

# DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

BUILDING DEPARTMENT

## PERMIT

Permit Number: 031314

Please Read Application And Notes, If Any, Attached

This is to certify that Portland Sports Center Llc / American Security  
has permission to Install Fire Alarm System  
AT 550 Warren Ave 271 A002001

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

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

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

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

### OTHER REQUIRED APPROVALS

Fire Dept. [Signature]  
Health Dept. \_\_\_\_\_  
Appeal Board \_\_\_\_\_  
Other \_\_\_\_\_  
Department Name

[Signature] 11/16/05  
Director - Building & Inspection Services

**PENALTY FOR REMOVING THIS CARD**

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

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

Permit No: 03-1314	Issue Date:	CBL: 271 A002001
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Location of Construction: 550 Warren Ave	Owner Name: Portland Sports Center Llc	Owner Address: 512 Warren Ave	Phone:
Business Name: n/a	Contractor Name: American Security	Contractor Address: PO Box 31 Sanford	Phone:
Lessee/Buyer's Name n/a	Phone: n/a	Permit Type: Fire Alarm System	Zone: B4

Past Use: Commercial / Jokers Fun Center	Proposed Use: Joker Fun Center / Install Fire Alarm System	Permit Fee: \$201.00	Cost of Work: \$20,000.00	CEO District: 1
Proposed Project Description: Install Fire Alarm System		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	INSPECTION: Use Group: <i>NA</i> Type: <i>ALARMS 11/6/03</i>	
		Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	
PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)				
Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied				
Signature: _____ Date: _____				

Permit Taken By: gg	Date Applied For: 10/22/2003	<b>Zoning Approval</b>	
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<p>1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.</p> <p>2. Building permits do not include plumbing, septic or electrical work.</p> <p>3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..</p>	<p><b>Special Zone or Reviews</b></p> <p><input type="checkbox"/> Shoreland</p> <p><input type="checkbox"/> Wetland</p> <p><input type="checkbox"/> Flood Zone</p> <p><input type="checkbox"/> Subdivision</p> <p><input type="checkbox"/> Site Plan</p> <p>Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/></p> <p>Date: <i>OK 4/5/03</i></p>	<p><b>Zoning Appeal</b></p> <p><input type="checkbox"/> Variance</p> <p><input type="checkbox"/> Miscellaneous</p> <p><input type="checkbox"/> Conditional Use</p> <p><input type="checkbox"/> Interpretation</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Denied</p> <p>Date: _____</p>	<p><b>Historic Preservation</b></p> <p><input checked="" type="checkbox"/> Not in District or Landmark</p> <p><input type="checkbox"/> Does Not Require Review</p> <p><input type="checkbox"/> Requires Review</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Approved w/Conditions</p> <p><input type="checkbox"/> Denied</p> <p>Date: <i>[Signature]</i></p>
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**CERTIFICATION**

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

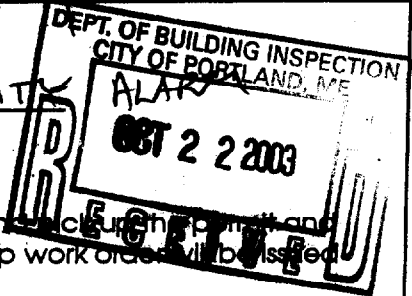
\_\_\_\_\_  
SIGNATURE OF APPLICANT ADDRESS DATE PHONE

\_\_\_\_\_  
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE DATE PHONE

# All Purpose Building Permit Application

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

Location/Address of Construction: <u>550 WARREN AVE</u>		
Total Square Footage of Proposed Structure <u>30,000 SQ FT</u>	Square Footage of Lot	
Tax Assessor's Chart, Block & Lot Chart# <u>275</u> Block# <u>B</u> Lot# <u>001</u>	Owner: <u>(Jokers)</u>	Telephone:
Lessee/Buyer's Name (If Applicable)	Applicant name, address & telephone: <u>SCOTT MATTHEWS</u> <u>AMERICAN SECURITY ALARM</u> <u>PO BOX 31 SAUFORD ME 04073</u>	Cost Of Work: \$ <u>20,000</u> Fee: \$ <u>201.00</u>
Current use: <u>JOKERS Fun CENTER</u>		
If the location is currently vacant, what was prior use: _____		
Approximately how long has it been vacant: _____		
Proposed use: <u>SOCCER FIELD</u>		
Project description: <u>Install fire alarm system</u>		
Contractor's name, address & telephone: <u>SCOTT @</u>		
Who should we contact when the permit is ready: <u>AMERICAN SECURITY</u>		
Mailing address: <u>PO BOX 31</u> <u>SAUFORD ME</u>		
<p>We will contact you by phone when the permit is ready. You must come in and review the requirements before starting any work, with a Plan Reviewer. A stop work order will be issued and a \$100.00 fee if any work starts before the permit is picked up. PHONE:</p>		



**IF THE REQUIRED INFORMATION IS NOT INCLUDED IN THE SUBMISSIONS THE PERMIT WILL BE AUTOMATICALLY DENIED AT THE DISCRETION OF THE BUILDING/PLANNING DEPARTMENT, WE MAY REQUIRE ADDITIONAL INFORMATION IN ORDER TO APPROVE THIS PERMIT.**

*I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.*

Signature of applicant: <u>Scott Matthews</u>	Date: <u>10/22/03</u>
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**This is NOT a permit, you may not commence ANY work until the permit is issued.**  
**If you are in a Historic District you may be subject to additional permitting and fees with the Planning Department on the 4<sup>th</sup> floor of City Hall**



July 7, 2000

DN-1109 • E-200

## PS Series Batteries

Section: Power Supplies

### GENERAL

Power-Sonic PS Series batteries provide secondary power for the whole series of NOTIFIER fire alarm control panels.

### FEATURES

- Provide secondary power for control panels.
- Gelled electrolyte.
- Sealed and maintenance-free.
- Overcharge protected.
- Extended shelf life.
- Easy handling with leakproof construction.
- Ruggedly constructed, high-impact case (ABS, polystyrene, or polypropylene depending on model).
- Long service life.
- Compact design.

### CAPACITY

Battery capacity, expressed in ampere-hours (AH), is the product of a discharge current and the length of time that the current is discharged. Batteries are rated according to their performance during 20 hours of discharge at a constant current.

The rated capacity of a battery is determined by subjecting it to a constant discharge current for 20 hours at 68°F (20°C). After 20 hours the voltage across the terminals is measured. The discharge current which causes a reading of 1.72 volts per cell (5.16 V on a 6 V battery and 10.32 V on a 12 V battery) is called the rated current. This current multiplied by 20 is the rated capacity of the battery.

### APPLICATIONS

Use the PS Series batteries to provide backup power for control panels. Select batteries based on current requirements for your system and the capacity of its charger. These batteries can be used over a temperature range of -76°F to +140°F (-60°C to +60°C).

### CONSTRUCTION

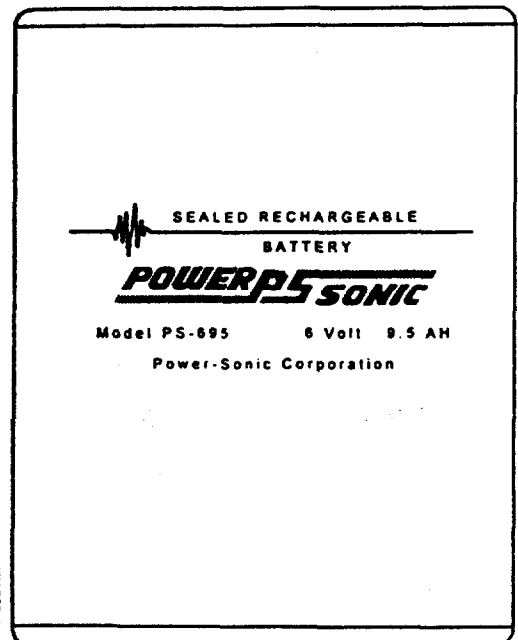
The sealed construction of the Power-Sonic battery allows trouble-free, safe operation in any position. There is no need to add electrolyte, as gases generated during overcharge are recombined in a unique "Oxygen Cycle." The battery is sealed, leakproof, and maintenance-free. The case is of high-impact materials with high resistance to chemicals and flammability.

### INSTALLATION

All panels have space reserved for batteries. See the appropriate panel installation manual for battery size restrictions. Typical inter-connection diagrams are shown in the literature accompanying each control panel.



LISTED  
MH14328 (S)



The PS-695 Battery

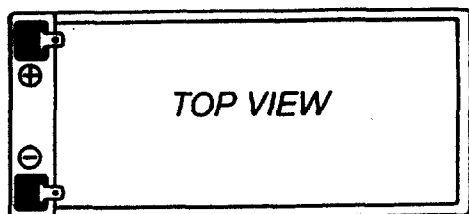
This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact NOTIFIER. Phone: (203) 484-7161 FAX: (203) 484-7118



NOTIFIER

One Fire-Lite Place, Northford, Connecticut 06472

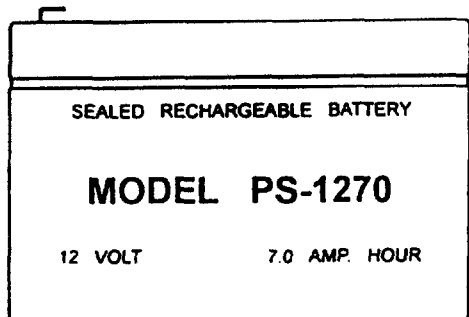
ISO 9001  
CERTIFIED  
ENGINEERING & MANUFACTURING



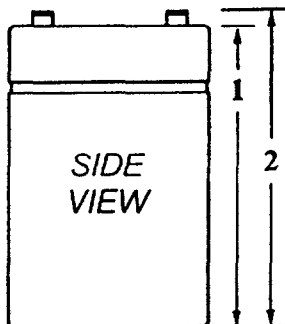
TOP VIEW

HEIGHT 1 BELOW  
3.70 ± 0.08 inches  
(94 ± 2 mm)

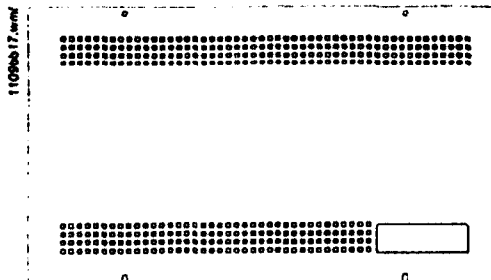
HEIGHT 2 BELOW  
3.86 ± 0.08 inches  
(96 ± 2 mm)



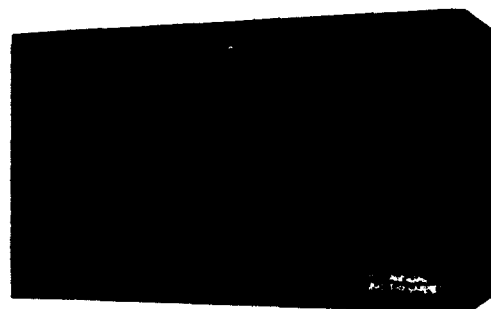
5.94 ± 0.04 inches  
(151 ± 1 mm)



2.56 ± 0.04 inches  
(65 ± 1 mm)



**BB-17: Optional Battery Backbox**  
14-1/2" W x 8-1/4" H x 4-3/4" D  
(mm: 368.3 W x 209.55 H x 120.65 D)  
For remote mounting of two 12-volt PS-12180 batteries.



**BB-55: Optional Battery Backbox**  
See CHG-120 data sheet for details.

1109dm1.wf

6040bb55.wmf

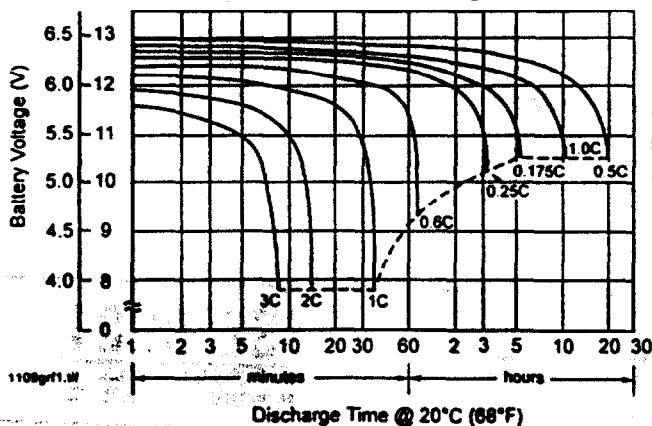
### ENGINEERING SPECIFICATIONS

The fire control panel shall be equipped with secondary power provided by gelled-electrolyte batteries. The batteries shall be maintenance-free and shall be capable of powering the system in a manner and for a length of time determined by the governing regulations and the authority having jurisdiction.

