**Protection Professionals**
325 U.S. Route 1
Falmouth, ME 04105
Ph 207-775-5755
Fax 207-781-2064

# Device List

No. 7856

| List Date |
|---|
| 4/6/2015 |

| Bill To Name / Address | Job Site |
|---|---|
| Ideal Electric, Inc<br>86 China Road<br>Winslow, Me 04901 | 134 Washington Ave<br>Portland, Maine |

**CHANGING THIS DEVICE LIST DOES NOT ALTER THE ORIGINAL ESTIMATE**
**Attach copy to Purchase Order for accounting**

| Estimate No. |
|---|
| |

| Item | Description | Qty To Order | Qty Ordered |
|---|---|---|---|
| | ***As per specification the wiring is Class A. ***** | | |
| | Fire Alarm System | | |
| P300-3992643 | Potter P300: 127 points expandable to 381 points Addressable Fire Alarm Control Panel, 2 NAC circuits @ 3 amps each, total power is 5 amps, 2 I/O circuits @ 1 amp each | 1 | |
| UD-1000-3006465 | Potter UD-1000 Digital Alarm Communicator Transmitter | 1 | |
| Bat 12-18 | Battery 12-18 | 2 | |
| CA-6075-3006459 | Potter CA-6075 Class A Module | 1 | |
| E120V-GT | Space Age 120V Surge Protector plus lockout and circuit breaker labels for FACP | 1 | |
| RA-6500-3992660 | LCD remote annunciator, 160 characters | 1 | |
| PSA-1430800 | Potter PSA Addressable Photo Smoke Detector | 28 | |
| RHA-1430804 | Potter RHA Rate of Rise Heat Detector | 5 | |
| AB-6-1430806 | Potter AB-6 six Inch Addressable Base | 33 | |
| TRM-4-1430824 | Potter TRM-4 Twin Relay Module (elevator) | 4 | |
| DCM-4-1430822 | Potter DCM-4 Dual Input Contact Module (sprinkler) | 3 | |
| MCM-1430820 | Potter MCM Miniature Contact Module (elevator tamper) | 1 | |
| 06-SSU00672 | Fire Document box 12 inches wide X 13.1 inches high X 2.25 inches deep, CAT 30 keyed | 1 | |
| WS-93 lockset | Potter lock set; Wind #10296-400 | 1 | |
| APS-DA-1430811 | Potter ABS-DA Addressable Pull Station Dual Action | 11 | |
| HS-24WR-4890030 | Horn/strobe wall adjustable candela | 15 | |
| S-24WR-4890010 | Strobe, wall mount, adjustable | 19 | |
| MH-12/24R-4560041 | Mini-horn, red | 17 | |
| HS24-177R-4890034 | Horn/strobe, wall mount, 177 candela, red, ADA rooms (room 402 only) | 1 | |
| BK-CO1224T | Carbon Monoxide Detector with alarm and trouble contacts, 20ma standby and 40ma in alarm, 12/24 VDC | 1 | |
| MCM-1430820 | Potter MCM Miniature Contact Module | 1 | |
| 3270 | Knox Box 3270 Series Recessed mounted black / door | 1 | |

**Ordered By:** _____ **Date:** _____

**Received By:** _____ **Date:** _____

**Protection Professionals**
325 U.S. Route 1
Falmouth, ME 04105
Ph 207-775-5755
Fax 207-781-2064

# Device List

No. 7856

| List Date |
|---|
| 4/6/2015 |

| Bill To Name / Address | Job Site |
|---|---|
| Ideal Electric, Inc<br>86 China Road<br>Winslow, Me 04901 | 134 Washington Ave<br>Portland, Maine |

**CHANGING THIS DEVICE LIST DOES NOT ALTER THE ORIGINAL ESTIMATE**
**Attach copy to Purchase Order for accounting**

| Estimate No. |
|---|
| |

| Item | Description | Qty To Order | Qty Ordered |
|---|---|---|---|
| | Intercom system | | |
| CM492/024 | INTERCOM STATION WITH 24 BUTTONS | 1 | |
| AM190D | Directory Panel | 1 | |
| OH193 | Intercom Housing | 1 | |
| OF193 | Intercom frame | 1 | |
| ss102a | Transformer 16VAC 10VA | 1 | |
| PK543A | Intercom amplifier | 1 | |
| IR104E | Intercom Station (4-wire) | 18 | |
| IH101 | Housing 2" IR series | 18 | |
| LI404B | Intercom ADA strobe (for room 402 only) | 1 | |
| | Intercom system with TTY capability. This could be used instead of the TekTone product as specified or in addition to. The TekTone product does not use a telephone line and would not be TTY capable. All door controls are supplied by others. This option would require a phone line which is supplied by others. | | |
| LN-AE100 | Telephone Entry System for 125 users | 1 | |
| | Area of Rescue system. Cornell Area of Rescue cable is $585.00/1,000 feet plus tax. | | |
| A-4204 | RESCUE ASSISTANCE CONTROL PANEL 4 ZONE AUDIO STAINLESS STEEL | 1 | |
| BB-40 | Back box for A-4204 | 1 | |
| 4201 B/VM | Call Station with audio and mushroom switch | 3 | |
| SN-C48 | Push for Help signage for Area of Rescue/Refuge | 3 | |
| SN-P48SL | Area of Rescue signage with Braille | 3 | |
| B-5243A | POWER SUPPLY & BACK UP BATTERY | 1 | |
| | 5.5% Maine Sales Tax | | |

**Ordered By:** _____ **Date:** _____

**Received By:** _____ **Date:** _____

# P300
## Fire Alarm Control Panel

## Features

- 127 expandable to 381 Analog Addressable Points. Any combination of detectors/modules
- 5 Amp Power Supply. Expandable to 315 amps
- 2 NAC circuits rated at 3 amps maximum, expandable to 188.
- 2 Input/Output (I/O) Circuits for system flexibility rated at 1 Amp each
- Built-in UL Listed IP Communicator
- Built-in email event notification and report capability.
- Optional Dual Line Digital Alarm Communicator
- System wide synchronization of Potter/AMSECO, Gentex, Cooper/Wheelock, and System Sensor signals.
- No twisted or shielded wiring required.
- Cabinet will accommodate up to 18AH batteries. Panel will charge up to 55AH.
- Capable of Class A or Class B wiring configurations
- Built-in NFPA 72 compliant smoke detector sensitivity test
- Dead-front cabinet design
- 1000 Event History Buffer


S735 7165-0328:0195 NYC Fire Dept. Certificate of Approval 6156

*Product includes a 5 year warranty*

## Potter/Nohmi Protocol Features

- Less than 4 second polling time
- LED's visible from 360°
- Adjustable Smoke Detector Sensitivity
- Adjustable Heat Detector Temperature
- High Temperature Heat Detector as fixed temp
- Drift Compensation
- Maintenance Alerts
- Day/Night Mode

## Description

The P300 is a mid-sized analog/addressable fire alarm control panel with a total of 381 points. The points may be any combination of smoke sensors, heat detectors or modules. This panel has a 5 amp power supply that is distributed across two Notification Appliance Circuits (NACs) and two Input/Output (I/O) Circuits.

The NAC circuits are rated at a maximum of 3 Amps each and the I/O circuits are rated for a maximum of 1 Amp each. All of the outputs may be configured for notification or auxiliary power. In addition, each NAC and Output can be programmed for strobe synchronization and utilizes Quadrasync for strobe synchronization across circuits of various brands. The I/O may also be programmed for a dry contact input such as a water flow switch or pull station.

The cabinet will hold two 12 volt, 8 amp/hour batteries or two 12 volt, 18 amp/hour batteries. The system when fully loaded will charge 55 amp/hour batteries. Anything larger than 18 amp/hour will require an external battery cabinet the SSU-00050.

The panel has the Potter P-Link connection for expansion with remote annunciators, intelligent power supplies and other optional modules. The P-Link will support 31 accessories in any combination. The RA-6075 is a 2 x 16 LCD annunciator. The RA-6500 offers a larger 4 x 40 line LCD display that allows points and descriptions to be shown simultaneously. Intelligent remote power supplies repeat the P-Link data and can be mounted 6,500 feet from reach other. P-Link devices such as the RLY-5 relay module, SPG-1000 serial parallel gateway and DRV-50 LED driver can be mounted anywhere in the chain of communication with a maximum of 31 of each P-Link devices. A total of two (2) SLCE-127 Signaling Line Circuit Expanders (loop cards) may be installed in the P300 enclosure, in a remote enclosure such as the AE-8 or with a PSN-1000E remote intelligent power supply.

The entire system, including the SLC, NACs and P-Link may be converted with a CA-6075 Class A module. The entire system is programmed using a Windows based computer software and requires the use of a software programming software key.

The P300 can communicate to a monitoring station using the on board Ethernet connection to an IP communicator or using optional UL listed UD-1000 traditional two line alarm communicator. The UD-1000 connects to the main board and has two phone line jacks provided. The IP communicator uses a RJ-45 connection and when connected to the internet may be programmed to E-mail system status, history reports, reminders and the configuration file. The panel may be updated remotely using the UD-1000. If the Ethernet connection is needed remotely, the FCB-1000 fire communication bridge may be installed to allow the Ethernet connection to be installed in a rack.

## SLC Loop Accessories

The control panel may be connected with up to 381 addressable devices or modules in any combination. The SLC is not restricted by any special wire requirements and may be wired with any wire that complies with the NEC.

## SLC Loop Devices

| Device | Description |
|---|---|
| **PSA** | Analog Photo Electric Smoke Detector is a smoke detector with a listed obscuration of 1.02 to 3.83 percent per foot. |
| **PSHA** | Combination Analog Photo Electric Smoke/Heat Detector – a smoke detector with a listed obscuration of 1.02 to 3.83 percent obscuration and a fixed temperature 135° Fahrenheit heat detector |
| **FHA** | Analog Fixed Temperature Heat Detector that is selectable from 135° F to 185°F |
| **RHA** | Analog Rate or Rise Heat Detector that has a fixed temperature selection from 135°F and 174°F and also will alarm if the temperature increase 12-15°F in one minute |
| **DDA** | Addressable Duct Smoke Detector |
| **AB-6** | 6” round base that is mounted to an electrical box and wired for connection of one of the above sensors |
| **AB-4** | 4” round base that may be mounted to an electrical box and wired for connection to the above sensors |
| **AIB** | Isolater base that interrupts a short in a SLC and prevents the short from affecting protected devices on the loop |
| **ARB** | Addressable Relay Base that contains two relays controlled by the SLC. One relay is rated at 8 amps at 240 VAC/30VDC and the other is rated at 2 amps 240 VAC/30 VDC |
| **ASB** | Addressable Sounder Base that contains an addressable sounder module that may be configured for local, group and all call. |

## Modules

| Device | Description |
|---|---|
| **MCM** | Miniature Contact Module provides a small foot print contact module for mounting inside an enclosure. |
| **APS-SA** | Single Action Addressable Pull Station |
| **APS-DA** | Dual Action Addressable Pull Station |
| **SCM-4** | Single Contact Module is a standard contact module with an LED that mounts into a 4” square electrical box. |
| **DCM-4** | Dual Contact Module is a device that can monitor two distinct inputs with a single device or in a Class A mode. |
| **TRM-4** | Twin Relay Module provides two form C relays that simultaneously active when the module is triggered by the control panel. Each relay is rated for 2 amps at 24VDC or 0.5 amps at 125VAC. |
| **MOM-4** | Monitored Output Module is a power switching module that monitors the circuit that is controlled by the control panel. |
| **CIZM-4** | Conventional Input Zone Module is used to connect conventional smoke detectors to the system that receive their power from the module. This module is like a conventional zone on the SLC. |
| **SCI** | Short Circuit Isolater interrupts a short on the SLC and prevents the short from affecting protected devices on the loop. |

## SLC Features

The Potter/Nohmi protocol is a digital protocol with a proven design for reliability and noise immunity. The system does not require special cable or conductors for connection of the Signaling Line Circuit as long as the cable is compliant with NFPA 70 and NFPA 72. The system allows for Class A or Class B installations as well as "T-Taps."

The total polling time for the protocol is about four (4) seconds which allows two polling cycles in the ANSI/UL 864 requirement of alarms reporting in less than ten seconds. Each loop is capable of 127 points with the exception of the P100 and P200.

## Sensor Features

The sensors through the fire alarm control panel provide a real time status as to the condition of the system. The smoke detector sensitivity, heat detector temperature level and drift compensation as all programmable options. The system also allows for a day/night mode where the panel automatically adjusts the sensitivity depending on the time of day. To assist in the reduction of false alarms, the smoke detectors also have a maintenance warning that sends a trouble signal when a detector is dirty to the point that it can no longer maintain the programmed sensitivity.

## User Interface

The fire alarm control panel has a 4 x 40 LCD display to provide information to the system status. The keypad has navigation keys to allow manipulation of the Menu on board the panel. The panel is shipped standard with the following LEDs:

- AC Power – Green
- Alarm – Red
- Earth Fault – Amber
- Supervisory-Amber
- Silenced-Amber
- Trouble-Amber

The common buttons include a Silence, Reset, Acknowledge and Drill. All of the buttons are accessible once the locked door is opened.

## P-Link

The P300 has a proprietary communication protocol that communicates through a RS-485 connection to field devices. Up to thirty-one (31) devices may be connected to a single P-Link connection. The P-Link includes the communication terminals and regulated 24 VDC connection for the field devices. The field devices may be any of the following:

SLCE-127-Analog/Addressable loop expansion module (maximum of 2 per P300)

RA-6075 – 2 x 16 LCD annunciator with a key pad in a locked metal enclosure.

RA-6500 – 4 x 40 LCD annunciator with a key pad in a locked metal enclosure

LED-16 – 16 LED annunciator with common indicators in a locked metal enclosure

PSN-1000(E) – 10 amp, remote intelligent power supply with 6 NACs, 2 I/Os and a P-Link repeater

CA-6075 – Class A convertor that converts the SLC, NACs and P-Link connection

UD-1000 – UL listed, Dual line telephone alarm communicator

DRV-50 – LED driver expander, used to connect up to 50 LEDs in a graphic display

FCB-1000 – Fire communication bridge, provides remote mounting of the Ethernet connection

FIB-1000 – Fiber interface module, used to extend P-Link to multi-mode fiber (2 required)

RLY-5 – Relay module, provides 5 form C relay contacts rated at 3.0 amps 24VDC/125AC

SPG-1000 – Serial parallel gateway, allows for the connection to a serial or parallel printer

The FIB-1000, FCB-1000 and the SPG-1000 may be installed in the stacker bracket or ordered with the optional rack mount enclosure.

AE-8 – Eight card expansion cabinet

AE-14 – Fourteen card expansion cabinet

## Ethernet/I.P. Connection

The P300 is shipped standard with an Ethernet connection. This connection is the programming port and may be connected to a building Wide Area Network (WAN) or Local Area Network (LAN). Once connected to the Internet, the panel may be selectively programmed to e-mail alarm conditions, trouble conditions, supervisory conditions, test, Event History and detector status. An e-mail may be sent to the panel and the panel will e-mail the event history, detector status, configuration file or server status to an authorized E-mail account. In addition, reminders may be set to send an e-mail for service, testing or other conditions.

In addition, the Ethernet connection is UL listed as an IP communicator. The IP communicator is listed to report to the UL listed Sur-Gard III IP receiver. The IP communicator replaces the traditional less reliable alarm communicator transmitter that utilized telephone lines. The IP communicator is an active method of connection and communication to the monitoring station.

