEN MENU STATE

The system enters the Menu State when an operator presses the 0 Key and enters the appropriate password as described in Paragraph 3-2.5.2.6. The operator will be prompted to enter a network node number. The requested menu will be accessible if the node number corresponds to:

- The control unit whose display is being utilized
- Another control unit in the same group as the control unit whose display is being utilized
- Any control unit in a network configured for global operation
- The control unit whose display is being utilized is defined as Group 0

#### 3-3.9.2 EVENT-DRIVEN STATES

A networked control unit will enter one of the event-driven states (pre-alarm, alarm, supervisory, or trouble) when it is configured as Group 0 or when the event that occurs is:

- Resident in the control unit or its associated peripheral devices
- From another control unit in the same group as the control unit
- From any control unit in a network configured for global operation

### 3-3.10 Network Outputs Activation

Control unit or SLC outputs activate when commanded on by operating instructions contained in each networked control unit's event output control (EOC) program. The EOC program for a particular control unit is triggered by any event that transitions it from the Normal Mode to any of the event-driven, Off-Normal operating states discussed in Paragraph 3-2.1. The control unit must be configured to selectively receive and respond to the event as described Paragraph 3-3.8, or the network must be configured for global operation.

### 3-3.11 Operator Control Keys

The operator control keys are used to:

- Acknowledge receipt of initiating or monitoring-circuitry reports
- Silence alarm-notification appliances
- Transition one or more control units back to the Normal Mode.

These keys are functional if the control unit is configured as Group 0 or if the event and/or activated appliances are:

- Resident in the control unit or in its associated peripheral devices

- From or connected to another control unit in the same group as the control unit
- From or connected to a control unit in a network configured for global operation

### 3-3.12 Status-Indicating LEDs

The five status-indicating LEDs (alarm, pre-alarm, trouble, supervisory, and alarm silence) will light when the control unit is configured as Group 0 or when the event is:

- Resident in the control unit or its associated peripheral devices
- From another control unit in the same group as the control unit
- From any control unit in a network configured for global operation

### 3-3.13 Network Display Messages

Display messages will appear as described in Section 3-2, System Operation, for the control unit in which the events occur. Remote control unit events will be displayed as described in the following paragraphs.

### 3-3.14 Remote Trouble Events

Remote trouble events from a networked control unit are shown in the upper line of the LCD display by:

- Node-of-origin
- Device or circuit address
- Type of trouble event and its state change
- Device or circuit type

The lower line indicates the up-to-40-character message assigned to the device or circuit using the ARIES configuration program.

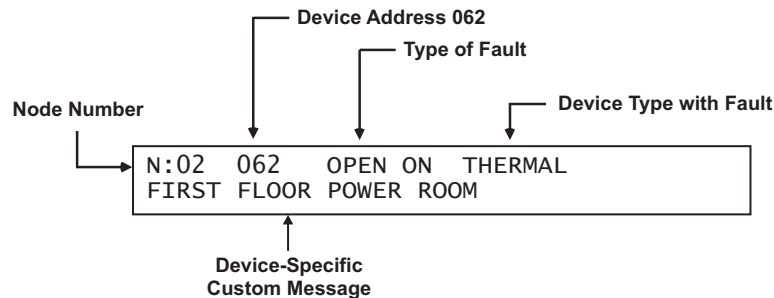


Figure 3-61. Typical Remote-Trouble-Message Display

The following actions also occur when the control unit is configured as Group 0 or when the trouble event is either from another control unit in the same group as the control unit or from any control unit in a network configured for global operation.

1. The Trouble LED on the display flashes
2. The internal buzzer pulses
3. The Trouble Relay de-energizes to transfer the Trouble contacts
4. The trouble event is stored in the event log
5. The trouble message is transmitted to peripheral devices such as RDCMs and ATM-Ls, if applicable
6. The trouble message is communicated via the NIC and RS-232 ports, as applicable
7. Point- or group- specific and general trouble outputs activate, including previously silenced outputs.

Refer to Paragraph 3-2.5.3.1 for what to do when a remote trouble message is received.

### 3-3.15 Remote Alarm Events

Remote alarm events from a networked control unit are shown in the upper line of the LCD display by:

- Node-of-origin
- Device address
- Change of state
- Device type

The lower line indicates the up-to-40-character message assigned to the alarm-initiating device using the ARIES configuration program.

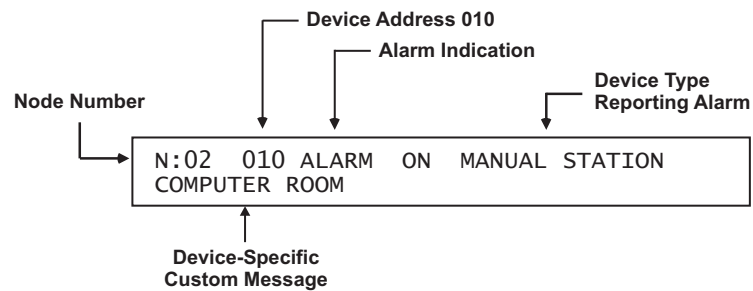


Figure 3-62. Typical Remote Alarm Message Display

The following actions also occur when the control unit is configured as Group 0 or when the alarm event is either from another control unit in the same group as the control unit or from any other control unit in a network configured for global operation.

1. The Alarm LED on the display flashes
2. The internal buzzer sounds continuously
3. The alarm event is stored in the event log
4. The alarm message is transmitted to peripheral devices such as RDCMs and ATM-Ls, if applicable
5. The alarm message is communicated via the NIC and RS-232 ports, as applicable
6. Point- or group-specific and general-alarm outputs activate, including previously-silenced outputs.

Refer to Paragraph 3-2.5.4.1 for what to do when a remote alarm message is received.

### 3-3.16 Remote Positive-Alarm-Sequence (PAS) Events

Remote PAS events from a networked control unit are shown in the upper line of the LCD display by:

- Node-of-origin
- Device address
- Change of state
- Device type

The lower line indicates the up-to-40-character message assigned to the alarm-initiating device using the ARIES configuration program.

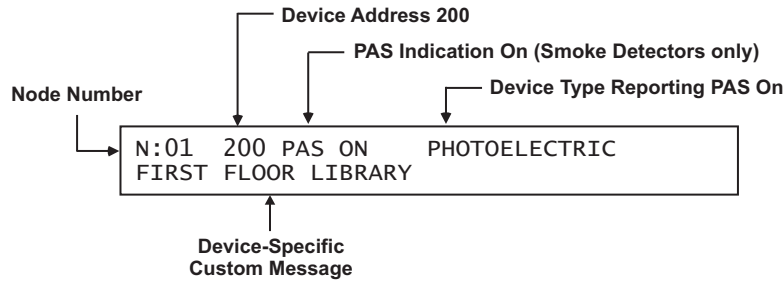


Figure 3-63. Typical Remote PAS Message Display

The following actions also occur when the control unit is configured as Group 0 or when the PAS event is either from another control unit in the same group as the control unit or from any other control unit in a network configured for global operation.

1. The internal buzzer pulses
2. The PAS event is stored in the event log
3. The PAS message is transmitted to peripheral devices such as RDCMs, if applicable
4. The PAS message is communicated via the NIC and RS-232 ports, as applicable

Refer to Paragraph 3-2.5.5.2 for what to do when a Remote PAS Message is Received.

**Note:** The time remaining on the PAS countdown timer will only appear on the display of the control unit that received the PAS report from the smoke detector. Remote, networked control units will not display the PAS countdown timer.

### 3-3.17 Remote Alarm-Verification Events

Remote alarm-verification events from a networked control unit are shown in the upper line of the LCD display by:

- Node-of-origin
- Device address
- Change of state
- Device type

The lower line indicates the up-to-40-character message assigned to the alarm-initiating device using the ARIES configuration program.

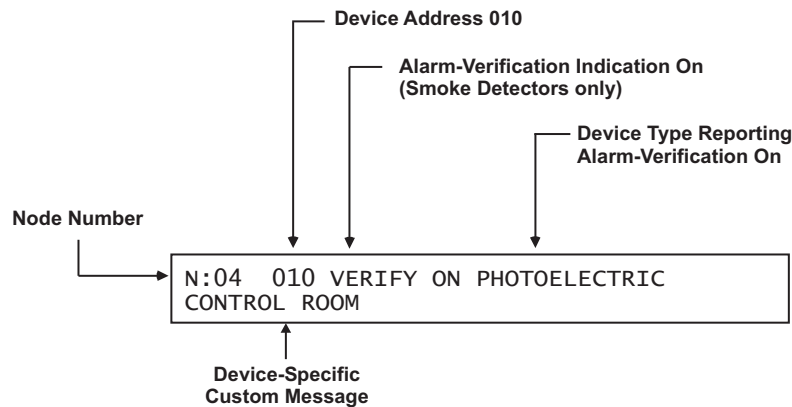


Figure 3-64. Typical Remote Alarm-Verification Message Display



The following actions also occur when a control unit is configured as Group 0 or when the alarm-verification event is either from another control unit in the same group as the control unit or from any other control unit in a network configured for global operation.

1. The internal buzzer pulses
2. The alarm-verification event is stored in the event log
3. The alarm-verification message is transmitted to peripheral devices such as RDCMs, if applicable
4. The alarm-verification message is communicated via the NIC and RS-232 ports, as applicable

Refer to Paragraph 3-2.5.5.4 for what to do when a remote alarm-verification message is received.

**Note:** The time remaining on the alarm-verification timer will only appear on the display of the control unit that received the verification report from the smoke detector. Remote, networked control units will not display the alarm-verification timer.

### 3-3.18 Remote Supervisory Events

Remote supervisory events from a networked control unit are shown in the upper line of the LCD display by:

- Node-of-origin
- Device address
- State change
- Device type

The lower line indicates the up-to-40-character message assigned to the device using the ARIES configuration program.

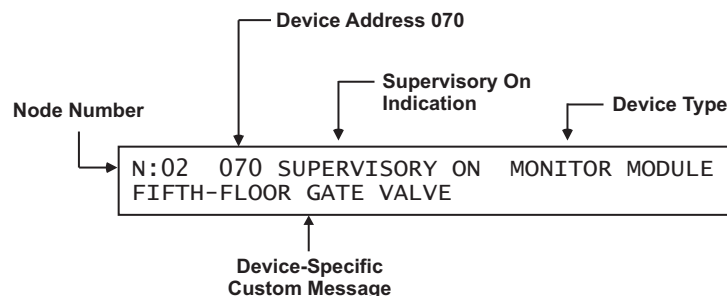


Figure 3-65. Typical Remote Supervisory Message Display

The following actions also occur when the control unit is configured as Group 0 or when the supervisory event is either from another control unit in the same group as the control unit or from any other control unit in a network configured for global operation.

1. The Supervisory LED on the display flashes
2. The internal buzzer pulses
3. The supervisory event is stored in the event log
4. The supervisory message is transmitted to peripheral devices such as RDCMs and ATM-Ls, if applicable
5. The supervisory message is communicated via the NIC and RS-232 ports, as applicable
6. Point- or group-specific and general-supervisory outputs activate, including previously-silenced outputs.

Refer to Paragraph 3-2.5.6.1 for what to do when a remote supervisory message is received.

**3-3.19 Remote Pre-Alarm Events**

Remote pre-alarm events from a networked control unit are shown in the upper line of the LCD display by:

- Node-of-origin
- Device address
- Change of state
- Device type

The lower line indicates the up-to-40-character message assigned to the alarm-initiating device using the ARIES configuration program.

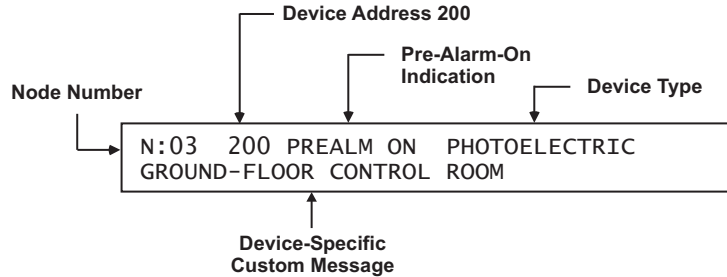


Figure 3-66. Typical Remote Pre-Alarm Message Display

The following actions also occur when the control unit is configured as Group 0 or when the pre-alarm event is either from another control unit in the same group as the control unit or from any other control unit in a network configured for global operation.

1. The Pre-Alarm LED on the display flashes
2. The internal buzzer pulses
3. The pre-alarm event is stored in the event log
4. The pre-alarm message is transmitted to peripheral devices such as RDCMs and ATM-Ls, if applicable
5. The pre-alarm message is communicated via the NIC and RS-232 ports, as applicable
6. Point- or group-specific and general pre-alarm outputs activate, including previously-silenced outputs.

Refer to Paragraph 3-2.5.7.1 for what to do when a remote pre-alarm message is received.

**3-3.20 How Concurrent Remote Events Will Be Displayed**

The information shown on the ARIES display will change if the system is in more than one Off-Normal state concurrently. Remote events will be displayed when a control unit is configured as Group 0 or when the events that occur are from another control unit in the same group as the control unit or from any other control unit in a network configured for global operation

**3-3.20.1 REMOTE LEVEL-1 EVENT DISPLAY**

Remote countdowns to release from a networked control unit are shown in the upper line of the LCD display by node of origin.

The lower line indicates the numbers of active or completed network events for the following event types:

- Discharges
- Countdowns to Release
- Aborts
- Alarms
- PAS countdowns in progress

Level-2 and lower-level events will not appear on the display as long as any Level-1 event is active.

Figure 3-67 shows a typical display when a suppression zone has begun to count down.

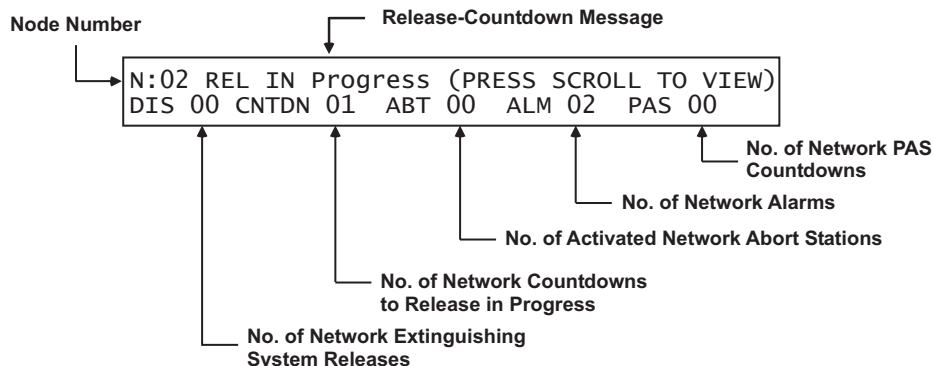


Figure 3-67. Typical Network Countdown to Release Display

Press the <SCROLL> Key to view the 40-character description associated with the suppression zone that is currently in countdown-to-release mode.

Figure 3-68 shows a typical display when an extinguishing system has been released:

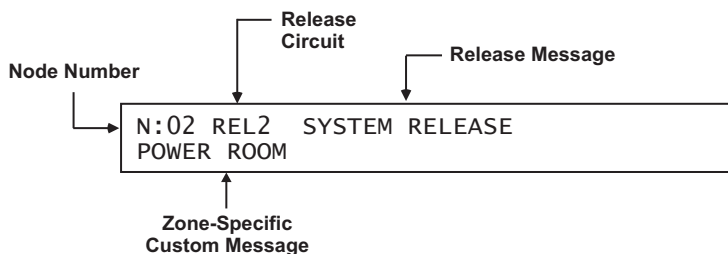


Figure 3-68. Typical Network Release Message

Press the <Acknowledge> key when the message in Figure 3-65 appears to silence the buzzers on all control units that have displayed the above messages. The displays will now show any other suppression zones (successively by order of occurrence, if applicable) that have begun to count down after the release in the first suppression zone. Otherwise its possible to resume scrolling among the completed Level-1 and active Level-2 event displays as shown in Figure 3-69.

