# CITY OF PORTLAND

# BUILDING PERMIT

This is to certify that **PROTECTION PROFESSIONALS** of **325 US Route 1, Falmouth, ME 04105**

For installation at **61 INDIA ST**

Job ID: **2011-02-463-UI**

CBL: **020- E-021-001**

has permission to install a sprinkler supervisory system

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

| Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED. | A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be |

_____

**Fire Prevention Officer**

**Code Enforcement Officer / Plan Reviewer**

**THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY**
**PENALTY FOR REMOVING THIS CARD**

# 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 Inspections 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.**

Final Fire

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF 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 OCCU0PIED.

**Job ID: 2011-02-463-UI**
**Install a sprinkler supervisory system**

**For installation at:**
**61 INDIA ST**

**CBL: 020- E-021-001**

## Conditions of Approval:

### Zoning

All previous conditions on the original permit are still in force with the issuance of this permit.

### Fire

The 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.

In field installation shall be installed per code as conditions dictate.

Records cabinet, FACP, annunciator(s), and pull stations shall be keyed alike.

Central Station monitoring for addressable fire alarm systems shall be by point.

All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP labeled "FIRE ALARM RECORDS".

Installation of a Fire Alarm system requires a Knox Box to be installed per city ordinance.

The fire alarm system shall be certified by a master fire alarm company and have a new fire alarm inspection sticker.

System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.

A sprinkler supervisory system shall be provided in accordance with NFPA 101, *Life Safety* Code, and NFPA 72, *National Fire Alarm and Signaling Code*. Sprinkler supervisory system shall monitor for water flow and sprinkler supervisory signals via an approved fire alarm panel to central station. One smoke detector shall be located over the panel, a manual pull station located at the front door, and an audible water flow alarm provided.

# City of Portland, Maine - Building or Use Permit Application

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

| Job No:<br>2011-02-463-UI<br>2011-10698 | Date Applied:<br>9/23/2011 | CBL:<br>020- E-021-001 | |
|---|---|---|---|

| Location of Construction:<br>61 INDIA ST | Owner Name:<br>PEARL PROPERTIES LLC | Owner Address:<br>198 TUTTLE RD<br>CUMBERLAND CTR, ME 04021 | Phone: |
|---|---|---|---|

| Business Name: | Contractor Name:<br>Protection Professionals | Contractor Address:<br>325 US Route 1,  Falmouth, ME  04105 | Phone:<br>(207) 775-5755 |
|---|---|---|---|

| Lessee/Buyer's Name: | Phone: | Permit Type:<br>Fire Alarm | Zone:<br>B-2b |
|---|---|---|---|

| Past Use:<br><br>The 4 story addition to existing building | Proposed Use:<br><br>Same use for the addition: 1st floor retail – 2nd floor offices – 3rd & 4th floor 1 apt – to install a fire alarm in this section of the bldg | Cost of Work:<br>$6,000.00 | CEO District: |
|---|---|---|---|
| | | Fire Dept:<br>✓ Approved  w/ conditions<br>___ Denied<br>___ N/A<br><br>Signature: BJCardell  (58) | Inspection:<br>Use Group:<br>Type:<br><br>Signature: |

| Proposed Project Description:<br>61 India UI ## 081124 | Pedestrian Activities District (P.A.D.) |
|---|---|

Permit Taken By:   planning

## 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 electrial work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.

| Special Zone or Reviews | Zoning Appeal | Historic Preservation |
|---|---|---|
| ___ Shoreland | ___ Variance | ✓ Not in Dist or Landmark |
| ___ Wetlands | ___ Miscellaneous | ___ Does not Require Review |
| ___ Flood Zone | ___ Conditional Use | ___ Requires Review |
| ___ Subdivision | ___ Interpretation | ___ Approved |
| ___ Site Plan | ___ Approved | ___ Approved w/Conditions |
| | ___ Denied | ___ Denied |
| ___ Maj ___Min ___ MM | | |
| Date: OK w/ th conditions 10/5/11 | Date: | 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 appication 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 |
|---|---|---|---|

# Fire Alarm Permit

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: **61 India Street**　　　　CBL: **020 E 021**

Exact location: (within structure) _____

Type of occupancy(s) (NFPA & ICC): **Retail with one apartment**

Building owner: **Pearl Properties, 198 Tuttle Road, Cumberland, Me 04021**

System Designer (point of contact): *Must be* **Rich Brobst, Jr**

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

Installing contractor: **Protection Professionals**　　　Certificate of Fitness No: **M1001**

Contractor phone: **775-5755**　　335 US Route 1　　E-mail: _____
　　　　　　　　　　　Falmouth　04105

This is a new application:　YES ⦿　NO ◯　New AES Master Box:　YES ◯　NO ⦿
　　　　　　　　　　　　　　　　　　　　(Include Master Box approval form)

Amendment to an existing permit: YES ◯　NO ◯　Permit no: _____

**The following documents shall be provided with this application:**

☑ Floor plans　　　　　　☑ Scope of Work

☐ Wiring diagram　　　　☑ 11 ½ x 17s

☐ Annunciator details　　☑ pdf copy (may be e-mailed)

☑ Input/ Output Matrix　☑ Designer qualifications

☑ Equipment data sheets　☑ Battery/ voltage drop calcs

☑ Electrical Permit Pulled (check alarm/com)

COST OF WORK: **$5,986**

PERMIT FEE: **$80.00**
($10 PER $1,000 + $30 FOR THE FIRST $1,000)

**RECEIVED**

SEP 23 2011

Dept. of Building Inspections
City of Portland Maine

Master box approval only:　YES ◯　NO ◯
(If yes check *New AES Master Box* above)

**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 readable 11 ½ x 17s 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: *Doug Hansen*　　　　Date: **9-23-11**

# Protection Professionals

325 US Route 1
Falmouth, ME 04105
Ph   207-775-5755
Fax  207-781-2064

# Device List   No.   3156

| Bill To Name / Address | Job Site |
| --- | --- |
| Pearl Properties<br>198 Tuttle Road<br>Cumberland, Maine 04021 | 61 India Street<br>Portland, Maine |

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

| Item | Description | Qty To Order | Qty Ordered |
| --- | --- | --- | --- |
| D7412GV2-B | Bosch D7412 Control Communicator, Dual Phone Line Module, Dual Phone Cords | 1 |  |
| Bat 12-7 | 12V 7AH Batteries | 2 |  |
| IM-RJ31XSET | IM-RJ31XSET | 2 |  |
| D1256RB | Fire Annunciator Keypad | 1 |  |
| D192G | BELL SUPERVISION MODULE 3 AMPS | 1 |  |
| 06-SSU00672 | Fire Document box 12 inches wide X 13.1 inches high X 2.25 inches deep, CAT 30 keyed | 1 |  |
| BK-P2R | Horn/strobe, wall mount, red, 15cd, 15/75cd, 30cd, 75cd, 95cd, 110cd, or 115cd | 3 |  |
| SR-1078CW | MAGNETIC CONTAC, WIDE GAP, WHITE, RECESSED | 8 |  |
| bk-4WTRB | Smoke Detector 4-wire with relay (elevator) | 4 |  |
| BK-2WB | Smoke Detector w/ Base (over fire panel) | 1 |  |
| FMM-7045-D | Addressable pull station dual action | 1 |  |
|  | State of Maine Sales Tax |  |  |

Ordered By: _____     Date: _____

Received By: _____     Date: _____

# SYSTEM SENSOR®

# 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

UL LISTED S911

FM APPROVED 3011446

7272-1209:210

MEA approved 290-01-E

MSFM approved 2093

# *i³* Smoke Detector 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<br>Minimum:  8.5V<br>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<br>4-inch octagonal back box<br>Single gang back box<br>4-inch square back box with a plaster ring<br>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 |

# System Sensor

# Smoke Detectors with Sounder and Relay Option

*System Sensor i³™ sounder and relay smoke detectors apply the guiding principles of installation ease, intelligence, and instant inspection in a series of specialty conventional devices.*

**Installation ease.** Throughout the i³ series, installation is simple with its installer-friendly base and plug-in design. The base accommodates a broad range of back box and direct mounting options and provides ample space for pre-wiring the device. To complete the installation, the i³ detector plugs into its base with a simple Stop Drop 'N Lock action.

