

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK
CITY OF PORTLAND

Please Read
Application And
Notes, if Any,
Attached

BUILDING PERMIT

PERMIT ISSUED
Permit Number: 100396
MAY 10 2010
CITY OF PORTLAND

This is to certify that Woitasek Walter J & /Protection professional

has permission to Install Fire Alarm System

AT 54 Grant St

CITY OF PORTLAND 048-D010001

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and written permission procured before this building or part thereof is lath or other closed-in. 24 HOUR NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

OTHER REQUIRED APPROVALS

Fire Dept. [Signature] (202)

Health Dept. _____

Appeal Board _____

Other _____
Department Name

[Signature]
Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

| | | |
|-----------------------|-------------|---------------------|
| Permit No: 10-0396 | Issue Date: | CBL: 048 D010001 |
|-----------------------|-------------|---------------------|

| | | | |
|--|--|--|---------------------|
| Location of Construction: 54 Grant St | Owner Name: Woitasek Walter J & | Owner Address: 141 Temby St | Phone: |
| Business Name: | Contractor Name: Protection Professionals | Contractor Address: 139 Newbury Street Portland | Phone 2077755755 |
| Lessee/Buyer's Name | Phone: | Permit Type: Fire Alarm System | Zone: R-6 |

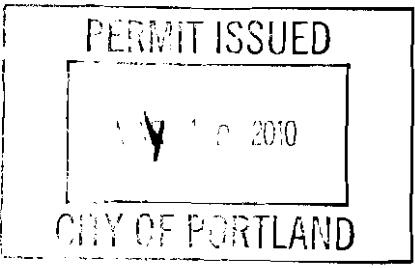
| | | | | | |
|-------------------------------------|--|------------------------|-----------------------------|--------------------|------|
| Past Use: Multi Family / 4 Units | Proposed Use: 4 Units / Install Fire Alarm System | Permit Fee: \$90.00 | Cost of Work: \$6,500.00 | CEO District: 2 | 5700 |
|-------------------------------------|--|------------------------|-----------------------------|--------------------|------|

| | | |
|---|---|---|
| Proposed Project Description: Install Fire Alarm System <i>current legal use - 4 residential, xl D.U.</i> | FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied <i>w/ conditions</i> 4/29/10 Signature: <i>[Signature]</i> | INSPECTION: Use Group: R2 Type: Fire Alarm IBC-2003 Signature: <i>[Signature]</i> 5/7/10 |
|---|---|---|

| |
|---|
| PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.) Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Signature: _____ Date: _____ |
|---|

| | | | | |
|------------------------|---------------------------------|------------------------|--|--|
| Permit Taken By: gg | Date Applied For: 04/16/2010 | Zoning Approval | | |
|------------------------|---------------------------------|------------------------|--|--|

| | | | |
|--|---|--|---|
| 1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. 2. Building permits do not include plumbing, septic or electrical work. 3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.. | Special Zoning or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>4/20/10</i> | Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date: _____ | Historic Preservation <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: _____ |
|--|---|--|---|



CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

| | | | |
|---|---------|------|-------|
| SIGNATURE OF APPLICANT | ADDRESS | DATE | PHONE |
| RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE | | DATE | PHONE |

City of Portland, Maine - Building or Use Permit

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

| | | |
|-----------------------|---------------------------------|---------------------|
| Permit No: 10-0396 | Date Applied For: 04/16/2010 | CBL: 048 D010001 |
|-----------------------|---------------------------------|---------------------|

| | | | |
|--|--|--|-------------------------|
| Location of Construction: 54 Grant St | Owner Name: Woitasek Walter J & | Owner Address: 141 Temby St | Phone: |
| Business Name: | Contractor Name: Protection Professionals | Contractor Address: 139 Newbury Street Portland | Phone (207) 775-5755 |
| Lessee/Buyer's Name | Phone: | Permit Type: Fire Alarm System | |

| | |
|--|--|
| Proposed Use: 4 Units / Install Fire Alarm System | Proposed Project Description: Install Fire Alarm System |
|--|--|

Dept: Zoning **Status:** Approved with Conditions **Reviewer:** Marge Schmuckal **Approval Date:** 04/20/2010

Note: **Ok to Issue:**

- 1) This is NOT an approval for an additional dwelling unit. You SHALL NOT add any additional kitchen equipment including, but not limited to items such as stoves, microwaves, refrigerators, or kitchen sinks, etc. Without special approvals.
- 2) This property shall remain a FOUR family dwelling. Any change of use shall require a separate permit application for review and approval.
- 3) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

Dept: Building **Status:** Approved with Conditions **Reviewer:** Jeanine Bourke **Approval Date:** 05/07/2010

Note: **Ok to Issue:**

- 1) There is a permit on hold by the owner for work on the 5th unit in the attic. The fire alarm installation appears to access this space and will be required to meet the code for this dwelling unit.
- 2) Fire Alarm systems shall be installed per Sec. 907 of the IBC 2003
- 3) Separate permits are required for any electrical, plumbing, sprinkler, fire alarm HVAC systems, heating appliances, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.

Dept: Fire **Status:** Approved with Conditions **Reviewer:** Ben Wallace Jr. **Approval Date:** 04/29/2010

Note: **Ok to Issue:**

- 1) Installation of a Fire Alarm system requires a Knox Box to be installed per city ordinance
- 2) As-built documents shall be submitted in pdf to the Building Inspections Office upon completion of job.
- 3) System acceptance and commissioning must be co-ordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.
- 4) All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP labeled "FIRE ALARM RECORDS". Records cabinet, FACP, annunciator(s), and pull stations shall be keyed alike.
- 5) The fire alarm system shall comply with the City of Portland Standard for Signaling Systems for the Protection of Life and Property. All fire alarm installation and servicing companies shall have a Certificate of Fitness from the Fire Department.

Comments:

4/20/2010-gg: recieved pdf and entered. /gg

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the City of Portland Inspection Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months, if the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a “Stop Work Order” and subsequent release to continue with construction.**

 X **Framing/Rough Plumbing/Electrical: Prior to Any Insulating or drywalling**

 X **Final inspection required at completion of work.**

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



Fire Alarm Permit

~~548 D 010~~
100 396

If you or the property owner owes real estate or property taxes or user charges on any property within the city, payment arrangements must be made before permits of any kind are accepted.

Installation address: 54 Grant Street ^{4 family} CBL: 048 D 010

Exact location: (within structure) Front Hall Entry

Type of occupancy(s) (NFPA & ICC): _____

Building owner: Steven Weitasek

System Designer (point of contact): Must be Rich Brost

Designer phone: 207-775-5755 E-mail: rich@protectionprofessionals.net

Installing contractor: Protection Professionals/Campbell E Certificate of Fitness No: 1001

Contractor phone: 207-775-5755 E-mail: rich@protectionprofessionals.net

This is a new application: YES NO

This is an amendment to an existing permit: YES NO Permit no: _____

The following documents shall be provided with this application:

- Floor plans
- Wiring diagram
- Annunciator details
- Equipment data sheets
- Battery & voltage drop calculations
- Input/ Output Matrix
- Designer qualifications
- Electrical Permit Pulled (check alarm/com)

| |
|---|
| COST OF WORK: <u>6,500.00</u> |
| PERMIT FEE: <u>90.00</u> |
| (\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000) |

Received PDF & entered. 66

The designer shall be the responsible party for this application. Download a new copy of this application at www.portlandmaine.gov/fire for every submittal. Submit all plans in electronic PDF in addition to full sized plans to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

Prior to acceptance of any fire alarm system, a complete commissioning and acceptance test must be coordinated with all fire system contractors and the Fire Department, and proper documentation of such test(s) provided.

All installation(s) must comply with the *City of Portland Technical Standard for Signaling Systems for the Protection of Life and Property*, available at www.portlandmaine.gov/fire.

Applicant signature: *[Signature]* Date: 4-10-10

Project Variables

Project Name: Standby Hours: Extra Circuit Capacity:

Project ID: Alarm Mins: Volt. Drop Warning:

Prepared By: EOL Voltage (V):

Date: FPP-RNAC-8A-4C Battery Calculator

| Circuit: Conventional 2-wire Loops | | Max STBY Current with 10% Safety: | | 0.0027 Amps | |
|------------------------------------|---|-----------------------------------|-------|----------------------------|-------|
| Qty | Device | Current Draw Each Standby | Alarm | Current Draw Total Standby | Alarm |
| 11 | D603 ROR Heat Detector / D287 or D288 Base | 0.000 | LTD | 0.001 | LTD |
| 17 | D604 Fixed Heat Detector / D287 or D288 Base | 0.000 | LTD | 0.002 | LTD |
| 9 | D285 Photo Smoke Detector / D287 or D288 Base | 0.000 | LTD | 0.001 | LTD |
| 4 | ← Please enter the number of Zones in use | Totals | | | |

| Circuit: NACs (Local #1) | | Max Current with 10% Safety: | | 2.25 Amps | | |
|--------------------------|--------------|------------------------------|---------------------------|-----------|----------------------------|-------|
| Qty | Manufacture | Device | Current Draw Each Standby | Alarm | Current Draw Total Standby | Alarm |
| 8 | Users Choice | | 0.000 | 0.098 | 0.000 | 0.784 |
| 4 | Users Choice | | 0.000 | 0.107 | 0.000 | 0.428 |
| | | | Totals | | | |

| Circuit: Expanders | | Current Draw Each Standby | | Current Draw Total Standby | |
|--------------------|--|---------------------------|---------------|----------------------------|-------|
| Qty | Device | Alarm | Alarm | Alarm | Alarm |
| 1 | FPC-7034 Four-Zone Conventional expander | 0.044 | 0.176 | 0.044 | 0.176 |
| | | | Totals | | |

| | | |
|---|--|--|
| Project Variables | | |
| Project Name: <input type="text" value="54 Grant St."/> | Standby Hours: <input type="text" value="24"/> | Extra circuit capacity: <input type="text" value="10%"/> |
| Project ID: <input type="text" value="3488"/> | Alarm Mins: <input type="text" value="5"/> | Voltage Drop: <input type="text" value="25%"/> |
| Prepared By: <input type="text" value="Dan Holt"/> | | EOL Voltage (V): <input type="text" value="18.0"/> |
| Date: <input type="text" value="1/18/2010"/> | FPD-7024 FACP Battery Calculator | |

| Circuit Type | Standby | Alarm | & Type | 1000 Ft. | Per Circuit | Ohms | EOL | %Drop |
|-------------------------------------|---------|-------|----------------------------|---|-------------|------|-------|-------|
| Conventional 2-wire Loops | | | #18 Solid | 8.08 | 200 | 3.23 | 19.83 | 2.79% |
| Smoke Power (Conv. 4-wire devices) | | | #18 Solid | 8.08 | 0 | 0.00 | 20.40 | 2.79% |
| Aux Power | | | #18 Solid | 8.08 | 0 | 0.00 | 20.40 | 2.79% |
| NACs (Local #1) | | | #14 Solid | 3.19 | 100 | 0.64 | 19.63 | 2.79% |
| NACs (Local #2) | | | #14 Solid | 3.19 | 100 | 0.64 | 20.40 | 2.79% |
| FPD-7024 Panel | 0.200 | 0.200 | | (Amps) Total Output Power Required | | | | |
| Total Standby Current (Amps) | 0.248 | 1.764 | Total Alarm Current (Amps) | | | | | |
| Standby Time In Hours | 24 | 5 | Alarm Time In Min 0 | | | | | |
| Total Standby AH Required | 5.949 | 0.147 | Total Alarm AH Required | | | | | |
| Total Combined AH Required | 6.10 | | | | | | | |
| Multiply by Battery Derating Factor | 10% | | | | | | | |
| Minimum Battery AmpHours Required | 6.71 | | | | | | | |

Sequence of Operations

| | Audio/visual activation | Activate audible/visual signal at FACP & Annunciator | Device Description at FACP & Annunciator | Shutdown of HVAC equipment | Log event in system history | Activate Elevator Fire Hat | Activate Elevator primary or secondary control | Activate Elevator shunt trip | Silence of audible devices Including FACP & annunciator | Release door holders | Release locked doors | 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 Stations | X | X | X | | X | | | | | | | | | A | |
| Smoke detectors common area | X | X | X | | X | | | | | | | | | A | |
| Smoke detectors elevator lobbies | | X | X | | X | | | | | | | | | A | |
| Smoke Detectors elevator shaft/machine room | | | | | | | | | | | | | | A | |
| Duct mounted Smoke Detectors | | | | | | | | | | | | | | S | |
| Heat Detectors common area | X | X | X | | X | | | | | | | | | A | |
| Heat Detectors Elevator shaft/machine room | | | | | | | | | | | | | | A | |
| Sprinkler flow or pressure switches | | | | | | | | | | | | | | A | |
| Sprinkler Tamper, low temp, or low air | | | | | | | | | | | | | | S | |
| Secondary fire panel such as kitchen hood | | | | | | | | | | | | | | A | |
| FACP/annunciator silence button | | | | | | | | 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 | |


BOSCH

Invented for life

D7024 Fire Alarm Control Panels



- ▶ Four detector zones (expandable to eight); up to 20 two-wire smoke detectors per zone
- ▶ Built-in DACT
- ▶ Two notification appliance circuits (NACs) on board with an internal 24 VFWR, 4 A NAC power supply
- ▶ Easily converts to addressable with the addition of a D7039 Multiplex Expansion Module
- ▶ Programmable through front panel interface, remote D7033 Liquid-crystal Display (LCD) Keypads, or remote programming software (RPS)

The D7024 Fire Alarm Control Panels (FACPs) can be used in commercial and public building applications such as schools, universities, manufacturing plants, and health care facilities. They are listed by UL for central station, local, auxiliary, and remote station systems.

The D7024 FACPs support four on-board initiating zones that can be expanded to eight using the D7034. Each initiating zone supports two-wire and four-wire detectors configurable as Class A, Style D (with D7014) or Class B, Style B loops. Each zone can support up to 20 two-wire detectors, or any number of four-wire detectors depending on available power. Each FACP has a built-in digital fire alarm communicator transmitter (DACT).

Enhance the D7024 conventional system features when running version 2.02 or higher firmware by adding a D7039 Multiplex Expansion Module. Adding a D7039 Multiplex Expansion Module to the D7024 turns the conventional FACP into an addressable FACP. The D7039 adds up to 247 addressable points to the base system and adds an additional 400 events to the history buffer for a total of 499 events. The D7039 also increases the number of programmable relay outputs from 18 to 58 and allows up to 100 system users (an addition of 84 PINs to the base system).

Functions

Notification Appliance Circuits (NACs)

Two on-board Class B, Style Y or Class A, Style Z (with D7015) NACs provide up to 4 A of 24 VFWR power to operate horns, strobes, bells, and other notification appliances. Each NAC can be programmed to provide Temporal Code 3, steady, pulsed, and synchronized output for Wheelock™ and Gentex™ notification appliances.