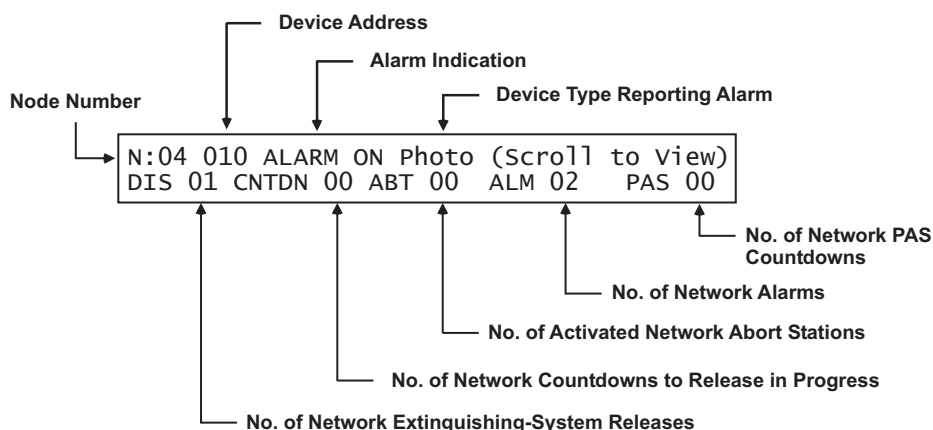


Figure 3-69. Typical Display After Acknowledgment of Remote-Release Message

A new event will not automatically override the appearance of the displays when a countdown to release is in progress. The appropriate LEDs on the display will flash and the buzzer will sound when any new system event is reported, and the new event will be logged. The new event will only be displayed when the <ACKNOWLEDGE> Key or <SCROLL> Key is pressed on one of the affected control units.

Refer to Paragraph 3-2.5.8.4 for what to do when a remote Level-1 message is displayed.

3-3.20.2 REMOTE LEVEL-2 EVENT DISPLAY

Remove Level-2 events from a networked control unit are shown in the upper line of the LCD display by the node-of-event origin, the activated device or circuit address, the change of state, and the device type that reported the event or the release circuit that has activated.

The lower line indicates the numbers of active or completed events for the following Level-1 and Level-2 event types:

- Discharges
- Countdowns to Release
- Aborts
- Alarms
- PAS Countdowns

Level-3 and lower-level events will not appear on the display as long as any Level-2 event is active. Figure 3-70 shows the display when more than one type of Level-2 event is active.

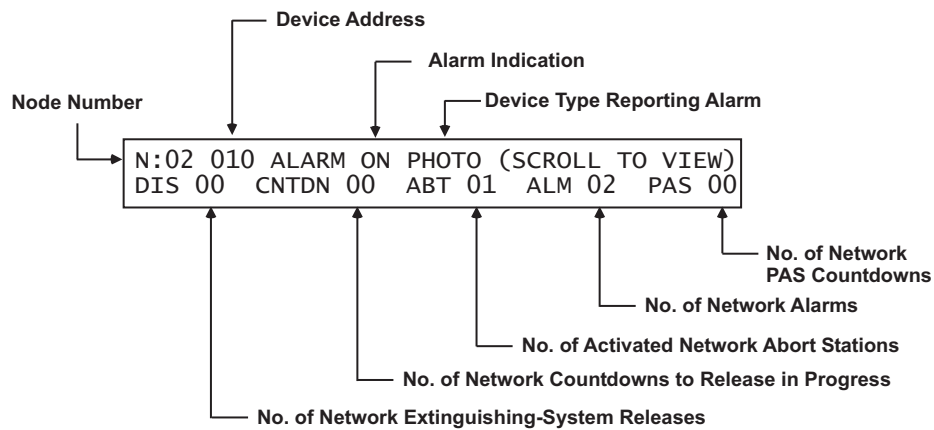


Figure 3-70. Typical Multiple Level-2 Event-Type Display

The upper line of the display will be scrolling among the active Level-2 events. The lower line will summarize the numbers of completed Level-1 and active Level-2 events.

Refer to Paragraph 3-2.5.8.6 for what to do when Level-2 events are reported.

## 3-3.20.3 REMOTE LEVEL-3 AND LOWER-LEVEL EVENT DISPLAY

Remote Level-3 and lower-level events from a networked control unit are shown in the upper line of the LCD display by the node-of-event origin, the activated device or circuit address, the change of state, and the device or circuit type that reported the event. The lower line indicates the numbers of active events for the following Level-3 through Level-5 event types:

- Pre-Alarms
- Alarm-Verification Countdowns
- Supervisory Events
- Troubles

Figure 3-71 shows the appearance of the display when more than one type of Level-3 through Level-5 event is active.

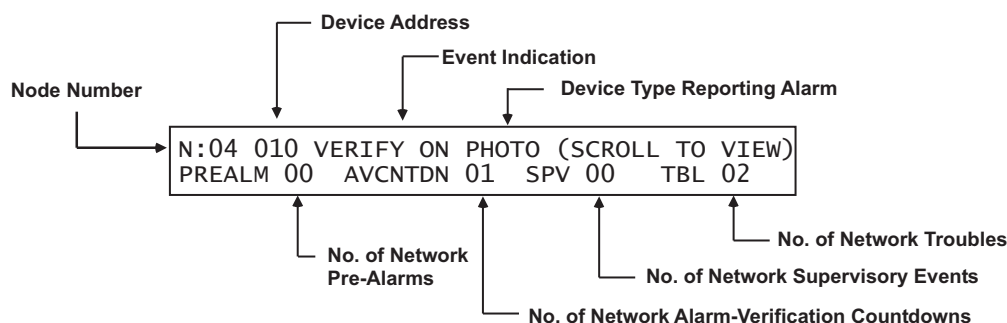


Figure 3-71. Typical Multiple Lower-Level Event Display

The upper line will display the active lower-level events according to the priority of events as described in Paragraph 3-2.5.8.7

Only Level-3 events will scroll, if present. Level-4 events will scroll if there are no Level-3 events. Supervisory and trouble events will scroll if there are no active pre-alarms or alarm verifications. The lower line will summarize the numbers of active Levels-3 through Level-5 events as shown in Figure 3-71.

Refer to Paragraph 3-2.5.8.8 for what to do when Level-3 and lower-level events are displayed.

### 3-3.21 Network Start-Up

**Note:** Refer to Paragraph 3-2.6 for the recommended sequence of steps to properly start up the individual nodes of a networked ARIES System.

It is important to proceed in a step-by-step manner when you start up, test, and commission a networked ARIES System. The objective is to have all the individual control units that comprise the network clear of all Off-Normal events, and fully tested as stand-alone control units, before any attempt is made to network them. Network operations, and testing to confirm proper EOC operations among the various network control units, should only begin when all the control units show the "System Status Normal" message.

## 3-3.21.1 SPECIAL PROCEDURES FOR NETWORKED SYSTEMS

The following paragraphs describe how a networked ARIES system must be configured, initialized, tested, and commissioned.

### 3-3.21.1.1 Network-Interface-Card (NIC) Installation and Wiring

Follow the instructions in Paragraph 2-17.1 to install each NIC. Make the wiring interconnections among all the networked control units as shown in Paragraph 2-17.2 for shielded, twisted-wire pair or as shown in Paragraph 2-18 for fiber-optic medium. The maximum wiring run between nodes is 4,000 feet of twisted, shielded, #18 AWG (or heavier) wire or 1 mile (5,280 feet) of 62.5/125  $\mu\text{m}$  duplex fiber-optic cabling. Remove all power from the control units while you are installing the NICs and making the wiring interconnections.

### 3-3.21.1.2 Initial Configuration

Apply power (AC first, then batteries) to Node No. 1 and set the time and date as directed in Paragraph 3-2.6.2. Refer to the ARIES Configuration Software User's Guide and upload this Node's configuration using your laptop computer and the ARIES Configuration Software (ACT) Program. The configuration program can include lines of EOC for output control to/from other network nodes. The inter-node control statements can also be added at a later time.

Pay particular attention to the structure of the inter-node control statements as shown in the ARIES Configuration Software User's Guide. There are significant differences in sentence structure between an EOC statement for a standalone control unit and an EOC statement that references initiating points on another network node. The configuration file must also include the node's network settings, such as node number, group number, and wiring style.

Clear all trouble and supervisory conditions from Node No. 1, if present. Test Node No. 1 for proper operation in accordance with the job specifications and/or local fire codes. Verify proper operation for each initiating device and output circuit.

Repeat this procedure for each additional network control unit.

### 3-3.21.1.3 Activating the Network

Begin configuring the individual control units for networked operation. Start with the lowest group number if the network consists of specific sub-groups. Add and test one group at a time. If specific sub-groups are not used, configure Nodes No. 1 and No. 2 for networked communications and test these nodes for proper inter-node input/output operations. Use the following procedure to activate Nodes 1 and 2 for networked operations:

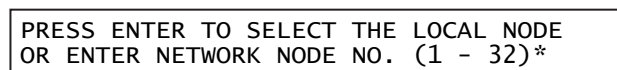
1. Press the 0 Key on Node No. 1. This display will show this message:



```
PLEASE ENTER PASSWORD
* * * *
```

Figure 3-72. Password Prompt

2. Enter the Level-2 Password and then press the <Enter> Key. The network-node prompt will appear as follows:



```
PRESS ENTER TO SELECT THE LOCAL NODE
OR ENTER NETWORK NODE NO. (1 - 32)*
```

Figure 3-73. Network Node Prompt

3. Select the local node by pressing the <Enter> Key. The top-level menu selections will be displayed.

1: ISOLATE	2: LIST
3: SET	4: TEST

Figure 3-74. Top-Level Menu Selections

4. Press the 3 Key to select the Set menu and the following options will appear:

1: TIME/DATE	2: PRINTER CONTROL
3: SLC DEVICES	SCROLL FOR MORE

Figure 3-75. Set Menu Selections

5. Press the <SCROLL> Key to display additional SET-Menu options. Then press the 6 Key to select NETWORK

4: PROGRAMMING	5: GLOBALS
6: NETWORK	SCROLL FOR MORE

Figure 3-76. Set Menu Options

6. Press the <Scroll> Key and then the 4 Key to select ADD/REMOVE NODES

7: CLEAR EVENTS	8: CLEAR TESTS
9: RESYNC NETWORK	[<-] to return

Figure 3-77. Add/Remove Nodes

7. The display will indicate the following; press backspace to exit from the menus.

NETWORK EVENT RESYNCHRONIZATION IN PROGRESS...
---

Figure 3-78. Prompt to Add/Remove Network Nodes

8. Press the <Backspace> Key multiple times as required to exit the Menu mode of operation. Nodes 1 and 2 will now begin communications with each other.

Confirm EOC programming for Nodes 1 and 2. Add successive network nodes one at a time as outlined in the procedure above and continue to confirm proper networked operations. Use Node 1 as the point for adding more control units to the network. Repeat this procedure until all the nodes have been successfully added. Use a consecutive range of network node addresses to simplify the process of bringing the network on line. Be sure that each node being added shows "System Status Normal" before you add it to the network.

Test the entire network for proper operation in accordance with the job specifications and/or local fire codes. Verify proper operation for each initiating device and output circuit.

3-3.21.1.4 Network Maintenance

A control unit must be isolated from the network before any maintenance is performed. The other network control units will ignore all alarm, supervisory, and trouble reports from the isolated control unit, and they will report it as a network supervisory condition subject to the operating rules discussed in Paragraph 3-3.8.

Any networked control unit can be isolated by a control unit designated as Group 0, or by

- Another control unit in the same group as the control unit to be isolated
- Any control unit in a network configured for global operation
- The control unit itself

Use the following procedure to isolate a networked control unit:

1. Press the 0 Key on the keypad of the control unit being used to do the isolation. The display will show this message:

```
PLEASE ENTER PASSWORD
* * * *
```

Figure 3-79. Password Prompt

2. Enter the Level-2 Password and then press the <Enter> Key. The network-node prompt will appear as follows:

```
PRESS ENTER TO SELECT THE LOCAL NODE
OR ENTER NETWORK NODE NO. (1 - 32)*
```

Figure 3-80. Network Node Prompt

3. Select the local node by pressing the <Enter> Key, or enter a remote node number then press the <Enter> Key. The top-level menu selections will be displayed.

```
1: ISOLATE          2: LIST
3: SET              4: TEST
```

Figure 3-81. Top-Level Menu Selections

4. Press the 3 Key to select the Set sub-menu

```
1: TIME/DATE        2: PRINTER CONTROL
3: SLC DEVICES     SCROLL FOR MORE
```

Figure 3-82. Set Sub-Menu



5. Press the <SCROLL> Key to display additional Set-Menu options, then press the 6 Key to select NETWORK

```

4: PROGRAMMING      5: GLOBALS
6: NETWORK          SCROLL FOR MORE

```

Figure 3-83. Additional Set Menu Options

6. Press the <Scroll> Key twice and then press the 8 Key to select "ISOLATE/DE-ISOLATE"

```

7: ISOLATE          8: DE-ISOLATE *

```

Figure 3-84. Isolate/De-Isolate Nodes

7. Press the 1 Key to select the Isolate Option, then press the <Enter> Key to confirm your selection when the following prompt appears:

```

ISOLATE/DE-ISOLATE NETWORK NODES
1: ISOLATE          2: DE-ISOLATE *

```

Figure 3-85. Isolate Node Selection

8. Insert the node number for the first entry on the following line and also insert it for the second entry. Press the <Enter> Key to isolate the node.

```

ISOLATE/DE-ISOLATE NETWORK NODES
NODES:  *_ TO  __

```

Figure 3-86. Prompt for Node to be Isolated

9. Press the <Backspace> Key multiple times as required to exit from the Menu operational mode. The selected node will now be isolated from the network.

#### 3-3.21.1.5

#### Removing Power from a Control Unit

A networked control unit should not to be powered down if it is on line. Any changes that occurred among the other control units while it was powered down may not be transmitted to the control unit when it is powered up again. This will lead to reporting discrepancies on the displays of control units that are configured to log and display all network events. Use the procedure in Paragraph 3-3.21.1.4 to isolate a control unit first if it is necessary to power it down. Do not isolate a control unit from the network if it is inadvertently powered down. Wait for control unit to restart and be recognized again by the network.

3-3.21.1.6 Resynchronizing the Network

Some networked control units may occasionally retain alarm, supervisory or trouble events from other control units in the network even if the events have cleared from the other control units. This can be corrected by the "Resynch Network" function that resynchronizes all messages across the network.

Network events can be resynchronized by using a control unit configured as Group 0, or by using

- Another control unit in the same group as the control unit retaining events
- Any control unit in a network configured for global operation
- The control unit itself

Use the following procedure to resynchronize the network:

1. Press the 0 Key on the keypad of the control unit being used to resynchronize the network. This display will show this message:

```
PLEASE ENTER PASSWORD
* * * *
```

Figure 3-87. Password Prompt

2. Enter the Level-2 Password and then press the <Enter> Key. The network-node prompt will appear as follows:

```
PRESS ENTER TO SELECT THE LOCAL NODE
OR ENTER NETWORK NODE NO. (1 - 32)*
```

Figure 3-88. Network Node Prompt

3. Select the local node by pressing the <Enter> Key, or enter a remote node number then press the <Enter> Key. The top-level menu selections will be displayed.

```
1: ISOLATE          2: LIST
3: SET              4: TEST
```

Figure 3-89. Top-Level Menu Selection

4. Press the 3 Key to select the Set sub-menu.

```
1: TIME/DATE      2: PRINTER CONTROL
3: SLC DEVICES   SCROLL FOR MORE
```

Figure 3-90. Set Sub Menu

5. Press the <SCROLL> Key, and then press the 4 Key to select PROGRAMMING

```
4: PROGRAMMING    5: GLOBALS
6: NETWORK        SCROLL FOR MORE
```

Figure 3-91. Additional Set Menu Options

6. Press the <Scroll> Key twice and then press the 9 Key to select RESYNCH NETWORK.

```
7: CLEAR EVENTS    8: RESYNCH NETWORK *
```

Figure 3-92. Resynch Network Option

7. Press the 1 Key when no groups are used or press the 2 Key when groups are being used, then press the <ENTER> Key when prompted by the message below.

```
RESYNCH NETWORK  
1: NO GROUPS      2: GROUPS *
```

Figure 3-93. Resynch Network Display

8. Enter the network group number as indicated below when groups are being used:

```
ENTER GROUP NUMBER * _
```

Figure 3-94. Network Group Prompt

9. Press the <Backspace> Key multiple times as required to exit from the Menu State.

The events being displayed on the control unit will now be consistent with the events being displayed on all of the networked control units.



# CHAPTER 4

## INSPECTION, TESTING AND MAINTENANCE

### 4-1 SCHEDULED SYSTEM MAINTENANCE

The ARIES™ Fire Alarm/Suppression Control Unit must be inspected, tested and maintained in accordance with the requirements of NFPA 72 (2002), Chapter 10, or in accordance with the inspection, testing and maintenance schedule mandated by the Authority Having Jurisdiction (AHJ).

Follow the required inspection, testing, and maintenance procedures for the associated extinguishing system(s) as directed by the manufacturer and by the standards and codes that apply to those systems.

