DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

BUILDING PERMIT

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

For installation at
2301 CONGRESS ST
SFX and MPX

Job ID: 2012-08-4691-FAFS

CBL: 238A- A-004-001

has permission to install master box fire alarm 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

58

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.

PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life • *www.portlandmaine.gov*

Director of Planning and Urban Development
Jeff Levine

Job ID: 2012-08-4691-FAFS
install master box fire alarm system

For installation at:
2301 CONGRESS ST
SFX and MPX

CBL: 238A- A-004-001

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.
An annunciator and Knox box shall be located at the primary point of fire department access.
All smoke detectors 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".
System acceptance and commissioning must be coordinated with alarm and suppression 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. Water flow
2. City Disconnect: Water flow
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: MPX & SFX
Building Address: 2301 Congress St
Occupancy: Business/storage/industrial
Assembly OL>300, 20 unit apartment building, etc.

Emergency Contact:
Emergency phone #:
Date of Application: 8/13/12
Billing Address:

Comments:

Applicant completes red box and submits with Fire Alarm Permit

1

FIRE PREVENTION: ☑ Approved ☐ Denied

9 / 6 / 12
Date

B J Waelz Jr.
Fire Prevention Officer

Zone 1: Water flow
Zone 2: City disconnect – Water flow
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

3

Box Type: AES Radio Box / _____
New Other

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:	Date Applied:	CBL:	
2012-08-4691-FAFS	**8/13/2012**	**238A- A-004-001**	
Location of Construction: **2301 CONGRESS ST**	Owner Name: **2301 CONGRESS REALTY LLC**	Owner Address: **2301 CONGRESS ST PORTLAND, ME 04102**	Phone:
Business Name: mPx-SFx	Contractor Name: **R. M. PEARSON INC**	Contractor Address: **232 OSSIPEE TRL GORHAM MAINE 04038**	Phone: **(207) 329-8432**
Lessee/Buyer's Name:	Phone:	Permit Type: **FIRE ALARM**	Zone: **I-M**
Past Use: **Offices**	Proposed Use: **Same: Offices – to install fire alarm in the electric (sprinkler) room**	Cost of Work: **$10,000.00**	CEO District:
		Fire Dept: (58) ↓ Approved w/ conditions ___ Denied ___ N/A Signature: 9/6/12	Inspection: Use Group: Type: Signature:
Proposed Project Description: **Fire Alarm for Electric Room (sprinkler room)**		Pedestrian Activities District (P.A.D.)	
Permit Taken By: Brad		**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
___ Maj ___ Min ___ MM	___ Denied	___ Denied
Date: OK 9/4/12	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

Entered 8/13/12

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.

2012-08-4691 - FAFS

Installation address: 2301 Congress Street CBL: 238 A A004

Exact location: (within structure) Elec. Rm. (Sprinkler Rm)

Type of occupancy(s) (NFPA & ICC): Commercial printing-offices

Building owner: MPX-SFX 2301 Congress Realty LLC

Must be

System Designer (point of contact): Ralph Sweet

Designer phone: 207-232-2921 E-mail:

Installing contractor: R.M. Pearson, Inc Certificate of Fitness No: M1001

Contractor phone: 207-329-8432 E-mail: rpearsoiemaine.rr.com

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

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

COST OF WORK: 10,000

PERMIT FEE: 120
($10 PER $1,000 + $30 FOR THE FIRST $1,000)

RECEIVED
AUG 13 2012
Dept. of Building Inspections
City of Portland Maine

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: Robert M. Pearson Date: 8/10/12

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Receipts Details:

Tender Information: Check , Check Number: 1219
Tender Amount: 55.00

Receipt Header:

Cashier Id: bsaucier
Receipt Date: 8/13/2012
Receipt Number: 47016

Receipt Details:

Referance ID:	7610	Fee Type:	BP Elec Comm
Receipt Number:	0	Payment Date:	
Transaction Amount:	55.00	Charge Amount:	55.00
Job ID: Job ID: 2012-08-4691-FAFS - Fire Alarm for Electric Room (sprinkler room)			
Additional Comments: 2301 Congress			

Thank You for your Payment!

PORTLAND MAINE

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Receipts Details:

Tender Information: Check , Check Number: 1219
Tender Amount: 120.00

Receipt Header:

Cashier Id: bsaucier
Receipt Date: 8/13/2012
Receipt Number: 47014

Receipt Details:

Referance ID:	7609	Fee Type:	BP-Constr
Receipt Number:	0	Payment Date:	
Transaction Amount:	120.00	Charge Amount:	120.00
Job ID: Job ID: 2012-08-4691-FAFS - Fire Alarm for Electric Room (sprinkler room)			
Additional Comments: 2301 Congress			

Thank You for your Payment!

AL602ULADA, AL802ULADA, AL1002ULADA
NAC Power Extenders

Rev. AL602/802/1002ULADA- A05I

Overview

The AL602ULADA, AL802ULADA and AL1002ULADA are extremely cost effective voltage regulated remote NAC Power Extenders. They may be connected to any 12 or 24 volt Fire Alarm Control Panel (FACP). Primary applications include Notification Appliance Circuit (NAC) expansion (supports ADA requirements) and will provide auxiliary power to support system accessories.

AL602ULADA
- 24VDC or 12VDC rated @ 6.5 amp max.
- Two (2) Class A or four (4) Class B outputs.

AL602ULADAJ
- Larger enclosure.

AL802ULADA
- 24VDC or 12VDC rated @ 8 amp max.
- Two (2) Class A or four (4) Class B outputs.

AL802ULADAJ
- Larger enclosure.

AL1002ULADA
- 24VDC rated @ 10 amp max.
- Two (2) Class A or four (4) Class B outputs.

AL1002ULADAJ
- Larger enclosure.

Specifications

- Two (2) Class A or two (2) Class B FACP inputs.
- Two (2) NC dry contact trigger inputs (AL802ULADA and AL1002ULADA only)
- Two (2) Class A or four (4) Class B indicating circuits.
- Two (2) Class B outputs may be paralleled for more power on an indicating circuit.
- One (1) Aux. Power Output @ 1 amp supply current (w/battery back up).
- Signal Circuit Trouble Memory - facilitates quickly locating intermittent system trouble and eliminates costly and unnecessary service calls. LED's indicate a prior fault (short, open, ground) has occurred on one or more signaling circuit outputs.
- 2-wire Horn/Strobe Sync mode allows audible notification appliances (Horns) to be silenced while visual notification appliances (Strobes) continue to operate.
- Horn/Strobe sync protocols include: Gentex®, System Sensor®, Faraday, Amseco.
- Temporal Code 3 Mode.
- Steady Mode.
- Input to Output Follower Mode (maintains synchronization of notification appliance circuits).
- March Time.
- Compatible with 24VDC or 12VDC fire panels.
- Common trouble inputs and outputs.
- Ground fault detection.
- Input 115VAC.
- AC fail supervision (form "C" contacts).
- Low battery supervision (form "C" contacts).
- Battery presence supervision (form "C" contacts).
- Power supply, logic board, red enclosure, cam lock, transformer & battery leads.
- Enclosure:
  - Combination knockouts re 1/2" and 3/4"
  - Accommodates up to two (2) 12VDC/12AH batteries.

Agency Approvals

UL Listed Control Units and Accessories for Fire Alarm Systems (UL 864), UL Listed Standard for Safety for Fire Protective Signaling Systems (UL 1481).

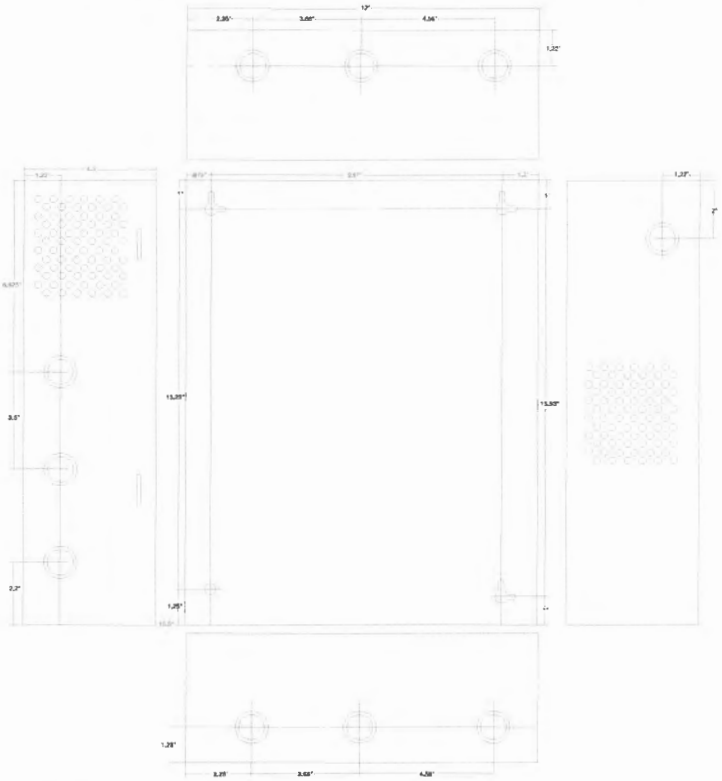
MEA Approved — NYC Department of Buildings Approved.

California State Fire Marshal Approved.

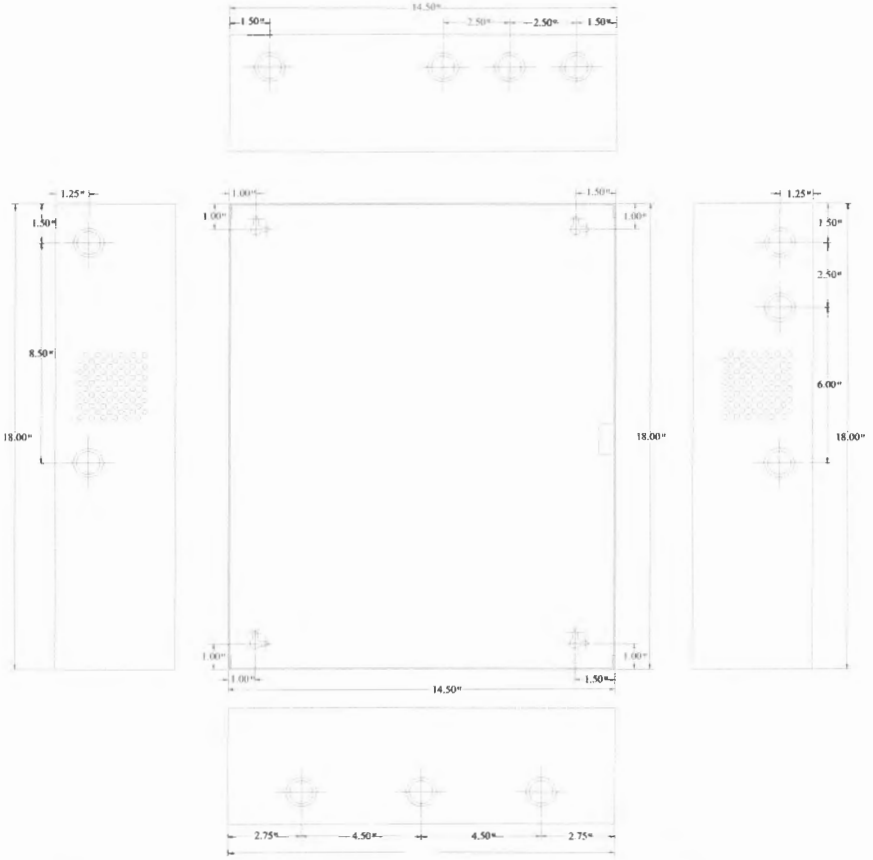
FM Approved — Factory Mutual Approved.

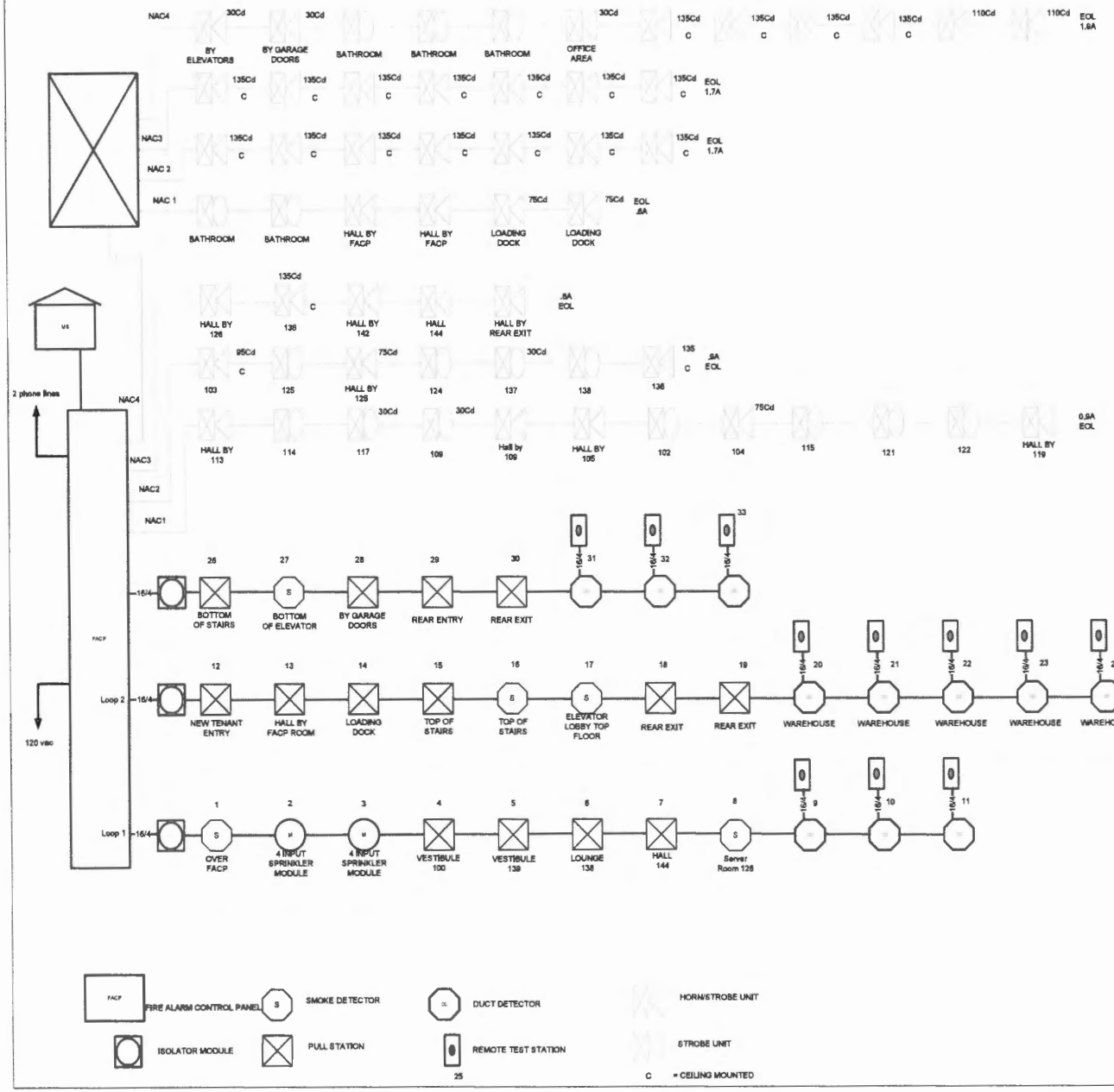
Enclosure Dimensions

AL602ULADA, AL802ULADA and AL1002ULADA: 15.5"H x 12"W x 4.5"D



AL602ULADAJ, AL802ULADAJ and AL1002ULADAJ: 18"H x 14.5"W x 4.625"D





GENERAL NOTES

INSTALLATION NOTES

NOTIFICATION TO INSTALLERS

PROTECTION PROFESSIONALS SINCE 1986

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

PROJECT:
MPX-SFX
2301 CONGRESS STREET
PORTLAND , MAINE 04102

DRAWING
RISER AND LAYOUT

REVISIONS

DATE 04-13-12
SCALE:
DRAWN BY SA
PROJECT NO 0001
SHEET
F1 of 1

FC901 Battery Calculations Worksheet
ver. 1.3
7-Feb-2012

Fixed Field | Enter Numbers Here
Calculated Field | Choose a value

Ref. No
Submitted By

FC901 Panel		Standby (A)	Alarm (A)
Main Board		0.178	0.203
Device Current Draw		0.03566	0.03566
NAC 1		0	3
NAC 2		0	
Aux power (external)			
FCACity Tie			
FSD901 Remote Annun.			

