P/N 06-236716-001
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Kidde AEGIS™ Conventional Fire Alarm-Suppression Control Unit

Installation, Operation, and Maintenance Manual

KiddeFire Systems
A UTC Fire & Security Company

FOREWORD

Note: This Manual, P/N 06-236716-001, 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 provide guidance to qualified technical professionals for the installation, operation and maintenance of the Kidde AEGIS™ Conventional Fire Alarm-Suppression Control Unit.

Only qualified persons experienced and trained in the installation of this type of equipment should install and configure the Kidde AEGIS. They must be familiar and experienced with the wiring diagrams and components, electrical installation, and familiar not only with NEC, relevant NFPA and local codes but also trained and qualified by Kidde-Fenwal, Inc. Kidde-Fenwal, Inc. is a manufacturer of the components that make up the Kidde AEGIS system, and may not have the opportunity to visit the sites where the product is installed or intended to be installed. It is the responsibility of the professional installer (described above) to properly install and configure the systems. Under no circumstances will Kidde-Fenwal be liable for improper installation or configuration of the systems.

The technical data contained herein is provided for informational purposes only, and should not be used as a substitute for professional judgment. Although, Kidde-Fenwal believes this information to be true and correct, it is published and presented without any guarantee or warranty whatsoever. Kidde-Fenwal disclaims any liability for any use of the data other than as set out in this manual, foreword included.

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TERMS AND ABBREVIATIONS

°C:	°Centigrade
°F:	°Farenheit
A:	Ampere
AC:	Alternating Current
ADA:	Americans with Disabilities Act
AH:	Ampere Hour
AHJ:	Authority Having Jurisdiction
ARC:	Automatic Release Circuit
AWG:	American Wire Gauge
CSFM:	California State Fire Marshal
DACT:	Digital Alarm Comm. Transmitter
DC:	Direct Current
DET:	Detector
EOLD:	End of Line Device
EOLR:	End of Line Resistor
FM:	Factory Mutual
ft.:	Feet
HSD:	High Sensitivity Smoke Detector
Hz:	Hertz (Frequency)
in.:	Inch
IRI:	Industrial Risk Insurers
LCD:	Liquid Crystal Display
LED:	Light Emitting Diode
MEA:	Materials and Equipment Acceptance Division of the City of New York
NAC:	Notification Appliance Circuit
N.C.:	Normally Closed
NEC:	National Electrical Code
NFPA:	National Fire Protection Association
N.O.:	Normally Open
NYC:	New York City
PCB:	Printed Circuit Board
pF:	Pico-farads
P/N:	Part Number
PSU:	Power Supply Unit
RAM:	Random Access Memory
SLC:	Signaling Line Circuit
TB:	Terminal Block
UL/ULI:	Underwriters Laboratories, Inc.
V:	Volts
Vac:	Volts AC
Vdc:	Volts DC
VRMS:	Volts Root Mean Square

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.**

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:

WARNING

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

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.

CAUTION

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.**

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 FM and ANSI/UL 864 requirements for operation at 32° to 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 Technical Support 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 overtighten screw terminals. Overtightening 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

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.

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.

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 Control Units and Accessories for Fire Alarm Systems, ANSI/UL 864, certain programming features or options must be limited to specific values or not used at all as indicated below.

Abort switches may be set-up to operate in any of the following ways:

1. Abort Mode 1* (UL) - Count down to 10 seconds and hold. Resume countdown at 10 seconds.
2. Abort Mode 2 (Reset) - Reset to initial delay setting. Resume countdown for entire delay period.
3. Abort Mode 3 (IRI) - Same as Mode 1, except disable abort function if countdown timer has started.
4. Abort Mode 4 (NYC) - Resets to 120 seconds.
5. Abort Mode 5 - Disables the abort.

*Only Abort Mode 1 is ANSI/UL 864 compliant.

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CHAPTER 1
GENERAL INFORMATION

1-1 INTRODUCTION

The Kidde AEGIS™ is a versatile, flexible, microprocessor-based conventional fire control unit which can be used in a wide range of fire alarm and suppression discharge applications.

1-2 LISTINGS AND APPROVALS

The Kidde AEGIS is listed/approved with the agencies listed in Table 1-1 for system classifications as described in the NFPA Standard 72, "National Fire Alarm Code", ANSI/UL 864 9th edition, "Control Units for Fire Protective Signaling Systems", and CAN/ULC-S527-99. The Kidde AEGIS shall be implemented according to the following:

- NFPA Standard 72, "National Fire Alarm Code"
- NFPA Standard 70, "National Electric Code"
- This Installation, Operation, and Maintenance Manual (IOM)
- Any other standards enforced by a local Authority Having Jurisdiction (AHJ)

Table 1-1. Agency Listing/Approval by System Classification

Agency	System Classification	Type	
		Service	Signaling
UL[4]	Protected Premises Fire Alarm Systems - Protected Premises (Local) Unit - Releasing Device Control Unit	Automatic Manual Waterflow Sprinkler Supervisory	DAC[1] Non-Coded
	Central Station Fire Alarm System - Protected Premises Unit - Releasing Device Control Unit		
cUL[3,4]	Protected Premises Fire Alarm Systems - Protected Premises (Local) Unit - Releasing Device Control Unit (for use in buildings not required to have an annunciator)	Automatic Manual Waterflow Sprinkler Supervisory	Non-Coded
FM[2]	Automatic Releases for External Systems	Automatic Manual Waterflow Sprinkler Supervisory	DAC[1] Non-Coded
	Central Station Signaling Systems		
	Local Protective Signaling		
CSFM	Fire Alarm Control Unit (Non-High Rise) - Local - Central Station - Releasing Device Service	Automatic Manual Waterflow Sprinkler Supervisory	DAC[1] Non-Coded
New York City MEA	Fire Control Releasing Unit	Automatic Manual Waterflow Sprinkler Supervisory	DAC[1] Non-Coded

[1] Must be used with ANSI/UL 864 Listed/FM Approved Silent Knight DACT Model 5104B.

[2] FM approved to FM requirements, ANSI/UL 864 9th edition, and CAN/ULC S527-99.

[3] Per Canadian Building Code, not for use as a high-rise building fire alarm system.

[4] For UL and cUL installation, must not exceed 24 hours standby and 5 minutes of alarm.

1-3 CODES AND STANDARDS

1-3.1 Suppression System Standards

The Kidde AEGIS is listed/approved for the control and activation of suppression systems listed in Table 1-2 which the designer/installer should be familiar with.

Table 1-2. Listed/Approved Suppression Systems

Application	Applicable NFPA Standard
Carbon Dioxide Extinguishing System	NFPA 12
Halon 1301 Fire Extinguishing Systems	NFPA 12A
Installation of Sprinkler Systems	NFPA 13
Water Spray Fixed Systems for Fire Protection	NFPA 15
Foam-Water Sprinkler and Foam-Water Spray Systems	NFPA 16
Dry Chemical Extinguishing Systems	NFPA 17
Wet Chemical Extinguishing Systems	NFPA 17A
Water Mist Fire Protection Systems	NFPA 750
Clean Agent Fire Extinguishing Systems	NFPA 2001

1-3.2 Other Standards

The designer/installer should also be familiar with the following (as applicable):

- NFPA Standard 70, "National Electric Code® 2002 Edition"
- NFPA Standard 72, "National Fire Alarm Code® 2002 Edition"
- NFPA Standard 75, "Standard for the Protection of Electronic Computer/Data Processing Equipment"
- NFPA Standard 76, "Fire Protection of Telecommunications Facilities"
- NFPA Standard 101, "Life Safety Code® 2003 Edition"
- NFPA Standard 110, "Standard for Emergency and Standby Power Systems 2002 Edition"
- UL Standard 38, "Manual Signaling Boxes for Fire Alarm Systems"
- UL Standard 268, "Smoke Detectors for Fire Protective Signaling Systems"
- UL Standard 268A, "Smoke Detectors for Duct Application"
- UL Standard 1481, "Power Supplies for Fire Protection Signaling Systems"
- Underwriter Laboratories of Canada (cUL) ULC-S527-99, "Standard of Control Units for Fire Alarm Systems"
- FM Standards 1011 and 1012, "Approval Standard for Deluge Systems and Preaction Systems"
- FM Standard 3011, "Central Station Service for Fire Alarms and Protective Equipment Supervision"
- Any others mandated by the building owner and/or the local Authority Having Jurisdiction (AHJ)

1-4 CONTROL UNIT DESCRIPTION

The Kidde AEGIS consists of the following: Enclosure with Door, Power Supply Unit, Printed Circuit Board (PCB), and Secondary Standby Batteries (ordered separately).

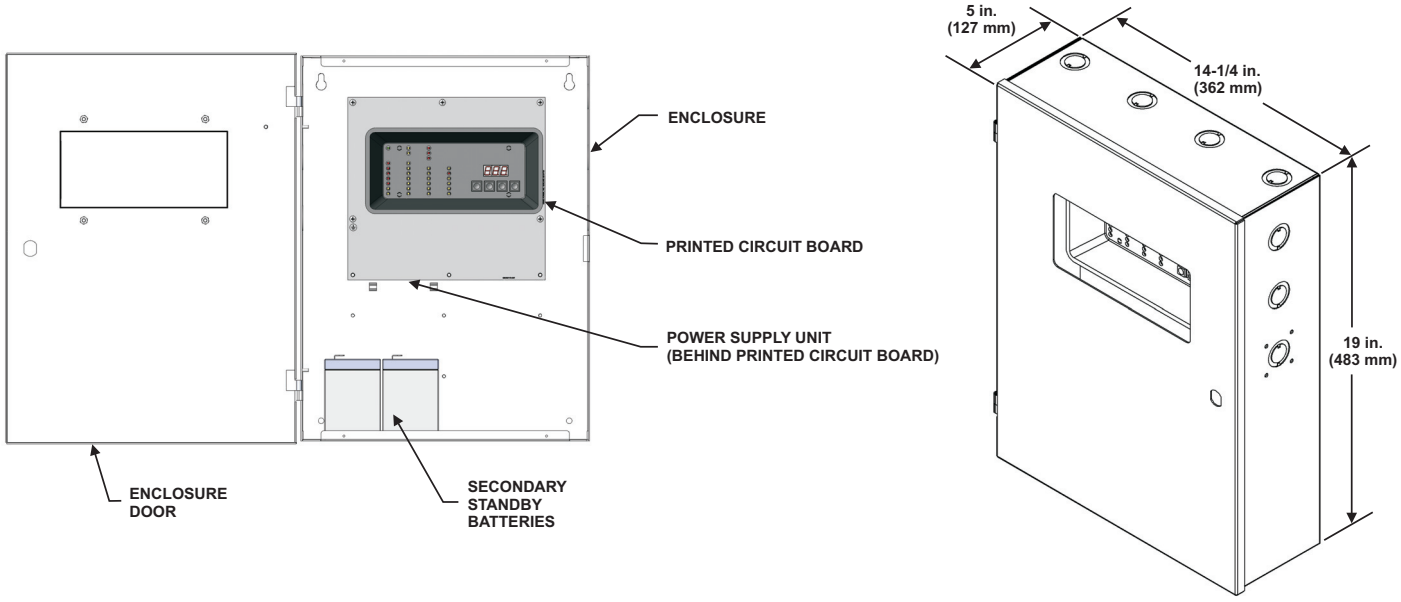


Figure 1-1. Control Unit Components and Dimensions

1-4.1 Enclosure with Door

The enclosure meets the requirements for NEMA Type 1 and is intended to be used indoors in a relatively dust-free environment. The enclosure has a hinged door that swings open 180° for accessibility. The enclosure can be surface or recessed mounted. A trim ring is available for recessed mounting. The enclosure is constructed of 18 gauge sheet steel. A steel door is held closed by a key lock. All operator interface switches and indicators are located behind the locked cover. The enclosure is large enough to house two 12 Vdc, 12 AH batteries required for standby operation.

1-4.1.1 ENCLOSURE DOOR OPTIONS

The standard enclosure door allows the operator to view the operator interface display mounted on the PCB behind a plexiglass window. The AEGIS is also available with an alternate door that allows an abort and manual release switch to be mounted. The manual release switch incorporates a lift type guard and the abort switch incorporates a safety guard to prevent inadvertent activation.

1-4.1.2 OPTIONAL DEAD-FRONT PANEL

The control unit is also suitable for mounting a dead-front panel (P/N 06-220175-001) that is mandatory for use in Canada. The dead-front is intended to protect the user from inadvertent access to any exposed potentially hazardous/high voltage components.

1-4.2 Power Supply Unit

The power supply unit mounts behind the circuit board and operates from either 120 Vac 50/60 Hz or 240 Vac 50/60 Hz. It powers the system and also charges a standby battery set which provides backup in case of loss of power from the AC source.

The battery charger is capable of charging sealed lead-acid 24 Vdc batteries of capacity up to 68 AH. The charge voltage is 27.4 Vdc nominal.

The actual battery capacity used for an application is a function of the units components, devices and configuration. Refer to Appendix A for battery capacity calculations.

The power supply monitoring circuit provides a trouble signal if any of the following occur:

- Loss of AC input or if AC power falls below 85% of nominal. This causes an immediate change-over to battery operation and a trouble signal after 30 seconds.
- Detection of a ground fault.
- Low charging current.
- High output voltage

The battery monitoring circuit provides a trouble signal if any of the following occur:

- The battery is installed backwards.
- The battery is disconnected.
- Battery voltage falls below 19.5 V (this condition causes the battery to disconnect and can only be cleared when primary AC main power is restored).

1-4.3 Printed Circuit Board

The printed circuit board provides an interface or terminals for the following:

- Power Supply Unit
- Battery
- Initiating Device Circuits (System Inputs)
- System Outputs
- Operator Interface
- Auxiliary Power Output

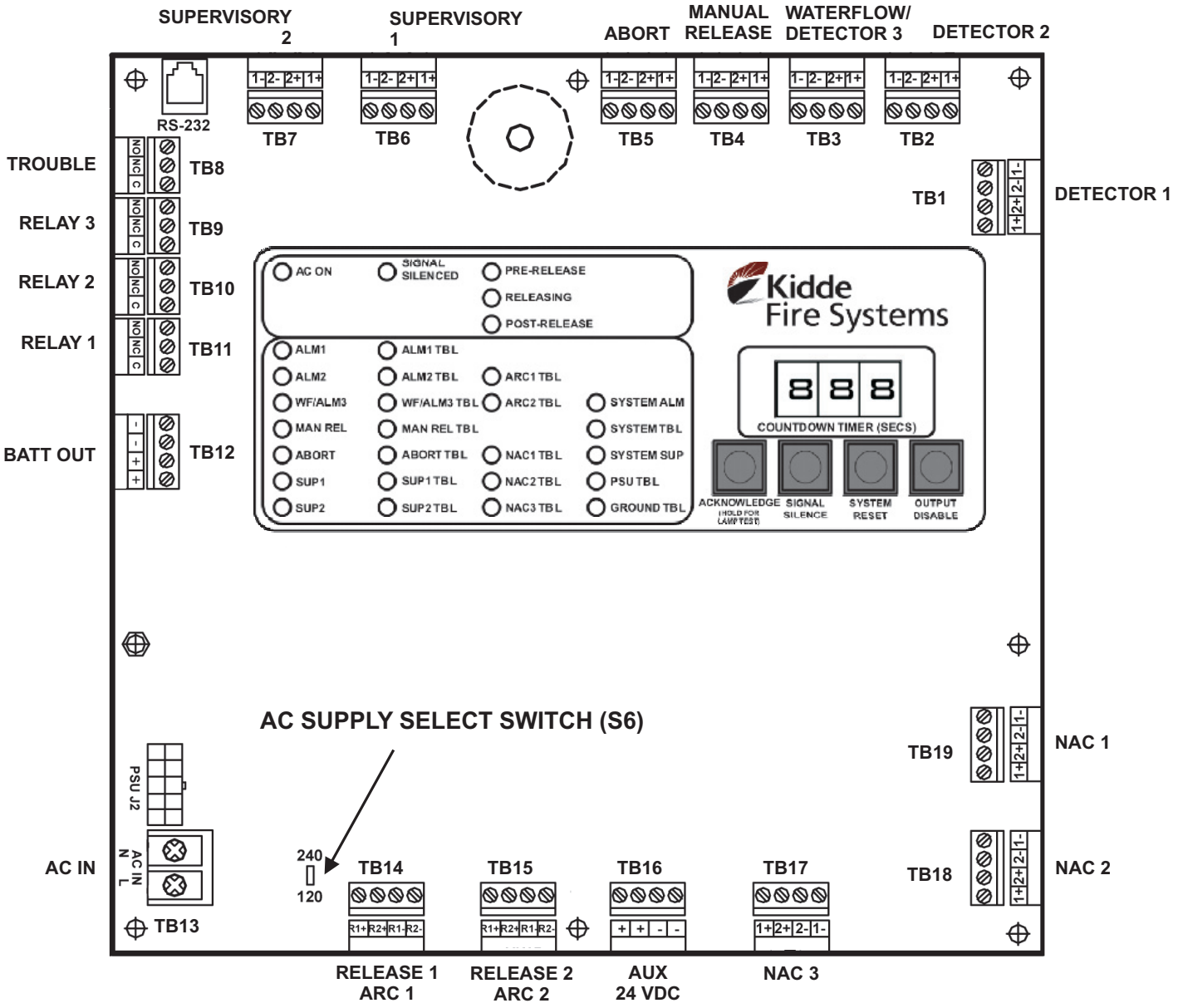


Figure 1-2. Printed Circuit Board (PCB)

1-4.3.1 OPERATOR INTERFACE

All alarms, troubles and supervisory signals are received at the control unit and displayed for the operator. The Operator Interface consists of four main components and are visible and/or audible through a transparent window:

- LED Indicators
- Control Switches
- Digital Display
- Buzzer

1-4.3.1.1 LED Indicators

The following is a list of control unit indicators and their LED display color.

Table 1-3. LED Indicator and Display Color

Indicator	Display Color
AC Power On	Green
System Alarm	Red
System Supervisory	Yellow
System Trouble	Yellow
Signal Silenced	Yellow
Agent Pre-Release	Red
Agent Releasing	Red
Agent Post-Release	Red
Input Activated	Alarm, Manual Release, and Abort — Red Other — Yellow
Input Trouble	Yellow
Release Output Trouble	Yellow
NAC Output Trouble	Yellow
Ground Fault	Yellow
Power Supply Fault	Yellow

1-4.3.1.2 Control Switches

There are four Control Switches on the Operator Interface. They are:

- **Acknowledge** — Silences the buzzer which sounds when a new supervisory, alarm, or trouble is detected. Holding this control switch for five seconds, activates the control unit Lamp Test. This control switch is also used in conjunction with the System Reset control switch to enter the configuration mode.

Note: Microprocessor and PCB troubles are latching and cannot be silenced or reset. Refer to Chapter 6, Troubleshooting.

- **Signal Silence** — Silences the NAC circuits.
- **System Reset** — Disconnects power from all input and output circuits and the auxiliary output for a period of five (5) seconds. This control switch is also used in conjunction with the Acknowledge control switch to enter the configuration mode.
- **Output Disable** — Disables the release of agent, and as selected in the system configuration, the activation of NAC outputs and/or Programmable Relays. This is used when performing maintenance on the system.

1-4.3.1.3 Digital Display

The three digit display is used for the following:

- View and enter field configuration settings
- Display troubleshooting/diagnostic codes
- Display battery voltage and charging current
- Count-down timer for agent release

1-4.3.1.4 Buzzer

The buzzer will sound when an alarm, trouble or supervisory condition is present.

1-4.3.2 INITIATING DEVICE CIRCUITS (SYSTEM INPUTS)

The Kidde AEGIS has the following system inputs:

- Three (3) Detection Inputs
- One (1) Manual Release
- One (1) Abort
- Two (2) Supervisory Inputs

1-4.3.2.1 Detection Inputs

The control unit provides two dedicated initiating/detector input circuits, plus a third that can be used as a Waterflow alarm or an independent initiating/detector input. Inputs from these circuits are latching. Refer to Chapter 3, Configuration for configuration settings.

