

S. Portland Maine Office
PO Box 2551
2257 West Broadway
South Portland, ME 04106
Toll Free 1-800-370-3473
Fax 207-879-0540

Bangor Maine Office
54 Perry Rd
Bangor, ME 04401
Toll Free 1-888-312-3473
Fax 207-947-1219

New Hampshire Office
1 Bayside Rd
Greenland, NH 03840
Toll Free 1-877-577-3473
Fax 603-431-2397

Vermont Office
PO Box 633
Middlebury, VT 05753
Phone 1-802-388-3473
Fax 802-388-3472

www.norrisinc.com

Date:

August 14, 2009

Contractor:

R.M. Pearson, Inc.
232 Ossipee Trail
Gorham, ME. 04038

Project Manager:

Zach Davis

Submitted By:

Norris Inc.
2257 West Broadway
South Portland, Maine 04106
Telephone: (800) 370-3473

System:

Fire Alarm System

Project:

645 Congress St. Fire Alarm Renovation

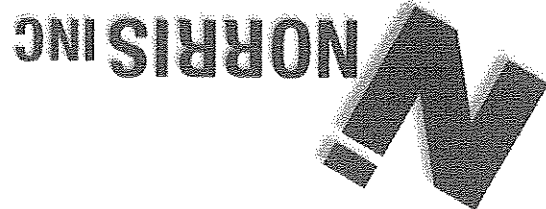
SUBMITTAL PACKAGE

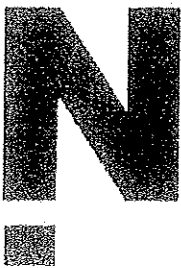
LOSS PREVENTION

BUILDING AUTOMATION

COMMUNICATIONS

Prepared For Tomorrow; Delivered Today





NORRIS, INC.

Company Profile

"We are extremely proud to represent the highest quality manufacturers integrating life safety, alarm and communication systems throughout northern New England."

-- Bradford Norris, President --

Mission Statement

Provide quality engineered systems, exceptional service.

Goal

Learn...Continually Improve...Exceed Expectations

Founded in 1979 Norris Inc. has grown to become Northern New England's leading integrated system contracting and supply company. Norris Inc. is an innovated proactive organization with extensive experience in integration interdisciplinary building management systems. Our local and national affiliations assure that your project will be done properly regardless of size representing leading manufacturers our comprehensive products provide outstanding quality reliability and performance... surpassing customer application requirements and exceeding the stringent requirements of Underwriters Laboratories, National Fire Protection Association and other codes. We maintain an exceptional level of quality and provide the highest levels of customer service. Our knowledgeable technical support will insure the great service you deserve. Whether your needs involve industrial, commercial, institutional, or educational applications, you can trust that Norris Inc. has the complete resources it takes to provide the right solution right away.

Engineering Manager
[Signature]

"LOOK FOR THE UL ALARM SYSTEM CERTIFICATE"

***THIS CERTIFICATE EXPIRES ON 31-MAR-2010 ***

S5129 - 1 UUS [Signal and Fire Alarm Equipment and Services] (Protective Signaling Services) Local, Auxiliary, Remote Station and Proprietary

File - Vol No. CCN Listing Category

The Alarm Service Company is Listed in the following Certificate Service Categories:

NORRIS INC 2257 W BROADWAY SOUTH PORTLAND ME 04106
NORRIS INC 2257 W BROADWAY SOUTH PORTLAND ME 04106

Alarm Service Company: (238321-001) Service Center: (238321-001)

Listed Service From: SCARBOROUGH, ME

THIS IS TO CERTIFY that the Alarm Service Company indicated below is included by Underwriters Laboratories Inc. (UL) in its Product Directories as eligible to use the UL Listing Mark in connection with Certified Alarm Systems. The only evidence of compliance with UL's requirements is the issuance of a UL Certificate for the Alarm System and the Certificate is current under UL's Certificate Verification Service. This Certificate does not apply in any way to the communication channel between the protected property and any facility that monitors signals from the protected property unless the use of a UL listed or Classified Alarm Transport Company is specified on the Certificate.