User Interface

A viewing port in the keyed control panel enclosure door shows the system status light-emitting diodes (LEDs) and LCD display while maintaining system keypad security. Unlocking the enclosure door provides access to the system controls for silencing off-normal conditions, zone bypassing, detector resetting, testing, other fire functions, and programming. These functions are also available on all D7033 LCD Keypads connected to the system. All D7036 LCD Annunciators provide custom text annunciation on a 32-character, backlit, two-line LCD display. All system keypads and annunciators have built-in sounders. Back-light intensity and sounder volume are programmable.

Personal Identification Numbers (PINs)

There are 16 PINs available for accessing system control. Assign each number an authority level to limit access to the system control functions.

Note The number of PINs increases to 10D with the addition of a D7039 Multiplex Expansion Module.

History Buffer

The system stores events in a 99-event history buffer.

Note The number of events that can be stored in the history buffer increases to 499 with the addition of a D7039 Multiplex Expansion Module.

Central Station Reporting

The D7024 FACPs send reports to two telephone numbers with full single, double, and backup reporting. They communicate in BFSK, SIA, Contact ID, Modem IIIa², and 4/2 and 3/1 Tone Bursts.

Dirty Smoke Detector Monitoring

All on-board zones and D7034 zones are continuously monitored for smoke detectors signaling a dirty condition using the Bosch Chamber Check[®] feature and CleanMe[®] protocol. If a detector's smoke chamber is dirty, the detector sends a CleanMe signal on the two-wire loop or a dirty detector signal on the addressable loop. The control panel annunciates that there is a dirty detector on the loop or the address. The Chamber Check feature signals a dirty smoke chamber using the LED on the detector head.

Accessories

The D7024 enclosure has space for additional accessory modules and two D1218 (18 Ah) batteries or two D126 (7 Ah) batteries.

Certifications and Approvals

| Region | Certification |
|-----------|---|
| USA | FM |
| | CSFM 7165-1615: 147 July 2008 |
| | NYC-MEA 12-92-E, Vol. VII 12-92-E, Vol. 14 |
| Canada | IC 1249 7703 A |
| Hong Kong | HKFSD |

Installation/Configuration Notes

Compatible Products

The following products are compatible with the D7024 FACPs:

| Category | Product ID | Product Description | |
|------------------------------|--|---|---------------------------------------|
| Batteries and Power Supplies | D126 | 12 V, 7 Ah battery | |
| | D1218 | 12 V, 18 Ah battery | |
| | D7038 | Remote NAC power supply | |
| Detectors | For two-wire detectors, refer to <i>D7022-D7024 Compatibility List Technogram</i> (P/N: 34445) | | |
| Keypads and Annunciators | D7030X | Eight-point LED annunciator (eight red) | |
| | D7030X-S2 | Eight-point LED annunciator (two yellow, six red) | |
| | D7030X-S8 | Eight-point LED annunciator (eight yellow) | |
| | D7032 | Eight-zone LED annunciator expander (eight red) | |
| | D7033 | LCD fire system keypad | |
| | D7036 | LCD annunciator | |
| | Modules | D132B | Smoke detector reversing relay module |
| | | D184A | Auxiliary local energy interface kit |
| | | D185 | Reversing polarity module |
| | | D275 | EOL power supervision module |
| D7014 | | Zone converter module | |
| D7015 | | Class B to Class A NAC converter | |
| D7031 | | Silence reset module | |
| D7034 | | Four-point expander | |
| D7035 | | Octal relay module | |
| D7035B | | Octal relay module in box | |
| NAC Devices | D7039 | Multiplex expansion module | |
| | D7039R | Multiplex expansion module retrofit kit | |
| | Refer to <i>D7024 NAC Compatibility List Technogram</i> (P/N: 34950) | | |

The following additional products are compatible with the D7024 Addressable FACPs:

| Category | Product ID | Product Description | |
|------------------------------|---------------|---|------------------------------|
| Detectors and Detector Bases | D7050 | Addressable photoelectric smoke detector | |
| | D7050TH | Addressable photoelectric smoke and heat detector | |
| | D7050-B6 | Addressable detector base | |
| Modules | D7042 | Multiplex eight-input remote module | |
| | D7042B | Multiplex eight-input remote module in box | |
| | D7044 | Multiplex single-input module | |
| | D7044M | Mini multiplex single-input module | |
| | D7048 | Multiplex octal driver | |
| | D7048B | Multiplex octal driver in box | |
| | D7052 | Multiplex dual-input module | |
| | D7053 | Multiplex input-output module | |
| | Pull Stations | FMM-7045 | Single-action manual station |
| | | FMM-7045-D | Double-action manual station |

Parts Included

| Quant. | Component |
|--------|--|
| 1 | D7024 board in a static-resistant bag |
| 1 | Enclosure (P/N: 30897) |
| 1 | Lock set with 2 keys (P/N: 24065) |
| 1 | Transformer (P/N: 29413) |
| 6 | 2.21 k Ω end-of-line (EOL) resistors (P/N: 25899 or 4998113202) |
| 1 | Hardware pack |
| 1 | Literature pack |

Note For the D7024 to be addressable, a D7039 Multiplex Expansion Module must be installed. The D7039 is purchased separately.

Technical Specifications

Environmental Considerations

| | |
|--------------------------|--------------------------------|
| Relative Humidity: | Up to 93%, non-condensing |
| Temperature (operating): | +32°F to +120°F (0°C to +49°C) |

Mechanical Properties

| | |
|-------------------------|--|
| Color: | Red |
| Dimensions (H x W x D): | 20.8 in. x 15 in. x 4.3 in. (52.8 cm x 38.1 cm x 10.9 cm) |
| Material: | Cold-rolled steel Base: 18 gauge (1.2 mm) Cover: 19 gauge (1.1 mm) |

Outputs

| | |
|-------------------|---|
| NAC: | 24 VFWR nominal, 4 A maximum |
| On-board Relays: | Two Form C contacts rated at 5 A, 28 VDC |
| Off-board Relays: | Up to two D7035 Octal Relay Modules each providing eight Form C relay outputs; contacts rated at 5 A, 28 VDC In an addressable system, up to 20 D7053 Multiplex Input-Output Modules per bus for a total of 40 |

Power Requirements

| | |
|--------------------|-------------------------------|
| Current (alarm): | 380 mA |
| Current (standby): | 200 mA |
| Power (primary) | 120 VAC, 1.5 A maximum, 60 Hz |

Sensor Circuits

| | |
|------------------|------------------------|
| Current: | 44 mA maximum per loop |
| Line resistance: | 150 Ω |
| Voltage: | 24 VDC nominal |

Trademarks

Trademark names are used throughout this document. In most cases, these designations are claimed as trademarks or registered trademarks in one or more countries by their respective owners. Rather than placing a trademark symbol in every occurrence of a trademark name, Bosch Security Systems, Inc. uses the names only in an editorial fashion and to the benefit of the trademark owner with no intention of infringing the trademark.

Chamber Check is a registered trademark of Bosch Security Systems, Inc. in the United States.

CleanMe is a registered trademark of GE Interlogix in the United States and/or other countries.

Wheelock is a trademark of Wheelock, Inc.

Gentex is a trademark of Gentex Corporation.

Ordering Information

| | |
|---|----------------|
| D7024 FACP Kit contains FACP, enclosure, transformer, and six EOL resistors. | D7024 |
| D7024LC FACP without Enclosure and Transformer Kit contains FACP only (no enclosure or transformer) | D7024LC |
| Accessories | |
| KEY-625 Replacement Key Replacement key | KEY-625 |

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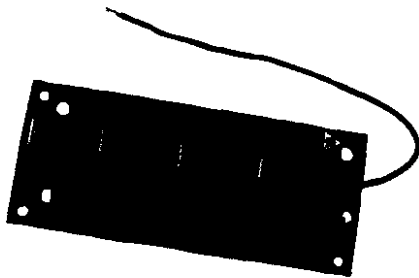
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Represented by



BOSCH
Invented for life

FPC-7034 Four-Point Expander



- ▶ Adds four Class B (Style B) or two Class A (Style D) initiating circuits to the FPD-7024 FACP
- ▶ For use with normally-open (NO) or normally-closed (NC) alarm contacts
- ▶ Compatible with two-wire or four-wire smoke detectors
- ▶ Up to 20 two-wire smoke detectors per circuit
- ▶ Easy installation due to plug-in design and screw terminal circuit connections
- ▶ No programming necessary

The FPC-7034 Four-point Expander doubles the number of alarm initiating device circuits on the FPD-7024 Fire Alarm Control Panel (FACP). These circuits are identical to the circuits on the FACP.

This plug-in module is automatically recognized by the control panel's firmware when power is restored to the system.

Certifications and Approvals

| Region | Certification | |
|--------|---------------|--------------------|
| USA | UL | UL864, 9th edition |
| | FM | |
| | CSFM | 7165-1615:227 |
| | FDNY-CoA | #6024 |

Installation/Configuration Notes

Compatible Products

The following products are compatible with the FPC-7034 Four-point Expander:

| Category | Product ID | Product Description |
|----------------|--|----------------------------------|
| Control Panels | FPD-7024 | Addressable or conventional FACP |
| Detectors | Refer to <i>FPD-7024 Smoke Detector Compatibility List Technogram</i> (P/N: F01U010790) for a list of smoke detectors compatible with the FPD-7024 FACP. | |

Note When four-wire smoke detectors are used, power must be supplied to the detectors from either the control panel or an external power source.

Mounting Considerations

The FPC-7034 mounts on the FPD-7024 control board, just to the right of the keypad. Use the four nylon stand-offs supplied with the expander.

Initiating Circuit Wiring

Circuit connection for the expansion initiating circuits is identical to the on-board circuit configuration. Refer to the *FPD-7024 Installation Guide* (P/N: F01U008458) for wiring details.

Install a supplied EOL resistor at the end of each wiring run.

Parts Included

| Quant. | Component |
|--------|--|
| 1 | Four-loop expander board |
| 4 | 2.21 k Ω End-of-Line (EOL) Resistors (P/N: 25899) |
| 4 | Stand-offs (P/N: 26510) |
| 1 | Literature pack |

Technical Specifications

Environmental Considerations

| | |
|--------------------------|--------------------------------|
| Environment: | Indoor, dry |
| Relative Humidity: | Up to 95%, non-condensing |
| Temperature (operating): | +32°F to +122°F (0°C to +50°C) |

Mechanical Properties

| | |
|---------------------|--|
| Dimensions (HxWxD): | 2.0 in. x 4.5 in. x 1.3 in. (5.1 cm x 11.4 cm x 3.3 cm) |
| Response Time: | Choice of fast (500 ms) or programmable from 1 sec to 89 sec |

Power Requirements

per initiating circuit:

| | |
|-----------------------------------|----------------------|
| Alarm Current (short circuit): | 40 mA maximum |
| Alarm Current (threshold): | >25 mA |
| Detector Standby Current (total): | 3 mA maximum |
| Loop Supervision Current: | 8.0 mA to 15.0 mA |
| Trouble Current Threshold: | <7 mA |
| Voltage (supply): | 18.0 VDC to 25.5 VDC |

per FPC-7034 module:

| | |
|--------------------|----------------|
| Current (standby): | 60 mA maximum |
| Current (alarm): | 160 mA maximum |

Ordering Information

| | |
|---|-----------------|
| FPC-7034 Four-Point Expander | FPC-7034 |
| Doubles the number of alarm initiating device circuits on the FPD-7024 FACP | |

Americas:
Bosch Security Systems, Inc.
130 Perinton Parkway
Fairport, New York, 14450, USA
Phone: +1 800 289 0096
Fax: +1 585 223 9180
security.sales@us.bosch.com
www.boschsecurity.us

Europe, Middle East, Africa:
Bosch Security Systems B.V.
P.O. Box 80002
5600 JB Eindhoven, The Netherlands
Phone: +31 40 2577 284
Fax: +31 40 2577 330
emea.securitysystems@bosch.com
www.boschsecurity.com

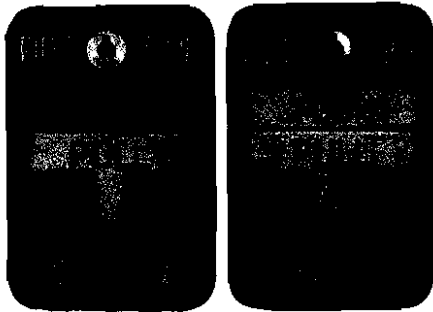
Asia-Pacific:
Robert Bosch (SEA) Pte Ltd, Security Systems
11 Bishan Street 21
Singapore S73943
Phone: +65 6571 2600
Fax: +65 6571 2698
apr.securitysystems@bosch.com
www.boschsecurity.com

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BOSCH

Invented for life

FMM-7045 Series Multiplex Addressable Manual Stations



- ▶ Easy addressing with rotary switches
- ▶ Low current draw
- ▶ Key-lock reset
- ▶ Replaceable scored acrylic breakrod option
- ▶ Terminal connections
- ▶ ADA compliant
- ▶ UL Listed

The FMM-7045 Series Multiplex Manual Stations are UL Listed fire alarm initiating devices that can be connected along with other multiplex devices on the D7039 Multiplex Expansion Module. The FPD-7024 or D7024 Addressable Fire Alarm Control Panel (FACP) supervises the entire multiplex loop, including the FMM-7045 or FMM-7045-D manual stations, for troubles, alarms, and ground fault conditions. Because each manual station occupies only one address on the multiplex bus, it can be addressed for any point within the 9 to 255 range allowed by the multiplex expansion module.

These manual stations are generally installed near building exits such as stairways and doors, allowing persons evacuating the building to activate the fire alarm. They have optional scored acrylic breakrods and a pull handle that locks in the activated position, to allow easy identification of alarm activation points.

These manual stations are high-quality units constructed entirely of non-toxic materials. They have a low profile and rounded edges to fit most design applications. All components are painted or have plated surfaces to inhibit corrosion. Non-corroding screw terminals are provided for wire connections. They are manufactured in conformance with the standards set forth in the Americans with Disabilities Act (ADA).

Functions

Alarm Action

The single-action FMM-7045 has a white pull-down lever in its center. The dual-action FMM-7045-D has a white push lever above the white pull-down lever in its center. Pulling down the pull-down lever latches it into place and sends an alarm signal to the control panel over the multiplex bus. The pull-down lever cannot be reset unless the correct key is inserted into the manual station's lock and the unit is opened. The latching lever can then be restored to its normal position.

Certifications and Approvals

| Region | Certification |
|--------|--|
| USA | UL UNIU: Boxes, Non-Coded (UL38) |
| | CSFM 7150-1615: 122 |
| | NYC-MEA 12-92-E, Vol. 14 |
| ADA | Complies with Americans with Disabilities Act ADA 4.28.3 |
| NFPA | Complies with National Fire Protection Association NFPA 72 |

Installation/Configuration Notes

Compatibility Information

The FMM-7045 Series Multiplex Manual Stations are compatible with a FPD-7024 FACP or a D7024 FACP with firmware revision 2.0 or greater with a D7039 Multiplex Expansion Module.