**Intelligence.** To reduce the likelihood of nuisance alarms, all i³ detectors are equipped with both drift compensation and smoothing algorithms. These capabilities minimize both short- and long-term causes of nuisance alarms such as RF interference and dust accumulation. When connected to the 2W-MOD2 loop test/ maintenance module or an i³ Ready™ panel, 2-wire i³ detectors can generate a remote maintenance signal when in a maintenance or freeze trouble condition. To measure the sensitivity of any i³ detector, the SENS-RDR displays the reading, in terms of percent-per-foot obscuration, within seconds.

**Instant inspection.** The i³ line's red and green LEDs simplify local status indication during power-up, standby, alarm, maintenance and freeze trouble conditions. When in alarm, i³ sounder models generate an 85 dB temporal tone. If connected to the RRS-MOD reversing relay/synchronization module, all i³ sounders on the loop will activate when one detector is in alarm. Additionally, the RRS-MOD synchronizes the output of all i³ sounders to ensure a clear audible signal.

Should the application call for differentiating between a local and a general alarm, the i³ line offers an isolated thermal model, which initiates a local alarm when smoke is detected, and a general alarm when the thermal sensor is activated.

## Features

- 85 dB sounder
- Form C relay
- Isolated thermal sensor
- Plug-in design – base included
- In-line terminals
- Flexible mounting options
- Stop-Drop 'N Lock™ attachment to the base
- Removable cover and chamber
- Remote maintenance signaling
- Drift compensation and smoothing algorithms
- Simplified sensitivity measurement
- Dual color LEDs

## Agency Listings

**UL LISTED** S911    **FM APPROVED** 3015195    7272-1653:164    **MEA approved** 372-02-E    **MSFM approved** 2133

# (i³) Smoke Detector Specifications

## Electrical Specifications

| | |
|---|---|
| **Operating Voltage** | Nominal: 12/24 V non-polarized<br>2-wire: 8.5 V - 35 V<br>4-wire: 10 V - 35 V |
| **Maximum Ripple Voltage** | 30% of applied voltage (peak to peak) |
| **Standby Current** | 2-wire: 50 µA maximum average<br>4-wire: 50 µA maximum average |
| **Peak Standby Current** | 2-wire: 100 µA<br>4-wire: n/a |
| **Maximum Alarm Current** | 2-wire: 2WTR-B: 130 mA limited by control panel<br>2WTA-B: 130 mA**<br>4-wire: 4WTA-B, 4WTR-B: 35 mA<br>4WTAR-B, 4WITAR-B: 50 mA<br>**Direct Power (Non-reverse Polarity): 130 mA limited by panel. Reverse Polarity Power: 30 mA for the 2WTA-B in alarm; 12 mA for all other 2WTA-B units on the loop. Add 25 mA for the RRS-MOD reversing relay alarm current. |
| **Alarm Contact Ratings** | 2-wire: n/a<br>4-wire: 0.5 A @ 30V AC/DC |
| **Form C Contact Ratings** | 2A @ 30V AC/DC |

## Physical Specifications

| | |
|---|---|
| **Operating Temperature Range** | 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** | 41° F (5° C) |
| **Sensitivity** | 2.5%/ft. nominal |
| **Input Terminals** | 14–22 AWG |
| **Dimensions (including base)** | 5.3 inches (134 mm) diameter, 2.0 inches (51 mm) height |
| **Approximate Weight** | 7.1 oz. (200 grams) |
| **Sound Pressure Output** | 85 dBA (models 2WTA-B, 4WTA-B, 4WTAR-B, and 4WITAR-B only) |
| **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

| 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 | | |

## Power Up Sequence for LED Indication

| Condition | Duration |
|---|---|
| **Initial LED status indication** | 80 seconds |

## Architect/Engineer 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 combination photoelectric/thermal equipped with a sounder (model 2WTA-B, 4WTA-B), a Form C relay (model 2WTR-B), a combination sounder/relay (model 4WTAR-B) or an isolated thermal/sounder/relay (model 4WITAR-B). 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% 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 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. When used in conjunction with the RRS-MOD module, all i³ sounder models on a loop shall sound when one alarms, all shall be synchronized, and all sounders may be silenced from the panel.

## Ordering Information

| Model | Thermal | Wiring | Alarm Current |
|---|---|---|---|
| 2WTA-B | Yes | 2-wire | 130 mA max. limited by control panel |
| 2WTR-B | Yes | 2-wire | 130 mA max. limited by control panel |
| 4WTA-B | Yes | 4-wire | 35 mA |
| 4WTR-B | Yes | 4-wire | 35 mA |
| 4WTAR-B | Yes | 4-wire | 50 mA |
| 4WITAR-B | Yes | 4-wire | 50 mA |

| Model | Description |
|---|---|
| RRS-MOD | Reversing relay/synchronization module |
| 2W-MOD2 | 2-wire loop test/maintenance module |
| SENS-RDR | Sensitivity reader |
| RT | Removal/replacement tool |
| A77-AB2 | Retrofit adapter bracket |

BOSCH
Invented for life

# D1255 Series VFD Keypads



▶ Easy to read vacuum fluorescent display (VFD)

▶ Easy system control with menu keys

▶ User controlled brightness and volume

▶ Installer configured menus, text, and custom functions

▶ Multiple or single area configurations

Each D1255 Series VFD Keypad model is an SDI bus compatible device that works with the G Series Control Panels and the D9124 Addressable Fire Alarm Panel. Each keypad model has an illuminated keypad, 16-character English language vacuum fluorescent display (VFD), and a sounder that emits eight tones.

## Functions

### Display

Every D1255 Series Keypad model uses words, numbers, and symbols to show the status of the security system. When several events occur, each model shows each event in order of priority.

### Keys

Each D1255 Series Keypad model has 10 numeric keys and five function keys. Use the [COMMAND] key with the numeric keys to perform a function. Use the [ENT] key or [YES] key to enter your passcode. When pressed, each key emits light and a muted beep.

### Audible Tones

The sounder emits eight distinct warning tones. You can adjust the volume or use a passcode to silence the tone. The tones include:

- Burglary Signal: Steady high-pitched bell tone during alarm.
- Fire Signal: Pulsed high-pitched bell tone during fire alarm.
- Entrance Warning: Intermittent beep tones during entry delay periods.
- Exit Warning: Intermittent beep tones during exit delay periods.
- Invalid Key Buzz: Buzz tone when an invalid key is pressed.
- Keypad Encoding Tone: Muted beep tone as each key is pressed.
- Trouble Buzzer: Two-tone warble during a trouble event.
- Watch Tone: Intermittent beep tone when a watch point is faulted.

## System Overview

Use D1255 Series Keypad models in applications for system controllers and annunciators:

- For commercial use, install the keypad in building entrances and areas with unrestricted access. Mounting a keypad near exterior doors in hotel or business lobbies allows people to identify the type and location of the emergency.

- For residential use, install the keypad near the front and rear entrances to the home. Install additional keypads in a kitchen or in a bedroom.
- Use multiple keypads in a large building with many separate areas of security. Program multiple keypads to control multiple areas.
- Install the keypad in locations that are hidden from view. Audible tones from the keypad sounder alert personnel to fire events and assist fire fighters in locating the keypad.

## Certifications and Approvals

| Keypad Model | Certifications and Approvals |
|---|---|
| All Models | UL365, Police Station Burglar Alarm Units and Systems |
| | UL609, Local Burglar Alarm Units and Systems |
| | UL864, Control Units for Fire-protective Signaling Systems |
| | UL985, Household Fire Warning System Units |
| | UL1023, Household Burglar Alarm System Units |
| | UL1076, Proprietary Alarm Units |
| | UL1610, Central-station Burglar-alarm Units |
| | UL1635, Digital Alarm Communicator System Units |
| D1255, D1255R, and D1255W | CSFM |
| D1255 Only | FM, MEA |

## Installation/Configuration Notes

### Compatibility Information

Control Panels with SDI Bus: D9412G, D7412G, D9412, D7412, D7212, D9112, and D9124
D7212G with firmware version 6.41 or higher

### Mounting Considerations

- Do not mount any of the D1255 Series Keypad models in a location exposed to direct sunlight. Direct sunlight can interfere with screen visibility and damage internal components.
- Do not mount any of the D1255 Series Keypad models in damp locations.