# Specifications

## Electrical Specs: AC Mains

3.0 Amps @ 120 VAC 50/60 HZ

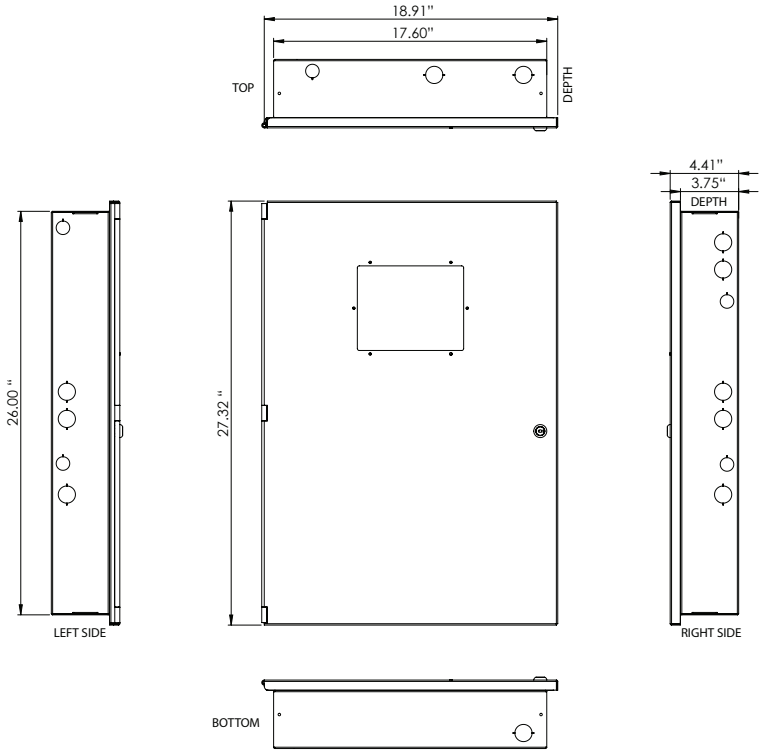
2.0 Amps @ 240 VAC 50/60 HZ

## Battery

130 mA Standby

220mA Alarm

- 5 Amps power for NACs, I/O and P-Link
- 3 Amps per NAC, regulated
- 1 Amp per I/O circuit, regulated
- Battery Charger range 8-55 Ah
- Battery Charger voltage 27.3 VDC
- P-Link maximum current of 1 Amp
- Panel holds (2) 8AH or (2) 18AH batteries




## Cabinet

- 16 gauge cold rolled steel with removable locked door
- Dimensions – 18 $^{15}/_{16}$"W x 27 $^{5}/_{16}$"H x 4 $^{7}/_{16}$"D
- Dead front to cover all electronics
- Lexan viewing window

## Temperature and Humidity

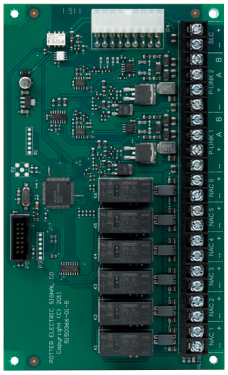
This fire alarm control is listed and approved for operation in an indoor application with temperature range fluctuations of 32° to 120° (0°C to 49°C) with a maximum humidity of 93% non-condensing. The ideal temperature is 77°F +/- 10°F (25°C +/-5°C).

## Standards

The P300 series fire alarm control panel complies with the following standards and codes.

- NFPA 13, 70 and 72
- ANSI/UL 864
    - o Local (L), Remote Station (RS), Central Station (CS), Propriety (PPU), Auxiliary (AUX)
    - o Type of Service: Automatic (A), Manual (M), Water flow (WF) Sprinkler Supervisory (SS)
    - o Type of Signaling: Digital Alarm Communicator (DAC), March Time (March), Non Coded (NC), Reverse Polarity (Rev Pol), Other Technologies (OT)
- IBC 2000, 2003, 2006, 2009, 2012

# CA-6500
## CLASS A EXPANDER INSTALLATION



7165-0328: 0198

**Features**

| | |
|---|---|
| Standby Current | 60 mA |
| Alarm Current | 100 mA |
| Ambient Operating Temperature | 32°F-120°F (0°C-49°C) 10%-93% @ 30°C (86°F) non-condensing humidity |
| Maximum CA-6500 Expanders | 1 |
| Size (WxHxD) | 10-1/4" x 1-1/8" x 5-1/8" |
| Compatible Panel | PFC-6800 |

Product Includes 5 year warranty.

**General Description**

The CA-6500 Class A expander allows notification circuits, PLINK circuits and the SLC circuit to be wired for Class A operation when used with the PFC-6500 series addressable fire control panels. Class A operation for notification, PLINK and SLC circuit can be selected independently in the PFC-6000 series configuration tool.

**Installation**

The CA-6500 is installed directly in the PFC-6800 series enclosure using the supplied cable assembly and hardware.

1. Power the system down
2. Slide the CA-6500 Class A expander into the opening on the bottom of the PFC-6800 chassis. The tabs on the back of the CA-6500 Class A expander must slide into the slots located in the PFC-6800 chassis.
3. Secure the CA-6500 CLass A expander using two #6-32x3/8" screws.
4. Plug the 2 x 9 cable assembly (P/N 5210515) into the CA-6500 and PFC-6800.

Figure 1: Examples of Installing and Wiring a Class A Expander Card

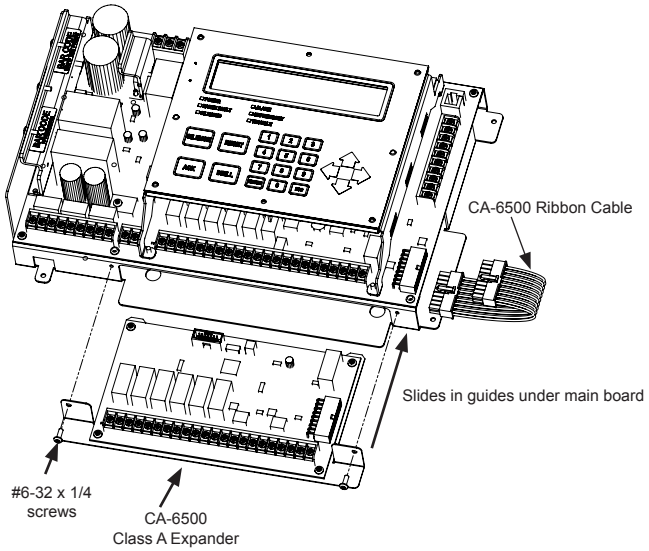
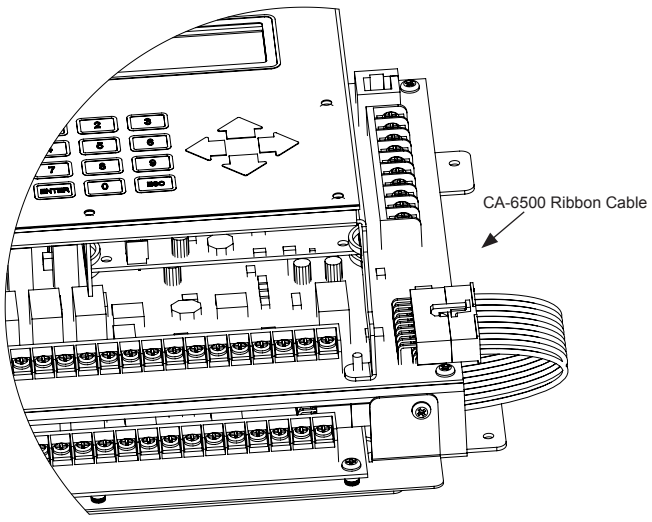



Figure 2: CA-6500 Installation Showing the CA-6500 Ribbon Connection



## CA-6500 Class A Expander Installation

The Class A configuration requires the use of the CA-6500. Once the card is installed, the additional terminals are provided for the return loop of the NAC. The CA-6500 provides the terminals for NACs, SLCs, and P-Link. Refer to the figures below for examples of installing and wiring a Class A expander card.

**Notes:**

1. One (1) CA-6500 Class A expander may be installed per panel.
2. The CA-6500 provides the terminals for NACs, P-Link, and SLCs.

Fig. 3 Example of Wiring a Class A Expander Card

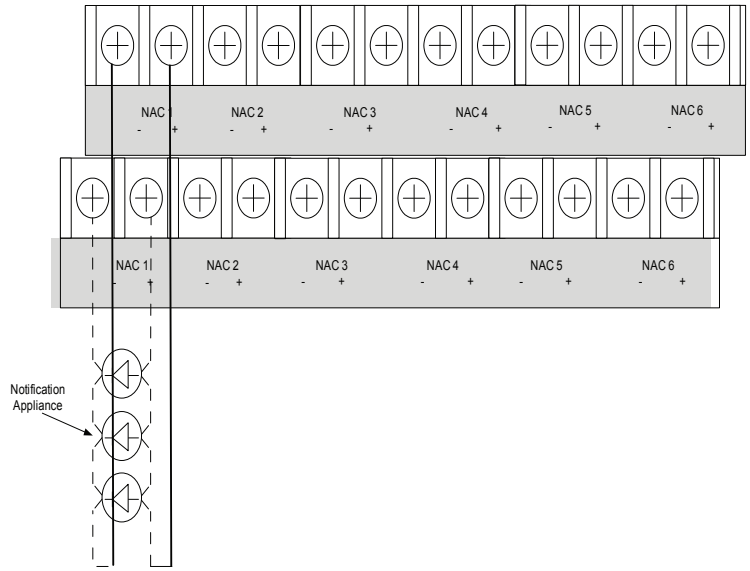
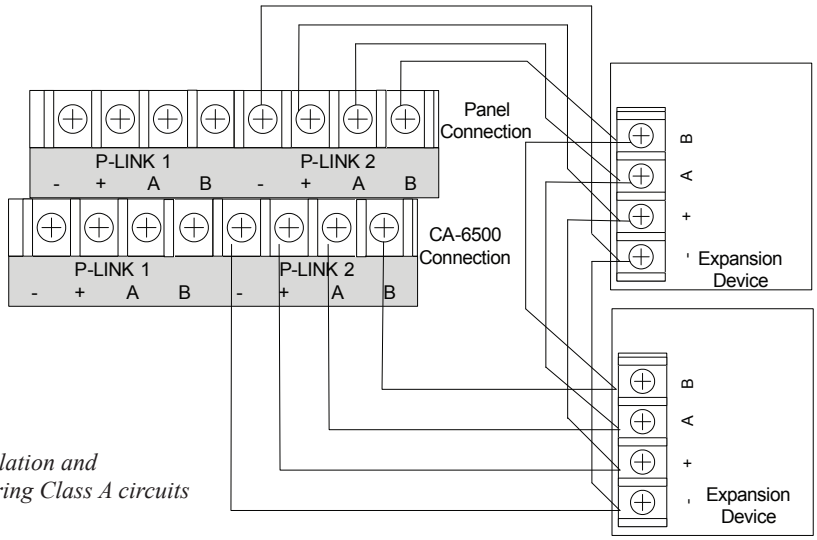
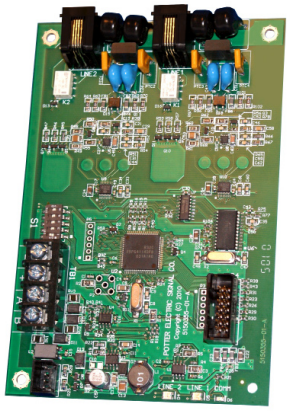



Fig. 4 Example of P-Link Class A Wiring Requiring a CA-6500




*Refer to the PFC-6800 Installation and Programming manual for wiring Class A circuits*

# UD-1000
## DACT INSTALLATION



S735 7165-0328: 0195

### Features

| | |
|---|---|
| Standby Current | 16 mA |
| Alarm Current | 23 mA |
| Ambient Operating Temperature | 0°C-49°C (32°F-120°F) 10%-93% @ 30°C (86°F) non-condensing humidity |
| Maximum UD-1000 DACTs | 1 |
| Size (WxHxD) | 4” x 6” x 1-5/8” |

### Description

The UD-1000 Digital Alarm Communicator Transmitter (DACT) provides for up to two (2) phone lines for communication to a monitoring station. The UD-1000 DACT communicates using the SIA-DCS or Ademco Contact ID protocols. When enabled, the DACT automatically monitors each phone line or voltage and has the ability to seize the line and connect with a remote receiver. Once the communication is complete, the DACT will hang up the phone line.

The DACT is provided with an RJ-11 jack for each phone line and a RJ-11 to RJ-33 cord. In order for the DACT to work properly, it must be installed on a plain old telephone service (POTS) or equivalent as deemed by the authority having jurisdiction. The DACT must be installed before any other equipment to ensure it can seize the line and disconnect any other lines.

Phone lines are high voltage and should be run in a separate conduit from other circuits. The wire conductors connecting the DACT to the phone system should be 26 AWG or larger.

### Installation

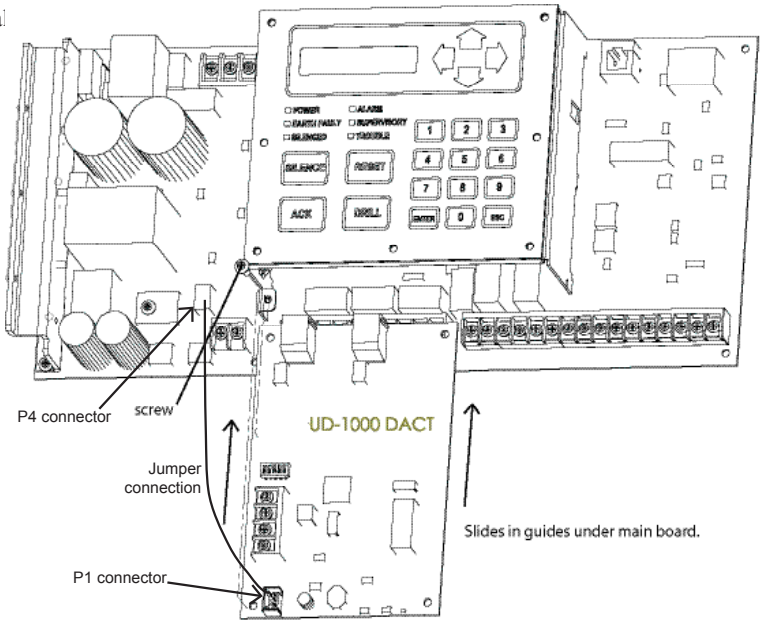
The UD-1000 DACT is connected to the control panel using the provided four-wire (4) cable connection (P/N 5210514) between P4 and UD-1000 P1. The connection is power limited and supervised.

1. Power system down.
2. Slide the UD-1000 DACT into the card guides located under the User Interface bracket.
3. Secure the UD-1000 DACT to the User Interface bracket using the provided #6-32x3/8” screw (#1 shown above).
4. Install the provided four-wire (4) conductor jumper (P/N 5210514) between UD-1000 P1 and P4.

**NOTICE**

Install in accordance with compatible fire alarm control panel installation manual.

Figure 1: UD-1000 DACT Instal



### Address Settings

The UD-1000 address is set by dip switch S1. Address must be set in the range of 1 – 31 to be recognized by the PFC-6075 control panel.

| UD-1000 Address | Dip Switch Settings | | | | |
|---|---|---|---|---|---|
| | SW-1 | SW-2 | SW-3 | SW-4 | SW-5 |
| 1 | On | Off | Off | Off | Off |
| 2 | Off | On | Off | Off | Off |
| 3 | On | On | Off | Off | Off |
| 4 | Off | Off | On | Off | Off |
| 5 | On | Off | On | Off | Off |
| 6 | Off | On | On | Off | Off |
| 7 | On | On | On | Off | Off |
| 8 | Off | Off | Off | On | Off |
| 9 | On | Off | Off | On | Off |
| 10 | Off | On | Off | On | Off |
| 11 | On | On | Off | On | Off |
| 12 | Off | Off | On | On | Off |
| 13 | On | Off | On | On | Off |
| 14 | Off | On | On | On | Off |
| 15 | On | On | On | On | Off |
| 16 | Off | Off | Off | Off | On |

| UD-1000 Address | Dip Switch Settings | | | | |
|---|---|---|---|---|---|
| | SW-1 | SW-2 | SW-3 | SW-4 | SW-5 |
| 17 | On | Off | Off | Off | On |
| 18 | Off | On | Off | Off | On |
| 19 | On | On | Off | Off | On |
| 20 | Off | Off | On | Off | On |
| 21 | On | Off | On | Off | On |
| 22 | Off | On | On | Off | On |
| 23 | On | On | On | Off | On |
| 24 | Off | Off | Off | On | On |
| 25 | On | Off | Off | On | On |
| 26 | Off | On | Off | On | On |
| 27 | On | On | Off | On | On |
| 28 | Off | Off | On | On | On |
| 29 | On | Off | On | On | On |
| 30 | Off | On | On | On | On |
| 31 | On | On | On | On | On |

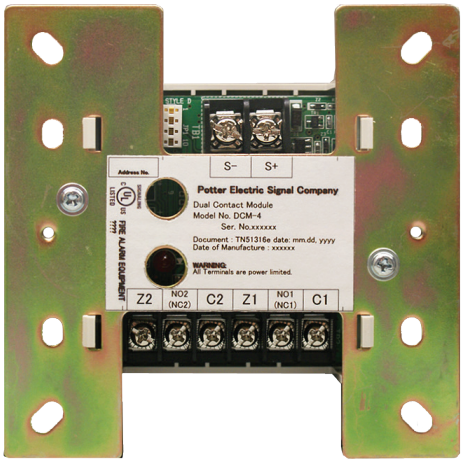
### Status LEDs

The status LEDs are provided for each phone line and the P-link communication link.

| **Line Status LEDs** | | |
|---|---|---|
| *Color* | *Action* | *Description* |
| Red | Steady | Phone line fault |
| Green | Flashing | Phone line off hook |
| Green | Steady | Communicating with remote receiver |

| **Com LEDs** | | |
|---|---|---|
| *Color* | *Action* | *Description* |
| Green | Flashing | Communicating with PFC-6075 control panel |

# DCM-4
## DUAL CONTACT MODULE




c UL us LISTED
S2930 7165-0328:0196

*Product includes a 5 year warranty*

**Features**

- Single contact module with dual inputs
- Two (2) Class B and one (1) Class A input module
- SLC Class A (Style 6, 7) & Class B (Style 4)
- IDC wiring may be Class B (Style B) or Class A (Style D)
- All connections are power limited
- Wiring for all connections is supervised
- Terminals accept 14 to 22 AWG wire
- Mounts in 4” square box with terminals accessible
- Temperature range of 32°F–120°F
- Maximum loop current draw of 325 µA

Note: This addressable module does not support 2-wire smoke detectors

### Description

The Dual Contact Module, DCM-4 is used to supervise multiple contact points with unique addresses from a single device. In addition, the DCM-4 may be configured as a single contact utilizing Class A wiring methods.