Addressing

Addresses are set using three rotary switches. Refer to the *D7024 FACP Operation and Installation Guide* (P/N: 31499) or the *FPD-7024 Operation and Installation Guide* (P/N F01U008458) and the *FMM-7045, FMM-7045-D Multiplex Addressable Manual Stations Installation Instructions* (P/N: F01U001402) for programming information.

Mounting

The FMM-7045 manual stations are for indoor use only.

Note If a pull station is needed for outdoor use or in an unheated area, use an FMM-100 Series Pull Station rated for the environment and wired to a multiplex module within the interior of the building.

The FMM-7045 manual stations flush or surface mount on a standard four-inch square back box with a single-gang mud ring so that the total depth of the box is at least 2.25 in. (5.7 cm).

Note The FMM-7045 does not fit an FMM-100BB-R Back Box.

Wiring

The terminal block accepts wiring up to 12 AWG (2.3 mm) in diameter. Refer to the *D7039 Installation Instructions* (P/N: 38685) for multiplex wiring information.

Parts Included

| Quant. | Component |
|--------|-----------------------------------|
| 1 | Manual station |
| 1 | FMM-100GR Scored Acrylic Breakrod |
| 1 | D102 Key (1358) |
| 1 | Literature pack |

Technical Specifications

Environmental Considerations

| | |
|--|---|
| Environment: | Dry, indoor |
| Radio Frequency Interference (RFI) Immunity: | No alarm on critical frequencies in the range from 26 MHz to 950 MHz at field strengths less than 30 V/m. |
| Temperature (Operating): | +32°F to +120°F (0°C to +49°C) |

Mechanical Properties

| | |
|-------------------------|---|
| Dimensions (H x W x D): | 4.75 in. x 3.75 in. x 3.25 in. (12 cm x 9.5 cm x 8.2 cm) |
| Material: | Die cast zinc alloy and steel |

Power Requirements

| | |
|---------------------------------|--|
| Current Draw (Mux Bus Average): | Alarm: 0.55 mA Standby: 0.55 mA |
| Voltage (Operating): | 12 VDC nominal (provided by the MUX bus) |

Ordering Information

FMM-7045 Single-Action Manual Station FMM-7045

A UL Listed fire alarm initiating device that can be connected, along with other multiplex devices, on the D7039 Multiplex Expansion Module and is supervised by the FPD-7024 or D7024 Addressable FACP

FMM-7045-D Double-Action Manual Station FMM-7045-D

A UL Listed fire alarm initiating device that can be connected, along with other multiplex devices, on the D7039 Multiplex Expansion Module and is supervised by the FPD-7024 or D7024 Addressable FACP

Accessories

D102 Replacement Key D102

Replacement key (#1358) for the D101 lock.

FMM-100GR Scored Acrylic Break Rods FMM-100GR

Scored acrylic rods (12 per package)

Americas:
Bosch Security Systems, Inc.
130 Pennton Parkway
Fairport, New York, 14450, USA
Phone: +1 800 289 0096
Fax: +1 585 223 9180
security.sales@us.bosch.com
www.boschsecurity.us

Europe, Middle East, Africa:
Bosch Security Systems B.V.
P.O. Box 80002
5600 JB Eindhoven, The Netherlands
Phone: + 31 40 2577 284
Fax: +31 40 2577 330
emex.securitysystem@bosch.com
www.boschsecurity.com

Asia-Pacific:
Robert Bosch (SEA) Pte Ltd, Security Systems
11 Bishan Street 21
Singapore 573943
Phone: +65 6571 2600
Fax: +65 6571 2698
spr.securitysystems@bosch.com
www.boschsecurity.com

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**NO
EXCUSES!**



FDB

Fire Alarm Control Unit (FACU) Records & Document Box

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.

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.

Standard Features:

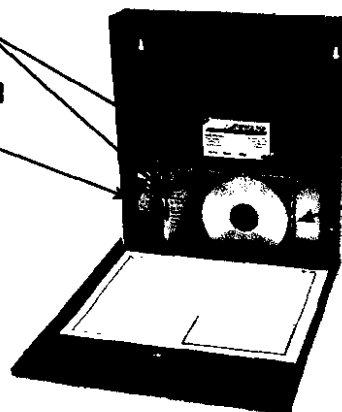
- Overall Dimensions are:
12" Wide x 13.1" High x 2.25" Deep
- CAT 30 Secured Locking Door
- Piano Hinged Door w/Notes Sticker
- Removable document holder can hold 1" of 8.5" x 11" paperwork
- Powder Coat Red Finish
- 16 Gauge CRS construction
- Embossed:
 - Key Ring Hooks
 - Business Card Holder
 -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

Key Ring
Hooks

Canned
Smoke

Business
Card Holder

CD Jewel
Case



NEMA



**ISO 9001
REGISTERED
COMPANY**



BOX

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

SIEMENS

INSTALLATION INSTRUCTIONS 2-WIRE FIELD SELECTABLE HORN, STROBE AND HORN/STROBE APPLIANCES (WALL AND CEILING MOUNT)

IMPORTANT – All audible and visual signaling appliances must be installed in accordance with all applicable national and local fire alarm codes and any other required regulatory agencies.

Series Z horn, strobe, and horn/strobe appliances are designed for easy installation. The ZH horn/strobes, ZH Horn and ZR strobes are for 24V operation. The appliance comes in two main parts. The universal mounting back plate allows the appliance to be mounted to a single-gang, double-gang, four square backbox, 4" octagon

backbox, or a 3 1/2" octagon backbox. Two wire appliance wiring is then connected to the mounting back plate. This allows a continuity check of the entire NAC circuit before any appliances are attached. It also allows the appliances to be installed after all finish work has been completed. The installer can snap or install the appliances when all other work is complete.

Refer to P/N 315-096363 for the maximum number of appliances on a single notification appliance circuit.

SPECIFICATIONS:

| Model * | Voltage Range (Special Application) Per UL 1971 (VDC/VRMS) | Strobe (cd) | Horn | Current Draw See Table | Mounting |
|----------|---|----------------|------|---------------------------|-----------------|
| ZR-MC | 16-33 | 15/30/75/110 | - | 3 | Wall |
| ZR-HMC | 16-33 | 135/185 | - | 3 | Wall |
| ZR-MC-C | 16-33 | 15/30/75/95 | - | 3 | Ceiling |
| ZR-HMC-C | 16-33 | 115/177 | - | 3 | Ceiling |
| ZH-MC | 16-33 | 15/30/75/110 | X | 4 | Wall |
| ZH-HMC | 16-33 | 135/185 | X | 4 | Wall |
| ZH-MC-C | 16-33 | 15/30/75/95 | X | 4 | Ceiling |
| ZH-HMC-C | 16-33 | 115/177 | X | 4 | Ceiling |
| ZH | 16-33 | - | X | 5 | Wall or Ceiling |

* All models available in red and white.

Strobe and Horn Strobe Appliances

Siemens' Series Horn Appliances provide a selectable Continuous or Code 3 Horn tone when connected directly to an unsynchronized NAC (Notification Appliance Circuit). They can also provide a synchronized code 3 or march time horn tone when connected to a notification appliance circuit running the Siemens sync protocol. The Horn Appliances can be field set for High (HI) or Low (LO) dBA sound output. The Horn Appliances are UL Listed under Standard 464 for Audible Signal Appliances. They are listed for indoor use only. These models are designed for use with either filtered DC (VDC) or unfiltered Full-Wave-Rectified (VRMS) input voltage. All inputs are polarized for compatibility with standard reverse polarity supervision of circuit wiring by a FACP. The ZR Strobe, ZH Horn/Strobe, and ZH Horn are for 24V operation only.

NOTE: The Code 3 temporal pattern (1/2 second on, 1/2 second off, 1/2 second on, 1/2 second off, 1/2 second on, 1-1/2 off and repeat) is specified by ANSI and NFPA 72 for standard emergency evacuation signaling. The Code 3 Horn should be used only for fire evacuation signaling and not for any other purpose.

Table 2: ZH and ZH-MC Horn Reverberant dBA per UL464

| | | ZH-MC and ZH at 24V | | |
|----------------------------|------|---------------------|-----|-------|
| | | 16.0V | 24V | 33.0V |
| Continuous Horn | High | 83 | 87 | 90 |
| | Low | 77 | 81 | 83 |
| Code 3 Horn or *March Time | High | 79 | 82 | 86 |
| | Low | 72 | 76 | 79 |

*Available in sync mode only.

CURRENT DRAW:

Table 3: ZR Strobe Current Draw (Amps) at 16-33 Volts

| | Strobe Setting (cd) | | | | | | | | | | | |
|-----|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | MC | | | | HMC | | | MC-C | | | HMC-C | |
| | 15 | 30 | 75 | 110 | 135 | 185 | 15 | 30 | 75 | 95 | 115 | 177 |
| DC | 0.064 | 0.098 | 0.175 | 0.233 | 0.318 | 0.445 | 0.069 | 0.111 | 0.200 | 0.264 | 0.318 | 0.445 |
| FWR | 0.108 | 0.164 | 0.268 | 0.368 | 0.482 | 0.684 | 0.117 | 0.180 | 0.297 | 0.398 | 0.482 | 0.684 |

Table 4: ZH Horn/Strobe Current Draw (Amps) at 16-33 Volts

| | Horn Setting | Strobe Setting (cd) | | | | | | | | | | | |
|-----|--------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | MC | | | | HMC | | MC-C | | | | HMC-C | |
| | | 15 | 30 | 75 | 110 | 135 | 185 | 15 | 30 | 75 | 95 | 115 | 177 |
| DC | High* | 0.078 | 0.113 | 0.195 | 0.259 | 0.371 | 0.506 | 0.087 | 0.131 | 0.222 | 0.292 | 0.371 | 0.506 |
| | Low* | 0.070 | 0.107 | 0.188 | 0.248 | 0.324 | 0.455 | 0.075 | 0.121 | 0.213 | 0.277 | 0.324 | 0.455 |
| FWR | High* | 0.141 | 0.200 | 0.302 | 0.406 | 0.521 | 0.722 | 0.149 | 0.216 | 0.331 | 0.436 | 0.521 | 0.722 |
| | Low* | 0.123 | 0.179 | 0.290 | 0.391 | 0.497 | 0.699 | 0.131 | 0.195 | 0.319 | 0.421 | 0.497 | 0.699 |

* Current Draw is the same for the Continuous Horn, Code 3 Horn and March Time Settings.

Table 5: ZH Horn Current Draw (Amps)

| | Horn Setting | 16-33 Volts |
|-----|--------------|-------------|
| DC | High* | 0.044 |
| | Low* | 0.018 |
| FWR | High* | 0.075 |
| | Low* | 0.045 |

* Current Draw is the same for the Continuous Horn, Code 3, and March Time Settings.

NOTE: Candela and Horn Setting will determine the current draw of the product.

When calculating the total currents use Tables 3-5 to determine the highest value of RMS current for an individual appliance, then multiply these values by the total number of appliances. Be sure to add the currents for any other appliances, including audible signaling appliances powered by the same source, and to include any required safety factors.

NOTE: These notification appliances are UL Listed as "Special Application". They are intended to be used only with Siemens notification appliance circuits.

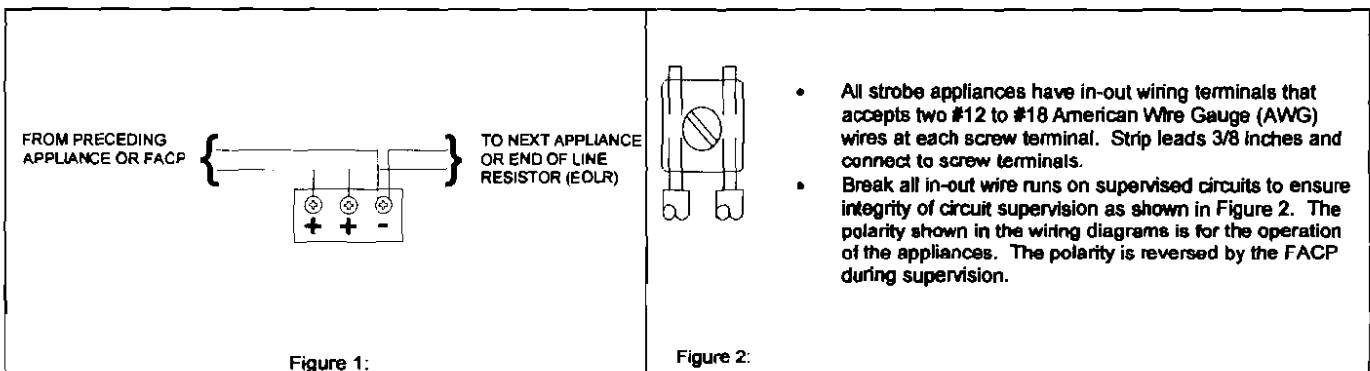
NOTE: THESE APPLIANCES WERE TESTED TO THE OPERATING VOLTAGE RANGE LIMITS OF 16.0-33.0 VOLTS FOR 24V MODELS USING FILTERED DC OR UNFILTERED FULL-WAVE-RECTIFIED VOLTAGE. DO NOT APPLY VOLTAGE OUTSIDE OF THIS RANGE.

NOTE: REFER TO THE INSTALLATION INSTRUCTIONS FOR THE APPROPRIATE NAC TO FIND THE MAXIMUM ALLOWED VOLTAGE DROP. USE THIS VALUE ALONG WITH THE CURRENT DRAW FOR THE APPLIANCE TO DETERMINE THE ALLOWABLE WIRE RESISTANCE. THE MAXIMUM WIRE RESISTANCE BETWEEN STROBES SHALL NOT EXCEED 35 OHMS.

NOTE: Strobes are not designed to be used on coded systems in which the applied voltage is cycled on and off.

