CITY OF PORTLAND

BUILDING PERMIT

This is to certify that
PROTECTION PROFESSIONALS
325 US Route One
FALMOUTH, ME 04105

Job ID: **2012-05-4116-FAFS**

For installation at
415 FOREST AVE
THE CHILDREN'S HOUSE
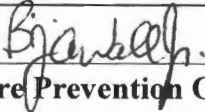
CBL: **111- C-005-001**

has permission to **install master box fire alarm for day care**
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 OCCUPIED.

Job ID: 2012-05-4116-FAFS
install master box fire alarm for day care

For installation at:
415 FOREST AVE
THE CHILDREN'S HOUSE

CBL: 111- C-005-001

Conditions of Approval:

Fire

The installation shall comply with the following:

> City of Portland Chapter 10, Fire Prevention and Protection;
>
> NFPA 1, *Fire Code* (2009 edition), as amended by City Code;
>
> NFPA 101, *Life Safety Code* (2009 edition), as amended by City Code;
>
> City of Portland Fire Department Rules and Regulations;
>
> NFPA 72, *National Fire Alarm and Signaling Code* (2010 edition), as amended by Fire Department Rules and Regulations; and
>
> NFPA 70, *National Electrical Code* (2011 edition) as amended by the State of Maine.

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

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

All smoke detectors and smoke alarms shall be photoelectric.

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.

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

Fire Alarm system shall be maintained. If system is to be off line over 4 hours a fire watch shall be in place. Dispatch notification required 874-8576.

A master box connection and drill switch is required. AES Zones shall be:

1. Not assigned
2. Not assigned
3. Pull stations and detectors
4. City Disconnect: Pull stations and detectors
5. Not assigned
6. Not assigned
7. Not assigned
8. AES tamper switch

Master Box Approval

Applicant: Protection Professionals

App Phone #: 207-775-5755

Building Name: The Children's House

Building Address: 415 Forest Ave

Occupancy: Day Care

Assembly OL>300, 20 unit apartment building, etc.

Emergency Contact: Magnifique Butera

Emergency phone #: 207-775-1112

Date of Application: 5/30/12

Billing Address: 415 Forest Ave
                 Portland, ME 04101

Comments:

Applicant completes red box and submits with Fire Alarm Permit

1

FIRE PREVENTION: ☑ Approved   ☐ Denied

_6_ / _4_ / _12_   _BjaWeeeJr._
Date   Fire Prevention Officer

Zone 1: Unassigned   Zone 2: Unassigned

Zone 3: Pulls and detectors   Zone 4: City disconnect – Pulls and Detectors

Zone 5: Unassigned   Zone 6: Unassigned

Zone 7: Unassigned   Zone 8: AES Tamper switch

Modify City Box response to alarm sounding in CAD: ☐ YES ☑ NO

2

FIRE ALARM: Box #: _____

ELECTRICAL DIVISION: ☐ Approved   ☐ Denied

Box Type: AES Radio Box / _____
             New   Other

3

Test Date: _____ / _____ / _____   In Service Date: _____ / _____ / _____   _____
                                                                            Fire Alarm Technician

AES / Circuit if applicable: _____

4

FIRE ALARM: Same Running Assignment As Box: _____

Notifications: ☐ All Stations ☐ Run Books ☐ Digitizer   ☐ Computer   ☐ Cad Box Test

☐ South Portland   ☐ _____   _____
                         Other   Dispatcher

5

BILLING: ☐ Entered   _____
                         Financial Officer

City of Portland, Maine - Building or Use Permit Application

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

Job No: **2012-05-4116-FAFS**	Date Applied: **5/30/2012**	CBL: **111- C-005-001**	
Location of Construction: **415 FOREST AVE**	Owner Name: **PORTLAND BAY PROPERTIES**	Owner Address: **415 FOREST AVE STE 3** **PORTLAND, ME 04101**	Phone:
Business Name:	Contractor Name: **Rich Brobst, Jr- Protection Professionals**	Contractor Address: **325 US FALMOUTH MAINE 04105**	Phone: **(207) 775-5755**
Lessee/Buyer's Name:	Phone:	Permit Type: **FIRE ALARM**	Zone: **B-2b**
Past Use: **Daycare under #09-1185**	Proposed Use: **Same: Daycare – to install fire alarm**	Cost of Work: **$6,000.00**	CEO District:

Fire Dept: _1_ Approved w/ conditions ___ Denied ___ N/A 6/5/12 Signature: Bjorubel (58)

Inspection:
Use Group:
Type:
Signature:

| Proposed Project Description:
Install Fire Alarm for Day Care | Pedestrian Activities District (P.A.D.) |

Permit Taken By: Lannie

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: 5/30/12	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.