CERTIFICATE OF COMPLIANCE

A not-for-profit organization dedicated to public safety and committed to quality service

Northbrook, IL San Jose, CA
Melville, NY

Underwriters Laboratories Inc. ®



Applicant ID No: 238321-001
Service Center No 0
Expires: 31-MAR-2010

J. Shannon
James M. Shannon, President

January 22, 2003
Date of Issue

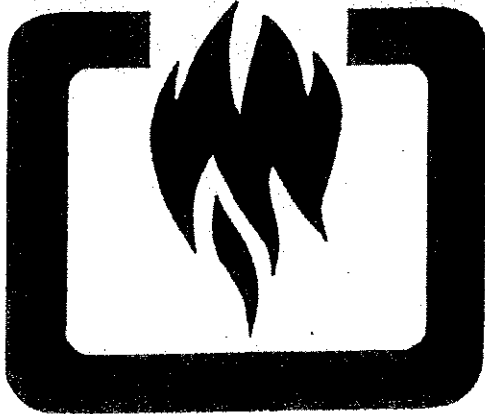
*as a member in good standing, entitled
to all rights and privileges of membership.*

NORRIS INC

NFPA recognizes

INTERNATIONAL

NFPA[®]



NATIONAL SYSTEMS CONTRACTORS ASSOCIATION


NSCA Membership Certificate

This is to certify that

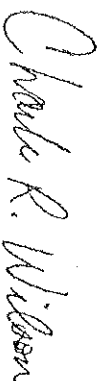
Norris Inc

is an official member of the
National Systems Contractors Association
on this the

First of December



Nancy Emerson
President



Chuck Wilson
Executive Director



Electronic Life Safety, Security
& Systems Professionals

National Burglar & Fire Alarm Association

Norris Inc

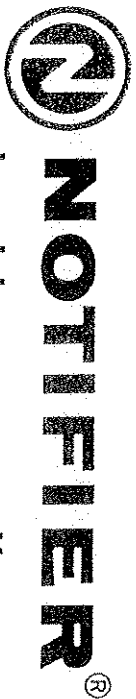
*is a member in good standing entitled to all rights
& privileges of membership and subject to all conditions
& objectives as defined in the association bylaws.*

A handwritten signature in black ink, appearing to read "Merlin J. Guilbeau".

Merlin J. Guilbeau
Executive Director

A handwritten signature in black ink, appearing to read "Michael A. Miller".

Michael A. Miller
President



by Honeywell

This is to certify that

NORRIS, INC.

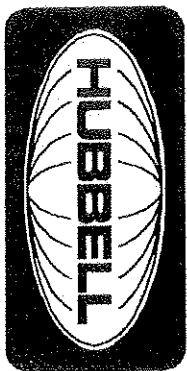
is an authorized Engineered Systems Distributor for NOTIFIER

During the Year of 2009

A handwritten signature in cursive script, appearing to read 'H. Jorvel'.

Vice President Domestic Sales

Signed for and on behalf of NOTIFIER



Hubbell Premise Wiring

A Division of
HUBBELL INCORPORATED (Delaware)

hereby certifies

Norris, Inc.

South Portland, Maine

as a Certified Installer of the

Hubbell Premise Wiring **MISSION CRITICAL®**

2009



Michael R. O'Connor, CSI, RCDD/NTS
Director-Technical Marketing
Hubbell Premise Wiring

Certificate of Membership

AFAA

This is to Certify that
Norris, Inc.

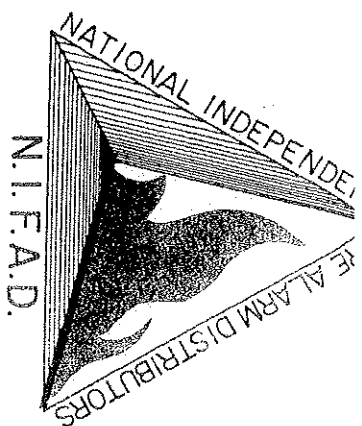
Has been duly elected to membership in this organization through
May 31, 1999

and pledged to improve LIFE SAFETY IN AMERICA by striving to ensure
fire protective signaling and automatic detection systems are properly designed, installed and maintained.