NOTE: MAKE SURE THAT THE TOTAL RMS CURRENT REQUIRED BY ALL APPLIANCES THAT ARE CONNECTED TO THE SYSTEM'S PRIMARY AND SECONDARY POWER SOURCES DO NOT EXCEED THE POWER SOURCES' RATED CAPACITY OR THE CURRENT RATINGS OF ANY FUSES ON THE CIRCUITS TO WHICH THESE APPLIANCES ARE WIRED. OVERLOADING POWER SOURCES OR EXCEEDING FUSE RATINGS COULD RESULT IN LOSS OF POWER AND FAILURE TO ALERT OCCUPANTS DURING AN EMERGENCY, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

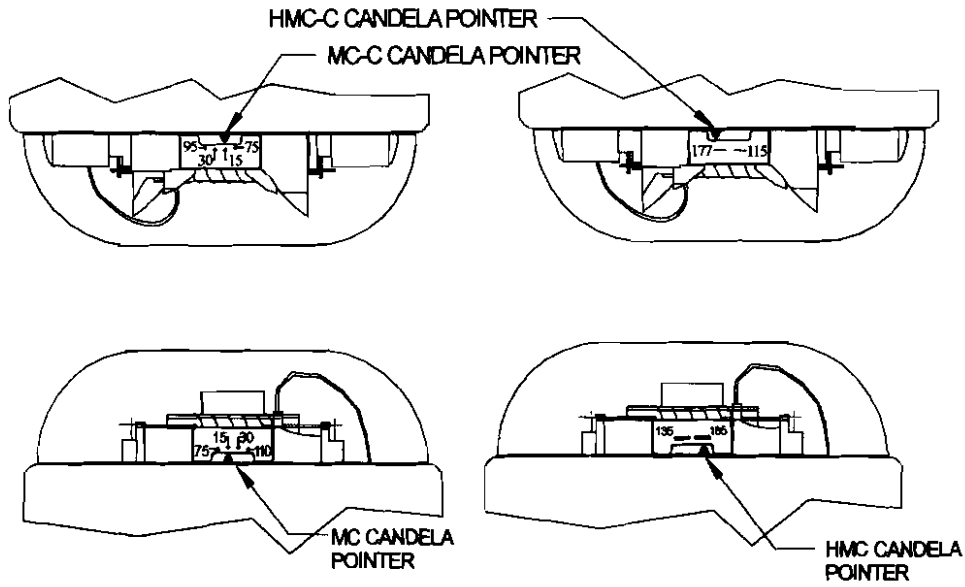
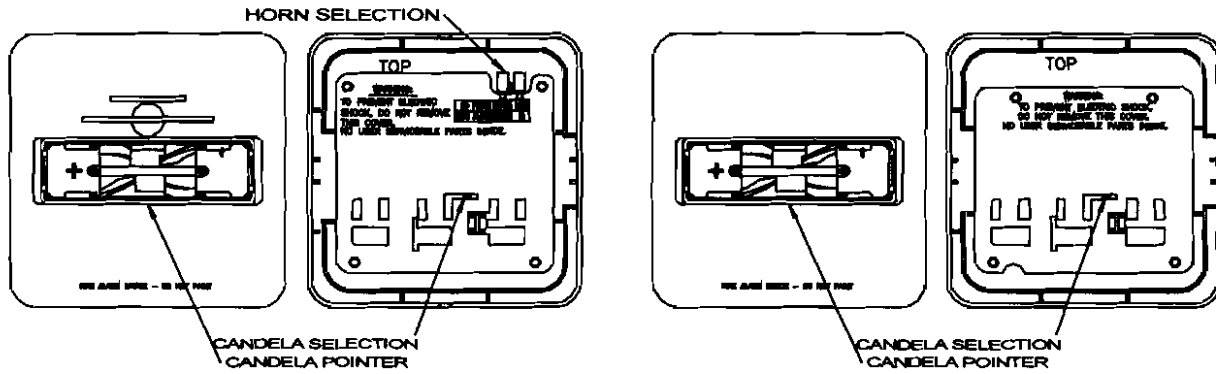
WIRING AND MOUNTING BASE:



WIRING AND MOUNTING SETTINGS:

Note: The ZH is factory set for the most common application of High dB and Code 3.

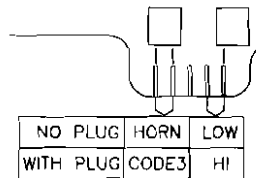
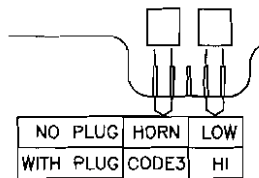
Jumper Plug and Candela Selectors



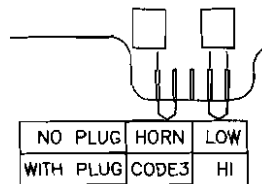
Note: Candela Factory Settings are shown in above illustration.

Jumper plug settings for High dB and Code 3 (or March Time).

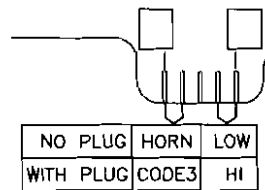
Jumper plug settings for Low dB and Code 3 (or March Time).



Jumper plug settings for High dB and Continuous Horn.



Jumper plug settings for Low dB and Continuous Horn.



NOTE: Use needle nose pliers to pull and properly set the jumper plugs. No jumper plugs are needed for Continuous Horn and low dB settings. However, it is recommended that the jumper plug be retained in the unit for future use (if needed) as shown.

CAUTION: Check that the installed product will have sufficient clearance and wiring room prior to installing backboxes and conduit, especially if sheathed multiconductor cable or 3/4" conduit fittings are used.

CAUTION: DO NOT OVER TIGHTEN MOUNTING SCREWS. EXCESSIVE TORQUE CAN DISTORT THE BASE AND MAY AFFECT OPERATION.

Mounting Options:

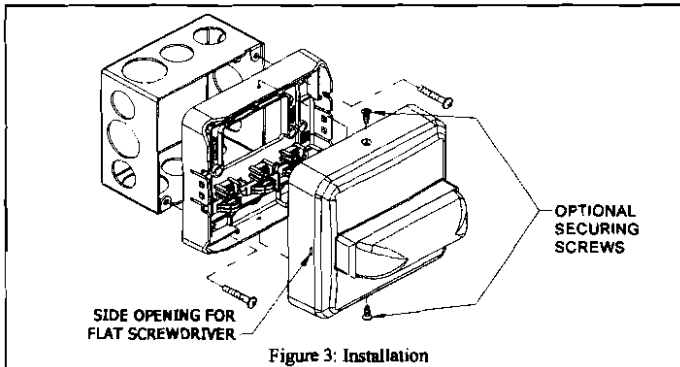


Figure 3: Installation

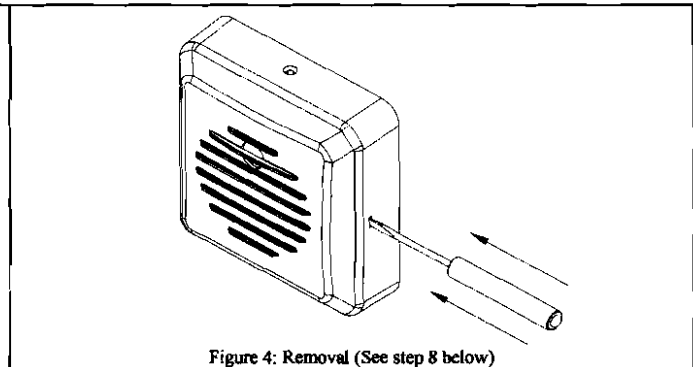


Figure 4: Removal (See step 8 below)

1. Install mounting plate as shown in figure 1 to a single-gang, double-gang, 4" square, 4" octagon, or a 3 1/2" octagon backbox with the provided pan head screws. To remove dust cover, place thumb and index finger on top edges of cover and pull off cover.
2. Connect field wiring per figures 2 and 3.
3. Address wires back into backbox.
4. Place dust cover over mounting plate to protect the terminals while performing wiring continuity check.
5. Remove dust cover before snapping or installing the appliance onto the mounting plate per fig 3.
6. Important: Device only has one mounting orientation. Match the top of the base to the top of the device.
7. If it is desired to further secure the device to the base, then two optional screws are provided. To install these screws punch out the screw holes located at the top and bottom of the device.
8. To remove the appliance, push a small flat-bladed screwdriver into the side opening. The screwdriver must clear the snap release opening by 1/4" to disengage the snap. Do not pry off housing with the screw driver. Apply pressure with screw driver, inserted in either side opening, as shown in Fig 4 to release the housing.

NOTE: NFPA 72/ANSI 117.1 conform to ADAAG Equivalent Facilitation Guidelines in using fewer, higher intensity strobes within the same protected area.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1) Reorient or relocate the receiving antenna, 2) Increase the separation between the equipment and receiver, 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected, and 4) Consult the dealer or an experienced radio/TV technician for help.

SIEMENS

INSTALLATION INSTRUCTIONS MULTI-CANDELA AUDIBLE STROBE APPLIANCE (WALL MOUNT VERSION)

IMPORTANT – All audible and visual signaling appliances must be installed in accordance with all applicable national and local fire alarm codes and any other required regulatory agencies.

Series Multi-Candela Audible Strobe Appliance (AS-MC) is the industry's first 2-wire horn strobe alarm appliance that provides 4 selectable candela settings (15, 30, 75, 110). Siemens Audible Strobe Appliances provide a selectable continuous or code 3 horn tone and non-synchronized strobe when connected directly to a Fire Alarm Control Panel (FACP). They can also provide a synchronized code 3 (or March time) horn tone and synchronized strobe when connected to a notification appliance circuit running the Siemens sync protocol. The AS-MC Appliance is UL Listed under Standard 1971 for Emergency Appliances for the Hearing Impaired and UL Standard 484 for Audible Signal Appliances. The AS-MC is also ULC Listed under Standard CAN/ULC-S526-02 for Visual Signaling Appliances and Standard CAN/ULC-S525-99 for Audible Signaling Appliances. This appliance is listed for wall mounting and indoor use only and is equipped with a universal mounting plate (UMP) that can be mounted to single-gang, double-gang, 4" backbox, 100mm European backbox or SHBBS surface backbox (See wiring and mounting information). The AS-MC Appliance uses a xenon flashtube with solid state circuitry enclosed in

a polycarbonate lens to provide maximum visibility and reliability for effective visible signaling.

The AS-MC Appliance can be field set to provide either high (HI) dBA, medium (MED) dBA or low (LO) dBA sound output.

NOTE: The Code 3 temporal pattern (1/2 second on, 1/2 second off, 1/2 second on, 1/2 second off, 1/2 second on, 1-1/2 off and repeat) is specified by ANSI and NFPA 72 for standard emergency evacuation signaling. The Code 3 Horn should be used only for fire evacuation signaling and not for any other purpose.

This model is designed for use with either filtered DC (VDC) or unfiltered full-wave-rectified (VRMS) input voltage. All inputs are polarized for compatibility with standard reverse polarity supervision of circuit wiring by an FACP.

NOTE: All Canadian installations should be in accordance with the Canadian Standard for the Installation of Fire Alarm Systems - CAN/ULC-S524-01 and Canadian Electrical Code, Part 1. Final acceptance is subject to authority having jurisdiction (AHJ).

NOTE: Refer to P/N 315-096363 for the maximum number of appliances on a single notification appliance circuit.

SPECIFICATIONS:

| Model* | Operating Voltage (Special Application) Per UL 1971/464 (VDC/VRMS) | Voltage Range Per CAN/ULC-S526-02/S525-99 (VDC/VRMS) | Strobe Candela (cd) | Mounting Options |
|--------|--|--|---------------------------|---------------------|
| AS-MC | 16.0-33.0 | 20.0-31.0 | 15/30/75/110 | A,B,C,D |

*Available in red and white.

| Description | Volume | Reverberant Per UL 464 | | | Anechoic dBA Per CAN/ULC-S525-99 at 10 Feet | | |
|----------------------------------|--------|------------------------|---------|---------|---|---------|---------|
| | | 16.0VDC | 24.0VDC | 33.0VDC | 20.0VDC | 24.0VDC | 31.0VDC |
| Continuous Horn | Low | 80 | 83 | 86 | 88 | 90 | 91 |
| | Medium | 85 | 88 | 91 | 93 | 95 | 97 |
| | High | 88 | 91 | 93 | 97 | 99 | 100 |
| Code 3 Horn (or March Time)** | Low | 75 | 79 | 82 | 88 | 90 | 91 |
| | Medium | 80 | 84 | 86 | 93 | 95 | 97 |
| | High | 84 | 87 | 90 | 97 | 99 | 100 |

**Available in sync mode only.

| |
|---|
| -3 dBA: 48 degrees left, 41 degrees right |
| -6 dBA: 50 degrees left, 58 degrees right |

NOTES:

1. Strobe will produce 1 flash per second over the Input Voltage range.
2. This strobe/horn model meets the required light distribution patterns defined in UL 1971 and ULC-S526-02.
3. This model is UL/ULC Listed for indoor use with a temperature range of +32 F to +120 F (0 C to +49 C) and maximum humidity of 93%, ± 2% RH. The effect of shipping and storage temperatures shall not adversely affect the performance of the appliance when it is stored in the original cartons and not subjected to misuse or abuse.

When calculating the total current: Use Table 3 to determine the highest value of "RMS Current" for an individual AS Appliance then multiply the value by the total number of AS Appliances. Be sure to add the currents for any other appliances powered by the same source and include any required safety factors.

THESE APPLIANCES WERE TESTED TO THE VOLTAGE LIMITS OF 16.0-33.0 VOLTS FOR 24V MODELS USING FILTERED DC OR UNFILTERED FULL-WAVE-RECTIFIED VOLTAGE. DO NOT APPLY VOLTAGE OUTSIDE OF THIS RANGE.

Note: Refer to the installation instructions for the appropriate NAC to find the maximum allowed voltage drop. Use this value along with the current draw for the appliance to determine the allowable wire resistance. The maximum wire resistance between strobes shall not exceed 35 ohms. This appliance is not designed to be used on coded systems in which the applied voltage is cycled on and off.

CANDELA SETTING WILL DETERMINE THE CURRENT DRAW OF THE PRODUCT.

Siemens Building Technologies, Inc.
6 Fernwood Road
Florham Park, New Jersey 07932

P83947-007 B
Sheet 1 of 4

| Table 3: Current Ratings (AMPS) | | | | | |
|--|---------------|-------|-------|-------|-------|
| Maximum RMS Current with Hi dBA Setting | | | | | |
| Input Voltage | | 15cd | 30cd | 75cd | 110cd |
| DC | 16.0-33.0VDC | 0.094 | 0.133 | 0.212 | 0.283 |
| FWR | 16.0-33.0VRMS | 0.134 | 0.191 | 0.307 | 0.405 |
| Maximum RMS Current with Med dBA Setting | | | | | |
| Input Voltage | | 15cd | 30cd | 75cd | 110cd |
| DC | 16.0-33.0VDC | 0.079 | 0.117 | 0.202 | 0.269 |
| FWR | 16.0-33.0VRMS | 0.119 | 0.183 | 0.292 | 0.397 |
| Maximum RMS Current with Low dBA Setting | | | | | |
| Input Voltage | | 15cd | 30cd | 75cd | 110cd |
| DC | 6.0-33.0VDC | 0.073 | 0.112 | 0.193 | 0.260 |
| FWR | 16.0-33.0VRMS | 0.112 | 0.176 | 0.287 | 0.393 |

Note: These notification appliances are UL Listed as "Special Application". They are intended to be used only with Siemens notification appliance circuits.

WARNING: MAKE SURE THAT THE TOTAL RMS CURRENT REQUIRED BY ALL APPLIANCES THAT ARE CONNECTED TO THE SYSTEM'S PRIMARY AND SECONDARY POWER SOURCES DO NOT EXCEED THE POWER SOURCES' RATED CAPACITY OR THE CURRENT RATINGS OF ANY FUSES ON THE CIRCUITS TO WHICH THESE APPLIANCES ARE WIRED. OVERLOADING POWER SOURCES OR EXCEEDING FUSE RATINGS COULD RESULT IN LOSS OF POWER AND FAILURE TO ALERT OCCUPANTS DURING AN EMERGENCY, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

CANDELA AND SOUND OUTPUT SETTINGS:

To set the candela, slide the switch to the desired setting. The setting is indicated by the pointer and label visible on the bottom side of the lens.