B-2b

Installation address: **415 Forest Avenue**   CBL: **111-C-5**

Exact location: (within structure) _____

Type of occupancy(s) (NFPA & ICC): **Day Care of 20 children** (use under #09-1185)

Building owner: **Magnifique Butera**   Portland Bay Properties

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

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

Installing contractor: **Leach Electric**   Certificate of Fitness No: **M1001**

Contractor phone: **657-5556**   E-mail: _____

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
- [✓] Wiring diagram
- [✓] Annunciator details
- [✓] Input/ Output Matrix
- [✓] Equipment data sheets
- [✓] Electrical Permit Pulled (check alarm/com)

- [✓] Scope of Work
- [✓] 11 ½ x 17s
- [✓] pdf copy (may be e-mailed)
- [✓] Designer qualifications
- [✓] Battery/ voltage drop calcs

COST OF WORK: **$5,133.50**

PERMIT FEE: **80**
($10 PER $1,000 + $30 FOR THE FIRST $1,000)

RECEIVED
MAY 30 2012
Dept. of Building Inspections
City of Portland Maine

1/200

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 Hanson**   Date: **5-30-12**

Protection Professionals

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

Device List   No.   3964

List Date
5/16/2012

Bill To Name / Address	Job Site
The Children's House 415 Forest Avenue Portland, Maine	The Children's House 415 Forest Avenue Portland, Maine

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

Estimate No.

Item	Description	Qty To Order	Qty Ordered
FPD-7024	Fire alarm control panel, 4 zones expandable to 8 zones, expandable to 247 addressable points, 2 NACs at 4amp maximum	1	
FPC-7034	4 Zone Expander Module	1	
Bat 12-12	Battery	2	
IM-RJ31XSET	IM-RJ31XSET	2	
06-SSU00672	Fire Document box 12 inches wide X 13.1 inches high X 2.25 inches deep, CAT 30 keyed	1	
7788F	Wireless fire subscriber for City of Portland	1	
1640	16.5 Volt AC 40 VA Class 2 Transformer	1	
Bat 12-7	12V 7AH Batteries	1	
D8004	UL TRANSFORMER KIT	1	
Miscellaneou Materials	Master box bypass switch	1	
GI-TSW01S	Tamper Switch for master boxes	1	
500-648507FA	MANUAL PULL STATION DUAL ACTION KEY RESET CAST METAL	3	
D101	D101 Lock & Key Set	2	
BK-2WB	Smoke Detector w/ Base	4	
500-636161	ZH-MC-R Horn/strobe, red, wall mount, Hi or Lo volume, 15cd, 30cd, 75cd, or 110cd	1	
500-636169	ZR-MC-R Strobe only, red, wall mount, 15cd, 30cd, 75cd, or 110cd	3	
3221	3200 Series w/ Lift-Off Door Recess Mounted	1	
	State of Maine Sales Tax		

Ordered By: _____   Date: _____

Received By: _____   Date: _____

BOSCH

Invented for life

FPD-7024 Fire Alarm Control Panels

▸ **Four initiating zones (expandable to eight); up to 20 two-wire smoke detectors per zone**

▸ **Built-in DACT**

▸ **Two notification appliance circuits (NACs) on board with a shared internal regulated 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 FMR-7033 Liquid-crystal Display (LCD) Keypads, remote programming software (RPS), or DX4010V2 or DX4020**

The FPD-7024 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 FPD-7024 FACPs support four on-board initiating zones that can be expanded to eight using the FPC-7034. Each initiating zone supports two-wire and four-wire detectors configurable as Class A , Style D 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 FPD-7024 conventional system features by adding a D7039 Multiplex Expansion Module. Adding a D7039 Multiplex Expansion Module to the FPD-7024 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 19 to 59 and expands system users to 100.

Functions

Notification Appliance Circuits (NACs)

Two Class A, Style Z or Class B, Style Y NACs provide up to 4 A of regulated 24 VFWR power to operate horns, strobes, bells, and other notification appliances. Each NAC can be programmed to provide Temporal Code 3, California March, steady, pulsed, and synchronized output for either Wheelock or System Sensor notification appliances.