The DCM-4 is fully supervised if wired in accordance with the wiring diagrams below. Normally closed contact monitoring is not UL listed.

The DCM-4 employs one red LED to indicate the status. In normal condition, the LED flashes. When the contact is activated, the LED will turn on constantly. In case of open circuit, the LED will turn off. If the conditions of two contacts are different from each other with two contacts supervising, the LED shall activate with higher priority condition. The highest priority of contact condition is activated condition of contact, the middle priority is open circuit, and the lowest priority is normal condition.

Since the system allows a maximum of 13 LEDs to activate constantly, if system already has 13 LEDs active on devices, DCM-4 will not turn on the LED and keep flashing even if the contacts of DCM-4 are in the active state.

**NOTICE**

All terminals are power limited and should be wired in accordance with the requirements of NFPA 70 (NEC) and NFPA 72 (National Fire Alarm Code). Failure to follow the wiring diagrams in the following pages will cause the system to not operate as intended. For further information, refer to the control panel installation instructions.

For more information, refer to a compatible fire panel installation.

Operation and Programming Manual.

### Setting the Address

Each addressable module, smoke sensor, heat detector and combination sensor/detector must have the address set before connecting the device to the SLC loop. The address is set using the hand held device programmer or the addressing feature on the control panel.

Before connecting a device to the SLC loop, take the following precautions to prevent potential damage to SLC or device. Verify the following:

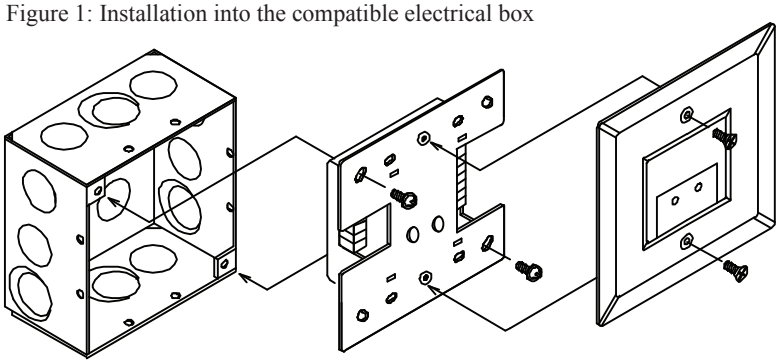
1. Power to the device is removed
2. Field wiring is correctly installed.
3. Field wiring has no open or short circuits.

Document discrepancies and notify appropriate personnel.

A dedicated address number is configured per the DCM-4 module prior to connecting the module to SLC loop. When DCM-4 is used for two contacts supervising, two addresses are assigned. When the first address number is assigned by address setting unit, the second address number shall be assigned automatically with adding one (1) to first address number. For example, if the first address number is assigned as “2”, the second address number shall be assigned as “3” automatically.

## Installation

Figure 1: Installation into the compatible electrical box



## Wiring Diagrams

Figure 2: Wiring diagram in case of one contact supervising

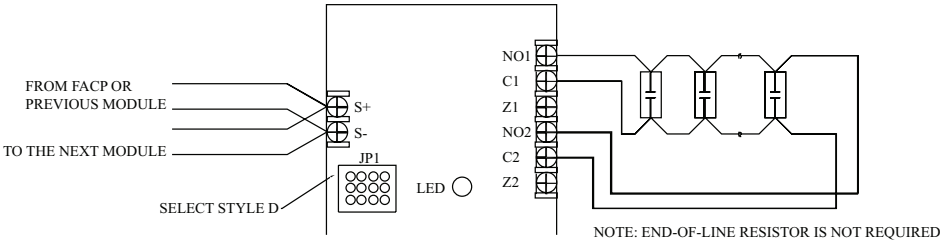



Figure 3: Wiring diagram in case of two contacts supervising (*Normally-open contact*)

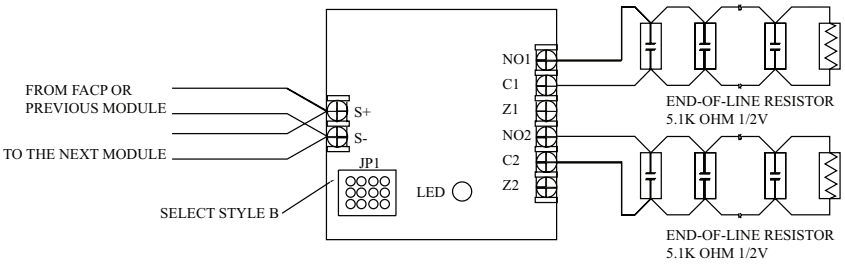
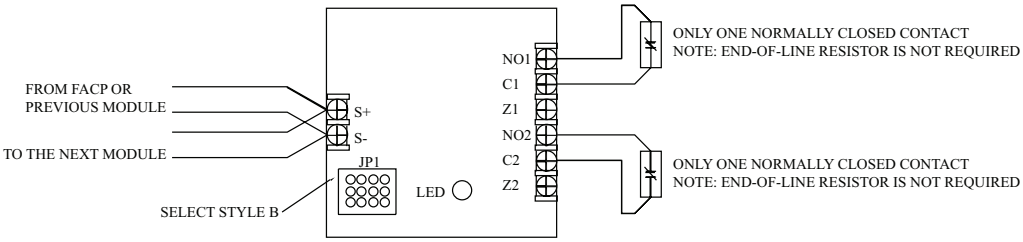
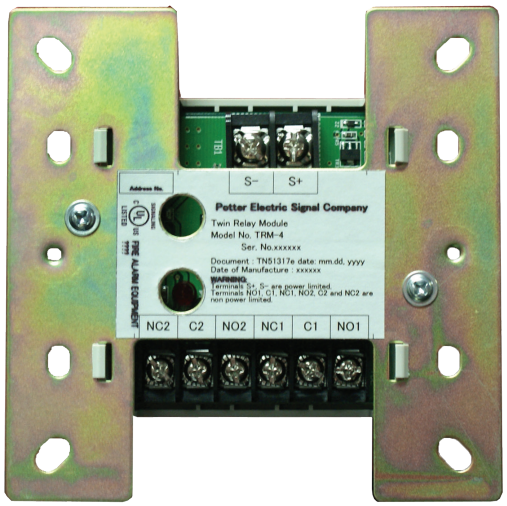



Figure 4: Wiring diagram in case of two contacts supervising (*Normally-closed contact*) (Not UL/ULC Listed)



# TRM-4
## TWIN RELAY MODULE




S2930 7165-0328:0196

*Product includes a 5 year warranty*

### Features

- Two (2) Form C contacts
- Both contacts rated at 2 Amps at 24 VDC/ 0.5 Amps at 125 VAC
- Mounts in 4" or double gang box
- Contacts operate simlutaneously
- Power limited or non-power limited based on power source
- Maximum standby and alarm current, 325 µA
- Status LED to indicate status
- Wire terminal accessible with module mounted

### Description

The TRM-4 module is a two Form C relay contact that is programmed to activate when mapped devices are activated. The two Form C relay contacts activate simultaneously.

TRM-4 employs one red LED to indicate the status. In normal condition, the LED flashes. When the relay contact is activated, the LED will turn on constantly.

The system has a maximum of 13 LEDs that can be activated simultaneously. If the system already has 13 LEDs on, the TRM-4 will operate even though the LED will not illuminate.

| | Normally Open | Normally Closed |
|---|---|---|
| Contact 1 | C1 & NO1 | C1 & NC1 |
| Contact 2 | C1 & NC2 | C2 & NC2 |

### NOTICE

All terminals are power limited and should be wired in accordance with the requirements of NFPA 70 (NEC) and NFPA 72 (National Fire Alarm Code). Failure to follow the wiring diagrams in the following pages will cause the system to not operate as intended. For further information, refer to the control panel installation instructions.

For more information refer toa compatible control panel manual.

### Setting the Address

Each addressable module, smoke sensor, heat detector and combination sensor/detector must have the address set before connecting the device to the SLC loop. The address is set using the hand held device programmer or the addressing feature on the control panel.

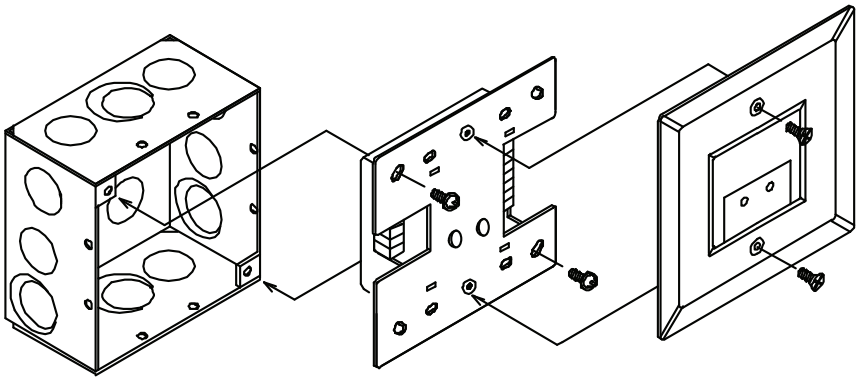
Before connecting a device to the SLC loop, take the following precautions to prevent potential damage to SLC or device. Verify the following:

1. Power to the device is removed
2. Field wiring is correctly installed.
3. Field wiring has no open or short circuits.

Document discrepancies and notify appropriate personnel.

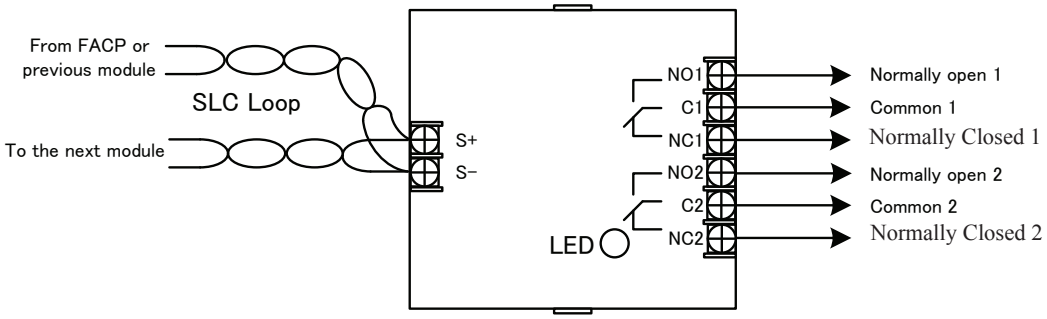
## Installation

Figure 1: Installation into the compatible electrical box



## Wiring Diagram

Figure 2: Wiring diagram of TRM-4




## NOTICE

Before connecting an output device, connect the module to the SLC loop and reset it with the FACP. This is necessary to ensure that the internal relay is unlatched. Connection of the module with this relay in the latched state (terminal between NO1 and C1, and NO2 and C2 are short) will activate the output device possibly causing damage.

# MCM
## MINIATURE CONTACT MODULE


S2930 7165-0328:0196

*Product includes a 5 year warranty*

Features

- Used to monitor contact devices such as pull stations where the device can be placed in the enclosure
- SLC Class A (Style 6, 7) & Class B (Style 4) wiring
- IDC Class B (Style B) wiring
- All terminals are power limited
- All wiring is supervised
- 100 ohms from module to EOLR
- This addressable module does not support 2-wire detectors
- Terminals accept #14 (max.) and #22 (min.)
- Maximum standby and alarm current, 250 µA
- 32°F to 120°F Temperature Range

### Description

The miniature contact module (MCM) module is used to monitor the contact status of an initiating device that contains a normally open contact. The MCM can be programmed in the panel to supervise either a Normally-open or Normally-closed contact on the Fire Alarm Control Panel (FACP). When the Normally-open contact is selected, and the contact is closed, the MCM reports its condition to FACP. Likewise when the Normally-closed contact is set to a supervising condition, and the contact is opened, the MCM reports its condition to FACP. MCM supervises an open circuit of wiring connected to the terminal C and NO contact.

The MCM is generally used to monitor pull stations and other devices where the module is installed in an electrical box or enclosure. The contact utilizes a terminal block that is covered in accordance with UL requirements to protect from inadvertent shorts and ground faults. The MCM does not include an LED for indication of an activated condition.

### NOTICE

All terminals are power limited and should be wired in accordance with the requirements of NFPA 70 (NEC) and NFPA 72 (National Fire Alarm Code). Failure to follow the wiring diagrams in the following pages will cause the system to not operate as intended. For further information, refer to the control panel installation instructions.

For more information refer to a compatible control panel manual.

### Setting the Address

Each addressable module, smoke sensor, heat detector and combination sensor/detector must have the address set before connecting the device to the SLC loop. The address is set using the hand held device programmer or the addressing feature on the control panel.

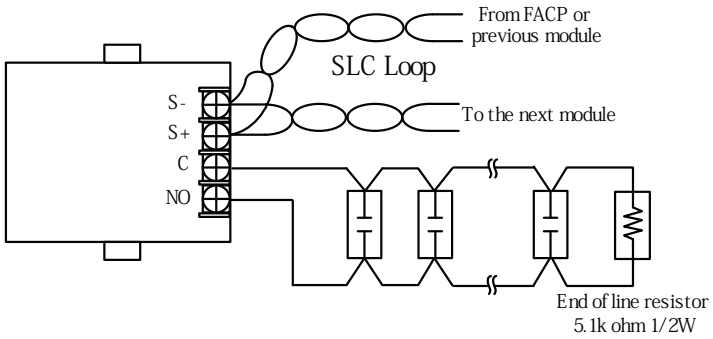
Before connecting a device to the SLC loop, take the following precautions to prevent potential damage to SLC or device. Verify the following:

1. Power to the device is removed
2. Field wiring is correctly installed.
3. Field wiring has no open or short circuits.

Document discrepancies and notify appropriate personnel.

## Wiring Diagrams

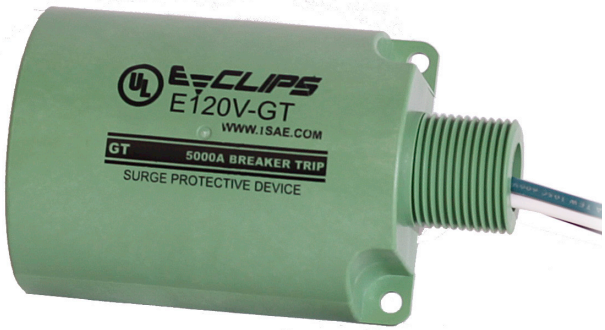
Figure 1: Wiring diagram in case of supervising Normally-Open contact



NO EXCUSES!

LISTED

# E120V-GT







## Hybrid Surge Protection Device

Safety and performance is what Eclips is all about. While there are many varying criteria to be considered for surge protective devices (SPD), if the design engineer neglects the importance there can be serious implications for the client and equipment.

Every piece of electrical equipment is designed to operate at a specified nominal voltage. Typically equipment is designed to handle minor variations. However external sources such as lightning, motors, and short circuits cause wild and damaging variations.

Critical systems wired to your electrical service like Fire Alarm Control Panels (FACP), Mass Notification systems, amplifiers, motors, pumps (HVAC), power boosters and many more must require appropriate levels surge protection. The E120 series is an ideal choice for your 120V AC applications. because it has the robustness not only to absorb a spike, but to clamp long enough to trip the branch circuit breaker and still be functional for additional surges.

The number one cause of destruction, degradation and down-time of critical electrical equipment is from power surges and lightning strikes.

The E120V-GT device is an ideal solution to protect equipment. UL listed it maintains system integrity and protects against transients introduced into / onto electrical lines via poor atmospheric and utility conditions as well as internally generated inductive loads and transient TVSS. It reduces system downtime associated with power surges and lightning strikes. Prevents destruction and degradation of electrical components in the system. Fix your nuisance and non-billable service calls as a result of transients and poor power quality and show your customer you care about system integrity.

## Standard Features:

- Available in 120 VAC
- UL Listed 1449 3rd Edition Type 2 & 3 2X to open circuit breaker @5000A
- Includes lockout & labels per NFPA 72 2013 10.6.5.2
- Surface or conduit mounting
- Diagnostic indicator light
- Self restoring
- 3 Wire device (18” length)

Made In U.S.A.