MODEL	Nominal Voltage V	Nominal Capacity @ 20 hr. rate A.H.	Discharge Current @ 20 hr. rate mA	DIMENSIONS									
				Width		Depth		Height		Height over terminal		Weight	
				in.	mm.	in.	mm.	in.	mm.	in.	mm.	lbs.	kg.
PS-695	6	9.5	475	4.26	108	2.75	70	5.54	141	5.54	141	4.9	2.2
PS-1250	12	5.0	250	3.54	90	2.76	70	4.02	102	4.21	107	4.1	1.9
PS-1270	12	7.0	325	5.94	151	2.56	65	3.70	94	3.86	98	5.7	2.6
PS-12120	12	12	600	5.94	151	3.86	98	3.70	94	3.86	98	8.8	4.0
PS-12180	12	18	875	7.13	181	2.99	76	6.57	167	6.57	167	12.8	5.8
PS-12250	12	25	1300	6.89	175	6.54	166	4.92	125	4.92	125	18.7	8.5
PS-12550	12	55	3000	10.25	260	6.60	168	8.20	208	9.45	240	39.7	18.0
PS-121000	12	100	5000	12.00	305	6.60	168	8.20	208	9.45	240	65.7	29.8

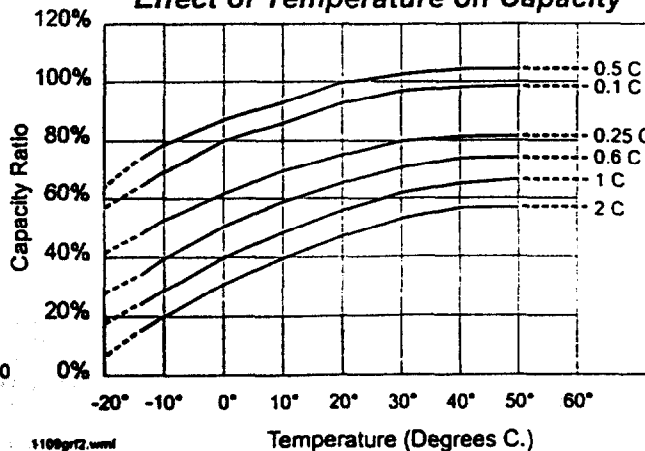
1109k1.wf

Characteristic Discharge Curves



1109gr1.wf

Effect of Temperature on Capacity



1109gr2.wmf



A Pittway Company

## Detector Accessories

used with  
System Sensor/Notifier products

Catalog Section: Miscellaneous

June 4, 1996

### GENERAL

System Sensor/NOTIFIER offer a number of accessory items and replacement parts to enhance the use, maintenance and testing of the smoke detectors.

### PRODUCT LINE INFORMATION

#### Remote LED Annunciator

The RA400Z Remote LED is an optional visual annunciator designed to provide remote status indication for all of our system smoke detectors, duct detectors and beam detectors. It uses an active current regulator to maintain 7 mA of current within the specified 3.1 to 32 VDC operating range. The 2" x 4" beige annunciator mounts in a standard, single-gang backbox.



RA400Z

CSFM 7300-1209:130  
MEA 427-91-E Vol. 2  
FM 0V8A5.AY  
UL = S2522  
ULC = CS308

#### Remote Test Station

The 400/500 Series Duct Detectors and 6424 Beam Detectors can be tested using the RTS451 Remote Test Station. A magnet is used to activate the test. The RTS451KEY model, for testing 2-wire or 4-wire detectors, includes a key reset switch instead of the magnet tool. The RTS-451KEY(A) is an automatic remote test station.

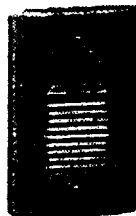


RTS451

CSFM 7300-1209:129  
MEA 427-91-E  
FM 0V3A0.AY  
UL = S2522  
ULC = CS308

#### Remote Sounder/ LED Annunciator

For stand-alone conventional duct detector applications, the Model APA451 Annunciator consists of a piezo sounder along with alarm and power LEDs to signal trouble in compliance with NFPA 90A. The device fits conveniently in a single-gang box.



APA451

CSFM 7135-1209:143  
MEA 427-91-E  
FM 0V3A0.AY  
UL = S4011

#### Relay Modules

End-of-line supervisory applications in 12- or 24-volt systems can be handled with the A77-716B Relay Module. It is specifically designed for use in 4-wire systems.



A77-716B

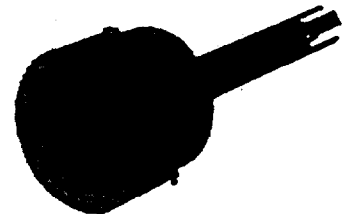
#### Removal Tools

The CRT400 Cover Removal Tool simplifies removal of the tamper-proof covers on 400/551 Series Ionization Detectors. It simultaneously depresses the three lock prongs on the top of the unit so the cover can be rotated counterclockwise and removed. It can also remove the cover of photo units.

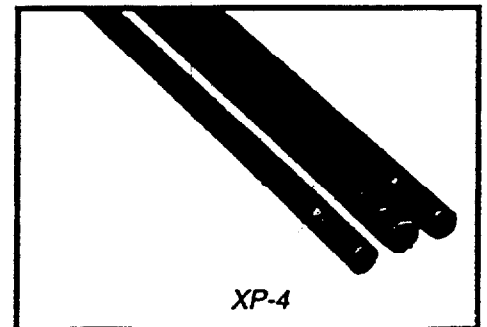


CRT400

The XR5 and XR2 Detector Removal Tools can be used with any 400/551 Series Plug-In Detector. The XR5 is used with the System Sensor 400 Series and the NOTIFIER CPX-551, SDX-551 and FDX-551. The XR2 is used with the NOTIFIER SD-651, CP-651, SDX-751, and CPX-751. When used with the XP-4 Extension Poles, detectors can be installed and removed up to 18 feet overhead without ladders or scaffolding.



XR5



XP-4

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12 Clintonville Road, Northford, Connecticut 06472

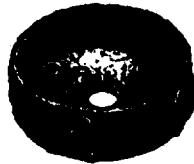
ISO-9001  
Engineering and Manufacturing  
Quality System Certified to  
International Standard ISO-9001



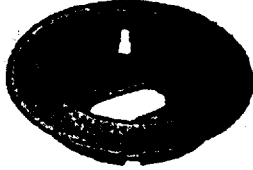
Made in the U.S.A.

### Mounting Kits

Four different mounting kits are available. The **SMK400 Surface Mounting Kit** and **RMK400 Recess Mounting Kit** are designed to work with 400/551/751 Series plug-in 4" mounting bases B401, B401R and B501. SMK400 accommodates a surface wiring conduit. RMK400 is suitable for suspended and drywall ceilings. **SMB600 Surface Mounting Kit** is designed for 400/551/751 Series plug-in detectors using a 6" diameter base, direct wire detectors and the B601BH Sounder Base. If a more finished look is desired for the intelligent 500 Series (MMX-1, MMX-2, CMX-2, ISO-X) panel modules, the **SMB500 Surface Mounted Box** provides a 4" square enclosure of beige plastic.



SMK400



RMK400

### Replacement Screens

After several cleanings, abuse, or use in particularly dirty areas, detector screens must be replaced to assure continued performance at the specified levels. System Sensor screens are made with a special screening that has 0.020" (0.5 mm) openings for greater insect resistance. **RS14** is the replacement screen for 400/551 Series ionization detectors. **RS23** fits the 2300T and 2312/24T detectors. **RS24** is for all 400/551 Series photoelectronic detectors, except those with thermal units. Photo/thermal units require a **RS24T** replacement screen.



RS14



RS23



RS24



RS24T

### Calibrated Test Card

An **R59-18-00 Test Card** can be used to simulate smoke conditions on 400 Series photoelectronic smoke detectors. The two-sided card provides for 1% and 4% smoke limits.



R59-18-00

### Test Magnet

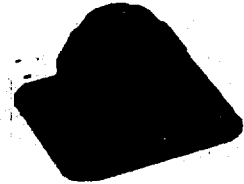
The **MO2-04 Test Magnet** is used to activate the internal reed switch on 400 Series System Sensor conventional and NOTIFIER intelligent plug-in and duct detectors. Accomplishing a thorough functional test will cause the LEDs to indicate alarm. The same test magnet can be used to successfully test the Model **RTS451** remote test station.



MO2-04-00

### Dust Cover

During light construction and remodeling, the fluorescent orange **DUST45** and **DUST 12** Dust Covers provide limited protection for 400/551/751 Series detectors. During heavy construction, however, the detectors should be removed.



DUST45



November 7, 2000

DN-6753 • I-355

# DH100ACDC

Four-Wire, Low-Profile,  
Ion & Photo Duct Smoke Detectors  
Section: Conventional Initiating Devices

## GENERAL

The System Sensor DH100ACDC four-wire duct smoke detectors are available as either an ionization or a photoelectric model. This new design allows for simplified cleaning and maintenance, or a change in application without removing the duct housing. The DH100ACDC samples air currents passing through a duct and gives dependable performance for management of fans, blowers, and air-conditioning systems, preventing the spread of toxic smoke and fire gases through the protected area.

### **WARNING!**

Duct smoke detectors have specific limitations.

#### DUCT DETECTORS ARE:

- **NOT** a substitute for an open-area smoke detector.
- **NOT** a substitute for early warning detection.
- **NOT** a substitute for a building's regular fire detection system.

REFER TO NFPA 72 and 90A for additional duct smoke detector application information.

## FEATURES

- Outside mounting tabs.
- Telescoping sampling tube (*patent pending*).
- Built-in reset button.
- Interconnectability (*patent pending*) for multi-fan shut-down (up to ten air handlers).
- Cover tamper trouble signal (*patent pending*).
- Easy to clean.
- 24 VAC/DC or 120/240 VAC operation.
- High-Low voltage barrier.
- Ion or photo models available.
- Remote test station option.
- Remote sounder option.
- Air velocity rating from 500 to 4,000 ft/min (152.4 to 1219.2 m/min).
- Equipped with two DPDT Form-C relay contacts.
- Easy and quick mounting to round or rectangular ducts from 1 to 12 feet (2.54 to 30.48 cm) wide.
- Textured cover for convenient visual inspection.
- UL 268A listed.

## SPECIFICATIONS

**Dimensions:** 14.375" (36.513 cm) wide x 5.500" (13.970 cm) high x 2.750" (6.985 cm) deep.

**Shipping weight:** 3.75 lbs. (1.7 kg).

**Operating temperature range:** 32° to 131°F (0° to 55°C).

**Operating humidity range:** 10% to 93% relative humidity.

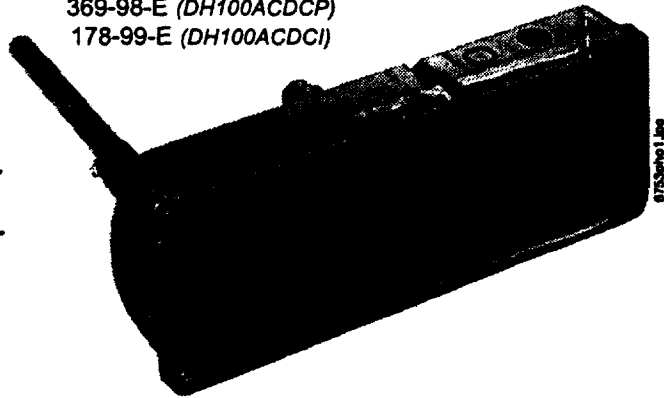


California  
State Fire  
Marshal  
3240-1209:155

MARYLAND  
State Fire Marshal  
RR8281

### MEA

369-98-E (DH100ACDCP)  
178-99-E (DH100ACDCI)



**Air duct velocity range:** 500 to 4,000 ft/min (152.4 to 1219.2 m/min).

## ARCHITECTURAL/ENGINEERING SPECIFICATIONS

The air-duct smoke detector shall be a System Sensor model DH100ACDC Series Duct Smoke Detector. The detector housing shall be UL listed per UL 268A specifically for use in air-handling systems. The detector shall operate at air velocities of 500 to 4,000 feet per minute (152.4 to 1219.2 meters per minute). The unit shall be capable of controlling up to ten (10) air-handling systems when interconnected with other detectors. The detector shall be capable of providing a trouble signal in the event that the front cover is removed. It shall be capable of local testing via magnetic switch or remote testing using the RTS451KEY Remote Test Station. The unit shall be reset by local reset button or remote test station. The duct smoke detector housing shall incorporate an airtight smoke chamber in compliance with UL 268A, Standard for Smoke Detectors for Duct Applications. The housing shall be capable of mounting to either rectangular or round ducts without adapter brackets. An integral filter system shall be included to reduce dust and residue effects on detector and housing, thereby reducing maintenance and servicing. Sampling tubes shall either be telescoping or be easily installed by passing through the duct housing after the housing is mounted to the duct. The unit shall provide a special sepa-

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NOTIFIER® 12 Clintonville Road, Northford, Connecticut 06472

**ISO 9001**  
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ENGINEERING & MANUFACTURING



ration of no less than 1/4" and/or a physical barrier between the high- and low-voltage terminals. The enclosure shall meet all applicable NEC and NFPA standard regarding electrical junction boxes. Terminal connections shall be of the strip-and-clamp method suitable for 12 to 18 AWG (3.25 to 0.75 mm<sup>2</sup>) wiring.