User Interface

A viewing port in the locked control panel enclosure door shows the system status light-emitting diodes (LEDs) and liquid-crystal display (LCD) 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 FMR-7033 LCD Keypads connected to the system.

Organized Event Display

Sorts alarm, trouble, and supervisory events into categories and allows scrolling through specific events.

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 FPD-7024 FACPs send reports to two telephone numbers (or IP addresses with a DX4020 Network Interface Module installed) with full single, double, and backup reporting. They communicate in BFSK, SIA, Contact ID, Modem IIIa[2], and 4/2 and 3/1 Tone Bursts.

Dirty Smoke Detector Monitoring

All on-board zones and FPC-7034 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 FPD-7024 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	UL	UL864, 9th edition
	FM	
	CSFM	7165-1615:227
	FCC	ESVAL04B7024
	FDNY-CoA	#6024

Installation/Configuration Notes

Compatible Products

The following products are compatible with the FPD-7024 FACP:

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 detector compatibility, refer to *FPD-7024 Smoke Detector Compatibility List Technogram* (P/N: F01U010790)	
Keypads and Annunciators	D7030X	Eight-point LED annunciator (eight red)
	D7030X-S2	Eight-point LED annunciator (two yellow, six red)

Category	Product ID	Product Description
	D7030X-S8	Eight-point LED annunciator (eight yellow)
	D7032	Eight-point LED annunciator expander (eight red)
	FMR-7033	LCD fire system keypad
	FMR-7036	LCD annunciator
Modules	D132B	Smoke detector reversing relay module
	D184A	Local energy kit
	D185	Reversing polarity module
	D275	EOL power supervision module
	FPC-7034	Four-point expander
	D7039	Multiplex expansion module
Option Bus Devices	D7035	Octal relay module
	D7035B	Octal relay module in box
	DX4010V2	USB/serial interface module
	DX4020	Network interface module
NAC Devices	Refer to *FPD-7024 Device Compatibility List Technogram* (P/N: F01U010791)	

The following additional products are compatible with the FPD-7024 Addressable FACPs:

Category	Product ID	Product Description
Detector Heads and Bases	D7050	Addressable Photoelectric Smoke Detector Head
	D7050TH	Addressable Photoelectric Smoke and Heat Detector Head
	D7050-B6	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	FPD-7024 board in a static-resistant bag
1	Enclosure (P/N: 30897)
1	Lock set with two #1358 (D102) keys (P/N: F01U009775)
1	Transformer (P/N: F01U008702)
6	2.21 kΩ end-of-line (EOL) resistors (P/N: 25899 or 4998113202)
1	Hardware pack
1	Literature pack

Note   For the FPD-7024 to be addressable, a D7039 Multiplex Expansion Module must be installed. The D7039 is purchased separately.

Technical Specifications

Electrical

Current (alarm):	380 mA
Current (standby):	200 mA
Power (primary):	120 VAC, 1.2 A maximum, 60 Hz or 240 VAC, 0.75 A maximum, 50 Hz

Environmental

Environment:	Indoor, dry
Relative Humidity:	Up to 95%, non-condensing
Temperature (operating):	+32°F to +120°F (0°C to +49°C)

Mechanical Properties

Color:	Red
Dimensions (HxWxD):	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)

Indicating Device Circuits (IDC)

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

Outputs

NAC:	24 VDC nominal, 4 A maximum
On-board Relays:	Three Form C contacts rated at 5 A, 28 VDC
Off-board Relays:	Up to two D7035 Octal Relay Modules with 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 are allowed per bus for a total of 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.

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 Cooper Wheelock, Inc.

System Sensor is a registered trademark of System Sensor, a brand of Honeywell International, Inc. in the United States and/or other countries.

Ordering Information

FPD-7024 FACP Four detector zones (expandable to eight); up to 20 two wire smoke detectors per zone	**FPD-7024**
FPD-7024-LC FACP without Enclosure and Transformer Four detector zones (expandable to eight); up to 20 two wire smoke detectors per zone	**FPD-7024-LC**
FPD-7024-LT FACP without Transformer Four detector zones (expandable to eight); up to 20 two wire smoke detectors per zone. **Available only in Latin America.**	**FPD-7024-LT**