Devices	Qty			
HFP-11 / 8713				
HFPO-11 / 8710				
HFPT-11 / 8712				
OOHC941				
OOH941	12	0.00816	0.00816	
OH921	5	0.0015	0.0015	
OP921				
HI921				
FDCIO422	3	0.0036	0.0036	
HMS / 8700-S/D/M	16	0.0224	0.0224	
HTRI-S / 8702				
HTRI-D / 8703				
HTRI-R / 8704				
HZM / 8705				
HCP / 8706				
ILED / 8726				
Total	36	0.03566	0.03566	**System OK**

Total Current		0.21366	3.23866
Standby Time	24	5.128	
Alarm Time	5		0.270
AH required (no reserve)			5.398
Battery Reserve	120%		
AH Required (with reserve)			6.477274 **System OK**

FIRE ALARM SYSTEMS

Helping People Take Action℠

Calculations Report for CEILING mounted strobes
Room Size: 59 Ceiling Height: 15. Rated Candela: 135

UL Angle (on axis = 0)	**UL Angle** (radians)	**UL Wall% Vertical/ Horizonal**	**Lumens/sqft Horizontal/ Vertical**
0	0.000	100	0.600
5	0.087	90	0.536
10	0.175	90	0.524
15	0.262	90	0.504
20	0.349	90	0.477
25	0.436	90	0.444
30	0.524	75	0.338
35	0.611	75	0.302
40	0.698	75	0.264
45	0.785	75	0.225
50	0.873	55	0.136
55	0.960	45	0.089
60	1.047	40	0.060
65	1.134	35	0.045
70	1.222	35	0.048
75	1.309	30	0.043
80	1.396	30	0.045
85	1.484	25	0.038
90	1.571	25	0.039

This utility uses data provided by the user to perform the calculations described in Chapter 7 of the 2002 edition of NFPA 72, which permits the use of a performance based altemative in lieu of tables for spacing wall or ceiling mounted strobe appliances. These calculations are described in Section 7.5.4.3 as follows and are to be provided to the authority having jurisdiction:

To calculate performance based strobe coverage, the inverse square law is used to calculate the illumination at each of the angles in the horizontal and vertical planes per UL 1971 and the effect of polar distribution is included using the minimum percentages in UL 1971 or actual test results recorded by the Listing organization (per Section 7.5.4.3.2).

The calculated illumination is required to be at least 0.0375 lumens/ft squared at any point within the covered area (per Section 7.5.4.3.1).

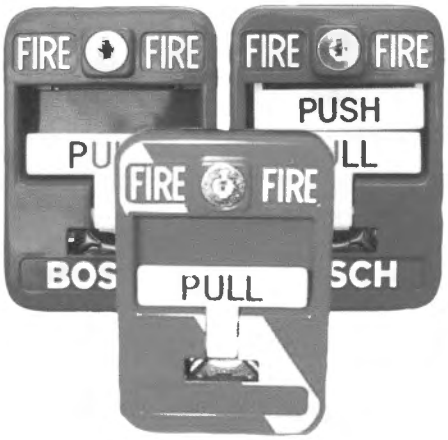
The calculation points are in the horizontal and vertical planes in 5 degree increments per UL 1971 (to comply with Section 7.5.4.3.2).

For the effect of polar distribution (rated candela at each angle), the UL 1971 minimum percentages are used for the calculations. UL 1971 does not provide ratings for each angle based on actual test results.

This utility is based on square rooms with wall mounted strobes on the centerline of the wall and ceiling mounted strobes on the center of the ceiling.

BOSCH
Invented for life

FMM-100 Series Die-cast Metal Fire Alarm Manual Stations



- **Single or dual action**
- **Terminal connections**
- **Gold-plated alarm contacts for corrosion resistance**
- **Surface or weatherproof back boxes**

The FMM-100 Series is a family of versatile, high-quality, metal fire alarm manual stations. Single-action or dual-action models are available. All models come with a key lock and contain gold-plated contacts to resist corrosion.

Functions

Operation

Single-action

When the bar on the front of the manual station is pulled, it latches open and is easily visible from 50 ft (15 m). Reset the activation bar by opening the manual station with the key and placing the activation bar in its normal upright position. An optional scored acrylic break rod is available.

Dual-action

With the dual-action configuration the upper bar on the front of the manual station rotates inward allowing the activation bar to be grasped and operated by a single hand.

Certifications and Approvals

Region	Certification	
USA	UL	UNIU: Boxes, Non-Coded (UL38), UNIU7: Boxes, Non-Coded Certified for Canada (cULus)
	CSFM	7150-1615: 224
	NYC-MEA	382-94-E or 382-94-E, Vol. 3

Installation/Configuration Notes

Compatibility Information

Compatible with all Bosch Security Systems, Inc. Fire Alarm Control Panels.

Mounting Considerations

The FMM Series manual stations can be surface mounted on either the FMM-100BB-R Surface-mount Back Box or the FMM-100WPBB-R Weatherproof Back Box. They can also be flush mounted on a standard single-gang back box.

Note When properly mounted on the FMM-100WPBB-R Weatherproof Back Box, these manual stations meet UL requirements for outdoor use.

To comply with ADA standards, the manual station must be less than 48 in. (1.2 m) above the floor for front wheelchair access and less than 54 in. (1.3 m) above the floor for side wheelchair access.

Parts Included

Quant.	Component
1	Manual station
1	D102 Key (1358 key)
1	FMM-100GR Acrylic Break Rod
1	Hardware pack
1	Literature pack

Technical Specifications

Environmental Considerations

Relative Humidity:	90% at +100°F (+38°C)
Temperature (operating):	-40°F to +150°F (-40°C to +66°C)

Mechanical Properties

Color:	Red
Dimensions (H x W x D):	4.75 in. x 3.25 in. x 1.1 in. (12 cm x 8.3 cm x 2.8 cm)
Material:	die-cast metal

Inputs

Switch Rating:	1 A at 30 VDC or 125 VAC

Ordering Information

FMM-100SATK Single-action Manual Station (red) Versatile, high-quality, metal single-action fire alarm manual station with key lock and gold-plated contacts	**FMM-100SATK**
FMM-100SATK-NYC Single-action Manual Station for New York City Versatile, high-quality, metal single-action fire alarm manual station for New York City with key lock and gold-plated contacts	**FMM-100SATK-NYC**
FMM-100DATK Dual-action Manual Station (red) Versatile, high-quality, metal dual-action fire alarm manual station with key lock and gold-plated contacts	**FMM-100DATK**

Accessories

D102 Replacement Key Replacement key (#1358) for the D101 lock.	**D102**
FMM-100BB-R Surface-mount Back Box (red) Red cast-metal back box	**FMM-100BB-R**
FMM-100WPBB-R Weatherproof Back Box (red) Red cast-metal weatherproof back box	**FMM-100WPBB-R**
FMM-100GR Scored Acrylic Break Rods Scored acrylic rods (12 per package)	**FMM-100GR**

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

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

Asia-Pacific: **Represented by**
Robert Bosch (SEA) Pte Ltd, Security Systems
11 Bishan Street 21
Singapore 573943
Phone: +65 6258 5511
Fax: +65 6571 2698
apr.securitysystems@bosch.com
www.boschsecurity.com

T2363731851 | Cur: en-US, V8, 4 Jul 2010

SIEMENS

Installation Instructions
Models FDBZ492, FDBZ492-R and FDBZ492-HR

Air Duct Monitoring Housings

INTRODUCTION

Models FDBZ492, FDBZ492-R and FDBZ492-HR from Siemens Industry, Inc., are air duct monitoring housings containing sampling tubes. When used with a compatible smoke detector, smoke and combustion products are detected for shutdown of the duct system and/or operation of supplementary equipment as provided by the system control panel. See the following chart for usage.

Model	Compatible Detectors	Relay
FDBZ492	PE-11/-11C, FP-11/-11C, HFP-11, HFPO-11, SFP-11*, SFPO-11*, 8854, 8713, 8710, OP121, FDO421, FDOOT441, FDOOTC441, OP921, OOH941, OOHC941	No
FDBZ492-R	PE-11/-11C, 8854, OP121	Yes
FDBZ492-HR	FP-11/-11C, HFP-11, HFPO-11, SFP-11*, SFPO-11*, 8713, 8710, FDO421, FDOOT441, FDOOTC441, OP921, OOH941, OOHC941	Yes

NOTE **For compatible control equipment, see charts on the page 14 of this manual.**

TECHNICAL DATA

AIR DUCT CONDITIONS

Temperature Range:
PE-11/-11C, FP-11/-11C, HFP-11, HFPO-11, SFP-11*, SFPO-11*, 8854, 8710, 8713, FDOOTC441, OOHC941, 32°F (0°C) - 100°F (38°C) per UL 268
OP121, FDOOT441, OOH941, FDO421, OP921, 32°F (0°C) - 120°F (49°C) per UL 268
Altitude Range:
FDBZ492, FDBZ492-R and FDBZ492-HR — No altitude limitations
Relative Humidity Range:
0-95% (non-condensing/non-freezing)
Air Duct Velocity Range:
100-4000 ft/min – FDBZ492, FDBZ492-R and FDBZ492-HR
Sampling Tube Pressure Range of Differences:
Greater than 0.01 and less than 1.2 inches of water column

CAUTION **These air duct detectors are designed for detection and control of products of combustion in a duct system. They are not to be used for open area protection.**
DO NOT USE air duct detectors with Alarm Verification.

*The SFP-11 and SFPO-11 are approved for use in Canada only.

Siemens Industry, Inc.
Building Technologies Division

ASSEMBLY

This detector has a cover tamper (removal) switches. Care should be taken when installing the cover. Squarely place the cover on the unit to aviod possible damage to the switches.

NOTE

DO NOT SLIDE COVER INTO POSITION.

APPLICATION

The duct smoke detectors provide early detection of smoke and products of combustion present in air moving through an HVAC duct supply, return, or both. These devices are designed to prevent the recirculation of smoke in areas by the air handling system's fans and blowers. Complete systems may be shut down in the event of smoke detection.

NOTE

For the correct installation of a duct smoke unit please refer to NFPA 72 (National Fire Alarm Code), NFPA 90A (Standard for Installation of Air Conditioning and Ventilation Systems) and NFPA 92A (Recommended Practice for Smoke Control Systems).

OPERATION

When the Models FDBZ492, FDBZ492-R and FDBZ492-HR are operating, a sample of air is drawn from the duct and passed through the sampling chamber by means of the input sampling tube. The air sample passes through the smoke detector mounted in the duct housing and is exhausted back into the duct through the outlet tube.

This detector is equipped with cover removal switches (SW1, SW2) that instantly provides a trouble condition upon removal of the clear cover. For all testing and inspection with the cover removed, the cover removal switches (designated as SW1, SW2 on PCB) must be manually depressed to simulate normal operation.

LED Indicator

The FDBZ492, FDBZ492-R and FDBZ492-HR contain an LED indicator (located on the smoke detector) capable of flashing either one of three distinct colors: green, yellow, or red. During each flash interval, the microprocessor based detector checks the following:

- for smoke in its sensing chamber
- that its critical smoke sensing electronics are operating.

Based on the results of these checks, the LED indicator flashes as follows:

Flash Color	Condition	Flash Interval (Seconds)				
		PE-11/ PE-11C-/8854	FP-11/FP-11C/ HFP-11/HFPO-11/ SFP-11/SFPO-11/ 8710/8713	OP121	FDO421/OP921	FDOOT441/ FDOOTC441/- OOH941/ OOHC941
Green	Normal supervisory operation.	7	4	10	8	10
Yellow	Detector requires service (cleaning or repair) or is operating beyond its environmental specifications.*	7-30	4	5	4	4
Red	Alarm	2½	4	2½	1	1
No Flashes	Detector is not powered, or requires repair/replacement.	-	-	-	-	-

***Note:** OP121, FDO41, OP921, FDOOT441, FDOOTC441, OOH941, OOHC941 detectors are not serviceable and need replacement.

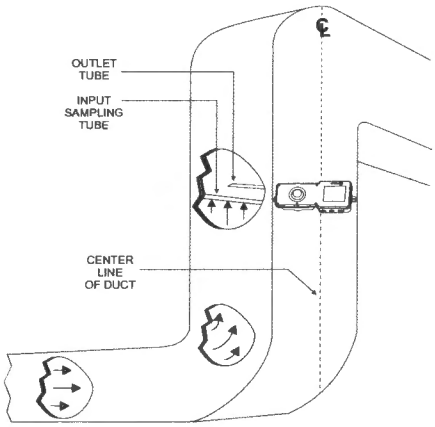


Figure 1
Typical Mounting of Duct Housing

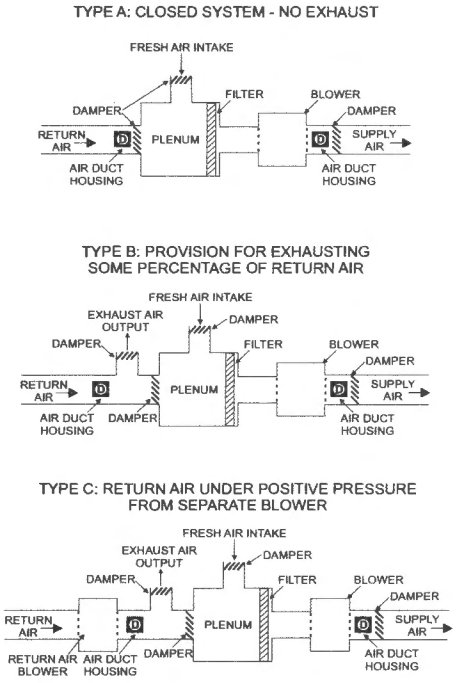


Figure 2
Recommended Locations in Duct Systems

MOUNTING THE AIR DUCT HOUSING

Location on Duct System

This guideline contains general information on duct smoke detector installation, but does not preclude the NFPA documents listed. Siemens Industry, Inc. assumes no responsibility for improperly installed duct detectors. To determine the correct installation position for an AD2 Series duct smoke detector, the following factors must be considered.

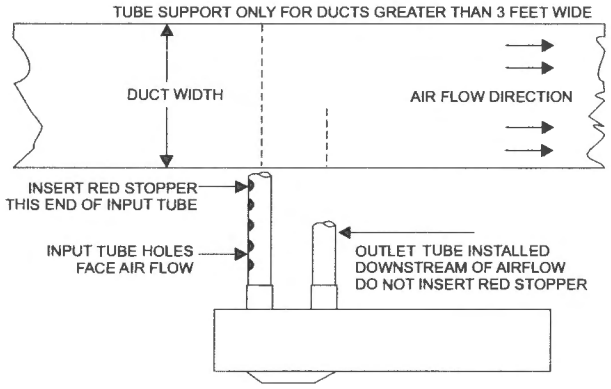
1) A uniform non-turbulent (laminar) airflow between 100 ft/min. to 4,000 ft/min. must be present in the HVAC duct. To determine duct velocities, examine the engineering specifications that define the expected velocities or use an Alnor model 6000AP velocity meter (or equivalent).

2) To minimize the impact of air turbulence and stratification on performance, a duct smoke detector should be located as far as possible downstream from any obstruction (i.e. deflector plates, elbows, dampers, etc.). In all situations, confirmation of velocity and pressure differential within specifications is required.

   The pressure differential between the input sampling (high pressure) tube and outlet (low pressure) tube for the smoke duct detector should be greater than 0.01 inches of water and less than 1.2 inches of water.

3) Identify a code compliant location (supply or return side, or both) for the installation of the duct unit that will permit easy access for viewing and serviceability.

4) When installing on the return side, install duct units prior to the air being exhausted from the building or diluted with outside "fresh" air.



NOTE: Mountings shown are typical. Detectors can be installed side, bottom or top of duct as long as proper tube operation and flow/pressure performance is maintained.

Figure 3
Sampling Tube Orientation

Once the airflow direction has been determined (refer to Figure 3), insert the input and outlet tubes into the duct housing.

1. Remove the cover from the housing.
2. Loosen the screw and rotate the tube retainer until the input tube is inserted and oriented properly. Ensure that the notched end of the tube is inside the housing and that the air input sampling tube is positioned so that the input holes are directly facing the airflow.
3. Once the tube is installed, rotate the retainer back into place and tighten screw.
4. Install the outlet tube in the remaining position. Once the tube is installed, rotate the retainer back into place and tighten screw.

Mounting

After securing the input and outlet tubes to the duct smoke unit, (or initially placing the tubes through the 1¼" holes drilled or punched in the HVAC duct to accept the input and outlet tubes and then attaching them to the duct unit), hold the duct unit assembly in position and use (2) # 12 X ¾" sheet metal screws (packaged in the installation kit) to secure the duct smoke detector to the HVAC duct sheet metal.

Air Duct Sampling Tube Pressure Measurement

The Model PDM-3 Pressure Differential Measuring device should be used to ensure that the sampling tube pressure differential is within the specified limits. The differential pressure between the two tubes should be greater than 0.01 inches of water and less than 1.2 inches of water. Qualified personnel should take measurements in accordance with the PDM-3 instructions, P/N 315-085535.

WIRING

Conduit Knockouts

Determine knockout size required based upon installation wiring. Refer to Figure 4. Select knockout and remove by placing screwdriver at center of knockout and tap with a hammer until the knockout breaks out. Clean the hole before installing conduit.