Figure 1:

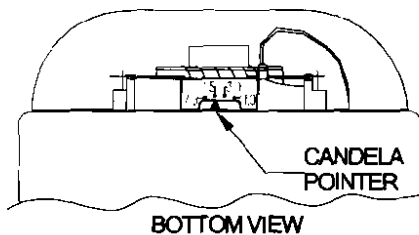
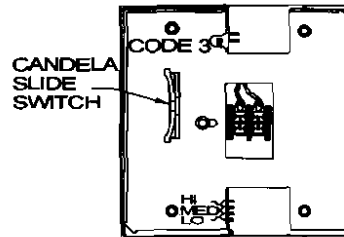


Figure 2: Showing Location of Jumper Plug (Back View)

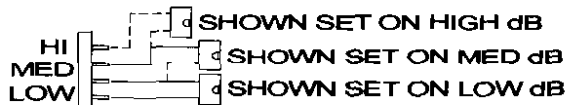


Factory setting is on Medium dB, Code 3 (or March Time) and 15 candela.

WARNING: THE CANDELA SELECT SWITCH MUST BE FIELD SET TO THE REQUIRED CANDELA INTENSITY BEFORE INSTALLATION. WHEN CHANGING THE SETTING OF THE CANDELA SELECT SWITCH, MAKE CERTAIN THAT IT "CLICKS" IN PLACE. AFTER CHANGING THE CANDELA SETTING, THE APPLIANCE MUST BE RETESTED TO VERIFY PROPER OPERATION.

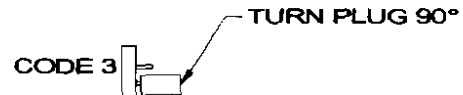
WARNING: THE AUDIBLE STROBE APPLIANCES MUST BE FIELD SET TO THE DESIRED TONE AND dBA SOUND OUTPUT LEVEL BEFORE THEY ARE INSTALLED. THIS IS DONE BY PROPERLY INSERTING JUMPER PLUGS IN ACCORDANCE WITH THESE INSTRUCTIONS.

Figure 3: Jumper plug settings for High, Medium, Low and Code 3 (or March Time)



(Use needle nose pliers to pull and properly set the jumper plugs)

Figure 4: Jumper plug setting for Continuous Horn

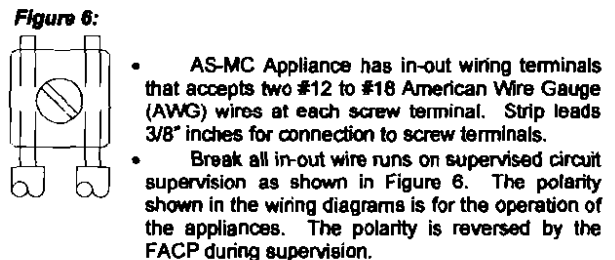
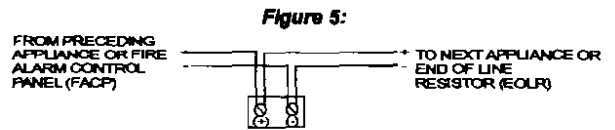
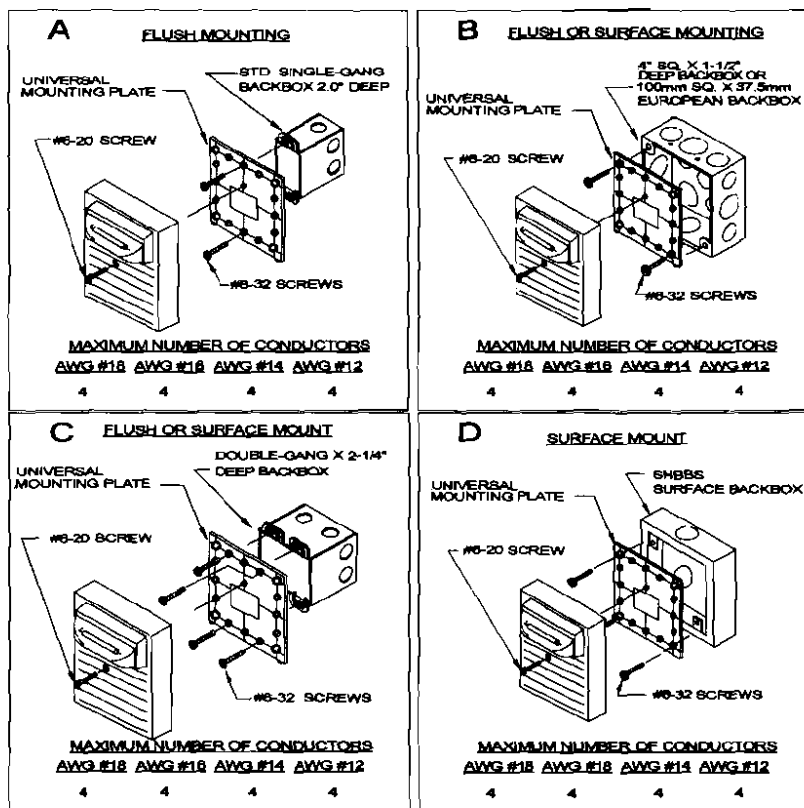


No jumper plug is needed for continuous horn setting. However, it is recommended that the jumper plug be retained in the unit for future use (if needed) as shown in Figure 4.

NOTE: The AS-MC must be set for Code 3 (or March Time) when used with a synchronized notification appliance circuit (NAC).

WIRING AND MOUNTING INFORMATION:

CAUTION: The following figures (A-D) show the maximum number of field wires (conductors) that can enter the backbox used with each mounting option. If these limits are exceeded, there may be insufficient space in the backbox to accommodate the field wires and stresses from the wires could damage the product. Check that the installed product will have sufficient clearance and wiring room prior to installing backboxes and conduit, especially if sheathed multiconductor cable or 3/4" conduit fittings are used.



MOUNTING PROCEDURES:

- This model can be flush mounted to a standard single-gang backbox (Figure A), 4" backbox (Figure B) or double-gang backbox (Figure C). They can also be surface mounted to a 4" or 100mm backbox (Figure B), a double-gang backbox (Figure C) or a SHBBS surface backbox (Figure D). Mounting hardware for each mounting option is supplied. For proper mounting, be sure to use the mounting screws supplied with the unit.
- The Universal Mounting Plate (UMP) must be oriented correctly when it is mounted to the backbox. Turn the UMP so that the arrow above the words "Horizontal Strobe" points to the top side of the UMP.
- Conduit entrances to the backbox should be selected to provide sufficient wiring clearance for the installed product. Do not pass additional wires (used for other than the signaling appliance) through the backbox. Such additional wires could result in insufficient wiring space for the signaling appliance.
- When terminating field wires, do not use more lead length than required. Excess lead length could result in insufficient wiring space for the signaling appliance. Position the field wires in the backbox so that they use minimum space and produce minimum stress on the product. This is especially important for stiff, heavy gauge wires and wires with thick insulation or sheathing.
- Thread the 4 field wires through the opening of the UMP. Mount the UMP to backbox.
- Connect 4 field wires to the AS-MC terminal block (polarity must be observed). Bend the 4 field wires up 90° at the connection to the terminal block.
- Carefully push the 4 field wires into the backbox through the opening of the UMP by hand.
- Hook the 2 slots on the inside wall of the AS-MC onto the 2 tabs of the UMP and screw the AS-MC to the UMP using the #8-20 screw supplied.

The 110cd strobe setting is Listed for use in sleeping or non-sleeping areas when installed in accordance with appropriate NFPA Standards and AHJ.

⚠ WARNING: INSTALLATION OF THE 110 CANDELA STROBE PRODUCTS IN SLEEPING AREAS SHOULD BE WALL MOUNTED AT LEAST 24" BELOW THE CEILING AS FOLLOWS: (1) THE ON-AXIS (DIRECTLY IN FRONT OF LENS) LIGHT OUTPUT SHOULD BE DIRECTED AT THE EYE-LIDS OF THE SLEEPING PERSON, E.G. PILLOW END OF BED, BED HEAD; (2) NO PART OF THE BED SHALL BE MORE THAN SIXTEEN (16) FEET FROM THE STROBE NOTIFICATION APPLIANCE. INSTALLERS MUST ADVISE OWNERS AND OPERATORS OF BUILDINGS WITH SLEEPING OCCUPANTS, E.G. HOTELS AND MOTELS, TO WARN GUESTS, RESIDENTS AND EMPLOYEES TO NOT MOVE THE BED LOCATION TO A POSITION VIOLATING POINTS (1) AND (2) ABOVE OR SERIOUS INJURY AND/OR LOSS OF LIFE MAY OCCUR DURING A FIRE MEERGENCY.

⚠ WARNING: A SMALL POSSIBILITY EXISTS THAT THE USE OF MULTIPLE STROBES WITHIN A PERSON'S FIELD OF VIEW, UNDER CERTAIN CIRCUMSTANCES, MIGHT INDUCE A PHOTO-SENSITIVE RESPONSE IN PERSONS WITH EPILEPSY. STROBE REFLECTIONS IN A GLASS OR MIRRORED SURFACE MIGHT ALSO INDUCE SUCH A RESPONSE. TO MINIMIZE THIS POSSIBLE HAZARD, IT IS STRONGLY RECOMMENDED THAT THE STROBES INSTALLED SHOULD NOT PRESENT A COMPOSITE FLASH RATE IN THE FIELD OF VIEW WHICH EXCEEDS FIVE (5) Hz AT THE OPERATING VOLTAGE OF THE STROBES. IT IS STRONGLY RECOMMENDED THAT THE INTENSITY AND COMPOSITE FLASH RATE OF INSTALLED STROBES COMPLY WITH LEVELS ESTABLISHED BY APPLICABLE LAWS, STANDARDS, REGULATIONS, CODES AND GUIDELINES.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital appliance, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1) Reorient or relocate the receiving antenna, 2) Increase the separation between the equipment and receiver, 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected, and 4) Consult the dealer or an experienced radio/TV technician for help.

14000 Series Battery Sets and Accessories

Description

Sealed Lead Acid

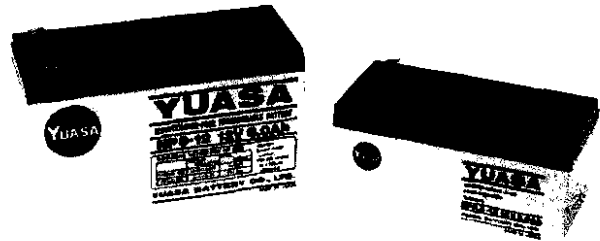
The sealed lead acid rechargeable battery has overcome the limitations of other types of battery sets, while retaining the low cost, ruggedness, reliability and long life of the lead acid format. The high energy density, sealed leak proof construction, excellent performance in either float or cyclic applications and long service life combine to make the sealed lead acid the most reliable and versatile maintenance free rechargeable battery set available.

Battery Cabinets

Faraday offers different battery cabinets for mounting lead-acid, gell-cell, ni-cad or large sealed lead acid battery sets. These cabinets are constructed of heavy gauge steel. They are bonderized and then painted red or black as noted, both inside and out (this process helps to retard rust and corrosion). The battery cabinet covers are secured by either screws or a key lock.

Care must be taken when installing the battery cabinets. The cabinets are designed to handle their rated batter load. Due to the fact that these cabinets may be required to hold over 100 pounds of battery set, the units must be suitably anchored to the wall with fasteners designed for rated stress. Cabinets should be as close as possible to the Fire Alarm Control Panel.

Note: Always refer to the Fire System owner's manual for calculating the proper battery size required for your system.



14000 Series Batteries

Ordering Information

| Model | Description | Part No. |
|-------|---|--------------|
| 14047 | 7AH, sealed lead cell | 500-648380FA |
| 14048 | 10AH, sealed led cell | 500-648381FA |
| 14049 | 17.2AH, sealed lead cell | 500-648382FA |
| 14052 | 38AH, sealed lead cell | 500-648237FA |
| 14051 | 65AH, sealed lead cell | 500-648236FA |
| 14050 | Battery Cabinet | 500-648453FA |
| BE-1 | Battery Cabinet Houses up to 100AH Battery Sets | 500-633953FA |

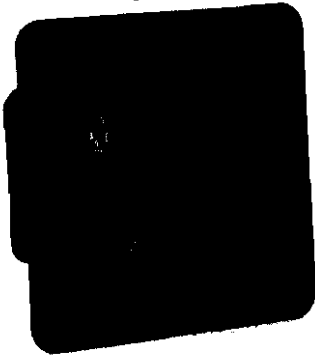


Siemens Building Technologies, Inc.
8 Fernwood Road • Florham Park, NJ 07932
Tel: (973) 593-2600 • Fax: (973) 593-6670
Web: www.faradayfirealarms.com

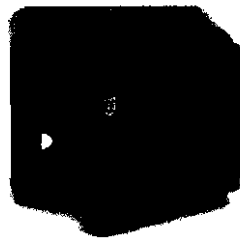
WARNING -The information contained in this document is intended only as a summary and is subject to change without notice. The devices described in this document have specific instruction sheets which cover various technical, limitation and liability information. Copies of these instruction sheets and the General Product Warning and Limitations Document, which also contains important information, are provided with the product and are available from the Manufacturer. Information contained in these documents should be consulted before specifying or using the product. For further information or assistance concerning particular problems contact the Manufacturer.

High Security Industrial/Government Key Box

Recessed Mount
with Face Flange



Surface Mount



The number one high-security KNOX-BOX® is used for most commercial applications including businesses, schools, government and public buildings, community associations and apartment complexes. The 3200 Series KNOX-BOX holds keys, access cards and other small items necessary for emergency access.

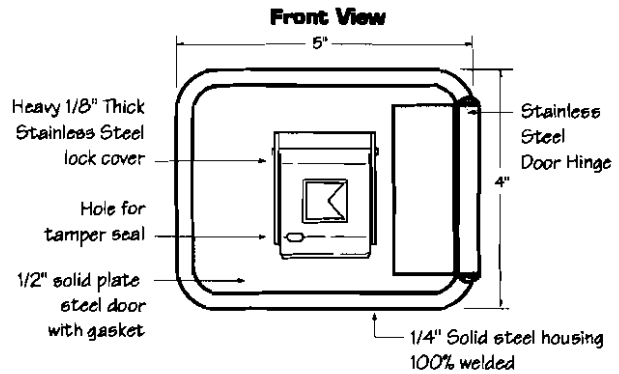
The hinged-door 3200 Series KNOX-BOX is more convenient than the lift-off door version because it allows single-handed operation and opened or closed, it's all one unit.