**Do not attempt any testing or maintenance of the control unit until you have:**

- Isolated all onboard releasing outputs via the Isolate function.
- Ensure that all RRM's are connected to the control unit.
- Physically disconnected the wiring to actuator assemblies (if used) from the release-circuit terminals, shorted the leads together, and wrapped the leads in insulating tape
- Physically disconnected all control heads (if used) from their associated agent-storage-container discharge valves
- Physically disconnected the wiring to solenoid valves (if used) for pre-action/deluge sprinkler systems
- Ensured that emergency operations controlled by this system such as facility power shutoff are bypassed
- Notified personnel in the facility and at off-premises monitoring locations that you are working on the system and that you will inform them when system servicing has ended.



### 4-2 SEMI-ANNUAL AND ANNUAL TESTING

Perform the following tests as part of each semi-annual or annual system inspection:

#### 4-2.1 Lamp Test

Test the LEDs on the control unit's display by using the procedure in Paragraph 3-2.5.2.5.16. Replace the display's membrane if any LED fails to illuminate.

#### 4-2.2 Battery Test

Test the standby batteries by using the procedure in Paragraph 3-2.5.2.5.7. Replace all batteries if either the charging voltage or current do not fall within the specified ranges.

Replace batteries every three years, or more frequently as recommended by the battery manufacturer. KIDDE provides the following batteries:

Part Number	Capacity (AH)
06-115915-047	12
06-115915-046	17
89-100052-001	35

### 4-2.3 Initiating-Devices Test

The ARIES Control Unit automatically tests all of the initiating devices connected to the signaling line circuit on a daily basis.

You should re-test the initiating devices by using the procedure in Paragraph 3-2.5.2.5.1. Investigate any "Device-Failed" messages and replace any defective initiating devices as appropriate.

### 4-2.4 Walk Test

Confirm acceptable fire-signature-entry characteristics for all automatic initiating devices by using the procedure in either Paragraph 3-2.5.2.5.2 or Paragraph 3-2.5.2.5.3. Use these procedures to confirm that all monitor modules are also working correctly.

## 4-3 SEQUENCE OF OPERATION

Verify that the system continues to operate in accordance with its approved sequence of operation. Figure 4-1 and Figure 4-2 show a typical sequence of operation for a waterless fire-suppression system.

**Note:** These figures are for example only. Every system is unique and requires its own approved sequence of operation.

Device/Circuit Assignments

	Head-End Room (Zone 1)	Photoelectric Detectors	Ionization Detectors	Manual Release Stations	Abort Switches	Audible NAC	Visible NAC	Waterless Extinguishing System Release Circuit	Pre-Action-Sprinkler Release Circuit	Power Room (Zone 2)	Photoelectric Detectors	Ionization Detectors	Manual Release Stations	Abort Switches	Audible NAC	Visible NAC	Waterless Extinguishing System Release Circuit	Pre-Action-Sprinkler Release Circuit	Facility Equipment Interlocks	HVAC Shutdown	Power Shutoff	Off-Premises Reports	Major Alarm to Central Station	Critical Alarm to Central Station	Waterflow Alarm to Central Station	Pre-Action-Valve to Central Station	Supervisory to Central Station	Trouble to Central Station
<b>SLC Device Addresses</b>																												
Photoelectric Detectors		1-5									15-18																	
Ionization Detectors			6-10									19-21																
Monitor Modules				11-12	13-14								22	23														
Control Modules																				24	25				26	27		
<b>Control-Unit Outputs</b>																												
NAC 1						X																						
NAC 2							X																					
Combo 1															X													
Combo 2																X												
Release 1								X	X																			
Release 2																	X	X										
Relay 1																							X					
Relay 2																								X				
Relay 3																										X		
Trouble Relay																											X	

Figure 4-1. Device/Circuit Assignments

Sequence of Operation

	Room-of-Origin Alarms/Actions	Activate/De-Activate Horns @ 60 BPM	Activate/De-Activate Horns @ 120 BPM	Activate/De-Activate Temporal-Coded Horns	Activate/De-Activate Strobes	Activate Waterless Extinguishing System	Interrupt Impending Waterless System Discharge	Open Pre-Action-Sprinkler Valve	Facility Equipment Interlocks	HVAC Shutdown	Power Shutoff	Off-Premises Reports	Major Alarm to Central Station	Critical Alarm to Central Station	Waterflow Alarm to Central Station	Pre-Action-Valve to Central Station	Supervisory to Central Station	Trouble to Central Station
<b>Waterflow Switch</b>				A	A										A			
<b>Sprinkle Tamper Switch</b>																		A
<b>One Area Smoke Detector</b>																		
Head-End Room (Zone 1)		A											A					
Power Room (Zone 2)		A											A					
<b>Two Area Smoke Detectors Alarm (Immediate Response)</b>																		
Head-End Room (Zone 1)		D	A							A								
Power Room (Zone 2)		D	A							A								
<b>Two Area Smoke Detectors (30-Sec. Delayed Response)</b>																		
Head-End Room (Zone 1)			D	A	A	A		A			A			A			A	
Power Room (Zone 2)			D	A	A	A		A			A			A			A	
<b>Manual Station (Immediate Response)</b>																		
Head-End Room (Zone 1)		D	D	A	A	A		A		A	A			A			A	
Power Room (Zone 2)		D	D	A	A	A		A		A	A			A			A	
<b>Abort Station</b>							A											
Head-End Room (Zone 1)							A											
Power Room (Zone 2)							A											
<b>Auxiliary Supervisory</b>																		
Low FM-200 Pressure Sw.																		
Head-End Room (Zone 1)																		A
Power Room (Zone 2)																		A
Low Air (Pre Action Sys)																		A
<b>Trouble</b>																		
Any Condition																		A

A = Activate Output  
D = De-Activate Output

Figure 4-2. Sequence of Operation



# CHAPTER 5 TROUBLESHOOTING

## 5-1 INTRODUCTION

This chapter lists all the error messages, their probable causes, and suggested procedures to return the ARIES™ Fire Alarm/Suppression Control Unit to proper operating condition.

**Do not attempt any of the corrective actions listed in this chapter until you have:**



- **Physically disconnected the wiring to actuator assemblies (if used) from the release-circuit terminals, shorted the leads together, and wrapped the leads in insulating tape**
- **Physically disconnected all control heads (if used) from their associated agent storage container discharge valves**
- **Physically disconnected the wiring to solenoid valves (if used) for pre-action/deluge-sprinkler systems**
- **Ensured that emergency operations controlled by this system such as facility power shutoff are bypassed**
- **Notified personnel in the facility and at off-premises monitoring locations that you are working on the system and that you will inform them when system servicing has ended.**

Table 5-1. General System Events

General System Events		
Error Message	Probable Cause	Corrective Action
AC Supply Fault On	Loss or degradation of primary power from commercial light and power company. Message will appear if AC supply voltage drops to 85% or less of the normal operating voltage. Accompanied by message "System Changed Over to Battery Power" if standby battery used.	<ul style="list-style-type: none"> <li>• Notify commercial light and power company of loss of service.</li> <li>• Check connections to main circuit board TB13. Use voltmeter to check for nominal 120/240 Vac at TB13.</li> <li>• Check for proper setting of printed-circuit-board AC Selection Switch. Refer to Figure 2-8</li> <li>• Remove secondary and primary power. Label and disconnect all field wiring. <b>Caution:</b> Disconnect all electrical control heads and short together and tape wiring to actuators (if applicable)</li> <li>• Ensure AC Selector Switch on power supply is correctly set for line voltage. Refer to Figure 2-5</li> <li>• Re-install printed-circuit board, connect field wiring, and apply primary and secondary power if incorrect AC Selector-Switch setting. Perform functional tests as necessary</li> </ul>

Table 5-1. General System Events (Continued)

General System Events		
Error Message	Probable Cause	Corrective Action
Battery Charging Fault On	Failure of the battery-supervision circuitry	<ul style="list-style-type: none"> <li>• Check battery connections to main circuit board TB3. Refer to Figure 2-9.</li> <li>• Disconnect battery leads from main circuit board TB3 and use digital volt-ohm meter to measure battery open-circuit voltage. Replace batteries if open-circuit voltage is less than 19.5 Vdc.</li> <li>• Replace the power supply assembly. See Figure 2-4</li> <li>• Replace printed-circuit board. See Figure 2-6</li> </ul>
Battery Disconnected Fault On	Faulty battery connection  <b>Note:</b> Battery disconnected-fault messages do not disappear immediately when corrected. The control unit only rechecks the battery connection once per minute.	<ul style="list-style-type: none"> <li>• Check battery connections to main circuit board TB3. Refer to Figure 2-9.</li> <li>• Disconnect battery leads from main circuit board TB3 and use digital volt-ohm meter to measure battery open-circuit voltage. Replace batteries if open-circuit voltage is less than 19.5 Vdc.</li> </ul>
Configuration Memory Checksum Failure	Internal software fault	<ul style="list-style-type: none"> <li>• Re-upload applications program</li> <li>• Re-test the system for proper functionality</li> </ul>
Configuration Memory Write Failure	Faulty upload of applications program or improper execution of a configuration change via the menu system	<ul style="list-style-type: none"> <li>• Re-upload applications program if message occurs after configuration upload</li> <li>• Re-execute configuration change via menu operation if message appears after menu operation</li> </ul>
Control Unit Ground Fault -Vdc ON	Low impedance path between negative field conductor and earth ground. Normal earth-ground offset voltage is 6.6 Vdc (nom.) relative to system common (e.g., main circuit board TB2-1 or TB2-3).	<ul style="list-style-type: none"> <li>• Continuously monitor DC voltage between earth-ground stud on left side of back box and main circuit board TB2-1. Voltage should be 6.6 (nom.) Vdc. Earth ground is positive relative to system common.</li> <li>• Remove field circuits one at a time until earth-ground offset voltage restores to 6.6 (nom.) Vdc.</li> <li>• Check for connections to earth ground on field circuit whose removal restored proper earth-ground offset voltage.</li> </ul>

Table 5-1. General System Events (Continued)

General System Events		
Error Message	Probable Cause	Corrective Action
Control Unit Ground Fault +Vdc On	Low impedance path between positive field conductor and earth ground. Normal earth-ground offset voltage is 6.6 (nom.) Vdc relative to system common (e.g., main circuit board TB2-1 or TB2-3).	<ul style="list-style-type: none"> <li>Continuously monitor DC voltage between earth-ground stud on left side of back box and main circuit board TB2-1. Voltage should be 6.6 (nom.) Vdc. Earth ground is positive relative to system common.</li> <li>Remove field circuits one at a time until earth-ground offset voltage restores to 6.6 (nom.) Vdc.</li> <li>Check for connections to earth ground on field circuit whose removal restored proper earth-ground offset voltage.</li> </ul>
Control Unit PSU Trouble On	The power-supply output is too low	<ul style="list-style-type: none"> <li>Check the power-supply connector, J12, from the power supply to the main printed-circuit board</li> <li>Check for proper setting of printed-circuit-board AC Selection Switch. Refer to Figure 2-8.</li> <li>Remove secondary and primary power. Label and disconnect all field wiring.</li> </ul> <p><b>Caution:</b> Disconnect all electrical control heads and short together and tape wiring to actuators (if applicable)</p> <ul style="list-style-type: none"> <li>Remove main printed-circuit board by reversing the steps in Paragraph 2-6. Inspect connections of power-supply-connector flying leads to power supply. Tighten if necessary.</li> <li>Ensure AC Selector Switch on power supply is correctly set for line voltage. Refer to Figure 2-5.</li> <li>Re-install printed-circuit board, connect field wiring, and apply primary and secondary power if loose connection(s) or incorrect AC Selector-Switch setting. Perform functional tests as necessary</li> <li>Replace power supply if no loose connections or AC Selector-Switch problem.</li> </ul>
Event Memory Checksum Failure On	Internal software fault	<ul style="list-style-type: none"> <li>Use the control unit configuration program to download the event log and forward an electronic copy to KIDDE Technical Services. Refer to the configuration program user's guide.</li> <li>Re-initialize the control unit by first removing, and then re-applying, primary and secondary power sources</li> <li>Functionally test the system</li> </ul>

Table 5-1. General System Events (Continued)

General System Events		
Error Message	Probable Cause	Corrective Action
Event Memory Write Failure On	Internal software fault	<ul style="list-style-type: none"> <li>• Use the control unit configuration program to download the event log and forward an electronic copy to KIDDE Technical Services. Refer to the configuration program user's guide.</li> <li>• Re-initialize the control unit by first removing, and then re-applying, primary and secondary power sources</li> <li>• Functionally test the system</li> </ul>
Low Battery Fault On	<p>Discharged battery. Open-circuit voltage of two series-wired batteries must be greater than 19.5 Vdc.</p> <p><b>Note:</b> Low-battery fault messages do not disappear immediately when corrected. The control unit only rechecks the battery voltage once per minute.</p>	<ul style="list-style-type: none"> <li>• Disconnect battery leads from main circuit board TB3 and use digital volt-ohm meter to measure battery open-circuit voltage. Replace batteries if open-circuit voltage is less than 19.5 Vdc.</li> <li>• Reconnect batteries to TB3 if open-circuit voltage is greater than 19.5 Vdc. Let batteries re-charge for 48 hours. Re-place batteries if fault remains after 48 hours.</li> </ul>
Main Board Voltage Reference Fault On	The control unit has detected system-common reference fault	<ul style="list-style-type: none"> <li>• Check the power-supply connector, J12, from the power supply to the main printed-circuit board</li> <li>• Check for proper setting of printed-circuit-board AC Selection Switch. Refer to Figure 2-8.</li> <li>• Remove secondary and primary power. Label and disconnect all field wiring.</li> </ul> <p><b>Caution:</b> Disconnect all electrical control heads and short together and tape wiring to actuators (if applicable)</p> <ul style="list-style-type: none"> <li>• Remove main printed-circuit board by reversing the steps in Section 2-6. Inspect connections of power-supply connector flying leads to power supply. Tighten if necessary.</li> <li>• Ensure AC Selector Switch on power supply is correctly set for line voltage. Refer to Figure 2-5.</li> <li>• Re-install printed-circuit board, connect field wiring, and apply primary and secondary power if loose connection(s) or incorrect AC Selector-Switch setting. Perform functional tests as necessary</li> <li>• Replace power supply if no loose connections or AC Selector-Switch problem.</li> <li>• Replace printed-circuit board if fault remains after replacement of the power supply.</li> </ul>

Table 5-1. General System Events (Continued)

General System Events		
Error Message	Probable Cause	Corrective Action
Printer Supervision Fault	Communications problem between printer and the control unit or printer port enabled but no printer is connected	<ul style="list-style-type: none"> <li>• Check RS-232 cable between main printed circuit board and printer</li> <li>• Make sure printer is powered and connected</li> <li>• Verify that the RS-232 port assigned to the printer via the menu is correct. Refer to Paragraph 3-2.5.2.4.5</li> <li>• Disable printer port if no printer is used</li> </ul>
Program Memory Corrupt On	Program memory self-test failure.	<ul style="list-style-type: none"> <li>• Use the control unit configuration program to download the event log and forward an electronic copy to KIDDE Technical Services. Refer to the configuration program user's guide.</li> <li>• Re-initialize the control unit by first removing, and then re-applying, primary and secondary power sources</li> <li>• Functionally test the system</li> </ul>
SLC Communications Fault On	This indicates that there has been a communication problem between the two processors on the control unit and the SLC is not being monitored.	<ul style="list-style-type: none"> <li>• Use the control unit configuration program to download the event log and forward an electronic copy to KIDDE Technical Services. Refer to the Configuration Program User's Guide.</li> <li>• Re-initialize the control unit by first removing, and then re-applying, primary and secondary power sources</li> <li>• Functionally test the system.</li> </ul>
SLC Open Circuit On	Open circuit in the field wiring connected to main circuit board TB1. Applies to Class-A wiring only	<ul style="list-style-type: none"> <li>• Look for discontinuity in SLC wiring.</li> </ul>
SLC Short Circuit On	Short circuit in the field wiring connected to main circuit board TB1	<ul style="list-style-type: none"> <li>• Troubleshoot SLC wiring by breaking-up circuit to isolate short circuit to specific branch or leg.</li> </ul>
Date/Time Must Be Set Trouble On	Message appears each time the control unit is re-initialized by applying AC and then DC power.	<ul style="list-style-type: none"> <li>• Set the date and time as instructed in Paragraph 3-2.6.2.</li> </ul>