Certain jurisdictions require NAC outputs due to Waterflow input to be non-silenceable. The configuration settings in Chapter 3, Configuration allows the user to select the specific mode needed for a given application.

Each detector circuit is suitable for Class A or Class B wiring and is capable of operating with up to 25 smoke/electronic heat detectors and a quantity of contact-closure type devices (up to the limitation imposed by wiring resistance). For a list of compatible devices, refer to Appendix B.

1-4.3.2.2 Manual Release

Operation of a manual release pull station activates the NACs and initiates the release sequence. The configured time delay and agent release output is activated after the site configured time delay. Manual release overrides any other time delay. The circuit is suitable for either Class A or Class B wiring and any quantity of contact closure type manual release stations subject to the limitations imposed by the wiring resistance. The manual release will also override any activated abort switch.

1-4.3.2.3 Abort

Activation of the abort station temporarily delays the impending agent release. Operation of the abort switch during non-alarm conditions will cause a trouble signal. However, if the Abort switch is pressed and held during either a non-alarm condition or during a first alarm condition, and remains held until an alarm pre-release condition exists occurs, the Abort function will execute as normal, per the configuration setting. The following abort modes are configurable.

Abort Mode 1 (ANSI/UL 864) - When the abort input is received, the release timeout continues and stops at ten (10) seconds. If the timeout was less than ten (10) seconds when the abort signal is received, timeout is reset to ten (10) seconds. When the abort is released, the timeout resumes. Successive aborts are permitted.

Abort Mode 2 (Reset) - When abort is activated, the timer is stopped and the full delay is loaded into it. The timeout begins when the Abort control switch is released. Successive aborts are permitted. If Mode 2 is selected with a zero (0) abort delay, the abort is disabled. Mode 2 does not comply with ANSI/UL 864s.

Abort Mode 3 (IRI) - This mode is only valid for cross-zoned release when both initiating inputs are needed to cause the agent release activation (if selected for single zone, the abort will be disabled). This mode is similar to Mode 1 with the exception that the abort will function only if held after the receipt of the first alarm, but prior to the receipt of the second alarm. Abort activation at any other time is ignored.

Abort Mode 4 (New York City) – When the abort is activated, the timer is stopped and reset to 120 seconds. The timer will not start as long as the Abort switch is held. The timeout restarts when the Abort switch is released. Successive Abort switch operations resets the timer back to the full 120 second delay. Selection of this mode does not have an over-ruling effect on any programmed manual or auto-release delays, regardless of whether an abort has actually occurred. In this mode, the delay from a manual release is forced to zero (0), and the auto-release delay is restricted to a maximum of 30 seconds. NYC Mode does not comply with ANSI/UL 864.

WARNING **The setting of non-compliant delays with New York City Abort is not error-trapped or over-ruled by the control unit.**

Abort Mode 5 - Disables the abort.

The circuit is suitable for either Class A or Class B wiring and any quantity of contact closure type abort stations subject to the limitations imposed by the wiring resistance.

1-4.3.3 SUPERVISORY INPUTS

The Supervisory Circuits accept inputs from monitoring devices such as pressure switches on agent cylinders or sprinkler systems.

1-4.4 System Outputs

The Kidde AEGIS has the following system outputs:

- Three (3) Notification Appliance Circuits (NACs)
- Two (2) Agent Release Circuits (ARC)
- Three (3) Programmable Relays
- One (1) Dedicated Trouble Relay
- One (1) Auxiliary Power Output

1-4.4.1 NOTIFICATION APPLIANCE CIRCUITS (NACs)

The AEGIS has three dedicated notification appliance circuits (NAC). Any NAC can be configured in system configuration to operate on or more on First Alarm, Pre-Release, and Releasing conditions. In the case that the control unit is being used in a non-suppression application, the three NACs may be configured to operate on Alarm from DET 1, DET 2, and DET 3. Each circuit is driven independently and is user configurable for either Class A (Style Z) or Class B (Style Y) operation with the following coded patterns:

- 60 beats per minute (BPM)
- 120 beats per minute (BPM)
- Temporal

- Continuous

The three 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 MT and NS series network appliances provide the option to use silencable horns and non-silenceable strobes on the same NAC.

Multiple NAC circuits (connected to audible devices only) programmed with the same master code pattern are synchronized, regardless of any differing starting times that preceded their concurrent operation.

The control unit is designed for user selection of an intelligent synchronization feature. This feature allows the silenceable horn to be shut off while the strobe continues to flash in synchronized fashion. Each NAC is rated 1.5A at 24 Vdc and is suitable for polarized 24 Vdc appliances only.

The maximum number of synchronized devices is 35.

1-4.4.2 AGENT RELEASE CIRCUITS (ARC)

The AEGIS has two (2) dedicated, independently controlled Class B ARCs compatible with devices listed in Appendix B.

The release circuit may be programmed for an ON time of 90 seconds for Control Heads and either 10 minutes, 15 minutes or On-until-reset for Deluge/Pre-Action Solenoids. When programmed for initiators, the ARC remains ON for 200 milliseconds.

The ARCs can be configured to activate on a variety of conditions based on inputs from manual release, detection circuits and supervisory circuits. Activation of the ARCs can be delayed from 0 to 60 seconds (in 10 second increments) in automatic release mode. Manual Release can be delayed from 0 to 30 seconds (in 10 second increments).

The ARCs are suitable to operate different release device types on both circuits. In other words, ARC1 may activate solenoids and ARC2 may activate an initiator. See Chapter 2, Installation.

ARCs are not inherently power-limited. For the circuits to be power-limited, the ARC should be field terminated with an in-line supervisory device P/N 06-220023-001. ARCs activating initiators cannot be made power-limited.

1-4.4.3 PROGRAMMABLE/DEDICATED RELAYS

The Kidde AEGIS has three independently programmable relays and one dedicated Trouble relay. The relays are Form-C type with contacts rated 3A @ 30 VDC / 120 VAC (resistive).

1-4.4.3.1 Programmable Relays

The three programmable relays are normally in the de-energized condition and will energize upon receipt of one of the following listed conditions. These relays will latch on change of state and shall remain latched until manually reset by the System Reset control switch.

- 1st Alarm: (DET 1, DET 2, DET 3/WF, or Manual Release)

Note: DET 3/WF will only be active if it's part of the activation condition.

- 1st Alarm: (DET 1, DET 2, DET 3/WF, SUPV 1, or Manual Release)

Note: SUPV 1 will only be active if it's part of the activation condition.

- Agent Pre-Release Condition
- Agent Release Condition
- Manual Release Input
- Waterflow Input
- Abort Input
- Supervisory Input
- Any Alarm: (DET 1, DET 2, DET 3/WF, or Manual Release)

1-4.4.3.2 Trouble Relay

The trouble relay is "normally energized" with AC Power ON and will de-energize upon receipt of a trouble condition. This change is non-latching and the relay will revert to its normal state upon removal of the trouble state. For Central Station operation, especially with an intermittent AC power supply, it may be desirable to delay the change of state of the trouble relay in case of AC power failure. See Chapter 3, Configuration to enable this configuration.

1-4.4.4 Auxiliary Power Output

The AEGIS provides one auxiliary power output rated 1 Amp at 24 Vdc (Nominal) and is intended to be used with 4-wire devices such as Flame Detectors, Smoke Detectors, etc. All applicable compatible devices contained in this manual may be used. For FM installations, use FM Approved Flame Detectors.

Note: Operation of the System Reset control switch will interrupt the Auxiliary Power Output for a period of time not exceeding five (5) seconds.

CHAPTER 2
INSTALLATION

2-1 INSTALLATION MATERIALS

2-1.1 Materials Provided

Check and ensure that the received shipment of the Kidde AEGIS™ unit consists of:

Table 2-1. Kidde AEGIS Control Unit Contents

Description	Part Number	Quantity
Enclosure Assembly (with door)	06-220132-001	1
Power Supply Unit	06-118394-001	1
Printed Circuit Board (PCB)	06-220113-001	1
Bezel Assembly	06-220114-001	1
Hardware Kit	06-220147-001	1
Installation/Configuration Kit	06-220148-002	1
Operating Instructions	06-236719-002	1
Keys (in poly bag)	06-250319-013	1

The Hardware Kit contains the following:

Table 2-2. Hardware Kit Contents (P/N 06-220147-001)

Description	Quantity
Ground Wire Assembly (Power Supply Unit Enclosure)	1
Power Supply Unit Wiring Harness	1
Battery Harness (2 long jumpers, 1 in-line fuse holder)	1
AC Safety Cover/Warning Label	1
3/4-inch Nylon Spacer	1
Nylon Pan Head Screw (8-32 x 1-1/4)	1
Threaded Aluminum Standoff (8-32 x 2-3/8)	8
INT Sems Screw (8-32 x 5/16)	8
Power Supply Unit Rentention Screw (M3 x 5)	1
End of Line Resistor Assembly (5.1K)	10
1/4-inch x 1-1/4-inch 10A Time Delay Fuse Cooper Bussman MDA-10-R	1

2-1.2 Materials Required

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

- No. 10 or 3/16-inch mounting hardware

- Electrical wiring and conduit
- 4-inch electrical junction boxes (as required)
- Wire-nuts and crimp-on terminals (as required)
- Ground strap (for use when handling printed circuit boards)

2-2 INSTALLATION GUIDELINES

2-2.1 Electrical Connections

Take special care when installing the system and follow the guidelines given in the following paragraphs.

Install electrical conduit and wiring in accordance with applicable National Electrical Code, NFPA Standard and state and local building code requirements.

The incoming AC voltage must be stable and within the permissible voltage range. This is especially important in new construction where incoming power may be high or unstable, and temporary connections may cause large inductive voltage spikes.

Most supervised circuits use voltage or current sensing circuits that are sensitive to induced voltages on the sensor wiring.

CAUTION

Do not under any circumstances run AC power, speaker, PA, intercom or switch control wiring with inductive loads in the same conduit or in the immediate vicinity of sensor wiring. Control unit damage or malfunction may result.

2-2.2 Grounding and Lightning Protection

The system should never be connected to a conduit or green wire circuit that is also used to power resistance heating, motors, fans, air-conditioning equipment or fluorescent lighting circuits. Leakage currents from these types of circuits into the ground return could damage sensitive system components.

A separate earth ground or cold water pipe with properly bypassed water meter should be used. All external devices such as horns or alarm bells should have their housings grounded. All low-level signal cables should have foil shielding and a drain wire to be installed in their own grounded metallic conduit.

Ground only one end of the drain wire or shield, since a ground on both ends will provide a current path and thus subject the circuit to induced RF currents and noise. A minimum alternative would be to use shielded #16 AWG twisted pair wire.

CAUTION

Adequate lightning protection must be provided for the incoming power at the building entry. Arrestor circuitry and earth grounding should be in accordance with article 250 of the National Electric Code.

There is no known protective device available that is capable of protecting equipment from damage caused by a direct lightning hit due to the extremely high energy released (10 million to 100 million volts at 10,000 to 30,000 or more amperes). However, line surges from indirect strikes and voltage spikes induced through power line load switching can be minimized by the addition of transient suppressors.

Although the Kidde AEGIS circuits have transient protection devices, additional protection is required in areas subject to above average lightning activity or induced voltage spikes and fluctuations due to power line load switching.

2-2.3 Terminating Wiring Conductors

For all subassemblies, strip 1/2-inch (13 mm) and leave straight for insertion beneath head of screw on one side only (do not loop conductor around screw). If using stranded conductor, twist and tin or use terminal lug.

2-2.4 Maximum Wiring Length

Table 2-3 lists wiring gauge recommendations, resistance, and maximum length.

Refer to Appendix C for maximum allowable wire resistance for alarm signaling and initiating circuits.

Table 2-3. Wiring Gauge Recommendation, Resistance, and Maximum Lengths

Wire Gauge	Resistance/1000 ft. (305 m)
12 AWG	1.588 ohms
14 AWG	2.525 ohms
16 AWG	4.016 ohms
18 AWG	6.385 ohms

2-2.5 DC Load Distribution

Operating power for all initiating and indicating circuits is provided by the power supply. 4-wire 24 Vdc smoke detectors and other listed, compatible external 24 Vdc loads may be powered from the power auxiliary output. DC load calculations must be performed to determine if the power supply is capable of providing the total system current demand. The calculations will also determine the minimum standby battery capacity in accordance with applicable NFPA codes. Refer to Appendix A for Battery Capacity Calculations.

2-2.6 Enclosure Location

Care should be taken in planning the enclosure location. The enclosure is intended only for indoor use in a location free from rain, condensation, excessive dust, moisture or other airborne contamination. The enclosure must not be exposed to ambient conditions outside those specified in Appendix C.

CAUTION **Installation on firewalls is generally not recommended. However, in situations with no suitable alternative locations, ensure acceptance by the local AHJ before installation.**

Position the enclosure in a readily accessible and easily visible location. Ensure there is 1-1/2 ft. (457 mm) clearance or more in front and to the door hinge side of the enclosure for the door to swing open completely.

The type of hardware is at the discretion of the installer, but must be in accordance with good electrical and safety practices.

2-3 INSTALLATION PROCEDURE

2-3.1 Mounting the Enclosure Assembly, P/N 06-220132-001

The control unit is designed to be surface or semi-flush mounted. Use screws or bolts no smaller than No. 10 (3/16-inch or 5 mm) in diameter to secure the enclosure to wall studs or masonry walls. Never mount the enclosure to drywall or plaster walls without securing to studs.

Locate the middle of the enclosure approximately 66-inches (1676 mm) above the floor so the control unit display is positioned at a convenient height for the operator. Refer to Figure 2-1. Figure 2-2 shows the control unit enclosure dimensions.

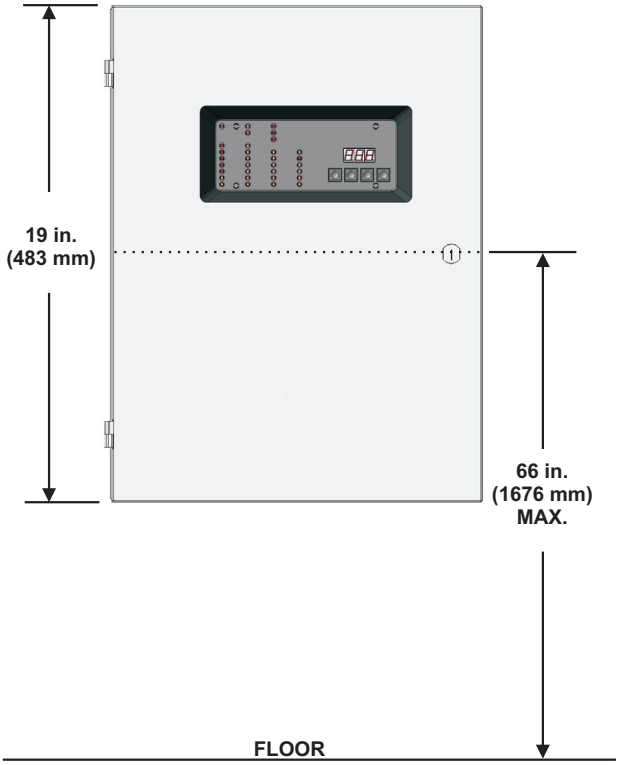


Figure 2-1. Installation Height Above Floor

Perform the following steps prior to installing the enclosure:

1. Disconnect the ground wire that connects the enclosure door to the back box.
2. Remove the control unit front door by rotating the door approximately 90° from its closed position. Lift up the door to allow the door's hinge pins to clear the mating-hinge sockets on the back box.
3. Remove the separately packaged power supply, printed-circuit board, and installation kit, and set them and the front door aside in a safe location to prevent damage.

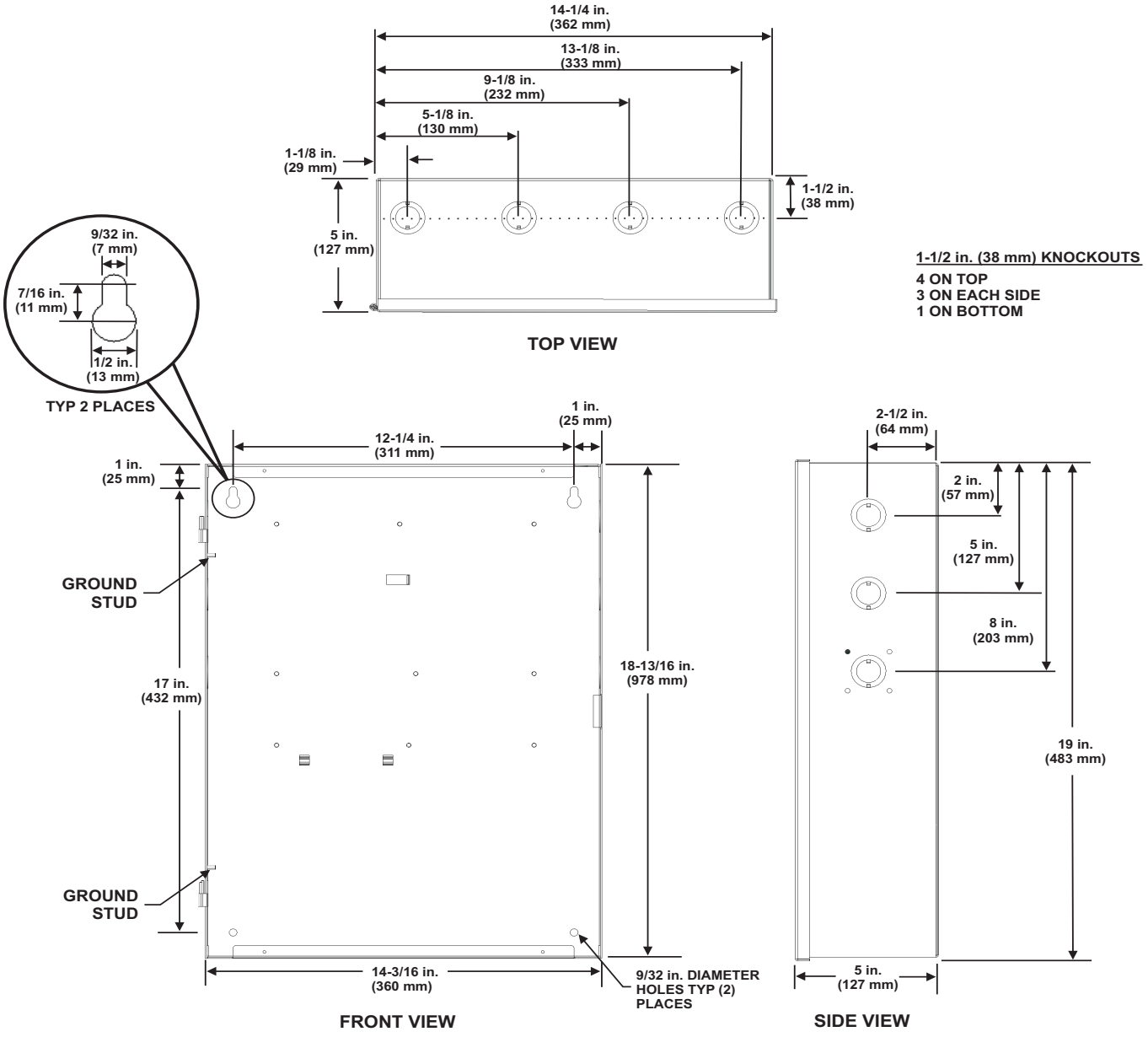


Figure 2-2. Control Unit and Surface Mounting Dimensions

2-3.1.1 SURFACE MOUNTING

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 (No. 10 or 3/16-inch (5mm)). There are two holes and two keyhole slots in the backbox that serve as a template for surface mounting. The type of hardware to be used is at the discretion of the installer, but must be installed in accordance with NFPA 70 (NEC).
2. Insert the upper two fasteners in the wall. Leave approximately 1/4-inch (6 mm) 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 (600 to 900 mm) of wire length in the enclosure for future internal connections.