Features and Benefits

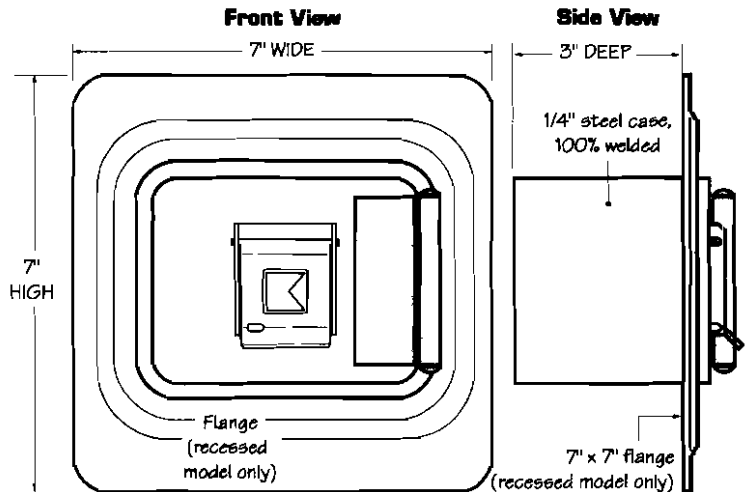
- Holds up to 10 keys or 1 access card in interior compartment
- Ensures high security. Box and lock are UL® Listed
- Includes a Knox-Coat® proprietary finishing process that protects Knox products up to four times better than standard powder coat
- Resists moist conditions with a weather resistant door gasket
- Hinged door allows single-handed operation
- Colors: Black, Dark Bronze or Aluminum
- Weight: Surface mount - 8 lbs.
Recessed mount - 9 lbs.

Options

- Alarm tamper switches (UL Listed)
- Additional rust and corrosion protection (Aluminization)
- Recessed Mounting Kit (RMK) for recessed models only
- Inside switch for use on electrical doors, gates and other electrical equipment



3200 Surface Mount



3200 Recessed Mount

Ordering Specifications

To insure procurement and delivery of the 3200 Series KNOX-BOX, it is suggested that the following specification paragraph be used:

KNOX-BOX surface/recessed mount with hinged door, with/without UL Listed tamper switches. 1/4" plate steel housing, 1/2" thick steel door with interior gasket seal and stainless steel door hinge. Box and lock UL Listed. Lock has 1/8" thick stainless steel dust cover with tamper seal mounting capability.

Exterior Dimensions: Surface mount body- 4"H x 5"W x 3 1/4"D
Recessed mount flange- 7"H x 7"W

Lock: UL Listed. Double-action rotating tumblers and hardened steel pins accessed by a biased cut key.

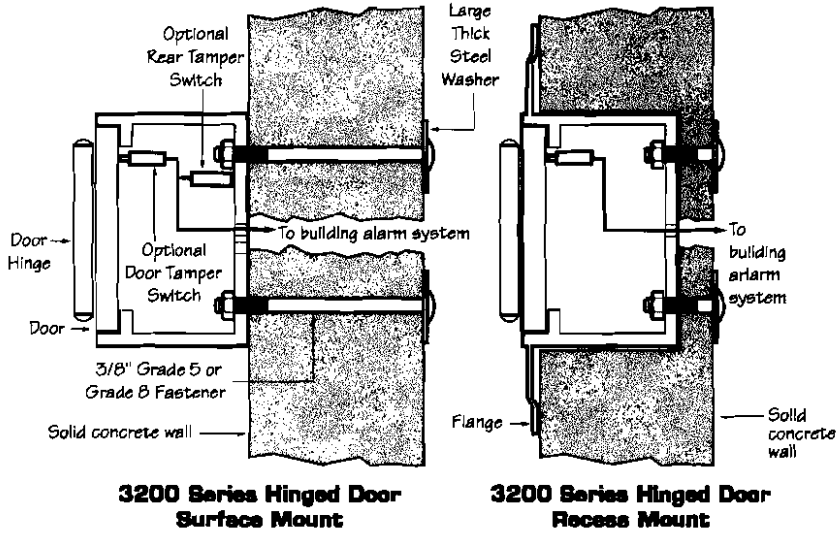
Finish: Knox-Coat® proprietary finishing process

Colors: Black, Dark Bronze or Aluminum

P/N: 3200 Series KNOX-BOX (mfr's cat. ID)

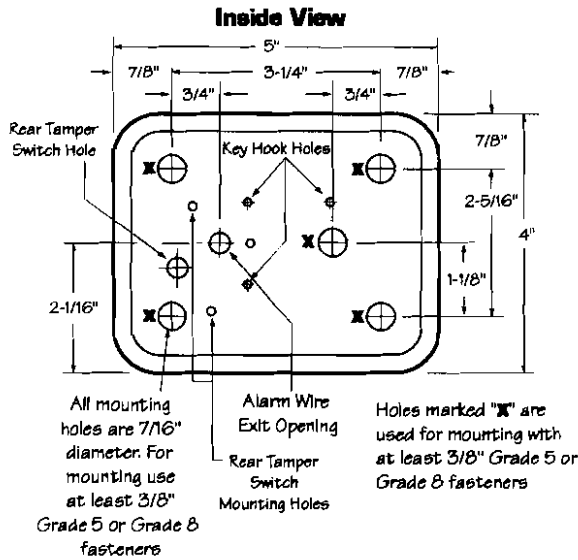
Mfr's Name: **KNOX COMPANY**

**Suggested minimum mounting height
6 feet above ground**



**3200 Series Hinged Door
Surface Mount**

**3200 Series Hinged Door
Recess Mount**



Attention: KNOX-BOX® is a very strong device that MUST be mounted properly to ensure maximum security and resist physical attack.

Knox® Rapid Entry System

The Knox Company manufactures a complete line of high security products including Knox-Box key boxes, key vaults, cabinets, key switches, padlocks, locking FDC caps, plugs and electronic master key security systems. For more information or technical assistance, please call Customer Service at 1-800-552-5669.

Recessed Mounting Kit

The 3200 Recessed Mounting Kit (RMK) is used for recessed models only. It contains a shell housing and mounting hardware to be cast-in-place in new concrete or masonry construction. After construction is completed, the KNOX-BOX mounts inside the RMK. The RMK may only be used in new concrete or masonry construction.

Installation In Cast Concrete

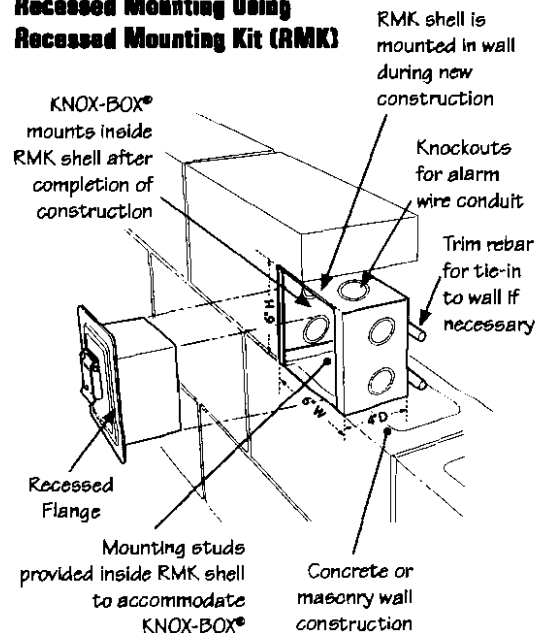
The optional Recessed Mounting Kit is for use in new concrete or masonry construction only. The kit includes a shell housing and mounting hardware to be cast-in-place. The KNOX-BOX is mounted into the shell housing after construction is completed.

Dimensions

Rough-in Dimensions: 6-1/2"H x 6-1/2"W x 5"D

IMPORTANT: Care should be taken to insure that the front of the RMK shell housing, including the cover plate and screw heads, is flush with the finish wall. The RMK must be plumbed to insure vertical alignment of the vault.

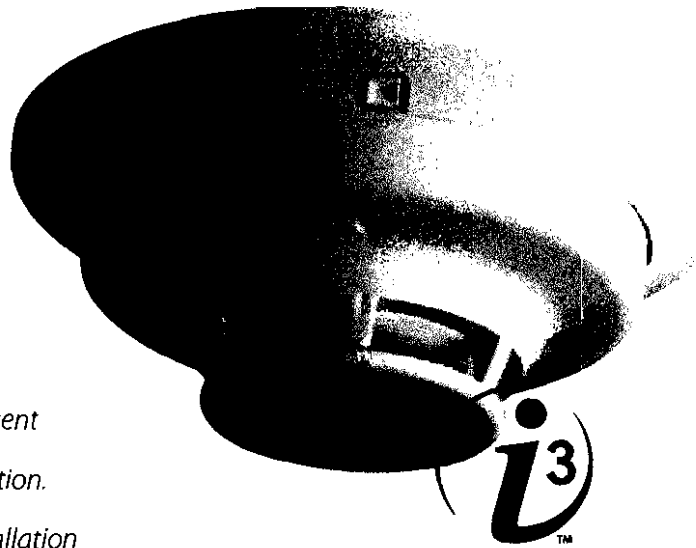
**Recessed Mounting Using
Recessed Mounting Kit (RMK)**





Photoelectric Smoke Detectors

System Sensor's i³™ series smoke detectors represent significant advancement in conventional detection. The i³ family is founded on three principles: installation ease, intelligence, and instant inspection.



Features

- Plug-in detector line, mounting base included
- Large wire entry port
- In-line terminals with SEMS screws
- Mounts to octagonal and single-gang backboxes, 4-square backboxes, or direct to ceiling
- Stop-Drop 'N Lock attachment to base
- Removable detector cover and chamber
- Built-in remote maintenance signaling
- Drift compensation and smoothing algorithms
- Simplified sensitivity measurement
- Wide angle, dual color LED indication
- Loop testing via EZ Walk feature
- Built-in test switch

Installation ease. The i³ line redefines installation ease with its plug-in design. This allows an installer to pre-wire the bases included with the heads. The large wire entry port and in-line terminals provide ample room for neatly routing the wiring inside the base. The base accommodates a variety of back box mounting methods, as well as direct mounting with drywall anchors. To complete the installation, i³ heads plug in to the base with a simple Stop-Drop 'N Lock™ action.

Intelligence. i³ detectors offer a number of intelligent features to simplify testing and maintenance. Drift compensation and smoothing algorithms are standard with the i³ line to minimize nuisance alarms. Two-wire i³ detectors needing cleaning can generate a remote maintenance signal, when connected to the 2W-MOD2 loop test/maintenance module, or to a panel equipped with the i³ protocol. This signal is indicated by LEDs located at the module and the panel. The SENS-RDR, a wireless device, displays the sensitivity of i³ detectors in terms of percent per-foot-obscuration.

Instant inspection. The i³ series provides wide-angle red and green LED indicators for instant inspection of the detector's condition: normal standby, out-of-sensitivity, alarm, or freeze trouble. When connected to the 2W-MOD2 loop test/maintenance module or a panel with the i³ protocol, the EZ Walk loop test feature is available on two-wire i³ detectors. This feature verifies the initiating loop wiring by providing LED status indication at each detector.

Agency Listings



Smoke Detector Specifications

Architectural/Engineering Specifications

Smoke detector shall be a System Sensor I³ Series model number _____, listed to Underwriters Laboratories UL 268 for Fire Protection Signaling Systems. The detector shall be a photoelectric type (Model 2W-B, 4W-B) or a combination photoelectric/thermal (Model 2WT-B, 4WT-B) with thermal sensor rated at 135°F (57.2°C). The detector shall include a mounting base for mounting to 3½-inch and 4-inch octagonal, single gang, and 4-inch square back boxes with a plaster ring, or direct mount to the ceiling using drywall anchors. Wiring connections shall be made by means of SEMS screws. The detector shall allow pre-wiring of the base and the head shall be a plug-in type. The detector shall have a nominal sensitivity of 2.5 percent-per-foot nominal as measured in the UL smoke box. The detector shall be capable of automatically adjusting its sensitivity by means of drift compensation and smoothing algorithms. The detector shall provide dual color LED indication which blinks to indicate power up, normal standby, out of sensitivity, alarm, and freeze trouble (Model 2WT-B, 4WT-B) conditions. When used in conjunction with the 2W-MOD2 module, 2-wire models shall include a maintenance signal to indicate the need for maintenance at the alarm control panel, and shall provide a loop testing capability to verify the circuit without testing each detector individually.

Electrical Specifications

| | |
|-------------------------------|--|
| Operating Voltage | Nominal: 12/24V non-polarized Minimum: 8.5V Maximum: 35V |
| Maximum Ripple Voltage | 30% peak to peak of applied voltage |
| Standby Current | 2-wire: 50 µA maximum average; 4-wire: 50 µA maximum average |
| Maximum Alarm Current | 2-wire: 130 mA limited by control panel; 4-wire: 20 mA @ 12V, 23mA @ 24V |
| Peak Standby Current | 2-wire: 100 µA; 4-wire: n/a |
| Alarm Contact Ratings | 2-wire: n/a; 4-wire: 0.5 A @ 30V AC/DC |

Physical Specifications

| | |
|------------------------------------|--|
| Dimensions (including base) | 5.3 inches (127 mm) diameter; 2.0 inches (51 mm) height |
| Weight | 6.3 oz. (178 grams) |
| Operating Temperature Range | 2W-B and 4W-B: 32°F–120°F (0°C–49°C); 2WT-B and 4WT-B: 32°F–100°F (0°C–37.8°C) |
| Operating Humidity Range | 0 to 95% RH non-condensing |
| Thermal Sensor | 135°F (57.2°C) fixed |
| Freeze Trouble | 2WT-B and 4WT-B only: 41°F (5°C) |
| Sensitivity | 2.5%/ft. nominal |
| Input Terminals | 14–22 AWG |
| Mounting | 3½-inch octagonal back box 4-inch octagonal back box Single gang back box 4-inch square back box with a plaster ring Direct mount to ceiling |

| LED Modes | | | Power Up Sequence for LED Indication | |
|--------------------|------------------------|------------------------|--------------------------------------|------------|
| LED Mode | Green LED | Red LED | Condition | Duration |
| Power up | Blink every 10 seconds | Blink every 10 seconds | Initial LED status indication | 80 seconds |
| Normal (standby) | Blink every 5 seconds | off | | |
| Out of sensitivity | off | Blink every 5 seconds | | |
| Freeze trouble | off | Blink every 10 seconds | | |
| Alarm | off | Solid | | |

Ordering Information

| Model | Thermal | Wiring | Alarm Current |
|-------|---------|--------|--------------------------------------|
| 2W-B | No | 2-wire | 130 mA max. limited by control panel |
| 2WT-B | Yes | 2-wire | 130 mA max. limited by control panel |
| 4W-B | No | 4-wire | 20 mA @ 12V, 23mA @ 24V |
| 4WT-B | Yes | 4-wire | 20 mA @ 12V, 23mA @ 24V |

Accessories

| | | | |
|----------|---------------------------------------|---------|--|
| 2W-MOD2 | 2-wire loop test / maintenance module | RT | Removal / replacement tool |
| SENS-RDR | Sensitivity reader | A77-AB2 | Retrofit adapter bracket, 6.6 in. (16.76cm) diameter |



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

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Product specifications subject to change without notice. Visit systemsensor.com for current product information, including the latest version of this data sheet.
A05-0318-006 • 7/06 • #1676



5600 Series
Mechanical Heat Detector
Single Circuit: 5601P, 5602, 5603, 5604
Dual Circuit: 5621, 5622, 5623, 5624

3825 Ohio Avenue, St. Charles, Illinois 60174
 1-800-SENSOR2, FAX: 630-377-6495
 www.systemsensor.com

Before Installing

This detector must be installed in compliance with the control panel installation manual and meet the requirements of NFPA 72, and/or the local authority having jurisdiction.