James M. Jandy Jr.
CHAIRMAN OF THE BOARD

Dave B. Ball
SECRETARY

AUTOMATIC FIRE ALARM ASSOCIATION, INC.
a non-profit organization



National Independent Fire Alarm Distributors Association

This is to Certify that

Morris Inc.

is a

Member in Good Standing

and is entitled to all rights and privileges of such membership

Carl Smith

Secretary

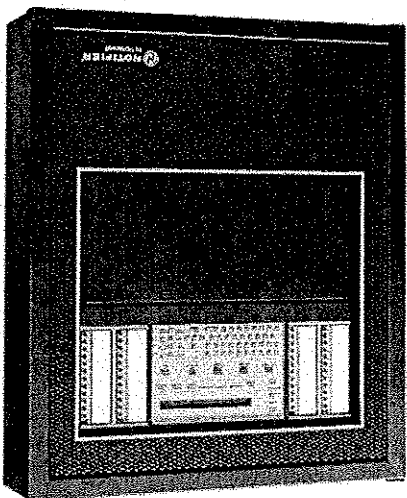
Robert Smith

President



by Honeywell

Intelligent Fire Alarm Control Panels



711panel.jpg

General

The NFS2-640 Intelligent Fire Alarm Control Panel is part of the ONYX® Series of Fire Alarm Controls from NOTIFIER.

As a stand-alone small-to-large system, or as a large network, the ONYX Series of products meets virtually every application requirement.

Designed with modularity and for ease of system planning, the NFS2-640 can be configured with just a few devices for small building applications, or for a large campus or high-rise application. Simply add additional peripheral equipment to suit the application.

NOTE: Unless called out with a version-specific "E" at the end of the part number, "NFS2-640" refers to models NFS2-640 and NFS2-640E; similarly, "CPU2-640" refers to models CPU2-640 and CPU2-640E.

Features

- Listed to UL Standard 864, 9th edition.
- One, expandable to two, isolated intelligent Signaling Line Circuit (SLC) Style 4, 6 or 7.
- Up to 159 detectors (any mix of ion, photo, thermal, or multi-sensor) and 159 modules (N.O. manual stations, two-wire smoke notification, or relay) per SLC. 318 devices per loop/636 per FACP or network node.
- Standard 80-character display, 640-character large display, or display-less (a node on a network).
- Network option — 103 nodes supported (AFP-200, AFP-300/400, NFS-320, NFS-640, NFS2-640, AFP1010, AM2020, NFS-3030, NFS2-3030, NCA/NCA-2 Network Annunciator, NCS Network Control Station, or ONYXWorks™ Network Control Station) using wire or fiber-optic connections.
- 6.0 amp switch mode power supply with four Class A/B built-in Notification Appliance Circuits (NAC). Selectable System Sensor, Wheelock, or Gentex strobe synchronization.
- Built-in Alarm, Trouble, and Supervisory relays.
- VeriFire® Tools offline program option. Sort Maintenance Reports by compensation value (dirty detector), peak alarm value, or address.
- Autoprogramming and Walk Test reports.
- Optional universal 636-point DACT.
- 80-character remote annunciators (up to 32).
- EIA-485 annunciators, including custom graphics.
- Printer interface (80-column and 40-column printers).
- History file with 800-event capacity in nonvolatile memory, plus separate 200-event alarm-only file.
- Alarm Verification selection per point, with tally.
- Autoprogramming and Walk Test reports.
- Positive Alarm Sequence (PAS) Presignal.
- Silence inhibit and Auto Silence timer options.
- March time/temporal/California two-stage coding/strobe synchronization.
- Field-programmable on panel or on PC, with VeriFire Tools program check, compare, simulate.
- Full QWERTY keypad.
- Charger for up to 200 hours of standby power.
- Non-alarm points for lower priority functions.
- Remote ACK/Signal Silence/System Reset/Drill via monitor modules.
- Automatic time control functions, with holiday exceptions.