2-3.1.2 SEMI-FLUSH MOUNTING

1. Cut and plumb an opening of dimensions as shown in Figure 2-3 in the wall on which the control unit will be semi-flush mounted.

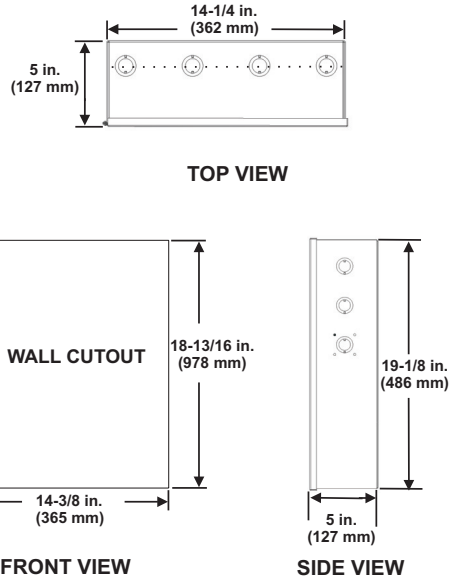


Figure 2-3. Semi-Flush Mounting Dimensions

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-inch (19 mm) from the surface of the wall. Secure the back box to the wall with appropriate mounting bolts (up to 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 (600 to 900 mm) of wire length in the enclosure for future internal connections.

2-3.1.3 SEMI-FLUSH MOUNTING WITH TRIM RING, P/N 76-600000-007

A Trim Ring (P/N 76-600000-007) can be used to enhance the final installed appearance of a semi-flush mounted AEGIS unit.

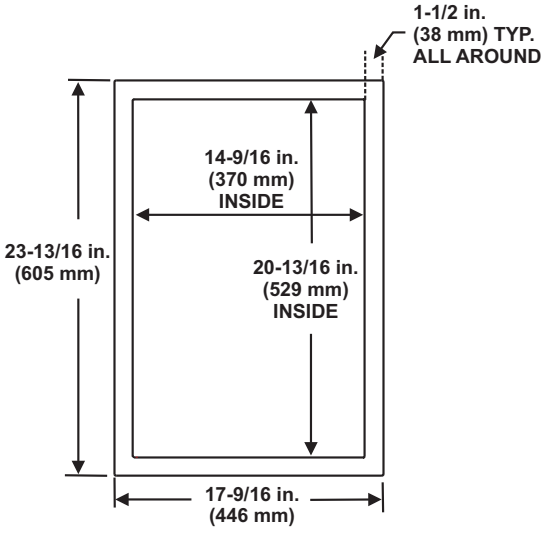


Figure 2-4. Trim Ring Dimensions

1. Ensure that the enclosure is semi-flush mounted as directed in Paragraph 2-3.1.2.
2. Prepare the surface of the wall for trim-ring installation by clearing all dirt and debris within 1-1/2 inches (38 mm) of the back-box perimeter. Ensure that this perimeter area is clean and dry.
3. Install the trim ring by first removing the protective strips that cover the adhesive tape on its back surface. Slip the trim ring over the back box with the adhesive-tape side toward the wall. The trim ring has tabs on both sides that aid in aligning it with the back box. Press all sides of the trim ring to the wall when it is correctly aligned and plumb with the back box.

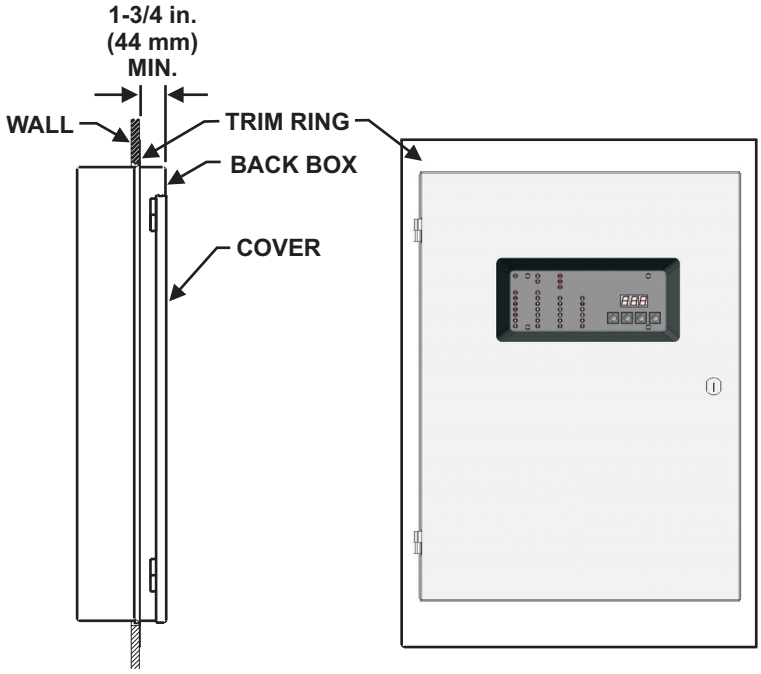
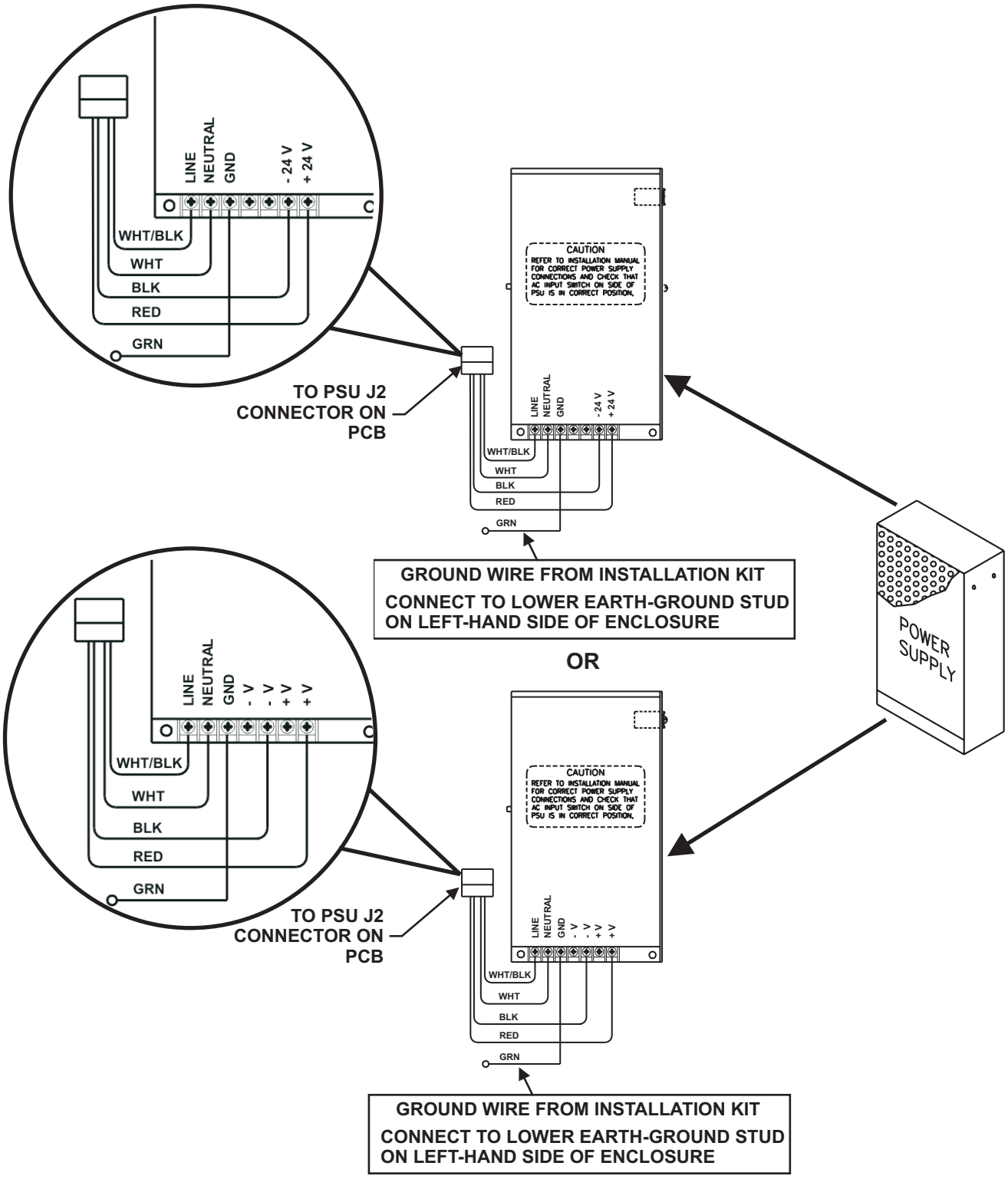


Figure 2-5. Trim Ring Installed

2-3.2 Installing the Power Supply Unit, P/N 06-118394-001

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

1. 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.
2. Remove the power supply unit from its shipping carton.
3. The AEGIS unit is supplied with one of two equivalent power supplies. Compare the terminal block wiring legend on the provided power supply with the diagrams in Figure 2-6 and connect the wiring harness as shown.
4. Connect the Power Supply Wiring Harness (P/N 06-220025-001) to the power supply unit. Next connect the fork end of the green ground wire (P/N 06-129928-002) to the earth-ground terminal of the power supply unit. Refer to Figure 2-6 and Figure 2-7 for wire harness and earth-ground connections.



ATTENTION!
THE CONTROL UNIT IS SUPPLIED WITH ONE OF TWO EQUIVALENT POWER SUPPLIES. COMPARE THE TERMINAL BLOCK WIRING LEGEND ON THE PROVIDED POWER SUPPLY WITH THE DIAGRAMS AND CONNECT THE WIRING HARNESS AS SHOWN IN THE APPLICABLE DIAGRAM.

Figure 2-6. Power Supply Unit Wiring

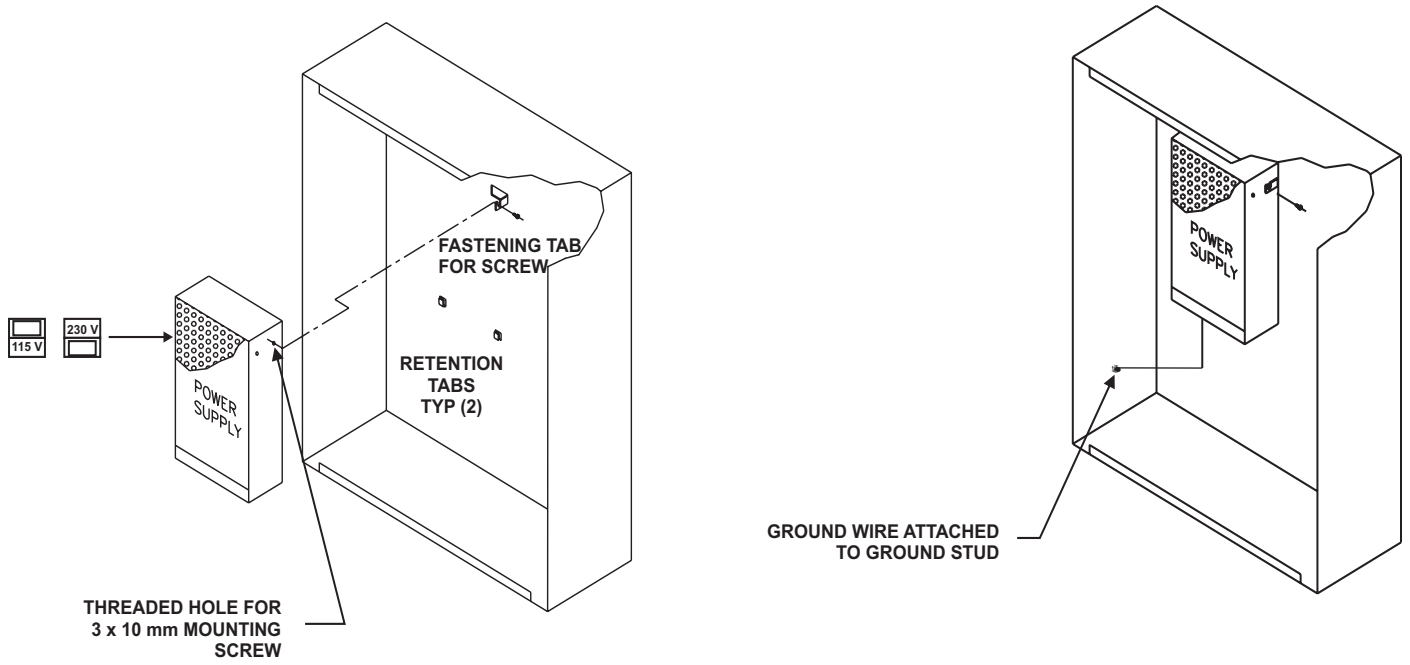


Figure 2-7. Power Supply Unit Installation

5. Thread the supplied 3 x 10 mounting screw part way into the lower of the two threaded holes of the power supply unit. See Figure 2-7.
6. Set the power supply unit AC-input-voltage selector switch to either 115 Vac or 230 Vac. Use the 115 Vac position for 110-120 Vac supplies and 230 V position for 230-240 Vac supplies. See Figure 2-7.
7. Locate the two power supply unit retention tabs and the fastening tab in the enclosure's back panel.
8. 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.
9. Tighten the screw onto the fastening tab.
10. Connect the ring end of the power supply's green ground wire (P/N 06-129928-002) to the earth-ground stud on the lower left side of the backbox wall. See Figure 2-6 and Figure 2-7.

2-3.3 Installing the Printed Circuit Board (PCB), P/N 06-220113-001

CAUTION **Use a ground strap to prevent static discharge that could damage sensitive components on the Printed Control Board.**

1. 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.

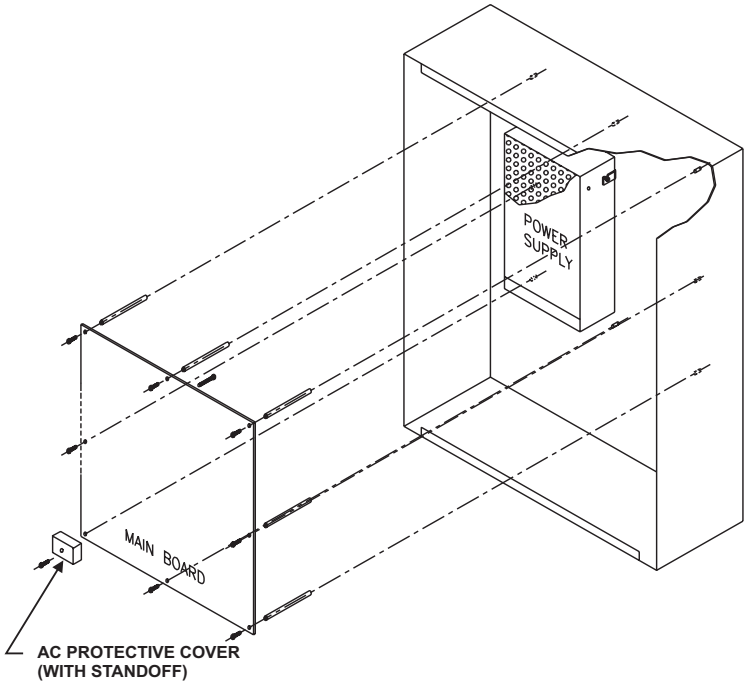


Figure 2-8. PCB Installation

2. Securely screw one each of the eight (8) 2-3/8 inch (60 mm) aluminum standoffs (P/N 06-118533-001) onto each of the eight (8) threaded PEMs on enclosure backbox (top three rows) as shown in Figure 2-8.

Note: Do not use the bottom row of threaded PEMs.

3. 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 shipping carton.
4. Remove the PCB from its shipping carton and position each of its eight (8) mounting holes over one of the aluminum standoffs so that the AC-input terminal block is in the lower-left corner.
5. Secure the PCB to the standoffs using the seven (7) 8-32 x 5/16 (8 mm) (P/N 06-250354-082). 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 Paragraph 2-3.4.1.
6. Place the free end of the longer of the two factory-installed Earth-Ground wires under the screw assembly of the PCB (marked detail A in Figure 2-9). Tighten the remaining eight screws. Be careful not to over-tighten.
7. Plug the harness from the power-supply unit into Connector J2 in the lower-left-hand corner of the PCB.

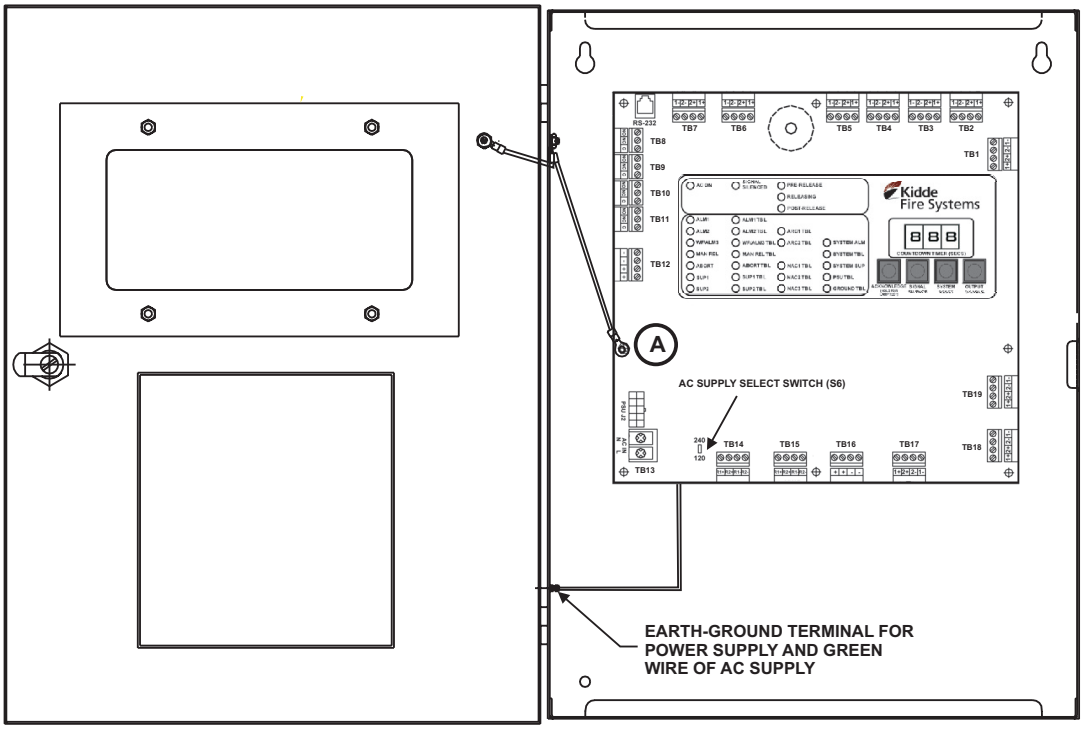


Figure 2-9. PCB-to-Cabinet Grounding Diagram

2-3.4 AC Input and Battery Backup Connections

The control unit uses AC power (by others) as the primary power source, together with a 24 Vdc standby battery.

WARNING

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

2-3.4.1 CONNECTING AC POWER

AC power must be provided to the control unit using a 3-conductor 14 AWG cable. The AC power cable shall be run through a one-inch conduit from a dedicated, 15-ampere circuit breaker. The conduit must be attached to the left side of the enclosure through one of the upper left corner knockouts.

Perform the following steps to connect AC power to the control unit.

1. Ensure the circuit breaker at the dedicated AC power source is in the OFF position.
2. To ensure correct AC supply supervision, for 110-120 Vac operation, move the AC Supply Select Switch (S6) on the PCB to the 120 position. For 220-240 Vac operation, move it to the 240 position.
3. Attach the 3-conductor AC power cable to TB13 on the PCB.