NFPA

ISO 9001 REGISTERED COMPANY

- Uses UL Recognized Components

NEMA

E-CLIPS
Space Age Electronics, Inc.
www.1SAE.com
**800.486.1723** Toll Free
508.485.0966 Local
508.485.4740 Fax

*No Excuses, Just Solutions!*

SPACE AGE ELECTRONICS, INC.

# Specifications:

All 120volt AC equipment will have Transient Voltage Surge Suppression (TVSS) protection manufactured by Space Age Electronics, Inc., part number E120V-GT ECLIPS Brand. The Unit shall be UL listed to standard 1449 rev 3. The unit will be labeled clearly with indelible ink. Mounting can be conduit mounted with a ¾" pipe threaded nipple to secure in panel, or surface panel mount with 2 external mounting holes. The unit shall have thermal fuses to protect against fire in short circuit conditions. The E120V will have 18" long, 14 gauge wires (3x) ground wire must be green. The enclosure will be a non dielectric material UL94 QMFZ2/8 grade material providing UV protection. The unit shall provide visual indication (LED) that unit is protecting and functioning.

## Specifications - Performance:

| | |
|---|---|
| Short Circuit Current Rating (SCCR) : | 5KA |
| Maximum Surge Current (8x20µs) : | 25,000 Amps |
| Enclosure Material : | UL94 QMFZ2/8 (green) |
| Energy Dissipation Joules : | 500 Joules |
| VPR=700(L – N) 700 (L – G) 600 (N – G) | |
| Capacitance : | < 2,000 pf |
| Clamping Response Time : | < 5 nanoseconds |
| Current : | Non-Load Bearing |
| Max Operating Voltage (MCOV) : | 140 volts AC, 50/60 Hz |
| Clamping Voltage : | 230 Volts RMS |
| Design : | Thermally Fused Hybrid |
| Operation Indicators : | LED |
| Surviveability : | UL rated X2 @5000 Amps to open Series external circuit breaker |

## Specifications - Operating:

| | |
|---|---|
| Service Voltage : | 120 Single Phase |
| Circuits Protected : | L-N L-G N-G |
| Connection Type : | Hardwired |
| Installation Configuration : | Parallel |

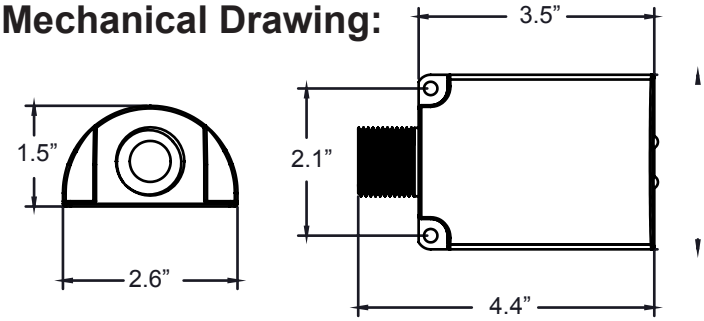
## Specifications - Physical:

| | |
|---|---|
| Weight : | 5.2oz |
| Dimensions : | 2.75" x 1.55" x 4" long |
| Operation Temperature : | -40 to +85º C |

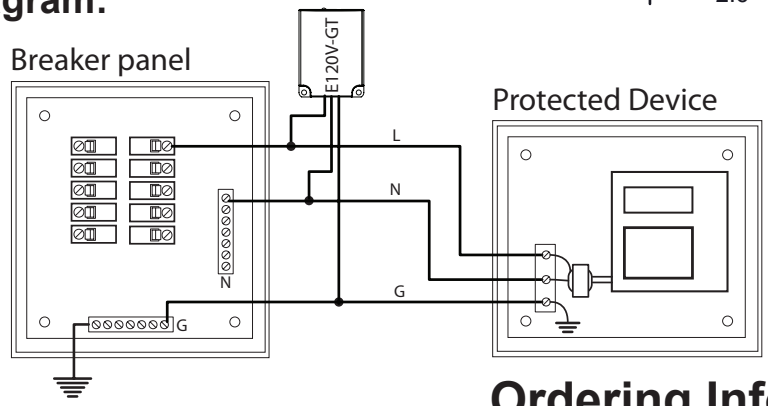
## Specifications - Compliance:

| | |
|---|---|
| UL Listed : | 1449 Third Edition - VZCA |
| File Number : | E319370 Vol. 1 Sec. 1 |

## Mechanical Drawing:




## Wiring Diagram:




# Ordering Information:

| Part # | Description |
|---|---|
| **E120V-GT** | **120V Hybrid Surge Protective Device** |
| **ELOCK-FA** | **Circuit Lockout Kit** |


ECLIPS

Space Age Electronics, Inc.
www.1SAE.com
**800.486.1723** Toll Free
508.485.0966 Local
508.485.4740 Fax


*No Excuses, Just Solutions!*

NO EXCUSES!

# FDB

## Fire Alarm Control Unit (FACU) Records & Document Box


NFPA 72 section 6.2.2.1 states, “A record of installed software and firmware version numbers shall be maintained at the location of the fire alarm control unit.” The FDB is large enough to hold Operating Manuals, Permits, Shut-Down Instructions and more.

The Space Age FDB has been developed to be a code compliant solution to a mandated item specified by the National Fire Code (NFPA 72).

An internal galvanized sleeve holds the documents safely and securely. Access to the documents is via a high security CAT 30 Lock Set.

The galvanized sleeve also contains 2 hooks for key rings or thumb drives, a place for several business cards, a cutout for a 1.4 Oz. can of test gas and a slot where a standard CD “jewel” case can be stored.

Held in by two “wing nuts” the sleeve is easily removable to allow storage of a 1.5” 3 ring binder.

The door reads “FACU MAINTENANCE RECORDS” in 1” tall white lettering. Custom Logo and Lock Sets are available upon request.

## Standard Features:

- Overall Dimensions are:
  12” Wide x 13.1” High x 2.25” Deep
- CAT 30 Secured Locking Door
- Piano Hinged Door w/Notes Sticker
- Removable document holder can hold 1” of 8.5” x 11” paperwork
- Powder Coat Red Finish
- 16 Gauge CRS construction
- Embossed:
  - Key Ring Hooks
  - Business Card Holder
  - CD Case Slot
- 1.4 Oz. can of detector test gas
- Private labeling available


NEMA

NFPA

Made In U.S.A.

ISO 9001 REGISTERED COMPANY

ADA

ACEBOX
Space Age Electronics, Inc.
www.1sae.com
**800.486.1723** Toll Free
508.485.0966 Local
508.485.4740 Fax



*No Excuses, Just Solutions!*

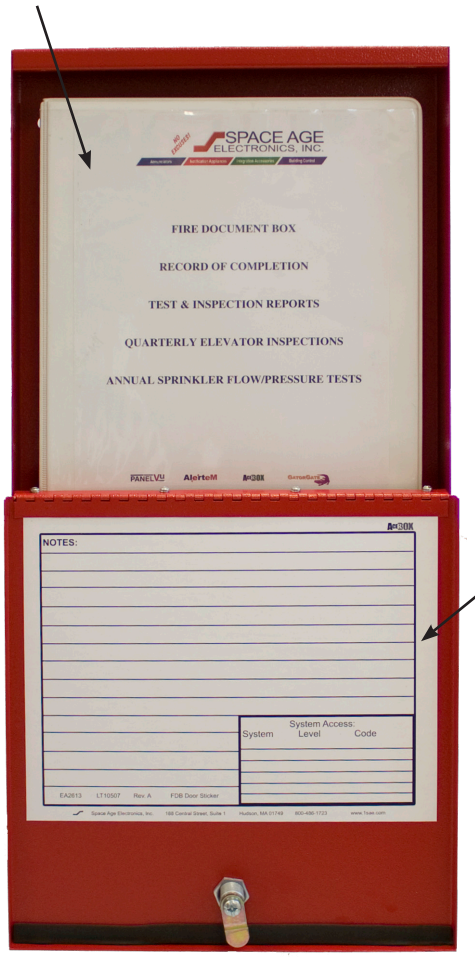
SPACE AGE ELECTRONICS, INC.

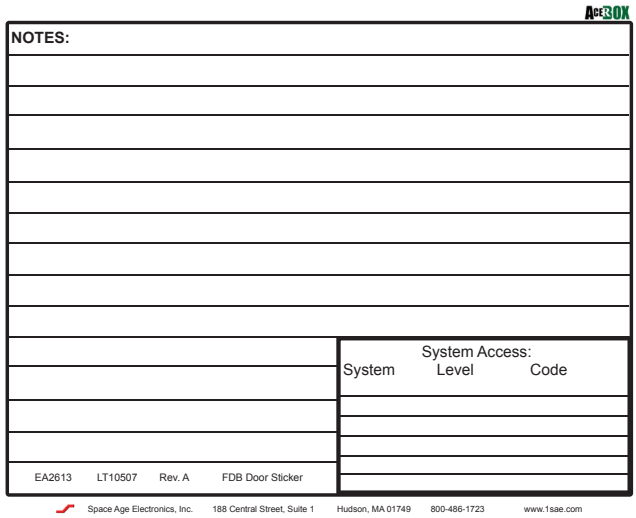
# Specifications:

The Fire Document Box (FDB) shall be constructed of 16 gauge cold rolled steel (CRS), it shall be painted with a durable red powder coat paint. The front door shall be lettered with the words “FACU MAINTENANCE RECORDS” in White indelible letters 1” in height. The door of the FDB shall be locked with a keyed lock (standard shall be CAT 30, but others shall be available along with Private Labeling).

Inside the cabinet shall contain a16 gauge galvanized CRS sleeve. This sleeve shall allow for the storage of 1” of paper, test and inspection records, manuals and other important documents. The sleeve shall also facilitate the hanging of key rings and thumb drives (for data storage) along with business cards and space for a CD ‘jewel” case. The unit shall also contain a 1.4oz can of smoke detector test gas. Inside the door shall have a “Notes” label for the recording of valuable information such as AHJ approvals, various system codes and the location of hard to find devices.

If so desired, the internal sleeve (held in by 2 wing nuts) may be removed and the space used to insert a 1.5” 3 ring binder.




Notes Sticker inside FDB Door

# Ordering Information:

| Part # | Description |
|---|---|
| SSU00672 | FDB Fire Document Box |
| SSU00673 | FDB Custom Logo/lock |
| (ask for Form FD10498 to order custom box) | |
| CK1 | Replacement 1.4 Oz Test Gas |


Space Age Electronics, Inc.
www.1sae.com
**800.486.1723** Toll Free
508.485.0966 Local
508.485.4740 Fax


*No Excuses, Just Solutions!*

# MH-12/24 SERIES

## 12 TO 24V DC MINI-HORN
## LOW CURRENT DRAW

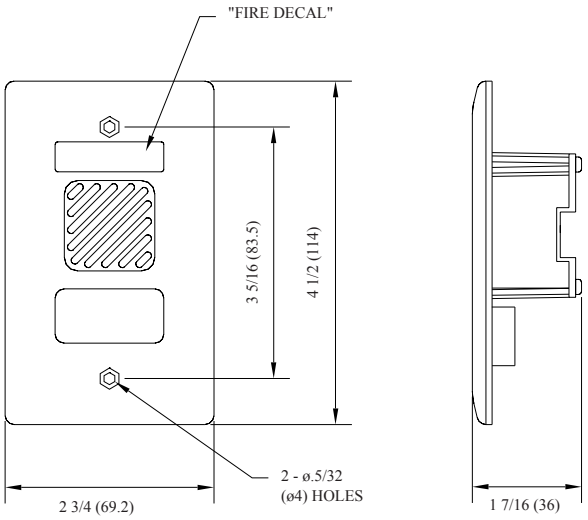
Call for additional listings

- Piezo Sounder for Fire Alarm Indoor applications
- Low current and High Sound Output
- UL and CSFM listed
- Wide range operating temperature 14°F to +140°F
- Ideal for Residential or Commercial application
- Wire lead or terminal connection for easy field wiring
- Available in red or white
- FIRE decal included

| | | |
|---|---|---|
| Stock number: | 4560041 - MH-12/24R | Leads |
| | 4560042 - MH-12/24W | Leads |
| | 4560043 - MH-12/24TR | Terminals |
| | 4560044 - MH-12/24TW | Terminals |

Potter's MH-12/24 is a Low Current Piezo Remote Signaling Device. It is ideal for hotels, motels, and residential fire alarm system applications where a dependable alarm signal is required. The MH-12/24 is comprised of an ABS plastic plate and Potter's UL recognized polarized piezo horn. It emits a high dB output of 97 (indoor measurement) drawing 15mA at 24V DC. The MH-12/24 mounts on a standard electrical gang box and is available in red or white.

**Dimensions: inches (mm)**




**Specifications**

| Input Voltage | Operating Voltage Range | Wiring Type | Mounting Type | Temperature Operating Range |
|---|---|---|---|---|
| Regulated 12-24V DC/FWR | 8-33V DC | 4 Wire | Wall or Ceiling Mount | 14°F-140°F (-10°C-60°C) |

**Operating Voltage**

| | Sound Level | |
|---|---|---|
| | UL Spherical | Indoor |
| 10V DC | 75dBA | 90dBA |
| 24V DC | 82dBA | 98dBA |
| 28V DC | 85dBA | 100dBA |

***Note:*** Sound Level in the indoor installation may vary depending upon the space

# PSA
## PHOTOELECTRIC SMOKE SENSOR


S24776 7165-0328:0194

*Product includes a 5 year warranty*

**Features**

- Low profile, less than 2 inches with the base
- Wide selectable sensitivity range of 1.05 to 3.82%/foot
- Sensor communicates sensitivity to control panel
- UL listed smoke calibration and sensitivity
- Optional locking tab to prevent unwanted removal
- Simple and accurate address setting without mechanical switches
- LEDs for 360° viewing

**Description**

The Photoelectric Smoke Sensor is a listed Analog Addressable smoke sensor compatible with any fire alarm control panel that has the Potter/Nohmi protocol. The PSA is a low profile smoke sensor with a wide sensitivity range. The sensor and base (not included) are made of a durable plastic in an eggshell white to blend in with the ceiling.

The PSA has a sensitivity range of 1.05 to 3.82% per foot and is UL and cUL listed. The PSA may be configured for drift compensation and has built in dirty detector warning as well as. The PSA and the control panel communicate over a proven and robust digital communication path and the system analyzes the level of alarm at the particular device. The total polling speed is less than five (5) seconds, well under the UL requirements.

The PSA has two LEDs that allow for 360° viewing. The sensor is compatible with any of the Potter/Nohmi bases and simply twists on. The PSA is addressed using the hand held programmer or the control panel addressing function.

**Air Velocity Ratings**

The PSA has an Open Area of Protection air velocity rating of 0 to 300 feet per minute.

The system has a maximum of 13 LEDs that can be turned on simultaneously. If the system already has 13 LEDs on, the PSA will operate even though the LED will not illuminate.

### Setting the Address

Each addressable module, smoke sensor, heat detector and combination sensor/detector must have the address set before connecting the device to the SLC loop. The address is set using the hand held device programmer or the addressing feature on the control panel.

Before connecting a device to the SLC loop, take the following precautions to prevent potential damage to SLC or device. Verify the following:

1. Power to the device is removed
2. Field wiring is correctly installed.
3. Field wiring has no open or short circuits.

Document discrepancies and notify appropriate personnel.

**Specifications**

| Item | PSA |
|---|---|
| Working voltage range | 22.0 to 24.0 V |
| Standby current | 250 µA |
| Alarm indicator | 2 LEDs |
| Alarm indicator current | 1.2 mA D.C. |
| Alarm set-point range | 1.05 to 3.82 %/ft / 3.4 to 12.0 %/m |
| Installation temperature range | 32 to 120 ° F / 0 to 49 ° C |
| Operating relative humidity range | 0% to 93% (Non-condensing) |
| Start-up time | Max. 1 sec. |
| Maximum number of addresses per loop | 127 |
| Maximum number of lighted indicators in alarm per zone. | 13 |
| Color | Eggshell White |
| Weight (without base) | 84g (2.96oz) |
| Dimensions (without base) | Height: 1.33 in (34mm) |
| | Diameter: 4.0 inches (99mm) |
| Approvals / Listings | UL, cUL, CSFM |

**Operation**

The PSA is an analog addressable sensor that uses one address on the Signaling Line Circuit (SLC) of a compatible fire alarm control panel. The unit communicates with the control panel as it is polled. The LEDs flash every time the unit is polled and they will latch steady if the unit is in an active status.

The PSA is a proven design being in service throughout the world. The PSA with the AB-4 or AB-6 base has a low profile of less than two (2) inches to blend into the surrounding environment. The sensor includes an insect screen to prevent foreign objects from reaching the chamber and the entire unit can be cleaned with a simple vacuum.

**Sensor Sensitivity**

The PSA and the compatible control panel work in tandem to keep the sensitivity consistent. As the sensor is installed over time, the sensor compensates for the dirt in the unit until it is out of range. At that time, the panel will indicate a dirty sensor. The sensor will then have to be cleaned or replaced.