Table 5-2. Control-Unit-Based-Output Events

<b>Control-Unit-Based-Output Events</b>		
<b>Error Message</b>	<b>Probable Cause</b>	<b>Corrective Action</b>
AR1 Open Circuit Trouble On	Open circuit in field wiring connected to main circuit board TB12	<ul style="list-style-type: none"> <li>• Look for discontinuity in Release-1 field wiring. Refer to Paragraph 2-11.</li> </ul>
AR1 Short Circuit Trouble On	Short circuit in field wiring connected to main circuit board TB12	<ul style="list-style-type: none"> <li>• Troubleshoot Release-1 wiring by breaking-up circuit to isolate short circuit to specific leg.</li> </ul>
AR2 Open Circuit Trouble On	Open circuit in field wiring connected to main circuit board TB11	<ul style="list-style-type: none"> <li>• Look for discontinuity in Release-2 field wiring. Refer to Paragraph 2-11.</li> </ul>
AR2 Short Circuit Trouble On	Short circuit in field wiring connected to main circuit board TB11	<ul style="list-style-type: none"> <li>• Troubleshoot Release-2 wiring by breaking-up circuit to isolate short circuit to specific leg.</li> </ul>
AR3 Open Circuit Trouble On	Open circuit in field wiring connected to main circuit board TB7. Combo-1 Circuit is configured as a release circuit.	<ul style="list-style-type: none"> <li>• Look for discontinuity in Combo-1 field wiring. Refer to Paragraph 2-10.2.</li> </ul>
AR3 Short Circuit Trouble On	Short circuit in field wiring connected to main circuit board TB7. Combo-1 Circuit is configured as a release circuit.	<ul style="list-style-type: none"> <li>• Troubleshoot Combo-1 wiring by breaking-up circuit to isolate short circuit to specific leg.</li> </ul>
AR4 Open Circuit Trouble On	Open circuit in field wiring connected to main circuit board TB6. Combo-2 Circuit is configured as a release circuit.	<ul style="list-style-type: none"> <li>• Look for discontinuity in Combo-2 field wiring. Refer to Paragraph 2-10.2.</li> </ul>
AR4 Short Circuit Trouble On	Short circuit in field wiring connected to main circuit board TB6. Combo-2 Circuit is configured as a release circuit.	<ul style="list-style-type: none"> <li>• Troubleshoot Combo-2 wiring by breaking-up circuit to isolate short circuit to specific leg.</li> </ul>
SG1 Open Circuit Trouble On	Open circuit in field wiring connected to main circuit board TB5	<ul style="list-style-type: none"> <li>• Check for missing 10k end-of-line resistor.</li> <li>• Look for discontinuity in NAC1 field wiring.</li> </ul>
SG1 Short Circuit Trouble On	Short circuit in field wiring connected to main circuit board TB5	<ul style="list-style-type: none"> <li>• Troubleshoot NAC1 wiring by breaking-up circuit to isolate short circuit to specific leg.</li> </ul>
SG2 Open Circuit Trouble On	Open circuit in field wiring connected to main circuit board TB14	<ul style="list-style-type: none"> <li>• Check for missing 10k end-of-line resistor.</li> <li>• Look for discontinuity in NAC2 field wiring.</li> </ul>
SG2 Short Circuit Trouble On	Open circuit in field wiring connected to main circuit board TB14	<ul style="list-style-type: none"> <li>• Troubleshoot NAC2 wiring by breaking-up circuit to isolate short circuit to specific leg.</li> </ul>
SG3 Open Circuit Trouble On	Open circuit in field wiring connected to main circuit board TB7. Combo-1 Circuit is configured as a NAC.	<ul style="list-style-type: none"> <li>• Check for missing 10k end-of-line resistor.</li> <li>• Look for discontinuity in Combo-1 field wiring.</li> </ul>

Table 5-2. Control-Unit-Based-Output Events (Continued)

<b>Control-Unit-Based-Output Events</b>		
<b>Error Message</b>	<b>Probable Cause</b>	<b>Corrective Action</b>
SG3 Short Circuit Trouble On	Short circuit in field wiring connected to main circuit board TB7. Combo-1 Circuit is configured as a NAC.	<ul style="list-style-type: none"> <li>• Troubleshoot Combo-1 wiring by breaking-up circuit to isolate short circuit to specific leg.</li> </ul>
SG4 Open Circuit Trouble On	Open circuit in field wiring connected to main circuit board TB6. Combo-2 Circuit is configured as a NAC.	<ul style="list-style-type: none"> <li>• Check for missing 10k end-of-line resistor.</li> <li>• Look for discontinuity in Combo-2 field wiring.</li> </ul>
SG4 Short Circuit Trouble On	Short circuit in field wiring connected to main circuit board TB6. Combo-2 Circuit is configured as a NAC.	<ul style="list-style-type: none"> <li>• Troubleshoot Combo-2 wiring by breaking-up circuit to isolate short circuit to specific leg.</li> </ul>

Table 5-3. SLC Events

<b>SLC Events</b>		
<b>Error Message</b>	<b>Probable Cause</b>	<b>Corrective Action</b>
<i>Addr Switch Not Set On AlarmLine Module</i>	An incorrect configuration for the AAM at address <i>Addr</i>	<ul style="list-style-type: none"> <li>• Check the configuration settings for the AAM. Re-configure and upload the correct configuration.</li> <li>• Refer to AlarmLine Installation, Operation, and Maintenance Manual, P/N 73.04</li> </ul>
<i>Addr 24 Vdc Failure Signal/ Sounder</i>	Failure of the DC to DC converter in the ASM at address <i>Addr</i>	<ul style="list-style-type: none"> <li>• Refer to ASM Installation Instructions, P/N 06-235717-001.</li> <li>• Check 24 Vdc power connections to ASM.</li> <li>• Ensure that the ASM's Jumper P1 and Switch S1 are set for 24 Vdc operation</li> <li>• Replace the ASM if steps above are unsuccessful</li> </ul>

Table 5-3. SLC Events (Continued)

SLC Events		
Error Message	Probable Cause	Corrective Action
<i>Addr</i> 9V DC Fault On <i>Device Type</i>	A failure of the internally generated 9-Volt power supply for the SmartOne smoke or heat detector at address <i>Addr</i> .	<ul style="list-style-type: none"> <li>• Check SLC wiring. Refer to Paragraph 2-8. Ensure that wiring-resistance and -capacitance limitations have not been exceeded.</li> <li>• Visually inspect the detector to ensure that its red LED is flashing. Use Handheld Programmer to test the device if the LED is not flashing. Refer to Appendix D. Replace the detector if it fails the Handheld-Programmer test.</li> <li>• List the automatic initiating device's 9-Volt level. Refer to Paragraph 3-2.5.2.3.11. Replace the device if the 9-Volt level varies by + / - 1.0 (nom.) Vdc volts.</li> <li>• Conduct an initiating device test on the automatic detector. See Paragraph 3-2.5.2.4.5</li> <li>• Activate and confirm a proper alarm response from the detector.</li> <li>• Replace the device if any of the above tests are unsuccessful.</li> </ul>
<i>Addr</i> Abort Trouble On <i>Monitor Module</i>	The abort switch being monitored by the AI at address <i>Addr</i> is activated and the system is not in alarm	<ul style="list-style-type: none"> <li>• Check abort switch for mechanical failure</li> </ul>
<i>Addr</i> Alarm Test Fail <i>Device Type</i>	An initiating device (i.e., automatic detector or monitor module) at address <i>Addr</i> failed a device test. The initiating device was unable to send an acceptable alarm-test signal when requested by the control unit.	<ul style="list-style-type: none"> <li>• Globally isolate all outputs. See Paragraph 3-2.5.2.2.9.</li> <li>• Disconnect device from SLC and visually inspect for damage. Clean if automatic detector.</li> <li>• Use Handheld Programmer to test the device. Refer to Appendix D. Reconnect device to SLC.</li> <li>• Conduct an initiating device test on the initiating device. Repeat this procedure at least 3 times. See Paragraph 3-2.5.2.4.5. Check wiring if test results are inconsistent. Refer to Paragraph 2-8. Ensure that wiring-resistance and -capacitance limitations have not been exceeded.</li> <li>• Activate and confirm a proper alarm response from the initiating device</li> <li>• Replace device if any of above tests is unsuccessful.</li> <li>• Globally de-isolate all outputs. See Paragraph 3-2.5.2.2.9.</li> </ul>



Table 5-3. SLC Events (Continued)

SLC Events		
Error Message	Probable Cause	Corrective Action
<i>Addr</i> Communication Fault On	A loss of communications between the SLC's driver circuit and the device at address <i>Addr</i> .	<ul style="list-style-type: none"> <li>• Check device connections to wiring</li> <li>• Ensure that device has not been removed</li> <li>• Check SLC wiring for excessive capacitance and/or resistance if the device LED is blinking. Refer to Paragraph 2-8.1. Rewire using recommended wire in Appendix B.</li> <li>• Replace the device if above procedures are unsuccessful.</li> </ul>
Addr Detector Tbl On ORION-XT Interface Module	A problem in a high-sensitivity smoke detector (HSSD) being monitored by a PALM	<ul style="list-style-type: none"> <li>• Check the PALM-to-HSSD connections</li> <li>• Use OCS to troubleshoot the HSSD.</li> <li>• Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
Addr Drift Fault On Device Type	The inability of a SmartOne smoke detector to further compensate for reference signal variation	<ul style="list-style-type: none"> <li>• Globally isolate all outputs. See Paragraph 3-2.5.2.2.9.</li> <li>• Disconnect smoke detector from SLC and visually inspect for damage. Clean the detector as recommended.</li> <li>• Use Handheld Programmer to test the device. Refer to Appendix D. Reconnect device to SLC.</li> <li>• Measure the detector sensitivity. See Paragraph 3-2.5.2.3.6. Replace the detector if the clean-air reference value is more than one half of the alarm-threshold value.</li> <li>• Conduct an initiating device test on the detector. See Paragraph 3-2.5.2.5.1.</li> <li>• Activate and confirm a proper alarm response from the detector.</li> <li>• Replace device if any of above tests is unsuccessful.</li> <li>• Globally de-isolate all outputs. See Paragraph 3-2.5.2.2.9.</li> </ul>

Table 5-3. SLC Events (Continued)

SLC Events		
Error Message	Probable Cause	Corrective Action
Addr Duplicate Address Fault On	There is more than one SLC device with address Addr. Refer to Paragraph 3-2.5.2.5.20	<ul style="list-style-type: none"> <li>• Find all devices with rapidly-pulsing LEDs. Monitor modules require an external LED to be installed.</li> <li>• Check the approved layout drawing for the correct address corresponding to each device location</li> <li>• Remove the incorrectly-addressed device(s) and re-address with the Handheld Programmer. Refer to Appendix D. Alternatively,</li> <li>• Remove the correctly-addressed device and all but one incorrectly-addressed device. Use the procedure in Paragraph 3-2.5.2.4.6 to change the incorrect device address.</li> <li>• Add one more incorrectly-addressed device and re-address using the procedure in Paragraph 3-2.5.2.4.6. Repeat as necessary until all incorrectly-addressed devices have been correctly addressed.</li> <li>• Reconnect the original correctly-addressed device</li> </ul>
Addr EEPROM Fault ON	The device at address Addr is reporting an internal software fault	<ul style="list-style-type: none"> <li>• Replace the device</li> </ul>
Addr High Airflow On ORION-XT Interface Module	A problem in a high-sensitivity smoke detector (HSSD) being monitored by a PALM. Excessively high air flow through the piping system	<ul style="list-style-type: none"> <li>• Look for leaks in the HSSD's piping system</li> <li>• Use OCS to troubleshoot the HSSD. The airflow may need to re-normalized.</li> <li>• Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
Addr Input Trouble On Monitor Module	An open circuit in a monitor module's initiating device circuit	<ul style="list-style-type: none"> <li>• Refer to AI Installation Instructions, P/N 06-235578-001.</li> <li>• Look for discontinuity in initiating device circuit.</li> <li>• Check for missing 10k end-of-line resistor.</li> </ul>

Table 5-3. SLC Events (Continued)

SLC Events		
Error Message	Probable Cause	Corrective Action
Addr Line Volt Fault On Device Type	A failure of the DC to DC converter in the device type at address Addr.	<ul style="list-style-type: none"> <li>• Check SLC wiring. Refer to Paragraph 2-8. Ensure that wiring-resistance and -capacitance limitations have not been exceeded.</li> <li>• Visually inspect the device to ensure that its red LED is flashing (if applicable). Use Handheld Programmer to test the device. Refer to Appendix D. Replace the device if it fails the Handheld-Programmer test.</li> <li>• List the device's line-voltage level. Refer to Paragraph 3-2.5.2.3.10. Line-voltage level must be a minimum 18 Vdc. Consider using larger wire gauge if line voltage is too low.</li> <li>• Conduct an initiating device test if the device is an initiating device. See Paragraph 3-2.5.2.5.1. Be sure to observe the warnings called out in this chapter.</li> <li>• Conduct an output device test if the device is a control module. See Paragraph 3-2.5.2.6. Be sure to observe the warnings called out in these paragraphs.</li> <li>• Activate and confirm a proper operation for the device.</li> <li>• Replace the device if any of the above tests are unsuccessful.</li> </ul>
Addr Low Airflow On ORION-XT Interface Module	<p>A problem in a high-sensitivity smoke detector (HSSD) being monitored by a PALM</p> <p>Low air flow through the piping system</p>	<ul style="list-style-type: none"> <li>• Look for blockages in the HSSD's piping system</li> <li>• Use OCS to troubleshoot the HSSD. The airflow may need to re-normalized.</li> <li>• Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
Addr Not Registered On Device Type	The control unit has not been set up to expect the device at address "addr".	<ul style="list-style-type: none"> <li>• Register the device if part of system configuration. See Paragraph 3-2.5.2.4.14.</li> </ul> <p>If this procedure is insufficient, try one of the following procedures:</p> <ul style="list-style-type: none"> <li>• Run the AutoLearn Procedure. Refer to Paragraph 3-2.5.2.4.26.</li> <li>• Upload a new application program that includes the previously unregistered device.</li> </ul>

Table 5-3. SLC Events (Continued)

SLC Events		
Error Message	Probable Cause	Corrective Action
Addr Offset Trouble On ORION-XT Interface Module	The PALM at address Addr is reporting an offset problem with the HSSD that it is monitoring. This is probably a problem with the background obscuration level in the area of the HSSD.	<ul style="list-style-type: none"> <li>• Work with the end user to improve the air quality in the HSSD location.</li> <li>• Check the PALM-to-HSSD connections</li> <li>• Use OCS to troubleshoot the HSSD</li> <li>• Refer to HSSD Installation/ Maintenance Manual, P/N 77.100, for guidance.</li> </ul>
Addr Output Relay Fault Addressable Relay	The AO at address Addr failed to activate upon receipt of an activation command	<p><b>Caution:</b> Be sure to bypass the shutoff to equipment controlled by the AO before functionally testing this device.</p> <ul style="list-style-type: none"> <li>• Check SLC wiring. Refer to Paragraph 2-8. Ensure that wiring-resistance and -capacitance limitations have not been exceeded.</li> <li>• Visually inspect the AO to ensure that its red LED is flashing. Use Handheld Programmer to test the device if the LED is not flashing. Refer to Appendix D. Replace the AO if it fails the Handheld-Programmer test.</li> <li>• Functionally test the existing or replaced AO via the procedure in Paragraph 3-2.5.2.6. Replace the AO if it fails the functional test.</li> <li>• Functionally re-test the AO for all configured actuation scenarios.</li> </ul>
Addr Output Relay Fault Signal/Sounder	The ASM at address Addr failed to activate upon receipt of an activation command	<ul style="list-style-type: none"> <li>• Check SLC wiring. Refer to Paragraph 2-8. Ensure that wiring-resistance and capacitance limitations have not been exceeded.</li> <li>• Visually inspect the ASM to ensure that its red LED is flashing. Use Handheld Programmer to test the device if the LED is not flashing. Refer to Appendix D. Replace the ASM if it fails the Handheld-Programmer test.</li> <li>• Functionally test the existing or replaced ASM via the procedure in Paragraph 3-2.5.2.6. Replace the ASM if it fails the functional test.</li> <li>• Functionally re-test the ASM for all configured actuation scenarios.</li> </ul>

Table 5-3. SLC Events (Continued)