## PRODUCT LINE INFORMATION

- DH100ACDCI** Four-wire ionization duct smoke detector.  
**DH100ACDCP** Four-wire photoelectronic duct detector.  
**A5052-00** Replacement ionization detector board.  
**A5069-00** Replacement photoelectronic detector board.  
**A5064-00** Replacement four-wire power board.

### ACCESSORIES:

- ST-1.5** Metal sampling tube, duct widths 1' to 2'.  
**ST-3** Metal sampling tube, duct widths 2' to 4'.  
**ST-5** Metal sampling tube, duct widths 4' to 8'.  
**ST-10** Metal sampling tube, duct widths 8' to 12'.  
**RTS451** Remote test station.  
**RTS451KEY** Remote test station with key lock.  
**RA400Z** Remote annunciator alarm LED.  
**APA451** Remote annunciator with piezo alarm.  
**MOD400R** Sensitivity test module.  
**M02-04-00** Test magnet.  
**PA400B** Mini-Alert sounder.  
**PS24LOB** Mini-Alert add-on strobe.

## ELECTRICAL RATINGS

for DH100ACDC (Including detector)

Power supply voltage:	20 – 29 VDC	24 VAC, 50/60 Hz	120 VAC, 50/60 Hz	220/240 VAC, 50/60 Hz
Input capacitance:	270 µF maximum	270 µF maximum	N/A	N/A
Reset voltage:	3.0 VDC minimum	2.0 VAC minimum	10 VAC minimum	20 VAC minimum
Reset time (with RTS451):	0.03 to 0.30 seconds	0.03 to 0.30 seconds	0.03 to 0.30 seconds	0.03 to 0.30 seconds
Reset time (by power-down):	0.6 seconds max.	0.6 seconds max.	0.6 seconds max.	0.6 seconds max.
Power-up time:	34 seconds max.	34 seconds max.	34 seconds max.	34 seconds max.
Alarm response time:	2 to 17 seconds	2 to 17 seconds	2 to 17 seconds	2 to 17 seconds
Sensitivity test:	See detector label.	See detector label.	See detector label.	See detector label.
<b>CURRENT LIMITATIONS (using no accessories):</b>				
Maximum standby current:	15 mA	35 mA RMS	25 mA RMS*	15 mA RMS*
Maximum alarm current:	70 mA	125 mA RMS	35 mA RMS*	25 mA RMS*

6753elec.tbl

ACCESSORY CURRENT LOADS at 24 VDC		
DEVICE	STANDBY	ALARM
APA451	12.5 mA maximum	30 mA maximum
PA400	0 mA	15 mA maximum
RA400Z	0 mA	10 mA maximum
RTS451	12 mA*	7.5 mA maximum
RTS451KEY	12 mA*	7.5 mA maximum

6753acc.tbl

\*NOTE: When a unit is powered at the 120 VAC or 220/240 VAC input, any combination of accessories may be used such that the given accessory loads are:

- 60 mA or less in the STANDBY state.
- 110 mA or less in the ALARM state.

## Contact Ratings

Alarm initiation contacts (SPST): 2.0 A @ 30 VAC/DC (0.6 power factor).

Alarm auxiliary contacts (DPDT): 10 A @ 30 VDC; 10 A @ 250 VDC.

NOTE: Alarm auxiliary contacts must switch 100 mA minimum at 5 VDC.

Alarm auxiliary contacts shall not be connected to initiating circuits of control panels. Use the alarm initiation contact for this purpose.

Trouble contacts (SPDT): 2.0 A @ 30 VDC (resistive).



July 27, 2000

DN-1190 - I-115

## 2400 Series 2-Wire Photoelectric Smoke Detector with Optional Horn & Thermal

Section: Conventional Initiating Devices

### GENERAL

The System Sensor 2400 Series photoelectric detectors are specifically designed to meet the stringent performance requirements of industrial and municipal fire detection/ alarm systems. The design of these detectors emphasizes ease of installation and field maintenance. The new AT/AIT models add built-in audible signaling and optional isolation of the thermal.

### FEATURES

- Unique optical sensing chamber:
  - Superior signal-to-noise ratio.
  - Built-in signal processing.
  - 3.0% nominal sensitivity.
- Removable cover for field cleaning.
- Visible LED "blinks" in standby.
- Sealed against dirt, insects, and back pressure.
- Built-in 135°F (57°C) thermal (models TH, AT, AIT only).
- Three-year limited warranty.
- Field metering of detector sensitivity (using MOD400R).
- Built-in test capability.
- Low standby current.
- Twist-on mounting bracket with tamper option.
- Designed for direct surface or electrical box mounting.
- Built-in 85 dBA piezoelectric horn (models AT and AIT only).
- Insect-resistant screening (0.020"/0.508 mm openings).
- Isolated or integrated operation of thermal available.
- SEMS screws for easy wiring.

### APPLICATIONS

Use to contribute to life safety, fire protection, and property conservation. Photoelectric detectors are recommended in areas where slow smoldering fires are likely to ignite. In areas where small combustion particles are usually present from fork-lift trucks, cooking stoves, etc., they are less likely than ionization detectors to produce false alarms.

### CONSTRUCTION AND OPERATION

All System Sensor 2400 Series photoelectric smoke detectors contain a unique optical sensing chamber designed to sense the presence of smoke particles produced by a wide range of combustion sources and meet performance criteria designated by UL 268. A new custom integrated circuit incorporates signal processing to reduce false alarms and sample/hold circuitry to provide easy field metering of sensitivity. Additional key features of AT/AIT models include available isolation of the thermal for separate monitoring, and a built-in horn.



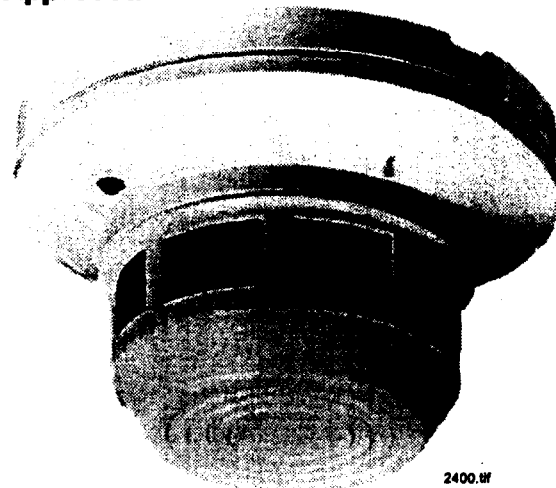
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7272-1209:103  
(2400 & 2400TH)  
7272-1209:134  
(2400AT & 2400AIT)



MEA

427-91-E Vol. III



The built-in piezoelectric horn produces an interrupted 85 dBA tone. The horn operates when the unit senses smoke, or when the thermal reaches its alarm point (integral thermal models only).

### INSTALLATION

Model 2400 detectors are designed for systems use with UL listed control panels. See panel Compatibility Chart to determine maximum number of detectors per zone. Easy to install and maintain, this detector is designed for direct surface mounting (mounting bracket included), or mounting to a 4" octagon or smaller box. Easy-to-wire screw terminals allow fast and simple field wiring of in, out and remote annunciator connections.

Consult control panel specifications for the maximum allowable loop resistance for the particular control panel to be used.

To prevent wiring mistakes, observe polarities and make certain that each conductor is identified. A copy of Installation and Maintenance Instructions is packaged with each detector. For further information, refer to NFPA 72 and to Local Authority Having Jurisdiction.

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact NOTIFIER. Phone: (203) 484-7161 FAX: (203) 484-7118



**NOTIFIER**

One Fire-Lite Place, Northford, Connecticut 06472

**ISO 9001**  
CERTIFIED  
ENGINEERING & MANUFACTURING

## MAINTENANCE

The 2400 Series has been designed to seal the sensing chamber from back-pressure air flow, dust, dirt, and insects. The back of the detector is sealed. The chamber is protected by a fine mesh screen. **Testing** is accomplished by insertion of a 0.1" (2.54 mm) max. diameter tool. If **cleaning** is required, it is easy to remove the cover and obtain access to the screen and chamber to perform a thorough cleaning.

## ENGINEERING SPECIFICATIONS

Smoke detector shall be a photoelectronic type (model 2400) or a combination photoelectronic/thermal (model 2400TH) with thermal sensor rated at 135°F (57°C) as manufactured by System Sensor. Wiring connections shall be made by means of SEMS screws. The detector will have a visible LED which will blink in standby and latch on in alarm. The detector shall have a nominal sensitivity of 3% per foot as measured in the UL smoke box. The detector screen and cover should be easily removable for cleaning. It shall be possible to perform a sensitivity and functional test without the need of generating smoke. Detector circuitry shall perform a self test on the sensing chamber and internal electronics every 40 seconds. If circuitry fails, the detector LED shall stop blinking. The detector shall have a mounting bracket that allows for mounting to a 3-1/2" (88.9 mm) or 4" (101.6) octagonal or a 4" square electrical box.

## PRODUCT LINE INFORMATION

Model	Description
2400	Photoelectric smoke detector, two-wire, surface mount.
2400TH	Photoelectric smoke detector with built-in 135°F (57°C) fixed-temperature thermal, two-wire, surface mount.
2400AT	Photoelectric smoke detector with integral 135°F (57°C) fixed-temperature thermal, and 85 dBA horn, two-wire, surface mount.
2400AIT	Photoelectric smoke detector with isolated 135°F (57°C) fixed-temperature thermal, and 85 dBA horn, two-wire, surface mount.
MOD400R	Field-test module for all of the System Sensor 2400 Series smoke detectors.
RA400Z	Remote annunciator (LED). Mounts to single-gang box.

### NOTES for GENERAL SPECIFICATIONS:

- Control panels must limit current to 100 mA or less.
- Maximum air velocity for photoelectric sensor operation is 3,000 feet (914.4 m) per minute.
- Relative humidity range: 10 to 93% (non-condensing).

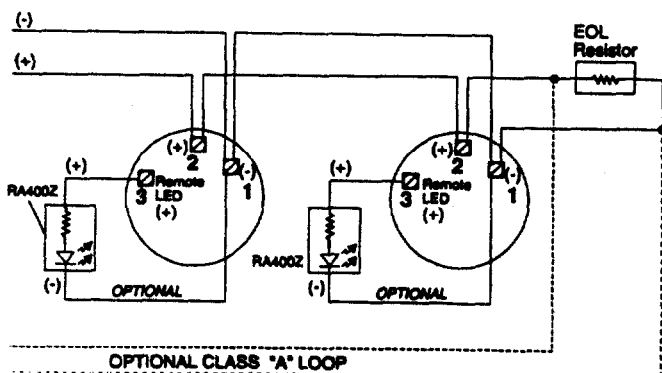
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## GENERAL SPECIFICATIONS

	Model 2400	Model 2400TH	Model 2400AT	Model 2400AIT
Control Panel Applications	2-wire	2-wire	2-wire	2-wire
Built-in Thermal	No	Yes	Yes	Yes (Isolated)
Visual LED Local Alarm	Yes	Yes	Yes	Yes
Remote LED Annunciator Capability	Yes	Yes	Yes	Yes
Operating Voltage Range	8.5 to 35 VDC	8.5 to 35 VDC	10 to 32 VDC	10 to 32 VDC
Current Limit, Standby (maximum)	120 µA	120 µA	120 µA	120 µA
Current Limit, Alarm (typical)	(see NOTE 1)	(see NOTE 1)	15 mA @ 10 V	15 mA @ 10 V
Current Limit, Alarm (maximum)	(see NOTE 1)	(see NOTE 1)	67 mA @ 32 V 48 mA @ 24 V	67 mA @ 32 V 48 mA @ 24 V
Reversed Voltage (non-alarm)	—	—	5 mA @ 10 V 15 mA @ 24 V 19 mA @ 32 V	5 mA @ 10 V 15 mA @ 24 V 19 mA @ 32 V
Alarm Signal	Shunt on power leads.	Shunt on power leads.	Shunt on power leads.	Shunt on power leads.