BOSCH
Invented for life

FPC-7034 Four-Point Expander
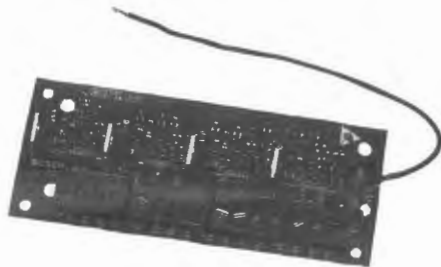
- ▶ **Adds four Class B (Style B) or two Class A (Style D) initiating circuits to the FPD-7024 FACP**
- ▶ **For use with normally-open (NO) or normally-closed (NC) alarm contacts**
- ▶ **Compatible with two-wire or four-wire smoke detectors**
- ▶ **Up to 20 two-wire smoke detectors per circuit**
- ▶ **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 *FPD-7024 Smoke Detector Compatibility List Technogram* (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 kΩ 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

▌█▌▐▛▀▌▌▐▌▐▌▞ FARADAY

Z Strobes, Horns, Horn/Strobes

Features

- UL listed. ULC, CSFM, and FM pending.

- ADA/NFPA compliant

- EZ Mount design, with separate base plate, provides ability to pre-wire the base and test the circuit wiring before the walls are covered

- The base plate is protected by a disposable cover and the appliances can quickly snap onto the base after the walls are painted.

- EZ Mount Universal Mounting Plate (ZBB) – uses single plate for ceiling and wall mount installations

- Wall Mount models feature field selectable candela settings of 15/30/75/110cd and 135/185cd

- Ceiling Mount models feature field selectable candela settings of 15/30/75/95cd and 115/177cd

- Strobes can be synchronized using the Siemens 5406B sync modules, MPC-6000 panel, MPC-7000 panel, or RSE-300 power supply with built-in sync protocol

- "Special Applications" listed with Siemens panels

- Strobes produce 1 flash per second

- Selectable Continuous Horn or Temporal (Code-3) Tones with selectable 90 or 95 dBA setting (ZH model)

Series ZH

Series ZR

ZR AND ZH Mounting

Description

The Siemens Series Z notification appliances feature an easy snap on base that is designed to simplify the installation and testing of horns, strobes, and horn/strobes. The separate Series Z snap on base can be pre-wired so circuit wiring can be fully tested before the appliance is installed and before the walls are covered. Once all surrounding work is complete, the appliance can be simply installed by snapping it on the base. Shorting contacts in the base, which provide continuity for circuit testing, are permanently opened when the appliance is installed so any subsequent removal of the appliance will indicate a trouble condition on that circuit at the control panel when circuit supervision is enabled. The same base is used for all Series Z horns, strobes and horn/strobes to provide consistent installation and easy replacement of appliances if required. A locking screw is also included for the appliance to provide extra secure installation.
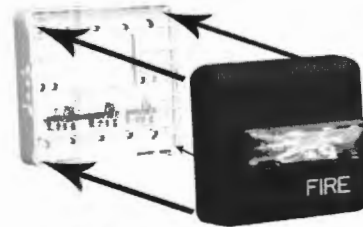
The Siemens Series Z appliances incorporate the same dependable circuitry and high efficiency optics that are used in Siemens ST strobes, NS horn/strobes and NH horns and have the same high performance ratings. The Series Z appliances are "Special Applications" listed with Siemens panels.

Engineering Specifications

General

Audible/visual notification appliances shall be listed for indoor use and shall meet the requirements of FCC Part 15 Class B. These appliances shall be listed under UL Standard 1971, (Standard for Safety Signaling Devices for Hearing Impaired) and UL Standard 464 (Fire Protective Signaling). The appliances shall use a universal backplate that shall allow mounting to a single-gang, double-gang, 4-inch square, 4" octal, or a 3-1/2" octal backbox. Two wire appliance wiring shall be capable of directly connecting to the mounting back plate. Continuity checking of the entire NAC circuit prior to attaching any audible/visual notification appliances shall be allowed. A dust cover shall fit and protect the mounting plate. The dust cover shall be easily removed when the appliance is installed over the backplate. Removal of an appliance shall result in a trouble condition by the Fire Alarm Control Panel (FACP).

Strobes

Strobe appliances shall produce a minimum flash rate of 60 flashes per minute (1 flash per second) over the Regulated Input Voltage Range and shall incorporate a

9674

Xenon flashtube enclosed in a rugged Lexan® lens. The strobes shall be available with two or four field selectable settings in one unit and shall be rated, per UL 1971, for up to 185 cd for wall mounting and 177 cd for ceiling mounting. The strobes shall operate over an extended temperature range of 32°F to 120°F (0°C to 49°C) and be listed for maximum humidity of 95% RH. Strobe inputs shall be polarized for compatibility with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP).