SLC Events		
Error Message	Probable Cause	Corrective Action
Addr Output Trouble On Signal/Sounder	Open or short circuit in notification-appliance circuit for ASM at address Addr. See Paragraph 1-5.5	<ul style="list-style-type: none"> <li>• Refer to ASM Installation Instructions, P/N 06-235717-001.</li> <li>• Look for discontinuity in NAC wiring to find open circuit.</li> <li>• Check for missing 47k end-of-line resistor.</li> <li>• Troubleshoot NAC wiring by breaking-up circuit to isolate short circuit to specific leg.</li> </ul>
Addr Overheat On Alarmline Module	An AlarmLine cable being monitored by an AAM and configured for overheat detection is reporting an overheat condition. This is not an error message. The control unit's buzzer will sound but no LED on the membrane will illuminate. Notification will only occur if programmed via an EOC statement.	<ul style="list-style-type: none"> <li>• Check the monitored area for excessively-high temperature.</li> <li>• Start air-conditioning units to lower temperature in monitored area.</li> </ul>
Addr PSU Open Circuit On Signal/Sounder	Loss of 24 Vdc signal to power-input circuit of ASM at address Addr. See Paragraph 1-5.5.	<ul style="list-style-type: none"> <li>• Refer to ASM Installation Instructions, P/N 06-235717-001.</li> <li>• Check 24 Vdc power connections to ASM.</li> <li>• Ensure that the ASM's Jumper P1 and Switch S1 are set for 24 Vdc operation</li> <li>• Check auxiliary power supply for faults.</li> </ul>
Addr PSU Short Circuit On Signal/Sounder	Appearance of 0 Vdc signal at power-input circuit of ASM at address "Addr". See Paragraph 1-5.5.	<ul style="list-style-type: none"> <li>• Refer to ASM Installation Instructions, P/N 06-235717-001.</li> <li>• Check 24 Vdc power connections to ASM.</li> <li>• Ensure that the ASM's Jumper P1 and Switch S1 are set for 24 Vdc operation</li> <li>• Check auxiliary power supply for faults.</li> </ul>
Addr RAM Fault ON	The device at address Addr is reporting an internal software fault	<ul style="list-style-type: none"> <li>• Replace the device</li> </ul>
Addr Sensor Fault On AlarmLine Module	A problem in the AlarmLine cable being monitored by an AAM.	<ul style="list-style-type: none"> <li>• Check the AlarmLine wiring connections to the AAM.</li> <li>• Refer to AlarmLine Installation, Operation, and Maintenance Manual, P/N 73.04</li> </ul>

Table 5-3. SLC Events (Continued)

SLC Events		
Error Message	Probable Cause	Corrective Action
Addr Trouble Open On Device Type	Loss of communications to device at address Addr	<ul style="list-style-type: none"> <li>• Check device connections to SLC wiring</li> <li>• Ensure that device has not been removed</li> <li>• Check wiring for excessive capacitance and/or resistance if the device LED is blinking. Refer to Paragraph 2-8.1. Rewire using recommended wire in Appendix B.</li> <li>• Use the procedure in Paragraph 3-2.5.2.4.15 to de-register the address if no device should occupy that address.</li> </ul>
Addr Type Error On Device Type	The device at address Addr is reporting a device type that is different from the type of device that is configured for that address	<ul style="list-style-type: none"> <li>• Ensure that the device installed at address Addr matches the device type configured for that address. Install corrected device or correct configuration file and re-upload application.</li> <li>• Use Handheld Programmer to test the device if the device type matches the entry in the configuration file. Refer to Appendix D. Replace the device if it fails the test or if the error message returns when the device is re-installed.</li> <li>• Intermittent type errors could be a symptom of wiring problems. Check wiring if random errors are reported. Refer to Paragraph 2-8. Ensure that wiring-resistance and -capacitance limitations have not been exceeded.</li> </ul>

Table 5-4. IIM Events

IIM Events		
Error Message	Probable Cause	Corrective Action
HSD <i>Addr</i> Auto Offset Trouble On	The HSSD at address <i>Addr</i> is reporting an offset problem. This is probably a problem with the background obscuration level in the area of the HSSD.	<ul style="list-style-type: none"> <li>•Work with the end user to improve the air quality in the HSSD location.</li> <li>•Check the IIM-to-HSSD wiring connections</li> <li>•Use ORION-XT to troubleshoot the HSSD</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
HSD <i>Addr</i> Detector Trouble On	A fault in the HSSD with IIM address <i>Addr</i>	<ul style="list-style-type: none"> <li>•Use ORION-XT to troubleshoot the HSSD</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
HSD <i>Addr</i> High AirFlow On	A problem in the HSSD with IIM address <i>Addr</i> . Excessively high air flow through the piping system	<ul style="list-style-type: none"> <li>•Look for leaks in the HSSD's piping system</li> <li>•Use ORION-XT to troubleshoot the HSSD. The airflow may need to be re-normalized.</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
HSD <i>Addr</i> Low AirFlow On	A problem in the HSSD with IIM address <i>Addr</i> . Low air flow through the piping system	<ul style="list-style-type: none"> <li>•Look for blockages in the HSSD's piping system</li> <li>•Use ORION-XT to troubleshoot the HSSD. The airflow may need to be re-normalized.</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
HSD <i>Addr</i> Missing On	Loss of communications to HSSD at IIM address <i>Addr</i>	<ul style="list-style-type: none"> <li>•Check the IIM-to-HSSD wiring connections</li> <li>•Ensure that HSSD has not been removed</li> <li>•Use the procedure in Section 3-2.5.2.4.15 to de-register the address if no HSSD should occupy that address.</li> <li>•Check IIM wiring for excessive capacitance and/or resistance.</li> <li>•Use ORION-XT to troubleshoot the HSSD.</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>

Table 5-4. IIM Events (Continued)

IIM Events		
Error Message	Probable Cause	Corrective Action
HSDAddr Not Registered On	The control unit has not been set up to expect the HSSD at IIM address <i>Addr</i> .	<ul style="list-style-type: none"> <li>•Register the device if part of system configuration. See Section 3-2.5.2.5.13 This procedure is insufficient. The following two procedures must also be conducted.</li> <li>•Use the ORION-XT Program to configure the previously unregistered HSSD</li> <li>•Upload a new application program that includes the previously unregistered HSSD.</li> </ul>
HSDAddr PSU Trouble On	A fault in the 24 Vdc power being supplied to HSSD with IIM address <i>Addr</i>	<ul style="list-style-type: none"> <li>•Check the IIM-to-HSSD wiring connections</li> <li>•Check 24 Vdc power connections to HSSD</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
HSDAddr Reference Trouble On	A fault in the HSSD with IIM address <i>Addr</i> being used as a reference detector for group of HSSDs.	<ul style="list-style-type: none"> <li>•Verify the HSSD's referencing configuration via ORION-XT. There could be no reference HSSD specified.</li> <li>•Verify the air quality in the vicinity of the reference HSSD.</li> <li>•Use ORION-XT to troubleshoot the reference HSSD</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
IIM Communication Failure On	The IIM has failed to respond to control-unit communication messages	<ul style="list-style-type: none"> <li>•Check the RS-232 cable connection between the control unit and the IIM. Refer to Figure 2-40.</li> <li>•Verify that the control-unit communications port connected to the IIM's CCM Port is configured for IIM communications. Refer to Section 3-2.5.2.4.5.</li> <li>•Ensure that the IIM is powered and that its green LED is illuminated. There is a problem with the IIM if its red LED is on.</li> <li>•Use ORION-XT to troubleshoot the IIM</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>



Table 5-4. IIM Events (Continued)

IIM Events		
Error Message	Probable Cause	Corrective Action
IIM Auxiliary Alarm Supervision Fault On	The end-of-line resistor is not installed on the Auxiliary-Alarm input of the IIM.	<ul style="list-style-type: none"> <li>•Check for opens in the wiring between the IIM and the unpowered alarm contact that it is monitoring.</li> <li>•Confirm that the end-of-line resistor on the IIM's alarm initiating circuit is 5.6 kOhm.</li> <li>•Disable this feature via ORION-XT if not used.</li> </ul>
IIM Auxiliary Trouble Supervision Fault On	The end-of-line resistor is not installed on the Auxiliary-Trouble input of the IIM.	<ul style="list-style-type: none"> <li>•Check for opens in the wiring between the IIM and the unpowered trouble contact that it is monitoring.</li> <li>•Confirm that the end-of-line resistor on the IIM's trouble initiating circuit is 5.6 kOhm.</li> <li>•Disable this feature via ORION-XT if not used.</li> </ul>
IIM Dial Tone Supervision Fault On	The IIM has been configured to monitor its modem connection for a telephone line and it has failed to detect a dial tone	<ul style="list-style-type: none"> <li>•Confirm that the IIM's Modem Port is connected to an active telephone line</li> <li>•Disable this feature via ORION-XT if not used.</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
IIM Memory Checksum Failure On	The IIM memory is corrupt due to faulty power up, a configuration-upload problem, or an internal software problem	<ul style="list-style-type: none"> <li>•Press the IIM's Reset Button</li> <li>•Upload configuration again. Refer to ORION-XT Software Guide, Version 3.X.</li> <li>•Use ORION-XT to troubleshoot the IIM</li> </ul>
IIM Modem Missing On	The IIM does not have a modem but is incorrectly configured for one, or the modem is inoperative	<ul style="list-style-type: none"> <li>•Disable the modem option via ORION-XT if not used.</li> <li>•Dial into the modem to confirm whether it is operative or not. Replace IIM if it is inoperable.</li> <li>•Use ORION-XT to troubleshoot the IIM</li> </ul>

Table 5-4. IIM Events (Continued)

IIM Events		
Error Message	Probable Cause	Corrective Action
IIM RS485 Channel 2 Failure On	The IIM's RS-485 wiring is programmed for two channels and there is a fault in Channel 2 (Terminals TB1-7 and TB1-8).	<ul style="list-style-type: none"> <li>•Look for discontinuity in IIM wiring (Terminals TB1-7 and TB1-8).</li> <li>•Troubleshoot IIM wiring (Terminals TB1-7 and TB1-8) by breaking-up circuit to isolate short circuit to specific branch or leg.</li> <li>•Disable this wiring style via ORION-XT if not used.</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
IIM Style6 Network Failure On	An open or short circuit in the RS-485 field wiring from the IIM to the HSSDs. Class-A wiring only	<ul style="list-style-type: none"> <li>•Look for discontinuity in IIM wiring.</li> <li>•Troubleshoot IIM wiring by breaking-up circuit to isolate short circuit to specific branch or leg.</li> <li>•Disable this wiring style via ORION-XT if not used.</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
IIM HSD Supervision Failure On	The IIM has lost communications with one or more HSSDs. Communications problems prevent the HSSD from being identified by specific address.	<ul style="list-style-type: none"> <li>•Check the IIM-to-HSSD wiring connections</li> <li>•Ensure that no HSSD has been removed</li> <li>•Use the procedure in Paragraph 3-2.5.2.4.15 to de-register an address if no HSSD should occupy that address.</li> <li>•Check IIM wiring for excessive capacitance and/or resistance.</li> <li>•Use ORION-XT to troubleshoot all HSSDs.</li> <li>•Refer to ORION-XT Installation, Operation, and Maintenance Manual, P/N 77.100.</li> </ul>
IIM Auxiliary Trouble Present On	The IIM is programmed as a standalone unit and a trouble signal has been reported via its auxiliary-trouble initiating circuit. This is not an IIM fault. It is a fault associated with the equipment being monitored by the IIM.	<ul style="list-style-type: none"> <li>•Investigate and correct the problem associated with the equipment being monitored via the IIM's auxiliary-trouble initiating circuit.</li> <li>•Disable this feature via ORION-XT if not used.</li> </ul>

Table 5-5. Remote-Display/Annunciator Events

Remote-Display/Annunciator Events		
Error Message	Probable Cause	Corrective Action
ATMAddr Acknowledge Input Fault On	An open circuit in wiring from the ATM-L's "Acknowledge" input terminal to the associated annunciator's acknowledge switch. ATM-L address is <i>Addr</i> .	<ul style="list-style-type: none"> <li>• Refer to ATM Installation Manual, P/N 06-236179-002.</li> <li>• Look for discontinuity in wiring to acknowledge switch</li> <li>• Check for missing 10k end-of-line resistor.</li> </ul>
ATMAddr Communication Fault On	A communications fault between the main printed circuit board and the ATM at address <i>Addr</i> .	<ul style="list-style-type: none"> <li>• Check the RS-485 wiring from main printed circuit board Terminal Block TB15 to ATM Terminal Blocks TB1 and TB2. Refer to Figures 2-27 and 2-28.</li> <li>• Check for a discontinuity in the RS-485 field wiring (Terminal Blocks TB1 and TB2).</li> <li>• Troubleshoot wiring to ATM Terminal Blocks TB1 and TB2 by breaking-up the circuits to isolate short circuit to specific leg or legs.</li> <li>• Check for 24 Vdc power at ATM Terminal Block TB3.</li> <li>• Ensure that the ATM's RS-485 Termination Jumper W1 is set correctly</li> <li>• Ensure that the ATM Address Switch S1 is set correctly.</li> <li>• Refer to ATM Installation Manual, P/N 06-236179-002</li> </ul>
ATMAddr Drill Input Fault On	An open circuit in wiring from the ATM-L's "Drill" input terminal to the associated annunciator's drill switch. ATM-L address is <i>Addr</i> .	<ul style="list-style-type: none"> <li>• Refer to ATM Installation Manual, P/N 06-236179-002.</li> <li>• Look for discontinuity in wiring to drill switch</li> <li>• Check for missing 10k end-of-line resistor.</li> </ul>
ATMAddr Monitored Output Fault On	An open circuit in any connection from the ATM to the LEDs (ATM-L) or relays (ATM-R) being driven	<ul style="list-style-type: none"> <li>• Refer to ATM Installation Manual, P/N 06-236179-002.</li> <li>• Look for discontinuity in wiring to LEDs (ATM-L) or relays (ATM-R)</li> <li>• Ensure that the correct supervision link corresponding to the number of outputs being used has been removed</li> </ul>

Table 5-5. Remote-Display/Annunciator Events (Continued)

Remote-Display/Annunciator Events		
Error Message	Probable Cause	Corrective Action
ATMAddr Not Registered On	The control unit has not been set up to expect the ATM at ATM RS-485 circuit address <i>Addr</i> .	<ul style="list-style-type: none"> <li>• Register the ATM if part of system configuration. See Paragraph 3-2.5.2.4.58. If this procedure is insufficient, the following procedure must also be conducted:</li> <li>• Upload a new application program that includes the previously unregistered ATM.</li> <li>• De-register the ATM if not part of system configuration. See Paragraph 3-2.5.2.4.59.</li> <li>• Check the 24 Vdc power (Terminal Block TB3) and RS-485 communications wiring (Terminal Blocks TB1 and TB2) from the control unit to the ATM</li> <li>• Ensure that the ATM Address Switch S1 is set correctly.</li> <li>• Refer to ATM Installation Manual, P/N 06-236179-002.</li> </ul>
ATMAddr PSU Fault On	A loss of 24 Vdc power at Terminal Block TB3 or an open circuit in the monitoring circuit from the ATM's "PS Flt" and "Com" terminals to the normally-closed trouble contacts of its associated remote power supply	<ul style="list-style-type: none"> <li>• Refer to ATM Installation Manual, P/N 06-236179-002.</li> <li>• Check for 24 Vdc power at ATM Terminal Block TB3.</li> <li>• Look for discontinuity in wiring to remote-power-supply trouble contacts. Jumper these terminals if you are using the ARIES Control Unit to power the ATM.</li> <li>• Check for trouble with third-party remote power supply</li> </ul>
ATMAddr Reset Input Fault On	An open circuit in wiring from the ATM-L's "Reset" input terminal to the associated annunciator's reset switch. ATM-L address is <i>Addr</i>	<ul style="list-style-type: none"> <li>• Refer to ATM Installation Manual, P/N 06-236179-002.</li> <li>• Look for discontinuity in wiring to reset switch</li> <li>• Check for missing 10k end-of-line resistor.</li> </ul>
ATMAddr Silence Input Fault On	An open circuit in wiring from the ATM-L's "Silence" input terminal to the associated annunciator's alarm-silence switch. ATM-L address is <i>Addr</i>	<ul style="list-style-type: none"> <li>• Refer to ATM Installation Manual, P/N 06-236179-002.</li> <li>• Look for discontinuity in wiring to alarm-silence switch</li> <li>• Check for missing 10k end-of-line resistor.</li> </ul>
ATMAddr Silenced Output Fault On	An open circuit in wiring from the ATM-L's "Silence" output terminal to the associated annunciator's alarm-silence LED. ATM-L address is <i>Addr</i>	<ul style="list-style-type: none"> <li>• Refer to ATM Installation Manual, P/N 06-236179-002.</li> <li>• Look for discontinuity in wiring to alarm-silence LED (if used)</li> <li>• Check for missing 20k supervising resistor if alarm-silence LED not used.</li> </ul>

Table 5-5. Remote-Display/Annunciator Events (Continued)