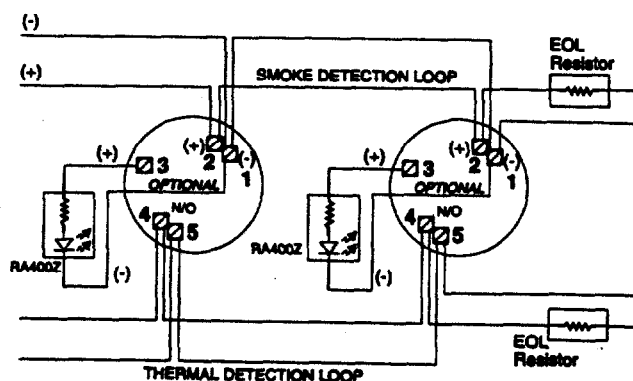
### Wiring Diagram: 2400, 2400TH, 2400AT

1190d1.wmf



### Wiring Diagram: 2400AIT

1190e2.wmf





November 5, 2001

DN-6643 - I-410

## NBG-12 Series Non-Coded Manual Fire Alarm Pull Stations

Section: Conventional Initiating Devices

### GENERAL

The NOTIFIER NBG-12 Series is a cost-effective, feature-packed series of non-coded manual fire alarm pull stations. It was designed to meet multiple applications with the installer and end-user in mind. The NBG-12 Series features a variety of models including single- and dual-action versions.

The NBG-12 Series provides conventional fire alarm control panels (FACPs) such as the SGL-2000, SFP Series, XP Transponders, System 5000, and System 500 with an alarm initiating input signal. Its innovative design, durable construction, and multiple mounting options make the NBG-12 Series simple to install, maintain, and operate.

### FEATURES

- Aesthetically pleasing, highly visible design and color.
- Attractive contoured shape and light textured finish.
- Meets ADA 5 lb. maximum pull-force.
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Easily operated (single- or dual-action), yet designed to prevent false alarms when bumped, shaken, or jarred.
- PUSH IN/PULL DOWN handle latches in the down position to clearly indicate the station has been operated.
- The word "ACTIVATED" appears on top of the handle in bright yellow when the station has been operated, further indicating operation of the station.
- Operation handle features white arrows showing basic operation direction for non-English-speaking persons.
- Braille text included on finger-hold area of operation handle and across top of handle.
- Multiple hex- and key-lock models available.
- U.S. patent pending hex-lock needs only a quarter-turn to lock/unlock.
- Station can be opened for inspection and maintenance without initiating an alarm.
- Product ID label viewable by simply opening the cover; label is made of a durable long-life material.
- The words "NORMAL" and "ACTIVATED" are molded into the plastic adjacent to the alarm switch (located inside).
- Four-position terminal strip molded into backplate.
- Terminal strip includes Phillips combination-head captive 8/32 screws for easy connection to Initiating Device Circuit (IDC).
- Terminal screws backed-out at factory and shipped ready to accept field wiring (up to 12 AWG/3.25 mm<sup>2</sup>).
- Switch contacts are normally open.
- Can be surface-mounted (with SB-10) or semi-flush mounted. Semi-flush mount to a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box.
- Backplate is large enough to overlap a single-gang backbox cutout by 1/2" (12.7 mm).
- Optional trim ring (BG-TR).

**PATENTED, U.S. PATENT NO. D428,351  
OTHER U.S. PATENTS PENDING**



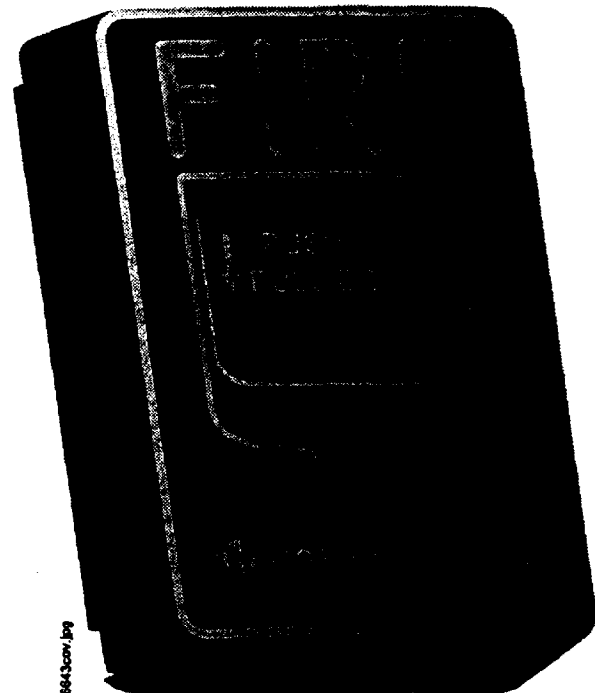
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**Approved**

(except NBG-12LPS/LPSP)



- Spanish version (*FUEGO*) available (NBG-12LSP, -12LPSP).
- Designed to replace the popular NBG-10 Series.
- Models packaged in attractive, clear plastic (PVC), clam-shell-style, Point-of-Purchase packages. Packaging includes a cutaway dust/paint cover in shape of pull station.

### CONSTRUCTION

- Cover, backplate and operation handle are all molded of durable polycarbonate material.
- Cover features white lettering and trim.
- Red color matches System Sensor's popular SpectraAlert™ horn/strobe series.

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**NOTIFIER**

12 Clintonville Road, Northford, Connecticut 06472

**ISO 9001**  
**CERTIFIED**  
ENGINEERING & MANUFACTURING

## OPERATION

The NBG-12 manual pull stations provide a textured finger-hold area that includes Braille text. In addition to PUSH IN and PULL DOWN text, there are arrows indicating how to operate the station, provided for non-English-speaking people.

Pushing in and then pulling down on the handle activates the normally-open alarm switch. Once latched in the down position, the word "ACTIVATED" appears at the top in bright yellow, with a portion of the handle protruding at the bottom as a visible flag. Resetting the station is simple: insert the key or hex (model dependent), twist one quarter-turn, then open the station's front cover, causing the spring-loaded operation handle to return to its original position. The alarm switch can then be reset to its normal (non-alarm) position manually (by hand) or by closing the station's front cover, which automatically resets the switch.

## SPECIFICATIONS

### Physical Specifications:

8643dim.tbl

	NBG-12	SB-10	WP-10
Height:	5.500 inches (13.97 cm)	5.500 inches (13.97 cm)	6.000 inches (15.24 cm)
Width:	4.121 inches (10.4673 cm)	4.125 inches (10.4775 cm)	4.690 inches (11.9126 cm)
Depth:	1.390 inches (3.5306 cm)	1.375 inches (3.4925 cm)	2.000 inches (5.08 cm)

### Electrical Specifications:

Switch contact ratings: gold-plated; rating 0.25 A @ 30 VAC or VDC. Auxiliary contact circuit (Terminals 3 & 4, NBG-12LA): rated to 3.0 A @ 30 VAC or VDC.

## ENGINEERS' & ARCHITECTS' SPECIFICATIONS

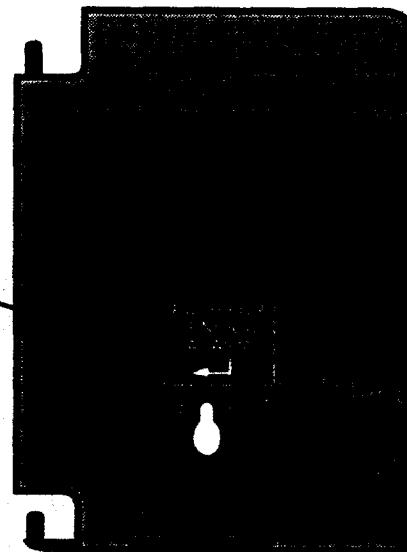
Manual Fire Alarm Stations shall be non-code, with a key- or hex-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key or hex. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red colored LEXAN® (or polycarbonate equivalent) with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in white letters, 1.00 inches (25.4 mm) or larger.\* Stations shall be suitable for surface mounting on matching backbox SB-10; or semi-flush mounting on a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box, and shall be installed within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

\*NOTE: The words "FIRE/FUEGO" on the NBG-12LSP and NBG-12LPSP shall appear on the front of the station in white letters, approximately 3/4" (19.05 mm) high.

## PRE-SIGNAL MODELS

The NBG-12LPS and -12LPSP pull stations are non-coded manual pull stations which provide a FACP with two normally open alarm initiating input signals. "Pre-signal" input is activated by pushing in, then pulling down, the dual-action handle. A "general" alarm input signal can be manually activated via a momentary rocker switch mounted inside the unit. This general alarm switch can only be accessed by opening the cover with the supplied key/lock. See diagram at right.

ROCKER SWITCH  
for General Alarm notification



NBG-12LPS

TOGGLE SWITCH  
for Pre-Signal function

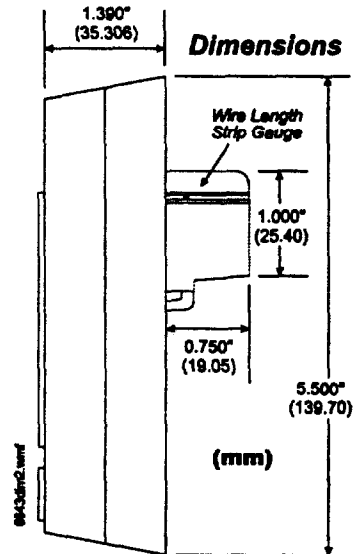
## PRODUCT LINE INFORMATION

- NBG-12S** Single-action pull station with pigtail connections, hex lock.
- NBG-12** Dual-action pull station with SPST N/O switch, hex lock, screw terminal connections.
- NBG-12L** Same as NBG-12 with key lock.
- NBG-12LSP** Same as NBG-12L with English/Spanish (FIRE/FUEGO) labeling.
- NBG-12LPS** Dual-action pull station with pre-signal option.
- NBG-12LPSP** Same as NBG-12LPS with English/Spanish (FIRE/FUEGO) labeling.
- NBG-12LOB** Dual-action pull station with key lock, outdoor applications listings (NBG-12LO), and backbox. Includes WBB weatherproof backbox, and sealing gasket. Model will also mount to WP-10 weatherproof backbox in retrofit applications.

NOTE: NBG-12LO not available separately; NBG-12LO + approved backbox = NBG-12LOB. Outdoor applications listings apply to NBG-12LOB combination.

- NBG-12LA** Dual-action pull station with key lock and annunciator contacts.

NOTE: For addressable NBG-12 models, see data sheet DN-6726.





July 19, 1999

C-50

# VEC 25/50 Emergency Voice Evacuation Control

Section: Emergency Voice Evacuation

**PATENT PENDING**

## GENERAL

The VEC 25/50 is a state-of-the-art, compact, stand-alone or slave Emergency Voice Evacuation Control. The VEC 25/50 is offered in a self-contained, cost-effective design and includes a 25 Watt, 25 VRMS audio amplifier, commercial-grade emergency communications microphone and alert tone generator, standard. Additionally, an integral digital message generator provides a factory prerecorded voice announcement and field record and playback capability.

The VEC 25/50 is suitable for use as an adjunct to most UL listed Fire Alarm Control Panels (FACP) in *slave applications* or as a *stand-alone* system utilizing a built-in power supply/battery charger. Options include a 25 Watt, 25 VRMS audio amplifier for system expansion to 50 Watts (providing dual 25 Watt speaker circuits) or as a secondary, backup amplifier in jurisdictions requiring such. A 70.7 VRMS converter is also available for independently converting amplifiers to meet retrofit needs.

A host of field-programming options, including dual-message capability (fire, weather, non-fire, multi-language), makes the VEC 25/50 the most versatile voice evacuation system available. Suitable applications include, but are not limited to: schools, auditoriums, dormitories, theaters, restaurants, places of worship, motels/hotels, office buildings, factories, etc.