### Power Supplies

A compatible control panel supplies the power and data requirements to a D1255 Series Keypad model through a four-wire connection.

### Wiring Considerations

Use 0.8 mm (22 AWG) or 1.2 mm (18 AWG) wire. Resistance cannot exceed 25 Ω. Each D1255 Series Keypad model includes a wiring assembly of four color-coded flying leads and one female four-pin connector.

## Technical Specifications

### Connections

| | |
|---|---|
| Connections: | 4-wire flying lead for data and power |
| Resistance: | 25 Ω maximum |

### Environmental Considerations

| | |
|---|---|
| Temperature (Operating): | 0°C to +50°C (+32°F to +122°F) |
| Relative Humidity: | 5% to 85% at +30°C (+86°F) |

### Keypad

| | |
|---|---|
| Dimensions for D1255, D1255W, and D1255R: | 11.7 cm x 21 cm x 2 cm (4.6 in. x 8.2 in. x 0.8 in.) |
| Dimensions for D1255B: | 12.6 cm x 20 cm x 3.2 cm (5 in. x 7.9 in. x 1.3 in.) |
| Weight for All Models: | 439 g (15.5 oz) |
| Material for All Models: | CHI MEI POLYLAC® PA757 ABS with UV Stabilizer. UL94-HB Fire Rated |
| Display Window: | • 16-character vacuum fluorescent display<br>• Each character is a 14-segment unit |
| Indicators: | • Illuminated keys<br>• Warning and indicating tones |

### Number of...

| | |
|---|---|
| D1255 Series Keypad Models per Control Panel: | Eight supervised 32 unsupervised |

### Power Requirements

| | |
|---|---|
| Voltage: | Nominal 12 VDC |
| Current: | Idle 104 mA, armed or disarmed Maximum 206 mA, with keypad lit and warning tone on |

### Trademarks

POLYLAC® is a registered trademark of CHI MEI Industrial Corporation, LTD. Plexiglas® is a registered trademark of Arkema.

## Ordering Information

| | |
|---|---|
| D1255 VFD Keypad<br>    Off-white classic case. | D1255 |
| D1255W VFD Keypad<br>    White classic case. | D1255W |
| D1255R VFD Keypad<br>    Red classic case. | D1255R |
| D1255B VFD Keypad<br>    White and gray modern case. | D1255B |
| **Hardware Accessories** | |
| D54B Brass Flush Mount Kit<br>    Back box and polished brass faceplate. | D54B |
| D54C Stainless Steel Flush Mount Kit<br>    Back box and stainless steel faceplate. | D54C |
| D55 Keypad Desk Stand<br>    Portable desk stand in smoke colored Plexiglas®. | D55 |

## Ordering Information

| | |
|---|---|
| **D56 Surface Mount Conduit Box**<br>White surface mount box. | D56 |
| **D56R Red Surface Mount Conduit Box**<br>Red surface mount box. | D56R |

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# D1256RB Fire Keypad

- ▶ **Compatible with Bosch GV3 control panels and GV2 control panels (firmware version 7.04 and higher)**
- ▶ **Provides system control with easy to use function keys**
- ▶ **Built-in multi-tone sounder**
- ▶ **Easy to read vacuum-fluorescent display (VFD) shows complete system status in English**
- ▶ **Programmable custom text for each point**
- ▶ **Local system test display**
- ▶ **Molded red ABS plastic construction**

The D1256RB Fire Keypad is a full-function system controller and annunciator. This SDI bus compatible device works with the Bosch Security Systems, Inc. GV3 control panels and GV2 control panels (firmware version 7.04 and higher). Four one-touch function keys provide user-friendly control over the system. The function keys allow the user to silence the audible alarm output, silence the trouble sounder, reset the annunciator display, and reset the system detectors. Four additional navigational keys allow access to other programmed system functions. The D1256RB can be mounted in secure areas.

## Certifications and Approvals

| Region | Certification | |
|--------|--------------|---|
| USA | UL | UOXX: Control Unit Accessories, System (ANSI/UL 864) |
| | FM | |
| | CSFM | 7165-1615: 0119  FIRE ALARM CONTROL UNIT (COMMERCIAL) |
| | FDNY-CoA | 6059 |

## Functions

### Display

The display uses words, numbers, and symbols to show the status of the fire system. When several events occur, each event is shown in order of priority followed by the time of occurrence. In conjunction with the 16-character vacuum-fluorescent display (VFD), four LEDs provide the following system status indications:

- Fire
- Silenced
- Supervisory
- Trouble

## Installation/Configuration Notes

### Compatible Control Panels

The D1256RB Fire Keypad is compatible with GV3 control panels[1] and GV2 control panels[1] with firmware version 7.04 or higher. The keypad will work with G Series Control Panels prior to GV2 v7.04; however the LEDs will not operate.

[1] The D7212GV3 and D7212GV2 are not listed for commercial fire applications.

## Mounting Considerations

The keypad is a low profile, surface-mounted unit molded in durable red plastic with three mounting holes in the base that allow secure, correct positioning during installation. Protect the surface-mounted keypad by mounting it to a D56 or D56R Conduit Back Box. For desktop applications, the keypad can be mounted to a D55 Desk Stand.

**Note**     Do not install the keypad in direct sunlight. This damages the module components and makes the display less visible. Do not mount in wet or moist locations.

## Wiring Considerations

The keypad connects to the control panel for data and power through a standard four-wire flying lead cable. For field wiring use 0.8 mm (22 AWG) or 1.2 mm (18 AWG) wires. Resistance cannot exceed 25 Ω. The field wiring connects to a four-wire harness supplied with the unit.

**Note**     Use shielded cable where excessive electromagnetic interference is a problem.

## Parts Included

| Quant. | Component |
|--------|-----------|
| 1 | Keypad |
| 1 | Hardware pack |
| 1 | Literature pack |

## Technical Specifications

### Environmental Considerations

| | |
|---|---|
| Relative Humidity: | 5% to 85% non-condensing at +30°C (+86°F) |
| Temperature (operating): | 0°C to +50°C (+32°F to +122°F) |

### Mechanical Properties

| | |
|---|---|
| Color: | Red |
| Dimensions: | 11.7 cm x 21 cm x 2 cm (4.6 in. x 8.2 in. x 0.8 in.) |
| Material: | CHI MEI POLYLAC PA757 ABS with UV Stabilizer. UL94-HB Fire Rated |

### Power Requirements

| | |
|---|---|
| Current: | 104 mA minimum, 225 mA maximum |
| Voltage: | 12 VDC nominal supplied by the control panel |

## Trademarks

Due to the nature of this material, this document refers to hardware and software products by their trade names. In most, if not all cases, these designations are claimed as trademarks or registered trademarks by their respective companies in one or more countries. It is not Bosch's intent to use any of these names generically. The reader is therefore cautioned to investigate all claimed trademark rights before using any of these names other than to refer to the product described.

POLYLAC is a registered trademark of CHI MEI Industrial Corporation, LTD.

Plexiglas is a registered trademark of Arkema.