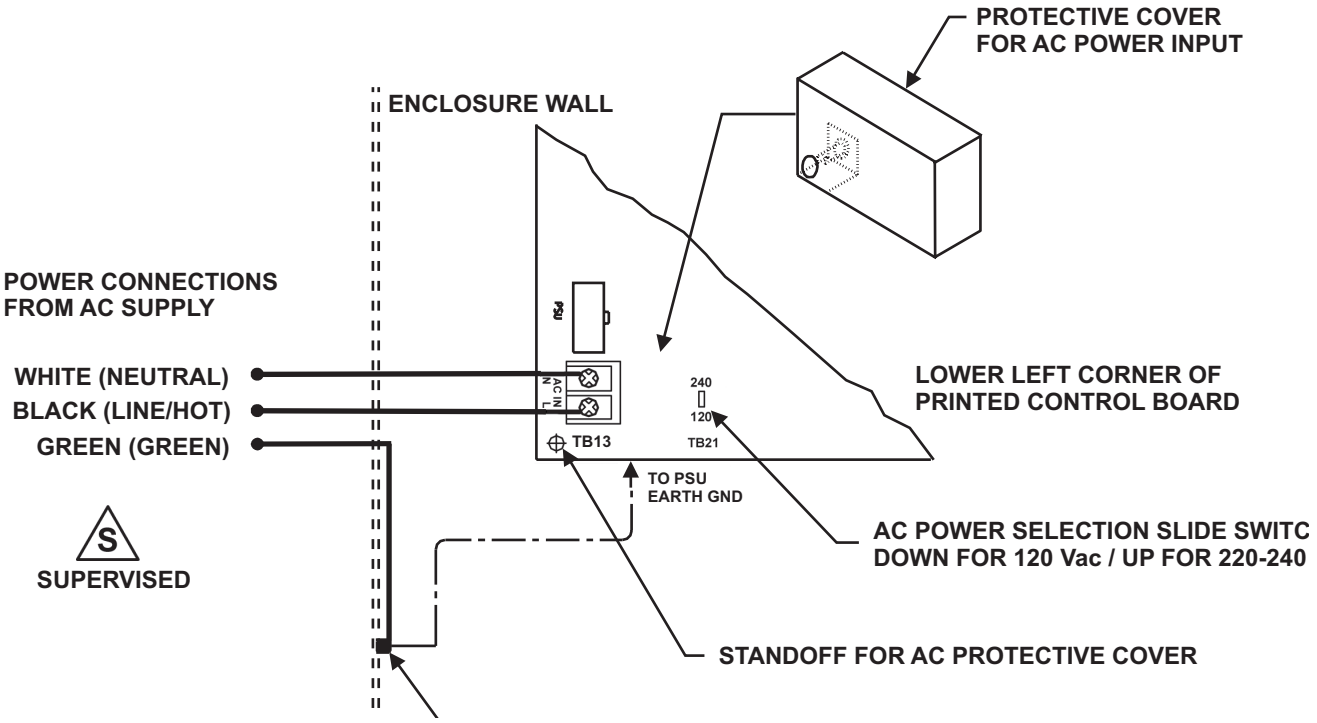


Figure 2-10. Primary Power Connections

4. To install the Protective Cover for AC Power input, fold along scored lines as shown in Figure 2-10.
5. Insert spacer and align thru holes and spacer with PCB standoff in lower left corner.
6. Attach to PCB with nylon screw.

2-3.5 Installing Backup Batteries

Perform the following steps to install the backup batteries

1. Using Appendix A, Battery Capacity Calculations, calculate the size of the battery required for the application.
2. Ensure that the batteries are being placed into service within three (3) months of the ship date if stored at about 75°F (24°C) or within one (1) month if stored at 100°F (38°C). For longer storage time, they require charging per manufacturer's specification to prevent permanent loss of capacity.
3. Observing polarity, connect the two (2) or four (4) 12-volt series-wired batteries of the required ampere hour (AH) capacity to TB12 (Batt Out) using battery cable (P/N 06-129925-002). Refer to Figure 2-11.

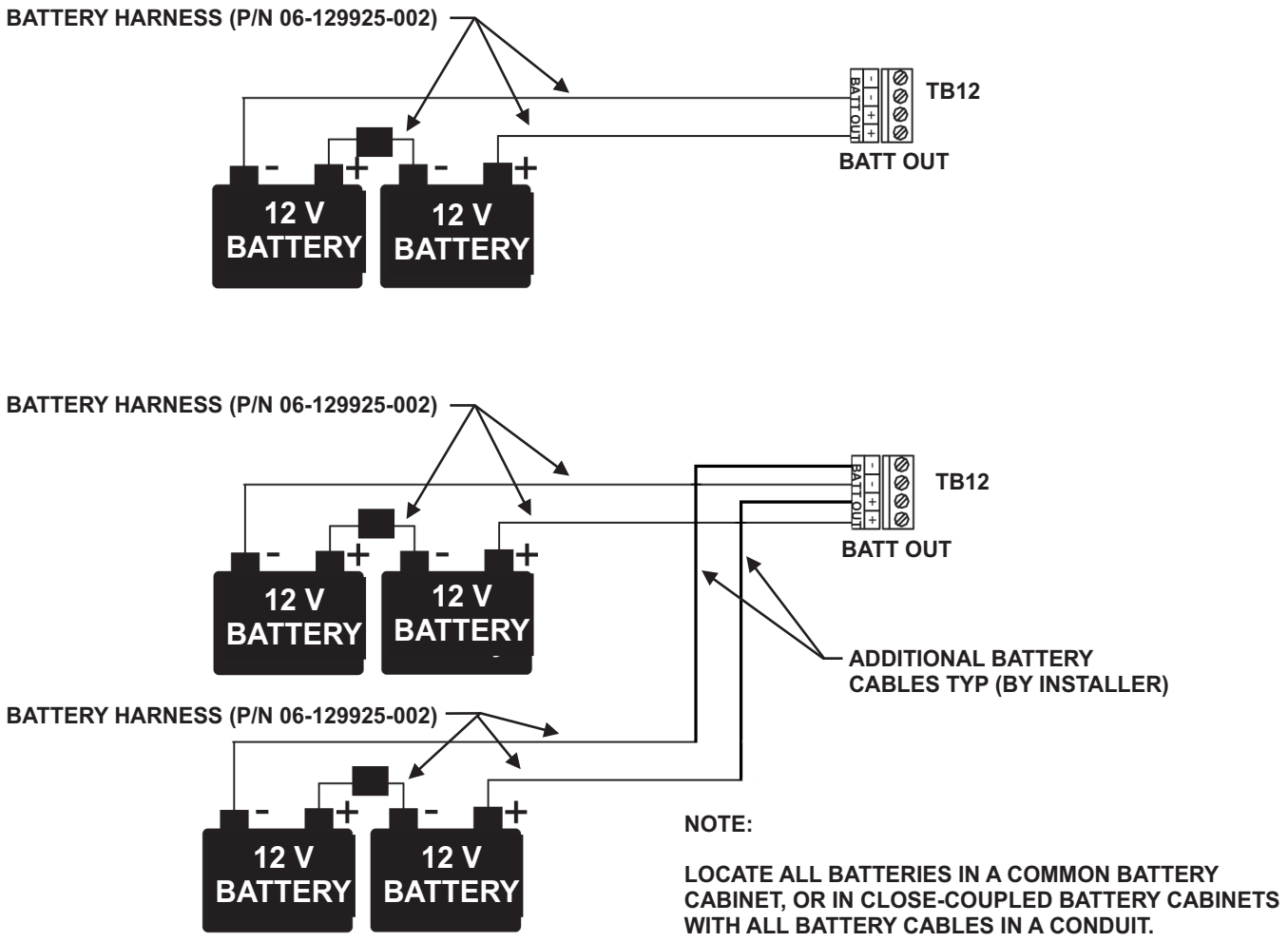


Figure 2-11. Backup Battery Connections

2-4 TERMINATIONS AND WIRING DIAGRAMS

2-4.1 Terminal Blocks

The PCB provides the following input and output terminations as shown in Figure 2-12.

- Detector 1 (TB1)
- Detector 2 (TB2)
- Waterflow/Detector 3 (TB3)
- Manual Release (TB4)
- Abort (TB5)
- Supervisory 1 (TB6)
- Supervisory 2 (TB7)
- Trouble Relay (TB8)
- Programmable Relay 3 (TB9)
- Programmable Relay 2 (TB10)
- Programmable Relay 1 (TB11)
- Battery Out (TB12)
- AC IN (TB13)
- Agent Release ARC 1 (TB14)
- Agent Release ARC 2 (TB15)
- Aux 24 Vdc Output (TB16)
- Notification Appliance Circuit 3 (TB17)
- Notification Appliance Circuit 2 (TB18)
- Notification Appliance Circuit 1 (TB19)
- PSU (J2)
- RS-232 Communications Port

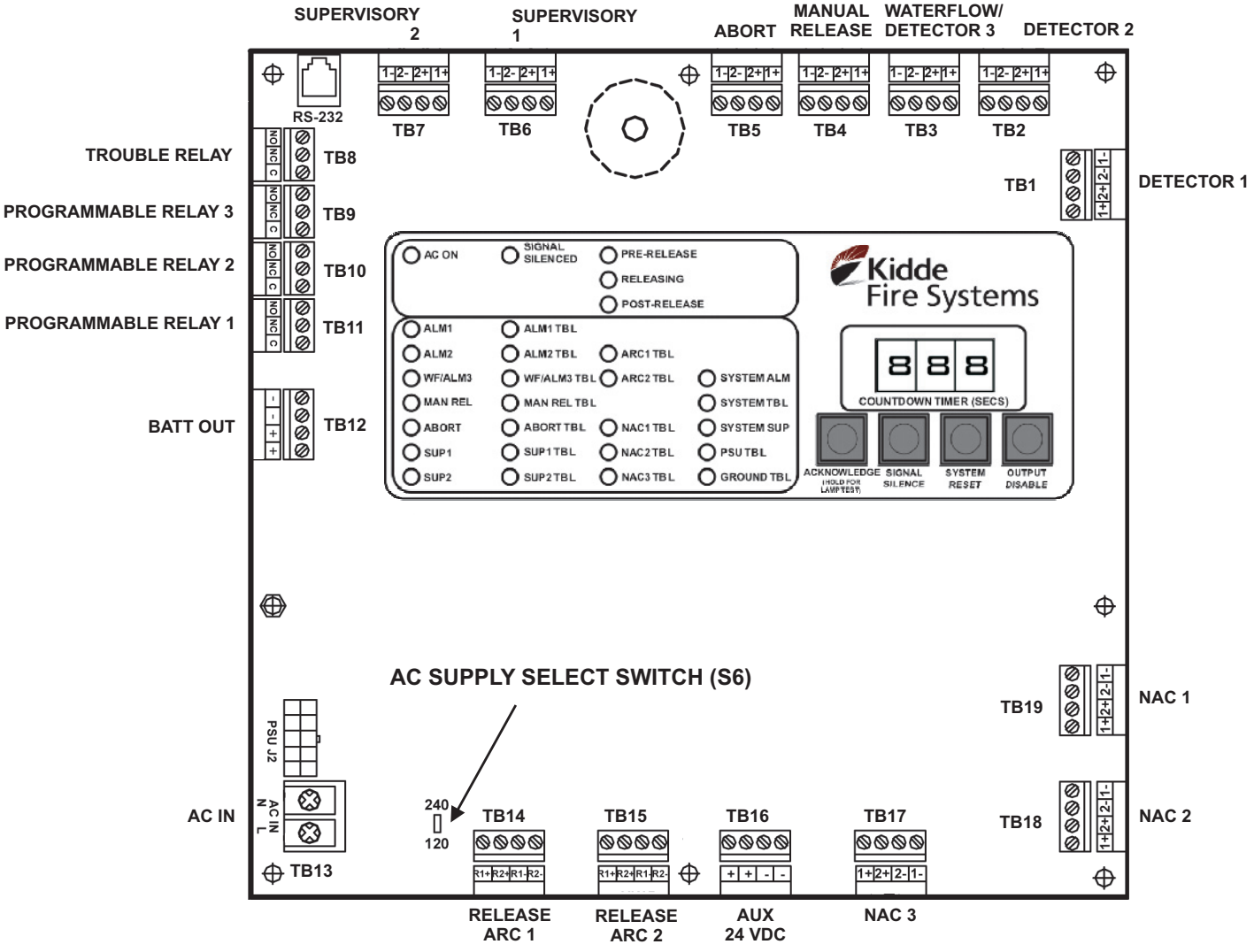


Figure 2-12. Printed Circuit Board

2-4.2 Input Circuit Wiring (TB1 through TB7)

Refer to Appendix B for a list of compatible listed smoke/electronic heat detectors.

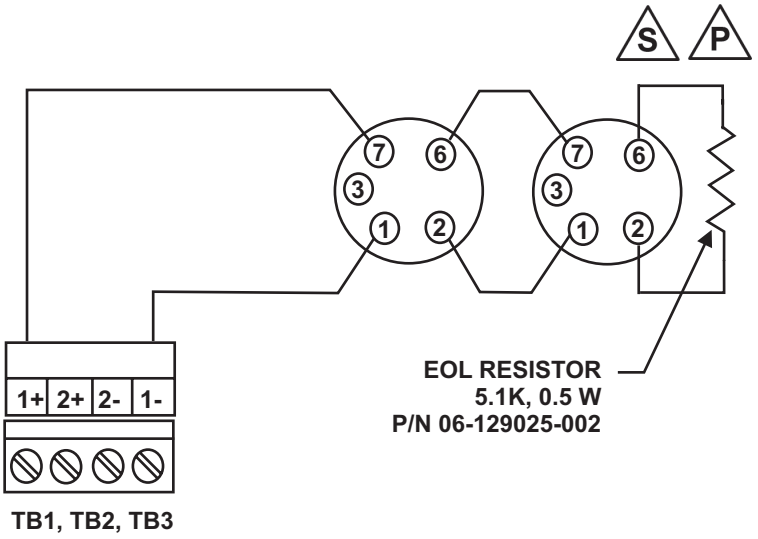


Figure 2-13A. Class B, Style B Wiring for Smoke/Electronic Heat Detectors

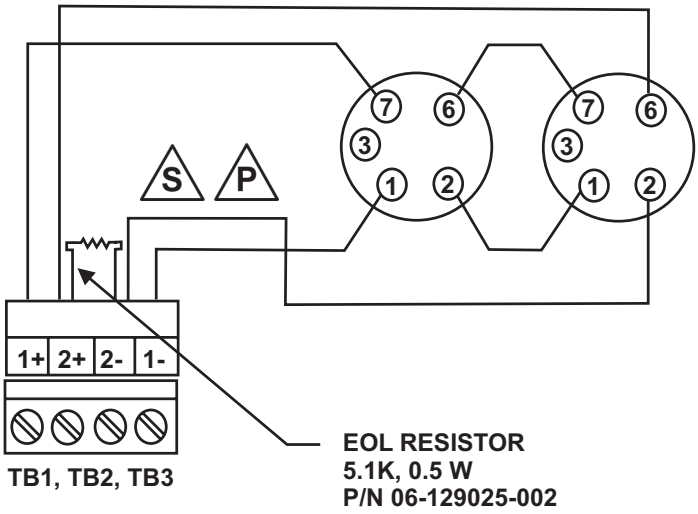


Figure 2-13 B. Class A, Style D Wiring for Smoke/Electronic Heat Detectors

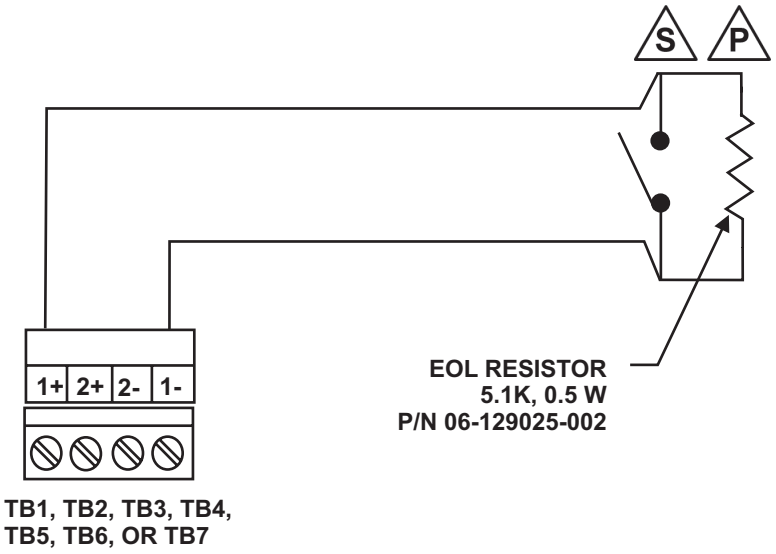


Figure 2-13C. Class B, Style B Wiring for Contact Devices

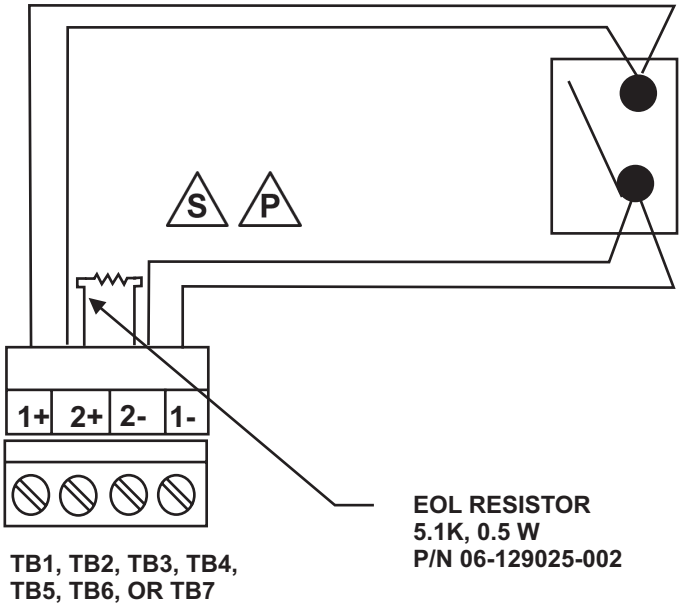


Figure 2-13D. Class A, Style D Wiring for Contact Devices

Figure 2-13. Initiating Device Circuit Wiring

2-4.3 Notification Appliance Circuit Wiring (TB17, TB18, TB19)

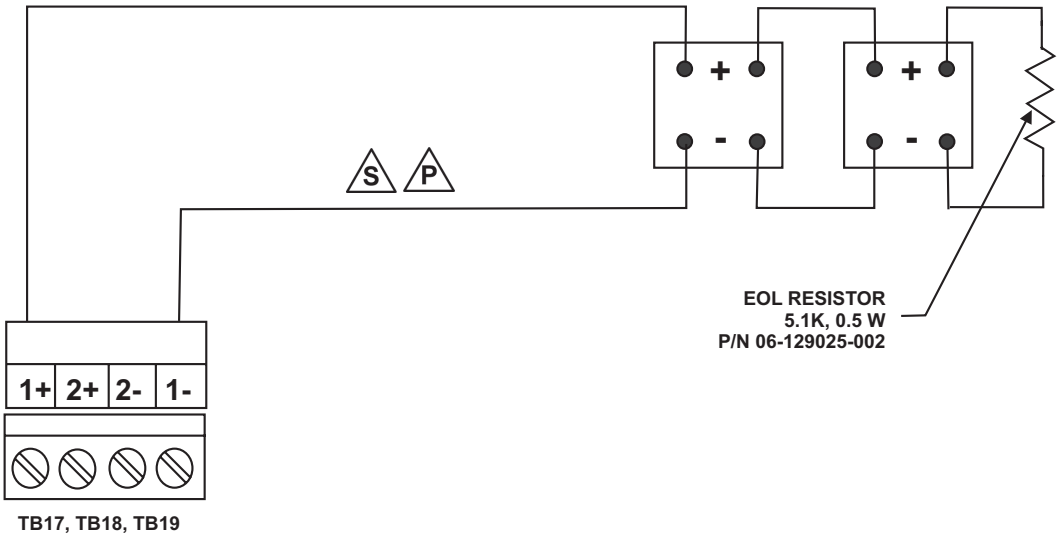


Figure 2-14 A. Class B , Style Y Notification Appliance Circuit

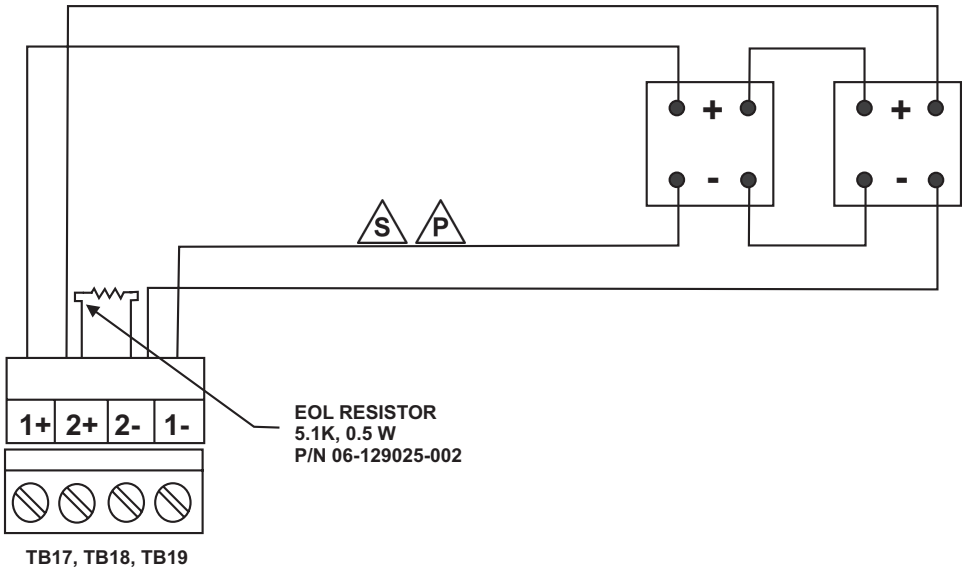


Figure 2-14B. Class B, Style Y Notification Appliance Circuit Wiring

LEGEND

S SUPERVISED P POWER LIMITED

Note: 1. Regulated 24 Vdc, 28 Vdc maximum.
2. Suitable for synchronized and non-synchronized notification appliances.
3. Use polarized notification appliances only.
4. Maximum single notification appliance current is 1.5A.
5. Voltage drop: 2.0 V (maximum)

Figure 2-14. Notification Appliance Circuit Wiring

2-4.4 Agent Releasing Circuit Wiring

Refer to Appendix B for a list of compatible listed releasing devices.