Audibles and Audible/Strobe Combinations

Horns and horn/strobes shall be listed for Indoor use under UL Standard 464. The horns shall be able to produce a continuous output or a temporal code-3 output that can be synchronized. The horns shall have at least 2 sound level settings of 90 and 95 dBA.

Synchronization Modules

When synchronization of strobes or temporal Code-3 audibles is required, the appliances shall be synchronized using the Siemens 5406B sync modules, MPC-6000 panels, MPC-7000 panels, or RSE-300 power suppies with built-in sync protocol. The strobes shall not drift out of synchronization at any time during operation. Au-

dibles and strobes shall be able to be synchronized on a 2-wire circuit with the capability to silence the audible if required. If the sync module or power supply fails to operate (i.e., contacts remain closed), the strobes shall revert to a non-synchronized flash rate. All notification appliances shall be listed for "Special Applications".

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Input Voltage Range".

- All candela ratings represent minimum effective strobe intensity based on UL Standard 1971.

- Series ZH Strobe products are listed under UL Standards 1971 and 464 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).

- Series ZH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).

Technical Information

For complete technical information, please consult the relevant installation sheets as well as the Siemens Compatibility Guide.

Ordering Information / Mounting Requirements / Approvals

Model Number	Order Code	Mounting Options#	Agency Approvals			
			UL	ULC	CSFM	FM
ZH-MC-R	500-636161	B, D, E, F	X	#	#	#
ZH-MC-W	500-636162	B, D, E, F	X	#	#	#
ZH-HMC-R	500-636163	B, D, E, F	X	#	#	#
ZH-HMC-W	500-636164	B, D, E, F	X	#	#	#
ZH-R	500-636159	B, D, E, F	X	#	#	#
ZH-W	500-636160	B, D, E, F	X	#	#	#
ZH-MC-CR	500-636165	B, D, E, F	X	#	#	#
ZH-MC-CW	500-636166	B, D, E, F	X	#	#	#
ZH-HMC-CR	500-636167	B, D, E, F	X	#	#	#
ZH-HMC-CW	500-636168	B, D, E, F	X	#	#	#
ZR-MC-R	500-636169	B, D, E, F	X	#	#	#
ZR-MC-W	500-636170	B, D, E, F	X	#	#	#
ZR-HMC-R	500-636171	B, D, E, F	X	#	#	#
ZR-HMC-W	500-636172	B, D, E, F	X	#	#	#
ZR-MC-CW	500-636174	B, D, E, F	X	#	#	#
ZR-MC-CR	500-636173	B, D, E, F	X	#	#	#
ZR-HMC-CR	500-636175	B, D, E, F	X	#	#	#
ZRS-HMC-CW	500-636176	B, D, E, F	X	#	#	#
ZBB-R	500-636193	Accessory - Includes base, dust cover, mounting screws and installation sheet				
ZBB-W	500-636194	Accessory - Includes base, dust cover, mounting screws and installation sheet				

X = listed/approved   # = pending   * = Refer to Data Sheet #9675 for mounting options.

WARNING: PLEASE READ THESE SPECIFICATIONS AND INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS AND WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

7744F/7788F ◢◢AES|IntelliNet

UL Listed

CORPORATION | For Alarm Monitoring

RF Subscriber Unit
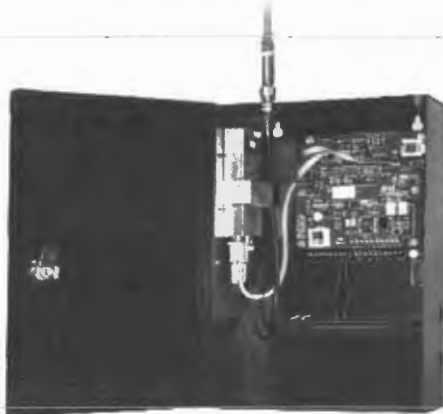### UL Fire, AA Burglary and NFPA-72 Compliant

UL Listed

UL Listed Central Station

Remote Station

864 Ed. 9, 827, 1610, 365, 681

CSFM

*NFPA
RF Section 8.6.3.5*

- **Options for Full Data for Fire and Burglary**

- **Available in 7744F & 7788F Zone Configurations**

- **Built-in Power Supply and Battery Charger**

- **Local Annunciation Options on Board**

Advanced Wireless Alarm Monitoring

The 7744F/7788F smart subscriber unit links an alarm panel to an alarm monitoring central station. This 2-way transceiver and repeater in one is housed in a full size locking steel cabinet for superior performance. The 7744F/7788F supports a wide range of inputs such as NO/NC/EOL and direct voltage. It automatically senses wire and antenna cuts, and monitors battery and AC power status. Advanced status reporting, self-diagnostics and a built-in power supply make the 7744F/7788F the first choice for all wireless alarm communication needs.