## STANDARD FEATURES

- Integral 25 Watt, 25 VRMS audio amplifier with single Class A or Class B speaker circuit.
- Standard, commercial-grade emergency communications microphone.
- Integral Digital Message Generator with standard, factory prerecorded emergency evacuation message.
- Integral message generator includes 60 second capacity, with primary and secondary message capability (30 seconds each).
- Custom messages are field recordable without the addition of costly add-on modules utilizing microphone or audio input jack.
- Digital message may be field-selected for 1, 2, 4, 8 or infinite repeat.
- Built-in alert tone generators with steady, slow whoop, high/low or chime tone capability.
- Field-selectable lead-in/trailing tone selection.
- Alert tone selection(s) may be field-programmed to conform with ANSI S3.41 *Audible Emergency Evacuation Signal* (Temporal Pattern), per NFPA.



S635



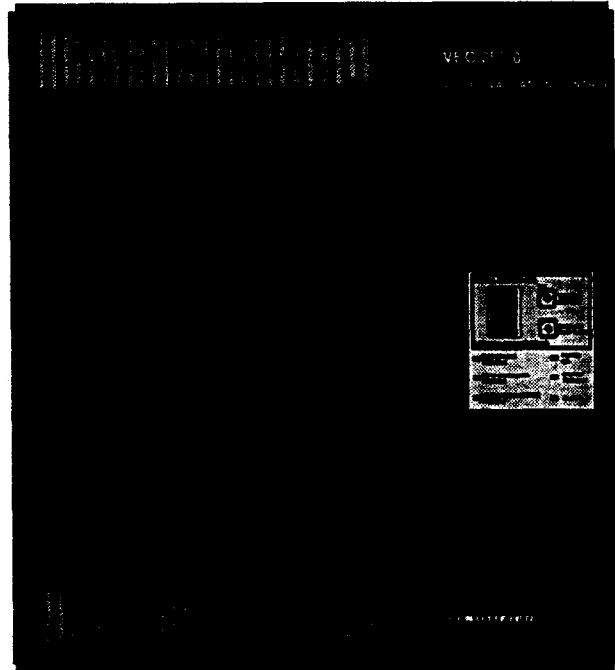
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177-97-E



- Dual-optically-isolated, trigger input circuits are independently field-programmable for activation by polarity reversal (host FACP NAC) or dry contact-closure.
- Powered from local 120 VAC (batteries required) or by removing a built-in power supply module (VEC-PSM) powered by host FACP auxiliary 24 VDC output.
- Two-position switch provides ALL-CALL or Manual Evacuate functions.
- Integral diagnostic LEDs include: Power, System Trouble, ALARM, Microphone Trouble, Message Generator Trouble, Tone Generator Trouble, Amplifier Fault and others.
- For ease of service and maintenance, plug-in style terminal blocks are utilized for most field-wiring terminations.
- Independent Form-C trouble relay allows FACP to monitor voice system while in active (alarm) state.
- Integral piezo provides local audible indication for troubles.

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**NOTIFIER** One Fire-Lite Place, Northford, Connecticut 06472

**ISO-9001**  
Engineering and Manufacturing  
Quality System Certified to  
International Standard ISO-9001



Made in the U.S.A.

- Fully supervised, including integral microphone, amplifier output, message generator, speaker wiring and tone generators, in *Standby* and *Active* states.
- *Independent* amplifier supervision: current limit, audio level, short circuit protection.
- All outputs fully power-limited to meet latest UL requirements.
- Current in-rush protection (limits current draw from external power supply during cold start).
- Auxiliary power output provides local power for addressable control modules when used to activate VEC.
- Unique amplifier design features high signal-to-noise ratio.
- Utilizes Surface Mount Technology.
- Compatible with ALL NOTIFIER Fire Alarm Control Panels, as well as other manufacturers'.
- Aesthetically pleasing design has similar look and feel to NOTIFIER's popular FACPs.
- Background music requires AHJ approval.

## OPTIONAL MODULES

### FC-AAM25

- 25 Watt, 25 V<sub>RMS</sub> audio amplifier module.
- Field-programmable for system expansion to 50 Watts (providing dual 25 Watt speaker circuits) or as a backup to the primary 25 Watt amplifier, where required.
- Provides single Class A or Class B speaker circuit.
- Utilizes plug-in style terminal blocks for ease of service and maintenance.
- Fully supervised and power-limited.
- Diagnostic LEDs include: yellow trouble LED (cable fault, 70 V<sub>RMS</sub> fault, amp fault) and green, amp functional LED.

### FC-PSM

- Power supply/battery charger module for stand-alone applications. Included with base model.
- Ground fault detection with diagnostic LED (yellow).
- Brownout detection with battery transfer.
- Battery trouble detect with diagnostic LED (yellow).
- Battery saver operation.
- Independent AC loss relay provides AC loss delay per UL, for independent monitoring by DACT (2 Amps at 24 VDC).
- AC power on LED (green).
- 17 AH battery charging capacity — up to 7 AH may be utilized in VEC enclosure. 12 AH - 17 AH require NOTIFIER BB-17 battery box.
- Large, teeter-plate terminal blocks easily accept up to 12 AWG for power terminations.

### FC-XRM70

- Converts 25 V<sub>RMS</sub> audio outputs to 70.7 V<sub>RMS</sub> for retrofit applications.
- Plugs directly on FC-AAM25 module(s), allowing independent conversion to 70.7 V<sub>RMS</sub>.

### FC-LPS

- Provides local digital message playback for user review of field-recorded custom messages.

## STANDARDS AND CODES

The VEC 25/50 will comply with the following standards:

**NFPA 72-1993** National Fire Alarm Code

**NFPA 101-1994** Life Safety Code

**UL 864** Standard for Control Units for Fire Alarm Systems

## SPECIFICATIONS

### STAND-ALONE APPLICATIONS

**Primary (AC) Power - Stand-alone applications:**

- 1.0 Amp max. @ 120 VAC, 50/60 Hz.

**Secondary Power (Battery) Charging Circuit:**

- Supports lead acid batteries only.
- Float charge voltage: 27.6V.
- Maximum charge current: 800 mA.
- Maximum battery capacity: 17 AH (greater than 7 AH requires a separate battery box).

### SLAVE APPLICATIONS (remove FC-PSM module)

**Primary Power:**

- 24 VDC (19.1 - 26.4) regulated, filtered, power-limited.

**Standby Current:**

- 180 mA maximum @ 1 amplifier, 210 mA maximum @ 2 amplifiers.

**Alarm Current:**

- 2.0 Amps DC maximum @ 1 amplifier, 4.0 Amps DC maximum @ 2 amplifiers.

**CAUTION:** Ensure proper available current from host FACP auxiliary power output or power supply UL-listed for Fire Protective Signaling Service to support alarm current drain.

**Dual Command Input Circuits:**

- Trigger input Voltage: 10.5 to 29 VDC (UL tested range -15%, +10%).

*Note: When programmed for reverse-polarity activation.*

**Trouble Contact Rating:**

- 2.0 Amps at 30 VDC (resistive), 0.06 Amps @125 VAC resistive.

**Auxiliary Power Output:**

- Specific application power - 60 mA maximum.

## CABINET SPECIFICATIONS

**Door:** 18.65" high x 15.65" wide x 1.08" deep.

**Backbox:** 18.5" high x 15.5" wide x 4.25" deep.

## CONTROLS AND INDICATORS

### LED INDICATORS

1. Power On (green).
2. ALARM (red).
3. System Trouble (yellow).
4. Microphone Trouble (yellow).
5. Message Generator Trouble (yellow).
6. Tone Generator Trouble (yellow).
7. Record (green).
8. Playback (green).

### SWITCH CONTROLS

1. Record.
2. Silence.
3. Playback.
4. Manual Evacuate.
5. All Call.



October 22, 1998

B-220

# IC-4, ICE-4, and ICR-4L Indicating Circuit Modules

Section: Conventional Fire Alarm Control Panels

## GENERAL

The IC-4 and ICE-4 Indicating Circuit Modules provide Notification Appliance Circuits for the System 500 Fire Alarm Control Panel. The IC-4 module provides four Style Y (Class B) or Style Z (Class A) supervised audible-visual alarm notification circuits, and may be expanded to eight circuits with an ICE-4 module.

The ICR-4L module mounts under one of the two option module positions of the CAB-500's mounting chassis. The ICR-4L includes two Style Y/Z notification circuits and two Form-C relays for use with the System 500. The two relay contacts are rated for 5 amps @ 120 VAC or 28 VDC (resistive). All relays and circuits are field programmable. Each circuit may be field-programmed to respond to a single initiating zone, a group of zones, or all initiating zones.

The notification circuits are power-limited per UL 864 requirements, and may be connected using UL listed limited energy cable.

## FEATURES

- The IC-4 includes four alarm notification circuits, expandable to eight.
- Supervised, power-limited outputs, suitable for use with limited energy cable.
- Outputs resound on subsequent alarm.
- Outputs may be programmed as silenceable or non-silenceable (strokes may keep flashing after panel is silenced).
- LEDs for indication of circuit activation and trouble.
- Separate input connections for audible-visual circuit power.
- Plug-in terminal blocks for ease of service.
- Module assembly mounts to chassis in seconds, using only two captive screws.
- High-speed serial interface to CPU-500.
- Optional zone coded output with UZC-256 module.

## APPLICATIONS

Each IC-4 provides four supervised audio-visual alarm notification circuits. The IC-4 may be expanded with *ONE* of the following:

- An ICE-4 to provide four additional Style Y or Style Z supervised alarm notification circuits; *OR*
- A CRE-4 to provide four SPDT control relays.

The ICR-4L is designed for applications where additional relays and notification circuits are required but space is limited.



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**MEA**

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(ICR-4L)

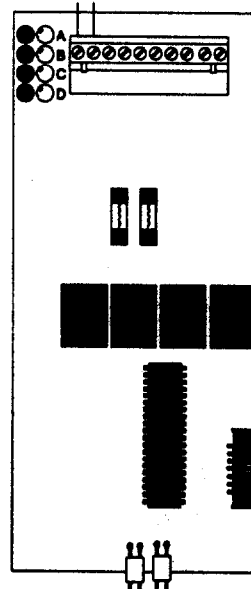
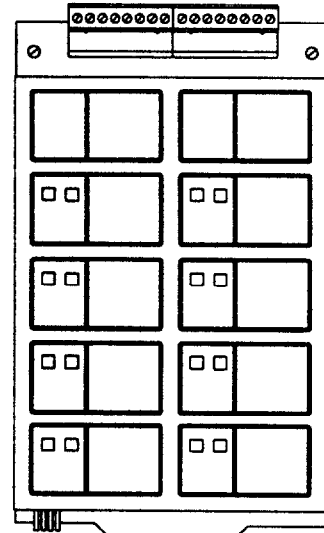


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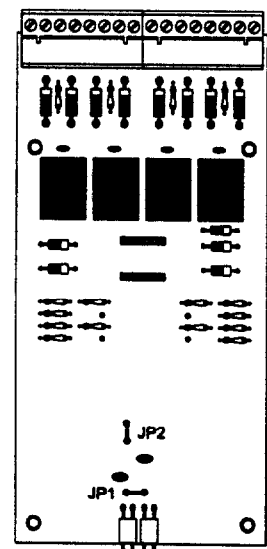
**BSA**

578-81-SA  
(IC-4, ICE-4)

IC-4 Indicating  
Circuit Module



ICR-4L Combination  
Output Module



ICE-4 Indicating  
Circuit Expander

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact NOTIFIER. Phone: (203) 484-7181 FAX: (203) 484-7118



**NOTIFIER** One Fire-Lite Place, Northford, Connecticut 06472

**ISO-9001**  
Engineering and Manufacturing  
Quality System Certified to  
International Standard ISO-9001



Made in the U.S.A.



## CONSTRUCTION

The ICE-4 consists of a printed circuit card which mounts behind the IC-4 with hardware provided. Removable field wiring terminal blocks are included.

The ICR-4L consists of a panel-mounted circuit board with green LEDs that indicate circuit activation and amber LEDs to indicate circuit trouble or a disabled circuit. The ICR-4L includes a removable terminal block for ease of service and installation.

## INSTALLATION

The IC-4 mounts in one module position of the cabinet using two captive screws. The ICE-4 or CRE-4 expanders (if used) are mounted to the back of the IC-4 with included hardware. A ribbon cable connects the IC-4 or ICR-4L to the CPU-500. An auxiliary power harness is provided with each IC-4 and ICE-4 for connection to the Main Power Supply or an optional APS-6R power supply.