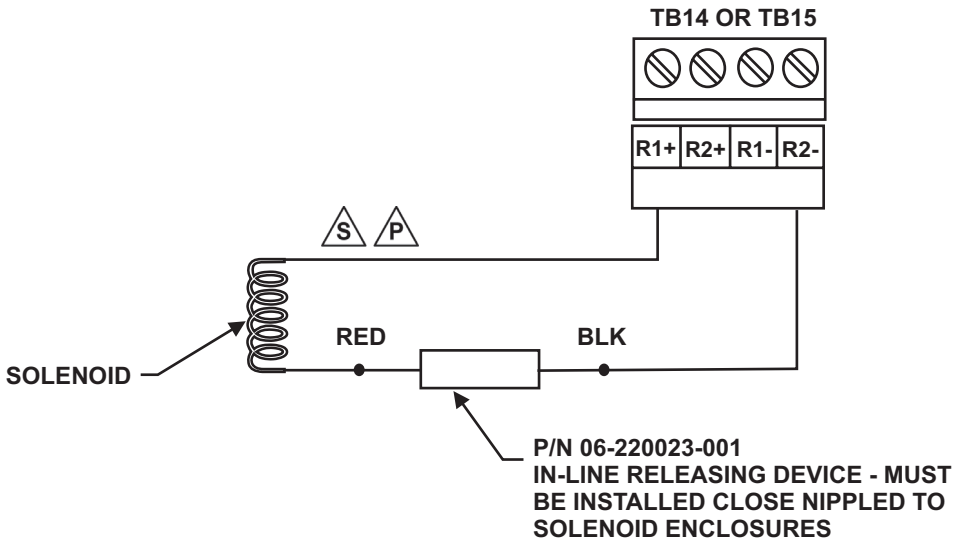


Figure 2-15A. Agent Release Circuit - Single Solenoid, Power-Limited

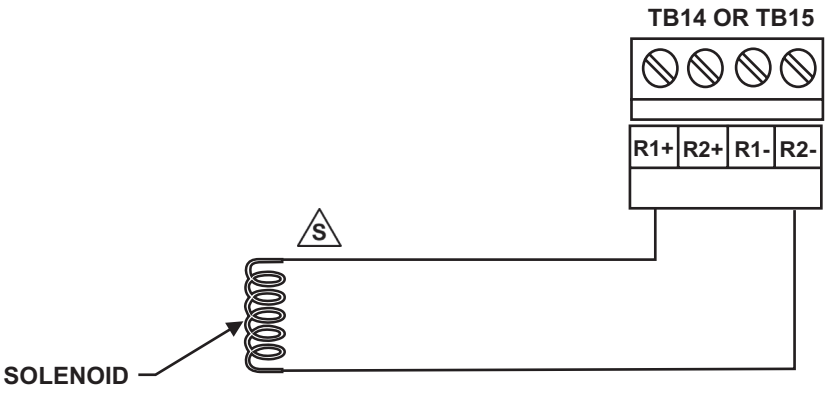


Figure 2-15B. Agent Release Circuit - Single Solenoid, Non-Power-Limited

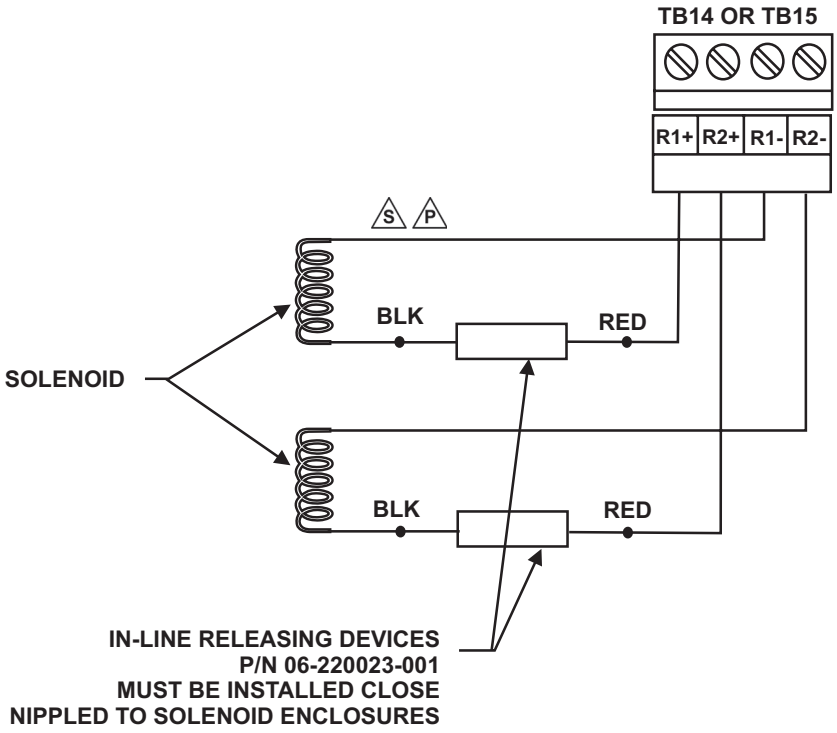


Figure 2-15C. Agent Release Circuit — Dual Solenoid, Power-Limited

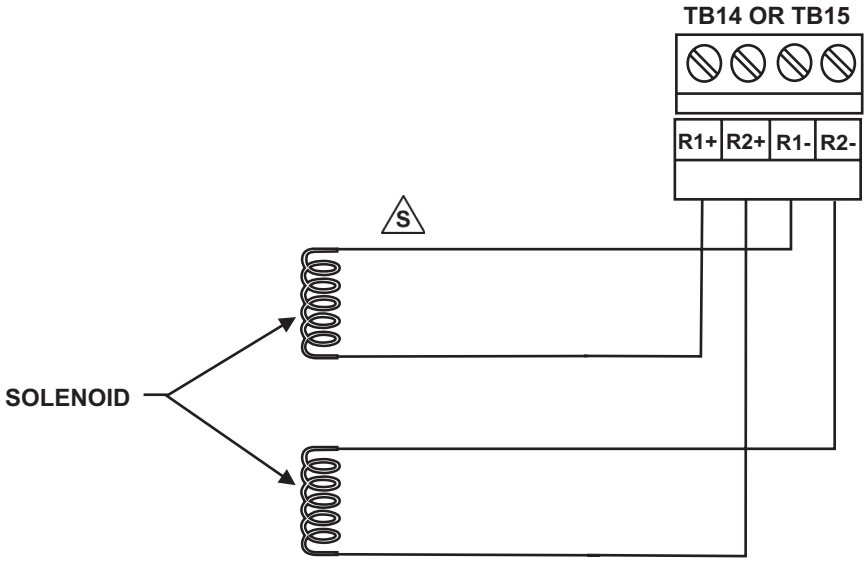


Figure 2-15D. Agent Release Circuit — Dual Solenoid, Non-Power-Limited

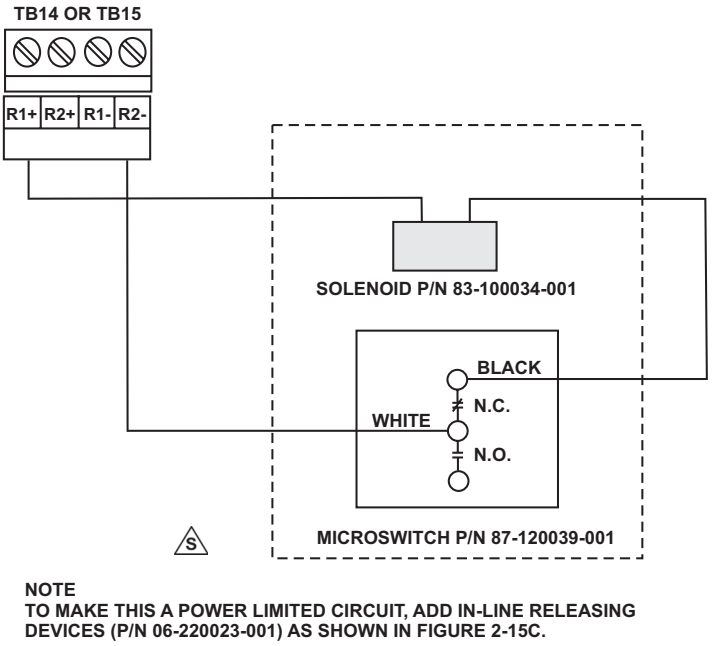


Figure 2-15E. Agent Release Circuit for *XV* and CXV Control Heads

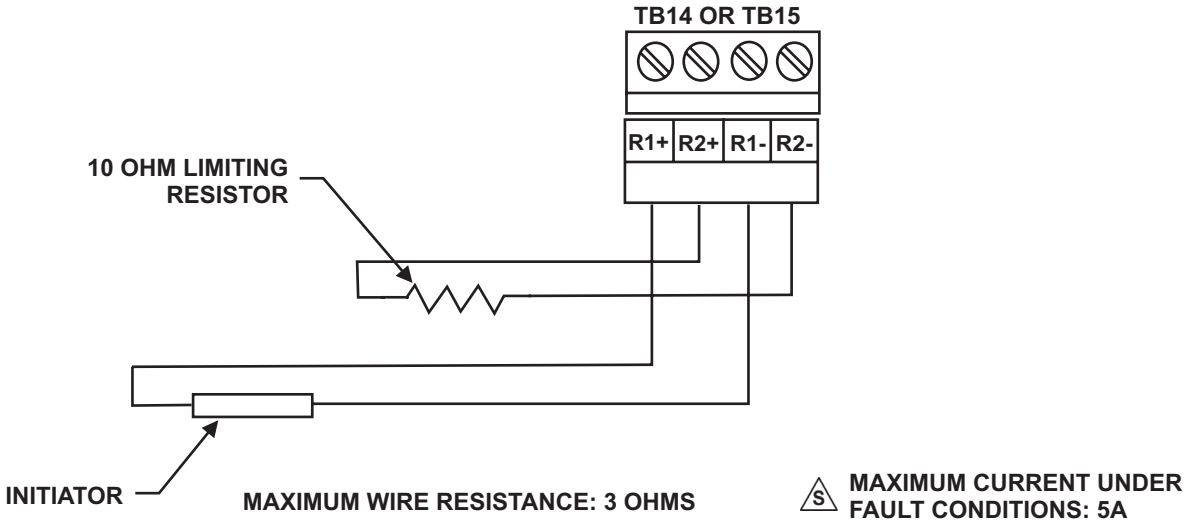


Figure 2-15F. Agent Release Circuit - Initiators, Non-Power-Limited

Note:
1. Polarities must be observed for solenoids P/N 890181 and 48650001.
2. The inline releasing device P/N 06-220023-001 must be close nippled to Solenoid enclosures.
3. The ARC is Non-Power-Limited when in-line device is not used.
4. Route Non-Powered-Limited wiring at least 1/4-inch away from all Power-Limited wiring. See Appendix F. Do not attach Power-Limited wiring to the same terminal block.
5. When firing initiators, the limiting resistor must have a rating of 1 watt minimum.
6. Control Head P/N 90-487100-001 when used with the control unit must include Solenoid P/N 83-100034-001 and Microswitch P/N 87-120039-001.

Figure 2-15. Agent Release Circuit Wiring

2-5 INSTALLING THE BEZEL, P/N 06-220114-001

1. Align bezel cutouts to the timer and control switches on the PCB.
2. Gently press the bezel onto PCB so snap-on clips click into the PCB fitted holes.

2-6 INSTALLING OPTIONAL DEAD-FRONT PANEL, P/N 06-220175-001

Certain applications such as those in Canada require a dead-front panel as described in Paragraph 1-4.1.2. Install as follows:

1. The tab on the dead-front panel goes over the bottom enclosure lip (Figure 2-16).
2. Attach to control unit with supplied screws.

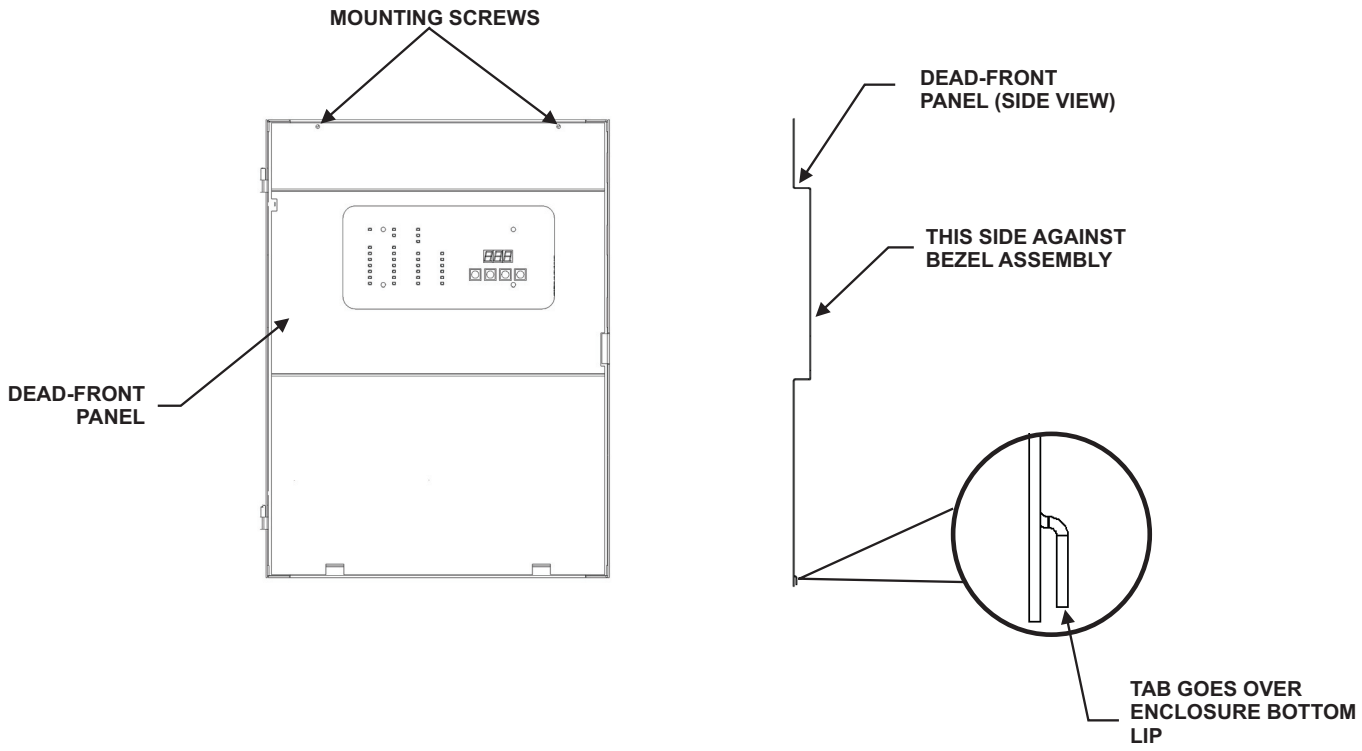


Figure 2-16. Dead-Front Panel Installation

2-7 INSTALLING THE ENCLOSURE DOOR (STANDARD DOOR)

1. Slide the door to allow the door's hinge pins to align with the mating-hinge sockets in the back box.
2. Connect the ground wire that connects the enclosure door to the back box.

2-8 INSTALLING THE ENCLOSURE DOOR (DOOR WITH SWITCHES)

1. Slide the door to allow the door's hinge pins to align with the mating-hinge sockets in the back box.
2. Connect the ground wire that connects the enclosure door to the back box.

2-8.1 Installing Manual Release and Abort Switches, P/N 06-220169-001

1. Install locking nut on the toggle switch.
2. Install toggle switch from back of enclosure door. Make sure the ON position of the toggle switch is facing the front of the the enclosure door and is in the up position.
3. Attach switch guard, lock washer, and locking ring and tighten.

Note: Switch guard is keyed and can only be installed one way.

4. Install locking nut on the abort switch.
5. Install abort switch from back of enclosure door. Attach pushbutton switch guard and tighten.