Anytime the PSA is being polled, the sensitivity may be viewed or printed from the control panel.

**Note**: As required by NFPA, do not install the sensors until all construction is complete and the work area has been thoroughly cleaned. If the sensors have been installed in a construction environment, they should be cleaned or replaced before the system is placed into service.

**Spacing**

The PSA is UL/ULC listed with a recommended maximum spacing of 30 feet. Refer to NFPA 72 for specific information regarding detector spacing, placement and special applications.

**Compatible Bases**

All bases will mount on a single gang, double gang, octagon, 4” square or mud ring electrical box.

| Device | Description |
|---|---|
| AB-4 | 4” Standard Base |
| AB-6 | 6” Standard Base |
| AIB | 6” base with an isolator module included. The base is pre-wired with a pluggable jumper to the module. |
| ARB-6 | 6” base with a dual relay module included. One relay is rated for 8 amps at 240 VAC/30 VDC and the second is rated for 2 amps at 240 VAC/30 VDC. The base is pre-wired with a pluggable jumper to the module. |
| ASB-6 | 6" base with sounder module included. Sound pattern is provided from external source. The base is pre-wired with a pluggable jumper into the module. |

# RHA
## RATE OF RISE/FIXED TEMPERATURE HEAT DETECTOR


S24776 7270-0328:0193

*Product includes a 5 year warranty*

**Features**

- Adjustable fixed 135° to 174° Fahrenheit
- Rate of rise feature with 10-12°F per minute detection
- LEDs for 360° viewing
- Low profile
- Reliable detection technology

**Description**

The combination Rate of Rise/Fixed Temperature Heat Sensor (RHA) is a listed Analog/Addressable combination temperature heat sensor compatible with any fire alarm control panel that has the Potter/ Nohmi protocol. The heat sensing portion utilizes a proven thermistor for accurate and reliable heat detection. The sensor and base (not included) are made of a durable plastic in an eggshell white (off white) to blend in with the ceiling.

The RHA is UL and cUL listed with a selectable fixed temperature point from 135° to 174° and a rate of rise feature. The rate-of-rise operates when the temperature increases 12-15°F occurs. The heat sensor is ideal for installations needing the earlier heat detection.

The RHA has two LEDs that allow for 360° viewing. The sensor is compatible with any of the Potter/Nohmi bases and simply twists on. The RHA is addressed using the hand held programmer or the control panel addressing function.

**Spacing**

The RHA spacing is dependent on the alarm set-point. The unit is listed from 135°F to 174°F. However as the temperature setting increases, the spacing decreases.

| Alarm set-point | RHA Spacing |
|---|---|
| 135 to 170 °F (57 to 76 °C) | Max. 50 ft |
| 171 to 174 °F (77 to 79 °C) | Max. 15 ft |

The system has a maximum of 13 LEDs that can be turned on simultaneously. If the system already has 13 LEDs on, the RHA will operate even though the LED will not illuminate.

**Setting the Address**

Each addressable module, smoke sensor, heat detector and combination sensor/detector must have the address set before connecting the device to the SLC loop. The address is set using the hand held device programmer or the addressing feature on the control panel.

Before connecting a device to the SLC loop, take the following precautions to prevent potential damage to SLC or device. Verify the following:

1. Power to the device is removed
2. Field wiring is correctly installed.
3. Field wiring has no open or short circuits.

Document discrepancies and notify appropriate personnel.

**Specifications**

| Item | FHA |
|---|---|
| Working voltage range | 22.0 to 24.0 V |
| Standby current | 250 µA |
| Alarm indicator | 2 LEDs |
| Alarm indicator current | 1.2 mA D.C. |
| Alarm set-point range | 135 to 174 °F/ 57 to 79 °C |
| Rate-of-rise | 12 to 15°F |
| Installation temperature range | 32 to 100 °F / 0 to 38 °C |
| Operating relative humidity range | 0% to 93% (Non-condensing) |
| Start-up time | Max. 1 sec. |
| Maximum number of addresses per loop | 127 |
| Maximum number of lighted indicators in alarm per zone. | 13 |
| Color | Eggshell White |
| Weight (without base) | 73g (2.57oz) |
| Dimensions (without base) | Height: 1.50 in (38mm) |
| | Diameter: 4.0 inches (99mm) |
| Approvals / Listings | UL, ULC, CSFM, MEA |

# RHA
## RATE OF RISE/FIXED TEMPERATURE HEAT DETECTOR

**Operation**

The RHA is an analog/addressable sensor that uses one address on the Signaling Line Circuit (SLC) of a compatible fire alarm control panel. The unit communicates with the control panel as it is polled. The LEDs flash every time the unit is polled and they will latch steady if the unit is in an active status.

The RHA is a single sensor that may be used in a wide variety of applications for property protection. The RHA has a the rate of rise heat detection to provide detection of an escalating fire. The unit has a sleek design and low profile for pleasing aesthetics. The temperature sensor is protected within the mold of the unit to prevent accidental damage.

**Compatible Bases**

All bases will mount on a single gang, double gang, octagon, 4” square or mud ring electrical box.

| Device | Description |
|---|---|
| AB-4 | 4” Standard Base |
| AB-6 | 6” Standard Base |
| AIB | 6” base with an isolator module included. The base is pre-wired with a pluggable jumper to the module. |
| ARB-6 | 6” base with a dual relay module included. One relay is rated for 8 amps at 240 VAC/30 VDC and the second is rated for 2 amps at 240 VAC/30 VDC. The base is pre-wired with a pluggable jumper to the module. |
| ASB-6 | 6" base with sounder module included. Sound pattern is provided from external source. The base is pre-wired with a pluggable jumper into the module. |

# CO1224
# Carbon Monoxide Detector


*System Sensor's CO1224 provides early warning when its electrochemical sensing technology accurately measures carbon monoxide levels in the air.*

**Carbon monoxide** is an odorless, colorless, tasteless and highly toxic gas that is produced when fuels, such as wood, gasoline, charcoal and oil, are burned with insufficient air. The majority of residential and commercial fatalities caused from these fuels come from heating systems, power tools and charcoal grills.

If carbon monoxide is detected, the CO1224 will alert residents by sounding and flashing a temp-4 signal alarm. Protection is guaranteed 24/7 by a central station, regardless of whether residents are away from home, sleeping or already suffering from the effects of CO.

The CO1224 is specifically designed for system operation. This means the detector is fully listed to UL 2075, offering a code required trouble relay, which sends a sensor failure or end-of-life signal to the control panel and the central station, as well as SEMS-type terminal Philips-head screws, which provide a quicker and more positive wiring connection and code required wiring supervision. Also, the CO1224 offers a low current draw, allowing more detectors to be connected to the panel without having to purchase a more expensive panel or an extra power supply.

Because the CO1224 is a 12/24 VDC detector, it will operate on most industry security or fire alarm control panels.

## Features

- Full compliance with UL 2075
- A code required trouble relay
- Wiring supervision with SEMS terminals
- A six-year end-of-life timer
- 12/24 VDC
- A current draw of 20mA in standby and 40mA in alarm
- Versatile mounting for wall and ceiling
- Electrochemical sensing technology

## Agency Listings

UL LISTED
2075

## Specifications

| Architectural/Engineering Specifications |
|---|
| Carbon monoxide detector shall be a System Sensor model number CO1224, listed to Underwriters Laboratories UL 2075 for Gas and Vapor Detectors and Sensors. The detector shall be equipped with a sounder and a trouble relay. The detector's base shall be able to mount to a single-gang electrical box or direct (surface) mount to the wall or ceiling. Wiring connections shall be made by means of SEMS screws. The detector shall provide dual color LED indication, which blinks to indicate normal standby, alarm, or end-of-life. When the sensor supervision is in a trouble condition, the detector shall send a trouble signal to the panel. When the detector gives a trouble or end-of-life signal, the detector shall be replaced. |

| Electrical Specifications | |
|---|---|
| **Operating Voltage** | 12/24 VDC |
| **Audible Signal** | 85 dB in alarm |
| **Standby Current** | 20 mA |
| **Alarm Current** | 40 mA (75 mA test) |
| **Alarm Contact Ratings** | 0.5 A @ 30 VDC |
| **Trouble Contact Ratings** | 0.5 A @ 30 VDC |
| **Physical Specifications** | |
| **Size** | Length: 5.1˝, Width: 3.3˝, Height: 1.3˝ |
| **Approximate Weight** | 7 oz |
| **Operating Temperature Range** | 0° – 40° C (32° – 104° F) |
| **Operating Humidity Range** | 22 – 90% RH |
| **Input Terminals** | 14 – 22 AWG |
| **Mounting** | Single-gang back box; surface mount to wall or ceiling |

## Operation Modes

| Operation Mode | Green LED | Red LED | Sounder |
|---|---|---|---|
| Normal (standby) | Blink 1 per minute | — | — |
| Alarm | — | Blink in temp 4 pattern | Sound in temp 4 pattern |

Hush Feature: Pushing the Test/Hush button will silence the sounder for 5 minutes.

Trouble Feature: When the detector is in a trouble condition, it will send a trouble signal to the panel.

End-of-life Timer: After the sensor inside the detector has reached the end of its useful life, a trouble signal will be sent to the panel. This will indicate that it is time to replace the detector. An electrochemical carbon monoxide detector lifespan is approximately six years, and the detector must be replaced by the date marked on the inside of the product.

## Ordering Information

| Part No. | Description |
|---|---|
| CO1224 | 12/24 volt, 4-wire system-monitored carbon monoxide detector |

SYSTEM SENSOR®

3825 Ohio Avenue • St. Charles, IL 60174
Phone: 800-SENSOR2 • Fax: 630-377-6495


A05-0402-001 • 9/06 • #1654

# S24-177/HS24-177

*High Candela Strobe and Horn/Strobe*

## Features

- Nominal Voltage 24 VDC
- Fixed177 candela strobe
- Super-Slide® Bracket - ease of supervision testing
- Checkmate® - Instant voltage verification
- Unit Dimensions: 5” (12.7 cm) high x 4.5” (11.43 cm) wide x 2.5” (6.35 cm) deep.
- Synchronize strobe and/or horn with AVSM Control Module
- Pre wire entire system, install mounting bracket, then install signals
- Documented lower installation and operating costs
- Input terminals 12 to 18 AWG
- Switch selection for high or low dBA
- Switch for chime, whoop, mechanical and 2400Hz tone
- Switch for continuous or temporal 3 (not available on whoop tone)
- Tamper proof re-entrant grill
- Surface mount with the AV-BB
- Silence horn while strobes remain flashing
- Faceplate available in red or off-white


SIGNALING UL LISTED
S3247

7135-0328:0217 (HS24-177)
7125-0328:0216 (S24-177)

## Applications

The S/HS24-177 Series is a low profile strobe, or horn/strobe combination that offers dependable audible and visual alarms with the absolute lowest current available.

The S/HS24-177 Series has a minimum flash rate of 1Hz regardless of input voltage.

The S/HS24-177 Series is shipped with the standard 4” mounting plate which incorporates the popular Super-Slide® feature that allows the installer to easily test for supervision. The product also features a locking mechanism which secures the product to the bracket without any screws showing.

The S/HS24-177 Series also features the patented Checkmate® -Instant Voltage Verification feature which allows the installer to measure the voltage drop and match it to the blueprint.

The S/HS-177 Series appliances are ANSI/UL 464, ANSI/UL 1971 and/or ANSI/UL 1638 listed for use with fire protective systems and are warranted for five years from date of purchase.

## Product Listings

- ANSI/UL 464, ANSI/UL 1971 and/or ANSI/UL 1638 Listed

## Product Compliance

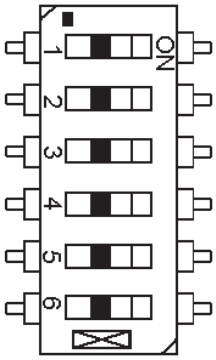
- NFPA 72
- Americans with Disabilities Act (ADA)
- IBC/IFC/IRC
- City & State Ordinances/Laws/Regulations
- Quality Management System is certified to: ISO 9001:2008

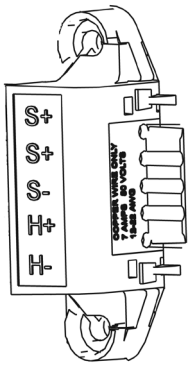
# S24-177/HS24-177

*High Candela Strobe and Horn/Strobe*

## Tone Switch Locations

| TONE | SWITCH POSITION | | |
|---|---|---|---|
| | 3 | 4 | 5 |
| Mechanical Temporal 3 | ON | ON | ON |
| Mechanical - Continuous | OFF | ON | ON |
| 2400Hz - Temporal 3 | ON | OFF | ON |
| 2400Hz - Continuous | OFF | OFF | ON |
| Chime - Temporal 3 | ON | ON | OFF |
| Chime - Continuous | OFF | ON | OFF |
| Whoop | ON | OFF | OFF |
| Whoop | OFF | OFF | OFF |



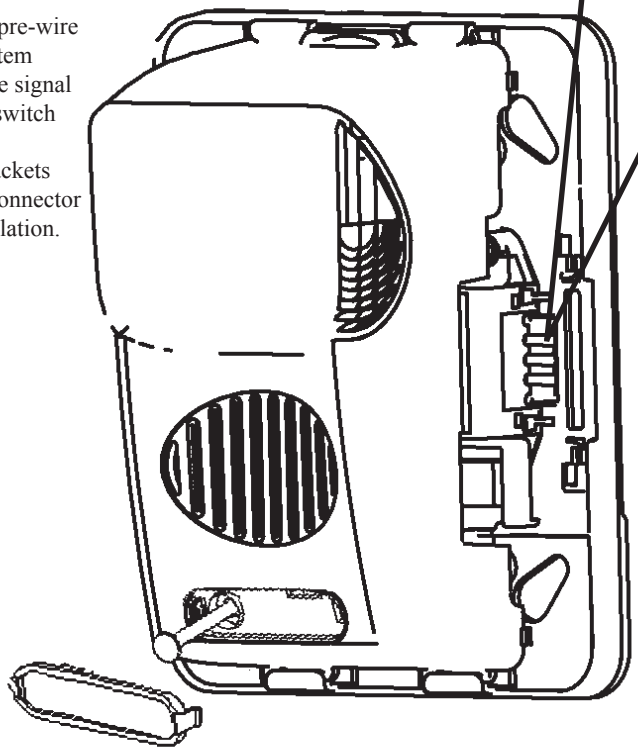




***NOTES*:**

- Switch Positions 1 and 2 in the OFF position to select isolated horn and strobe power inputs
- Switch Position 6 ON = HIGH dBA
- Switch Position 6 OFF = LOW dBA

## Super Slide® Mounting Bracket

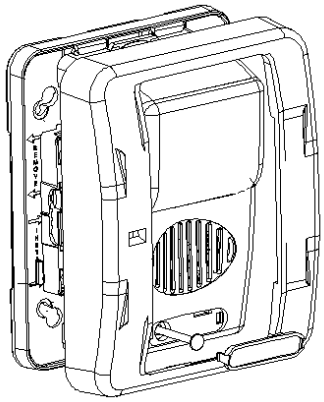
Allows the installer to pre-wire the system, test for system supervision, remove the signal head until occupancy, switch out signals without changing mounting brackets and has locking edge connector for snap-in-place installation.



## Checkmate® Instant Voltage Verification

It is often necessary to confirm the voltage drop along a line of devices. The access holes are provided in the back of the terminal block to allow the voltage to be measured directly without removing the device. Typically, this would be done at the end of line to confirm design criteria. Most measurements will be taken using the S+ and S- locations although access is provided to other locations.

***NOTE*: Care should be taken to not short the test probes.**



To remove bezel, grip both sides of bezel and pull in a download and outward motion.

# S24-177/HS24-177

*High Candela Strobe and Horn/Strobe*

## S24-177 VDC Low Profile Evacuation Strobe

| Model Number | Item Number | Nominal Voltage | Strobe Candela |
|---|---|---|---|
| S24-177R | 4890014 | 24 VDC | 177 |
| S24-177W | 4890015 | 24 VDC | 177 |
| S24-177PR | 4890016 | 24 VDC | 177 |
| S24-177 PW | 4890017 | 24 VDC | 177 |

**Model Designations:**

P = Plain (no lettering)

R = Red faceplate W = White Faceplate.

Plain units are non-returnable.