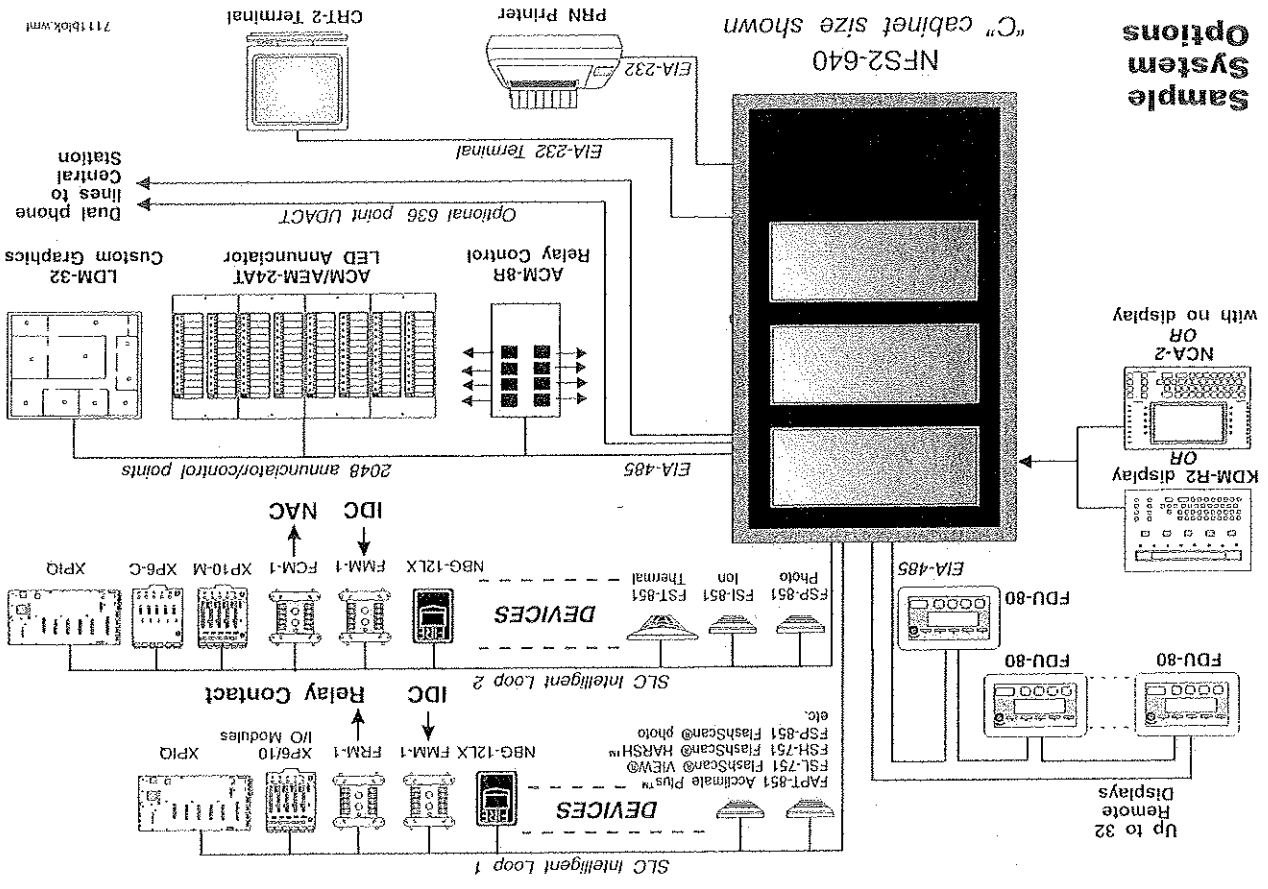
NCA-2 640-CHARACTER DISPLAY FEATURES:

- Surface Mount Technology (SMT) electronics.
- Extensive, built-in transient protection.
- Powerful Boolean logic equations.
- Backlit, 640-character display.
- Supports SCS Series smoke control system in both HVAC or FSCS modes (not UL-Listed for FSCS).
- Printer and CRT EIA-232 ports.
- EIA-485 annunciator and terminal mode ports.
- Alarm, Trouble, Supervisory, and Security relays.

FLASHSCAN® INTELLIGENT FEATURES:

- Poll 318 devices in less than two seconds.
- Activate up to 159 outputs in less than five seconds.
- Multicolor LEDs blink device address during Walk Test.
- Fully digital, high-precision protocol (U.S. Patent 5,539,389).
- Manual sensitivity adjustment — nine levels.
- Pre-alarm ONYX intelligent sensing — nine levels.
- Day/Night automatic sensitivity adjustment.
- Sensitivity windows.
- Ion — 0.5 to 2.5%/foot obscuration.
- Photo — 0.5 to 2.35%/foot obscuration.
- Laser (VIEW®) — 0.02 to 2.0%/foot obscuration.
- Acclimate Plus™ — 0.5 to 4.0%/foot obscuration.
- HARSH™ — 0.5 to 2.35%/foot obscuration.
- Drift compensation (U.S. Patent 5,764,142).
- Degraded mode — in the unlikely event that the CPU2-640 microprocessor fails, FlashScan detectors revert to degraded operation and can activate the CPU2-640 NAC circuits and alarm relay. Each of the four built-in panel circuits includes a Disable/Enable switch for this feature.
- Multi-detector algorithm involves nearby detectors in alarm decision (U.S. Patent 5,627,515).
- Automatic detector sensitivity testing.
- Maintenance alert (two levels).
- Self-optimizing pre-alarm.