Remote-Display/Annunciator Events		
Error Message	Probable Cause	Corrective Action
ATMAddr Test Lamps Input Fault On	An open circuit in wiring from the ATM-L's "Lamp Test" input terminal to the associated annunciator's lamp-test switch. ATM-L address is <i>Addr</i> .	<ul style="list-style-type: none"> <li>• Refer to ATM Installation Manual, P/N 06-236179-002.</li> <li>• Look for discontinuity in wiring to lamp-test switch</li> <li>• Check for missing 10k end-of-line resistor.</li> </ul>
RDCMAddr Communication Fault On	A communications fault between the main printed circuit board and the RDCM at address <i>Addr</i> .	<ul style="list-style-type: none"> <li>• Check the RS-485 wiring from main printed circuit board Terminal Block TB15 to RDCM Terminal Block TB1. Refer to Figures 2-27 and 2-28.</li> <li>• Check for a discontinuity in the RS-485 field wiring to RDCM (TB1, Terminals 5 and 6 and 7 and 8).</li> <li>• Troubleshoot wiring to RDCM TB1, Terminals 5 and 6 and 7 and 8, by breaking-up the circuits to isolate short circuit to specific leg or legs.</li> <li>• Check for 24 Vdc power at RDCM TB1, Terminals 1 and 2.</li> <li>• Ensure that the RDCM's RS-485 Termination Jumper W2 is set correctly.</li> <li>• Ensure that the RDCM Address Switch S1 is set correctly.</li> <li>• Check for duplicate addressed RDCMs.</li> </ul>
RDCMAddr Not Registered On	The control unit has not been set up to expect the RDCM at RDCM RS-485 circuit address <i>Addr</i> .	<ul style="list-style-type: none"> <li>• Register the RDCM if part of system configuration. See Paragraph 3-2.5.2.4.58.</li> <li>• De-register the RDCM if not part of system configuration. See Paragraph 3-2.5.2.4.59.</li> <li>• Check the 24 Vdc power (TB1, Terminals 1 and 2) and RS-485 communications wiring (TB1, Terminals 5 and 6 and 7 and 8) from the control unit to the RDCM</li> <li>• Ensure that the RDCM Address Switch S1 is set correctly.</li> </ul>
RDCMAddr PSU Fault On	A loss of 24 Vdc power at TB1, Terminals 1 and 2 or an open circuit in the RDCM's monitoring circuit from TB1, Terminals 3 and 4 to the normally-closed trouble contacts of its associated remote power supply	<ul style="list-style-type: none"> <li>• Check for 24 Vdc power at RDCM Terminals 1 and 2.</li> <li>• Look for discontinuity in wiring from Terminals 3 and 4 to remote-power-supply trouble contacts. Jumper these terminals if you are using the ARIES Control Unit to power the RDCM.</li> <li>• Check for trouble with third-party remote power supply</li> </ul>

Table 5-6. Network Events

Network Events		
Error Message	Probable Cause	Corrective Action
Network Card Missing On	The control unit does not recognize its NIC.	<ul style="list-style-type: none"> <li>• Check connection of NIC to main printed circuit board Header J5. See Figure 1-8 and Section 2-17.</li> </ul>
Network NodeXX Channel Y Failure On	The networked system has lost communications with Node XX via Channel Y	<ul style="list-style-type: none"> <li>• Check wiring to NIC in Node XX. See Section 2-17. Ensure that network wiring is daisy-chained and not T-Tapped.</li> <li>• Check network wiring for excess resistance or capacitance.</li> <li>• Check connection of NIC to main printed circuit board Header J5. See Figure 1-8 and Section 2-17.</li> <li>• Review network settings in applications program. Correct parameters via the control-unit menu options or re-upload corrected configuration again to Node XX. Perform either of these operations at Node XX</li> </ul>
NXX Bad Style or Node Number On	Node XX is not configured properly	<ul style="list-style-type: none"> <li>• Review network settings in applications program. Correct parameters via the control-unit menu options or re-upload corrected configuration again to Node XX. Perform either of these operations at Node XX.</li> </ul>
Token Not Received On CH. Y On	Network communications problems or the node reporting this message is not active on the network	<ul style="list-style-type: none"> <li>• Check wiring to NIC in node reporting the fault. See Section 2-17. Ensure that network wiring is daisy-chained and not T-Tapped.</li> <li>• Check network wiring for excess resistance or capacitance.</li> <li>• Check connection of NIC to main printed circuit board Header J5. See Figure 1-8 and Section 2-17.</li> <li>• Review network settings and required interactions among control units in the applications program. Make any necessary corrections and re-upload configurations again to all effected nodes.</li> </ul>

Table 5-6. Network Events (Continued)

Network Events		
Error Message	Probable Cause	Corrective Action
Unmapped Network Node <i>XX</i> on CH. <i>Y</i> On	Node <i>XX</i> is connected to and communicating on the network via Channel <i>Y</i> but is not registered	<ul style="list-style-type: none"> <li>• Add node to network. Refer to Section 3-2.5.2.4.45. This is not sufficient by itself. See next step.</li> <li>• Review network settings and required interactions among control units in the applications program. Make any necessary corrections and re-upload configurations again to all effected nodes.</li> <li>• Check wiring to NIC in Node <i>XX</i>. See Section 2-17. Ensure that network wiring is daisy-chained and not T-Tapped.</li> <li>• Check network wiring for excess resistance or capacitance.</li> <li>• Check connection of NIC to main printed circuit board Header J5. See Figure 1-8 and Section 2-17.</li> </ul>

**Do not leave a facility after performing any of the corrective actions listed in this chapter until you have:**

- **Performed sufficient system testing to ensure that the problem(s) has (have) been corrected and that the system is in proper working condition**
- **Physically re-connected the wiring to actuator assemblies (if used) to the release-circuits from which they were removed**
- **Physically re-connected all control heads (if used) to the associated agent-storage-container discharge valves from which they were removed**
- **Physically re-connected the wiring to solenoid valves (if used) for pre-action/deluge sprinkler systems**
- **Ensured that emergency operations controlled by this system such as facility power shutoff are restored**
- **Notified personnel in the facility and at off-premises monitoring locations that you have finished working on the system, that system servicing has ended, and that the system has been restored to proper working conditions.**



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# CHAPTER 6

## PARTS LIST

### 6-1 INTRODUCTION

The complete assemblies, sub-assemblies, and compatible peripheral devices associated with the ARIES™ Fire Alarm/Suppression Control Unit are listed in the following tables.

Table 6-1. ARIES Control Unit and Replacement Sub-Assemblies

Model No.	Part Number	Description
ARIES	76-600000-001	Control Unit (complete assembly)
N/A	76-600000-007	Trim Ring
N/A	76-600000-002	Enclosure w/ Door
N/A	06-118394-002	Power Supply
N/A	76-600000-104	Printed-Circuit Board
N/A	06-220024-002	Installation/Hardware Kit
N/A	76-600000-011	Keypad/Display Assembly
N/A	06-220023-001	In-Line Releasing Device

Table 6-2. External Modules

Model No.	Part Number	Description
RDCM	76-300000-502	Rem. Display/Control Mod.
RDCM	76-600000-005	Rem. Display/Control Mod.
ATM-L	76-200004-032	Annun. Driver Module
ATM-R	76-200005-032	Relay Driver Module
N/A	76-300000-510	RDCM Trim Ring
IIM	77-297114-002	Intelligent Interface Module w/ Modem
IIM	77-297114-001	Intelligent Interface Module w/o Modem
NIC	76-600000-009	Network Interface Card
OCC	76-600000-006	Fiber-Optic Converter Card

Table 6-3. SLC Initiating and Control Devices

Model No.	Part Number	Description
PSD-7152	71-402001-100	Photoelectric Detector
PSD-7140	71-401001-000	Photoelectric Detector (retrofit only)
PSD-7140	71-401004-000	Photo. Det. w/ Relay (retrofit only)
CPD-7052	70-402001-100	Ionization Detector
CPD-7040	70-401001-000	Ionization Detector (retrofit only)
CPD-7040	70-401004-000	Ion. Det. w/ Relay (retrofit only)
THD-7252	70-404001-100	Heat Detector
6SB	70-400001-100	Flanged Detector Base
4SB	70-400001-101	Detector Base
MA-002	70-400001-200	Det.-Base Adapter
N/A	70-400001-000	Detector Base (retrofit only)
DH-2000 PSDI	70-403001-152	Duct Hous. w/ Photo. Det.
DH-2000CPDI	70-403001-052	Duct Hous. W/ Ion. Det.
DH-4000	70-403000-000	Duct Housing (retrofit only)
AI	70-407008-001	Monitor Module (N/O)
AI	70-407008-002	Monitor Module (N/C) (UL only)
AI	70-407018-001	Monitor Module (N/O) (non-silicone)
AI	70-407018-002	Monitor Module (N/C) (non-silicone; UL only)
AI	70-407004-001	Monitor Module (N/O) (retrofit only)
AO	70-408004-001	Control Module
AO	70-408014-001	Control Module (non-silicone)
AO	70-408001-000	Cont. Mod. w/o Mtg. Plate (retrofit only)
AO	70-408002-000	Cont. Mod. w/ Mtg. Plate (retrofit only)
AO	70-408003-000	Cont. Mod. w/ SS Mtg. Pl. (retrofit only)
PALM	297103	ORION-XT Inter. Mod.
AAM	73-100001-001	Addr. Alarmline Module
ASM	70-200200-001	Addr. Signal Module
N/A	74-200012-002	Isolator Module (single-gang mount)
N/A	74-200012-004	Isolator Module (detector-base mount)
RRM	70-600000-001	Remote Releasing Module (standard mount)
RRM	70-600000-002	Remote Releasing Module (in-cabinet mount)

Table 6-4. Notification Appliances

Model No.	Part Number	Description
MT-12/24	75-000010-001	Multi-Tone Horn
MT-24 Series	75-000015-001	Multi-Tone Horn w/15-75 cd Strobe (FIRE)
	75-000015-002	Multi-Tone Horn w/15-75 cd Strobe (AGENT)
	75-000016-001	Multi-Tone Horn w/75 cd Strobe (FIRE)
	75-000016-002	Multi-Tone Horn w/75 cd Strobe (AGENT)
	75-000017-001	Multi-Tone Horn w/75 cd Strobe (FIRE) Weatherpr.
MIZ Series	75-000020-001	Mini Horn-Steady (Red)
	75-000020-002	Mini Horn-Steady (White)
	75-000025-001	Mini Horn-Steady/Temporal (Red)
	75-000025-002	Mini Horn-Steady/Temporal (White)
NH-12/24	75-000080-001	Steady / Temporal Horn
NS-24 Series	75-000082-001	Steady/Temp. Horn w/15-75 cd Strobe (FIRE)
	75-000082-002	Steady/Temp. Horn w/15-75 cd Strobe (AGENT)
	75-000086-001	Steady/Temp. Horn w/15-30-75-110 cd Strobe (FIRE) Red
	75-000086-002	Steady/Temp. Horn w/15-30-75-110 cd Strobe (AGENT) Red
	75-000087-001	Steady/Temp. Horn w/15-30-75-110 cd Strobe (FIRE) Wht
	75-000087-002	Steady/Temp. Horn w/15-30-75-110 cd Strobe (AGENT) Wht
RSS(P) Series	75-000002-011	15-75 cd Strobe (FIRE)
	75-000002-012	Retrofit 15-75 cd Strobe (FIRE)
	75-000002-013	15-75 cd Strobe (AGENT)
	75-000005-021	15-30-75-110 cd Strobe (FIRE)-Red
	75-000005-022	15-30-75-110 cd Strobe (AGENT)-Red
	75-000005-023	Retrofit 15-30-75-110 cd Strobe (FIRE)-Red
	75-000005-024	Retrofit 15-30-75-110 cd Strobe (AGENT)-Red
	75-000005-031	15-30-75-110 cd Strobe (FIRE)-White
	75-000005-032	15-30-75-110 cd Strobe (AGENT)-White
	75-000005-033	Retrofit 15-30-75-110 cd Strobe (FIRE)-White
	75-000005-034	Retrofit 15-30-75-110 cd Strobe (AGENT)-White
	75-000005-041	75 cd Strobe (FIRE)-Weatherproof
	75-000005-042	75 cd Strobe (AGENT)-Weatherproof

Table 6-5. Batteries and Battery Enclosures

<b>Model No.</b>	<b>Part Number</b>	<b>Description</b>
N/A	06-115915-047	12-V, 12-AH
N/A	06-115915-046	12-V, 17-AH
N/A	297108	12-V, 35-AH
N/A	76-100010-001	ARIES Battery Enclosure

Table 6-6. Miscellaneous

<b>Model No.</b>	<b>Part Number</b>	<b>Description</b>
N/A	70-411001-005	EOL Resistor Kit
N/A	74-200013-001	Device Programmer
N/A	06-129025-003	EOL Resistor-10K, 0.5W

# APPENDIX A

## BATTERY CALCULATIONS

### A-1 AC BRANCH CIRCUIT

The ARIES™ Fire Alarm/Suppression Control Unit requires a separate, dedicated connection to an AC branch circuit (120 Vac, 50/60 Hz, 3.2 A or 220/240 Vac, 50/60 Hz, 1.6 A) that must be labeled "Fire Alarm." This branch circuit must connect to the line side of the main power connection for the premises. No other equipment can be powered from the fire-alarm branch circuit.

The branch-circuit wire must run continuously, without any disconnection devices, from the source of AC power to the ARIES Control Unit. Over-current protection for this branch circuit must comply with Article 760 of the National Electric Code and any other local electrical codes. Use a minimum wire size of #14 AWG, with 600-volt insulation, for this branch circuit

### A-2 CALCULATING THE STANDBY BATTERIES

Calculate the system operating current and alarm load using the template in Table A-1.

Table A-1. Calculating Operating System Current Load

Qty	Unit	Unit Standby Current (A)	+Ext. Standby Current (A)	Alm Qty	Pre-Rel. Qty	Rel Qty	Unit Alarm Current (A)	#Ext. Alm Current (A)	&Ext. Pre-Rel. Current (A)	\$Ext. Rel. Current (A)
1	ARIES	0.2	0.2	1	1	1	0.650			
-	RDCM	0.064	-	-	-	-	0.085	-	-	-
-	ATM-L	0.045	-	-	-	-	0.045	-	-	-
-	LEDS *	-	-	-	-	-	0.012	-	-	-
-	ATM-R	0.045	-	-	-	-	0.045	-	-	-
-	Relays *	-	-	-	-	-	0.025	-	-	-
-	PSD-7152	0.000405	-	-	-	-	0.000445	-	-	-
-	CPD-7052	0.000400	-	-	-	-	0.000440	-	-	-
-	THD-7252	0.000400	-	-	-	-	0.000440	-	-	-
-	DH-2000 PSDI	0.000405	-	-	-	-	0.000445	-	-	-
-	DH-2000 CPDI	0.000400	-	-	-	-	0.000440	-	-	-
-	N/O AI	0.000450	-	-	-	-	0.000450	-	-	-
-	N/C AI	0.000450	-	-	-	-	0.000450	-	-	-
-	PALM	0.000450	-	-	-	-	0.000450	-	-	-
-	AAM	0.000450	-	-	-	-	0.000450	-	-	-
-	AO	0.000400	-	-	-	-	0.000440	-	-	-
-	ASM	0.000500	-	-	-	-	0.000500	-	-	-
-	Single-gang Isolator	-	-	-	-	-	-	-	-	-
-	Det.-base Isolator	-	-	-	-	-	-	-	-	-
-	NIC	0.070	-	-	-	-	0.070	-	-	-
-	OCC	0.200	-	-	-	-	0.200	-	-	-
-	IIM (without modem)	0.070	-	-	-	-	0.080	-	-	-
-	IIM (with modem)	0.070	-	-	-	-	0.200	-	-	-
-	RRM	0.000410	-	-	-	-	0.000410	-	-	-
-	MT-12/24 *	-	-	-	-	-	0.024	-	-	-
-	MT-241575 *	-	-	-	-	-	0.089	-	-	-

# Battery Calculations

Table A-1. Calculating Operating System Current Load (Continued)

Qty	Unit	Unit Standby Current (A)	+Ext. Standby Current (A)	Alm Qty	Pre-Rel. Qty	Rel Qty	Unit Alarm Current (A)	# Ext. Alm Current (A)	&Ext. Pre-Rel. Current (A)	\$Ext. Rel. Current (A)
-	MT-2475 *	-	-	-	-	-	0.157	-	-	-
-	MIZ-24 *	-	-	-	-	-	0.012	-	-	-
-	MIZ-TC24 *	-	-	-	-	-	0.017	-	-	-
-	NH-12/24 *	-	-	-	-	-	0.015	-	-	-
-	NS-241575 *	-	-	-	-	-	0.079	-	-	-
-	NS-24MC (Horn only) *	-	-	-	-	-	0.015	-	-	-
-	NS-24MC (w/15 cd) *	-	-	-	-	-	0.058	-	-	-
-	NS-24MC (w/30 cd) *	-	-	-	-	-	0.082	-	-	-
-	NS-24MC (w/75 cd) *	-	-	-	-	-	0.140	-	-	-
-	NS-24MC (w/110 cd) *	-	-	-	-	-	0.174	-	-	-
-	MB-G6-24 *	-	-	-	-	-	0.030	-	-	-
-	MB-G10-24 *	-	-	-	-	-	0.030	-	-	-
-	RSS-241575 *	-	-	-	-	-	0.065	-	-	-
-	RSS-24MC (15 cd) *	-	-	-	-	-	0.050	-	-	-
-	RSS-24MC (30 cd) *	-	-	-	-	-	0.081	-	-	-
-	RSS-24MC (75 cd) *	-	-	-	-	-	0.133	-	-	-
-	RSS-24MC (110 cd) *	-	-	-	-	-	0.161	-	-	-
-	SM Synch. Module *	-	-	-	-	-	0.025	-	-	-
-	DSM Synch. Module *	-	-	-	-	-	0.038	-	-	-
-	897494	-	-	-	-	-	1.500	-	-	-
-	486500-01	-	-	-	-	-	0.240	-	-	-
-		-	-	-	-	-		-	-	-
-	FM Solenoid (Group A)	-	-	-	-	-	0.458	-	-	-
-	FM Solenoid (Groups B,D)	-	-	-	-	-	0.700	-	-	-
-	FM Solenoid (Groups E,G)	-	-	-	-	-	0.420	-	-	-
	Total Standby Current (A)	_____					Total Alarm Current (A)	_____	_____	_____
	Standby Hours	_____					Alm Minutes	_____	_____	_____
	Standby AH	_____					Alarm AH	_____	_____	_____
							Total AH	_____	_____	_____
							Battery Size (AH)	_____	_____	_____
							Battery Capacity for Calculations(AH) (10% De-rating)			_____
							Max. Alarm Current (A)			5.400
+ (Qty) X (Unit Standby Current) # (Alm Qty) X (Unit Alm Current) & (Pre-Rel. Qty) X (Unit Alm Current) \$ (Rel. Qty) X (Unit Alm Current) * Typical currents. Refer to specific product information sheets.										