The IC-4 will also accept a CRE-4 relay expander module, giving four notification circuits and four relays in a single module position.

## SPECIFICATIONS

- Maximum current per circuit is 3.0 amps. However, the actual current available from a circuit or group of circuits is subject to the limitation of the power supply. Each IC-4 or ICE-4 may be powered from two separate power supplies.
- End-of-line device is a 4.7 K ohm, 1/2 watt resistor, for Style Y configuration.

- Current consumption:

	<b>STANDBY</b>	<b>ALARM</b>
IC-4	0.047 amps.	0.072 amps.
ICE-4	0.001 amps.	0.065 amps.
CRE-4	(none)	0.072 amps.
ICR-4L	0.007 amps.	0.072 amps.

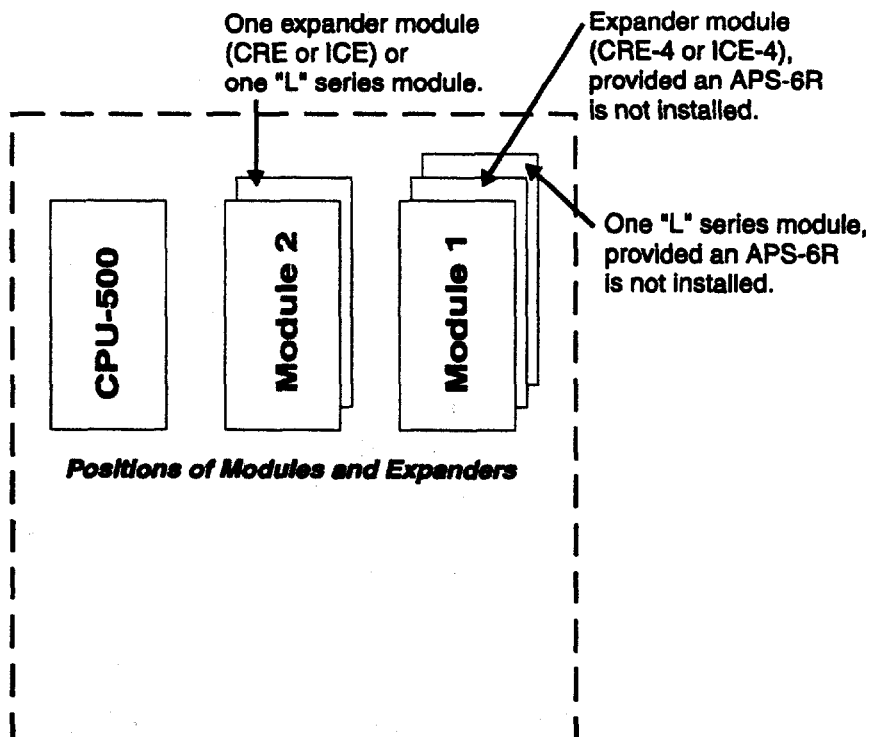
The ICR-4L also includes two Form-C (SPDT) gold-plated, silver plated, silver alloy relay contacts rated for medium duty switching that is not intended for motor control or pilot duty. UL listed contact ratings are 5 amps @ 125 volts AC (resistive) or 30 volts DC (resistive) and 2 amps @ 125 volts AC (inductive).

## PRODUCT LINE INFORMATION

- IC-4** Four notification circuits module.
- ICE-4** Converts IC-4 to eight notification circuits.
- ICR-4L** Provides two additional notification circuits and two Form-C relays.
- CRE-4** Expands IC-4 from four notification circuits to four notification circuits and four Form-C relays.
- UZC-256** Universal Zone Coder. Provides the System 500 with up to 16 different codes that pulse the 24 VDC power to the IC-4, ICE-4, or ICR-4L.
- UZC-SI** Software required to program the UZC-256.

## AGENCY LISTINGS AND APPROVALS

See the first page of this catalog sheet for listing agencies and file numbers. In some cases, certain modules may not be listed by certain approval agencies, or request for listing may be submitted. Consult factory for latest listing status.





October 22, 1998

B-240

# IZ-4, IZ-4A, IZ-8, & IZE-A Initiating Zone Modules

Section: Conventional Fire Alarm Control Panels

## GENERAL

The IZ-4, IZ-4A, IZ-8, and IZE-A Initiating Zone modules provide Initiating Device Circuits for the NOTIFIER System 500 Fire Alarm Control Panel. The IZ-4 Initiating Zone Module provides four Style B (Class B) and the IZ-4A provides four Style D (Class A) alarm initiating or supervisory circuits.

The IZ-8 Initiating Zone Module provides eight Style B (Class B) alarm initiating circuits.

The IZE-A Initiating Zone Expander, when used with the IZ-8, provides eight Style D (Class A) alarm initiating circuits.

## FEATURES

- Up to eight zones Style B (IZ-8) or Style D (IZ-8 & IZE-A).
- Up to four zones Style B (IZ-4) or Style D (IZ-4A).
- Powered loop allows the use of two-wire smoke detectors.
- Initiating circuits are power-limited for use with limited-energy cable.
- Alarm and Trouble LEDs are provided for individual annunciation of each zone.
- RED LEDs indicate alarm condition or I/O Mapping.
- YELLOW LEDs indicate initiating circuit Trouble, circuit Disabled or System communication failure.
- LEDs flash for unacknowledged alarms or troubles and light steady after being acknowledged or silenced.
- Walk Test selectable by zone.
- Each zone may be configured as a fire, water-flow, supervisory, non-alarm circuit, or for remote command inputs.
- Alarm verification selectable by circuit.



S635



CS118  
CS733



California  
State Fire  
Marshal  
7165-0028:157

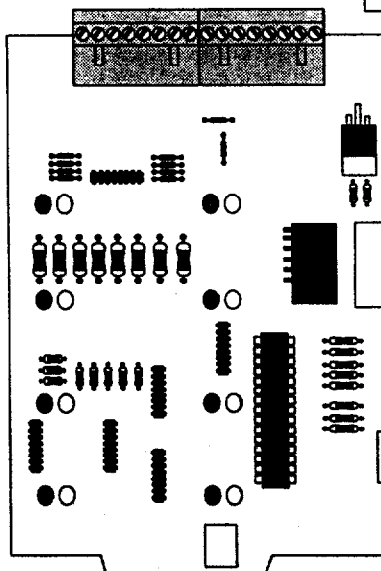
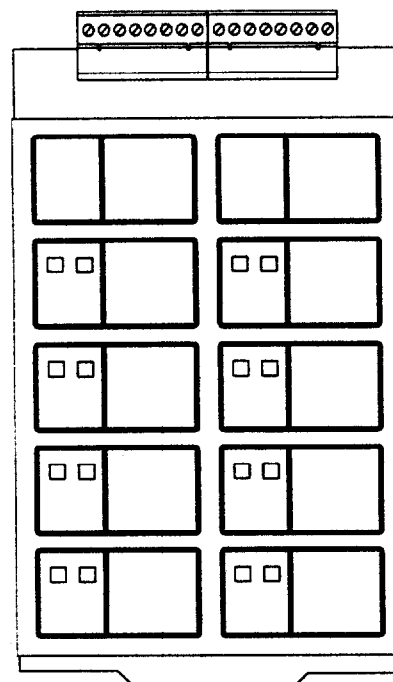


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**MEA**

291-91-E

*IZ-8 Eight-Zone  
(Style B)  
Initiating Zone Module*



*IZE-A Eight-Zone  
(Style D)  
Initiating Zone Expander*

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## APPLICATIONS

The IZ-8 provides up to eight zones of Style B alarm initiating or supervisory devices, both powered and non-powered, such as pull stations, smoke detectors, waterflow devices, tamper switches, etc.

Adding the IZE-A to the IZ-8 provides Style D operation.

The IZ-4 and IZ-4A provides up to four zones of Style B (Style B or D with IZ-4A). Alarm Initiation or Supervisory devices, both powered and non-powered, such as pull stations, smoke detectors, waterflow devices, tamper switches, etc.

## CONSTRUCTION

The IZ Series consists of a panel-mounted printed circuit card. Windows in the System 500's door allow viewing of Alarm and Trouble LEDs. Slide-in pockets on the door also allow insertion of descriptive labels for the zones. Module windows are 0.875" (22.225 mm) high by 0.975" (24.765 mm) wide. Removable terminal blocks are provided for connection of field wiring on most modules.

The IZE-A consists of a printed circuit card which mounts behind the IZ-8 with hardware provided. Removable field-wiring terminal blocks are included with the IZE-A.

## INSTALLATION

The IZ Series modules mount in one of two available module positions for the chassis using two captive screws. A ribbon cable connects the modules to the CPU-500. An optional IZE-A mounts to the back of the IZ-8 with hardware included.

## SPECIFICATIONS

*Applies to IZ-4, IZ-4A, IZ-8 and IZE-A, except as noted.*

**End-of-line device:** 4.7k ohm, 1/2 watt resistor.

**NOTE:** *The IZ-8 with IZE-A does not require EOL resistors on its circuits.*

**Loop voltage:** 18 - 27 volts DC.

**Maximum loop standby current:** 2.5 mA.

**Ripple:** 100 mV max.

**Maximum loop resistance:** 100 ohm.

**Maximum alarm impedance:** 1200 ohm.

**Minimum alarm impedance:** 400 ohm.

**Max. voltage with minimum alarm impedance:** 10 VDC.

**Minimum alarm current:** 45 mA (typical).

**IZ-4 standby current consumption:** 27 mA.

**IZ-4A standby current consumption:** 27 mA.

**IZ-8 standby current consumption:** 47 mA.

**IZE-A standby current consumption:** 4 mA.

**Wheelock E Series**  
**Low-Profile Speakers**  
**and Speaker Strobes**  
Section: Audio/Visual Devices

**GENERAL**

Wheelock has enhanced the E Series Low-Profile Speakers and Speaker Strobes, designed for high-efficiency sound output and dual voltage (25/70 volt) capability, with field-selectable taps from 1/8 to 2 watts. In addition to the low-profile design that results in more wiring space in standard electrical backboxes, the E Series speakers and speaker strobes now incorporate a new *speaker mounting plate* for faster and easier installation with a built-in level adjustment feature along with the new aesthetically pleasing *two-screw grille cover*. The E Series Speaker Strobe models now incorporate the new low-current, reduced-inrush RSS Series Non-Sync/Sync Strobes. Synchronization of the strobe flash is achieved when used with Wheelock's SM or DSM Sync Module. The strobe is part of the speaker mounting plate and the grille cover mounts easily and securely around the strobe with just two screws.

E Series Speakers provide high audio output with clear audibility and are designed to meet the critical needs of the life safety industry for effective emergency voice communications, tone signaling, and visible signaling to alert the hearing impaired.

All inputs (audio and strobe) are supervised, and they employ In/Out wiring terminals for fast installation using #12 AWG (3.25 mm<sup>2</sup>) to #18 AWG (0.75 mm<sup>2</sup>) wiring. E Series Speakers and Speaker Strobes maximize wire size and number of conductor capacity in standard electrical backboxes.

E Series speaker strobes are designed for maximum performance, reliability and cost-effectiveness while meeting or exceeding the latest requirements of NFPA 72 (National Fire Alarm Code), ANSI 117.1 (American National Standard of Accessible and Usable Buildings and Facilities) and UL Standard 1971 (Standard for Signaling Devices for the Hearing Impaired). E Series speaker strobes, when properly specified and installed in accordance with NFPA/ANSI Standards, can provide the Equivalent Facilitation allowed under ADA Accessibility Guidelines (ADAAG General Section 2.2) by meeting or exceeding the illumination which results from the ADA specified strobe intensity of 75 candela at 50 feet (15.24 m). This is an illumination of 0.030 lumens per square foot.

E Series speaker strobes are UL listed for indoor use, ceiling and wall mounting, under Standard 1971 (Signaling Devices for the Hearing Impaired) and Standard 1480 (Speaker Appliances), and use a Xenon flashtube with solid state circuitry enclosed in a rugged LEXAN® lens to provide maximum reliability for effective visual signaling.