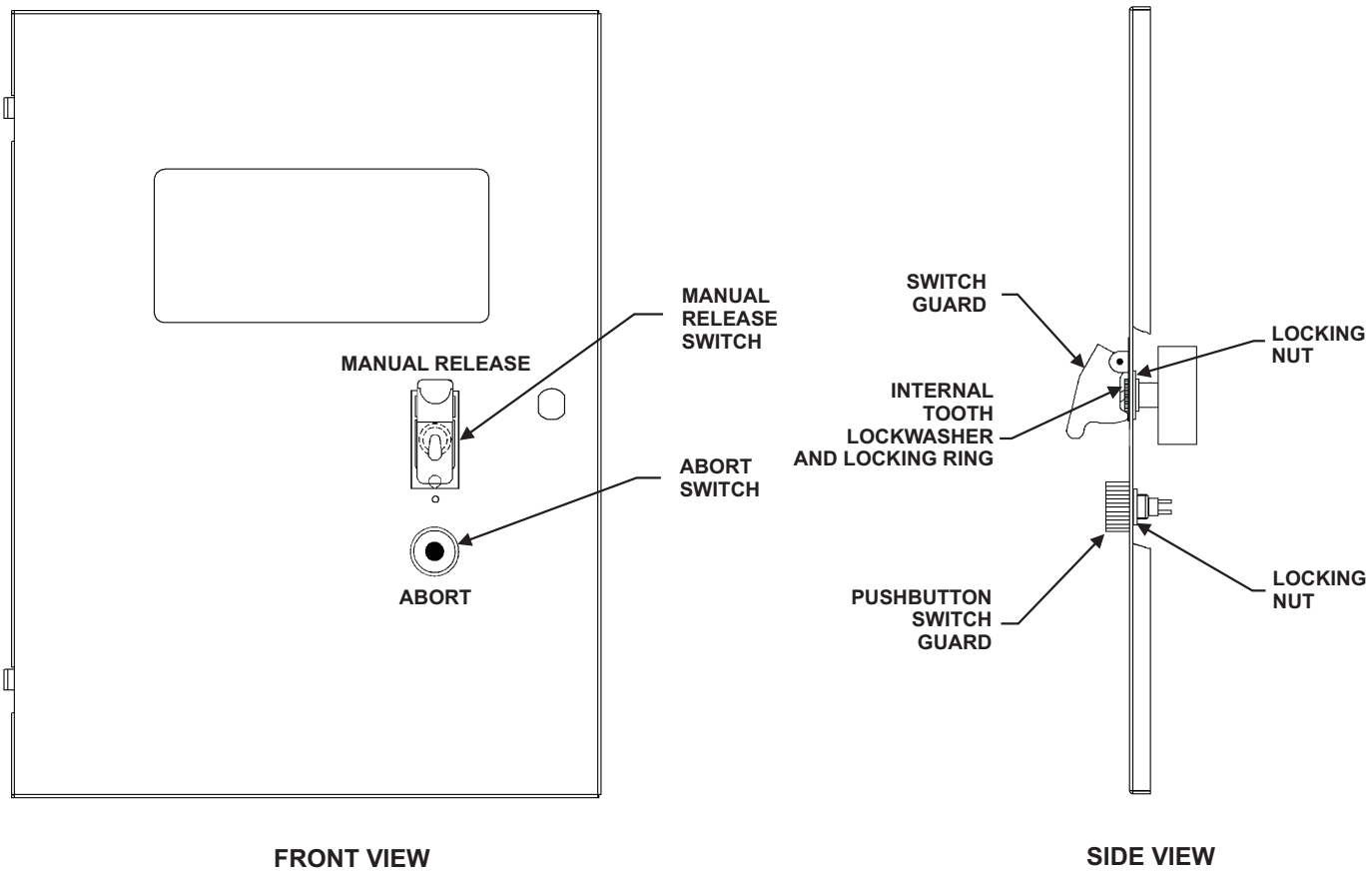


Figure 2-17. Installation of Manual Release and Abort Switches

6. Attach black wires from switch wire harness to the right side of the toggle switch as shown in Figure 2-18.
7. Route switch wire harness as shown in Figure 2-18.
8. Install cable clamps and 8-32 kep nuts to secure switch wire harness to enclosure door.
9. Run the black wires from the Manual Release switch to **TB4** on the PCB. Refer to Figure 2-13 through Figure 2-15 for wiring configurations.
10. Run the white wires from the Abort switch to **TB5** on the PCB. Refer to Figure 2-13 through Figure 2-15 for wiring configurations.

CAUTION

Power-limited wiring from the front cover Manual Release and Abort switches to their respective terminal blocks on the PCB must be routed to maintain a 1/4-inch distance from non-power-limited wiring. Refer to Appendix F for more details.

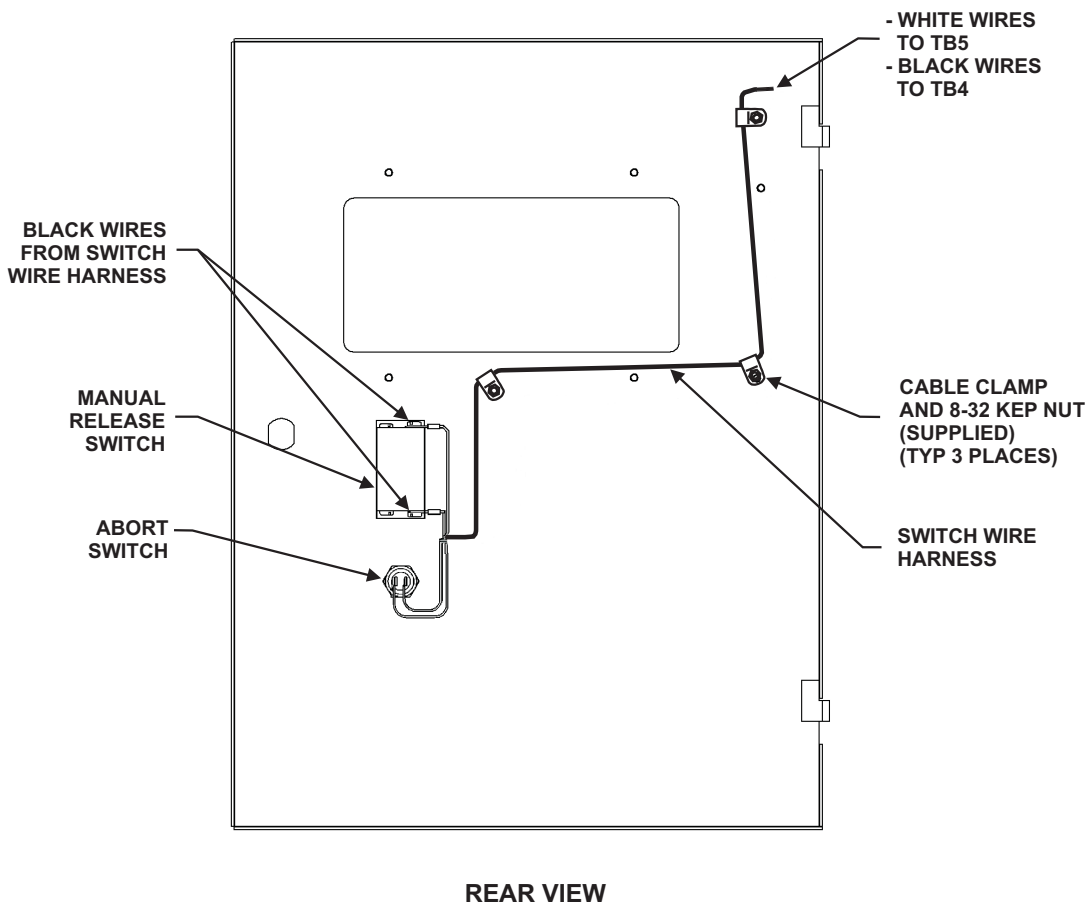


Figure 2-18. Installing Switch Harness Assembly

2-9 COMPLETING THE INSTALLATION

1. Power-up the system AC first and then DC.
2. Configure as described in Chapter 3.
3. Once configured, test the complete system for operation. Once operation is verified, the installation is complete.

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CHAPTER 3
CONFIGURATION

3-1 ENTERING SITE - SPECIFIC CONFIGURATION

The Kidde AEGIS™ is suitable for a wide variety of applications by means of configuring its inputs and outputs. Inputs and outputs are configured via the operator interface. The following sections details on how to enter or change configuration settings.

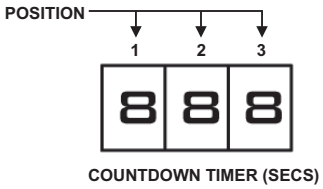


Figure 3-1. Digital Display

3-1.1 Entering the Password

To enter the configuration setting mode, you must enter the factory default password (**186**) via the operator interface. Ensure that no alarms or supervisories are present and perform the following.

Step	Description	Display
1	Press and hold the **Acknowledge** control switch and within five (5) seconds, press the **System Reset** control switch.	0 – –
2	Press **Output Disable** to advance (each press advances one digit).	1 – –
3	When correct, press the **Acknowledge** control switch. Position 1 is accepted and cursor moves to position 2.	1 0 –
4	Press **Output Disable** to advance (each press advances one digit).	1 8 –
5	When correct, press the **Acknowledge** control switch. Position 2 is accepted and cursor moves to position 3.	1 8 0
6	Press **Output Disable** to advance (each press advances one digit).	1 8 6
7	When correct, press the **Acknowledge** control switch. Position 3 is accepted and if the password is is correct, the display shows '00' and the AEGIS enters the configuration mode.	0 0 –

The control unit exits the configuration mode upon status change, or if more than five (5) minutes have expired since the last control switch press. Only saved changes are retained by the control unit.

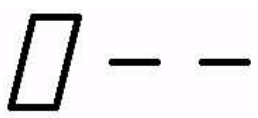
3-1.2 Lost, Forgotten or Incorrect Passwords

In the event that the entered password is incorrect, the display reads **"Err"** for three (3) seconds and then prompts for entering the password again by displaying "0" as the first digit.

When at the "**Err**" display, press the **Signal Silence** control switch to display a random 3 digit code. Make a note of the code and call Technical Support. The control unit does not timeout (exit out of the configuration mode) when the display reads the random 3-digit code.

Note: Do not press any buttons while this 3 digit code is being displayed.

Technical Support will translate this 3 digit code to a new password that will work only on a control unit displaying the original random code for one time only. When given the Temporary Password (the 3 digit code should still be displayed), press the **Signal-Silence** control switch. The display is now exactly as it would be to enter a password:



Enter the Temporary Password in the same manner as entering a regular Password.

When the password has been accepted (and the first configuration item is being displayed "00x", where x is the left most digit of the Temporary Password), you should:

1. either press the Signal Silence control switch in order to accept and save the current Temporary Password as a Permanent Password; OR
2. enter the desired Password in configuration items 0, 1, and 2, and then press the Signal Silence control switch in order to accept and save it.

3-2 CONFIGURATION SETTINGS

This section describes the configuration settings for the AEGIS unit. Use Table 3-1 to set the configuration settings.

- To advance to the next selection for an item, press the **Output Disable** control switch.
- To advance to the next item, press the **Acknowledge** control switch.
- To accept a configuration setting change and exit the Configuration menu at any step in the process, press the **Signal Silence** control switch. Check the configuration by starting the configuration process again, checking all items, and exiting by pressing **System Reset** after inspecting the last item.
- To exit the configuration menu at any time, press the **System Reset** control switch. This reverts the control unit to its previous state.

Note: The control unit takes about five (5) seconds to boot up after exiting the configuration menu.

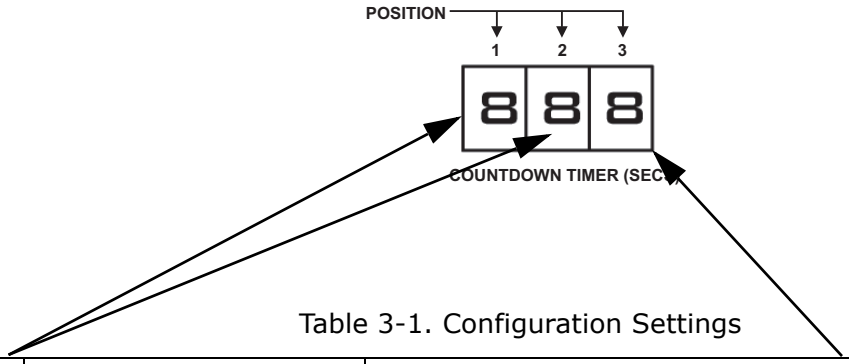


Table 3-1. Configuration Settings

Configuration Number (Position 1, 2)	Configuration Item	Configuration (Position 3) Selection	Default Mode
00	1st Password Character	0 — 9	1
01	2nd Password Character	0 — 9	8
02	3rd Password Character	0 — 9	6
03	Application Mode - Release Circuit 1	1 — Release Circuit 1 not in use[1] 2 — Manual Release or Single Zone input from DET 1 3 — Manual Release or Single Zone input from DET 2 4 — Manual Release or Single Zone input from any one of DET 1 or DET 2 5 — Manual Release or Cross Zone input from DET 1 and DET 2 6 — Manual Release or Cross Zone input from any two of the following: DET 1, DET 2, and DET 3/WF 7 — Manual Release or Cross Zone input from any two of the following: DET 1, DET 2, and SUPV 1 8 — Manual Release or Cross Zone input from any two of the following: DET 1, DET 2, DET 3/WF, and SUPV 1 (except DET 3/WF and SUP 1) 9 — Manual Release or Cross Zone input from SUPV 1 and either DET 1 or DET2	6

Table 3-1. Configuration Settings

Configuration Number (Position 1, 2)	Configuration Item	Configuration (Position 3) Selection	Default Mode
04	Application Mode - Release Circuit 2	1 — Release Circuit 2 not in use (*see note 1)* 2 — Manual Release or Single Zone input from DET 1 3 — Manual Release or Single Zone input from DET 2 4 — Manual Release or Single Zone input from any one of DET 1 or DET 2 5 — Manual Release or Cross Zone input from DET 1 and DET 2 6 — Manual Release or Cross Zone input from any two of the following: DET 1, DET 2 and DET 3/WF 7 — Manual Release or Cross Zone input from any two of the following: DET 1, DET 2, and SUPV 1 8 — Manual Release or Cross Zone input from any two of the following: DET 1, DET 2, DET 3/WF, and SUPV 1 (except DET 3/WF and SUP 1) 9 — Manual Release or Cross Zone input from SUPV 1 and either DET 1 or DET2	6
05	Abort Both or Release Circuit 1	1 — Activation aborts ARC 1 and ARC 2 2 — Activation aborts ARC 1 only	1
06	Abort	1 — Mode 1 (UL) 2 — Mode 2, (Reset) 3 — Mode 3 (IRI) 4 — Mode 4 (NYC) 5 — Mode 0 (Disable the Abort)	1
07	Input Circuit 3	1 — Detector (DET 3) 2 — Waterflow with Non-Silenceable NACs (DET WF) 3 — Waterflow with Silenceable NACs (DET WF)	1
08	Programmable Relay 1	1 — General alarm (DET 1, DET 2, DET 3/WF, or Manual Release) 2 — First Alarm (DET 1, DET 2, DET 3/WF, or Manual Release) *(see note 2)* 3 — First Alarm (DET 1, DET 2, DET 3/WF, Manual Release, or SUPV 1) *(see notes 2 & 3)* 4 — Agent Pre-Release Condition 5 — Agent Release Condition 6 — Manual Release Input 7 — Waterflow Input 8 — Abort Input 9 — Supervisory Input	3

Table 3-1. Configuration Settings

Configuration Number (Position 1, 2)	Configuration Item	Configuration (Position 3) Selection	Default Mode
9	Programmable Relay 2	1 — General alarm (DET 1, DET 2, DET 3/WF, or Manual Release) 2 — First Alarm (DET 1, DET 2, DET 3/WF, or Manual Release) *(see note 2)* 3 — First Alarm (DET 1, DET 2, DET 3/WF, Manual Release, or SUPV 1) *(see notes 2 & 3)* 4 — Agent Pre-Release Condition 5 — Agent Release Condition 6 — Manual Release Input 7 — Waterflow Input 8 — Abort Input 9 — Supervisory Input	4
10	Programmable Relay 3	1 — General alarm (DET 1, DET 2, DET 3/WF, or Manual Release) 2 — First Alarm (DET 1, DET 2, DET 3/WF, or Manual Release) *(see note 2)* 3 — First Alarm (DET 1, DET 2, DET 3/WF, Manual Release, or SUPV 1) *(see notes 2 & 3)* 4 — Agent Pre-Release Condition 5 — Agent Release Condition 6 — Manual Release Input 7 — Waterflow Input 8 — Abort Input 9 — Supervisory Input	5
11	Trouble Relay	1 — AC Failure response - Instantaneous 2 — AC Failure response - Delayed 1 minute 3 — AC Failure response - Delayed 60 minutes 4 — AC Failure response - Delayed 90 minutes 5 — AC Failure response - Delayed 120 minutes 6 — AC Failure response - Delayed 180 minutes	4
12	Manual Release Station Time Delay - Release Circuit 1	1 — Instantaneous (*select for NYC*) 2 — 10 seconds 3 — 20 seconds 4 — 30 seconds	1
13	Manual Release Station Time Delay - Release Circuit 2	1 — Instantaneous (*select for NYC*) 2 — 10 seconds 3 — 20 seconds 4 — 30 seconds	1

Table 3-1. Configuration Settings

Configuration Number (Position 1, 2)	Configuration Item	Configuration (Position 3) Selection	Default Mode
14	Automatic Time Delay - Release Circuit 1	1 — 0 seconds 2 — 10 seconds 3 — 20 seconds 4 — 30 seconds (*select for NYC*) 5 — 40 seconds 6 — 50 seconds 7 — 60 seconds	7
15	Automatic Time Delay - Release Circuit 2	1 — 0 seconds 2 — 10 seconds 3 — 20 seconds 4 — 30 seconds (*select for NYC*) 5 — 40 seconds 6 — 50 seconds 7 — 60 seconds	7
16	On-Time - Release Circuit 1 *(see note 4)*	1 — Agent Control Head 90 seconds 2 — Deluge Solenoid 10 minutes 3 — Deluge Solenoid 15 minutes 4 — Deluge Solenoid On Until Reset 5 — Initiators	1
17	Power Limited - Release Circuit 1 *(see note 4)*	1 — Power-Limited (one solenoid) 2 — Power-Limited (two solenoids) 3 — Non-Power-Limited (one solenoid) 4 — Non-Power-Limited (two solenoids) 5 — Initiators	3
18	On-Time - Release Circuit 2 *(see note 4)*	1 — Agent Control Head 90 seconds 2 — Deluge Solenoid 10 minutes 3 — Deluge Solenoid 15 minutes 4 — Deluge Solenoid On Until Reset 5 — Initiators	1
19	Power Limited - Release Circuit 2 *(see note 4)*	1 — Power-Limited (one solenoid) 2 — Power-Limited (two solenoids) 3 — Non-Power-Limited (one solenoid) 4 — Non-Power-Limited (two solenoids) 5 — Initiators	3
20	Trouble Latching	1 — Troubles are non-latching 2 — Troubles are latching (required for cUL)	1

Table 3-1. Configuration Settings

Configuration Number (Position 1, 2)	Configuration Item	Configuration (Position 3) Selection	Default Mode
21	Latching for Supervisory 1	1 — SUPV 1 is non-latching 2 — SUPV 1 is latching (forced if part of Cross-Zone)	1
22	Latching for Supervisory 2	1 — SUPV 2 is non-latching 2 — SUPV 2 is latching	1
23	Outputs Disabled by Isolate Button	1 — Disables ARCs 2 — Disables ARCs and NACs 3 — Disables ARCs and Programmable Relays 4 — Disables ARCs, NACs and Programmable Relays	4
24	NAC 1 relationship to ARCs	1 — ARC 1 only 2 — ARC 2 only 3 — Both ARC 1 and ARC 2 (*see note 5*) 4 — Neither ARC 1 nor ARC 2 (*see note 6*) 5 — NAC 1 Not Used (*see note 1*)	1
25	NAC 2 relationship to ARCs	1 — ARC 1 only 2 — ARC 2 only 3 — Both ARC 1 and ARC 2 *(see note 5)* 4 — Neither ARC 1 nor ARC 2 *(see note 6)* 5 — NAC 2 Not Used *(see note 1)*	2
26	NAC 3 relationship to ARCs	1 — ARC 3 only 2 — ARC 3 only 3 — Both ARC 1 and ARC 2 (*see note 5*) 4 — Neither ARC 1 nor ARC 2 (*see note 6*) 5 — NAC 3 Not Used *(see note 1)*	3
27	NAC 1 First Alarm *(see note 8)*	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 8 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Only Off) C — NAC 1 Off *(see note 7)*	1

Table 3-1. Configuration Settings

Configuration Number (Position 1, 2)	Configuration Item	Configuration (Position 3) Selection	Default Mode
28	NAC 1 Pre-Release *(see note 9)*	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 7 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Off) C — NAC 1 Off *(see note 7)*	3
29	NAC 1 Releasing *(see note 10)*	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 7 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Off) C — NAC 1 Off *(see note 7)*	5

Table 3-1. Configuration Settings

Configuration Number (Position 1, 2)	Configuration Item	Configuration (Position 3) Selection	Default Mode
30	NAC 2 First Alarm *(see note 8)*	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 8 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Only Off) C — NAC 2 Off *(see note 7)*	1
31	NAC 2 Pre-Release *(see note 9)*	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 7 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Off) C — NAC 2 Off *(see note 7)*	3