Read this manual carefully before using the detector. This manual should be left with the owner/user of this equipment.

General Description

The 5600 series mechanical heat detector is intended for use in property protection applications, or for non-life-safety installations where smoke detection is not practical or appropriate.



For life-safety installations, smoke detectors must be used, in lieu of, or in addition to mechanical heat detectors.

The 5600 series consists of both single- and dual-circuit heat detectors featuring fixed temperature thermal sensors or combination fixed temperature/rate-of-rise sensors, with temperature ratings of 135°F (57°C) or 194°F (90°C).

Markings on the exterior of the detector indicate the specific activation method and temperature rating. All models are identified as either 135°F/57°C or 194°F/90°C. Models equipped with combination fixed temperature/rate-of-rise sensors are marked FX/ROR. Fixed temperature only models are marked FX.

Non-Resettable Fixed Temperature Sensor

The fixed temperature element reacts to heat by responding to a specific temperature setting (135°F or 194°F). The detection method is based on the spring action of a metal contact, held to the metal chamber by a fusible alloy. When the temperature reaches the alloy's melting point, the metal contact will depress the diaphragm, causing the electrical contact to close the circuit. The circular external heat collector is released from the detector to visually indicate that the detector has been activated.

NOTE: 5600 series Fixed Temperature models (5603, 5604, 5623, and 5624) are non-resettable, and cannot be tested.

Self-Restoring Rate-of-Rise (ROR) Sensor

The rate-of-rise element responds to a rapid rise of temperature, approximately 15°F (8.3°C) per minute. As the temperature rises, the air within the sealed chamber expands. Should the chamber air expand faster than it can escape through the calibrated vent, the diaphragm is depressed, and the electrical contact closes the circuit.

NOTE: Only the ROR element of 5600 series combination fixed temperature/ROR models (5601P, 5602, 5621, and 5622) are self-restoring, and may be tested using a hair dryer or heat gun. When testing the ROR element, to prevent the activation of the fixed temperature element, the heat source must not exceed the fixed temperature rating of the detector.

Table 1. 5600 Series Mechanical Heat Detectors

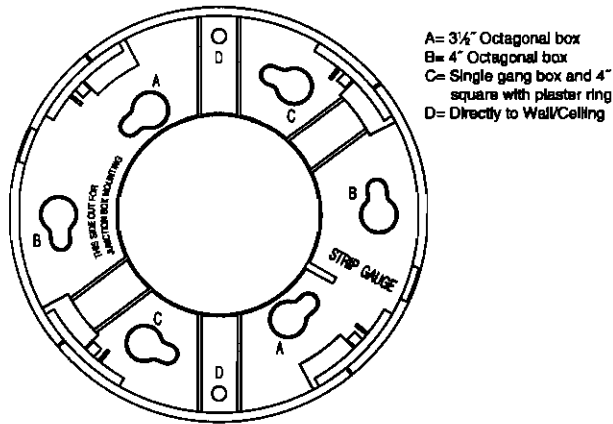
| Model No. | Circuit | Temperature Rating | Thermal Sensor | UL Maximum Spacing (10-foot ceiling) |
|-----------|---------|--------------------|--------------------------------|--------------------------------------|
| 5601P | Single | 135°F (57°C) | Fixed Temperature/Rate of Rise | 50-feet x 50-feet |
| 5602 | Single | 194°F (90°C) | Fixed Temperature/Rate of Rise | 50-feet x 50-feet |
| 5603 | Single | 135°F (57°C) | Fixed Temperature | 25-feet x 25-feet |
| 5604 | Single | 194°F (90°C) | Fixed Temperature | 25-feet x 25-feet |
| 5621 | Dual | 135°F (57°C) | Fixed Temperature/Rate of Rise | 50-feet x 50-feet |
| 5622 | Dual | 194°F (90°C) | Fixed Temperature/Rate of Rise | 50-feet x 50-feet |
| 5623 | Dual | 135°F (57°C) | Fixed Temperature | 25-feet x 25-feet |
| 5624 | Dual | 194°F (90°C) | Fixed Temperature | 25-feet x 25-feet |

NOTE: Refer to NFPA72 guidelines for spacing reductions when ceiling heights exceed 10 feet.

Mounting Bracket

All 5600 series detectors are equipped with a mounting bracket that includes mounting slots to accommodate single-gang, 3½" octagonal, and 4" octagonal electrical boxes, as well as 4" square boxes equipped with a plaster ring (Figure 1). The mounting bracket is reversible to accommodate flush-mount and surface-mount installations (Figure 2).

Figure 1. Bracket Mounting Locations:



Wiring Installation Guidelines

All wiring must be installed in compliance with the National Electrical Code, applicable state and local codes, and any special requirements of the local Authority Having Jurisdiction. Proper wire gauges should be used. The conductors used to connect heat detectors to the alarm control panel and accessory devices should be color-coded to reduce the likelihood of wiring errors. Improper connections can prevent a system from responding properly in the event of a fire.

Figure 3. Wiring Diagram - Single Circuit Models:

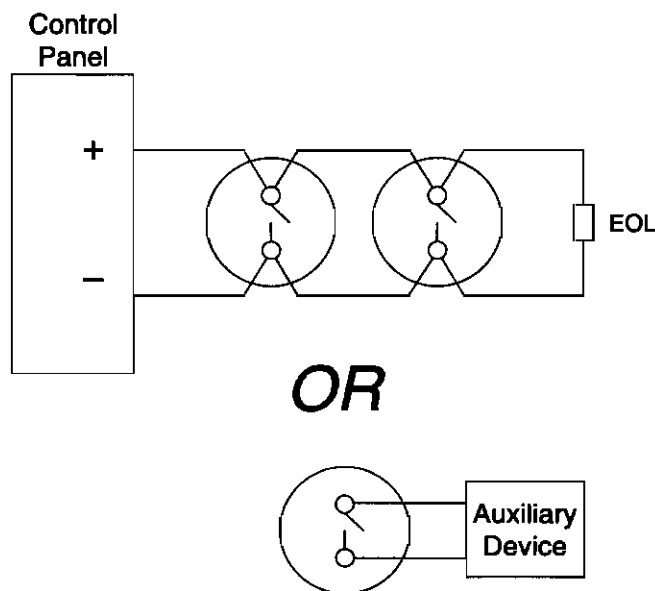
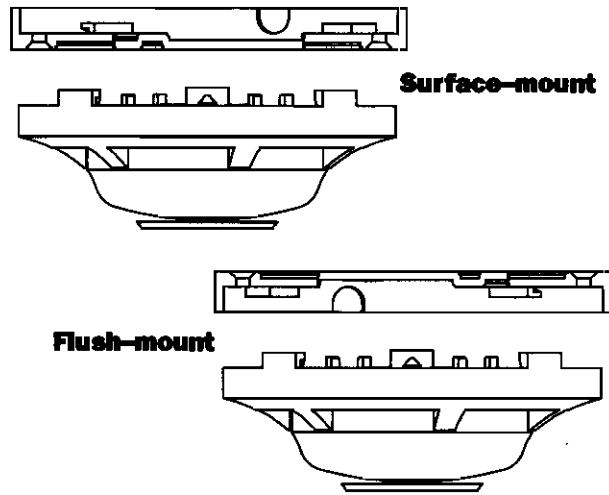


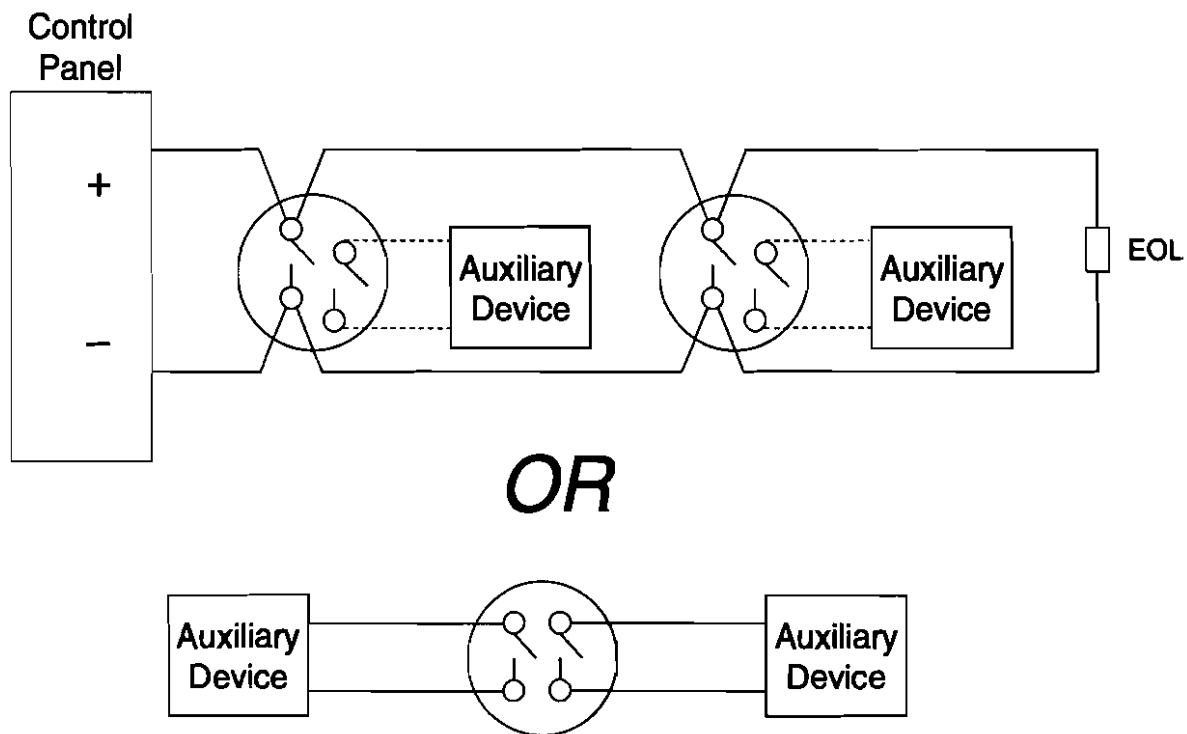
Figure 2. Reversible Mounting Bracket:



The non-polarized screw terminals on the back of the detector will accept 14–22 AWG wire. For best system performance, all wiring should be installed in separate grounded conduit; do not mix fire alarm system wiring in the same conduit as any other electrical wiring. Twisted pair may be used to provide additional protection against extraneous electrical interference.

Wire connections are made by stripping approximately ¼" of the insulation from the end of the feed wire, inserting it into the proper base terminal, and tightening the screw to secure the wire in place.

Figure 4. Wiring Diagram – Dual Circuit Models:



Installation

Remove power from the alarm control unit or initiating device circuits before installing detectors.

1. Detach the detector from the mounting bracket by rotating the detector 1/4 turn counter-clockwise.
2. Orient the mounting bracket properly for either a flush- or surface-mount installation (Figure 2).
3. Select the pair of mounting holes suitable for the junction box, (figure 1) and secure the bracket to the box.
4. Connect the wires to the detector per Figure 3 or Figure 4, as applicable.
5. Place the detector onto the mounting bracket by rotating clockwise. The detector will lock into place with a “click”.
6. After all detectors have been installed, apply power to the alarm control unit.
7. Test each detector as described in Testing.
8. Reset all the detectors at the alarm control unit.
9. Notify the proper authorities that the system is in operation.

Testing/Maintenance

The rate-of-rise mechanism may be subject to reduced sensitivity over time. Annual testing of the rate-of-rise operation is therefore recommended.

Before testing, notify the proper authorities that maintenance is being performed and the system will be temporarily out of service. Disable the zone or system undergoing maintenance to prevent any unwanted alarms.

Only the ROR element of 5600 series combination fixed temperature/ROR models (5601P, 5602, 5621, and 5622) are self-restoring, and may be tested using a hair dryer or heat gun.

WARNING

When testing the ROR element, to prevent the activation of the fixed temperature element, the heat source must not exceed the fixed temperature rating of the detector.

WARNING

5600 series fixed temperature models (5603, 5604, 5623, and 5624) are non-resettable, and cannot be tested.

CAUTION

When using the RRS-MOD with model 2WTA-B, do not mix the 2WTA-B with other model smoke detectors and dry contact closure devices, including mechanical heat detectors, manual pull stations and waterflow switches. Such mixing can cause a direct short on the auxiliary power terminals, damaging the control panel’s internal circuitry and/or damage devices connected to the initiating device circuit.

Specifications:

| | |
|--|---|
| Operating Voltage/Contact Ratings (Resistive): | 6 – 125 VAC / 3A 6 – 28 VDC / 1A 125 VDC / 0.3A 250 VDC / 0.1A |
| Maximum Installation Temperature: | Models 5601P, 5603, 5621, and 5623: 100°F (38°C) Models 5602, 5604, 5622, and 5624: 150°F (65.6°C) |
| Alarm Temperature: | Models 5601P, 5603, 5621, and 5623: 135°F (57°C) Models 5602, 5604, 5622, and 5624: 194°F (90°C) |
| Rate-of-Rise Threshold: | 15°F (8.3°C) per minute (models 5601P, 5602, 5621, and 5622 only) |
| Operating Humidity Range: | 5 to 95% RH non-condensing |
| Input Terminals: | 14 – 22 AWG |
| Back Box Mounting: | 3½ octagonal 4 octagonal Single gang 4 square with a square to round plaster ring |
| Dimensions with mounting bracket: | Diameter: 4.57 inches (11.6cm) Height: 1.69 inches (4.3cm) |
| Weight: | 6 oz. (170 grams) |

CAUTION

To prevent the activation of the fixed temperature element, the shipping and storage temperature must not exceed 122°F (50°C).