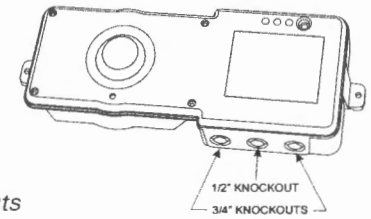


Figure 4
Removing the Knockouts

Wiring

The FDBZ492, FDBZ492-R and FDBZ492-HR should be connected as shown in Figures 5, 6, 7 and 8. *Note any limitations on the number of detectors and restrictions on the use of remote devices permitted for each circuit.*

The FDBZ492 is used with the 8854, PE-11/PE-11C, FP-11/FP-11C and OP121. It is also used with the HFP-11/HFPO-11, 8710, 8713 detector in the FireFinder-XLS, FS-250 or MPC6000, 7000 System. The FDBZ492 is also used with the SFP-11/SFPO-11 detector in the FS-250C System. The FDBZ492 is also used with the FDO421, FDOOT441, FDOOTC441, OP921, OOH941, OOHC941 detector in the FC360 and FS20 Systems. The FDBZ492-HR must be used for the relay version. Also, all optional accessories in the same loop must be compatible with the detector series being used. These devices should be interconnected as shown in Figure 7 and wired to the DLC, FS-DLC or FDLC. (Refer to the DLC Installation Instructions, P/N 315-033090, or the FS-250, P/N 315-049353, or the FS-250C Manual, P/N 315-049589C, or the MPC-6000/MPC-7000 Manual, P/N 315-447309, as applicable.) The HFP-11, HFPO-11, SFP-11, SFPO-11, 8710, 8713, FDO421, FDOOT441, FDOOTC441, OP921, OOH941, and OOHC941 are polarity insensitive detectors. Line 1 and Line 2 can be either line of the loop. *Note any limitations on the number of detectors and restrictions on the use of remote devices permitted for each circuit.*

When replacing a detector with a different model, be aware that existing detector accessories connected to the base or air duct housing that were compatible with the old detector may not be compatible with the new detector. Always read the Installation Instructions accompanying the detector to determine detector and accessory compatibility.

Installation Of Smoke Detectors

To Install:

- Remove cover by loosening the four screws. Take off the cover and set it aside.
- Align detector with base and insert detector.
- Rotate detector clockwise while gently pressing on it until the detector drops fully into base.
- Then rotate the detector clockwise until it stops and snaps in place.
- Replace cover and tighten the four screws.

To Remove:

- Rotate the detector counterclockwise until stop is reached.
- Pull detector out of base.

TESTING

Only qualified service personnel should test these units. To assure proper operation of the detector and control panel, both the Sensitivity and the Functional tests should be conducted. The minimum test schedule may be found in the current edition of NFPA 72 for installations in the U.S. and CAN/ULC-S537, The Verification of Fire Alarm Systems, for installation in Canada.

Sensitivity Test

The PE-11/-11C, 8854, OP121 detector monitors its smoke sensitivity automatically and requires no test equipment. A green flash of the detector LED indicates that the smoke sensitivity is within its listed limits.

The following detector models are analog types that must be programmed for the air duct application using the control unit configuration tool; that is, CSG-M, Zeus, FS-CT2, FS20 Programming Tool or FC360 Programming Tool, as applicable.

To test the FP-11/-11C detector refer to its installation instructions. See Table 9 on page 12.

To test the HFP-11/HFPO-11/SFP-11/SFPO-11 detector refer to its installation instructions. See Table 9 on page 12.

These tests ensure that the detector is within its listed and marked sensitivity range. For additional instructions on applying the *Sensitivities* mode, refer to the FireFinder-XLS Manual, P/N 315-033744, the DPU Manual, P/N 315-033260 or the SDPU Manual, P/N 315-033260C.

Functional Test

Smoke Testing

Using P/N 500-649750 TG-11 smoke test canister with testing nozzle model AD-TGN P/N 500-649717 (purchased separately) available from Siemens Industry, Inc., insert the test gas nozzle into the hole in the red plug in the unit cover. Press can against cover for about ½ second to release gas into the chamber.

DO NOT SPRAY GAS FOR MORE THAN ½ SECOND. OVERUSE OF TEST GAS MAY RESULT IN DETECTOR CONTAMINATION.

After 15 to 20 seconds the detector will go into alarm, illuminating the detector LED and causing the duct unit functions to operate; alarm relays will change state, and the alarm related remote accessories, if attached, will function.

If no test gas is available to conduct functional testing, remove cover and, while holding down the cover removal switch, blow smoke from a smoldering cotton wick or punk directly at the head to cause an alarm. The alarm indicator on the detector should illuminate within one minute.

NOTES:

1. Up to 30 air duct housings can be installed on one initiating circuit, except as noted in Note 2.
2. When an FDBZ492-R is used to control a fire safety function, the FDBZ492-R must be the ONLY device on the initiating circuit.
3. Do not use looped wire under base terminal.
4. Break wire run to provide supervision of connection.
5. The green grounding screw in the wiring compartment of the air duct housing is not used.
6. Please follow Pin designation in Table 1, 2.

WARNING

If the relay contacts are being used to control 120 VAC operated equipment, ensure that the conduit is properly attached to the internal metal ground strap, using the proper conduit locking nuts. **Failure to provide proper grounding may result in fatal electrical shock and violation of national and local codes.**

Model FDBZ492

For Wiring Information
Refer to Table 1

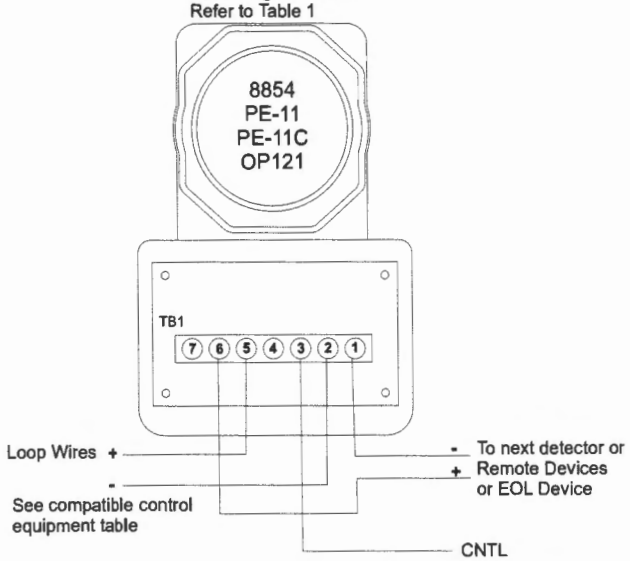


TABLE 1

TB1 - Pin Designations	Description
7	Not Used
6	Device Loop + / Remote +
5	Device Loop +
4	Not Used
3	Remote Control
2	Device Loop-
1	Device Loop - / Remote -

† SEE REMOTE DEVICE INSTRUCTIONS FOR WIRING DETAILS:

DEVICE	INSTALLATION INSTRUCTIONS
RLC-11, RLW-11	P/N 315-094925
RSAC-11, RSAW-11	P/N 315-094926
FDBZ-RTL	P/N A610335440_a_en

MODEL FDBZ492-R

For Wiring Information
Refer to Table 2

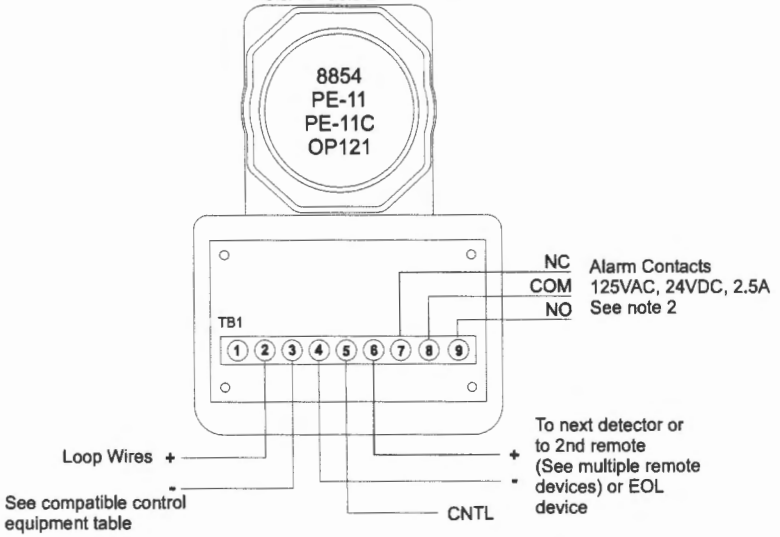


TABLE 2

TB1 - Pin Designations	Description
1	Not Used
2	Device Loop +
3	Device Loop -
4	Device Loop/Rem -
5	Remote Control
6	Device Loop - / Remote +
7	Relay Normally Closed Contact (NC)
8	Relay Common Contact (COM)
9	Relay Normally Open Contact (NO)

MULTIPLE REMOTE DEVICES

If remote devices are supported by the initiating circuit, each detector/base may have up to 2 remote devices with the following configurations and restrictions only:

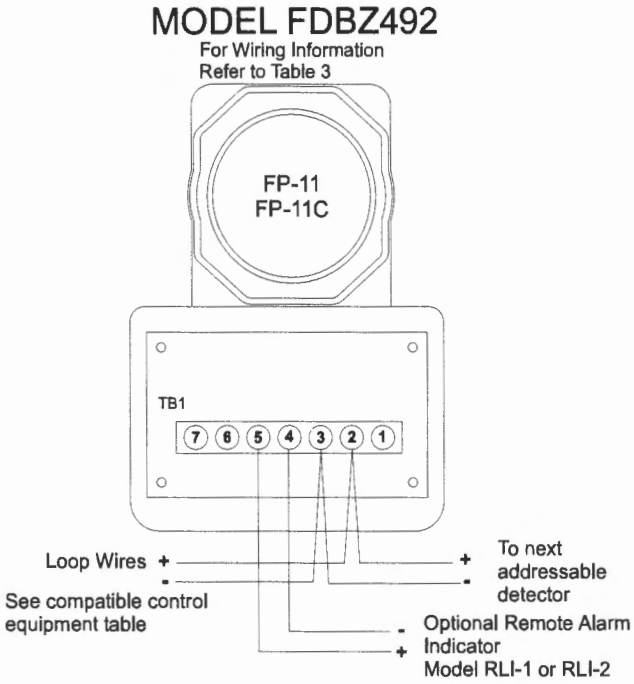
Remote Device 1	Remote Device 2	Restrictions
FDBZ492	RLC-11, RLW-11	See Note 2
FDBZ492	RSAC-11, RSAW-11	See Note 2
FDBZ492	FDBZ-RTL	See Note 2

Figure 5
Typical Connections for the FDBZ492 / FDBZ492-R Using PE-11 / PE-11C, 8854, or OP121 Detectors

NOTES:

1. The relay contacts are shown after a reset pulse, which represents the non-alarm condition.
2. The green grounding screw in the wiring compartment of the air duct housing is not used.
3. Please follow the pin designation on Table 3 - 4

If the relay contacts are being used to control 120 VAC operated equipment, ensure that the conduit is properly attached to the internal metal ground strap, using the proper conduit locking nuts. **Failure to provide proper grounding may result in fatal electrical shock and violation of national and local codes.**



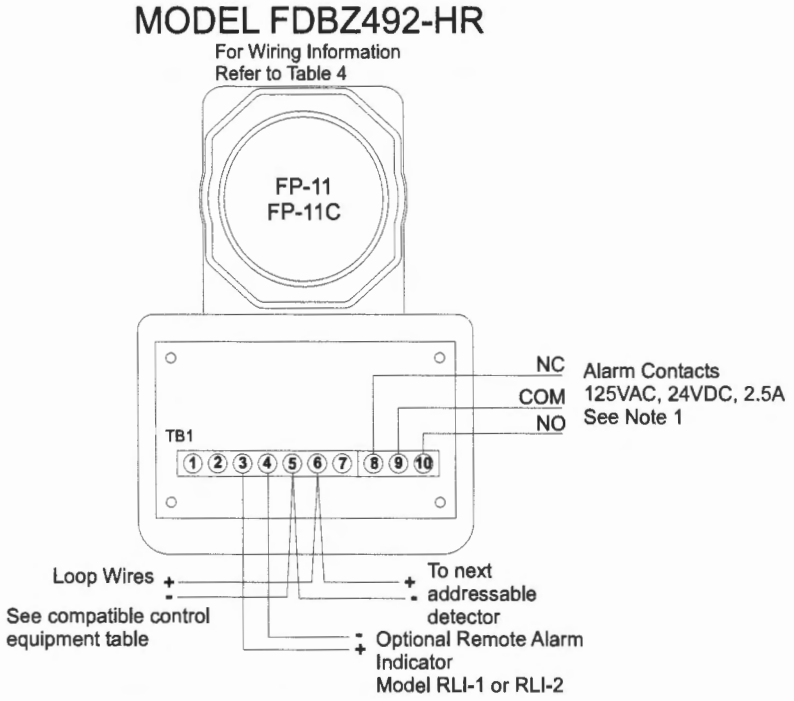


TABLE 3

TB1 - Pin Designations	Description
7	Not Used
6	Not Used
5	Remote +
4	Remote -
3	Device Loop -
2	Device Loop +
1	Not Used

TABLE 4

TB1 - Pin Designations	Description
1	Not Used
2	Not Used
3	Remote +
4	Remote -
5	Device Loop -
6	Device Loop +
7	Not Used
8	Relay Normally Closed Contact (NC)
9	Relay Common Contact (COM)
10	Relay Normally Open Contact (NO)

Figure 6
Typical Connections for the FDBZ492 / FDBZ492-HR Using FP-11 / FP-11C Detectors

NOTES:

1. The relay contacts are shown after a reset pulse, which represents the non-alarm condition.
2. Refer to the RL-HW / RL-HC Installation Instructions, P/N 315-033230.
3. The green grounding screw in the wiring compartment of the air duct housing is not used.
4. For polarity insensitive topology, follow the pin designation on Table 5, 6 (Figure 7)

If the relay contacts are being used to control 120 VAC operated equipment, ensure that the conduit is properly attached to the internal metal ground strap, using the proper conduit locking nuts. **Failure to provide proper grounding may result in fatal electrical shock and violation of national and local codes.**

MODEL FDBZ492

For Wiring Information
Refer to Table 5

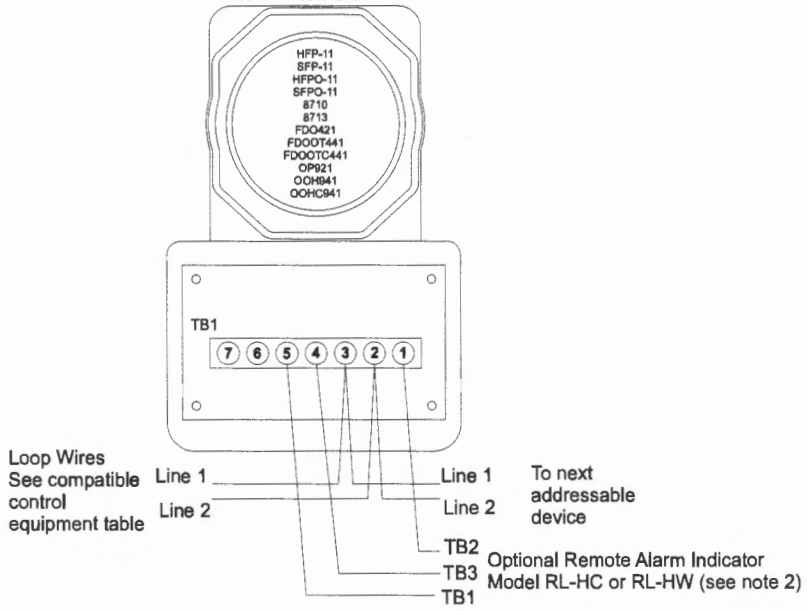


TABLE 5

TB1 - Pin Designations	Description
7	Not Used
6	Not Used
5	Remote TB1
4	Remote TB3
3	Line 1
2	Line 2
1	Remote TB2

MODEL FDBZ492-HR

For Wiring Information
Refer to Table 6

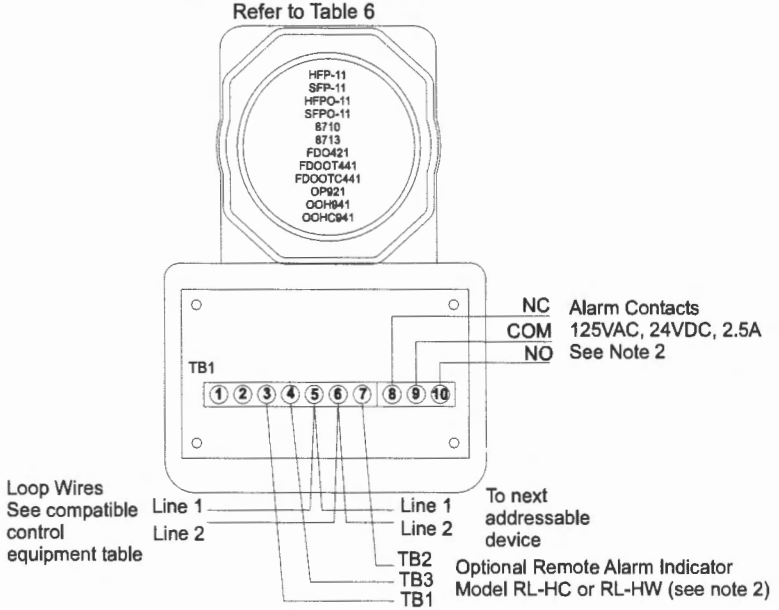


TABLE 6

TB1 - Pin Designations	Description
1	Not Used
2	Not Used
3	Remote TB1
4	Remote TB3
5	Line 1
6	Line 2
7	Remote TB2
8	Relay Normally Closed Contact (NC)
9	Relay Common Contact (COM)
10	Relay Normally Open Contact (NO)

Figure 7
Typical Connections for the FDBZ492 / FBDZ492-HR Using Compatible Addressable Detectors in Polarity Insensitive Topology

Refer to the following Installation Instructions for additional information on testing each of these detectors:

TABLE 9

Detector	Installation Instruction
PE-11	315-094198
PE-11C	315-095626
FP-11/-11C	315-095921
HFP-11	315-033290
HFPO-11	315-034800
SFP-11	315-033290C
SFPO-11	315-033290C
FDO421	A6V10323926
FDOOT441	A6V10324655
FDOOTC441	A6V10324657
8854	315-094198FA
OP121	A6V10281367
8710	315-033290FA
8713	315-033290FA
OP921	A6V10323928
OOH941	A6V10324659
OOHC941	A6V10324661

The FP-11, HFP-11, SFP-11, HFPO-11, SPFO-11, 8710, 8713, FDO421, FDOOT441, FDOOTC441, OP921, OOH941, and OOHC941 detectors can also be tested individually using the DPU. Refer to the DPU Manual, P/N 315-033260. The SFP-11 and SFPO-11 detectors can be tested individually using the SDPU. Refer to the SDPU Manual, P/N 315-033260C.