## Ordering Information

| | |
|---|---|
| **D1256RB Fire Keypad** The D1256RB Fire Keypad provides our one-touch function keys for user-friendly control over the system | **D1256RB** |

**Accessories**

| | |
|---|---|
| **D55 Keypad Desk Stand** Portable desk stand in smoke colored Plexiglas. | **D55** |
| **D56 Surface Mount Conduit Box** White surface mount box. | **D56** |
| **D56R Red Surface Mount Conduit Box** Red surface mount box. | **D56R** |

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# D7412GV3 Control Panel



► **Fully integrated intrusion, fire, and access control allows users to interface with one system instead of three**

► **Conettix IP-based communication options provide high-speed, secure alarm transport and control through connection of up to two wired (DX4020) and/ or wireless (ITS-DX4020-G) network interfaces**

► **Eight programmable areas with perimeter and interior partitioning**

► **75 points with flexible configuration options to meet multiple installation requirements**

► **Commercial Wireless allows up to 67 RF points**

► **Up to 16 supervised keypads (vacuum fluorescent, ATM style, or touch-screen keypads available)**

The D7412GV3 Control Panel delivers a powerful new solution for intrusion, access control, and fire alarm system applications. The control panel includes a communicator that sends event reports to selected public switched telephone network (PSTN), IP network, or general packet radio service (GPRS) destinations through four programmable route groups. The control panel provides up to 75 individually identified points. Each point:

- Accommodates normally-open (NO) and normally-closed (NC) devices with end-of-line (EOL) resistor supervision
- Is programmable for fire, fire supervisory, or intrusion applications.

With the D7412GV3 you can:

- Monitor alarm points for intruder or fire alarms while operating user keypads and other outputs
- Program all system functions locally or remotely (attended or unattended) through Remote Programming Software (RPS); pro-gram critical parameters on site through a keypad.
- Add up to two doors of access control using the optional D9210BLC Access Control Interface Module.

- Four alarm-output patterns
- Automatic bell test

### System Response

- High performance micro-controller provides industry-leading system response
- 31 custom point indexes, including fire supervisory
- Selectable point response time
- Cross point capability
- Fire alarm verification
- Fire inspector's local test
- Watch mode
- Scheduled events (skeds) arm, disarm, bypass and unbypass points, control relays, control authority levels, and control door access

### User Interface

- Supervision of up to 16 keypads (up to 32 unsupervised keypads can be used)
- Custom keypad text is fully programmable, including remote programming
- Full function command menu including custom functions
- Authority by area and 16-character name for each user
- 14 custom authority levels control user's authority to change, add, or delete passcodes or access control credentials; to disarm or bypass points; and to start system tests

## Functions

### Programmable Outputs
- 2 A alarm power at 12 VDC
- 1.4 A auxiliary power at 12 VDC

### Area Configurations

Area programming offers a wide selection of different system configurations. Each area is assigned an account number to define annunciation, control, and reporting functions. Multiple areas can be linked to a shared area which is automatically controlled (hallway or lobby). Area arming can be conditional on other areas (master or associate). Any area can be configured for perimeter and interior arming, not requiring a separate area for this function.

### Two Man Rule

Two Man Rule provides added security by requiring:

- Two people present at opening
- Two unique passcodes on the same keypad to disarm an area

Without the second passcode, the system denies entry.

### Early Ambush

Early Ambush requires two passcode entries on the same keypad. Enter the same passcode twice or have two unique passcodes, depending on the configuration. The first entry disarms the area and the second entry stops a timer programmed to send a duress event. If the second entry does not occur within the programmed time, the system generates a duress event. Early Ambush allows users to inspect the premises and use the system to confirm that the area is safe to enter, providing added security.

### Easy Exit Control

The D7412GV3 Control Panel changes from one armed state to another armed state without disarming. For example, if you change the state from Master Arm to Perimeter Arm, the control panel complies and reports the change. Easy Exit Control reduces the number of keystrokes, simplifying system operation.

### Programmable Passcode-controlled Menu List

The system prompts users to enter a passcode prior to viewing the keypad menu. The keypad display shows the user the menu options allowed according to the user's authority level. Passcode-controlled menus provide users only with the options and information pertinent to them, simplifying system operation.

### Passcode Follows Scope

Use Passcode Follows Scope to restrict passcode arming and disarming to the keypad's immediate local area, even if the keypad can report events from other areas. Passcode Follows Scope simplifies the arming and disarming procedure without limiting any other keypad capabilities.

### Invisible Walk Test

A menu item allows the user to test invisible 24-hour points within the scope of the keypad without sending a report to the central station.

### Door-Activated Custom Function

A custom function activates when user credentials are presented to a D9210B door controller's reader. The custom function behaves as though the user performed a function at the keypad associated with the door controller.

### Passcodes

User passcodes contain three to six digits. Assign each user one of 14 customized authority levels in each area. Restrict passcodes to operate only during certain times.

The Two Man Rule and Early Ambush options require two passcodes, providing additional security in financial establishments such as banks.

### Communications

The D7412GV3 Control Panel prioritizes and sends reports in Contact ID or Modem IIIa[2] communications formats to four route groups. Each group has a programmable primary and backup destination.

The D7412GV3 provides flexible communications for most central stations with reporting capabilities such as:

- Individual point numbers
- Opening or closing reports by user and area number
- Remote programming attempts
- Diagnostic reports

The D7412GV3 uses the DX4020 Ethernet Network Interface Module and/or the ITS-DX4020-G GPRS/GSM Communicator to communicate with the Conettix D6600 and D6100i Communications Receiver/Gateways. Using Conettix IP communication offers a secure path that includes anti-replay/anti-substitution features and provides enhanced security with encryption. Both the DX4020 and ITS-DX4020-G can be used for remote programming.

### Security and Fire Detection

The D7412GV3 Control Panel provides eight on-board points, and up to 67 additional off-board points (depending on model and expansion interfaces). You can program individual points to monitor all types of burglar alarms, fire alarms, and supervision devices.

### Commercial Wireless

The Commercial Wireless platform, powered by Inovonics wireless mesh network technology, ensures superior range, reliability, and scalability for commercial applications. Using a wide range of transmitters and repeaters, this proven technology provides flexibility and performance to meet the most stringent requirements. This exclusive protocol is available only on Commercial Wireless products.

The Commercial Wireless platform sends redundant information on several multi-frequency channels within the FCC Part 15 900 MHz band, providing superior range and reliability. In comparison, systems that use a single frequency technology can only send information on one narrow band channel. Any interference within the band can cause missed signals. With wireless registration, it is easy to add this technology to any application.

### Event Log

The event log stores up to 1,000 local and transmitted events. The event log includes time, date, event, area, point, and user number. View the event log from a keypad or use RPS to remotely retrieve event information. RPS operators can retrieve events periodically using one phone call, rather than receiving several calls each day. When the event log reaches a programmed threshold of stored events, it can send an optional report to a receiver.

### Access Control

The D7412GV3 provides custom door strike, point shunt and auto disarming response by area. There are 14 panel-wide access levels with both manual and scheduled control.

Store, view, or print access events such as:

- Access granted
- No entry
- Request-to-enter
- Request-to-exit

### Scheduled Events (Skeds)

The internal clock and calendar start individually scheduled events (skeds). Skeds perform functions such as arm or disarm, relay control, or point bypassing. The D7412GV3 Control Panel offers:

- 40 scheduled events with up to 25 different functions
- Eight opening windows and eight closing windows
- Eight user windows
- Day-of-week, date-of-month, or holiday only schedules
- Four holiday schedules of 366 days each (leap year)

### Fire Test

When a user activates Fire Test Mode, the control panel suppresses all reports to the central station. The keypad and annunciator show all testing data. An automatic sensor reset feature saves time; you do not need to reset the sensors manually. At the end of test, the keypad shows the number of untested points.

### Programming, Diagnostics and Controls

Installers can do limited programming on-site with a keypad (critical parameters; such as, .Account IDs, Central Station and RPS IP addresses and phone numbers, reporting formats, and such).They can also do full programming on-site or remotely (attended or unattended) with RPS. A programmable system passcode prevents unauthorized remote programming.

When resetting alarms or arming or disarming a system, the user is identified by name and number.

### ROM Updates

An on-site flash update key provides for easy feature enhancements without replacing ROM chips.