Full Data for Fire and Burglary

Use with the optional Firetap for full fire data or the IntelliTap for full fire and burglary data.

Available Configurations	Available Options
7744F – 4 reversing polarity inputs plus 4 programmable EOL inputs	FireTap 7770
	IntelliTap 7067
	NEMA 4 Enclosure
7788F – Programmable EOL inputs with 8 zones	High Gain Antenna
	Additional Back Up Battery
	Available in Burglary Beige or Fire Red

Wireless mesh networking is an innovative technology adopted by many industries with applications that need to communicate data over a large geographic area with a high level of reliability at a low total cost of ownership.

The advanced design and 2-way communications capability provides easy installation, expansion, and management when compared to alternative communication methods, both wired and wireless.

7744F/7788F
RF Subscriber Unit

Technical Specifications

Radio
Standard CSAA frequency ranges: 450–470 MHz and 130-174 MHz, VHF and UHF. Others available

Standard Output Power
2 watts (requires FCC license)

Power Input
16.5 VAC, 40VA UL listed
Class II transformer required

Voltage
12 VDC nominal

Current
175mA standby; 800mA transmit

Alarm Signal Inputs
- 4 individually programmable Zones: NO/NC/EOL, trouble restore
- RS-232
- Reversing voltage (7744F only) 12 or 24 VDC

Operating Temperature Range
0° to 50°C, 32° to 122°F

Storage Temperature Range
-10° to 60°C, 14° to 140°F

Relative Humidity Range
0-85% RHC non-condensing

Back up Battery
12V, 7.5 AHr

Low Battery Reporting
22.5-minute test cycle

AC Status
Reports to central station after approximately 60 minutes without AC power, reports power restored after approximately 60 minutes of restored power. programmable from 60 to 180 minutes

Antenna Cut (local reporting)
Form 'C' Contact 1 AMP

Size
13.25"H x 8.5"W x 4.3"D
34cm x 21.5cm x 11cm

Weight
6.4 lbs, 2.9 Kilograms
(excluding battery)

Colors
Available in standard
Burglary Beige or Fire Red
Please specify when ordering

Available Options
- 7788F RF subscriber unit with 8 EOL inputs
- 7744F RF subscriber unit with 4 EOL inputs and 4 reverse polarity inputs
- 7770 - FireTap
- 7067 - IntelliTap
- NEMA 4 Enclosure

Please specify when ordering

Available configurations

- 7788F, 8 EOL inputs
- 7744F, 4 EOL inputs w/4 reverse polarity inputs

AES-*IntelliNet*™ is the industry leader in delivering high quality wireless mesh networks to the fire and security industry in commercial, corporate, government, and educational applications with its broad line of products and advanced network management tools. Users of AES-*IntelliNet* networks have gained significant revenue, communications, and cost advantages while meeting the high standards of reliability required for the fire and security industry. AES-*IntelliNet* alarm monitoring systems are deployed at hundreds of thousands of locations in over 130 countries.

AES | *IntelliNet*
CORPORATION | For Alarm Monitoring

For more information
Call 800-AES-NETS (800-237-6387)

AES Corporation | 285 Newbury Street | Peabody, MA 01960 USA
Tel. +1 978-535-7310 | Fax +1 978-535-7313 | Email info@aes-intellinet.com
Web www.aes-intellinet.com

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 sensitivityof 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 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

LED Mode	Green LED	Red LED
Power up	Blink every 10 seconds	Blink every 10 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

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

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

BOSCH
Invented for life

D8004 Transformer Enclosure

The D8004 Transformer Enclosure protects the AC plug-in transformer and ensures that it remains securely fixed to the AC wall outlet. The D8004 Transformer Enclosure may be required for certain applications; the most common being fire alarm.