**Alert Bezel Available:**
Red - 4890264
White - 4890265

**Agent Bezel Available:**
Red - 4890262
White - 4890263

## HS24-177 24 VDC Fixed Candela, Low Profile Evacuation Horn/Strobe

| Model Number | Item Number | Nominal Voltage | Strobe Candela | Reverberant dBA @ 10ft., per ANSI/UL 464 | In Anechoic Room dBA @ 10ft. |
|---|---|---|---|---|---|
| HS24-177R | 4890034 | 24 VDC | 177 | 70-82 | 100 |
| HS24-177W | 4890035 | 24 VDC | 177 | 70-82 | 100 |
| HS24-177PR | 4890036 | 24 VDC | 177 | 70-82 | 100 |
| HS24-177PW | 4890037 | 24 VDC | 177 | 70-82 | 100 |

## S/HS24-177 Series Current Ratings (mA)

| | 24VDC (16-33 Volts) | |
|---|---|---|
| Candela | 24 VDC | UL Max[1] |
| 177cd | 96mA | 213mA |

| HS-24 Horn Decibel and Current Ratings | | | |
|---|---|---|---|
| Horn Mode | Minimum dBA @ 10ft. per ANSI/UL 464 (HIGH) | Minimum dBA @ 10ft. per ANSI/UL 464 (LOW) | Regulated 12VDC Max. Operating @ High Setting (mA) |
| Temp 3 2400Hz | 78 | 71* | 28 |
| Temp 3 Mechanical | 76 | 70* | 25 |
| Temp 3 Chime | 70* | 66* | 15 |
| Continuous 2400Hz | 81 | 74* | 28 |
| Continuous Mechanical | 80 | 72* | 25 |
| Continuous Chime | 70* | 66* | 15 |
| Whoop | 82 | 69* | 56 |

***NOTES:***

- Operating temperature: 32°to 120°F (0° to 49°C). The 177 Series is not listed for outdoor use.

  The sound output for the temporal 3 tone is rated lower since the time the horn is off is averaged into the sound output rating. While the horn is producing a tone in the temporal 3 mode its sound pressure is the same as the continuous mode.

- For nominal and peak current across UL regulated voltage range for filtered DC power and unfiltered (FWR [Full Wave Rectified]) power, see installation manual.

* Operating the horn in this mode at this voltage will result in not meeting the minimum ANSI/UL 464 reverberant sound level required for public mode fire protection service. These settings are acceptable only for private mode fire alarm use. Use the high dBA setting for public mode application (not applicable when using the chime tone. The chime tone is always private mode).

[1] RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range (16-33VDC for 24VDC units). For strobes the UL max current is usually at the minimum listed voltage (16VDC for 24VDC units). For audibles the max current is usually at the maximum listed voltage. For unfiltered FWR ratings, see installation manual.

## Architect & Engineering Specifications

The audible and/or visible signal shall be Potter S24-177 strobe and Potter HS24-177 horn/strobe Series or approved equal and shall be listed by Underwriters Laboratories, Inc. per ANSI/UL 1971 and/or ANSI/UL 464. The notification appliance shall also be listed with the California State Fire Marshal (CSFM).

The notification appliance (combination audible/visible) shall produce a peak sound output of 100dBA or greater at 24VDC as measured in an anechoic chamber. The signaling appliance shall also have the capability to silence the audible signal while leaving the visible signal energized with the use of a single pair of power wires. Additionally, the user shall be able to select either continuous or temporal tone output with the temporal signal having the ability to be synchronized.

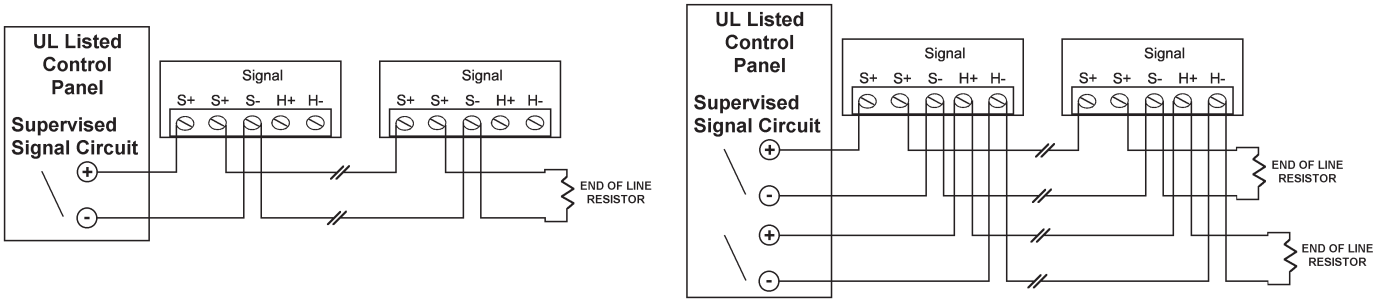
Unit shall be capable of being installed so that any unauthorized attempt to change the candela setting will result in a trouble signal at the fire alarm control panel.

The audible/visible and visible signaling appliance shall also maintain a minimum flash rate of 1Hz or up to 2Hz regardless of power input voltage.

The appliance shall be polarized to allow for electrical supervision of the system wiring. The unit shall be provided with a mounting bracket with terminals and barriers for input/output wiring and be able to mount to a single gang or double gang box or double workbox without the use of an adapter plate. The unit shall have an input voltage range of 16-33 volts with either direct current or full wave rectified power for 24VDC models.

The appliance shall be capable of testing supervision without disconnecting wires, verify voltage without removing unit and be capable of mounting to a surface back box.

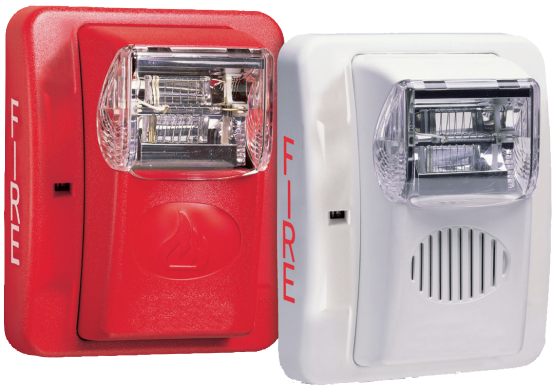
## Conventional Wiring Diagrams for Emergency Notification Evacuation Series




***NOTES*:**

- All strobes are designed to flash as specified with continuous applied voltage. Strobes should not be used on coded or pulsing signaling circuits. However, use of the Potter AVSM control module or Gentex synchronization protocol is permitted to synchronize the strobe, horn, and/or mute the horn.
- **FOR SYNCHRONIZATION WIRING INFORMATION, REFERENCE AVSM CONTROL MODULE DATA SHEET (8830064) AND/OR AVSM CONTROL MODULE MANUAL FOR SYNCHRONIZATION MODULE WIRING DIAGRAMS. AVSM CONTROL MODULE DATA SHEET CAN BE OBTAINED AT http://pottersignal.com OR CALL POTTER ELECTRIC AT 1-800-325-3936.**

# S-24 & HS-24
## SELECTABLE CANDELA STROBE & HORN/STROBES




**Features**

- 24VDC units have field selectable candela options of 15, 30, 60, 75, & 110
- Super-Slide® Bracket - Ease of Supervision Testing
- Checkmate® - Instant Voltage Verification
- Synchronize strobe and/or horn with AVSM Control Module
- Prewire entire system, install mounting bracket, then install signals
- Documented lower installation and operating costs
- Input terminals accept 12 to 18 AWG
- Switch selection for high or low dBA
- Switch for chime, whoop, mechanical and 2400Hz tone
- Tamperproof re-entrant style grill
- Switch for continuous or temporal 3 tone (not available on whoop tone)
- Surface mount with the AVBB (Surface Mount Back Box)
- Silence audible while visual appliance will remain flashing (for use in accepted jurisdictions)
- Faceplate available in red or off-white

*Operating Temperature*

- 32°F to 120°F (0°C to 49°C). The HS and S Series are **not** listed for outdoor use.

*Unit Dimensions*

- 5” (12.7 cm) high x 4.5” (11.43 cm) wide x 2.5” (6.35 cm) deep

LISTED
S3247

**Description**

The S-24/HS-24 Series is a low profile strobe and horn/strobe combination that offers dependable audible and visual alarms and the absolute lowest current available.

The S-24 & HS-24 Series 24VDC offers tamperproof field selectable candela options of 15, 30, 60, 75, and 110 candela.

The Strobe and Horn/Strobe offers a continuous or sync temporal three in 2400Hz and mechanical tone, a chime and whoop tone. All tones are easy for the professional to change in the field by the use of switches.

The S-24 & HS-24 Series has a minimal operating current and has a minimum flash rate of 1Hz regardless of input voltage.

This Series is shipped with a standard 4" metal mounting plate which incorporates the popular Super-Slide® feature that allows the installer to easily test for supervision. The product also features a locking mechanism which secures the product to the bracket without any screws showing.

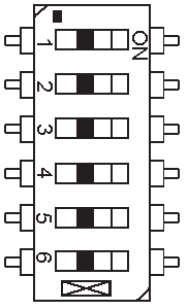
The S-24/HS-24 also features the patented Checkmate® - Instant Voltage Verification feature which allows the installer to check the voltage drop draw and match it to the blueprint.

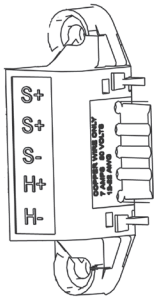
The S-24 & HS-24 Series appliances are ANSI/UL 464 and ANSI/UL 1971, listed for use with fire protective systems and are warranted for three years from date of purchase.

# S-24 & HS-24
## SELECTABLE CANDELA STROBE & HORN/STROBES

**Tone Switch Locations**

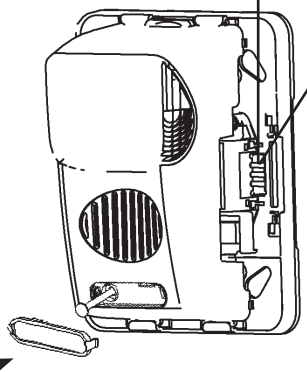
| TONE | SWITCH POSITION | | |
|---|---|---|---|
| | 3 | 4 | 5 |
| Mechanical Temporal 3 | ON | ON | ON |
| Mechanical - Continuous | OFF | ON | ON |
| 2400Hz - Temporal 3 | ON | OFF | ON |
| 2400Hz - Continuous | OFF | OFF | ON |
| Chime - Temporal 3 | ON | ON | OFF |
| Chime - Continuous | OFF | ON | OFF |
| Whoop | ON | OFF | OFF |
| Whoop | OFF | OFF | OFF |




**NOTE:**
- Switch Positions 1 and 2 in the OFF position to select isolated horn and strobe power inputs
- Switch Position 6 ON = HIGH dBA
- Switch Position 6 OFF = LOW dBA

**Super Slide® Mounting Bracket**
Allows the installer to pre-wire the system, test for system supervision, remove the signal head until occupancy, switch out signals without changing mounting brackets and has locking edge connector for snap-in-place installation.

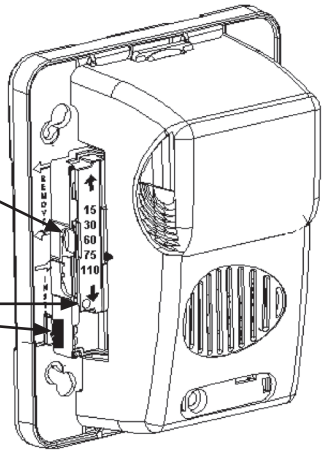


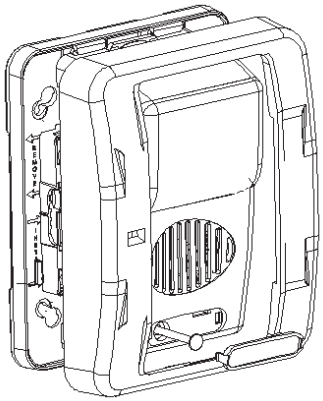
**Checkmate® Instant Voltage Verification**
It is often necessary to confirm the voltage drop along a line of devices. The access holes are provided in the back of the terminal block to allow the voltage to be measured directly without removing the device. Typically, this would be done at the end of line to confirm design criteria. Most measurements will be taken using the S+ and S- locations althouhg access is provided to other locations.

**NOTE: Care should be taken to not short the test probes.**

Candela selection slider switch. Depress center and slide switch to desire brightness level.

Break off pin and insert into hole at the bottom of the selector to lock candela setting. Signal must be removed from bracket and pin pushed forward from backside out of hole to change candela.



To remove bezel, grip both sides of bezel and pull in a download and outward motion.

**S-24 24 VDC Selectable Candela, Low Profile Evacuation Strobe**

| Model Number | Part Number | Nominal Voltage | Candela (ANSI/UL 1971) |
|---|---|---|---|
| S-24WR | 4890010 | 24 VDC | 15, 30, 60, 75, 110 |
| S-24WW | 4890011 | 24 VDC | 15, 30, 60, 75, 110 |

**HS-24 24 VDC Selectable Candela, Low Profile Evacuation Horn/Strobe**

| Model Number | Part Number | Nominal Voltage | Candela (ANSI/UL 1971) | Reverberant dBA at 10 ft., per ANSI/UL 464 | In Anechoic Room dBA at 10 ft. |
|---|---|---|---|---|---|
| HS-24WR | 4890030 | 24 VDC | 15, 30, 60, 75, 110 | 62-82 | 100 |
| HS-24WW | 4890031 | 24 VDC | 15, 30, 60, 75, 110 | 62-82 | 100 |

**S-24 & HS-24 Product Strobe Current Ratings (mA)**

| | 24 VDC (16-33 Volts) | |
|---|---|---|
| Candela | **24 VDC** | UL Max[1] |
| 15 cd | **30 mA** | 42 mA |
| 30 cd | **35 mA** | 58 mA |
| 60 cd | **66 mA** | 97 mA |
| 75 cd | **80 mA** | 116 mA |
| 110 cd | **103 mA** | 161 mA |

**Model Designations:**
W = Wall Mount
R = Red Faceplate W = White Faceplate

All units are available in plain (no lettering).
Plain units are non-returnable.

ALERT bezel available for order.
ALERT bezel available for order.

**S-24 & HS-24 Product Horn Current Ratings**

| | Horn Decibel Levels | | Horn Current Ratings |
|---|---|---|---|
| Horn Mode | Minimum SPL at 10 ft., per ANSI/UL 464 (HIGH) | Minimum SPL at 10 ft., per ANSI/UL 464 (LOW) | Regulated 24 VDC Max. Operating @ High Setting (mA) |
| Temp 3 2400 Hz | 78 dBA | 71* dBA | 28 mA |
| Temp 3 Mechanical | 76 dBA | 70* dBA | 25 mA |
| Temp 3 Chime | 70* dBA | 66* dBA | 15 mA |
| Continuous 2400 Hz | 81 dBA | 74* dBA | 28 mA |
| Continuous Mechanical | 80 dBA | 72* dBA | 25 mA |
| Continuous Chime | 70* dBA | 66* dBA | 15 mA |
| Whoop | 82 dBA | 69* dBA | 56 mA |

**NOTES:**

- For nominal and peak current across ANSI/UL regulated voltage range for filtered DC power and unfiltered (FWR [Full Wave Rectified]) power, see installation manual.
- Potter does nto recommend usign a coded or pulsing signaling circuit with any of our strobe products.
- The sound output for the temporal 3 tone is rated lower since the time the horn is off is averaged into the sound output rating. While the horn is producing a tone in the temporal 3 mode its sound pressure is the same as the continuous mode.

* Operating the horn in this mode at this voltage will result in not meeting the minimum ANSI/UL 464 reverberant sound level required for public mode fire protection service. These settings are acceptable only for private mode fire alarm use. Use the high dBA setting for public mode application (not applicable when using the chime tone. The chime tone is always private mode).

**Architect & Engineering Specifications**

The audible and/or visible signal shall be Potter S-24 strobe and Potter HS-24 horn/strobe Series or approved equal and shall be listed by Underwriters Laboratories, Inc. per ANSI/UL 1971 and/or ANSI/UL 464. The notification appliance shall also be listed with Factory Mutual Listing Service (FM) and the California State Fire Marshal (CSFM).

The notification appliance (combination audible/visible) shall produce a peak sound output of 100dBA or greater at 24VDC as measured in an anechoic chamber. The signaling appliance shall also have the capability to silence the audible signal while leaving the visible signal energized with the use of a single pair of power wires. Additionally, the user shall be able to select either continuous or temporal tone output with the temporal signal having the ability to be synchronized.

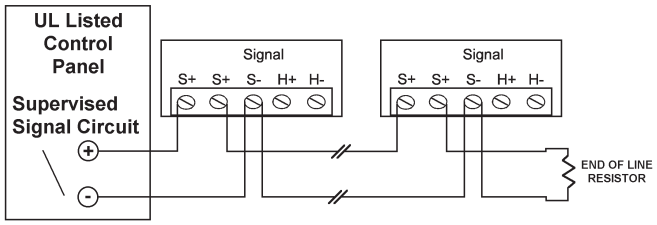
Unit shall be capable of being installed so that any unauthorized attempt to change the candela setting will result in a trouble signal at the fire alarm control panel.