Table 3-1. Configuration Settings

Configuration Number (Position 1, 2)	Configuration Item	Configuration (Position 3) Selection	Default Mode
32	NAC 2 Releasing *(see note 10)*	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 7 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Off) C — NAC 2 Off *(see note 7)*	5
33	NAC 3 First Alarm *(see note 8)*	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 8 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Only Off) C — NAC 3 Off *(see note 7)*	1

Table 3-1. Configuration Settings

Configuration Number (Position 1, 2)	Configuration Item	Configuration (Position 3) Selection	Default Mode
34	NAC 3 Pre-Release *(see note 9)*	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 7 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Off) C — NAC 3 Off *(see note 7)*	3
35	NAC 3 Releasing *(see note 10)*	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 7 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Off) C — NAC 3 Off *(see note 7)*	5
36	NACs Used for General Alarm	1 — NAC #1 2 — NAC #2 3 — NAC #1 & NAC #2 4 — NAC #3 5 — NAC #1 and NAC #3 6 — NAC #2 & NAC #3 7 — NAC #1 & NAC #2 & NAC #3 8 — None (No General Alarm)	8

Table 3-1. Configuration Settings

Configuration Number (Position 1, 2)	Configuration Item	Configuration (Position 3) Selection	Default Mode
37	NAC #1 General Alarm	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 7 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Off) C — NAC 3 Off *(see note 7)*	7
38	NAC #2 General Alarm	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 7 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Off) C — NAC 3 Off *(see note 7)*	7

Table 3-1. Configuration Settings

Configuration Number (Position 1, 2)	Configuration Item	Configuration (Position 3) Selection	Default Mode
39	NAC #3 General Alarm	0 — 60 bpm Non-Silenceable 1 — 60 bpm Silenceable 2 — 120 bpm Non-Silenceable 3 — 120 bpm Silenceable 4 — Steady Non-Silenceable 5 — Steady Silenceable 6 — Temporal Non-Silenceable 7 — Temporal Silenceable 8 — Intelligent Synchronization - Non-Silenceable 9 — Intelligent Synchronization - Silenceable (Horn & Strobe) A — Intelligent Synchronization - Silenceable (Horn Off) C — NAC 3 Off *(see note 7)*	7

NOTES:

1. If "circuit not used" is selected, do NOT install an EOL as the control unit needs to see open circuit. Using an EOL will cause trouble.
2. DET 1, DET 2, and DET 3/WF will activate first alarm ONLY IF it is part of the ARC activation condition.
3. SUPV 1 will activate first alarm ONLY IF it is part of the ARC activation condition.
4. If Initiator is selected for any Release circuit output, the respective Power-Limited switch setting is ignored.
5. The NAC will be driven by both ARC 1 and ARC 2. However the first ARC to reach each state is given precedence. Once its cycle is complete, the other ARC, if active, will gain control.
6. The NAC may be related to neither ARC if the control unit is used for non-suppression applications. Also see notes 8 to 10.
7. An OFF condition is different from NOT USED and will require that an EOL be installed.
8. In addition to being selectable for NACx First Alarm, the various tones are also selectable in the condition that both ARCs are not used and one of DET 1, DET 2 or DET 3/WF is in alarm.
9. In addition to being selectable for NACx Pre-Release, the various tones are also selectable in the condition that both ARCs are not used and two of DET 1, DET 2 or DET 3/WF are in alarm.
10. In addition to being selectable for NACx Releasing, the various tones are also selectable in the condition that both ARCs are not used and all of DET 1, DET 2 and DET 3/WF are in alarm.

CHAPTER 4
OPERATION

4-1 INTRODUCTION

This chapter explains how to read the control unit display, interpret the LEDs, and how to reset the unit. The following are the operational modes of the control unit:

- Normal Mode
- Alarm Signal
- Supervisory Signal
- Trouble Signal State

4-1.1 Normal Mode

In the normal mode, the control unit continuously monitors all inputs and outputs for any change of state. In the normal mode the Green **AC ON** LED is the only illuminated LED. The buzzer and NACs are silent, The Programmable Relays are de-energized, and the Trouble relay is energized.

4-1.2 Alarm Signal State

In the Alarm state, the control unit has detected one or more active inputs on its input circuits. The states of Alarm are:

1. **First Alarm** — caused when input is received from:
   - DET 1, or
   - DET 2, or
   - DET 3 (Detector or Waterflow), or
   - Manual Release
2. **Pre-Release** — caused when input is received from:
   - DET 1 in Single-Zone release mode, or
   - DET 2 in Single-Zone release mode, or
   - DET 1 and DET 2 in Cross-Zone Mode, or
   - DET 1 and DET 3 (Waterflow) in Cross-Zone mode, or
   - DET 2 and DET 3 (Waterflow) in Cross-Zone mode, or
   - DET 1 and Supv 1 in Cross-Zone mode, or
   - DET 2 and Supv 1 in Cross-Zone mode, or
   - Manual Release
3. **Releasing** — caused when the pre-release countdown timer has counted down to zero. In this state, the control unit is actively in the process of activating its Agent Release Circuit(s).
4. **Post-Release** — condition when the control unit has released Agent.

4-1.3 Supervisory Signal

In the supervisory state, the control unit has detected a change in state of one or both of its supervisory input circuits, or its PCB mounted Output Disable switch. A flashing LED indicates one or more unacknowledged supervisory events. A steady LED indicates all supervisory events have been acknowlwdged. The LED turns off when the AEGIS receives supervisory-off messages from all initiating devices that reported supervisory conditions.

4-1.4 Trouble Signal State

In the trouble state, the control unit has detected one or more active troubles such as AC failure, open circuits, short circuits, ground faults, activation of abort during non-alarm condition, and so on. In the trouble mode, the Trouble LED and circuit-specific LED will flash, the internal buzzer will sound, and the trouble relay will de-energize.

With the exception of microprocessor or PCB troubles, all other troubles may be acknowledged either automatically (i.e., the trouble event reverts to normal condition) or manually by the operator by pressing the **Acknowledge** or **System Reset** control switches.

4-2 CONTROL SWITCH FUNCTIONALITY

Illegal button presses, or illegal combinations of button presses, shall result in a momentary display of "Err".

4-2.1 Acknowledge

Pressing the Acknowledge control switch during an active trouble, supervisory, or alarm allows the operator to signal the AEGIS that a new event currently being displayed is understood. The AEGIS control unit’s buzzer will silence and all flashing Alarm, Trouble, or Supervisory LEDs will light steady.

Table 4-1. Acknowledge

Event	Circuit Specific LED	System Event LED	Buzzer
Alarm	Steady	Steady	Off
Trouble	Steady	Steady	Off
Supervisory	Steady	Steady	Off
Event Clear	Off	Off	Off
Event Recurrence	Flash	Flash	On Steady - Alarm On Pulsed - Trouble/Supervisory

4-2.2 Signal Silence

Pressing the Signal Silence control switch at any alarm state will turn on the Signal Silenced LED and silence all NACs unless configured otherwise (non-silenceable).

4-2.3 System Reset

Resets the system including turning off outputs and interrupting power to all input and output circuits for a period of five (5) seconds.

4-2.4 Output Disable

Disables the release of agent, and as selected in the system configuration, the activation of NAC outputs and/or Programmable Relays. This is used when performing maintenance on the system. When the control switch is engaged, it creates a System Supervisory condition. Pressing the control switch momentarily toggles in and out of the disable mode.

CHAPTER 5
TESTING AND MAINTENANCE

5-1 MAINTENANCE REQUIREMENTS

The Kidde AEGIS™ must be inspected, tested and maintained in accordance with the requirements of NFPA 72 (latest edition), and/or the local Authority Having Jurisdiction (AHJ).

WARNING

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

For inspection, testing and maintenance of the associated extinguishing system, refer to the manufacturers instructions and the standards and codes that apply to that systems.

Prior to any testing or maintenance on the AEGIS, perform the following:

1. Disable ARCs and NACs via the **Output Disable** control switch.
2. Physically disconnect the wiring to initiator assemblies (if used) from the release-circuit terminals, short the leads together, and wrap the leads in insulating tape
3. Physically disconnect all control heads (if used) from their associated agent-storage-container discharge valves
4. Physically disconnect the wiring to solenoid valves (if used) for pre-action/deluge sprinkler systems
5. Ensure that emergency operations controlled by this system such as facility power shutoff are bypassed
6. Notify personnel in the facility and at off-premises monitoring locations that you are working on the system and that you will inform them when servicing has ended.

5-2 TESTING FREQUENCY

The frequency shall be per NFPA 72 (latest edition) stated below, or as required by the local Authority Having Jurisdiction (AHJ), whichever is more stringent.

5-3 TESTING

5-3.1 Battery Status Check

1. Disconnect AC power.
2. Allow control unit to operate on the batteries for about one hour.
3. Measure the individual battery voltages. If any battery reads 1.5 V or more below its rated voltage, that battery should be replaced.

Generally, if one of the batteries is low, the other(s) will soon fail. It is advisable to replace all the batteries in a set when one requires replacement. Any battery that has been in service for 36 months or more must be replaced.

5-3.2 Battery Test

The following sequence will display the battery open circuit voltage and charge current:

1. Press and hold **Acknowledge** and **Signal Silence** control switches simultaneously for five (5) seconds. As long as both keys are pressed, the battery voltage is displayed for three (3) seconds, and then the battery current. These alternate every three (3) seconds.
2. The battery test will exit if either control switch is released, or if a control unit status change occurs.

5-3.2.1 BATTERY VOLTAGE DISPLAY

Battery voltage will be as shown in Figure 5-1. The units are in Volts.

Figure 5-1. Battery Voltage Display

5-3.2.2 BATTERY CHARGE CURRENT DISPLAY

Battery charge current will be as shown in Figure 5-2. The units are in Amps.

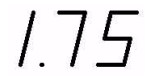


Figure 5-2. Battery Charge Current Display

5-3.3 Replacing the Batteries

Before replacing batteries, disconnect AC power. Batteries should be replaced at least once every 36 months, or as directed by the local Authority Having Jurisdiction. Do not install a battery set whose open circuit voltage is less than 22 volts.

5-3.4 Lamp Test

Use the following procedures to perform the lamp/buzzer test.

1. Verify that the control unit is in normal standby mode with no alarms, troubles or supervisory conditions.
2. Press and hold the **Acknowledge** control switch for a period of five (5) seconds. The LEDs and the digital display characters will illuminate, and the buzzer will sound. This will continue until the **Acknowledge** control switch is released, or there is a status change to the control unit. This will enable malfunctioning LEDs/segments to be visually sighted.

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CHAPTER 6
TROUBLESHOOTING

6-1 PURPOSE

This chapter provides diagnostic information, probable causes, and the method(s) to return the Kidde AEGIS to proper operating conditions.

Prior to taking corrective action or performing any maintenance functions, you must refer to Paragraph 5-1 and follow the instructions specified there.

6-2 TROUBLE DIAGNOSTICS

Diagnostics allow the operator to determine the cause of trouble. To access the diagnostic function, the control unit needs to have at least one active trouble condition. Perform the following:

Step	Description	Display Examples
1	Press and hold the **Signal Silence** control switch for five (5) seconds. A 3-digit Trouble code will be displayed until the **Signal Silence** control switch is released (sample on right).	
2	If multiple troubles exist, the display will blink one second on, one second off, and the trouble codes will sequence to the next code every time the display illuminates. When all codes have been displayed, the sequence will repeat until the **Signal Silence** control switch is released (sample on right).	 

6-3 TROUBLE CODES AND CORRECTIVE ACTION

Code	Trouble	Corrective Action
000	Microprocessor or PCB	Replace the PCB.
001	Ground	Check for connections to earth ground on field wiring whose removal restores proper earth-ground offset voltage of 6.60 Vdc nominal.
002	AC Voltage below 85%	Check incoming AC power.
003	Primary PSU Output Voltage	Check power supply connector, from the power supply to main PCB (PSU J2). Replace the power supply assembly.
004	No Secondary Power Connected	Verify battery connections to PCB (TB12). In the presence of primary power, no chargeable batteries can be detected. Either they are too discharged (<17V), or not connected at all. In either case there will be no battery charging.
005	Battery Charger Fault	Measure Power Supply voltage (27.6 Vdc) (PSU J2). If correct, replace PCB. If not correct, replace power supply.

Code	Trouble	Corrective Action
006	Low Battery	Check battery voltage, must be greater than 20.5 Vdc in the absence of primary power. When voltage drops as low as 19.5 Vdc, the charger will disconnect and the outputs will be isolated.
007	Reversed Battery	Verify Battery polarity.
008	Detector #1 Open Circuit	Look for discontinuity in detector #1 wiring. Check for missing/incorrect value 5.1K resistor.
009	Detector #2 Open Circuit	Look for discontinuity in Detector #2 wiring. Check for missing/incorrect value 5.1K resistor.
010	Detector #3/Waterflow Open Circuit	Look for discontinuity in Detector #3/Waterflow wiring. Check for missing/incorrect value 5.1K resistor.
011	Manual Release Open Circuit	Look for discontinuity in manual release circuit wiring. Check for missing/incorrect value 5.1K resistor.
012	Supervisory #1 Open Circuit	Look for discontinuity in Supervisory #1 wiring. Check for missing/incorrect value 5.1K resistor.
013	Supervisory #2 Open Circuit	Look for discontinuity in Supervisory #2 wiring. Check for missing/incorrect value 5.1K resistor.
014	Invalid Abort	Abort station activated in non-alarm condition.
015	Abort Open Circuit	Look for discontinuity in circuit wiring.
016	ARC #1 Short Circuit	Troubleshoot ARC #1 wiring by breaking-up circuit to isolate the short.
017	ARC #1 Open Circuit	Look for discontinuity in ARC #1 wiring. Check ARC #1 configuration.
018	ARC #2 Short Circuit	Troubleshoot ARC #2 wiring by breaking-up circuit to isolate the short.
019	ARC #2 Open Circuit	Look for discontinuity in ARC #2 wiring. Check ARC #2 configuration.
020	NAC #1 Short Circuit	Troubleshoot NAC #1 wiring by breaking-up circuit to isolate the short.
021	NAC #1 Open Circuit	Look for discontinuity in NAC #1 wiring. Check for missing/incorrect value 5.1K resistor.
022	NAC #2 Short Circuit	Troubleshoot NAC #1 wiring by breaking-up circuit to isolate the short.
023	NAC #2 Open Circuit	Look for discontinuity in NAC #1 wiring. Check for missing/incorrect value 5.1K resistor.
024	NAC #3 Short Circuit	Troubleshoot NAC #1 wiring by breaking-up circuit to isolate the short.
025	NAC #3 Open Circuit	Look for discontinuity in NAC #1 wiring. Check for missing/incorrect value 5.1K resistor.
026	ARC #1 Not Open Circuit	Check configuration to make sure ARC #1 is enabled.
027	ARC #2 Not Open Circuit	Check configuration to make sure ARC #2 is enabled.
028	Serial Cable Connected	Remove serial cable.

CHAPTER 7
PARTS LIST

Description	Part Number
Kidde AEGIS Control Unit	84-732001-001
Kidde AEGIS Control Unit with Switches	84-732001-201
Installation/Configuration Kit	06-220148-002
Operating Instructions	06-236719-002
Replacement Hardware Installation Kit	06-220149-001
Replacement Enclosure Assembly	06-220172-002
Replacement Enclosure Assembly (with Switches)	06-220174-002
Replacement Switch Kit	06-220176-001
Replacement PCB Assembly	06-220150-001
Replacement Power Supply	06-118394-002
Trim Ring	76-600000-007
In-Line Releasing Diode (10K) Kit	06-220023-001
Battery Enclosure	76-100010-001
Dead-Front Panel	06-220175-001
Replacement Bezel Assembly	06-220151-001
Spare Key	06-118013-001
Spare Keylock with Keys	06-129924-001
EOL Backbox (Canadian applications only)	06-129963-002
Battery Harness	06-129925-002

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APPENDIX A
BATTERY CAPACITY CALCULATIONS

A-1 STANDBY TIME DURATION

To calculate battery capacity for a specific application, first select the duration for which standby and alarm power is required using Table A-1.

Table A-1. Duration Time for Standby and Alarm

Type of System	Standby	Alarm
Local or Central Station (Protected Premises) Fire Alarm Systems per NFPA 72	24 hours	5 minutes
Clean Agent Suppression Systems per NFPA 12, 12A, 12B, and 2001	24 hours	5 minutes
Deluge or Pre-Action Water Spray Systems per Factory Mutual	90 hours	10 minutes

A-2 POWER CONSUMPTION DATA

Table A-2 lists the power consumption of the various system components.

Table A-2. Power Consumptions for System Components

Number	Component	Standby Power (mA)	Alarm Power (mA)
1	Kidde AEGIS™ Control Unit[1]	100.00	240.00
2	Auxiliary Power Output[2]	1000.00 Max.	1000.00 Max.
3	Programmable Relays	0.00	20.00
4	Ionization/Photoelectric/Electronic Heat Detectors	0.07	70.00
5	DH-60 (2W) Duct Detectors[3]	0.07	70.00
6	Contact Type Heat Detectors[3]	0.00	70.00
7	NACs 1, 2, and 3[4]	0.00	1500.00 each
8	Release Solenoids - Steady[5]	0.00	Refer to Appendix B
9	Release Solenoids - Momentary[6]	0.00	0.00
10	Release - Initiators[6]	0.00	0.00

[1] The standby and alarm values for the AEGIS include the Trouble Relay.

[2] The Auxiliary Power Output current value stated is the maximum allowed.

[3] The Standby current stated for Ionization, Photoelectric, Electronic Heat, Duct and Contact Heat Detectors is for each detector. The Alarm current is for the Detection Circuit.

[4] The current value stated for the Notification Appliance Circuits is the maximum each.

[5] For the Alarm current values of Steady Release Solenoids, refer to Appendix B.

[6] Momentary Agent Release Solenoids and Initiators are negligible in their current requirements and do not need to be included in the calculation.

A-3 STANDBY AND ALARM POWER REQUIREMENTS

Use Table A-3 to calculate the Standby and Alarm Power requirement of the Kidde AEGIS.

A-3.1 Procedure

1. Insert the actual count of components and devices into the **Standby Quantity** column.
2. Insert the quantity of these components devices which can be in alarm into the **Alarm Quantity** column.
3. Multiply the quantity count by the **Each** — **Standby and Alarm Power** and insert these values into the **Total** column.
4. Calculate the sum of the values in the **Total Standby** and **Total Alarm** columns to arrive at the **Total Standby Power** and **Total Alarm Power** in milliamperes.
5. Divide the mA values for **Total Power** in Amperes.

Table A-3. Standby and Alarm Calculation Guide

Number	Component	Standby Power (mA)			Alarm Power (mA)		
		Qty	Each	Total	Qty	Each	Total
1	AEGIS Control Unit	1	100.00	100.00	1	240.00	240.00
2	Auxiliary Power Output[1]		1000.00			1000.00	
3	Programmable Relays[2]		0.00	0.00		20.00	
4	Detection Circuits 1, 2, and 3[3]		0.00	0.00		70.00	
5	Ionization Detectors		0.07			0.00	
6	Photoelectric Detectors		0.07			0.00	
7	Electronic Heat Detectors		0.07			0.00	
8	DH-60 (2W) Duct Detectors		0.07			0.00	
9	Contact Type Heat Detectors		0.00	0.00		0.00	
10	NACs 1, 2, and 3[4]		0.00	0.00		1500.00	
11	Release Solenoids[5]		0.00	0.00		0.00	
	Total Power in mA						
	Total Power in Amperes						

[1] The Auxiliary Power Output current value stated is the maximum allowed. See Note 6 below.

[2] The value stated for the Programmable Relays is for each individual relay when energized.

[3] Standby currents should be considered for all Ionization, Photoelectric, Duct and Heat Detectors in the three Detection Circuits. However, since only one detector can be in Alarm, the Alarm current should only be considered for the entire Detection Circuit.