## Battery Calculations

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Round up to next whole number (7 AH) using the largest-calculated battery capacity (6.86 AH) for the required standby-battery size.

Use Table A-3 to determine the maximum standby currents that can be used as a function of the required standby hours and the size of the battery used.

Table A-3. Maximum Standby Currents vs. Standby Duration and Battery Size

<b>Standby Duration (hrs.)</b>	<b>Alarm Duration (min.)</b>	<b>Max. Standby Current (A)</b>	<b>Max. Alarm Current (A)</b>	<b>Max. Battery (AH)</b>
4	5	1.4	5.4	7
4	5	2.5	5.4	12
24	5	0.4	5.4	12
24	5	1.2	5.4	35
60	5	0.5	5.4	35
90	10	0.3	5.4	35
24	5	2.6	5.4	70
60	5	1.0	5.4	70
90	10	0.6	5.4	70



# APPENDIX B

## WIRING REQUIREMENTS FOR ARIES SIGNALING LINE CIRCUIT

### B-1 RECOMMENDED WIRE TYPES

For best results, use twisted, unshielded, low-capacitance, addressable-fire-alarm wire with a nominal wire-to-wire capacitance of approximately 20 pf (picofarads, where 1 pf =  $10^{-6}$   $\mu$ F) per foot for the signaling-line circuit. Typical wire types that meet these criteria are indicated below:

Table B-1. Typical Wire Types - 18 AWG

Manufacturer	Part Number	Rating	Cap (pf/ft.)
Atlas Wire and Cable Corp.	228-18-1-1TP	FPL	12.5
West Penn Wire	D980	FPL	16.0
West Penn Wire	60980B	FPLP	29.0
Coleman Cable	98181	FPL	19.0
Coleman Cable	98820	FPLR	26.0
Clifford of Vermont, Inc.	1P18 B1 FPL-M	FPL	15.0
Comtran Corporation	4184	FPLR	20.0
Belden Wire and Cable Co.	5320UJ	FPL	12.5
Belden Wire and Cable Co.	9571	FPLR	22.0
Belden Wire and Cable Co.	6320UJ	FPLP	25.0
BSCC	341802E	FPLP	25.0
Genesis Cable Systems	4050	FPL	15.0
Genesis Cable Systems	4431	FPLR	15.0
Genesis Cable Systems	4631	FPLP	16.0

## Wiring Requirements for ARIES Signaling Line Circuit

Table B-2. Typical Wire Types - 16 AWG

Manufacturer	Part Number	Rating	Cap (pf/ft.)
Atlas Wire and Cable Corp.	228-16-1-1TP	FPL	12.5
West Penn Wire	D990	FPL	18.0
Coleman Cable	98161	FPL	20.0
Coleman Cable	98620	FPLR	27.0
Clifford of Vermont, Inc.	1P16 B1 FPL-M	FPL	19.0
Comtran Corporation	4234	FPLR	20.0
Belden Wire and Cable Co.	5220UJ	FPL	13.5
Belden Wire and Cable Co.	9572	FPLR	29.0
Belden Wire and Cable Co.	6220UJ	FPLP	27.0
BSCC	341602E	FPLP	18.0
Genesis Cable Systems	4051	FPL	17.0
Genesis Cable Systems	4432	FPLR	17.0
Genesis Cable Systems	4632	FPLP	18.0

Table B-3. Typical Wire Types - 14 AWG

Manufacturer	Part Number	Rating	Cap (pf/ft.)
Atlas Wire and Cable Corp.	228-14-1-1TP	FPL	14.5
Coleman Cable	98141	FPL	20.0
Coleman Cable	98420	FPLR	25.0
Comtran Corporation	4240	FPLR	21.0
Belden Wire and Cable Co.	9580	FPLR	27.0
Belden Wire and Cable Co.	6120UJ	FPLP	25.9
BSCC	341402E	FPLP	20.0
Genesis Cable Systems	4052	FPL	19.0
Genesis Cable Systems	4433	FPLR	19.0
Genesis Cable Systems	4633	FPLP	20.0

Table B-4. Typical Wire Types - 12 AWG

Manufacturer	Part Number	Rating	Cap (pf/ft.)
Coleman Cable	98121	FPL	27.0
Coleman Cable	98200	FPLR	29.0
Genesis Cable Systems	4054	FPL	21.0
Genesis Cable Systems	4434	FPLR	22.0

### B-2 EXAMPLE NO. 1

Determine the recommended wire size for a daisy-chained, Class-B, Style-4 SLC with 160 devices and a total wire length of 7,500 feet. The total wire length is the sum of wiring for the positive and negative SLC legs, and is not the linear distance from the control unit to the most-remote device.

Try #14 AWG wire. The total SLC wiring resistance is:

$$7,500 \text{ ft.} \times 2.525 \text{ ohms} / 1,000 \text{ ft.} = 18.9 \text{ ohms.}$$

If Coleman Cable wire is selected, P/N 98141 (from Recommended Wire Listing), the total SLC wiring capacitance is:

$$3,750 \text{ ft} \times 20 \times 10^{-12} \text{ farads} / \text{ft.} = 0.075 \times 10^{-6} \text{ farads (or, } 0.075 \text{ } \mu\text{F).}$$

Coleman Cable wire, PN 98141, is acceptable.

**Note:** Capacitance values correspond to a pair of wires as compared to resistance values that correspond to a single conductor. The wire-pair length for this SLC is 3,750 feet, and this value is used for the SLC's capacitance calculation.

### B-3 EXAMPLE NO. 2

Determine the proper wire size for a Class-A, Style-6 SLC with 100 devices and a total wire length 7,000 feet. The total wire length is the sum of wiring for the positive and negative SLC legs for both the primary and redundant communications circuits, and is not the linear distance from the control unit to the most remote device.

Try #18 AWG wire first. The total SLC wiring resistance is using #18 AWG is:

$$7,000 \text{ ft.} \times 6.385 \text{ ohms} / 1,000 \text{ ft.} = 44.7 \text{ ohms.}$$

The total SLC wiring resistance (44.7 ohms) when using #18 AWG wire exceeds the maximum SLC wiring resistance of 40.0 ohms. Use larger wire.

Try #16 AWG next. The total SLC wiring resistance using #16 AWG is:

$$7,000 \text{ ft.} \times 4.016 \text{ ohms} / 1,000 \text{ ft.} = 28.1 \text{ ohms.}$$

The total SLC wiring resistance (28.1 ohms) when using #16 AWG wire is less than the maximum SLC wiring resistance of 40 ohms. The SLC wiring resistance using #16 AWG wire is acceptable.

If Coleman Cable wire is selected, P/N 98161 (from Recommended Wire Listing), the total SLC wiring capacitance is:

$$3,500 \text{ ft} \times 20 \times 10^{-12} \text{ farads} / \text{ft.} = 0.07 \times 10^{-6} \text{ farads (or, } 0.07 \text{ } \mu\text{F).}$$

Coleman Cable wire, P/N 98161, is acceptable.

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# APPENDIX C

## LISTED AND APPROVED RELEASING DEVICES

### C-1 RELEASING CIRCUIT ELECTRICAL CHARACTERISTICS

The following electrical characteristics apply to the dedicated releasing circuits, Release 1 and Release 2.

Table C-1. Release 1 and 2 Circuit Electrical Characteristics

Characteristic	Solenoids	Actuator
Maximum Devices.	2	1
Minimum Peak Firing Current	2.8 A / 30 ms	1.5 A / 10 ms
Maximum Steady Firing Current	2.4 A	---
Max. Open-Circuit Term. Voltage	28.0	28.0
Min. Open-Circuit Term. Voltage	20.0	20.0
Maximum Supervision Current	5 ma	5 ma
Dummy Load	10 k Ohms	---

### C-2 COMBINATION CIRCUIT ELECTRICAL CHARACTERISTICS FOR RELEASING

The following electrical characteristics apply to the combination circuits, Combo 1 and Combo 2.

Table C-2. Combo 1 and 2 Circuit Electrical Characteristics

Characteristic	Solenoids	Actuator
Maximum Devices	1	Do Not Use
Minimum Peak Firing Current	2.8 A / 30 ms	---
Maximum Steady Firing Current	2.4 A	---
Max. Open-Circuit Term. Voltage	28.0	---
Min. Open-Circuit Term. Voltage	20.0	---
Maximum Supervision Current	5 ma	---
Dummy Load	10 k Ohms	---

# Listed and Approved Releasing Devices

## C-3 UL LISTED AND FM APPROVED SOLENOIDS

The solenoids in Table C-3 are UL Listed and FM Approved as noted.

Table C-3. UL Listed and FM Approved Solenoids

Device	I (max.) A	Resistance (min.) ohms	"On" Time	Wire Length (Ft.)				Comment
				12 AWG	14 AWG	16 AWG	18 AWG	
890181	2.40	10.0	Momentary	300	200	120	—	
897494	1.50	15.9	Continuous	380	240	150	—	Max. One (1) per System
486500-01	0.240	103.0	Continuous	3000	2000	1200	800	
81-100000-001	0.440	59.0	Continuous	2300	1460	915	570	
06-118329-001	0.225	108.0	Continuous	3000	2000	1200	800	FM Approved; Not UL Listed
06-118384-001	0.520	46.0	Continuous	1440	760	480	340	UL Listed; Not FM Approved
38-509837-001	0.400	60.0	Continuous	2300	1460	915	570	
38-509834-001	0.632	38.0	Continuous	1050	550	330	240	
87-120099-001*	2.00	12.0	Momentary*	360	240	140	—	Max. One (1) per System
90-487100-001*	2.00	12.0	Momentary*	360	240	140	—	Max. One (1) per System
FM Group A	0.458	52.0	Continuous	1440	760	480	340	
FM Groups B,D	0.700	34.0	Continuous	940	500	300	220	
FM Groups E,G	0.420	57.0	Continuous	1570	760	525	370	

\* Must be used in conjunction with microswitch P/N 87-120039-001 for momentary operation.

See Figure C-1 and Figure C-2.

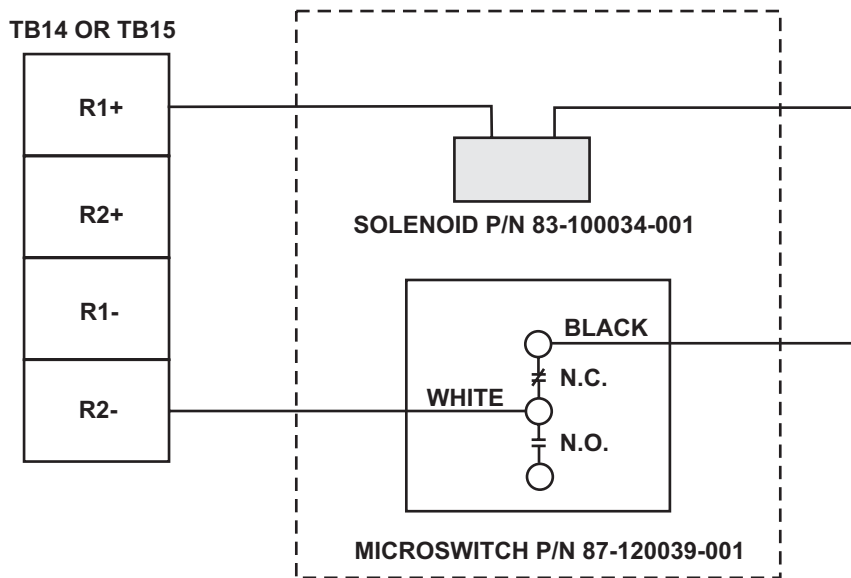


Figure C-1. Agent Release Circuits for XV Control System (P/N 87-120099-001) and CXV Control System (P/N 93-487100-001)

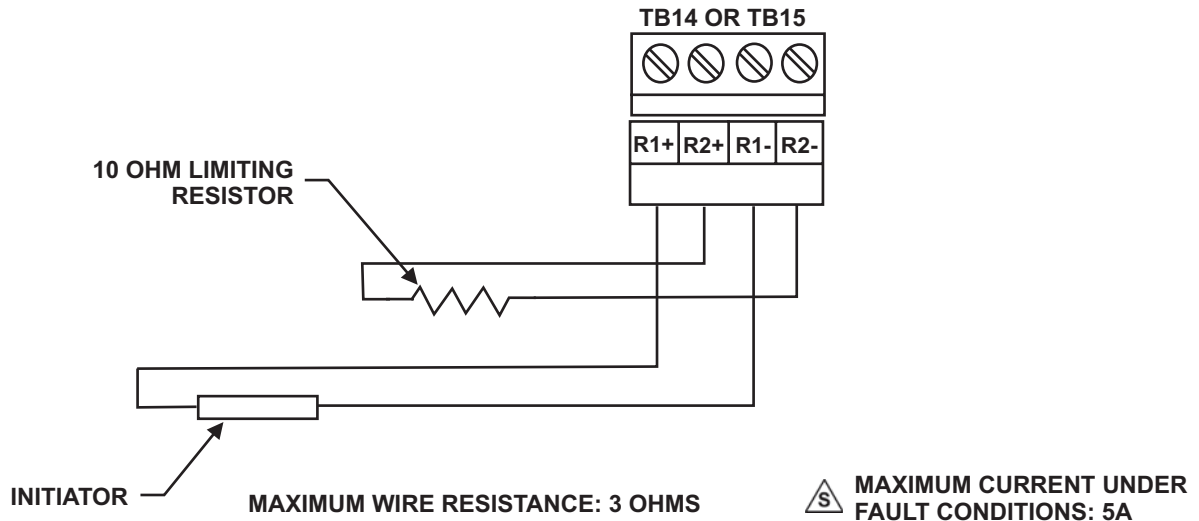


Figure C-2. Agent Release Circuit Wiring - Initiators, Non-Power-Limited

- Note:**
1. Polarities must be observed.
  2. Must be close nipped to Solenoid enclosures.
  3. The ARC is Non-Power-Limited when in-line device not used.
  4. Route Non-Powered-Limited wiring at least 1/4-inch away from all Power-Limited wiring. Do not attach Power-Limited wiring to the same terminal block.
  5. When using initiators, different types of initiators must **NOT** be mixed on the same circuit. The limiting resistor is used to make the total circuit resistance equal to  $\pm 1$  ohm. The resistor must have a rating of 1 watt minimum.
  6. Control Head P/Ns 90-487100-001 and 87-120099-001 when used with the panel must include Solenoid P/N 83-100034-001 and Microswitch P/N 87-120039-001.

**C-4 UL LISTED AND FM APPROVED ASSEMBLY**

The following actuator assembly is UL Listed and FM Approved.

Table C-4. UL Listed and FM Approved Actuator Assembly

Part Number	Max. No. per Release Ckt.	Max. Rel. Ckt. Resistance
83-131025-001	1	3 ohms

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# APPENDIX D

## HANDHELD-PROGRAMMER OPERATING INSTRUCTIONS

### D-1 DESCRIPTION

The Handheld Programmer (hereinafter referred to as the Programmer) provides the system installer/service person with a convenient means to assign device address information and test device operation.