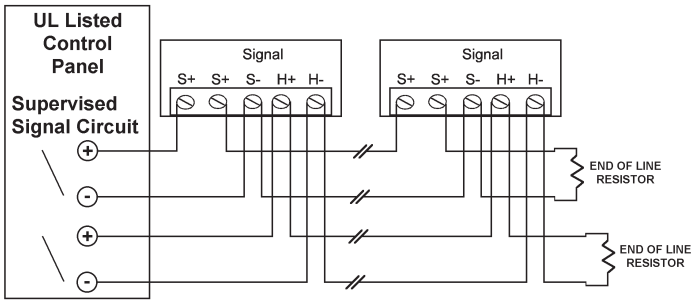
The audible/visible and visible signaling appliance shall also maintain a minimum flash rate of 1Hz or up to 2Hz regardless of power input voltage. The strobe appliance shall have an operating current of 42mA or less at 24VDC for the 15Cd strobe circuit.

The appliance shall be polarized to allow for electrical supervision of the system wiring. The unit shall be provided with a mounting bracket with terminals and barriers for input/output wiring and be able to mount to a single gang or double gang box or double workbox without the use of an adapter plate. The unit shall have an input voltage range of 16-33 volts with either direct current or full wave rectified power for 24VDC models.

The appliance shall be capable of testing supervision without disconnecting wires, verify voltage without removing unit and be capable of mounting to a surface back box.

**Conventional Wiring Diagrams for Emergency Notification Evacuation Series**




**NOTES:**

- All strobes are designed to flash as specified with continuous applied voltage. Strobes should not be used on coded or pulsing signaling circuits. However, use of the Potter AVSM control module or Gentex synchronization protocol is permitted to synchronize the strobe, horn, and/or mute the horn.
- **FOR SYNCHRONIZATION WIRING INFORMATION, REFERENCE AVSM CONTROL MODULE DATA SHEET (8830050) AND/OR AVSM CONTROL MODULE MANUAL FOR SYNCHRONIZATION MODULE WIRING DIAGRAMS. AVSM CONTROL MODULE DATA SHEET AND MANUAL CAN BE OBTAINED AT http://pottersignal.com OR CALL POTTER ELECTRIC AT 1-800-325-3936.**

# APS-SA/APS-DA

## ADDRESSABLE PULL STATION SINGLE/DUAL ACTION


**Features:**

- Durable Die Cast Manual Pull Station
- Matching Fire Alarm Control Panel Key
- Mounts in Single Gang Box
- Single or Dual Action
- Compatible with all PFC-6000, PFC-8000, and P-Series Panels

| | |
|---|---|
| Rated Voltage | 22 to 24 VDC |
| Standby Current Draw | 0.325 mA |
| Alarm Current Draw | 0.325 mA |
| Temperature Range | 32°F to 120°F (0°C to 49°C) |
| Relative Humidity Range | 0 to 93% (non-condensing) |

c UL us LISTED

| | |
|---|---|
| APS-SA Addressable Pull Station Single Action | 1430810 |
| APS-DA Addressable Pull Station Dual Action | 1430811 |

### Description

The APS-SA and APS-DA addressable manual pull stations are non-coded that provide an addressable point to a Potter alarm system. The APS series has terminals that allow the signaling line circuit (SLC) to be wired directly to the device and then exit to the next device in the loop. The APS series will mount in a single gang box or the Potter P32-BB surface mount back box.

### Operation

The APS-SA is activated by simply pulling the white "T" bar handle down. The APS-DA is activated by lifting the front cover and then pulling the white "T" bar. Once activated, the "T" bar cannot be reset without opening the front cover. Opening the front cover will also activate the manual pull station.

To reset the pull station, use the Potter WS-93 key and turn the lock to open the front cover. Once the cover is open, push the white "T" bar into the normal position and re-secure the front cover to the device.

### Setting the Address

The APS series must have the address set prior to installation of the manual pull station. This is accomplished using the handheld programmer or the SLC programmer on the fire alarm control panel (FACP). The address is stored on the module attached to the pull station and should be uniquely addressed. The device address should be recorded on the mounting plate of the pull station for future reference.

### ADA Compliance

The APS series is required to be mounted between 42" (106.7 cm) and 48" (121.9 cm) from the finished floor. The maximum side reach is allowed to be 54 inches (137.2 cm).

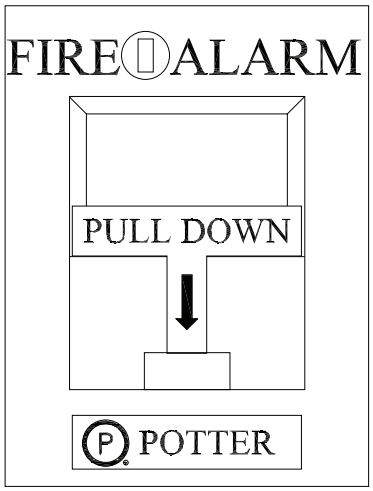
**CAUTION**

This device is to be installed per the manufactures instructions in accordance with the applicable NFPA standards, national and local fire and electrical codes. The Authority Having Jurisdiction (AHJ) should be consulted if there are any questions or local requirements.

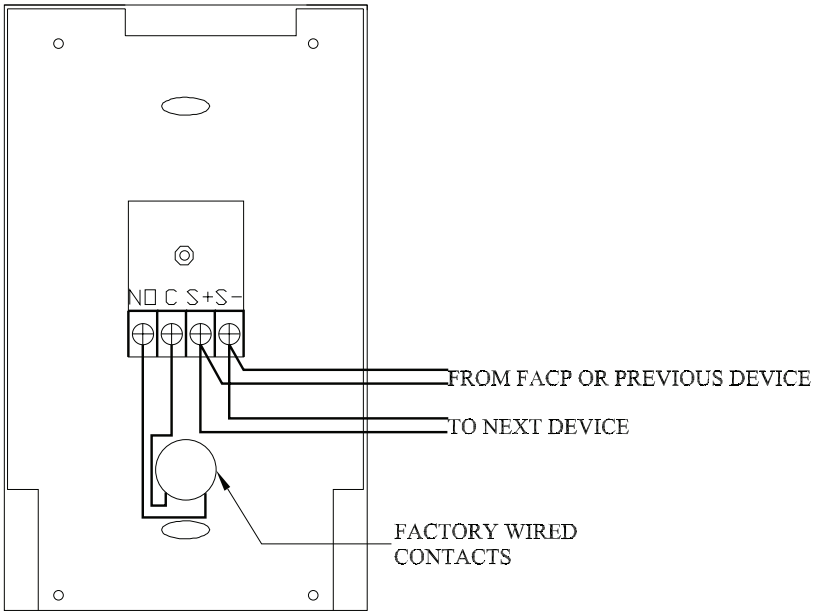
This device should be tested in accordance with NFPA standards.

Failure to follow the manufacturers recommendations could lead to the APS failing to report an alarm condition. It is the responsibility of the alarm installer to ensure this device is installed as intended. If there are questions, contact Potter's Technical Support for clarification.

## Pull Station Front View




## Pull Station Back View



UTC Fire & Security
A United Technologies Company

Product Data Sheet

# 3025T-M

Self-adjusting tamper contact with screw terminals

## Recessed pin plunger

Sentrol offers the 3010 series pin plunger for tamper protection. The contact is hermetically sealed and reed actuated for positive operation on seldom-used enclosure openings.

## Durability and dependability

The Sentrol high performance magnetic contacts have been designed to facilitate installation and ensure durability and dependability. Most are conservatively rated at 10,000,000 cycles, guaranteeing a long life. Every reed connection is hand soldered and each magnetic contact is tested before they leave the factory, 100% of the time.


## Standard Features

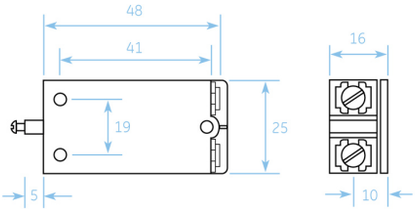
- Adjustable plunger depth
- Including sheet metal mounting screws
- Easy installation
- Optional tamper loop provided

# 3025T-M

## Self-adjusting tamper contact with screw terminals

## Specifications

| | |
|---|---|
| Gap distance (max) | N/A |
| Connections | Screw terminals |
| Contact | NC |
| Supervised loop | No |
| Dimensions (L x W x H) | |
| Contact | 48 x 25 x 16 mm |
| Magnet | N/A |
| Color | Mahogany |
| Remarks | |




## Ordering Information

| Part No. | Description |
|---|---|
| 3025T-M | Self-adjusting tamper contact with screw terminals, mahogany |





UTC Fire & Security
A United Technologies Company

# Sequence of Operations

| | Audio/visual activation at FACP | Activate audible/visual signal at FACP & Annunciator | Device Description at FACP | Log event in system history | Silence of audible devices Including FACP & annunciator | Event acknowledgement | Reset of all system functions and all visual devices | Remote transmission to Central Station A=alarm; T=trouble; S=Supervisory; L = log only | Remote indicator |
|---|---|---|---|---|---|---|---|---|---|
| Manual Pull Station at FACP | X | X | X | X | | | | A | |
| Smoke detector at FACP | X | X | X | X | | | | A | |
| Sprinkler flow or pressure switches | X | X | X | X | | | | A | |
| Sprinkler Tamper, low temp, or low air | | X | X | X | | | | S | |
| FACP/annunciator silence button | | X | X | X | X | | | L | |
| FACP/annunciator acknowledge button | | X | X | X | | X | | | |
| FACP/annunciator reset button | | X | X | X | | | X | L | |
| Removal of any device | | X | X | X | | | | T | |
| Ground fault | | X | X | X | | | | T | |
| System wiring "open" | | X | X | X | | | | T | |
| AC Power loss | | X | X | X | | | | T | |
| Secondary power loss | | X | X | X | | | | T | |
| Telephone line loss | | X | X | X | | | | T | |

***P300***
***Battery & Voltage Drop Calculations***

| | | | |
|---|---|---|---|
| **Project Name:** | 134 Washington | **Standby Hours:** | 24 |
| | | **Alarm Mins:** | 5 |
| **Installed By:** | | **Batt Efficiency:** | 80% |
| **Designed By:** | | **SLC Type:** | Class B |
| **Date:** | | **NAC Source Voltage:** | 20.4 |

**Model #:** P300
**Panel ID:**
**Location:**

**Max Panel Current (amps):** 5

*User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.*

| Qty | FACP Part # | Description | Standby (amps) Each | Standby (amps) Total | Alarm (amps) Each | Alarm (amps) Total |
|---|---|---|---|---|---|---|
| 1 | P300 | Analog Addressable FACP | 0.130 | 0.130 | 0.220 | 0.220 |
| | | | **Panel Standby:** | **0.130** | **Panel Alarm:** | **0.220** |

| | P-LINK (RS-485) | | Standby | | Alarm | |
|---|---|---|---|---|---|---|
| 1 | UD-1000 | DACT | 0.016 | 0.016 | 0.023 | 0.023 |
| | RA-6075 | LCD Annunciator | 0.020 | | 0.025 | |
| 1 | RA-6500 | LCD Annunciator | 0.020 | 0.020 | 0.050 | 0.050 |
| | LED-16 | LED Annunciator | 0.025 | | 0.025 | |
| | LED-16 | LED Annunciator LED Power* | 0.015 | | 0.210 | |
| 1 | CA-6075 | Class A Module | 0.012 | 0.012 | 0.044 | 0.044 |
| | PSN-1000(E) | Power Expander | 0.015 | | 0.015 | |
| | SLCE-127 | SLC Expander (2 Max) | 0.060 | | 0.060 | |
| | RLY-5 | Relay Expander | 0.025 | | 0.035 | |
| | RLY-5 | Relay Expander Power* | 0.010 | | 0.135 | |
| | DRV-50 | LED Driver Module | 0.025 | | 0.025 | |
| | DRV-50 | LED Driver Module LED Power* | 0.010 | | 0.215 | |
| | FCB-1000 | Fire Communications Bridge | 0.025 | | 0.025 | |
| | FIB-1000 | Fiber Interface Board | 0.030 | | 0.030 | |
| | SPG-1000 | Serial Parallel Gateway | 0.040 | | 0.040 | |
| | | *(Maximum current draw on P-Link limited to 1 Amp)* | **P-LINK Standby:** | **0.048** | **P-LINK Alarm:** | **0.117** |

***Only enter quantity if PLINK power is being used to power devices**

| | SLC Devices | | Standby | | Alarm | |
|---|---|---|---|---|---|---|
| 28 | PSA | Analog Photo Smoke | 0.000325 | 0.009100 | 0.000325 | 0.009100 |
| | PSHA | Analog Photo Smoke/Heat | 0.000325 | | 0.000325 | |
| 5 | RHA | Analog Rate of Rise Heat | 0.000325 | 0.001625 | 0.000325 | 0.001625 |
| | FHA | Analog Fixed Temp Heat | 0.000325 | | 0.000325 | |
| 11 | APS-SA/APS-DA | Addressable Pull Station Single/Dual Action | 0.000325 | 0.003575 | 0.000325 | 0.003575 |
| 2 | MCM | Mini Contact Input Module | 0.000325 | 0.000650 | 0.000325 | 0.000650 |
| | SCM-4 | Single Contact Input Module | 0.000325 | | 0.001000 | |
| 3 | DCM-4 | Dual Contact Input Module | 0.000325 | 0.000975 | 0.001000 | 0.003000 |
| 4 | TRM-4 | Twin Relay Output Module | 0.000325 | 0.001300 | 0.001000 | 0.004000 |
| | CIZM-4 * | Conventional Zone Input Mod | 0.000325 | | 0.001000 | |
| | MOM-4 * | Monitored Output Module | 0.000325 | | 0.001000 | |
| | ARB * | Detector Base w/Relay | 0.000325 | | 0.000325 | |
| | ASB * | Detector Base w/Sounder | 0.000325 | | 0.000325 | |
| | SCI ** | Short Circuit Isolator (Class A) | 0.000325 | | 0.002340 | |
| | AIB ** | Detector Base w/Isolator (Class A) | 0.000325 | | 0.002340 | |
| | SCI/AIB Class B ** | Current Draw from Install Manual | | | | |
| 1 | | SLC Loop Alarm LED Current | 0.000000 | 0.000000 | 0.027000 | 0.027000 |
| | | | **SLC Standby:** | **0.017225** | **SLC Alarm:** | **0.048950** |

* Requires Aux Power (Configure Below)

** See the installation manual for special considerations when installing AIB, SCI devices on Class B loops.

| NAC Circuits (See NAC Configuration below) Ckt | Use | Description | Standby (amps) Total | | Alarm (amps) Total |
|---|---|---|---|---|---|
| 1 | | | 0.00000 | | 3.00000 |
| 2 | | | 0.00000 | | 2.00000 |
| | | **NAC Standby:** | **0.00000** | **NAC Alarm:** | **5.00000** |

| I/O Circuits (See I/O Configuration below) Ckt | Use | Description | Standby (amps) Total | | Alarm (amps) Total |
|---|---|---|---|---|---|
| 1 | | | 0.00000 | | 0.00000 |
| 2 | | | 0.00000 | | 0.00000 |
| | | **I/O Standby:** | **0.00000** | **I/O Alarm:** | **0.00000** |

## Battery Calculation Summary

| | Standby (amps) | | Alarm (amps) |
|---|---|---|---|
| **Panel Current:** | 0.13000 | | 0.22000 |
| **P-Link Current:** | 0.04800 | | 0.11700 |
| **SLC Device Current:** | 0.01723 | | 0.04895 |
| **NAC Circuit Current:** | 0.00000 | | 5.00000 |
| **I/O Circuit Current:** | 0.00000 | | 0.00000 |
| **Total Standby:** | **0.195225** | **Total Alarm:** | **5.38595** |
| **Standby Hours:** | 24 | **Alarm Mins:** | 5 |
| **AH Required:** | **4.69** | **AH Required:** | **0.45** |

**SLC Loop Type:** Class B
**Point Capacity Needed:** 56
**Point Capacity Actual:** 127

**Total Combined Standby & Alarm AmpHours Required:** 5.14

**Efficiency Factor:** 80%

**Required Battery AmpHours:** **6.43**

**Battery AmpHours Provided:**

***Note: The cabinet will house two 8 AH or 18 AH batteries. The charging circuit is rated for up to two 55 AH batteries.***

## *NAC Circuit Configuration & Voltage Drop*

*134 Washington*

### NAC 1

**MAX Circuit Current (amps): 3** **Source Voltage Used (VDC): 20.4**

**Usage:** **Description:**

| Wire Type | Ohms/1000ft | Length 1-Way | Actual Ohms | Max Load (amps | Volts @ EOL | Min Volts Req'd |
|---|---|---|---|---|---|---|
| #14 Solid | 2.5 | | 0.000 | 3.000 | 20.40 | 16 |

| Qty | Circuit Devices Lookup Type | Desc | Standby (amps) Each | Standby (amps) Total | Alarm (amps) Each | Alarm (amps) Total |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | User can add devices on the fly | | | | |
| | | to these bottom 5 rows | | | | |
| | | (No lookup function) | | | | |
| 1 | Horn/strobes | Total | 0.000000 | 0.000000 | 3.000000 | 3.000000 |
| | | | | | | |
| | | | **Total Standby:** | **0.00000** | **Total Alarm:** | **3.00000** |