MAINTENANCE

The performance of the air duct detector unit may be adversely affected by dirt or foreign matter on the sampling tubes or detector. If the air holes in the input sampling tube become restricted, the unit cannot receive a proper air sample, and performance is impaired. It is recommended that the sampling tubes be checked and cleaned periodically. The detector maintenance program should consist of periodic cleaning of dust from the detector head by using a vacuum cleaner. For cleaning Models PE-11, PE-11C, FP-11, FP-11C, HFP-11, HFPO-11, SFP-11 or SFPO-11, refer to the detector's Installation Instructions (See Table 9).

The cleaning and test program is recommended for 6 month intervals, or more frequently, if needed, depending on the individual detector environment. Consult your local code and AHJ requirements for required maintenance schedules.

Under no circumstances is the detector portion of the unit to be disassembled by anyone other than an authorized Siemens Industry, Inc. Systems Technician. For service, contact your nearest authorized Siemens Industry, Inc. Service Representative.

If the fire alarm system is connected to a central station or fire department, or operates external devices such as fans, extinguishers, etc., connected, notify appropriate personnel and disconnect the external devices until all tests are completed. After testing, reset the system, reconnect the devices, and notify the personnel that the system is operating again.

COMPATIBLE CONTROL EQUIPMENT

FDBZ492 AND FDBZ492-R USING PE-11/-11C/8854/OP121 DETECTOR

Module Equipment Compatibility Identifier	Module Installation/ Wiring Instructions
CDC-4 (FireFinder-XLS)	P/N 315-034100-8
CP-35 (SYSTEM 3)	P/N 315-084902-22
*CZM-1B6 (MXL, MXL-IQ)	P/N 315-095355-9
CZM-4 (MXL, MXL-IQ)	P/N 315-090826-10
HZM (FireFinder-XLS, FS-250, FC2050, FC2025, FC2005, FC922, FC924, FC901)	P/N 315-034850-6
SXL-EX	P/N 315-095997-8
SZE-4X (SXL-EX)	P/N 315-096018-8
SZE-8AX (SXL-EX)	P/N 315-096022-8
*SZM (FS-250C)	P/N 315-034850C-4
ZU-35 (SYSTEM 3)	P/N 315-083222-18
8705 (MPC-6000/MPC-7000)	P/N 315-447309-8

FDBZ492 AND FDBZ492-R USING FP-11/-11C DETECTOR

Module Equipment Compatibility Identifier	Module Installation/ Wiring Instructions
ALD-2I (MXL, MXL-IQ)	P/N 315-091464-13
MMB-2 (MXL)	P/N 315-095097-8
MMB-3 (MXL)	P/N 315-048860-7
SMB-2 (MXL-IQ)	P/N 315-095931-7

FDBZ492 AND FDBZ492-HR USING HFP-11, HFPO-11, 8710, 8713 DETECTOR

Module Equipment Compatibility Identifier	Module Installation/ Wiring Instructions
DLC (FireFinder-XLS)	P/N 315-033090-10
FS-DLC (FS-250)	P/N 315-049353-10
FDLC (MPC-6000/MPC-7000)	P/N 315-447309-8
FC2050, FC2025	P/N A6V10315015
FC2005	
FC922, FC924	
FC901	

FDBZ492 AND FDBZ492-HR USING FDO421, FDOOT441, FDOOTC441, OP921, OOH941, OOHC941 DETECTOR

Module Equipment Compatibility Identifier	Module Installation/ Wiring Instructions
FC2050, FC2025	P/N A6V10315015
FC2005	
FC924, FC922	
FC901	

FDBZ492 AND FDBZ492-HR USING SFP-11 OR SFPO-11 DETECTOR

Module Equipment Compatibility Identifier	Module Installation/ Wiring Instructions
FDLC (FS-250C)	P/N 315-049589C-1

The detector model number is the compatibility identifier.

*Control equipment does not support remote accessories; e.g., lamps or relays.

ELECTRICAL RATINGS FOR PE-11/-11C, 8854, OP121

Voltage	16-27 VDC
Ripple	3V peak-to-peak
Supervisory Current	110 uA max.
Start-up Time	50 seconds max.

	PE-11/-11C Detector	PE-11/-11C Detector + Remote Device
Alarm Current	33 - 50mA	50 - 70mA

ELECTRICAL RATINGS FOR HFP-11, HFPO-11, SFP-11, SFPO-11, 8710, 8713, FDO421, FDOOT441, FDOOTC441, OP921, OOH941, OOHC941

Electrical ratings are not provided here for these detectors. Guidance for detector loop loading, along with loop wire electrical specifications are provided in the applicable control unit instructions given in the above Compatible Control Equipment tables.

Siemens Industry, Inc.
Building Technologies Division
Florham Park, NJ

Siemens Canada Limited
Building Technologies Division
2 Kenview Boulevard
Brampton, Ontario L6T 5E4 Canada

NO EXCUSES!

FDB

Fire Alarm Control Unit (FACU) Records & Document Box

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

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

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

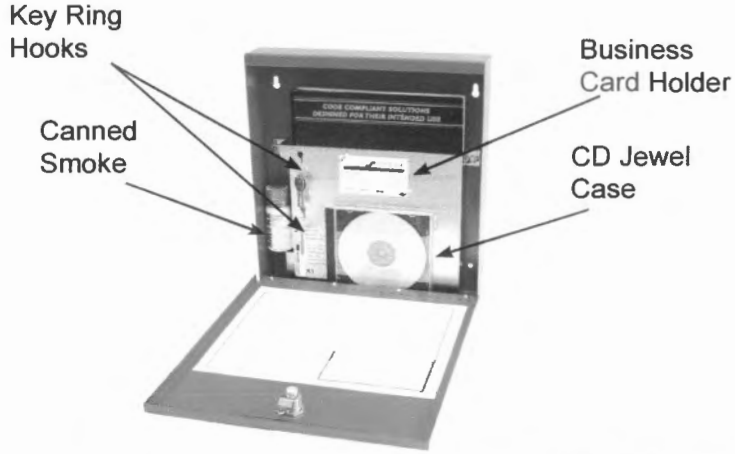
The galvanized sleeve also contains 2 hooks for key rings or thumb drives, a place for several business cards, a cutout for a 1.4 Oz. can of test gas and a slot where a standard CD "jewel" case can be stored.

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

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

Standard Features:

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



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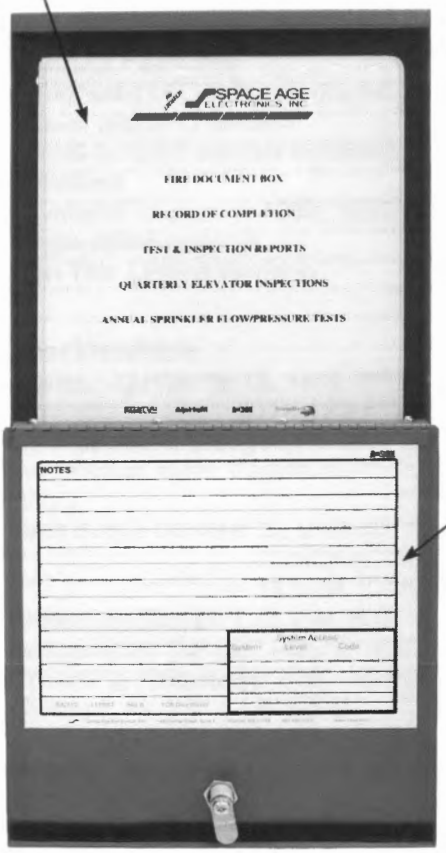
SPACE AGE ELECTRONICS, INC.

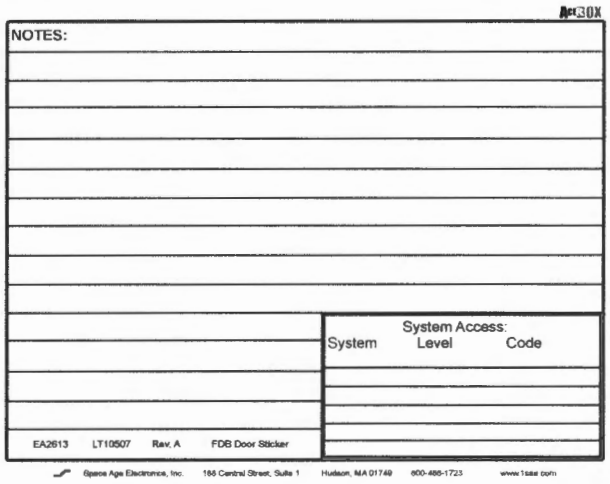
Specifications:

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

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

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





Notes Sticker inside FDB Door

Ordering Information:

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

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

No Excuses, Just Solutions!

DTK-HW Series

Equipment Panel/Dedicated Circuit Surge Protector
General Product Specifications

DITEK's HW series of surge protection are designed and manufactured to meet the exacting standards of the life safety industry. These compact parallel mount surge protectors are widely used to protect fire alarm panels and other dedicated branch circuit loads.

DTK-120HW **DTK-120/240HW**
DTK-240HW

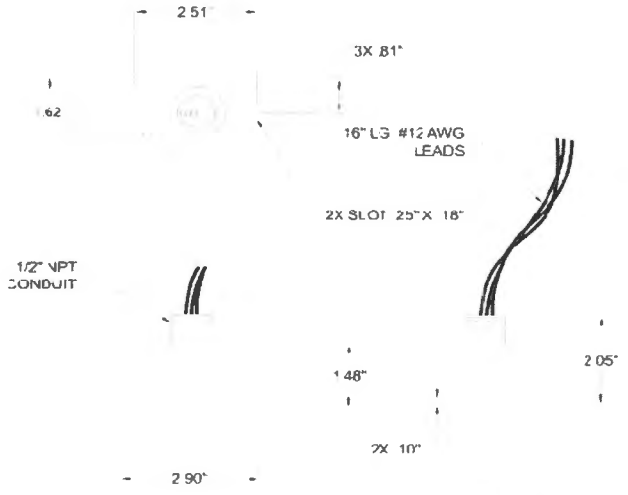
Product Features

- Diagnostic LED indicates ground presence, system power and SPD function
- Small footprint enables installation in a variety of locations
- Available for popular 120V, 120/240V and 240V single-phase systems
- Ten Year Limited Warranty

Model Selection: DTK-	System Voltage	MCOV	UL 1449, 2nd Ed. S.V.R.
120HW	120VAC	130V	400V
120/240HW	120/240VAC	130V/250V	n/a
240HW	240VAC	250V	n/a

Specifications

Agency Approvals: UL 1449, 2nd Edition 2007, cUL (DTK-120HW)
IEEE Location Categories: Cat. A & Cat. B
Suppressor Type: Parallel configuration, external mount
Peak Surge Current: 22,500A (DTK-120HW)
27,000A (DTK-120/240HW)
13,500A (DTK-240HW)
Protection Modes: L-G, L-N, N-G
Temperature Range: -40C to +85C
Operating Frequency: 0Hz – 400Hz
Dimensions: 2.9" x 1.6" x 2.1"
(73.7mm x 40.6mm x 53.3mm)
Weight: .5lb. (227g)
Housing: NEMA 4 ABS



ISO 9001-2000 CERTIFIED

c UL us

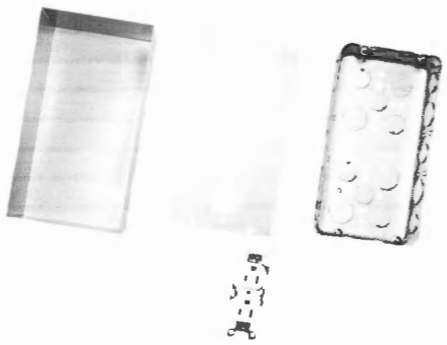
One DITEK Center
1720 Starkey Road
Largo, FL 33771

1-800-753-2345
Technical Support: 1-888-472-6100
www.ditekcorp.com

Document: SPS-100057-001 Rev 3 08/08

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

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

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

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

Represented by

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SIEMENS

Data Sheet
Fire Safety & Security Products

Cerberus™ PRO Fire Safety System

50-Point Addressable Fire Alarm Control Panel

Model FC901

ARCHITECT AND ENGINEER SPECIFICATIONS

- **An addressable fire alarm control panel (FACP) comprised of the following three (3) system components:**
  - Main board (Model FCM901-U3)
  - 170-Watt power supply (Model FP2011-U1)
  - System enclosure (Model FH901-U3 / R3)
- **System features:**
  - Supports 50 addressable devices on one (1) 'Class A', or one (1) — two (2) 'Class B' circuits
  - Includes one (1) 'Class A', or two (2) 'Class B' notification appliance circuits (NACs)
  - Built-in digital alarm communication transmitter (DACT)
  - Built-in RS–485 connection for remote annunciators
  - Resettable and non-resettable 24VDC auxiliary power
  - Optional connectivity to a leased-line / city-tie module
  - Off-normal warning message prior to reset
  - Fast and easy set-up with custom-configuration tool

- **Alphanumeric keypad**
  - for manual configuration
- **©UL 864 9th Edition Listed; FM, CSFM & NYC Fire Department Pending**

Product Overview

Model FC901 is an addressable FACP that provides a cost-effective solution for simple fire-alarm system applications.

Small and compact in design, Model FC901 is ideal for small fire-protection applications using less than 50 addressable devices:

- retail outlets / strip malls
- doctor's offices
- dry cleaners
- restaurants
- banks, etc.

With its built-in DACT and two (2) NACs, Model FC901 is powerful enough to economically meet the needs of these applications.

Specifications

The Model FC901 FACP consists of a main board (Model FCM901-U3); a 170-Watt power supply (Model FP2011-U1), and a Model FH901-U3 / R3 system enclosure.

Main Board

The Model FCM901-U3 / R3 main board provides system display and control, as well as connections for system field wiring, via removable terminal blocks.

The 3.5-inch (8.9 centimeters) by 1.5" (3.8 centimeters) LCD display shows all system messages and event status. Each event may have a custom message up to 28 characters that describes the event's location.

The backlit LCD screen illuminates on any system event, or manual key press. New, 'unacknowledged' events are indicated by a flashing exclamation point ('!'). Once 'acknowledged,' the exclamation point changes to a check mark ('√'). A system-status line shows the quantity of events presently active.

The main board supports system-status LEDs, based upon the following conditions of Model FC901:

- *Power*
- *Alarm*
- *Trouble*
- *Supervisory*
- *Ground-Fault*

SIEMENS Industry, Inc.
Building Technologies Division

Notice: This marketing data sheet is not intended to be used for system design or installation purposes. For the most up-to-date information, refer to each product's installation instructions.

SIEMENS Industry, Inc.
Building Technologies Division

Fire Safety
8 Fernwood Road
Florham Park, NJ 07932
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FAX: (908) 547-6877
URL: www.USA.Siemens.com/Cerberus-PRO

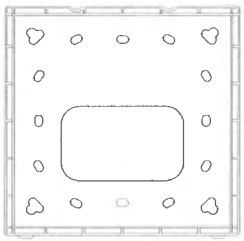
(SII-FS)
Printed in U.S.A.