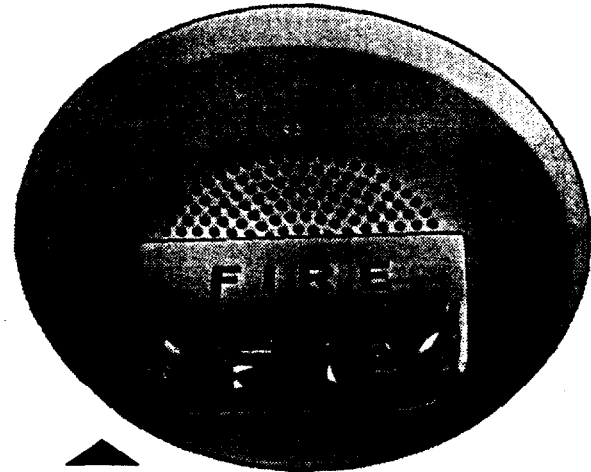


S2652 (Speakers)  
S2652/S5391  
(Speakers/Strobes)

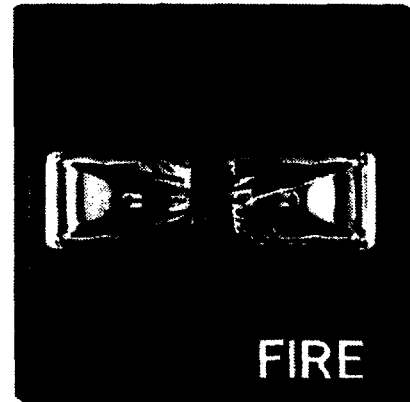


California 7320-0785:134  
State Fire (Speakers)  
Marshal 7125-0785:145  
(Speakers/Strobes)

**MEA**  
151-92-E Vol. XXI



**E90 Series**  
**Speaker Strobe**




**E70 Series**  
**Speaker Strobe**

LEXAN® is a registered trademark of GE Plastics, a subsidiary of General Electric Company.

**FEATURES**

- Designed to meet or exceed NFPA/ANSI Standards and ADA Accessibility Guidelines. Meets OSHA 29 Part 1910.165.
- All strobe inputs may be supervised with standard reverse-polarity supervision from a Fire Alarm Control Panel.
- High-efficiency design for maximum output at minimum wattage across a frequency range of 400 to 4,000 Hz.

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Quality System Certified to  
International Standard ISO-9001



- Field-selectable taps for 25 or 70 Vrms operation from 1/8 watt up to 2 watts.
- Choice of wall (E70) or ceiling (E90) mountings in both speaker and speaker strobe models.
- E Series Low-Profile Speaker Strobe models are available with the new RSS Series Non-Sync/Sync Strobes in 15, 15/75, 30, 75, and 110 candela for wall mounting; and 15, 30, 75, and 100 candela for ceiling mounting. When used in conjunction with Wheelock's SM or DSM Sync Modules, these strobes produce a *synchronized flash* for compliance with ADA guidelines concerning photo-sensitive epilepsy.
- The 15/75 candela wall-mounted strobes are listed at 15 candela under UL 1971 and meet 75 candela intensity on axis for ADA guidelines, with low current draw.
- The new speaker mounting plate provides faster, easier installation with special slots for easy leveling of speaker and speaker strobe models.

## SPECIFICATIONS AND ORDERING INFORMATION

## GENERAL NOTES

- Strobes are designed to flash at 1 flash per second minimum from 20 to 31 VDC. Note that NFPA-72 (1996) specifies a flash rate of 1 to 2 flashes per second, and ADA guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective strobe intensity based on UL 1971.
- E Series Speakers and Speaker Strobes are listed for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 85%.

### **WARNING!**

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	MODEL NUMBER	STROBE CANDELA	AVG.* STROBE CURRENT (AMPS) @ 24 VDC	SPEAKER dB @ 10 FEET (3.048 m) (RATED WATTS)**					MOUNTING OPTIONS ***
				1/8	1/4	1/2	1	2	
<b>SPEAKERS</b> <i>Wall-Mount or Ceiling-Mount</i>	E70-R	—	—	78.1	80.8	83.8	86.0	88.8	L, O, P, Q, V, Y, Z
	E70-W	—	—	78.1	80.8	83.8	86.0	88.8	L, O, P, Q, V, Y, Z
	E90-R	—	—	78.1	80.8	83.8	86.0	88.8	L, O, P, Q, V, Y, Z
	E90-W	—	—	78.1	80.8	83.8	86.0	88.8	L, O, P, Q, V, Y, Z
<b>SPEAKER STROBES</b> <i>Wall-Mount</i>	E70-2415W-FR	15	0.050	77.5	80.4	83.2	85.7	87.8	L, O, P, Q, V, Y, Z
	E70-241575W-FR	15/75	0.065	77.5	80.4	83.2	85.7	87.8	L, O, P, Q, V, Y, Z
	E70-2430W-FR	30	0.081	77.5	80.4	83.2	85.7	87.8	L, O, P, Q, V, Y, Z
	E70-2475W-FR	75	0.133	77.5	80.4	83.2	85.7	87.8	L, O, P, Q, V, Y, Z
	E70-24110W-FR	110	0.161	77.5	80.4	83.2	85.7	87.8	L, O, P, Q, V, Y, Z
<b>SPEAKER STROBES</b> <i>Ceiling-Mount</i>	E90-2415C-FW	15	0.067	77.5	80.4	83.2	85.7	87.8	L, N, Q, V, Y
	E90-2430C-FW	30	0.102	77.5	80.4	83.2	85.7	87.8	L, N, Q, V, Y
	E90-2475C-FW	75	0.204	77.5	80.4	83.2	85.7	87.8	L, N, Q, V, Y
	E90-24100C-FW	100	0.238	77.5	80.4	83.2	85.7	87.8	L, N, Q, V, Y
<b>SYNC MODULES****</b>		INPUT VDC	AVG. CURRENT						
	SM-12/24-R	12 / 24	0.014 / 0.025						E, N
	DSM-12/24-R	12 / 24	0.020 / 0.038						W

**NOTES:** 1) E70 and E90 Speakers are offered in red and white. E70 Speaker Strobes are offered in red only. E90 Speaker Strobes are offered in white only. 2) SUFFIXES USED ABOVE: W = Wall mounting; C = Ceiling mounting; F = Fire lettering; R at end = Red; W at end = White. **EXAMPLES:** E70-R (Red); E70-241575W-FR (Wall mounting - Fire lettering, Red); E90-2475C-FW (Ceiling mounting - Fire lettering; White). 3) FIELD-SELECTABLE TAPS for 1/8, 1/4, 1/2, 1 or 2 watt operation on all Series E models.

\* Average current per actual Wheelock Production testing 24 VDC nominal. For rated average, peak, and inrush currents across the listed voltage ranges for both filtered DC and unfiltered Vrms, see the installation instructions for this product series (Wheelock #P83567).

\*\* dB Ratings are based on UL testing under UL 1480.

\*\*\* For descriptions of MOUNTING OPTIONS, refer to NOTIFIER data sheet DN-6111, derived from Wheelock #S7000.

\*\*\*\* SM Sync Modules are rated for 3.0 amperes at 12/24 VDC; DSM Sync Modules are rated for 3.0 amperes per circuit. The maximum number of interconnected DSM modules is twenty (20). Refer to installation instructions for SM (Wheelock #P83123) and DSM (Wheelock #P83177).



June 3, 2002

DN-5765 • J-120

# Wheelock RSS and RSSP Series Single- and Multi-Candela Strobes and Strobe Plates

Section: Audio/Visual Devices

## GENERAL

Wheelock's patented **RSS Series Strobes** and **RSSP Series Strobe Plates** have lower current draw and zero inrush while maintaining outstanding performance, reliability, and cost effectiveness. These versatile devices will satisfy virtually all requirements for indoor wall- or ceiling-mount applications.

Strobe options for wall-mount models include 15/75 cd or Wheelock's patented **SPEC1FIRE™** multi-candela strobe with field-selectable candela settings of: 15, 30, 75, or 110 cd. Ceiling-mount models are available in 15, 30, 75, or 100 cd intensities.

All models may be synchronized when used in conjunction with the Wheelock **SM** or **DSM Sync Modules**. Synchronized strobes can eliminate possible restrictions on the number of strobes in the field of view. Wheelock's synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy as well as meeting the requirements of NFPA 72 (1999).

Wheelock's RSS Series Strobes employ a patented integral strobe mounting plate that can be mounted to single-gang, double-gang, 4" (10.16 cm) square, 100 mm European, or the SHBB surface backbox. If the flush backbox has side or top space between it and the finished wall, the **NATP** (Notification Appliance Trim Plate) may be used. It provides an additional 0.65" (16.51 mm) of trim for the appliance. An attractive cover plate is provided for a clean, finished appearance on all models.

The RSSP Series Multi-Candela Strobe Plates are a cost-effective way to retrofit required strobe appliances to bells, horns, chimes, multitones, or speakers. They mount easily to standard 4" (10.16 cm) backboxes, or for surface mounting, use with Wheelock's **SBL2** surface backbox.

For weatherproof RSS Series model, see Wheelock data sheet S9004.

## FEATURES

- ADA/NFPA/ANSI compliant. Meets OSHA 29, Part 1910.165.
- Wall-mount or ceiling-mount models available.
- Wall-mount models are available in 15/75 cd or with field-selectable candela settings of 15, 30, 75, or 110 cd (multi-candela models).
- Ceiling-mount models are available in 15, 30, 75, or 100 cd.
- Low current draw with temperature compensation to reduce power consumption and wiring costs.

**SPEC1FIRE™** is a trademark of Wheelock Inc. **LEXAN®** is a registered trademark of GE Plastics, a subsidiary of General Electric Company.



California  
State Fire  
Marshal

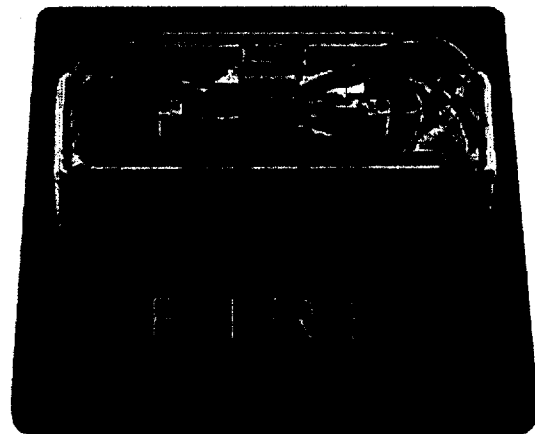
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151-92-E Vol. XIX, XX  
Vol. XXIV (RSS-24MCW-FR, -FW)



Approved



RSS-24MCW-FR

5705phmc.jpg

- Low current draw with temperature compensation to reduce power consumption and wiring costs.
- Strobes produce one flash per second over the regulated voltage range.
- 12 and 24 VDC models with wide new UL "regulated voltage" ranges using filtered (DC) or unfiltered Vrms input voltage.
- Synchronize with Wheelock SM or DSM sync modules.
- Zero inrush above peak.
- Compatible with all Wheelock two-wire products.
- Fast installation with In/Out screw terminals using #12 AWG (3.25 mm<sup>2</sup>) to #18 AWG (0.75 mm<sup>2</sup>) wires.
- For RSS Series mounting: patented integral strobe mounting plate for single-gang, double-gang, 4" (10.16 cm) square, or 100 mm European backboxes. Wheelock's SHBB shallow backbox is used for surface mounting.
- For RSSP Series mounting: use standard 4" (10.16 cm) backboxes or for surface mounting, Wheelock's SBL2 surface backbox.

NOTIFIER® is an operation of **Honeywell**.

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12 Clintonville Road, Northford, Connecticut 06472



ENGINEERING & MANUFACTURING

## GENERAL NOTES

- Strobes are designed to flash at 1 flash per second minimum over the regulated voltage range. Note that NFPA 72 (1999) specifies a flash rate of 1 to 2 flashes per second and ADA guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective strobe intensity based on UL 1971.
- RSS/RSSP Series strobe products are listed under UL 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).

- "Regulated voltage range" is the newest terminology used by UL to identify the voltage range. Prior to this change, UL used the terminology "Listed voltage range."