### NAC 2

**MAX Circuit Current (amps): 3** **Source Voltage Used (VDC): 20.4**

**Usage:** **Description:**

| Wire Type | Ohms/1000ft | Length 1-Way | Actual Ohms | Max Load (amps | Volts @ EOL | Min Volts Req'd |
|---|---|---|---|---|---|---|
| #14 Solid | 2.5 | | 0.000 | 2.000 | 20.40 | 16 |

| Qty | Circuit Devices Lookup Type | Desc | Standby (amps) Each | Standby (amps) Total | Alarm (amps) Each | Alarm (amps) Total |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | User can add devices on the fly | | | | |
| | | to these bottom 5 rows | | | | |
| | | (No lookup function) | | | | |
| 1 | Horn/strobes | Total | 0.000000 | 0.000000 | 2.000000 | 2.000000 |
| | | | | | | |
| | | | **Total Standby:** | **0.00000** | **Total Alarm:** | **2.00000** |

POTTER
The Symbol of Protection

## *I/O Circuit Configuration & Voltage Drop*

*134 Washington*

### I/O 1

**MAX Circuit Current (amps): 1** **Source Voltage Used (VDC): 20.4**

**Usage:** **Description:**

| Wire Type | Ohms/1000ft | Length 1-Way | Actual Ohms | Max Load (amps | Volts @ EOL | Min Volts Req'd |
|---|---|---|---|---|---|---|
| #14 Solid | 2.5 | | 0.000 | 0.000 | 20.40 | 16 |

| Qty | Lookup Type | Circuit Devices Desc | Standby (amps) Each | Standby (amps) Total | Alarm (amps) Each | Alarm (amps) Total |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | User can add devices on the fly | | | | |
| | | to these bottom 5 rows | | | | |
| | | (No lookup function) | | | | |
| | | | | | | |
| | | | | | | |
| | | | **Total Standby:** | **0.00000** | **Total Alarm:** | **0.00000** |

### I/O 2

**MAX Circuit Current (amps): 1** **Source Voltage Used (VDC): 20.4**

**Usage:** **Description:**

| Wire Type | Ohms/1000ft | Length 1-Way | Actual Ohms | Max Load (amps | Volts @ EOL | Min Volts Req'd |
|---|---|---|---|---|---|---|
| #14 Solid | 2.5 | | 0.000 | 0.000 | 20.40 | 16 |

| Qty | Lookup Type | Circuit Devices Desc | Standby (amps) Each | Standby (amps) Total | Alarm (amps) Each | Alarm (amps) Total |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | User can add devices on the fly | | | | |
| | | to these bottom 5 rows | | | | |
| | | (No lookup function) | | | | |
| | | | | | | |
| | | | | | | |
| | | | **Total Standby:** | **0.00000** | **Total Alarm:** | **0.00000** |

# NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES®

*Providing Certification Programs Since 1961*

**BE IT KNOWN THAT**

## Richard W. Brobst, Jr

**IS HEREBY AWARDED CERTIFICATION AT**

LEVEL IV

IN FIRE PROTECTION ENGINEERING TECHNOLOGY
FIRE ALARM SYSTEMS

**BASED UPON SUCCESSFUL DEMONSTRATION OF REQUISITE KNOWLEDGE, EXPERIENCE AND WORK PERFORMANCE AS SET FORTH BY THIS INSTITUTE.**

Certification Valid through October 1, 2017

CERTIFICATION NUMBER 106322

Dawn Edgell

CHAIRMAN OF THE NICET BOARD OF GOVERNORS

A DIVISION OF THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

(1) GENERAL NOTES:

A. FIRE ALARM SYSTEM WIRING SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE, APPLICABLE STATE AND LOCAL CODES, AND SHALL BE COORDINATED WITH THE LOCAL AUTHORITY HAVING JURISDICTION.

B. CAUTION: DO NOT CONNECT ANY POWER TO THE CONTROL PANEL (BATTERIES OR 120V AC) UNTIL ALL OTHER FIELD WIRING IS TESTED AND CONNECTED.

C. DO NOT INSTALL FIRE ALARM CONTROL PANEL OR SMOKE DETECTORS IN AN UNHEATED AREA.

D. DO NOT INSTALL ANY AC CURRENT-CARRYING CONDUCTORS CLOSE TO OR IN THE SAME RACEWAY WITH FIRE ALARM SYSTEM CONDUCTORS.

E. SOLID LINES REPRESENT CONNECTIONS TO BE MADE BY THE SYSTEM INSTALLER.

F. ALL RELAYS ARE SHOWN IN NORMAL SUPERVISORY CONDITION. ALL RELAYS ARE FORM "C" TYPE.

G. STROBES INSTALLED IN BEDROOMS SHALL BE LOCATED IN A SYMMETIRCAL MANNER DOWWN CENTER OF HALL WAY WHEN POSSIBLE

INSTALLATION NOTES

A. SMOKE DETECTORS SHALL NOT BE MOUNTED ANY CLOSER THAN 3' FROM ANY AIR DUCT OPENINGS

B. ELEVATOR LOBBY SMOKE DETECTORS SHALL BE MOUNTED WITHIN 10' OF THE ELEVATOR DOOR

C. MANUAL PULL STATIONS SHALL BE MOUNTED PER ADA REQUIREMENTS: 48" AFF OR 42" AFF TO COMPLY WITH SIDE/FRONT REACH REQUIREMENTS

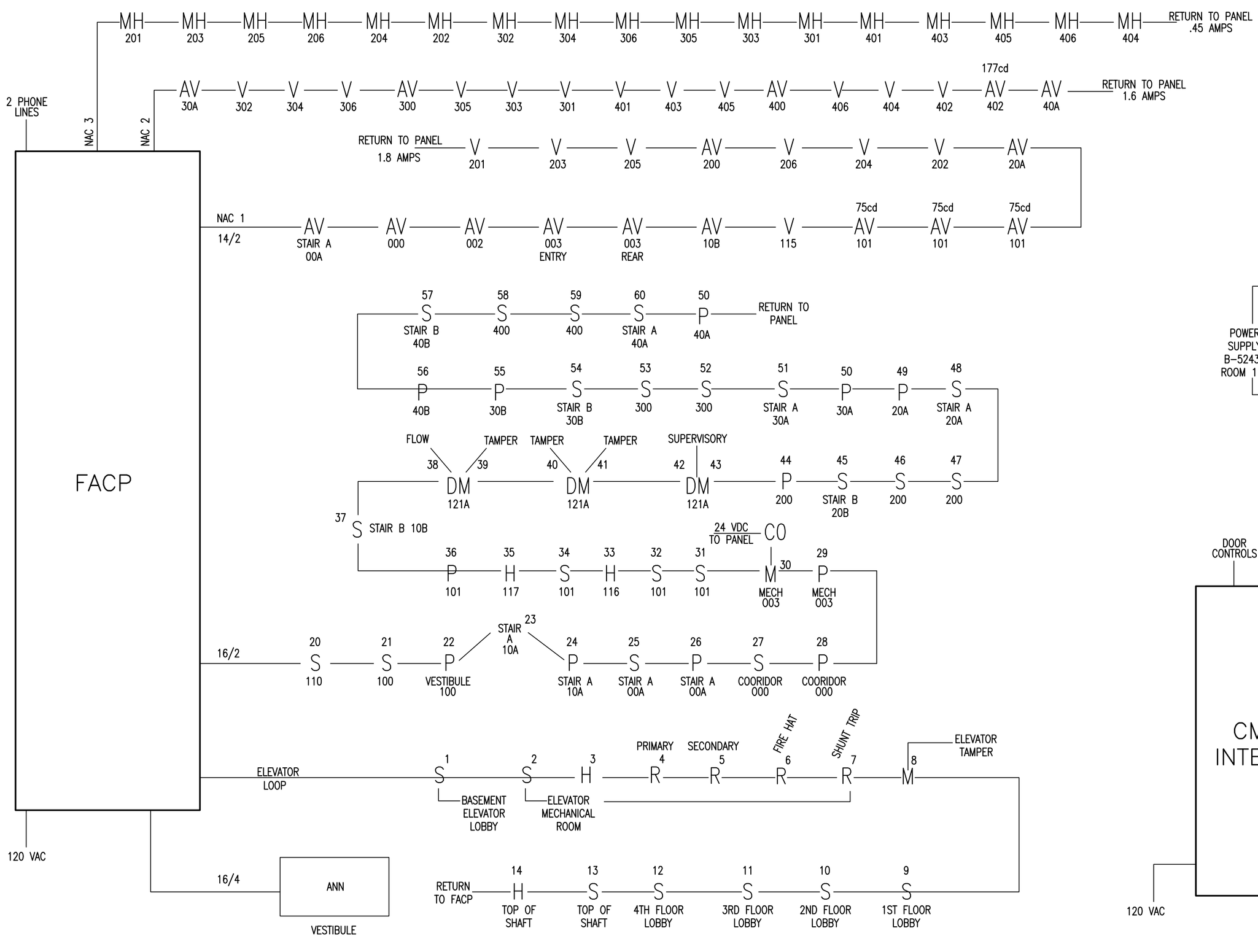
D. WALL MOUNTED HORN/STROBES & STROBES SHALL BE MOUNTED 6" FROM CEILING, OR 96" TO 80" AFF TO THE CENTER OF STROBE

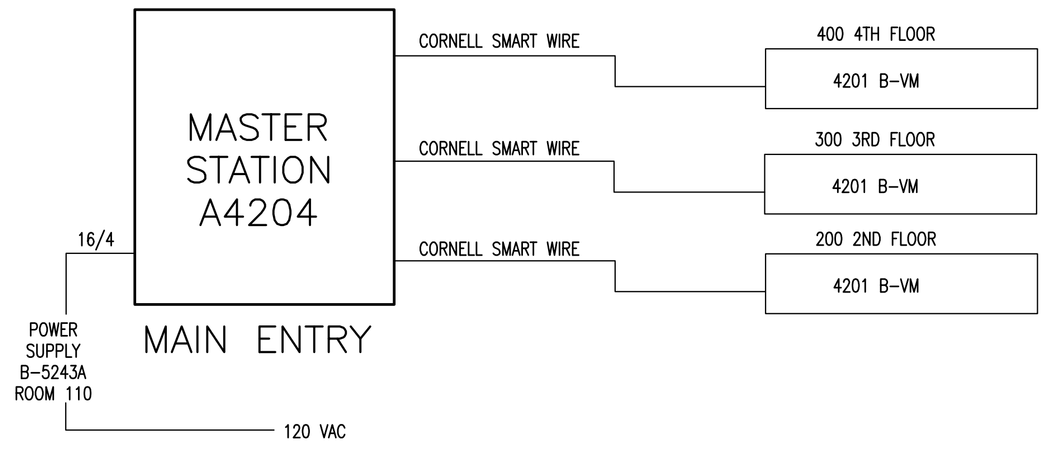
E. HORN/STROBES & STROBES SHALL BE MOUNTED 15' FROM THE CORNER OF THE WALL. IF THIS IS NOT POSSIBLE, DEVICE SHALL BE CENTERED ON THAT WALL.

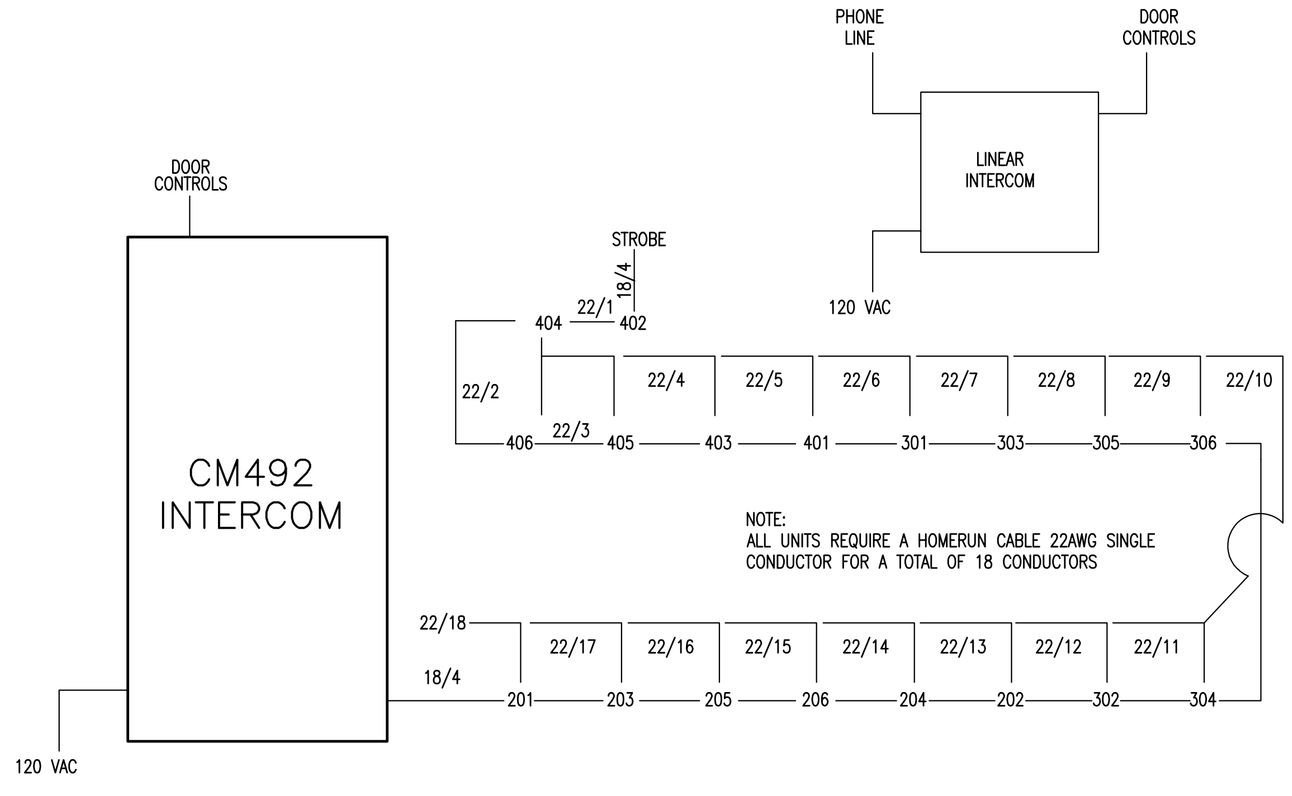
F. CEILING MOUNTED HALLWAY DEVICES SHALL BE LOCATED IN A SYMMETRICAL MANNER DOWN CENTER OF HALLWAY WHEN POSSIBLE

(2) SEE INITIATION CIRCUITS AND NAC CIRCUITS FOR INTEGRATION OF BOTH SLC AND NAC CIRCUITS
(3) ALL CABLING IS 14/2 FOR THE NAC CIRCUITS UNLESS OTHERWISE SHOWN
(4) ALL CABLING IS 16/2 FOR THE SLC CIRCUITS UNLESS OTHERWISE SHOWN
(5)

AC = ALARM CONTROL MODULE
R – ARM = ADDRESSABLE RELAY MODULE
AV = AUDIO VISUAL DEVICE (SET TO 75cd UNLESS NOTED OTHERWISE)
B = EXTERIOR BEACON
CO = CO DETECTOR
D = DUAL MODULE
DUCT=DUCT DETECTOR MINI MODULE
F = FLOW
FACP = MAIN FIRE PANEL
FS = FIRESMART SMOKE DETECTOR
H = HEAT DETECTOR
I = ISOLATION MODULES
T.S. = TWISTED SHIELDED
S/CO = SMOKE/CO DETECTOR (00HC941)
RL = REMOTE LIGHT
K = KNOX BOX
LP = LOW AIR
MM = MINI MODULE
P = PULL STATION MINI MODULE
PS = PRESSURE SWITCH
RI = REMOTE INDICATOR
S = SMOKE
SA = SMOKE WITH AUDIBLE BASE
T= TAMPER
TS = TEST SWITCH
V = VISUAL DEVICE ONLY (SET TO 75cd UNLESS NOTED OTHERWISE)
MH = MINI HORN
RTS = REMOTE TEST MODULE
PS = PULL STATION
CL = CORRIDOR LIGHT





CONSULTANT:
325 US ROUTE ONE
FALMOUTH, ME 04105
Phone: (207) 775-5755
Fax: (207) 781-2064
FIRE - SECURITY - ACCESS - CCTV


PROJECT:
134 WASHINGTON AVE.
Portland, ME.

DRAWING:
RISERS

REVISIONS

DATE: 04/08/15
SCALE: NTS
DRAWN BY: SSA
APPROVED BY: –
SHEET: 1