## Certifications and Approvals

| Region | Certification | |
|--------|---------------|---|
| USA | UL | AMCX: Central Station Alarm Units (ANSI/UL 1610 and 1635); AMTB: Control Panels, SIA False Alarm Reduction (UL 864 and ANSI/SIA CP-01-2000); AOTX: Local Alarm Units (ANSI/UL 609 and ANSI/UL 464); APAW: Police Station Alarm Units (ANSI/UL 365 and ANSI/UL 464); APOU: Proprietary Alarm Units (ANSI/UL 1076); NBSX: Household Burglar Alarm System Units (ANSI/UL 1023); UOJZ: Control Units, System (ANSI/UL 864); UTOU Control Units and Accessories, Household System Type (ANSI/UL 985) |
| | FM | |
| | CSFM | 7165-1615:0238  FIRE ALARM CONTROL UNIT (COMMERCIAL) |
| | | 7167-1615:0239  CONTROL UNIT (HOUSEHOLD) |
| | FDNY-CoA | 6059 |
| | FCC | Designed to comply with Part 15 |

## Installation/Configuration Notes

### Compatible Products

| Keypads | D1260 Series Keypads (D1260, D1260W, D1260R, D1260BLK, D1260B) |
|---------|----------------------------------------------------------------|
| | D720 Series Keypads (D720, D720W, D720R, D720B) |
| | D1255 Series Keypads (D1255, D1255W, D1255B, D1255RB) |
| | D1256RB Fire Keypads |
| | D1257RB Remote Fire Alarm Annunciators |
| | D1265 Touch Screen Keypad |
| | D279A Independent Zone Control |

**Detectors**

D278S Four-wire Addressable Detector Base, 12 VDC

D285/TH Photoelectric Smoke Detector Heads

D298S Addressable Detector Base, 24 VDC

D7050 Series Addressable Photoelectric Smoke and Smoke Heat Detector Heads

F220-B6PM/S Addressable Detector Bases with POPITs

MX775i Addressable PIR Detector

MX794i Long Range Multiplex PIR Detector

MX934i Addressable PIR Detector

MX938i Addressable PIR Detector

ZX776Z PIR Detector

ZX794Z Long Range PIR Detector

ZX835 TriTech Microwave/PIR Detector

ZX935Z PIR Detector

ZX938Z PIR Detector

ZX970 PIR/Microwave Detector

Bosch conventional detectors, including Blue Line, seismic, PIR, TriTech PIR Microwave, photoelectric, heat, and smoke.

**Enclosures**

D8103 Universal Enclosure

D8108A Attack-resistant Enclosure

D8109 Fire Enclosure

**Magnetic Contacts**

Bosch magnetic contacts include recessed, terminal connection, miniature, overhead door, and surface mount.

**Modules**

Conettix ITS-DX4020-G GPRS/GSM Integrated Communicator

Conettix DX4020 Network Interface Module

Conettix DX4010V2 USB/Serial Interface Module

Conettix C900V2 Dialer Capture Module

D113 Battery Lead Supervision Module

D125B Dual Class B Initiating Module

D127 Reversing Relay Module

D129 Class A Initiating Module

D130 Auxiliary Relay Module

D185 Reverse Polarity Signaling Module

D192G Notification Appliance Circuit Module

D928 Phone Line Switcher

D5060 MUX Programmer

D8125 POPEX Point Expander

D8128D OctoPOPIT Eight Point Expander

D8125MUX Point Expander

D8125INV Wireless Interface Module

D8129 Octo-relay Module

D8130 Door Release Module

D9127 Series POPIT Modules

D9131A Parallel Printer Interface Module

D9210BLC Access Control Interface Module

DS7432 Eight-input Remote Module

DS7457i Series Single Zone Multiplex Input Modules

DS7460i Two-input Module

DS7461i Single-input Multiplex Module

DS7465i Input and Output Module

ICP-SDI-9114 SDI Splitter

**Programming**

RPS or RPS-LITE Remote Programming Software

**Readers**

ARD-R10 iCLASS Mullion Reader

ARD-R40 iCLASS Switchplate Reader

ARD-RK40-09 iCLASS PIN Reader

ARD-VSMART iCLASS Reader

D8223 Prox Pro Reader

D8224 Mullion Reader

D8224-SP Switch Plate Reader

D8225 Mini Mullion Reader

D8301W Low-profile Proximity Reader

**Commercial Wireless Products**

ISW-D8125CW Commercial Wireless Interface

ISW-EN7280 Serial Receiver

ISW-EN4200 Serial Receiver

ISW-EN4204R LED Receiver

ISW-EN4216R LCD Receiver

ISW-EN4016SK Survey Receiver

ISW-EN5040-T High-power Repeater

ISW-EN1210 Universal Transmitter (Single-input)

ISW-EN1210EOL Universal Transmitter with EOL Resistor

ISW-EN1210SK Survey Transmitter

ISW-EN1210W Door-Window Transmitter with Reed Switch

ISW-EN1215EOL Universal Transmitter with Wall Tamper and EOL Resistor

ISW-EN1215WEOL Door-Window Transmitter with Wall Tamper, Reed Switch, and EOL Resistor

ISW-EN1223D Water-resistant Pendant Transmitter (Double-button)

ISW-EN1223S Water-resistant Pendant Transmitter (Single-button)

ISW-EN1223SK Survey Pendant Transmitter

ISW-EN1233D Necklace Pendant Transmitter (Double-button)

ISW-EN1233S Necklace Pendant Transmitter (Single-button)

ISW-EN1235D Beltclip Pendant Transmitter (Double-button)

ISW-EN1235S Beltclip Pendant Transmitter (Single-button)

ISW-EN1235DF Fixed-location Transmitter (Double-button)

ISW-EN1235SF Fixed-location Transmitter (Double-button)

ISW-EN1242 Smoke Detector-Transmitter

ISW-EN1247 Glass-break Sensor Transmitter

ISW-EN1249 Billtrap Transmitter

ISW-EN1260 PIR Motion Sensor Transmitter (Commercial and High-end Domestic Applications)

ISW-EN1261HT PIR Motion Sensor Transmitter (High-traffic Areas)

ISW-EN1262 PIR Motion Sensor Transmitter (Residential and Low-traffic Commercial Applications)

ISW-EN1265 PIR Motion Sensor Transmitter (Ceiling-mount Applications)

## Parts Included

The D7412GV3 includes the following parts:

| Quant. | Component |
|---|---|
| 1 | D7412GV3 Board |
| 1 | Mounting Skirt |
| 1 | Faceplate with D7412GV3 Label |
| 1 | Literature pack<br>• Installation Instructions<br>• Owners Manual<br>• Release Notes |
| 1 | Literature CD containing all product literature |

The available kits come with the parts indicated in the following table:

| Components | Kits | | | |
|---|---|---|---|---|
| | -A | -B | -C | -D |
| D7412GV3 Board | 1 | 1 | 1 | 1 |
| D101F Lock and Key Set | | | 1 | 1 |
| D122 Dual Battery Harness | | 1 | | |
| D161 Dual Modular Phone Cord | | 2 | | |
| D928 dual Phone Line Switcher | | 1 | | |
| D1640 Transformer | 1 | 1 | 1 | 1 |
| D6103 Enclosure | | | | 1 |
| D8103 Enclosure | | | 1 | |
| D8108A Attack-resistant Enclosure | 1 | | | |
| D8109 Firwe Endosure | | 1 | | |

## Technical Specifications

### Communications

| | |
|---|---|
| SDI Bus A (+): | 9 VDC<br>4572 m (15,000 ft) |
| SDI Bus B (-): | 9 VDC<br>4572 m (15,000 ft) |
| Telephone Connection: | • One telephone line<br>• D928 Dual Phone Line module required for two telephone lines |

### Electrical

| | |
|---|---|
| Current Draw (Maximum): | 300 mA |
| Output (Alarm): | 2 A at 12 VDC |
| Output (Auxiliary, Continuous Power, and Switched Auxiliary combined): | 1.4 A at 12 VDC nominal |
| Voltage (Operating): | 12 VDC nominal |
| Voltage (AC): | 16.5 VAC 40 VA plug-in transformer (D1640) |

### Environmental

| | |
|---|---|
| Relative Humidity: | 5% to 93% at +30°C (+86°F), non-condensing |
| Temperature (Operating): | 0°C to +50°C (+32°F to +122°F) |

### Number of...

| | |
|---|---|
| Areas: | 8 |
| Card Readers (Doors): | 2 |
| Credentials (Tokens): | 396 |
| Custom Functions: | 4 |
| Events: | Store up to 1,000 |
| Parallel Printers: | 1 |
| Passcode Users: | 99, plus 1 service passcode |
| Points: | 75 (8 on-board, upto 67 off-board) |
| Programmable Relay Outputs: | 67 |
| RF Points: | 67 |
| SKEDs: | 40 |

### 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.

Inovonics is a trademark of Inovonics Wireless Corporaton.