Certifications and Approvals

Region	Certification	
USA	UL	AMCX: Central Station Alarm Units (UL1610, UL1635), AOTX: Local Alarm Units (UL464, UL609), APAW: Police Station Alarm Units (UL365, UL464), NBSX: Household Burglar Alarm System Units (UL1023), UOXX: Control Unit Accessories, System (UL864, 9th edition), UTOU: Control Units and Accessories - Household System Type (UL985)
	FM	
	CSFM	7167-1615: 100, 7165-1615: 112, 7165-1615: 119
	NYC-MEA	12-92-E, Vol. 12
		12-92-E, Vol. 15

Technical Specifications

Environmental Considerations

Environment:	Indoor, dry

Mechanical Properties

Cover

Color:	Light gray
Dimensions:	8.8 in. x 4.7 in. x 3.0 in. (22.4 cm x 11.9 cm x 7.6 cm)
Material:	Cold-rolled steel, 18 gauge (1.2 mm)

Outlet Box

Dimensions:	8.7 in. x 4.6 in. x 1.7 in. (22.1 cm x 11.7 cm x 4.3 cm)
Material:	Galvanized steel, 18 gauge (1.2 mm)

Power Requirements

Voltage (supply):	120 VAC

Ordering Information

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

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.

FACU MAINTENANCE RECORDS

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

NFPA
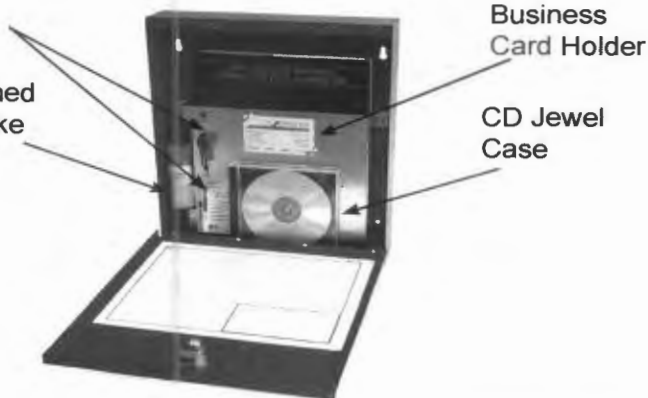
Made In U.S.A.

ISO 9001 REGISTERED COMPANY

ADA

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

No Excuses, Just Solutions!

KNOX®
Serving First Responders Since 1975

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.
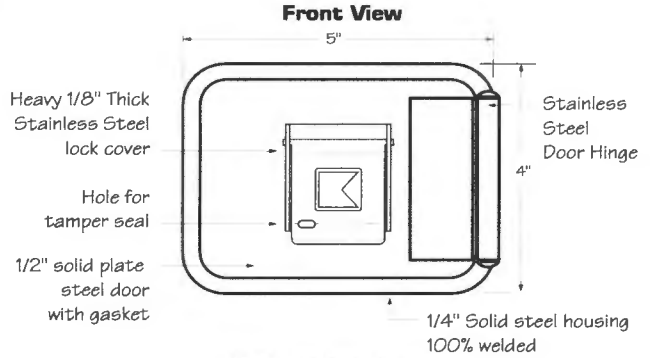
The hinged-door 3200 Series KNOX-BOX is more convenient than the lift-off door version because it allows single-handed operation and opened or closed, it's all one unit.
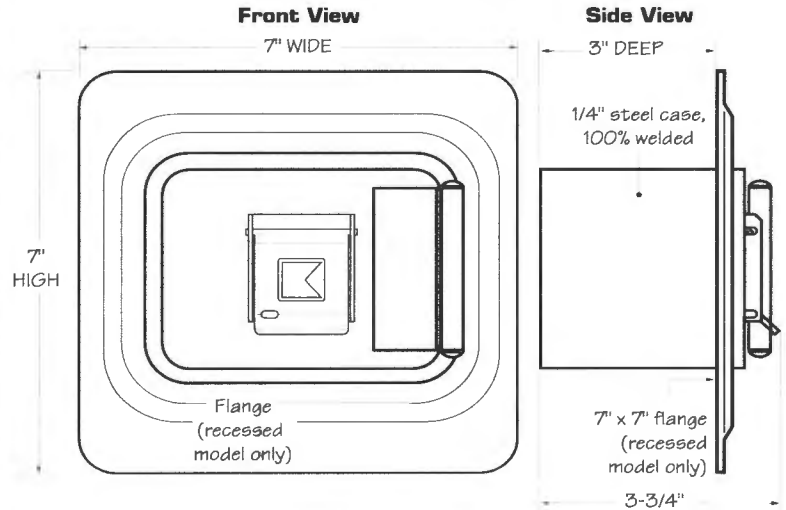
Features and Benefits
- Holds up to 10 keys and access cards in interior compartment
- Ensures high security. Box and lock are UL® Listed
- Includes a Knox-Coat® proprietary finishing process that protects Knox products up to four times better than standard powder coat
- Resists moist conditions with 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)
- Recessed Mounting Kit (RMK) for recessed models only
- Inside switch for use on electrical doors, gates and other electrical equipment