## ⚠ WARNING!

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## ORDERING INFORMATION

Model Number*	Input Voltage	Reg. Voltage Range VDC/FWR	Strobe Candela (cd)	Average Current** (Amps) @ 24 VDC				Mounting Options***
				15 cd	30 cd	75 cd	110 cd	
<b>Multi-Candela Wall-Mount Strobes:</b>				15 cd	30 cd	75 cd	110 cd	
RSS-24MCW-FR	24 VDC	16.0 – 33.0	15 / 30 / 75 / 110	0.050	0.081	0.133	0.161	B, D, E, F, G, H, J, N, O, R, X
RSS-24MCW-FW	24 VDC	16.0 – 33.0	15 / 30 / 75 / 110	0.050	0.081	0.133	0.161	B, D, E, F, G, H, J, N, O, R, X
<b>Single-Candela Wall-Mount Strobes:</b>								
RSS-241575W-FR	24 VDC	16.0 – 33.0	15 (75 on axis)	0.065				B, D, E, F, G, H, J, N, O, R, X
RSS-121575W-FR	12 VDC	8.0 – 17.5	15 (75 on axis)	0.170				B, D, E, F, G, H, J, N, O, R, X
<b>Single-Candela Ceiling-Mount Strobes:</b>								
RSS-2415C-FW	24 VDC	16.0 – 33.0	15	0.072				B, D, E, F, G, H, J, N, O, R, X
RSS-2430C-FW	24 VDC	16.0 – 33.0	30	0.102				B, D, E, F, G, H, J, N, O, R, X
RSS-2475C-FW	24 VDC	16.0 – 33.0	75	0.205				B, D, E, F, G, H, J, N, O, R, X
RSS-24100C-FW	24 VDC	16.0 – 33.0	100	0.238				B, D, E, F, G, H, J, N, O, R, X
<b>Wall-Mount Strobe Plates:****</b>				15 cd	30 cd	75 cd	110 cd	
RSSP-24MCW-FR	24 VDC	16.0 – 33.0	15 / 30 / 75 / 110	0.050	0.081	0.133	0.166	D, E, Z
RSSP-241575W-FR	24 VDC	16.0 – 33.0	15 (75 on axis)	0.065				D, E, Z
RSSP-121575W-FR	12 VDC	8.0 – 17.5	15 (75 on axis)	0.170				D, E, Z
<b>Synchronization Modules:*****</b>								
SM-12/24-R	24 VDC	—	—	0.025				W
DSM-12/24-R	24 VDC	—	—	0.038				W

NOTES: 1) SUFFIXES USED ABOVE: W = Wall mounting; C = Ceiling mounting; F = Fire lettering; R at end = Red; W at end = White. EXAMPLES: RSS-241575W-FR (Wall mounting – Fire lettering, Red); RSS-2415C-FW (Ceiling mounting – Fire lettering, White). 2) SPECIAL PLATE: NATP Trim Plate provides 0.65" (16.51 mm) additional trim for the appliance. Available in red only.

- \* Series RSS and RSSP wall-mount models are offered in **red only**. Series RSS ceiling-mount models are offered in **white only**.
- \*\* Average current per actual Wheelock production testing Listed VDC. For rated average and peak current across the UL regulated voltage range for both filtered DC and unfiltered Vrms, see the Wheelock installation instructions.
- \*\*\* For descriptions of MOUNTING OPTIONS, refer to NOTIFIER data sheet DN-6111, derived from Wheelock #S7000.
- \*\*\*\* Compatible Wheelock audibles/speakers for RSSP Strobe Plates are as follows: multitone appliances (AMT, MT); horns (AH, NH); motor bells (MB-G6/G10); speakers (ET-1010/1080, E70, ET70); chimes (CH70).
- \*\*\*\*\* SM Sync Modules are rated for 3.0 amperes at 24 VDC; DSM Sync Modules are rated for 3.0 amperes per circuit. The maximum number of interconnected DSM modules is twenty (20). Refer to installation instructions for SM (Wheelock #P83123) and DSM (Wheelock #P83177).

## FEATURES QUICK REFERENCE

\*For Weatherproof RSS Series Strobe (below) information, see Wheelock data sheet S9004.

MODEL NUMBER	WALL MOUNT	CEILING MOUNT	NON-SYNC	SYNCS w/ SM or DSM	STROBE CANDELA	24 VDC	12 VDC	COLOR RED	COLOR WHITE
RSS-24MCW-FR	X		X	X	15 / 30 / 75 / 110	X		X	
RSS-24MCW-FW	X		X	X	15 / 30 / 75 / 110	X			X
RSS-241575W-FR	X		X	X	15 (75 on axis)	X		X	
RSS-121575W-FR	X		X	X	15 (75 on axis)		X	X	
RSSP-24MCW-FR	X		X	X	15 / 30 / 75 / 110	X		X	
RSSP-241575W-FR	X		X	X	15 (75 on axis)	X		X	
RSSP-121575W-FR	X		X	X	15 (75 on axis)		X	X	
RSS-2415C-FW		X	X	X	15	X			X
RSS-2430C-FW		X	X	X	30	X			X
RSS-2475C-FW		X	X	X	75	X			X
RSS-24100C-FW		X	X	X	100	X			X
RSSWP-2475W-FR*	X		X	X	75 @ -31°F	X		X	



June 4, 1997

DN-3314 • I-400

# 6424 Projected Beam Smoke Detector

Section: Conventional Initiating Devices

## GENERAL

The System Sensor Model 6424 Beam Detector is ideal to meet the unique fire protection challenge of atriums and other open areas with high ceilings.

The System Sensor Model 6424 Beam Detector is designed for four-wire, 24 VDC applications.

This stylish, two-component infrared detector consists of a separate transmitter and receiver. Together they can protect a linear distance from 30' to 330'. Multiple units spaced between 30 and 60 feet apart can be used to cover larger areas. If 95% or more of the beam is blocked, a trouble condition is signaled. This blockage must be removed before the unit can reset itself and return to normal.

## FEATURES

- Unique LED alignment technique makes setup fast and easy.
- Four LEDs on the front of the receiver provide positive visual indication of maximum signal strength.
- No special meters or alignment tools are necessary.
- Receiver and transmitter can be powered separately or together.
- Detects a broad range of fires.
- Ceiling and wall mount brackets included.
- Calibrated test filters included.
- Form A (Alarm) and B (Trouble) contacts.
- Remote test station option.
- Made in USA.
- Three-year warranty.

## APPLICATIONS

The System Sensor Model 6424 Beam Detector is particularly well suited for use in atriums, ballrooms, churches, warehouses, museums, factories, and other large or high-ceiling areas where conventional smoke detectors cannot be easily installed.

## CONSTRUCTION & OPERATION

The two-component System Sensor Model 6424 detector consists of a separate infrared transmitter and receiver. The units mount on opposite walls or on the ceiling across from each other and are designed to detect any smoke in a linear distance from 30' to 330'. Since both absorption and scattering of the beam's infrared light is detected as a reduction in signal, the System Sensor Model 6424 works well on both smoldering and fast-flaming fires.



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*The 6424 Projected Beam Smoke Detector*

System Sensor's unique LED alignment technique assures the fast and easy setup. No special meters or alignment tools are necessary. Four LEDs on the front of the receiver provide all the help needed to lock transmitter and receiver together for maximum signal strength and protection.

A built-in automatic gain control compensates for the gradual deterioration of signal strength from dust accumulation, component aging and temperature fluctuations. The receiver and transmitter can be powered separately or together for maximum flexibility in installation. Sensitivity selectable at 30% or 55% Total Obscuration. There is also a choice of test filters to allow convenient checking of detector sensitivity under varying conditions. Operating temperature range is -22°F to 131°F (-30°C to 55°C). For further information, see "Guide for Proper Use of Beam Smoke Detectors," document I56-506-00.

## PRODUCT LINE INFORMATION

Model	Description
6424	Projected Beam Smoke Detector.
RTS451	Remote Test Station.
RA400Z	Remote Annunciator.
A77-716B	End-of-Line Relay, 24 VDC.

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact NOTIFIER. Phone: (203) 484-7161 FAX: (203) 484-7118



**NOTIFIER** 12 Clintonville Road, Northford, Connecticut 06472

**ISO 9001**  
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## SPECIFICATIONS

### Operational

**Range:** 30' to 330' (length).

**Smoke detector spacing:** On smooth ceilings, 60' between projected beams and not more than one-half that spacing between a projected beam and a sidewall. Other spacing may be used depending on ceiling height, airflow characteristics, and response requirements. See NFPA 72 A-5-3.5.5.2.

**Sensitivity:** 30% ± 5% total obscuration *OR* 55% ± 5% total obscuration.

**Fault condition (Trouble):** 95% or more obscuration; automatic gain control limit; improper initial alignment.

**Test/Reset features:** Obscuration filter; local reset switch; remote test and reset switch capability (compatible with RTS451 test station).

**Indicators:** ALARM — Local red LED  
TROUBLE — Local amber LED  
NORMAL — Local flashing green LED

**Alignment aid:** Integral signal strength indication (4 red LEDs).

**Relays:** Alarm, Trouble. EOL relay is required to supervise power.

### Environmental

**Temperature:** -30°C to 55°C (-22°F to 131°F).

**Humidity:** 95% RH non-condensing.

### Mechanical

**Dimensions:** With no bracket, 2.5"H x 8.5"W x 7"D.

With ceiling mount bracket, 5.5"H x 8.5"W x 7"D.

With wall mount bracket, 5.5"H x 8.5"W x 10"D.

**Weight:** Receiver, 1.5 lb. (663 g). Transmitter, 1.3 lb. (598 g).

**Mounting:** Separate ceiling and wall brackets.

**Wiring:** Plug with attached cable.

### Electrical (Receiver)

**Voltage:** 20 to 32 VDC.

**Maximum ripple voltage:** 30% of nominal (peak to peak).

**Current (24 VDC):**

Standby: 10.0 mA maximum.

Alarm: 28.4 mA maximum.

Trouble: 27.1 mA maximum.

Start-up surge: 19.0 mA maximum.

Relay contacts: 0.5 A at 30 VAC/DC.

**Reset time:** 0.6 seconds maximum.

**Start-up time:** 1 minute maximum (after 5 minute reset).

**Power loss:** Retain memory for 5 minute minimum.

### Electrical (Transmitter)

**Voltage:** 18.8 to 32.0 VDC.

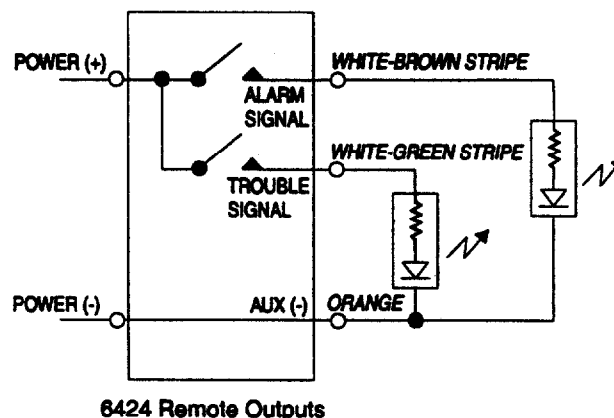
**Maximum ripple voltage:** 30% of nominal (peak to peak).

**Current (24 VDC):** 10.0 mA maximum.

## ENGINEERING SPECIFICATIONS

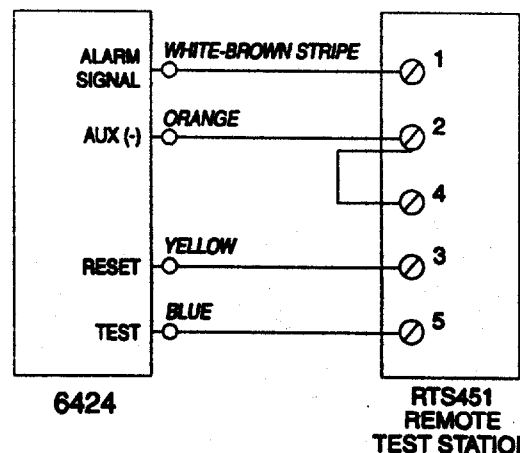
The projected beam type smoke detector shall be a 4-wire 24 VDC device to be used with UL listed separately supplied four-wire control panels only. Unit shall be listed to UL 268 and shall consist of a separate transmitter and receiver capable of being powered separately or together. The detector shall operate in either a short range (30' - 100') or long range (100' - 330') mode. The temperature range of the beam shall be -22°F to 131°F. The detector shall feature a bank of four alignment LEDs on both the receiver and transmitter that are used to ensure proper alignment of unit without special tools. Beam detector shall feature automatic gain control which will compensate for gradual signal deterioration from dirt accumulation on lenses. Unit shall include both ceiling and wall mounting brackets. Testing shall be carried out using calibrated test filters or magnet activated remote test station.

## WIRING DIAGRAMS



6424 Remote Outputs

### 6424 Remote Outputs



6424

RTS451  
REMOTE  
TEST STATION

### Remote Test Station Connection