## Ordering Information

### D7412GV3 Control Panel
Includes one printed circuit board (PCB) with mounting skirt and faceplate with label, and a literature pack and CD.

**D7412GV3**

### D7412GV3-A Attack-resistant Package
Contains one PCB, one transformer, and one attack-resistant enclosure.

**D7412GV3-A**

### D7412GV3-B Fire/Burglar Package
Contains one PCB, one dual battery harness, two telephone cords, one telephone line switcher, one transformer, and one fire enclosure.

**D7412GV3-B**

### D7412GV3-C Standard Burglar Package
Contains one PCB, one lock and key set, one transformer, and one universal enclosure.

**D7412GV3-C**

### D7412GV3-D Burglar Package
Contains one PCB, one lock and key set, one transformer, and one D6103 Enclosure.

**D7412GV3-D**

### Accessories

### ICP-SDI-9114 SDI Splitter
Provides the ability to set up two independent SDI buses from a single SDI connection on the control panel.

**ICP-SDI-9114**

### D928 Dual Phone Line Switcher
Allows the control panel to operate over and supervise two separate phone lines. Only one D162 phone cord is supplied. Two additional D161 or D162 phone cords are required.

**D928**

### D110 Tamper Switch
Screw-on tamper switch that fits all enclosures. Shipped in packages of two.

**D110**

### ICP-EZTS Dual Tamper Switch
Combination tamper switch with a wire loop for additional tamper outputs.

**ICP-EZTS**

### D101 Lock and Key Set
Standard lock set with one key supplied. Uses the D102 (#1358) replacement key.

**D101**

### D122 Dual Battery Harness
Harness with circuit breaker. Connects two batteries to a compatible control panel.

**D122**

### D122L Dual Battery Harness with Long Leads
Color-coded harness with circuit breaker and leads measuring 89 cm (35 in.). Connects 12 V batteries to compatible control panels.

**D122L**

### D126 Standby Battery (12 V, 7 Ah)
Sealed lead-acid standby and auxiliary rechargeable power supply.

**D126**

## Ordering Information

### D1218 Battery (12 V, 18 Ah)
A 12 V sealed lead-acid battery for standby and auxiliary power with two bolt-fastened terminals. Includes hardware for attaching battery leads or spade connectors

**D1218**

### D1224 Battery (12 V, 26-28 Ah)
A 12 V sealed lead-acid battery for standby and auxiliary power with two bolt-fastened terminals. Includes hardware for attaching battery leads or spade connectors.

**D1224**

### D137 Mounting Bracket
Used to mount accessory modules in D8103, D8108A, and D8109 enclosures.

**D137**

### D138 Mounting Bracket, Right Angle
Used to mount accessory modules in D8103, D8108A, and D8109 enclosures.

**D138**

### D1640 Transformer
System transformer rated at 16.5 VAC, 40 VA.

**D1640**

### D8004 Transformer Enclosure
For applications such as fire alarm that might require a transformer enclosure.

**D8004**

### D8103 Enclosure
Grey steel enclosure measuring 41 cm x 41 cm x 9 cm (16 in. x 16 in. x 3.5 in.).

**D8103**

### D8108A Attack Resistant Enclosure
Grey steel enclosure measuring 41 cm x 41 cm x 9 cm (16 in. x 16 in. x 3.5 in.). UL Listed. Includes lock and key set. Requires the D2402 Mounting Plate.

**D8108A**

### D8109 Fire Enclosure
Red steel enclosure measuring 40.6 cm x 40.6 cm x 8.9 cm (16 in. x 16 in. x 3.5 in). UL Listed. Includes a lock and key set.

**D8109**

### D9002-5 Mounting Skirt
Mounts inside D8103, D8108A, and D8109 enclosures. Can accept up to six standard 7.62 cm x 12.7 cm (3 in. x 5 in.) cards.

**D9002-5**

### Software Options

### RPS Kit (USB)
Account management and control panel-programming software with USB connection.

**D5500C-USB**

NO EXCUSES!

# FDB

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.

## 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.

## 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

Business Card Holder

Canned Smoke

CD Jewel Case

NEMA

NFPA

Made In U.S.A.

ISO 9001 REGISTERED COMPANY

ADA

No Excuses, Just Solutions!
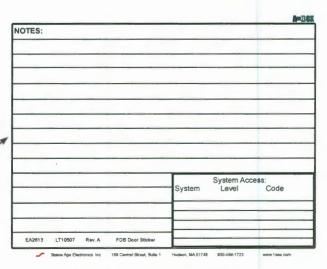
# SPACE AGE
## ELECTRONICS, INC.

## Specifications:

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

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

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





Notes Sticker inside FDB Door

## Ordering Information:
**Part #**        **Description**

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

# 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 | | | | | X | X | | | A | |
| Smoke detectors common area | X | X | X | | X | | | | | X | X | | | A | |
| Smoke detectors elevator lobbies | X | X | X | | X | | X | | | X | X | | | A | |
| Smoke Detectors elevator shaft/machine room | X | X | X | | X | X | X | | | X | X | | | A | |
| Duct mounted Smoke Detectors | | X | X | X | X | | | | | | | | | S | X |
| Heat Detectors common area | X | X | X | | X | | | | | X | X | | | A | |
| Heat Detectors Elevator shaft/machine room | X | X | X | | X | X | | X | | X | X | | | A | |
| Sprinkler flow or pressure switches | X | X | X | | X | | | | | X | X | | | A | |
| Sprinkler Tamper, low temp, or low air | | X | X | | X | | | | | | | | | S | |
| Secondary fire panel such as kitchen hood | X | X | X | | X | | | | | X | X | | | A | |
| FACP/annunciator silence button | | X | X | | X | | | | X | | | | | L | |
| FACP/annunciator acknowledge button | | X | X | | X | | | | | | | X | | | |
| FACP/annunciator reset button | | X | X | | X | | | | | | | | X | L | |
| Removal of any device | | X | X | | X | | | | | | | | | T | |
| Ground fault | | X | X | | X | | | | | | | | | T | |
| System wiring "open" | | X | X | | X | | | | | | | | | T | |
| AC Power loss | | X | X | | X | | | | | | | | | T | |
| Secondary power loss | | X | X | | X | | | | | | | | | T | |
| Telephone line loss | | X | X | | X | | | | | | | | | T | |

Fire Alarm sequence of operations

**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 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

| | |
|---|---|
| Listings and Approvals: | UL UNIU: Boxes, Non-Coded (UL38) |
| | CSFM: 7150-1615: 122 |
| Complies with: | Americans with Disabilities Act (ADA 4.28.3) |
| | National Fire Protection Association (NFPA 72) |

## Installation/Configuration Notes

### Compatibility Information

The FMM-7045 Series Multiplex Manual Stations are compatible with 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 ) 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 |
| FMM-7045-D Double-Action Manual Station | FMM-7045-D |
| **Hardware Accessories** | |
| D102 Replacement Key | D102 |
| FMM-100GR Scored Acrylic Breakrods | FMM-100GR |

# SYSTEM SENSOR®

# Selectable Output Horns, Strobes, and Horn/Strobes

*SpectrAlert® Advance selectable-output horns, strobes, and horn/strobes are rich with features guaranteed to cut installation times and maximize profits.*

SPECTR**Alert**®
**A D V A N C E**
from System Sensor

**The SpectrAlert Advance series** of notification appliances is designed to simplify installations, with features such as plug in designs, instant feedback messages to ensure correct installation of individual devices, and 11 field-selectable candela settings for wall and ceiling strobes and horn/strobes.