Front View

Heavy 1/8" Thick Stainless Steel lock cover

Hole for tamper seal

1/2" solid plate steel door with gasket

5"

Stainless Steel Door Hinge

4"

1/4" Solid steel housing 100% welded

3200 Surface Mount

Front View
7" WIDE

7" HIGH

Flange (recessed model only)

Side View
3" DEEP

1/4" steel case, 100% welded

7" x 7" flange (recessed model only)

3-3/4"

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 3-3/4"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.
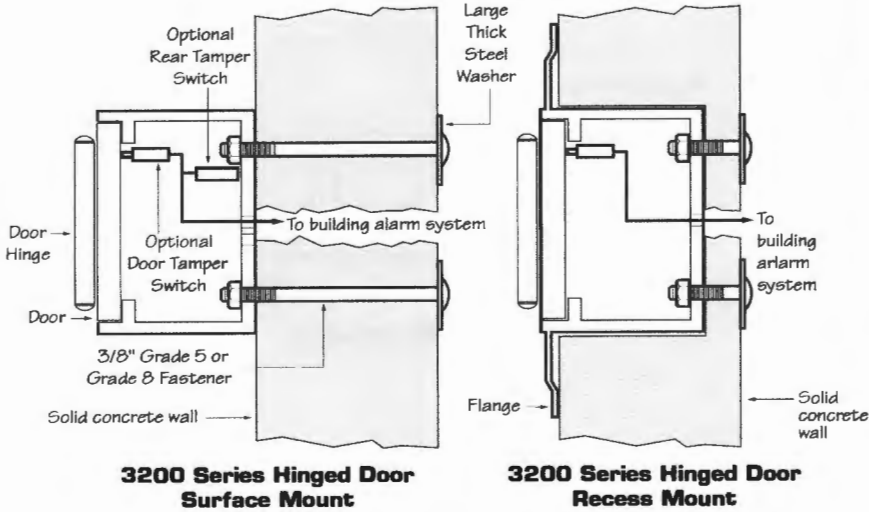Finish: Knox-Coat® proprietary finishing process
Colors: Black, Dark Bronze or Aluminum
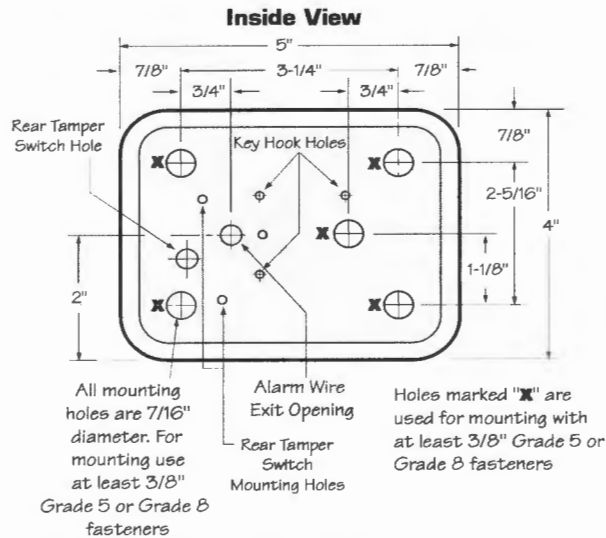P/N: 3200 Series KNOX-BOX (mfr's cat. ID)
Mfr's Name: **KNOX COMPANY**

Suggested minimum mounting height 6 feet above ground

3200 Series Hinged Door Surface Mount

3200 Series Hinged Door Recess Mount

Inside View

All mounting holes are 7/16" diameter. For mounting use at least 3/8" Grade 5 or Grade 8 fasteners

Alarm Wire Exit Opening

Rear Tamper Switch Mounting Holes

Holes marked "X" are used for mounting with at least 3/8" Grade 5 or Grade 8 fasteners

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)

KNOX-BOX® mounts inside RMK shell after completion of construction

Recessed Flange

Mounting studs provided inside RMK shell to accommodate KNOX-BOX®

RMK shell is mounted in wall during new construction

Knockouts for alarm wire conduit

Trim rebar for tie-in to wall if necessary

Concrete or masonry wall construction

MKT-KBSPEC-0019-D