Please refer to Insert for the Limitations of Fire Alarm Systems**Three-Year Limited Warranty**

System Sensor warrants its enclosed product to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for the enclosed product. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the replacement of any part of the product which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor's toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to: System Sensor, Returns

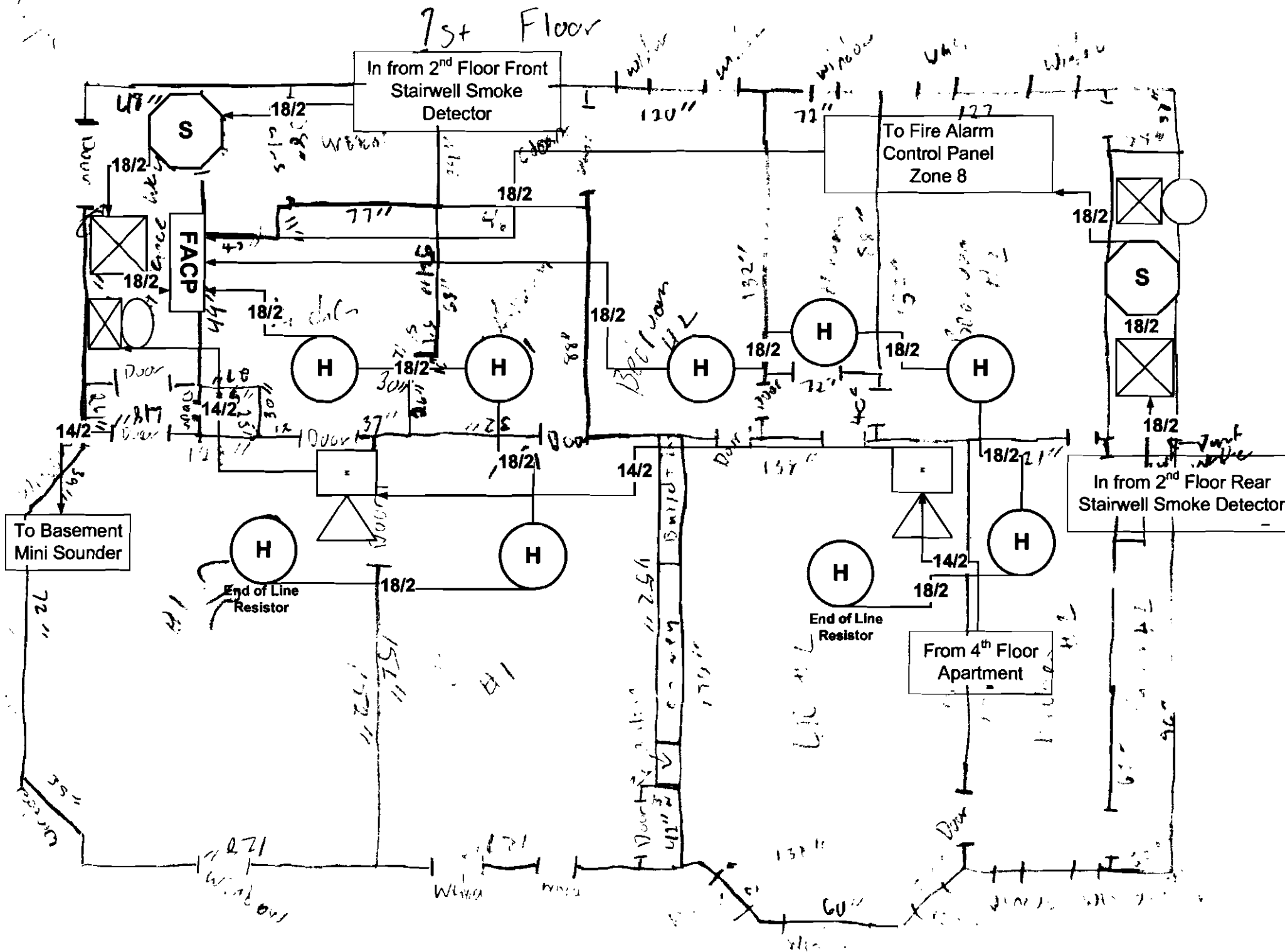
Department, RA # _____, 3825 Ohio Avenue, St. Charles, IL 60174. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



GENERAL NOTES

1. FIRE ALARM SYSTEM WIRING MUST COMPLY WITH THE NATIONAL ELECTRICAL CODE, APPLICABLE STATE AND LOCAL CODES, AND SHALL BE COORDINATED WITH THE LOCAL AUTHORITY HAVING JURISDICTION.
2. CAUTION: DO NOT CONNECT ANY POWER TO THE CONTROL PANEL (BATTERIES OR 120V AC) UNTIL ALL OTHER FIELD WIRING IS TESTED AND CONNECTED.
3. DO NOT INSTALL FIRE ALARM CONTROL PANEL OR SMOKE DETECTORS IN AN UNHEATED AREA.
4. DO NOT INSTALL ANY AC CURRENT-CARRYING CONDUCTORS CLOSE TO OR IN THE SAME RACEWAY WITH FIRE ALARM SYSTEM CONDUCTORS.
5. SOLID LINES REPRESENT CONNECTIONS TO BE MADE BY THE SYSTEM INSTALLER.
6. SEE MODEL ___ Bosch D7024 ___ INSTALLATION MANUAL FOR ADDITIONAL WIRING INSTRUCTIONS.
7. ALL RELAYS ARE SHOWN IN NORMAL SUPERVISORY CONDITION. ALL RELAYS ARE FORM "C" TYPE.

INSTALLATION NOTES

1. SMOKE DETECTORS SHALL NOT BE MOUNTED ANY CLOSER THAN 3' FROM ANY AIR DUCT OPENINGS
2. ELEVATOR LOBBY SMOKE DETECTORS SHALL BE MOUNTED WITHIN 10' OF THE ELEVATOR DOOR
3. MANUAL PULL STATIONS SHALL BE MOUNTED PER ADA REQUIREMENTS: 48" AFF OR 42" AFF TO COMPLY WITH SIDE/FRONT REACH REQUIREMENTS
4. WALL MOUNTED HORN/STROBES & STROBES SHALL BE MOUNTED 6" FROM CEILING, OR 96" TO 80" AFF TO THE CENTER OF STROBE
5. 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.
6. CEILING MOUNTED HALLWAY DEVICES SHALL BE LOCATED IN A SYMMETRICAL MANNER DOWN CENTER OF HALLWAY WHEN POSSIBLE

NOTIFICATION TO INSTALLERS

1. Do not use any other Riser Diagram than this one. Any changes shall be indicated under Revisions. Confirm with our office that you are using the latest issue before starting work.
2. Please call our office at least ten days in advance to schedule Final Connections & Testing (referred to as "Finals").
3. Prior to our arrival at the jobsite to perform "Finals", all of your wires must be:
 - a. Labeled by zone and device location per the Riser Diagram.
 - b. Free of grounds, shorts or opens.
 - c. Polarity must be maintained throughout.
 - d. All circuits must show proper resistance.
 - e. Shielded cable drain wires must be connected and fully isolated from contact with backboxes or any metal surface.
 - f. Installed in accordance with N.F.P.A. #7D and N.F.P.A. #72.
4. We require that your cabling installer be present and ready to assist our Technicians on the day we perform the "Finals".
5. Before scheduling "Finals", contact our office and confirm the arrangements for Central Station Monitoring Service or municipal connections, whether provided through our firm or another party.
6. There may be additional charges to the contract if there are delays or extra labor due to improper wiring or uncompleted items.
7. If you have any questions regarding proper wiring methods or installation of the devices we have provided to you, call our office at 207.775.5755.

CONSULTANT
PROTECTION PROFESSIONALS
 325 US ROUTE ONE
 FALMOUTH, ME. 04105
 Phone: (207) 775-5755
 Fax: (207) 781-2064

PROJECT:
 154 Grant Street

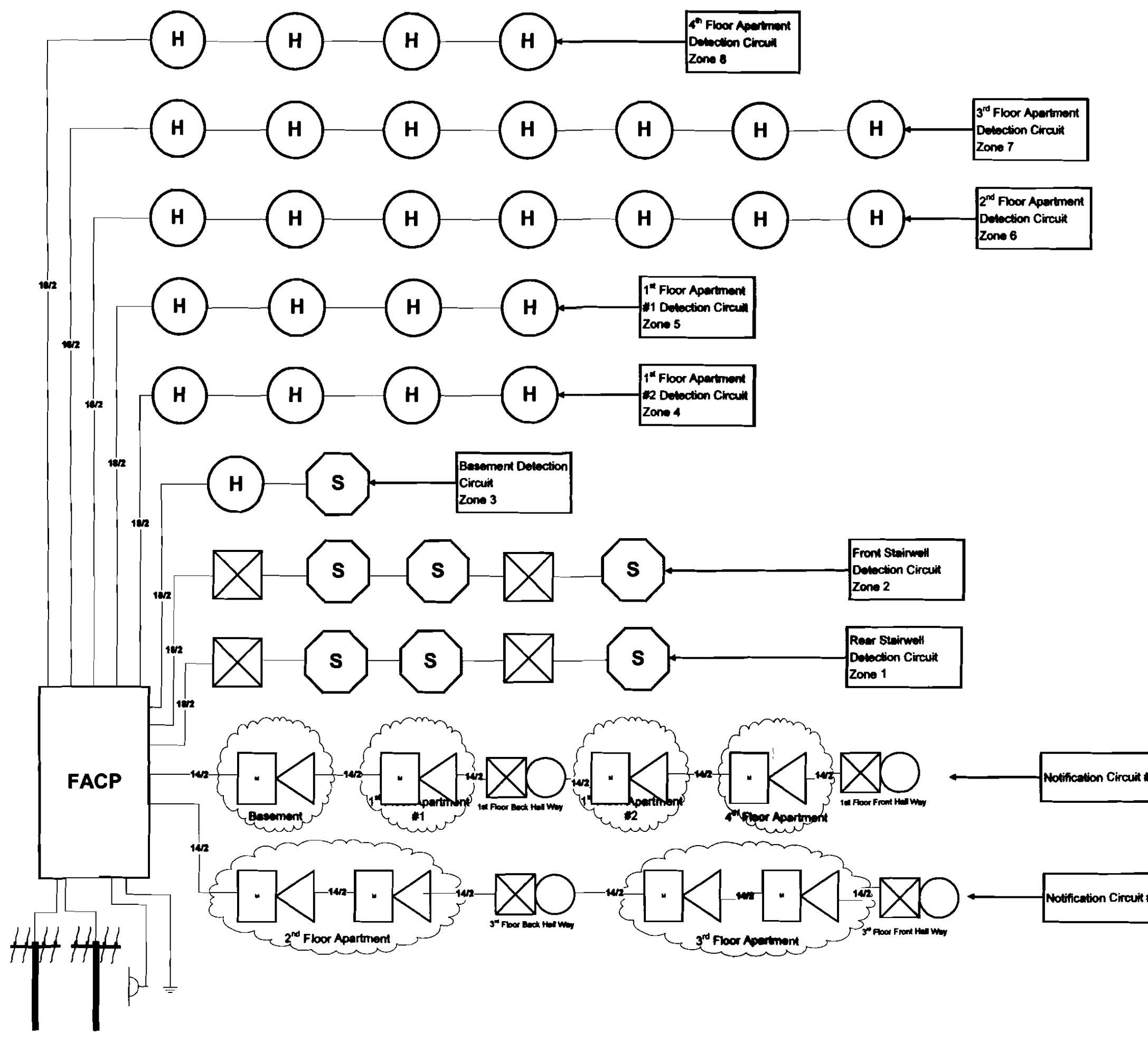
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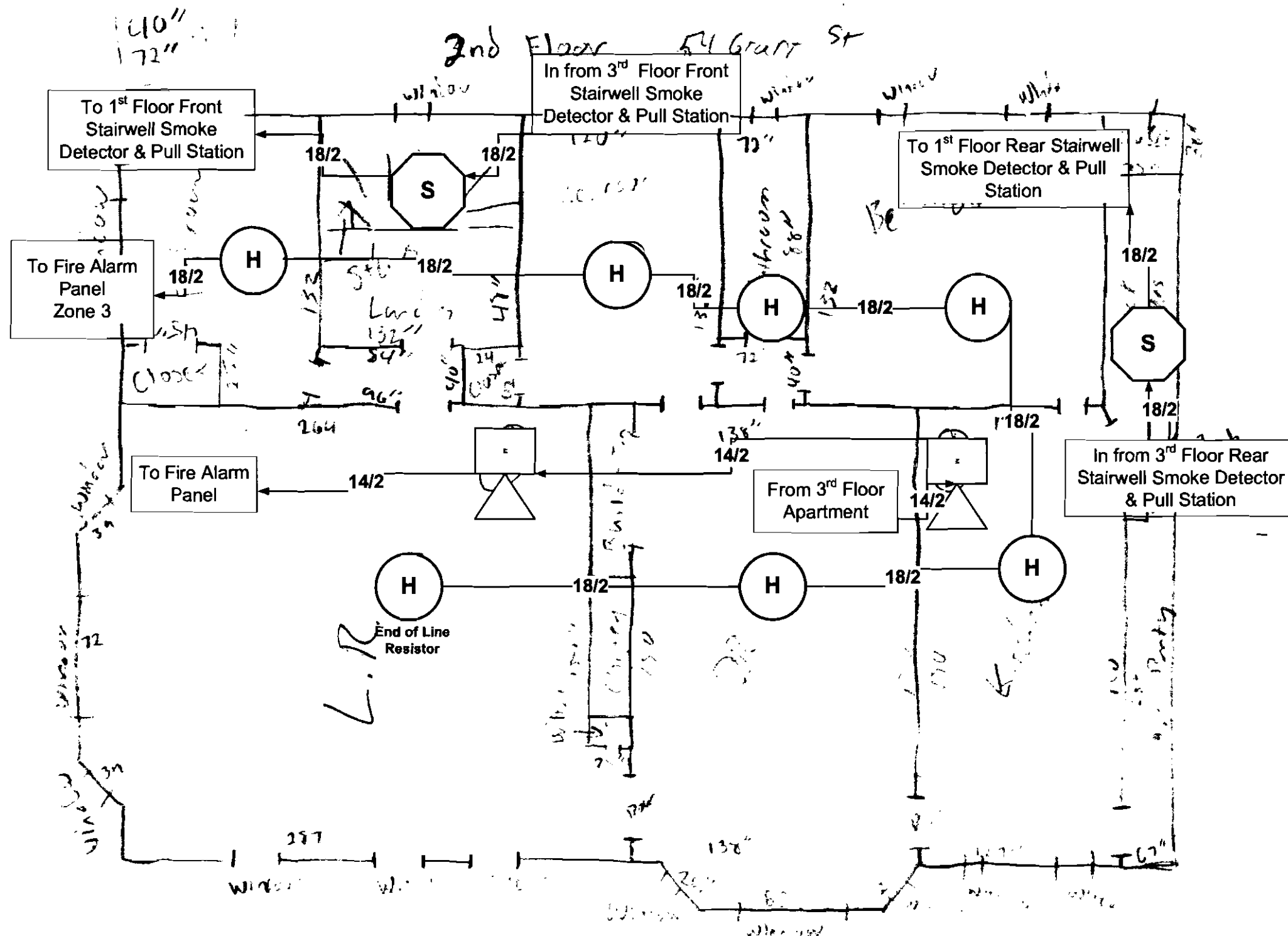
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 154 Grant Street

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