When installing Advance products, first attach a universal mounting plate to a four-inch square, four-inch octagon or double-gang junction box. The two-wire mounting plate attaches to a single-gang junction box.

Next, connect the notification appliance circuit wiring to the SEMS terminals on the mounting plate.

Finally, attach the horn, strobe or horn/strobe to the mounting plate by inserting the product's tabs in the mounting plate's grooves. The device will rotate into position, locking the product's pins into the mounting plate's terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

The SpectrAlert Advance series includes outdoor notification appliances. Outdoor strobes and horn/strobes (two wire and four wire) are available for wall or ceiling. Outdoor horns are available for wall only. All System Sensor outdoor products are rated between minus 40 degrees Fahrenheit and 151 degrees Fahrenheit in wet or dry applications.

## Features

- Electrically compatible with existing SpectrAlert products
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- Plug-in design
- Field selectable candela settings on wall and ceiling units: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185
- Same mounting plate for wall- and ceiling-mount units
- Shorting spring on mounting plate for continuity check before installation
- Tamper resistant construction
- Outdoor wall and ceiling products rated from −40°F to 151°F
- Design allows minimal intrusion into the back box
- Horn rated at 88+ dbA at 16 volts
- Rotary switch for horn tone and three volume selections
- Outdoor products UL listed to UL 1638 (strobe) and UL 464 (horn) outdoor requirements
- Outdoor products rainproof per UL 50 (NEMA 3R)
- Compatible with MDL sync module

## Agency Listings

SIGNALING

(UL) LISTED
S4011
S5512
S3593

F M APPROVED
3023572

MEA approved
MEA452-05-E

7125-1658:186 (indoor strobes)
7300-1658:187 (outdoor strobes)
7125-1658:188 (horn/strobes, chime/strobes)
7135-1658:189 (horns, chimes)

# SpectrAlert Advance Specifications

## Architect/Engineer Specifications

### General

SpectrAlert Advance horns, strobes and horn/strobes shall mount to a standard $4 \times 4 \times 1\frac{1}{2}$-inch back box, 4-inch octagon back box or double-gang back box. Two-wire products shall also mount to a single-gang $2 \times 4 \times 1\frac{7}{8}$-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between nine and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32 and 120 degrees Fahrenheit from a regulated DC, or full-wave rectified, unfiltered power supply. Strobes and horn/strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.

### Strobe

The strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and shall be approved for fire protective service. The strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system.

### Horn/Strobe Combination

The horn/strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and UL 464 and shall be approved for fire protective service. The horn/strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The horn shall have three audibility options and an option to switch between a temporal three-pattern and a non-temporal (continuous) pattern. These options are set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn on horn/strobe models shall operate on a coded or non-coded power supply.

### Outdoor Products

SpectrAlert Advance outdoor horns, strobes and horn/strobes shall be listed for outdoor use by UL and shall operate between minus 40 degrees and 151 degrees Fahrenheit. The products shall be listed for use with a System Sensor outdoor/weatherproof back box with half inch and three-fourths inch conduit entries.

### Synchronization Module

The module shall be a System Sensor Sync•Circuit model MDL listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1Hz and horns at temporal three. Also, while operating the strobes, the module shall silence the horns on horn/strobe models over a single pair of wires. The module shall mount to a $4^{11}/_{16} \times 4^{11}/_{16} \times 2\frac{1}{8}$-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

## Physical/Electrical Specifications

| | |
|---|---|
| **Standard Operating Temperature** | 32°F to 120°F (0°C to 49°C) |
| **K Series Operating Temperature** | −40°F to 151°F (−40°C to 66°C) |
| **Humidity Range** | 10 to 93% non-condensing (indoor products) |
| **Strobe Flash Rate** | 1 flash per second |
| **Nominal Voltage** | Regulated 12DC/FWR or regulated 24DC/FWR[1] |
| **Operating Voltage Range[2]** | 8 to 17.5 V (12V nominal) or 16 to 33 V (24 nominal) |
| **Input terminal wire gauge** | 12 to 18 AWG |
| **Ceiling mount dimensions (including lens)** | 6.8″ diameter × 2.5″ high (173 mm diameter × 64 mm high) |
| **Wall mount dimensions (including lens)** | 5.6″L × 4.7″W × 2.5″D (142 mm L × 119 mm W × 64 mm D) |
| **Horn dimensions** | 5.6″L × 4.7″W × 1.3″D (142 mm L × 119 mm W × 33 mm D) |
| **Wall-mount back box skirt dimensions (BBS-2, BBSW-2)** | 5.9″L × 5.0″W × 2.2″D (151 mm L × 128 mm W × 56 mm D) |
| **Ceiling-mount back box skirt dimensions (BBSC-2, BBSCW-2)** | 7.1″ diameter × 2.25″ high (180 mm diameter × 57 mm high) |
| **Wall-mount weatherproof back box dimensions (SA-WBB)** | 5.7″L × 5.1″W × 2.0″D (145 mm L × 130 mm W × 51 mm D) |
| **Ceiling-mount weatherproof back box dimensions (SA-WBBC)** | 7.1″ diameter × 2.0″ high (180 mm diameter × 51 mm high) |

**Notes:**

1. Full Wave Rectified (FWR) voltage is a non-regulated, time varying power source that is used on some power supply and panel outputs.

2. P, S, PC, and SC products will operate at 12 V nominal only for 15 and 15/75 cd.

## UL Current Draw Data

### UL Max. Strobe Current Draw (mA RMS)

| | Candela | 8–17.5 Volts | | 16–33 Volts | |
|---|---|---|---|---|---|
| | | DC | FWR | DC | FWR |
| **Standard Candela Range** | 15* | 123 | 128 | 66 | 71 |
| | 15/75* | 142 | 148 | 77 | 81 |
| | 30* | NA | NA | 94 | 96 |
| | 75* | NA | NA | 158 | 153 |
| | 95* | NA | NA | 181 | 176 |
| | 110 | NA | NA | 202 | 195 |
| | 115 | NA | NA | 210 | 205 |
| **High Candela Range** | 135 | NA | NA | 228 | 207 |
| | 150 | NA | NA | 246 | 220 |
| | 177 | NA | NA | 281 | 251 |
| | 185 | NA | NA | 286 | 258 |

### UL Max. Horn Current Draw (mA RMS)

| Sound Pattern | dB | 8–17.5 Volts | | 16–33 Volts | |
|---|---|---|---|---|---|
| | | DC | FWR | DC | FWR |
| Temporal | High | 57 | 55 | 69 | 75 |
| Temporal | Medium | 44 | 49 | 58 | 69 |
| Temporal | Low | 38 | 44 | 44 | 48 |
| Non-temporal | High | 57 | 56 | 69 | 75 |
| Non-temporal | Medium | 42 | 50 | 60 | 69 |
| Non-temporal | Low | 41 | 44 | 50 | 50 |
| Coded | High | 57 | 55 | 69 | 75 |
| Coded | Medium | 44 | 51 | 56 | 69 |
| Coded | Low | 40 | 46 | 52 | 50 |

### UL Max. Current Draw (mA RMS), 2-wire Horn/Strobe, Standard Candela Range (15–115 cd)

| DC Input | 8–17.5 Volts | | 16–33 Volts | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 15 | 15/75 | 15 | 15/75 | 30 | 75 | 95 | 110 | 115 |
| Temporal High | 137 | 147 | 79 | 90 | 107 | 176 | 194 | 212 | 218 |
| Temporal Medium | 132 | 144 | 69 | 80 | 97 | 157 | 182 | 201 | 210 |
| Temporal Low | 132 | 143 | 66 | 77 | 93 | 154 | 179 | 198 | 207 |
| Non-temporal High | 141 | 152 | 91 | 100 | 116 | 176 | 201 | 221 | 229 |
| Non-temporal Medium | 133 | 145 | 75 | 85 | 102 | 163 | 187 | 207 | 216 |
| Non-temporal Low | 131 | 144 | 68 | 79 | 96 | 156 | 182 | 201 | 210 |
| **FWR Input** | | | | | | | | | |
| Temporal High | 136 | 155 | 88 | 97 | 112 | 168 | 190 | 210 | 218 |
| Temporal Medium | 129 | 152 | 78 | 88 | 103 | 160 | 184 | 202 | 206 |
| Temporal Low | 129 | 151 | 76 | 86 | 101 | 160 | 184 | 194 | 201 |
| Non-temporal High | 142 | 161 | 103 | 112 | 126 | 181 | 203 | 221 | 229 |
| Non-temporal Medium | 134 | 155 | 85 | 95 | 110 | 166 | 189 | 208 | 216 |
| Non-temporal Low | 132 | 154 | 80 | 90 | 105 | 161 | 184 | 202 | 211 |