Fire Safety
2 Kenview Boulevard
Brampton, Ontario
L6T 5E4 / Canada
Tel: (905) 799-9937
FAX: (905) 799-9858

November 2011
New Issue

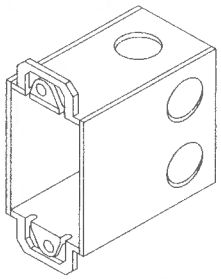
Mounting Matrix and Details

(A) UNIVERSAL MOUNTING PLATE



"AS" Mounting (item included with AS series devices)

(B) SINGLE-GANG, FLUSH (BO)

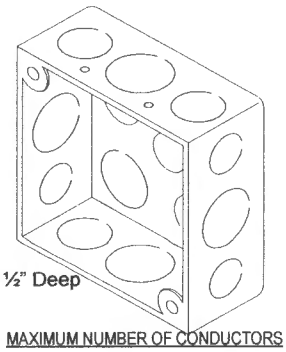


MAXIMUM NUMBER OF CONDUCTORS

AWG. #18	AWG. #16	AWG. #14	AWG. #12
4	4	4	4

Used with Series AH, AS, MH, NH, NS, ST

(D) 4" SQUARE, FLUSH (BO)



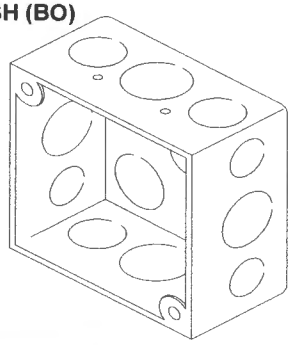
1-1½" Deep

MAXIMUM NUMBER OF CONDUCTORS

AWG. #18	AWG. #16	AWG. #14	AWG. #12
4	4	4	4

Used with Series MH115, B6, B10, AH, AS, HS, MBDC, MTH, NH, NS, ST

(E) 4" SQUARE, DEEP, FLUSH (BO)



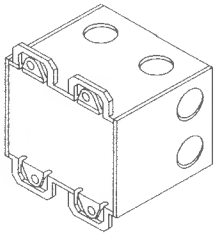
2-1/8" Deep

MAXIMUM NUMBER OF CONDUCTORS

AWG. #18	AWG. #16	AWG. #14	AWG. #12
8	8	8	8

Used with Series MH115, B6, B10, AH, AS, SETSF, SET-ULC, HS, MBDC, MTH, NH, NS, ST

(F) DOUBLE-GANG, FLUSH (BO)



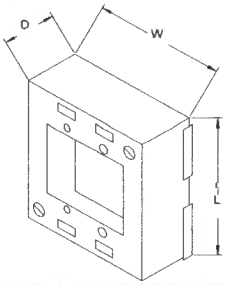
MAXIMUM NUMBER OF CONDUCTORS

AWG. #18	AWG. #16	AWG. #14	AWG. #12
4	4	4	4

Used with Series AH, AS, HS, MT, NH, NS, ST

(G) DOUBLE-GANG, SURFACE (BO)

L.	W.
4-¾"	4-¾"
D.	GANG #
1-¾"	2



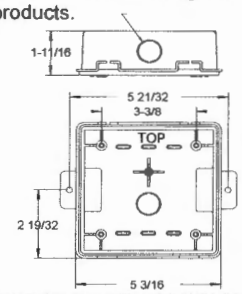
MAXIMUM NUMBER OF CONDUCTORS

AWG. #18	AWG. #16	AWG. #14	AWG. #12
4	4	4	4

Used with Series AH, AS, NH, NS, ST

(I) WPBBS (ORDER CODE: RED 500-636137)

Plastic backbox for surface mounting series AS weather-proof outdoor products.

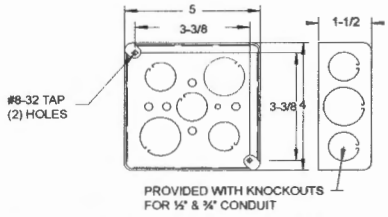


MAXIMUM NUMBER OF CONDUCTORS

AWG. #18	AWG. #16	AWG. #14	AWG. #12
8	8	8	8

(J) BBS BACKBOX (ORDER CODES: RED 500-636110)

Standard steel backbox with knockouts for interior surface mounting, concealed conduit mounting or semi-flush applications.



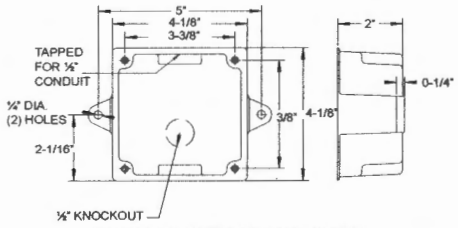
MAXIMUM NUMBER OF CONDUCTORS

AWG. #18	AWG. #16	AWG. #14	AWG. #12
4	4	4	4

Used with Series MH115, B6, B10, AH, AS, MBDC, MTH-15-115, NH, NS, ST

(K) WBBS WEATHER RESISTANT BACKBOX (ORDER CODES: RED 500-636129, WHITE 500-636131)

Sturdy die cast housing, threaded conduit hole and knockout for outdoor applications.

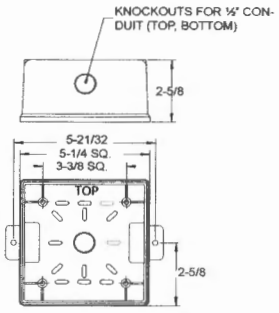


MAXIMUM NUMBER OF CONDUCTORS

AWG. #18	AWG. #16	AWG. #14	AWG. #12
4	4	4	4

Used with Series MH115, B6, B10, SETSF, MBDC, MTH-15-115

(M) MT-SUR-BOX BACKBOX (ORDER CODES: RED 500-693168, WHITE 500-636118)



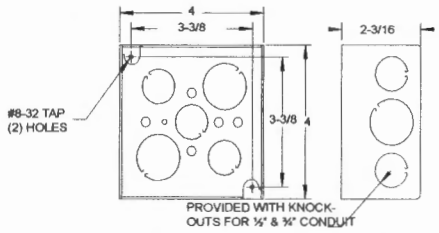
MAXIMUM NUMBER OF CONDUCTORS

AWG. #18	AWG. #16	AWG. #14	AWG. #12
8	8	8	8

Used with Series SET, HS, MTH, MTWP. For surface mounting MT products.

(N) DBBS BACKBOX (ORDER CODE: RED 500-636111)

Standard steel backbox provided with knockouts for interior surface mounting, concealed conduit mounting or semi-flush applications.



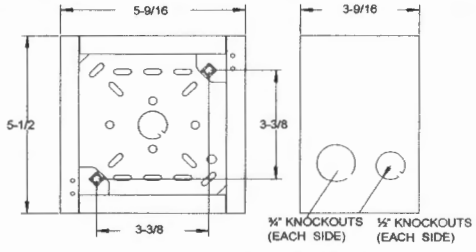
MAXIMUM NUMBER OF CONDUCTORS

AWG. #18	AWG. #16	AWG. #14	AWG. #12
8	8	8	8

Used with Series MH115, B6, B10, AH, AS, SETSF, HS, MBDC, MTH, NH, NS, ST

(P) SBBS BACKBOX (ORDER CODES: RED 500-636119, WHITE 500-636120)

For surface mounting speakers, chimes, and electronic applications.

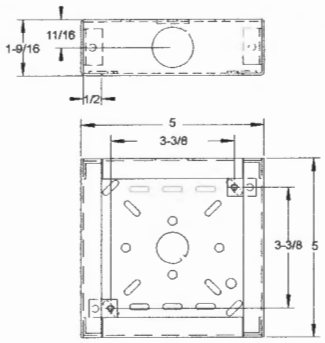


MAXIMUM NUMBER OF CONDUCTORS

AWG. #18	AWG. #16	AWG. #14	AWG. #12
8	8	8	8

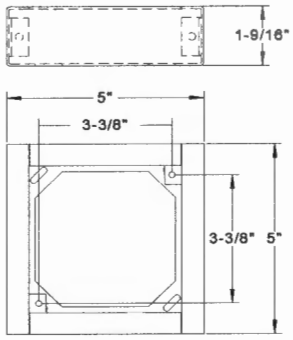
Used with Series B6, B10, CH, SEF, SET, SETFL, HS, MBDC, MTH, NH, NS, ST

(X) SHBBS SQUARE, SURFACE BACKBOX (Order Codes: Red 500-636126, White 500-636127)



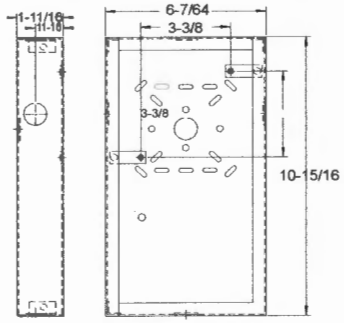
Used with Series AS, AH, NS, Z

(Y) SERS SQUARE SEMI-FLUSH EXTENSION RING (Order Codes: Red 500-636122, White 500-636123)

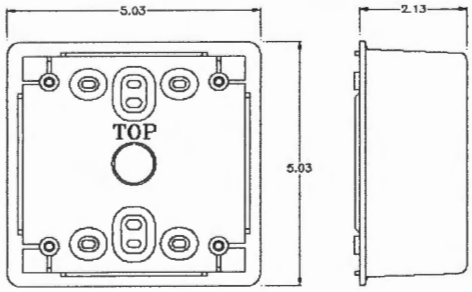


Used with Series CH, SEF, SET

(Z) SBL2S BACKBOX (Order Codes: RED 500-636121)

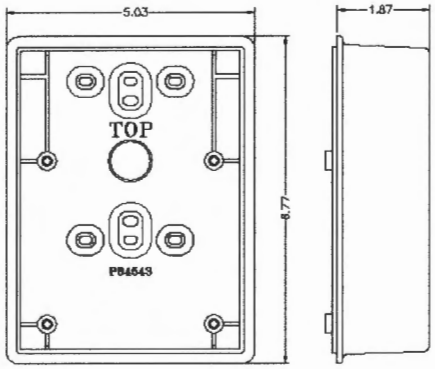


(AA) SPSB (Order Codes: Red 500-636112, White 500-363113)



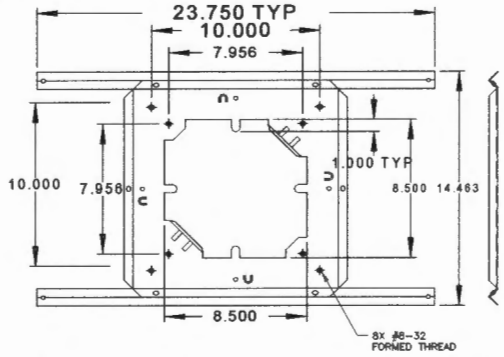
Used with Series SE Speakers

(BB) SPSSB (ORDER CODES: RED 500-636114, WHITE 500-636115)



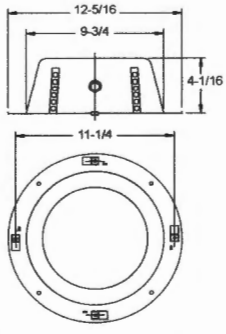
Used with Series SE-MC/HMC (wall mount speaker/ strobe)

(CC) SB-W 8" CEILING SUPPORT BRIDGE (ORDER CODE: WHITE 500-634882)



Used with Series S 8" Ceiling Speakers

(DD) SE-1 8" CEILING SPEAKER BACKBOX (ORDER CODE: WHITE: 500-634881)



Used with 8" Ceiling Speakers

MOUNTING MATRIX

	Series SET-C	Series ST	Series ST-MC-RETRO	Series MH115	Series SE	Series B10-115	Sereis CH	Series SETSF-B	Series SETSF	Series MBDC	Series SET/SET Wall Mount	Series SE-C	Series MH	Series MTH	Series NH/NS	Series HS	Series AS/AH	Series AH-WB(3), MT-WP(4), MTH	Series Z
(A) Universal Mounting Plate (included with AS series devices)																	X		
(B) 1-GANG x 2" Deep - Flush (BO)		X											X		X		X		X
(D) 4" x 4" x 1.5" Deep - Flush (BO)		X	X	X		X				X					X		X		X
(E) 4" x 4" x 2.125 Deep - Flush (BO)		X	X	X	X	X		X		X				X	X	X	X		X
(F) 2-Gang x 3.5" Deep - Flush (BO)		X												X	X	X	X		X
(G) 2-Gang x 1.75" Deep - Surface (BO)		X													X		X		
(I) WPBBS-R Weatherproof Backbox for AS-WP																		2	
(J) BBS Surface (SP) Note 9		X		X		X				X					X				
(K) WBBS Weatherproof (SP)				X		X			X	X							X	3	
(M) MT-SUR-BOX Surface & Weatherproof (SP)											X			X		X		4	
(N) DBBS Surface (SP)		X		X		X			X	X				X	X	X			
(P) SBBS Surface (SP)	X	X				X	X	X		X	X			X	X	X	X		
(Q) 4" x 4" x 2.125" Box w/ 1.5" Extension Ring- Flush (BO)	X		X				X	X			X	X							
(R) SPT Semi-Flush Plate (SP)		X		X		X	X	X		X	X			X	X	X	X		
(S) APS Adapter Plate (SP)						X			X	X	X								
(T) WPSBBS-R Weatherproof Backbox for ST-WP																		1	
(U) 5" Square Backbox w/ Extension Ring, Flush (BO)	X						X	X				X							
(W) 4.6875" x 4.6785" x 2.125" Deep Surface (BO)																			
(X) SHBBS (SP) Shallow Surface		X				X				X					X		X		
(Y) SERSSemi-Flush Extension Ring (Retrofit Appl.)	X						X				X								
(Z) SBLS-2 Surface (SP)		X	X	X		X	X	X		X									
(AA) SPSB Backbox for SE Speaker					X														
(BB) SPSSB Backbox for SE Speaker Strobe					X														
(EE) SPEXT Extension Ring												X							
(FF) ZBB																			X

MOUNTING NOTES

Caution: The mounting options figures show the maximum number of field wires (conductors) that can enter the backbox used with each mounting option. If these limits are exceeded, there may be insufficient space in the backbox to accommodate the field wires and stresses from the wires could damage the product.

Although the limits shown for each mounting option comply with the National Electrical code (NEC), Siemens recommends use of the largest backbox option and the use of approved field wires whenever possible, to provide additional wiring room for easy installation and minimum stress on the product from wiring.

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

1. Mounting hardware for each mounting option is supplied.
2. Conduit entrances to the backbox should be selected to provide sufficient wiring clearance for the installed product. When extension rings are required, conduit should enter through the backbox, not the extension ring. Use Steel City #53151 (1-1/2" deep) or #53171 (2-1/8" deep) extension rings (as noted in the mounting options) or equal with the same cut-out area.
3. When terminating field wires, do not use more lead length than required. Excess lead length could result in insufficient wiring space for the appliance.
4. Use care and proper techniques to position the field wires in the backbox so that they use minimum space and produce minimum stress on the product. This is especially important for stiff, heavy gauge wires and wires with thick insulation or sheathing.
5. Do not pass additional wires (used for other than the appliance) through the backbox "unless the backbox is of a sufficient size to permit additional wiring as described in NEC 314.16 (B)". Such additional wires could result in insufficient wiring space for the appliance.

NOTE: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Siemens Inc. standard terms and conditions.

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. Audibles 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.

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8/07 2M SBT/IG

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SIEMENS

Data Sheet
Fire Safety & Security Products

Intelligent Peripheral Devices

Quad Interface Module (4-Input / 4-Output)

Model FDCIO422

ARCHITECT AND ENGINEER SPECIFICATIONS

- Four (4) inputs / four (4) outputs via one (1) address
- Status indication via LED display of all input / output functions
- Supports 'Class A' and 'Class B' wiring
- Input lines can be supervised for open, short and ground-fault conditions
- Light-emitting diode (LED) display of input / output status
- Polarity insensitive with *SureWire*™ technology
- Microprocessor-controlled signal evaluation
- Two-wire installation
- Power supply via FDnet / C-Net module
- Communication via FDnet/C-NET
  - Individual addressing
- Mounts in one (1) electrical back box
  - Optional 4-inch and 5-inch square back boxes
- Four (4) relay outputs
  - Rated 2 – 8 Amps
- Electronic address programming is easy and dependable
- Easy front-end access to programming port and wiring terminals
- Model DPU programs and verifies address of the device, as well as performs test functionality
- Restriction of Hazardous Substances (RoHS compliant)
- ®UL 864 9th Edition Listed;
  FM, CSFM and NYC Fire Department Approved

Product Overview

The four (4) input / (4) output interface module (Model FDCIO422) from Siemens Industry — Fire Safety is designed to provide the means of interfacing direct shorting devices to the Cerberus™ PRO fire-alarm control panels (FACPs).

Model FDCIO422, which contains microcomputer-chip (*SureWire*) technology and is polarity insensitive, achieves the state of an 'intelligent device' through its highly advanced method of address programming and supervision — combined with its sophisticated, bi-directional FACP communication.