### D-2 GENERAL NOTE

Prior to using the Programmer, you need to ensure that you have the supplied accessories, listed in the table below:

#### D-2.1 Accessory List

Part No.	Description
74-200013-001	Device Programmer (complete Unit)
06-117999-001	AC/DC Power Pack*
06-118003-001	AC Cord*
06-117998-001	Battery Pack (installed in device)*

\* All supplied in top level Part No. 74-200013-001

### D-3 DEVICES SUPPORTED

The Programmer is designed to support all SmartOne intelligent/addressable devices. A table of supported devices accompanies these instructions.

Prepare the Programmer for Operation with AC Adapter

1. Connect Device Interface Cable to the SLC connector on the top of the Programmer.
2. Connect the small plug of the power pack to the DC IN connector on the top of the Programmer, and then plug the line cord into a 120 Vac, 60Hz outlet.
3. Verify that the green "DC Input" LED is lit. The yellow "Bat. Charger" LED will also light if the batteries are not fully charged.
4. Set the power switch to the "on" position (up direction).
5. Verify that the green "Power On" LED is lit and that the display is flashing each of the segments used to display characters.
6. After 30 seconds ensure the top row of the display is flashing (---). The bottom row of the display should be blank.

Table D-1. Trouble Code Table

Code	Trouble
E00	Programmer Trouble - An internal trouble condition has been detected within the Programmer. Remove all power. Re-energize and allow the Programmer to re-initialize. If it does not operate (Programmer Trouble remains), return Programmer to factory for repair.
E01	Alarm Test Fail - The connected device has failed Alarm Test. Remove device and allow Programmer to clear. Re-attach failed device. Change address of device. Allow Programmer to complete entire process before disconnecting leads from the device. If device fails test again, return device for repair.
E02	Addressable Set Trouble - The Programmer has detected a trouble condition during address setting of connected device. Disconnect Programmer and allow it to clear. Reattach device and set address in device. If device fails again, return device for repair.
E95	Internal Device Open - The Programmer has received a trouble condition from the connected device. Verify connected device has E.O.L. resistor connected (AI/ASM only). If the E.O.L. is not connected, connect it to the device as required. Disconnect device from Programmer and allow it to clear. Reattach unit to Programmer and set address on device.
E96	Device Open - Programmer has detected the connected device as being disconnected. Verify SLC connection to Programmer and allow it to clear. Reattach and retry.
E99	SLC Short - SLC leads of Programmer have become shorted together.

## D-4 PREPARE THE PROGRAMMER FOR OPERATION WITH INTERNAL BATTERIES

1. Connect Interface Cable to the SLC connector on the top of the Programmer.
2. Set the power switch to the "On" position (up direction).
3. Verify that the green "Power On" LED is lit and that the display is flashing each of the segments used to display characters.
4. If the "Bat. Failure" LED is lit or no LEDs are lit, charge the batteries according to the Battery Charging procedure.

## D-5 BATTERY CHARGING

If the "Bat. Failure" LED lights on the Programmer, go to AC operation to charge the batteries as described below:

1. Ensure that the power switch is in the "Off" position (down direction).
2. Connect the small plug of the power pack to the DC IN connector on the top of the Programmer.
3. Plug the line cord into a 120 Vac, 60Hz outlet.
4. Verify that the "DC Input" and "Bat. Charger" LEDs are lit.
5. Charge batteries for at least one hour. If the "Bat. Failure" LED is illuminated after the charge, replace the Programmer's batteries.

## D-6 CHANGE OR SET THE ADDRESS OF A DEVICE

1. Connect the alligator clips of the interface cable to the terminals of an addressable device.
2. After about 17 seconds, the top row of the display should indicate the device address (000 to 255), and shortly after, the bottom row of the display should indicate "000."

**Note:** All new addressable devices should have an address of 000.

3. Refer to the Trouble Code Table if the Trouble LED lights, if the Programmer beeps, or if a trouble code is displayed.
4. To change the address, enter a value between 001 and 255 into the keypad. The entered value will appear in the bottom row of the display. Press the <ENTER> key.

5. After about 10 seconds, the entered address will be displayed on the top row of the display.
6. Repeat Steps 1 through 5 for each device to be addressed.

**D-7 BATTERY REPLACEMENT**

1. Ensure that the power switch is off (down position) and that the power cord is disconnected.
2. Remove the four Phillips-head screws from the back panel of the Programmer.
3. Lift the rear panel from the unit carefully, preventing tension to the wiring connected to the rear panel PC board. Place rear panel on the side of the unit. Do not disconnect interconnecting wiring.
4. Remove the two Phillips-head screws securing the battery bracket. Lift out the bracket.
5. Remove battery pack and disconnect battery connector.
6. Insert new battery pack by reversing the steps above.

Table D-2. Supported Devices

Supported Devices	Part Number
Ionization Detectors	70-402001-100
	70-401001-000
	70-401002-000
	70-401004-000
Photoelectric Detectors	71-402001-100
	71-401001-000
	71-401002-000
	71-401004-000
Thermistor Heat Detector	70-404001-100
Addressable Contact Input Devices	70-407002-00X
	70-407003-001
	70-407004-001
	70-4070x8-00x
Relay Devices	70-408001-000
	70-408003-000
	70-4080x4-001
Addressable Signal Module	70-200200-00X

**D-8 POWER SPECIFICATIONS ADDRESSABLE SIGNAL MODULE**

- AC Input Rating:                    120Vac, 1.0A (Max.)
- DC Output Rating:                12Vdc, 1.75A (Max.)
- Battery Rating:                    7.2Vdc, 700 mAH

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## **APPENDIX E**

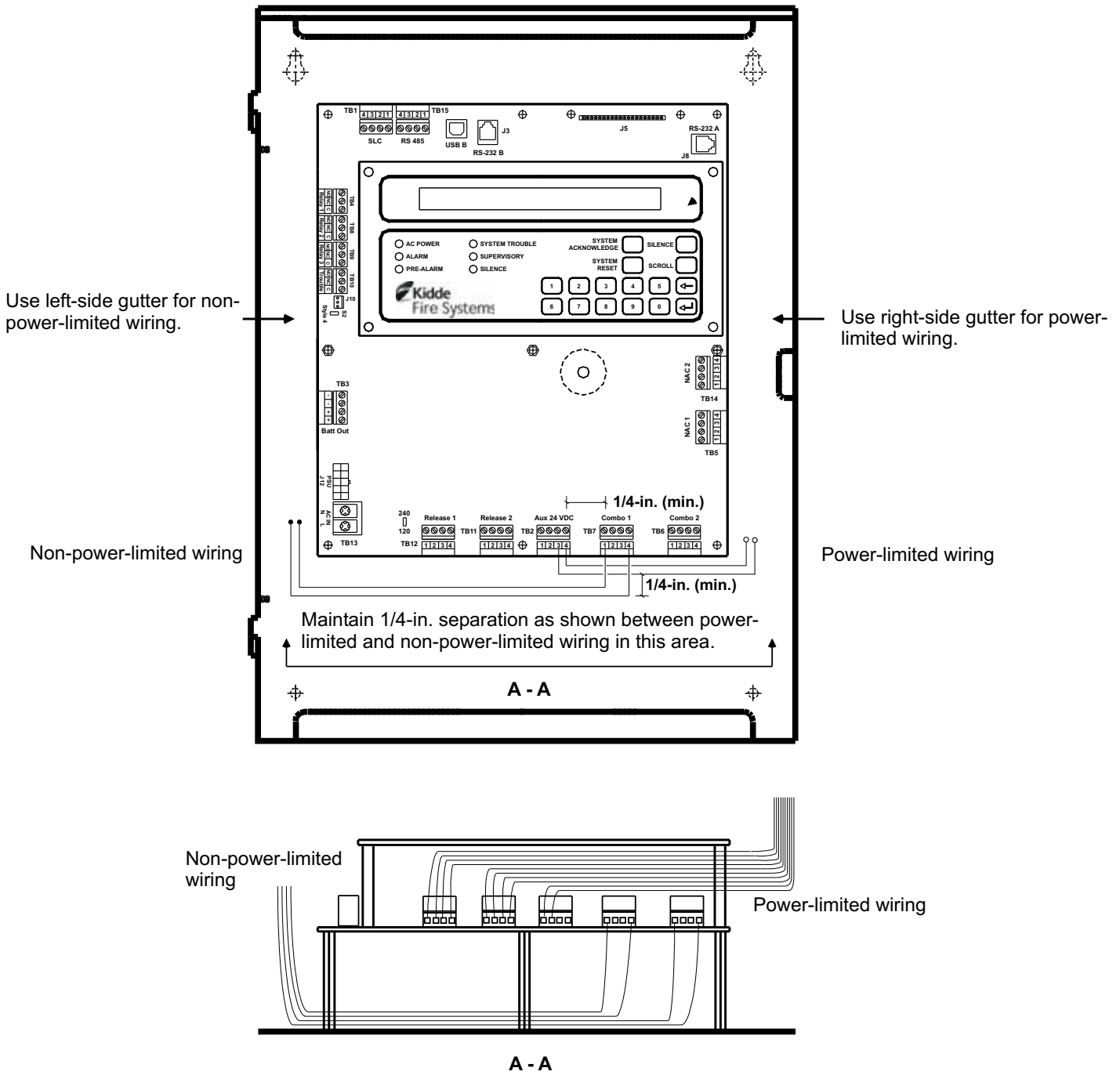
# **ROUTINGS FOR POWER-LIMITED AND NON-POWER-LIMITED WIRING**

This appendix provides guidelines for power-limited and non-power-limited wiring requirements. The following wiring requirements shall be observed:

- Power-limited and non-power-limited wiring must be physically separated within the control-unit enclosure
- All power-limited wiring must be separated by at least ¼-inch (6.35 mm) from any non-power-limited wiring
- Power-limited and non-power-limited wiring cannot enter and exit the control-unit enclosure through the same knockout or conduit.

Figure E-1 shows typical wiring for power-limited and non-power-limited circuits.

# Routings for Power-Limited and Non-Power-Limited Wiring



## Note:

Route wiring as shown when combination power-limited and non-power-limited circuits are used.

Direct all non-power-limited wiring to the rear and then to the left-hand side of the enclosure. Tie wrap this wiring to the back of the enclosure to maintain a minimum 1/4-inch separation from all power-limited wiring.

Direct all power-limited wiring outward and then to the right-hand side of the enclosure. Also tie wrap this wiring as necessary to maintain a minimum 1/4-inch separation from all non-power-limited wiring.

Figure E-1. Power-Limited and Non-Power-Limited Wiring

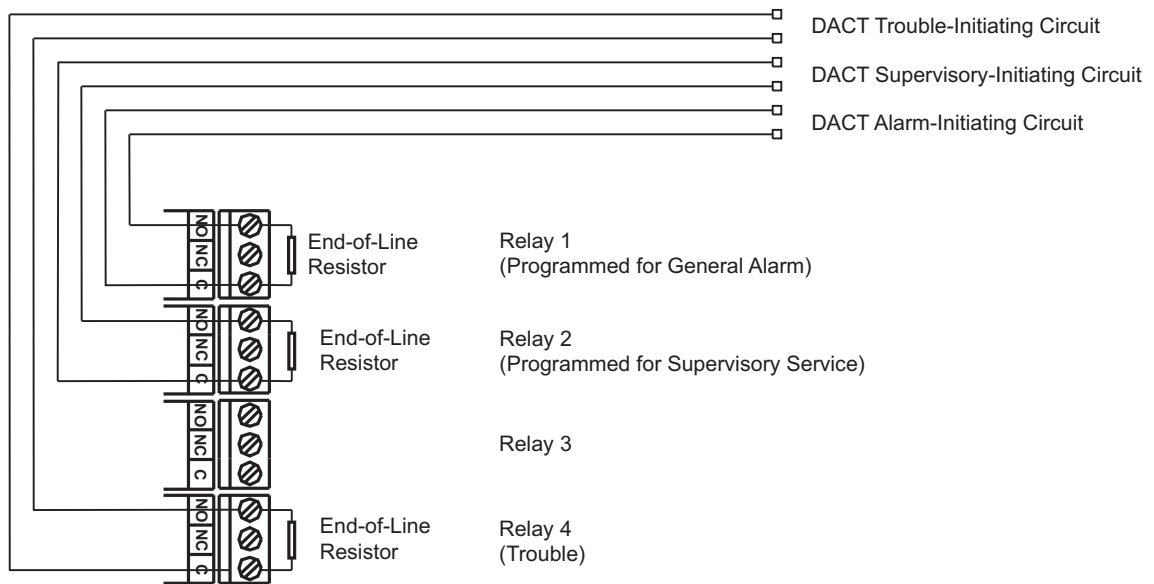
# APPENDIX F

## CENTRAL-STATION OPERATION

The ARIES™ Fire Alarm/Suppression Control Unit can be programmed for central-station operation through the application-specific configuration software. Refer to the ARIES Programmer's Guide to set up a control unit or a networked system for central-station operation.

Use a UL Listed and compatible digital alarm communicator/transmitter (DACT) to transmit the alarm, supervisory, and trouble signals off-premises to the central station. The typical interconnections between the ARIES Control Unit and the DACT are shown in Figure F-1.

Refer to the DACT installation manual to interface the DACT to the ARIES Control Unit and to connect this equipment to the public switched telephone network for off-premises signal transmissions.



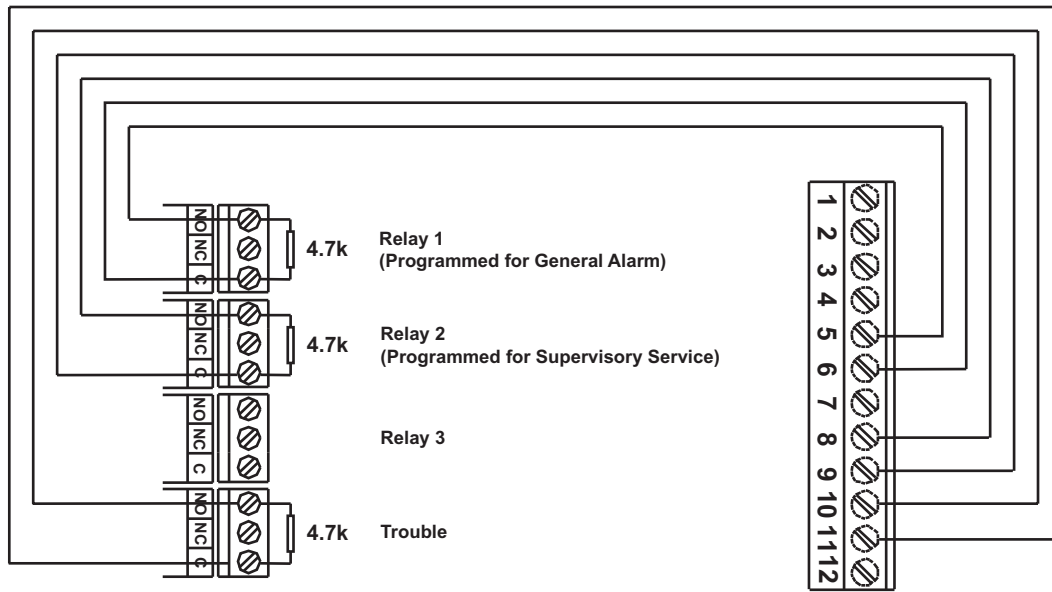
### ARIES Relays

Note:

Model AO Addressable Relays may be substituted for control-unit relays.

Figure F-1. Typical ARIES and DACT Interconnections

Figure F-2 shows the interconnection between the ARIES Control Unit and the Silent Knight Model 5104 DACT as a specific example.



**ARIES Relays**

**Silent Knight 5104 DACT  
Initiating Device Circuits**

**Note:**

**Model AO Addressable Relays may be substituted for control-unit relays.**

Figure F-2. ARIES and Silent Knight Model 5104 DACT Interconnections



## APPENDIX G

# FACTORY MUTUAL REQUIREMENTS FOR PRE-ACTION AND DELUGE SPRINKLER SYSTEMS

ARIES™ Fire Alarm/Suppression Control Unit applications that require Factory Mutual (FM) Approval of pre-action and deluge sprinkler systems must conform to the following guidelines:

- SmartOne® Thermal Detectors, Model THD-7252, must be installed at 20 ft. spacings. The pre-alarm and alarm setpoint ranges are as follows:
  - Pre-Alarm: 80° to 155° F
  - Alarm: 135° to 155° F
- The signaling line circuit must be configured for Style 6 wiring. Refer to Figure 2-14.
- Provide 90 hours of standby battery and 10 minutes of alarm operation. Refer to Appendix A.
- Each release circuit is required to be configured for solenoid activation. The solenoid output on-time period should be set to either “90 seconds” or “on until reset”.

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