[4] The value stated for the NACs is the maximum for each. See Note 6 below.

[5] For the Alarm current values of Steady Release Solenoids, refer to Appendix B.

[6] Since the Power Supply of the Kidde AEGIS unit is rated at 5.4 Amps, the system designer should ensure that the system circuits are loaded so as to keep the calculated alarm current equal to or less than 5.4 Amps.

A-4 BATTERY CAPACITY CALCULATIONS

Based on the "Duration" for which battery backup is required (refer to Paragraph A-1) and the **Total Standby Power** and **Total Alarm Power** values (refer to Paragraph A-3), the next step is to calculate the battery capacity in Ampere-Hours (AH) using Table A-4.

Table A-4. Battery Capacity Calculations

Total Power Required (Amps)			Multiply By	Duration (Hours)	Equals	Ampere-Hour (AH)
Total Standby Current (Amps)	=		x		=	
Total Alarm Current (Amps)	=		x		=	
Total Calculated AH (column sum)					=	
Required Battery AH using 110% Deration Factor (multiply Total Calculated AH by 1.1)					=	
Selected Battery Capacity (must be greater than or equal to required battery AH and lower than 68 AH)					=	

Note: 1. The above battery capacity calculation and subsequent selection assumes that the battery is installed in ambient room temperatures. If installed in below ambient, consult the battery manufacturer for requirement of additional deration factors not considered above.

2. 5 minutes = 0.083 hours
   10 minutes = 0.167 hours

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APPENDIX B
LIST OF AGENCY LISTED COMPATIBLE DEVICES

B-1 DETECTORS AND BASES

Table B-1. Detectors and Bases

Device	Model	Part Number
Ionization Smoke Detector	CPD-7051	70-510000-001
Ionization Detector Duct Head	CPD-7051D	70-510000-060
Advanced Ionization Smoke Detector	CPD-7054	70-540000-001
Advanced Ionization Detector Duct Head	CPD-7054D	70-540000-002
Photoelectric Smoke Detector	PSD-7155	71-550000-001
Photoelectric Detector Duct Head	PSD-7155D	71-550000-060
Photoelectric Smoke Detector	PSD-7155P	71-550000-002
Photoelectric Detector with 135°F Sensor	PSD-7156	71-560000-001
Advanced Photoelectric Smoke Detector	PSD-7157	71-570000-001
Advanced Photoelectric Detector Duct Head	PSD-7157D	71-570000-002
Electronic 135°F Fixed with 15°F ROR Heat Detector	THD-7052	70-520000-001
Electronic 135°F Fixed Temp Heat Detector	THD-7053	70-530000-001
2-Wire Detector Base	2WB	70-501000-001
2-Wire Detector Base	2WRLT	70-501000-002
2-Wire Detector Base	2WRB	70-501000-005
2-Wire Relay Module	2WRM	70-500000-004
2-Wire Duct Housing	DH-60-2W	70-600000-200
2-Wire Duct Housing with CPD-7051D	DH-60-2CPD	70-600000-251
2-Wire Duct Housing with CPD-7054D	DH-60-2ACD	70-600000-254
2-Wire Duct Housing with PSD-7155D	DH-60-2PSD	70-600000-255
2-Wire Duct Housing with PSD-7157D	DH-60-2APD	70-600000-257
4-Wire Detector Base	4WRB	70-501000-101
4-Wire Duct Housing less Detector with Integral Exhaust Tube & 24/120/240 VAC Transformer	DH-60	70-600000-000
4-Wire Duct Housing with *Original* Ionization Detector CPD-7051D	DH-60-CPD	70-600000-051
4-Wire Duct Housing with *Advanced* Ionization Detector CPD-7054D	DH-60-ACD	70-600000-054
4-Wire Duct Housing with *Original* Photoelectric Detector PSD-7155D	DH-60-PSD	70-600000-155
4-Wire Duct Housing with *Advanced* Photoelectric Detector PSD-7157D	DH-60-APD	70-600000-157

Table B-2. Releasing Solenoid

				Wire Length (ft.)					
Device	**I (Min.) Amps**	**Resistance (Max.) Ohms**	**On Time**	**12 AWG**	**14 AWG**	**16 AWG**	**18 AWG**	**Max. Number per Circuits**	**Agency**
890181	2.4	10	Momentary	300	200	120	—	1 or 2	UL, FM
895630	2.0	12	Momentary	300	200	120	—	1 or 2	UL, FM
899175	2.20	10.8	Momentary	300	200	120	—	1 or 2	UL, FM
48650001	0.24	103	Steady	3000	2000	1200	800	1 or 2	UL, FM
06-118329-001	0.225	108	Steady	3000	2000	1200	800	1 or 2	FM
06-118384-001	0.52	46	Steady	1440	760	480	340	1 or 2	UL
38-509834-001	0.632	38	Steady	1050	550	330	240	1 or 2	UL, FM
38-509837-001	0.4	60	Steady	2300	1460	915	570	1 or 2	UL, FM
81-100000-001	0.44	59	Steady	2300	1460	915	570	1 or 2	UL, FM
87-120099-001*	2	12	Momentary	360	240	140	—	1 or 2	UL, FM
60-120099-001*	2	12	Momentary	360	240	140	—	1 or 2	UL, FM
87-120099-600*	2	12	Momentary	360	240	140	—	1 or 2	UL, FM
897494-000	1.5	14.2	Steady	380	240	150	—	1	UL, FM
897494-530	1.5	14.2	Steady	380	240	150	—	1	UL, FM
90-487100-001*	2	12	Momentary	360	240	140	——	1 or 2	UL, FM
FM Group A	0.458	52	Steady	1440	760	480	340	1	FM
FM Group B, D	0.7	34	Steady	940	500	300	220	1	FM
FM Group E, G	0.42	57	Steady	1570	760	525	370	1	FM
FM Group F	Skinner 24 Vdc, 22 Watt Solenoid 7312BN4TNLVNOC322C2							1	FM
FM Group I	Victaulic 24 Vdc, 8.7 Watts, 364 mA series 753-E Solenoid							1	FM
FM Group J	Viking Model No. 11591, 11592, 11595, and 11596, 24 Vdc, 10 Watts							1	FM
FM Group K	Viking Model No. 11601, 11602, and 13215, 24 Vdc, 9 Watts							1	FM

* **Must** be used in conjunction with Microswitch P/N 87-120039-001 for momentary operation.

Table B-3. Initiator-Based Releasing Devices

Device	**I (Min.) Amps**	**Resistance (Max.) Ohms**	**On Time**	**Max. Number per Circuits**	**Agency**
83-131025-001	*	3	Momentary	1	

* The maximum circuit resistance for this device must be 10 ohms, regardless of the number used. The firing current will be 2.5 Amps.

Table B-4. Miscellaneous Devices

Device	**Model Number**	**Supplier/Mfg.**
Receiving Units for Central Station	5104B	Silent Knight

APPENDIX C
TECHNICAL SPECIFICATIONS

	Item	Description
A	**NUMBER OF HAZARDS**	**One (1)**
B	**POWER**	
	AC Main Input	120 Vac/240 Vac 50/60 Hz (90 to 264 Vrms, 47 to 63 Hz)
	Current Consumption 120 Vac: 240 Vac:	 3.2 Amps 1.6 Amps
	Required Breaker	15 Amps
	Power Supply Output	5.4 Amps @ 27 Vdc
	Battery Charger Output	6 Amps @ 27 Vdc
	Battery Capacity	Up to 68 AH @ 24 Vdc
	Battery Cutout Voltage	18.6 Vdc
	Auxiliary Power Output	1 Amp maximum @ 24 Vdc Nominal
	Battery Transfer	85% of 120 Vac 85% of 240 Vac
C	**Input Circuits**	
C.1	**Detection Circuits**	**Three (3)** - Two (2) for Suppression Input - Third configurable as either independent Detection Circuit or for Waterflow
	Compatible Devices	- 25 conventional electronic Smoke/Heat detectors listed in Appendix B. - A quantity of Normally-Open contact-closure devices subject to maximum allowable wiring resistance.
	Circuit Type	- Class A (Style D) or Class B (Style B) supervised - Detects Opens and Ground Faults - Power Limited
	Circuit Voltage	Nominal 24 Vdc, 28 Vdc maximum
	Maximum Line Resistance	100 ohms per loop
	Maximum Alarm Current	70 mA
	End-of-Line Resistor	5.1K, 5%, 1/2 W

	Item	Description
C.2	**Manual Release**	**One (1)**
	Compatible Devices	A quantity of Normally-Open contact-closure devices subject to maximum allowable wiring resistance.
	Circuit Type	- Class A (Style D) or Class B (Style B) supervised - Detects Opens and Ground Faults - Power Limited
	Circuit Voltage	Nominal 24 Vdc, 28 Vdc maximum
	Maximum Line Resistance	100 ohms per loop
	Maximum Current	10 mA
	End-of-Line Resistor	5.1K, 5%, 1/2 W
C.3	**Abort Input**	**One (1)**
	Compatible Devices	A quantity of Normally-Open contact-closure devices subject to maximum allowable wiring resistance.
	Circuit Type	- Class A (Style D) or Class B (Style B) supervised - Detects Opens and Ground Faults - Power Limited
	Circuit Voltage	Nominal 24 Vdc, 28 Vdc maximum
	Maximum Line Resistance	100 ohms per loop
	Maximum Current	10 mA
	End-of-Line Resistor	5.1K, 5%, 1/2 W
C.4	**Supervisory Input**	**Two (2)**
	Compatible Devices	A quantity of Normally-Open contact-closure devices subject to maximum allowable wiring resistance.
	Circuit Type	- Class A (Style D) or Class B (Style B) supervised - Detects Opens and Ground Faults - Power Limited
	Circuit Voltage	Nominal 24 Vdc, 28 Vdc maximum
	Maximum Line Resistance	100 ohms per loop
	Maximum Current	10 mA
	End-of-Line Resistor	5.1K, 5%, 1/2 W

	Item	Description
D	**OUTPUT CIRCUITS**	
D.1	**Notification Appliance**	**Three (3)** - NAC 1: First Alarm Condition - NAC 2: Pre-Release Condition - NAC 3: Release Condition
	Compatible Devices	A quantity of Polarized 24 Vdc Notification Appliances subject to the maximum current and maximum allowable voltage drop per circuit.
	Circuit type	- Class A (Style Y) or Class B (Style Z) supervised - Detects Opens and Ground Faults - Power Limited
	Circuit Voltage	Nominal 24 Vdc, 28 Vdc maximum
	Total Voltage Drop at End-of-Line	2 V
	End-of-Line Resistor	5.1K, 5%, 1/2 W
D.2	**Output Relays**	**Four (4)** - Programmable: Three (3), normally de-energized with power on - Trouble: One (1), normally energized with power on
	Relay Type	Voltage free, Form-C (1 N.O. and 1 N.C.)
	Contact Rating	3 Amps @ 30 Vdc (resistive)
D.3	**Releasing Circuits**	**Two (2)** - ARC 1 - ARC 2
	Compatible Devices	On each circuit the following devices listed in Appendix B - 1 or 2 Control Head Solenoids - 1 Initiator - 1 or 2 FM Pre-Action/Deluge/Sprinkler Solenoids
	Releasing Configurations	- Solenoids on both ARC 1 and ARC 2 - Solenoids on ARC 1 and one Initiator on ARC 2 or vice-versa - One Initiator on both ARC 1 and ARC 2
	Circuit Type	- Class B (Style Z) supervised - Detects Opens and Ground Faults - Normally no Short detection and non-Power Limited - Except with Initiators, power limiting and short circuit detection options enabled with In-line Diode-Resistor device
	Operating Voltage	Nominal 24 Vdc, 28 Vdc maximum
	End-of-Line Resistor	Not required

	Item	Description
E	**ENCLOSURE**	
	Degree of Protection	NEMA 1
	Material of Construction	18 Gauge (0.053 inches or 1.35 mm) sheet steel
	Color	Red
	Assembled Dimensions - With Standard Door - With Switch-Door	 14-1/4 in. Width x 5 in. Depth x 19 in. Height (362 mm x 127 mm x 483 mm) 14-1/4 in. Width x 6 in. Depth x 19 in. Height (362 mm x 152 mm x 483 mm)
	Approximate Weight (without batteries) - Standard Assembled - Standard Shipping - Canadian Assembled with Dead-Front Panel - Dead Front Panel Shipping - Switch Panel Assembled - Switch Panel Shipping	 18 lbs. (8 kg) 21 lbs. (9 kg) 22 lbs. (10 kg) 4 lbs. (2 kg) 19 lbs. (8 kg) 21 lbs. (10 kg)
F	**OPERATING ENVIRONMENT**	
	Temperature	32°F to 120°F (0°C to 49°C)
	Relative Humidity	93% RH @ 90°F

APPENDIX D
FM RULES FOR PREACTION/DELUGE SYSTEMS

Kidde AEGIS™ applications which require Factory Mutual (FM) approved Pre-Action and/or Deluge Systems must conform to the following guidelines:

- Detection Zone 1 (Det1), Detection Zone 2 (Det2) and Waterflow (W'Flow) Initiating Circuits must be configured for Class A, Style D wiring.
- The Battery backup system must provide for 90 hours of Standby operation followed by 10 minutes of Alarm operation. Refer Appendix A for calculations.
- The Agent Release Output must be configured for Deluge Solenoid activation. The Solenoid Activation Time must be set either for:
  - 10 minutes, or
  - 15 minutes, or
  - On-until-reset.

The wiring connection of the Control Unit to the Deluge Solenoids must be as detailed in the Installation section of this Manual.

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APPENDIX E
CENTRAL STATION OPERATION

The Kidde AEGIS™ should be configured for Central Station operation as follows:

- One of the three (3) Programmable Relays should be configured for any alarm. For example:

1	2, 3, OR 4	1

- The Trouble Relay should be set to delay AC Failure Response by a period acceptable to the local AHJ. For example:

1	15	X

Refer to Chapter 3 for details on how to enter or change configuration settings.

A Silent Knight DACT Model 5104B must be wired to the control unit, as shown in Figure E-1. Refer to the Model 5104B Installation Manual for information regarding connection of the DACT to telephone lines for Alarm and Trouble transmission(s).

Note 1: Wiring must be installed in conduit within 20 feet.

Note 2: Central Station is not suitable for use with Canadian applications.

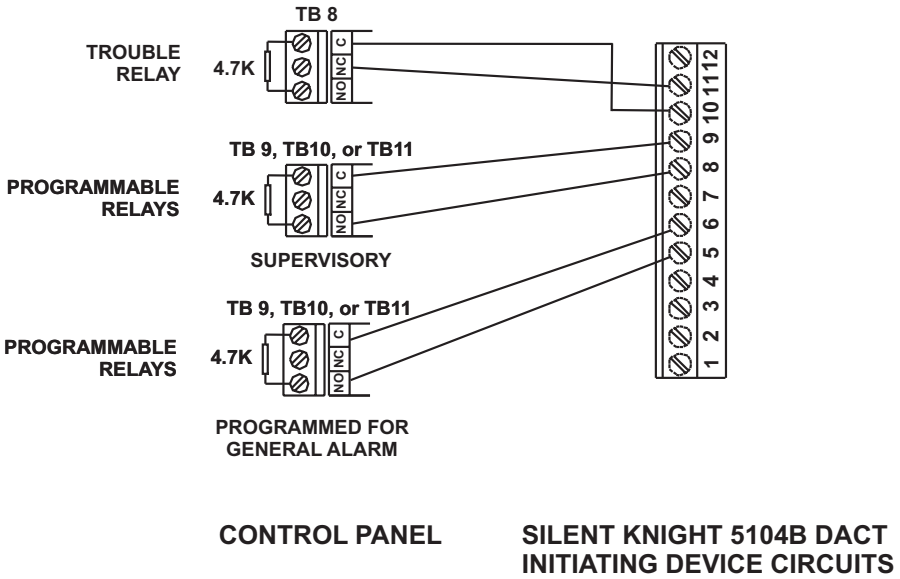

Figure E-1. Wiring for the DACT

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APPENDIX F
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 1/4-inch (6 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 F-1 shows typical wiring for power-limited and non-power-limited circuits.

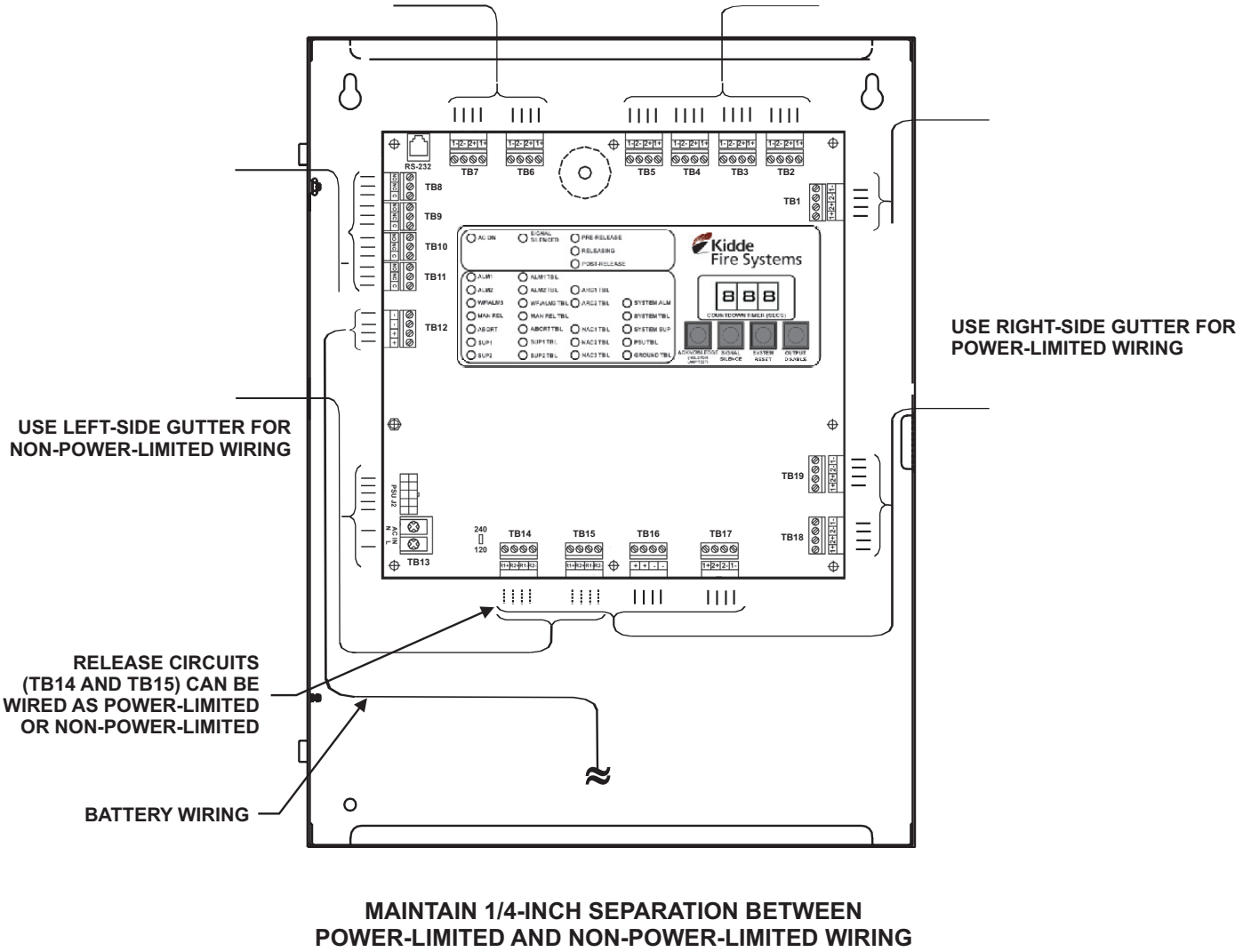

Figure F-1. Power-Limited and Non-Power-Limited Wiring

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