The relays and contact device inputs for Model FDCIO422 are controlled at the same address. For the FACP, the relays and input contacts can be controlled as a separate function. The relay is typically used where control or shunting of external equipment is required.

Model FDCIO422 is designed to monitor Normally Open (N.O) or Normally Closed (N.C) dry contacts. Each interface module reports the status of the (N.O) or (N.C) contacts to the FACP.

Specifications

Model FDCIO422 is used for the connection of up to two (2) independent 'Class A' or four (4) independent 'Class B,' dry and N.O configurable contacts. Input lines can be supervised for open, short and ground-fault conditions (depending on end-of-line [EOL] termination resistor and class configuration).

Inputs can independently be configured via the FACP for *Alarm*, *Trouble*, *Supervisory* or *Status* zones.

Model FDCIO422 has four (4) programmable outputs with four (4) potential-free latching-type 'Form A' (dry) relay contacts for fire-control installations.

The FDnet module provides supervised, power-limited power supply for Model FDCIO422. The four (4) input / (4) output interface module provides status indication per LED for each input / output, plus one (1) LED for general device status:

- Four (4) EOL devices (470 ohms)
- Three (3) separators to separate power-limited wiring from non-power limited wiring

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Building Technologies Division

Specifications — (continued)

Separators are delivered in the following sizes:

- ✓ 4–x–11/16-inch back box
- ✓ 4–x–11/16-inch extension ring

Note: Optional 5" back boxes are available exclusively via Randl Industries, Inc.

Model FDCIO422 has a multi-color LED that flashes GREEN when operating in 'normal' (standby) condition; AMBER if unit is in a *Trouble* event, and RED to indicate a change of event status.

Model FDCIO422, which is fitted with screw terminals for connection to an addressable circuit, is fully compatible on the same circuits with all intelligent Siemens 'H'-series detectors; 'HMS'-series addressable manual stations, or any other addressable intelligent modules, such as Model HZM or Model HCP.

Model DPU

Model FDCIO422 is compatible with the Siemens field-device programmer / test unit (Model DPU), which is a compact, portable, menu-driven accessory for electronically programming and testing detectors, easily and reliably.

Model DPU eliminates the need for cumbersome, unreliable mechanical programming methods—such as dials or rotary switches—and reduces installation and service costs by electronically programming and testing the detector prior to installation (via the interface's microcomputer-chip, non-volatile memory).

For proper operation of Model DPU, the technician selects the accessory's program mode, and enters the desired address. In turn, Model DPU automatically sets and verifies the address, as well as tests the detector. When in the 'test' mode, Model DPU will perform a series of diagnostic tests without altering the address or other stored data, allowing technicians to determine if the detector is operating properly.

Model DPU operates on AC power or rechargeable batteries, providing flexibility and convenience in programming and testing equipment from practically any location. Further, vibration, corrosion and other conditions that deteriorate mechanical-addressing mechanisms are no longer a cause for concern.

Application

NFPA-guideline spacing is based on ideal conditions—namely: smooth ceiling, no air movement, and no physical obstructions between the fire source and the detector.

Do not mount interface modules in areas close to ventilating or air-conditioning outlets. Exposed joists or beamed ceilings may also effect safe spacing limitations for Model FDCIO422. It is mandatory to precisely follow NFPA 72 regulations, as well as applying professional engineering judgment, regarding interface locations and spacing.

Electrical Ratings

Voltage Rating:	12VDC — 32VDC
Maximum Voltage: (FDnet / Cnet modules)	32VDC
Operating current: (quiescent)	1mA
Peak Current:	192mA, max.

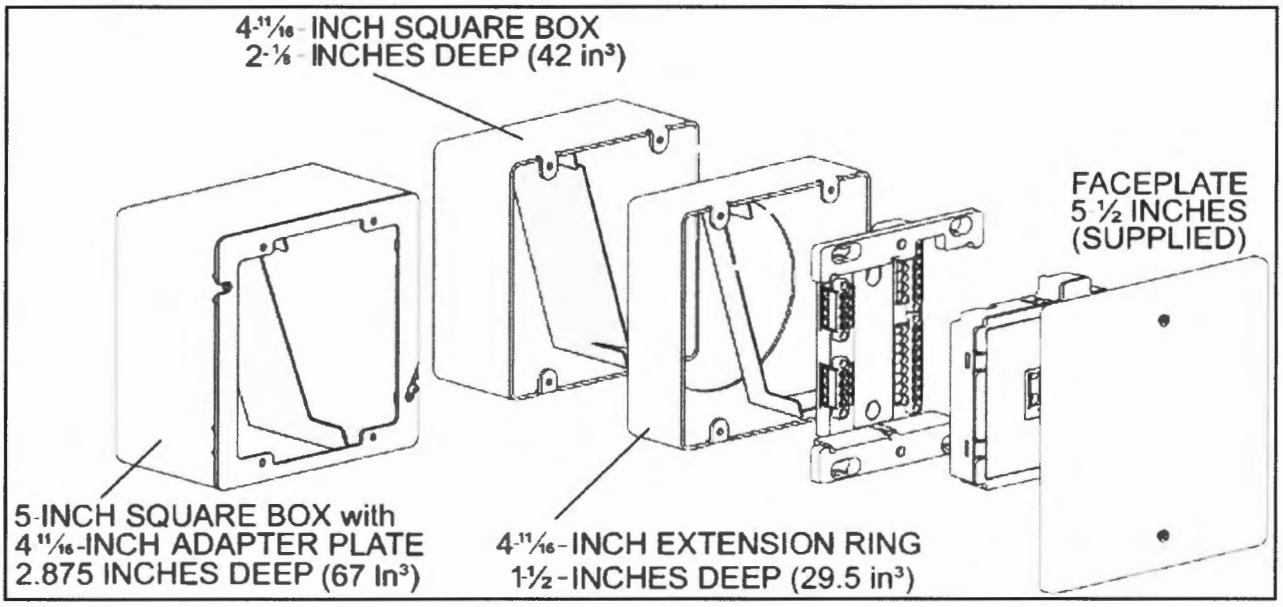
Supervised switch ratings

Monitoring Voltage:	3VDC
Cable-length input:	200 feet (61 meters), max.
Input-shielding cable-length range:	30 ft — 200 ft (9.14m — 61m)
C line-to-line:	0.02 µF, max.
C line-to-shield:	0.04 µF, max.
Line Sizes American Wire Gauge (AWG)	14 AWG, max; 18 AWG, min.

Technical Data

Communication Protocol:		FDnet / Cnet **(supervised signaling-line circuit, power limited)**
Operating Temp. Range:		-22 – +140 °F (-30 – +60 °C)
Relay Outputs	**Normally Open**	2 -x- 7 Amps ('Out' B, C)
	Normally Closed	1 -x- 8 Amps ('Out' C)
Relative Humidity:		5 – 85 % **(non freezing and condensing at low temperature)**
PHYSICAL PROPERTIES	**Color:**	Carrier: ~RAL 9017
	Cage Cover:	Transparent
	Cage:	~RAL 9017
	Faceplate:	White
	Dimensions:{ W -x- H -x- D }	4" -x- 4.7" -x- 1.2" (12 cm. -x- 12 cm. -x- 3.1 cm.)
	Weight:	3 Lbs. (1.12 kgs.)
	Volume: (cage and carrier)	11.7 inch^3

Mounting Diagram
– Model FDCIO422 Control-Module (Supplied) Barrier –



Compatible FACPs

Model Number	Data Sheet Number	Description
FC901	9813	50-point panel
FC922	9815	252-point system (networkable)
FC924	9815	504-point system (networkable)

Details for Ordering

Model Number	Part Number	Description
FDCIO422	S54322-F4-A1	Four (4) Input / Four (4) Output Interface Module
EOL-100	S54312-F7-A1	End-of-Line (EOL) Resistor {100 Ω ±1% ½ W}
TB-EOL	S54322-FY-A2	TB - EOL Terminal

Optional Accessories

[available via Randl Industries, Inc.]

Part Number	Description
M-411000	4-11/16-inch adapter plate
T55017	5-inch back box
T55018	5-inch back box
T55019	5-inch back box

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Notice: This marketing data sheet is not intended to be used for system design or installation purposes. For the most up-to-date information, refer to each product's installation instructions.

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Building Technologies Division

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Data Sheet
Fire Safety & Security Products

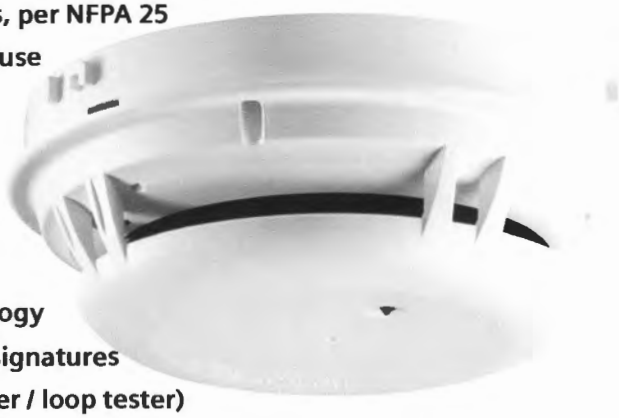
Intelligent Detection Devices

Multi-Criteria Fire Detector [with *ASAtechnology*™]

Model OOH941

ARCHITECT AND ENGINEER SPECIFICATIONS

- Advanced / ®UL 268-compliant, multi-criteria fire detector that has dual optical and thermal sensors
- Differentiates between deceptive phenomena and an actual fire (nuisance-alarm avoidance)
- Provides enhanced detection via forward-and-backward light-scattering technology
- ®UL 521 Listed heat detector with five (5) possible field-selectable temperatures; combined with four (4) rate-of-rise options
- Complies with NFPA 76 (Telco standard) as 'VEWFD' high-sensitivity detector
- Compatible with Siemens Model 'H'-series devices on the same loop
- Low-temperature warning for sprinkler systems, per NFPA 25
- ®UL 268A Listed for direct air-duct (4,000 FPM) use
- Supervisory temperature-monitoring feature
- Remote sensitivity-measurement capability
- Automatic environment compensation
- Up to 22 application profiles
- Tri-color detector status LED with 360° viewing
- Polarity insensitive utilizing *SureWire*™ technology
- Responds to both flaming and smoldering-fire signatures
- Compatible with Model DPU (device programmer / loop tester)
- Environmentally efficient alternative to ionization detectors
- Meets guidelines (®UL, NFPA 72) for sensitivity self-monitoring
- Compatible with legacy Model DB-11–series mounting bases



- ®UL 268 / RoHS compliant
- ®UL Listed and ®ULC Pending; CSFM Approved

Product Overview

The Model OOH941 is an advanced, multi-criteria fire detector that incorporates a redundant, optical / thermal sensor. Model OOH941 uses a unique forward / backward light-scattering technology providing state-of-the-art, unparalleled fire detection to the widest range of fire types.

Model OOH941 is programmable as a high-sensitivity detector, and meets the requirements of NFPA 76 Standard (*for the Fire Protection of Telecommunications Facilities*) as a Very Early Warning Fire Detector (VEWFD).

The Model OOH941 detector is a flexible, multi-purpose detector that provides all solutions to meet detection needs. The detector can be field programmed for simultaneous and or independent functionality, depending upon the exact customer and application requirements.

For example the detector can utilize the optical and heat sensors together for enhanced fire detection (multi-criteria) and simultaneously provide independent output for heat detection. The detector is extremely versatile and meets the following standards:

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Product Overview — (continued)

- Multi-criteria fire detector (UL 268)
- Heat detector (UL 521) with five (5) possible field-selectable temperatures; combined with four (4) rate-of-rise options
- Direct in-duct (plenum) detector (UL 268A)
- Supervisory monitoring for temperature ranges
- NFPA 76 (Telco Standard) as VEWFD
- Low-temperature warning signal at 40°F (4.4°C) — for sprinkler systems, per NFPA 25 / NFPA 72

Model OOH941 — which provides extremely accurate and reliable detection with built-in redundancy — utilizes advanced, multi-criteria detection technology known as ASA (Advanced Signal Analysis) that allows the detector to distinguish non-threatening deceptive phenomena.

For instance, the signals from the detector's sensors are monitored and processed via the ASA patented-algorithm technology, which combines the signals into a neural network to create an intelligent, multi-criteria detector.

The encompassing result is a detector that provides enhanced detection to a wide range of products of combustion, while offering unsurpassed rejection to nuisance-alarm sources, such as: dust, steam, aerosols and other deceptive phenomena that could cause false alarms.

Since Model OOH941 is a (2) two-wire, addressable device, it is able to function as a multi-purpose detector — satisfying smoke and heat detection in a singular, aesthetically pleasing package. Further, Model OOH941 serves as an extremely cost-effective, sensible solution that saves product, installation and maintenance costs (compared to other multiple detector alternatives). Each detector fits into one (1) wall-or-ceiling footprint, and only occupies one (1) address on the signal-line circuit (SLC).

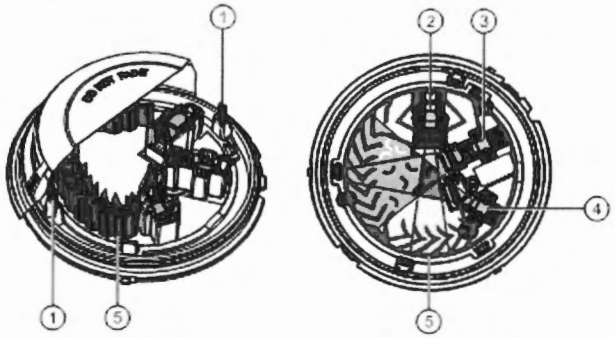
A patented forward / backward, light-scattering technology — which is able to distinguish both small and large products of combustion — operates at the core of each Model OOH941 detector.

Additionally, each Model OOH941 provides an environmental-friendly solution to ionization detectors, eliminating the need for a radioactive source and eventual disposal requirements. Thus, each detector is capable of detecting both smoldering and flaming fire — all in ecologically efficient manner — and is a valid, RoHS-compliant (Restriction of Hazardous Substances) detection alternative to ionization detectors.

Two (2) thermal sensors make each Model OOH941 detector a robust, reliable device suitable for the most challenging applications.

Operation

Forward / Backward Light-Scattering Technology



1. **Heat sensors**
2. **Receiver**
3. **Backward scatterer**
4. **Forward scatterer**
5. **Labyrinth**

The high-quality, optical-electronic measuring chamber for each Model OOH941 houses the following components:

- ✓ Two (2) optical transmitters
- ✓ One (1) optical receiver
- ✓ Two (2) thermal sensors

The transmitters illuminate the smoke particles from different angles: one sensor acts as forward scatterer, the other sensor as a backward scatterer. The scattered light then hits the receiver (photodiode) and generates a measurable electric signal. The combination of a forward-and-backward scatterer facilitates optimum detection, as well as differentiates between light-and-dark particles / particle size. This type of detection creates standardized, responsive behavior and optimizes the differentiation between wanted signals and deceptive phenomena.

In addition, the heat sensors make it possible to detect fires without smoke generation:

- ✓ Early detection of all fire types of fire — whether they generate light-or-dark smoke, or no smoke
- ✓ The fire detector can be operated at a lower sensitivity level, thus achieving a higher immunity against false alarms that may otherwise be caused by cold aerosols (e.g. — by smoking, electrical welding, etc.).

  In the case of an open fire, the smoke sensitivity is heightened by a temperature increase — which means that a detection-reliability level that is comparable to a wide-spectrum smoke detector can be achieved and maintained

Operation — (continued)

Model DPU

Model OOH941 is compatible with the Device Program / Test Unit accessory, which is used to program and verify the address of the detector. The technician selects the accessory's program mode, and enters the desired address. Model DPU automatically sets and verifies the address and tests the detector.

Model DPU eliminates the need for cumbersome, unreliable mechanical programming methods — such as dials or switches — and reduces installation and service costs by electronically programming and testing the detector prior to installation.

Model DPU operates on AC power or rechargeable batteries, providing flexibility and convenience in programmer and testing equipment from practically any location.

When in 'test' mode, Model DPU will perform a series of diagnostic tests without altering the address or other stored data, allowing technicians to determine if the detector is operating properly.

Field-selectable application profiles

Model OOH941 provides 22 user-friendly, field-selectable application profiles, indentified with universally known names (e.g. — Hotel, Telco, Office, Parking Garage, Dormitory, and Data Center etc.) Refer to installation manual: **P/N— A6V10324655** for a complete list and description of application profiles.

Due to generic-name classification, no cross-reference tables are required as the application name resides in the panel's configuration tool. This user-friendly feature — along with the algorithms provided by ASA*technology* — provides a reliable, field-configurable detector suitable for an array of applications.

Field-selectable temperature settings

Model OOH941 provides five (5) field-selectable temperature thresholds, ranging from 135°F to 175°F (57°C to 79°C), with fixed and rate-of-rise options. The aforementioned ranges provide the customer with maximum flexibility to program and easily adjust the temperature settings to suit multiple application needs within a building or changing environmental conditions.