### UL Max. Current Draw (mA RMS), 2-wire Horn/Strobe, High Candela Range (135–185 cd)

| DC Input | 16–33 Volts | | | | FWR Input | 16–33 Volts | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 135 | 150 | 177 | 185 | | 135 | 150 | 177 | 185 |
| Temporal High | 245 | 259 | 290 | 297 | Temporal High | 215 | 231 | 258 | 265 |
| Temporal Medium | 235 | 253 | 288 | 297 | Temporal Medium | 209 | 224 | 250 | 258 |
| Temporal Low | 232 | 251 | 282 | 292 | Temporal Low | 207 | 221 | 248 | 256 |
| Non-temporal High | 255 | 270 | 303 | 309 | Non-temporal High | 233 | 248 | 275 | 281 |
| Non-temporal Medium | 242 | 259 | 293 | 299 | Non-temporal Medium | 219 | 232 | 262 | 267 |
| Non-temporal Low | 238 | 254 | 291 | 295 | Non-temporal Low | 214 | 229 | 256 | 262 |

## Candela Derating

For K series products used at low temperatures, listed candela ratings must be reduced in accordance with this table.

### Strobe Output (cd)

| Listed Candela | Candela rating at –40°F |
|---|---|
| 15 | |
| 15/75 | Do not use below 32°F |
| 30 | |
| 75 | 44 |
| 95 | 70 |
| 110 | 110 |
| 115 | 115 |
| 135 | 135 |
| 150 | 150 |
| 177 | 177 |
| 185 | 185 |
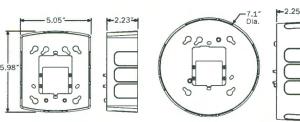
## Horn Tones and Sound Output Data

### Horn and Horn/Strobe Output (dBA)

| Switch Position | Sound Pattern | dB | 8–17.5 Volts | | 16–33 Volts | | 24 Volt Nominal | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Reverberant | | Anechoic | |
| | | | DC | FWR | DC | FWR | DC | FWR | DC | FWR |
| 1 | Temporal | High | 78 | 78 | 84 | 84 | 88 | 88 | 99 | 98 |
| 2 | Temporal | Medium | 74 | 74 | 80 | 80 | 86 | 86 | 96 | 96 |
| 3 | Temporal | Low | 71 | 73 | 76 | 76 | 83 | 80 | 94 | 89 |
| 4 | Non-temporal | High | 82 | 82 | 88 | 88 | 93 | 92 | 100 | 100 |
| 5 | Non-temporal | Medium | 78 | 78 | 85 | 85 | 90 | 90 | 98 | 98 |
| 6 | Non-temporal | Low | 75 | 75 | 81 | 81 | 88 | 84 | 96 | 92 |
| 7[†] | Coded | High | 82 | 82 | 88 | 88 | 93 | 92 | 101 | 101 |
| 8[†] | Coded | Medium | 78 | 78 | 85 | 85 | 90 | 90 | 97 | 98 |
| 9[†] | Coded | Low | 75 | 75 | 81 | 81 | 88 | 85 | 96 | 92 |

[†]Settings 7, 8, and 9 are not available on 2-wire horn/strobe.

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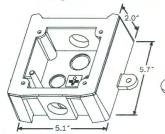
## SpectrAlert Advance Dimensions

**Wall-mount horn/strobes**

**Ceiling-mount horn/strobes**
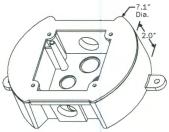
**Wall back box skirt**

**Ceiling back box skirt**

**Wall weatherproof back box**

**Ceiling weatherproof back box**

## SpectrAlert Advance Ordering Information

| Model | Description |
|---|---|
| **Wall Horn/Strobes** | |
| P2R*† | 2-wire Horn/Strobe, Standard cd‡, Red |
| P2RH* | 2-wire Horn/Strobe, High cd, Red |
| P2RK* | 2-wire Horn/Strobe, Standard cd, Red, Outdoor |
| P2RHK* | 2-wire Horn/Strobe, High cd, Red, Outdoor |
| P2W* | 2-wire Horn/Strobe, Standard cd, White |
| P2WH* | 2-wire Horn/Strobe, High cd, White |
| P4R* | 4-wire Horn/Strobe, Standard cd, Red |
| P4RH* | 4-wire Horn/Strobe, High cd, Red |
| P4RK | 4-wire Horn/Strobe, Standard cd, Red, Outdoor |
| P4RHK | 4-wire Horn/Strobe, High cd, Red, Outdoor |
| P4W* | 4-wire Horn/Strobe, Standard cd, White |
| P4WH* | 4-wire Horn/Strobe, High cd, White |
| **Wall Strobes** | |
| SR*† | Strobe, Standard cd, Red |
| SRH*† | Strobe, High cd, Red |
| SRK | Strobe, Standard cd, Red, Outdoor |
| SRHK | Strobe, High cd, Red, Outdoor |
| SW* | Strobe, Standard cd, White |
| SWH* | Strobe, High cd, White |
| **Ceiling Horn/Strobes** | |
| PC2R* | 2-wire Horn/Strobe, Standard cd, Red |
| PC2RH* | 2-wire Horn/Strobe, High cd, Red |
| PC2RK | 2-wire Horn/Strobe, Standard cd, Red, Outdoor |
| PC2RHK | 2-wire Horn/Strobe, High cd, Red, Outdoor |

| Model | Description |
|---|---|
| **Ceiling Horn/Strobes (cont'd.)** | |
| PC2W*† | 2-wire Horn/Strobe, Standard cd, White |
| PC2WH*† | 2-wire Horn/Strobe, High cd, White |
| PC4R | 4-wire Horn/Strobe, Standard cd, Red |
| PC4RH | 4-wire Horn/Strobe, High cd, Red |
| PC4RK | 4-wire Horn/Strobe, Standard cd, Red, Outdoor |
| PC4RHK | 4-wire Horn/Strobe, High cd, Red, Outdoor |
| PC4W | 4-wire Horn/Strobe, Standard cd, White |
| PC4WH | 4-wire Horn/Strobe, High cd, White |
| **Ceiling Strobes** | |
| SCR* | Strobe, Standard cd, Red |
| SCRH* | Strobe, High cd, Red |
| SCRK | Strobe, Standard cd, Red, Outdoor |
| SCRHK | Strobe, High cd, Red, Outdoor |
| SCW*† | Strobe, Standard cd, White |
| SCWH*† | Strobe, High cd, White |
| **Horns** | |
| HR | Horn, Red |
| HRK | Horn, Red, Outdoor |
| HW | Horn, White |
| **Accessories** | |
| BBS-2 | Back Box Skirt, Wall, Red |
| BBSW-2 | Back Box Skirt, Wall, White |
| BBSC-2 | Back Box Skirt, Ceiling, Red |
| BBSCW-2 | Back Box Skirt, Ceiling, White |

**Notes:**

* Add "-P" to model number for plain housing (no "FIRE" marking on cover), e.g., P2R-P

† Add "-SP" to model number for "FUEGO" marking on cover, e.g., P2R-SP

‡ "Standard cd," refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings. "High cd," refers to strobes that include 135, 150, 177, and 185 candela settings.

All outdoor units ending in "K" include a weatherproof back box.