Additionally, Model OOH941 can be configured to provide a low temperature warning signal at 40°F (4.4°C).

This configuration (along with connection to a compatible fire alarm control panel {FACP}) meets NFPA 72 requirements for sprinkler-temperature monitoring, and serves as prevention of water freezing in pipes for water-based suppression systems.

Ambient supervisory feature for temperature

Another highlight for Model OOH941 is supervision of ambient temperatures, allowing the end user to set an unique, specified warning point at a customized temperature threshold ranging from -4°F to 120°F (-20°C to 49 °C). This feature is practical for monitoring of machinery; special processes, or for environments where maintaining a temperature is critical as an early-warning supervisory signal.

Self-monitoring for smoke-sensor sensitivity

Model OOH941 provides an automatic self-monitoring sensitivity check that suits the NFPA 72 sensitivity requirements. When connected with a compatible FACP, Model OOH941 detects automatic-and-dynamic sensitivity verification within the agency-listed-and-approved limits. Besides checking for sensor integrity and automatic environmental compensation, Model OOH941 provides a display and report of sensitivity in percent-per-foot (or percent-per-meter) at the FACP.

Profile Overview

The Model OOH941 detector contains a tri-color LED indicator, capable of flashing any one (1) of three (3) distinct colors: Green, Yellow, or Red. During each flash interval, the microprocessor-based detector monitors the following:

- Smoke in its sensing chamber
- Smoke sensitivity is within the range indicated on the nameplate label
- Internal sensors and electronics

Based on the results of the monitoring, the LED indicator flashes the following:

Flash Color	Condition	Flash Interval (in seconds)
Green*:	Normal supervisory operation. Smoke sensitivity is within rated limits.	10
Yellow:	Detector is in trouble and needs replacement.	4
Red:	Alarm condition.	1
No Flash:	Detector is not powered.	— —

* LED can be turned OFF.
Please follow the corresponding description of the panel used.

Installation

All Model OOH941 detectors use a surface-mounting base (Model DB-11 or Model DB-11E), which mounts on a 4-inch octagonal, square or single-gang electrical box. The base utilizes screw-clamp contacts for electrical connections and self-wiping contacts for increased reliability.

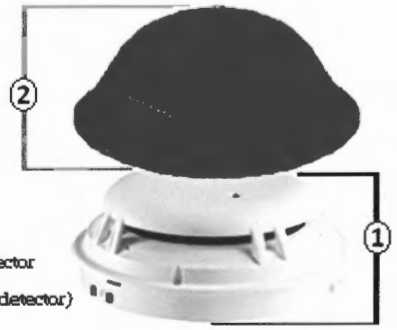
The Model DB-11 base can be used with the optional Model LK-11 detector locking kit, which contains 50 detector locks and an installation tool to prevent unauthorized removal of the detector head. Model DB-11 has decorative plugs to cover the outer mounting screw holes.

Model OOH941 may be installed on the same initiating circuit with the Siemens Model 'H'-series detectors (Models HFP-11 and HFPT-11); Model 'HMS'-series manual stations; Model 'HTRI'-series interfaces; Model HCP output-control devices, or Model 'HZM'-series of addressable, conventional zone modules.

Each detector consists of the following:

- Dust-resistant photoelectric chamber
- Solid state, non-mechanical thermal sensor
- CO sensor
- Microprocessor-based electronics with a low-profile plastic housing

Each Model OOH941 fire detector is shipped with a protective dust cover:



1) Model OOH941 detector
2) Dust cover
(provided with each detector)

All Model OOH941 detectors are approved for operation within the ®UL-specified temperature range of 32° to 120°F (0° to 49°C) — depending on heat-detector configuration (see to installation manual: **P/N A6V10324655**) for details.

Application Data

Installation of the Model OOH941 series of fire detectors requires a two-wire circuit. In many retrofit cases, existing wiring may be used. 'T-tapping' is permitted only for Style 4 (Class B) wiring. Model OOH941 is polarity insensitive, which can greatly reduce installation and debugging time.

Model OOH941 fire detectors can be applied within the maximum 30-feet center spacing (900 sq. ft. areas,) as referenced in NFPA 72. This application guideline is based on ideal conditions — specifically, smooth ceiling surfaces; minimal air movement, and no physical obstructions between potential fire sources and the actual detector. Do not mount detectors in close proximity to ventilation or heating and air conditioning outlets. Exposed joints or beamed ceilings may also affect safe spacing limitations for detectors.

Should questions arise regarding detector placement, observe NFPA 72 guidelines. Good fire-protection system engineering and common sense dictate how and when fire detectors are installed and used. Contact your local Siemens Industry — Fire Safety distributor or sales office whenever you need assistance applying Model OOH941 in unusual applications. Be sure to follow NFPA guidelines and ®UL Listed / ®ULC Pending installation instructions — included with every Siemens – Fire Safety detector — and local codes as for all fire protection equipment.

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Building Technologies Division

Technical Data

Operating Temperatures: +32°F (0°C) to 120°F (49°C)
depending upon heat-detector configurations (see to installation manual: **P/N A6V10324655***) for details*

Heat-Detector Range: +135°F (57°C) to 175°F (79°C)

Thermal Rating:

OOH941 Selectable Temp. Profiles

Fixed temperature 135°F
Fixed temperature 145°F
Fixed temperature 155°F
Fixed temperature 165°F
Fixed temperature 175°F
Fixed temperature 135°F + Rate of Rise (RoR) 15°F
Fixed temperature 175°F + Rate of Rise (RoR) 15°F
Fixed temperature 135°F + Rate of Rise (RoR) 20°F
Fixed temperature 175°F + Rate of Rise (RoR) 20°F

Selectable Alarm Threshold Setting Profiles

2.50 % / ft. Threshold
3.00 % / ft. Threshold
2.50 % / ft. Threshold, verified
3.00 % / ft. Threshold, verified

Detector Sensitivity Range: ®UL: 0.77% to 3.82% / ft.
NFPA 76 (Telco) VEWFD:
0.2% / ft. Pre-*alarm*,
1.0% / ft. *Alarm*

Application Profiles: 22 (field configurable)

Programmable Supervisory Temperature Warning
available with compatible FACPs:
-4°F (-20°C) to 120°F (49°C)

Relative Humidity: 0-95%; non-condensing

Air Velocity –
(Open Area): 0–4,000 feet-per-minute (fpm)
Direct-in-Duct: 0–4,000 (fpm)

Air Pressure: No effect

Maximum Spacing: 30-foot centers (900 sq. ft.), per NFPA 72 and ®ULC-S524 pending

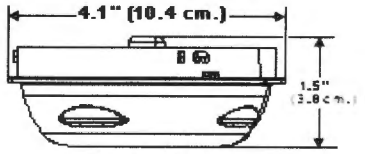
Input Voltage Range: 13VDC – 32VDC

***Alarm* Current:** 650µA, max.

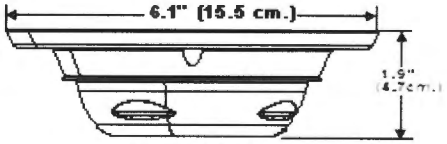
Quiescent (Standby) Current: 280µA – 360µA

Detector Weight: 0.281 lbs. (0.128 kg.)
Approvals / Standards
®UL 268 NFPA 25
®UL 268A NFPA 72
®UL 521 NFPA 76
®ULC-S524 pending

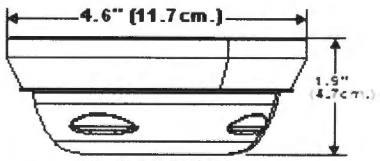
Mounting Diagram
Dimensions



Model OOH941



Model OOH941
with Model DB-11 base



Model OOH941
with Model DB-11E base

SIEMENS Industry, Inc.
Building Technologies Division

Compatible FACPs

Model Number	Data Sheet Number	Description
FC901	9813	50-point panel
FC922	9815	252-point system (networkable)
FC924	9815	504-point system (networkable)

Details for Ordering

Model Number	Part Number	Description
OOH941	S54320-F7-A2	Multi-Criteria Fire Detector with *ASAtechnology*™
DB-11	500-094151	Detector Mounting Base for Series 11
DB-11E	500-094151E	Detector Base {small}
DB2-HR	S54370-F12-A1	Detector Mounting Base with Relay
RL-HC	500-033230	Remote Alarm Indicator: 4" octagon-box mount, red
RL-HW	500-033310	Remote Alarm Indicator: single-gang box mount, red
LK-11	500-695350	Base Locking Kit for Series 11 Detectors

In Canada, order:

Model Number	Part Number	Description
DB-11C	500-095687	Detector Mounting Base for Series 11 Detectors (ULC pending)

Notice: This marketing data sheet is not intended to be used for system design or installation purposes. For the most up-to-date information, refer to each product's installation instructions.

SIEMENS Industry, Inc.
Building Technologies Division

Fire Safety
8 Fernwood Road
Florham Park, NJ 07932
Tel: (973) 593-2600
FAX: (908) 547-6877
URL: www.SBT.Siemens.com/FIS

(SII-FS)
Printed in U.S.A.

Fire Safety
2 Kenview Boulevard
Brampton, Ontario
L6T 5E4 / Canada
Tel: (905) 799-9937
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October 2011
New Issue

SIEMENS

Data Sheet
Fire Safety & Security Products

Intelligent Detection Devices

Multi-Criteria Fire Detector

Model OH921

ARCHITECT AND ENGINEER SPECIFICATIONS

- Multi-criteria addressable fire detector that incorporates photoelectric and thermal sensors
- Utilizes advanced signal processing with proven detection algorithms
- Differentiates between deceptive phenomena and an actual fire (nuisance-alarm avoidance)
- Compatible with Model DPU (device programmer / loop tester)
- Responds to both flaming and smoldering-fire signatures
- Field selectable application profiles
- Superior EMI immunity
- Remote sensitivity-measurement capability
- Tri-color detector status LED with 360° viewing
- Each detector is self-testing:
  - complete diagnostics performed every 10 seconds
  - self monitored for sensitivity within ®UL Listed limits
- Polarity insensitive utilizing *SureWire*™ technology
- Compatible with DB-11 series mounting bases
- Compatible with FireFinder™ XLS control panels (with Siemens Model 'H'-series devices on the same loop)
- Listed and approved as heat detector
  - Rate-of-Rise Detection: 15°F / min. (8.3°C / min), and fixed 135°F (57°C)

- RoHS compliant
- Automatic environment compensation
- ®UL Listed and ®ULC Pending; CSFM and NYC Fire Dept. Approved

Product Overview

The Model OH921 photoelectric detector incorporates both optical and thermal sensors, and uses advanced software algorithms to combine the signals into a neural network to create an intelligent multi-criteria detector. The encompassing result is a detector that provides enhanced detection to a wide range of products of combustion, while offering superior rejection to nuisance-alarm sources.

Model OH921 utilizes advanced multi-criteria detection technology that allows the detector to distinguish non-threatening deceptive phenomena (i.e. – cigarette smoke) while optimizing detection for the area. Model OH921 uses state-of-the-art microprocessor circuitry with error check, detector self-diagnostics and supervision programs.

Model OH921 is compatible with the Siemens Fire Safety field-device programmer / test unit (Model DPU), which is a compact, portable, menu-driven accessory for electronically programming and testing detectors, easily and reliably.

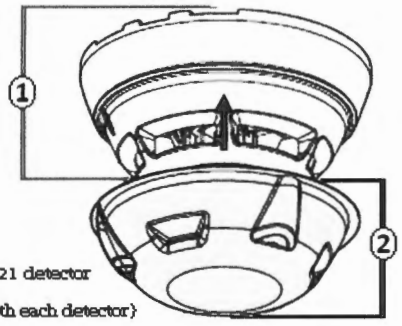
Model DPU eliminates the need for cumbersome, unreliable mechanical programming methods, such as dials or switches, and reduces installation and service costs by electronically programming and testing the detector prior to installation.

Model OH921 is a plug-in, addressable, two-wire and multi-criteria detector (with both photoelectric and thermal inputs) that is compatible with FireFinder XLS control panels.

SIEMENS Industry, Inc.
Building Technologies Division

Product Overview — (continued)

Each detector consists of a dust-resistant photoelectric chamber; a solid state, non-mechanical thermal sensor, and microprocessor-based electronics with a low-profile plastic housing. Every Model OH921 fire detector is shipped with a protective dust cover:



1) Model OH921 detector
2) Dust cover
(provided with each detector)

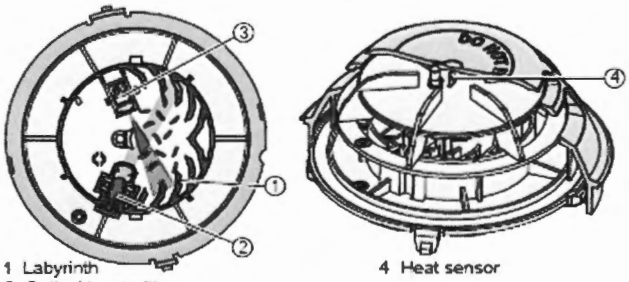
Operation

Model OH921 utilizes an infrared light emitting diode (IRLED), and infrared light-sensing photodiode. Under normal conditions, light transmitted by the LED is directed away from the photodiode and scattered through the smoke chamber in a controlled pattern.

The smoke chamber is designed to manage light dissipation and extraneous reflections from dust particles or other non-smoke, airborne contaminants in such a way as to maintain stable, consistent detector operation. When smoke enters the detector chamber, light emitted from the IRLED is scattered by the smoke particles, and is received by the photodiode.

Model OH921 also utilizes a modern, accurate and shock-resistant thermistor to sense temperature changes.

The signal processing with detection algorithms allows the detector to first gather smoke and thermal data, and then analyze this information in the detector's 'neural network.' By comparing data received with the common characteristics of fires or fire signatures, Model OH921 can compare these signals to those of deceptive phenomena that cause other detectors to false alarm.



1 Labyrinth
2 Optical transmitter
3 Optical receiver
4 Heat sensor

Each Model OH921 detector provides three (3) pre-programmed parameter sets that can be selected by the fire alarm control panel.

Profile Overview

Model OH921 provides two (2) different alarm sources that can be selected individually (ON or OFF) by the control panel.

Alarm Source 1 (Neural Network) – Combines smoke – heat with the following selectable profiles:

- Sensitive
- Standard
- Robust

***Sensitive*:** This parameter set is practically suitable for areas where few misleading sources of false alarm are present, and is appropriate where priority is given to detecting open fires as soon as possible (e.g. – typically a clean application with controlled environmental conditions.)

***Robust*:** This parameter set offers improved resistance to false alarms in areas where misleading sources, such as cigarette smoke or exhaust fumes, may cause a nuisance alarm.

***Standard*:** This parameter set is practically apt for normal office, hotel lobby type applications and is the default setting.

Alarm source 2 (Thermistor) – Heat only, provides the following:

- Static / fixed at 135°F (57°C), default setting
- Rate-of-Rise Detection: 15°F / min. (8.3°C / min)

If the detector is not programmed, Model OH921 will default to a 'standard' profile setting, which allows operation for a normal office-type environment.

Model OH921 contains a tri-color LED indicator, capable of flashing any one (1) of three (3) distinct colors: Green, Yellow, or Red. During each flash interval, the microprocessor-based detector monitors the following:

- Smoke in its sensing chamber
- Smoke sensitivity is within the range indicated on the nameplate label
- Internal sensors and electronics

Based on the results of the monitoring, the LED indicator flashes the following:

Flash Color	Condition	Flash Interval (in seconds)
Green*:	Normal supervisory operation. Smoke sensitivity is within rated limits.	10
Yellow:	Detector is in trouble and needs replacement.	4
Red:	Alarm condition.	1
No Flash:	Detector is not powered.	— —

* LED can be turned OFF.
Please follow the corresponding description of the panel used.

SIEMENS Industry, Inc.
Building Technologies Division

Installation

All Model OH921 detectors use a surface-mounting base, Model DB-11 or Model DB-11E, which mounts on a 4-inch octagonal, square or single gang electrical box. The base utilizes screw-clamp contacts for electrical connections and self-wiping contacts for increased reliability.

The Model DB-11 base can be used with the optional Model LK-11 detector locking kit, which contains 50 detector locks and an installation tool to prevent unauthorized removal of the detector head. Model DB-11 has decorative plugs to cover the outer mounting screw holes.

Model OH921 may be installed on the same initiating circuit with the Siemens Model 'H'-series detectors (Models HFP-11 and HFPT-11); Model 'HMS'-series manual stations; Model 'HTRI'-series interfaces; Model HCP output-control devices, or Model 'HZM'-series of addressable, conventional zone modules for FireFinder XLS control panels.

All Model OH921 detectors are approved for operation within the ®UL-specified temperature range of 32 to 100°F (0 to 38°C).

Model DPU

The Device Program / Test Unit accessory is used to program and verify the address of the detector. The technician selects the accessory's program mode, and enters the desired address. Model DPU automatically sets and verifies the address and tests the detector.

Model DPU operates on AC power or rechargeable batteries, providing flexibility and convenience in programmer and testing equipment from practically any location.

When in the test mode, Model DPU will perform a series of diagnostic tests without altering the address or other stored data, allowing technicians to determine if the detector is operating properly.

Application Data

Installation of the Model OH921 series of fire detectors requires a two-wire circuit. In many retrofit cases, existing wiring may be used. 'T-tapping' is permitted only for Style 4 (Class B) wiring. Model OH921 is polarity insensitive, which can greatly reduce installation and debugging time.

Model OH921 fire detectors can be applied within the maximum 30-feet center spacing (900 sq. ft. areas,) as referenced in NFPA 72. This application guideline is based on ideal conditions, specifically, smooth ceiling surfaces, minimal air movement, and no physical obstructions between potential fire sources and the actual detector. Do not mount detectors in close proximity to ventilation or heating and air conditioning outlets. Exposed joints or beamed ceilings may also affect safe spacing limitations for detectors.

Should questions arise regarding detector placement, observe NFPA 72 guidelines. Good fire-protection system engineering and common sense dictate how and when fire detectors are installed and used. Contact your local Siemens Industry – Fire Safety distributor or sales office whenever you need assistance applying Model OH921 in unusual applications. Be sure to follow NFPA guidelines and ®UL Listed / ®ULC Pending installation instructions – included with every Siemens – Fire Safety detector – and local codes as for all fire protection equipment.

Technical Data

Operating Temperatures: +32°F (0°C) to 100°F (38°C)

Relative Humidity: 0-95%; non-condensing

Air Velocity: 0–4,000 ft. / min (0-20m / sec)

Air Pressure: No effect

Maximum Spacing: 30-foot centers (900 sq. ft.), per NFPA 72 and ®ULC-S524 pending

Input Voltage Range: 16VDC – 30VDC

***Alarm* Current:** 410uA

Standby Current: 250uA, max. (average)

Detector Sensitivity Range: ®UL: 1.10% to 2.62% / ft.
®ULC: 1.44 to 3.06% / ft. Pending

Thermal Rating:
- Fixed-temperature set point: 135°F (57°C)
- Rate-of-Rise Detection: 15°F / min. (8.3°C / min)

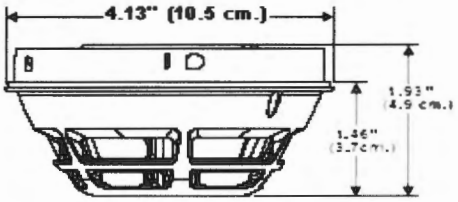
Detector Weight: 0.317 lbs. (0.144 kg.)

Mechanical Protection Guard:
®UL Listed /®ULC Pending
with STI Guard Model STI-9604

SIEMENS Industry, Inc.
Building Technologies Division

Mounting Diagram

Dimensions



Details for Ordering

Model Number	Part Number	Description
OH921	S54320-F6-A2	Addressable Multi-Criteria Fire Detector
DB-11	500-094151	Detector Mounting Base for Series 11
DB-11E	500-094151E	Detector Base {small}
RL-HC	500-033230	Remote Alarm Indicator: 4" octagon-box mount, red
RL-HW	500-033310	Remote Alarm Indicator: single-gang box mount, red
LK-11	500-695350	Base Locking Kit for Series 11 Detectors

In Canada, order:

Model Number	Part Number	Description
DB-11C	500-095687	Detector Mounting Base for Series 11 Detectors (ULC pending)

Notice: This marketing data sheet is not intended to be used for system design or installation purposes. For the most up-to-date information, refer to each product's installation instructions.

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Building Technologies Division

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(SII-FS)
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L6T 5E4 / Canada
Tel: (905) 799-9937
FAX: (905) 799-9858

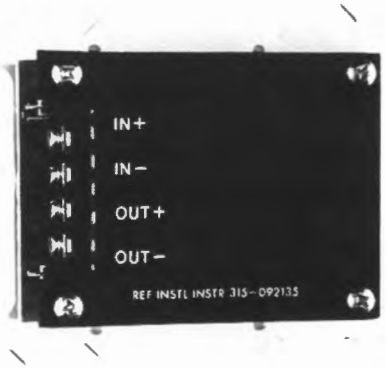
August 2011
Supersedes sheet dated 7/11
(Rev. 2)

FARADAY

8709 Line Isolator Module for Use With MPC-6000 & 7000 Control Panels

Features

- Short Circuit Isolation
- Used on MPC-6000 & 7000 Intelligent Device Circuits
- Increased FaultTolerance
- Style 4 or Style 6
- Up to 12 Per Loop
- Requires no Programming
- Does Not Occupy a Device Address
- Mounts in Either 4" Square, 21/8" Deep or a 3 1/2" Deep Double Gang Electrical Box
- Local LED Indicator
- Cover Plate Included
- (UL) Listed, NYMEA and CSFM Submitted



Description

The 8709 loop isolator module provides short circuit protection on MPC-6000 & 7000 intelligent device circuits (FDLC). When a short is detected by the 8709, it isolates the affected segment of the circuit, allowing the remaining devices to continue operation. The 8709 is self-restoring, automatically reconnecting to circuit segment when the fault is removed.

The 8709 also includes a yellow LED which illuminates to indicate that the device has been activated. The 8709 mounts in either a 4" square, 2 1/8" deep or a 3 1/2" deep double gang electrical box and is supplied with a cover plate with an opening for the LED.

It can be wired in either a Style 4 or Style 6 configuration.

The 8709 does not occupy a device address on the intelligent device circuit and requires no programming. Up to twelve 8709s may be installed on each loop.

Ordering Information

Model	Description	Part No.
8709	Line Isolator Module	500-033170FA

FARADAY

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

4/05 2.5M SBT/IG

April 2005 - Supersedes sheet dated 12/03

FARADAY

8701 Intelligent Monitoring Module

Features

Intelligent Interface Modules for use with MPC-6000 & 7000 Control Panels

- Interfaces and Supervises Normally Open Contacts
- Compact Size Allows Mounting in Single Gang Box Behind Equipment
- Polarity Insensitive Technology
- Innovative Technology Supports Comprehensive System and Interface Communication
- Dynamic Supervision
- Two Wire Operation
- 8720 Device Program/Test Unit Electronically Programs and Verifies Device's Address and Tests Device's Functionality
- UL Listed, CSFM and NYMEA Approved

Introduction

The FARADAY 8701 Intelligent interface module is designed to provide the means of interfacing direct shorting devices to the MPC-6000 & 7000 initiating circuit.

The 8701 Intelligent interface module provides the market's most advanced method of address programming and supervision, combined with sophisticated control panel communication. Each 8701 interface module incorporates microcomputer chip technology and its sophisticated bi-directional communication capabilities with the control panel.

Description

The 8701 is designed to monitor a normally open dry contact and reports the contact's status to the control panel.

The device's microcomputer chip has the capacity of storing, in memory, identification information as well as important operating status information.

FARADAY innovative technology allows all 8701 intelligent interface modules to be programmed by using the 8720 Device Program/Test Unit. The 8720 is a compact, portable, menu driven accessory that makes programming and testing an interface device faster, easier and more dependable than previous methods. The 8720 eliminates the need for mechanical addressing mechanisms, such as program jumpers, DIP switches or rotary dials, because it electronically sets the 8701 interface's address into the interface's microcomputer chip non-volatile memory. Vibration, corrosion and other conditions that deteriorate mechanical addressing mechanisms are no longer a cause for concern.This 8701 is connected to the program/tester with the programming cable provided with the tester.This programming cable utilizes two (2) alligator clip connectors to attach to the 8701.

The 8701 Series has five leads, one for grounding, which are wired to the system with user supplied wire nuts.

The 8701 is fully compatible on the same circuit with detectors, addressable manual stations or any addressable intelligent modules.

All 8701 intelligent interface modules have been UL and ULC Listed.

Environmental operating conditions for all 8701 modules are 32°F (°C) to 120°F (49°C) with a relative humidity of not greater than 93% non-condensating.

Ordering Information

Model	Description	Shipping oz.	Weight kg.	Part No.
8701	Single Input	3.5	.1	500-034000FA

Electrical Ratings

Current Draw (Active or Standby): 1mA

FARADAY

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

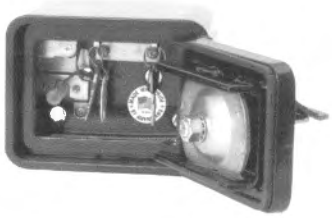
KNOX®
Serving First Responders Since 1975

Knox-Box® 3200 Series
HINGED DOOR MODEL

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.

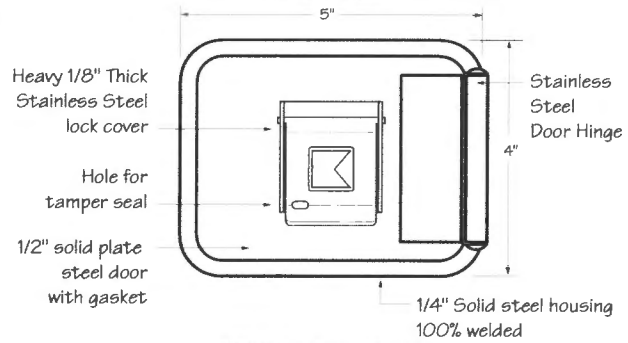
Features and Benefits

- 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

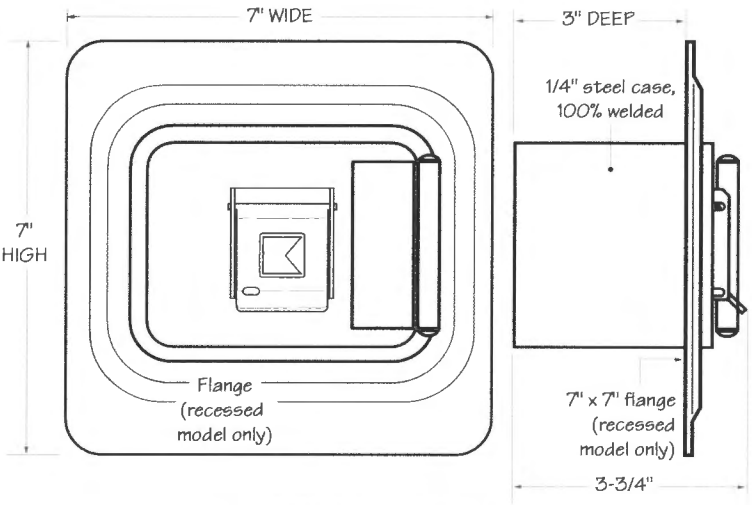
- Alarm tamper switches (UL Listed)
- Recessed Mounting Kit (RMK) for recessed models only
- Inside switch for use on electrical doors, gates and other electrical equipment

Front View



3200 Surface Mount

Front View **Side View**



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.

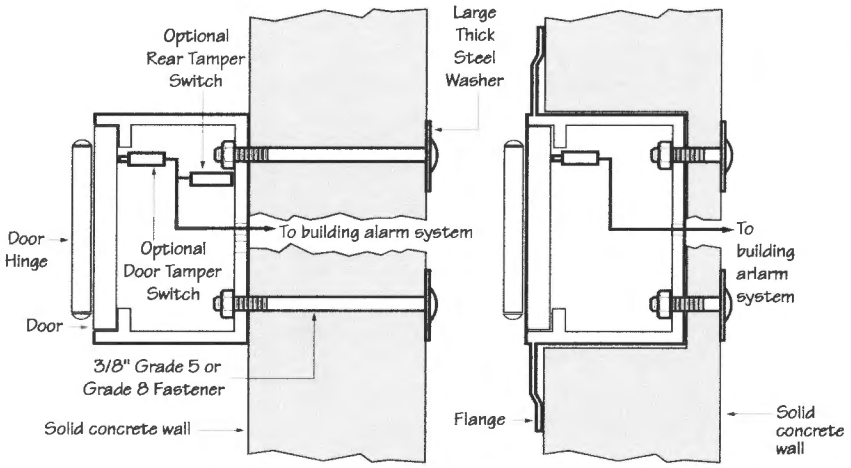
Exterior Dimensions:	Surface mount body- 4"H x 5"W x 3-3/4"D Recessed mount flange- 7"H x 7"W
Lock:	UL Listed. Double-action rotating tumblers and hardened steel pins accessed by a biased cut key.
Finish:	Knox-Coat® proprietary finishing process
Colors:	Black, Dark Bronze or Aluminum
P/N:	3200 Series KNOX-BOX (mfr's cat. ID)
Mfr's Name:	**KNOX COMPANY**

KNOX COMPANY • 1601 W. Deer Valley Road, Phoenix, AZ 85027 • (800) 552-5669 • (623) 687-2300 • Fax (623) 687-2299 • Web: www.knoxbox.com • E-mail: info@knoxbox.com

KNOX®
Serving First Responders Since 1975

Knox-Box® 3200 Series
HINGED DOOR MODEL - MOUNTING DIAGRAM

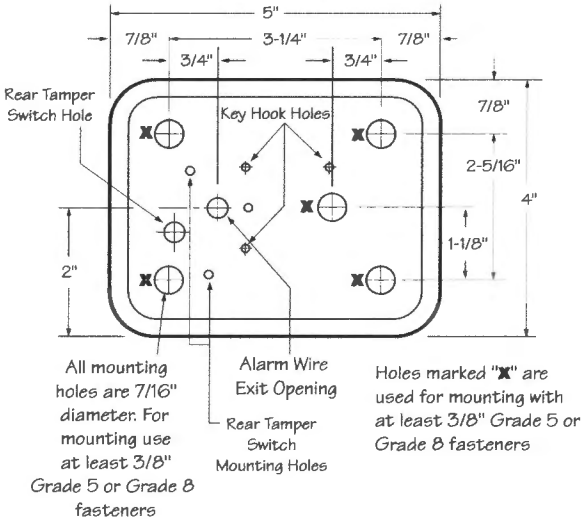
Suggested minimum mounting height
6 feet above ground



3200 Series Hinged Door Surface Mount

3200 Series Hinged Door Recess Mount

Inside View



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

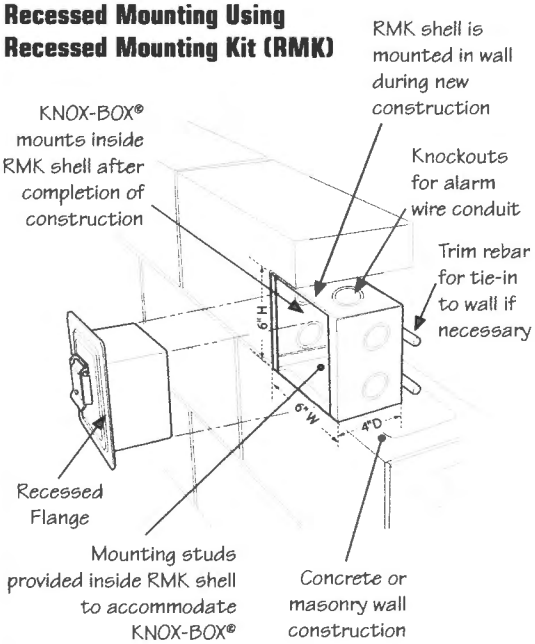
The optional Recessed Mounting Kit is for use in new concrete or masonry construction only. The kit includes a shell housing and mounting hardware to be cast-in-place. The KNOX-BOX is mounted into the shell housing after construction is completed.

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)



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UL Listed

7744F/7788F

AES CORPORATION | IntelliNet For Alarm Monitoring

RF Subscriber Unit

UL Fire, AA Burglary and NFPA-72 Compliant

UL Listed

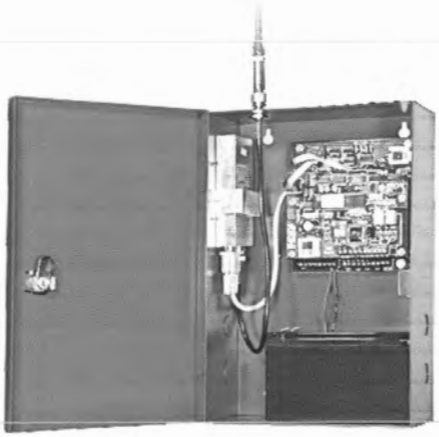
UL Listed Central Station

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**

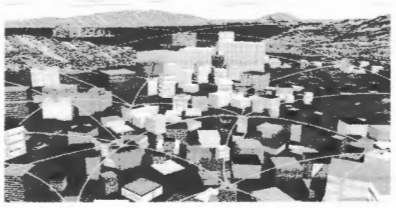
Advanced Wireless Alarm Monitoring

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
7788F – Programmable EOL inputs with 8 zones	IntelliTap 7067
	NEMA 4 Enclosure
	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 CORPORATION | *IntelliNet* For Alarm Monitoring

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

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Tel. +1 978-535-7310 | Fax +1 978-535-7313 | Email info@aes-intellinet.com
Web www.aes-intellinet.com

7744F/7788F/08/09