Sample System Options



VIEW (VERY INTELLIGENT EARLY WARNING) SMOKE DETECTION TECHNOLOGY:

- Revolutionary spot laser design.
- Advanced ONYX intelligent sensing algorithms differentiate between smoke and non-smoke signals (U.S. Patent 5,831,524).
- Addressable operation pinpoints the fire location.
- No moving parts to fail or filters to change.
- Early warning performance comparable to the best aspiration systems at a fraction of the lifetime cost.

ACCLIMATE PLUS

- Detector automatically adjusts sensitivity levels without operator intervention or programming. Sensitivity increases with heat.
- Microprocessor-based technology; combination photo and thermal technology.
- FlashScan or classic mode compatible with NFS2-640, NFS-320.
- Low-temperature warning signal at $40^{\circ}\text{F} \pm 5^{\circ}\text{F}$ ($4.4^{\circ}\text{C} \pm 2.77^{\circ}\text{C}$).

HARSH HOSTILE-AREA SMOKE HEAD:

- Provides early warning of smoke detection in environment where traditional smoke detectors are not practical.
- The detector's filters remove particulates down to 30 microns in size.
- Intake fan draws air into photo chamber, while airborne particles and water mist are removed.
- Requires auxiliary 24 VDC from system or remote power supply.

3.0 AMP POWER SUPPLY (6.0 A IN ALARM):

- Displays battery current/voltage on panel (with display).
- 120 or 220/240 VAC.

HIGH-EFFICIENCY OFFLINE SWITCHING

- Backup tone generator and amplifier option.
- Firefighter telephone option.
- 30- to 120-watt high-efficiency amplifiers (AA Series).

VOICE AND TELEPHONE FEATURES:

- Solid-state digital message generation.
- Firefighter telephone option.
- 30- to 120-watt high-efficiency amplifiers (AA Series).
- Backup tone generator and amplifier option.
- Multichannel voice transponder (XPiQ).

RELEASING FEATURES:

- Ten independent hazards.
- Sophisticated cross-zone (three options).
- Delay timer and Discharge timers (adjustable).
- Abort (four options).
- Low-pressure CO₂ listed.

7111blk.wmf

of the NFS-2-640 software is such that each point entry carries its own program, including control-by-event links to other points. This allows the program to be entered with independent per-point segments, while the NFS-2-640 simultaneously monitors other (already installed) points for alarm conditions.

Verify Tools is an offline programming and test utility that can greatly reduce installation programming time, and increase confidence in the site-specific software. It is Windows-based and provides technologically advanced capabilities to aid the installer. The installer may create the entire program for the NFS-2-640 in the comfort of the office, test it, store a backup file, then bring it to the site and download from a laptop into the panel.

Flashscan, Exclusive New World-Leading Detector Protocol

At the heart of the NFS-2-640 is a set of detection devices and device protocol — Flashscan (U.S. Patent 5,339,389). Flashscan is an all-digital protocol that gives superior precision and high noise immunity.

In addition to providing quick identification of an active input device, this new protocol can also activate many output devices in a fraction of the time required by competitive protocols. This high speed also allows the NFS-2-640 to have the largest device per loop capacity in the industry — 318 points — yet every input and output device is sampled in less than two seconds. The microprocessor-based Flashscan detectors have bicolor LEDs that can be coded to provide diagnostic information, such as device address during Walk Test.

ONYX Intelligent Sensing

Intelligent sensing is a set of software algorithms that provides the NFS-2-640 with industry-leading smoke detection capability. These complex algorithms require many calculations on each reading of each detector, and are made possible by the very-high-speed microcomputer used by the NFS-2-640.

Drift Compensation and Smoothing: Drift compensation allows the detector to retain its original ability to detect actual smoke, and resist false alarms, even as dirt accumulates. It reduces maintenance requirements by allowing the system to automatically perform the periodic sensitivity measurements required by NFPA 72. Smoothing filters are also provided by software to remove transient noise signals, such as those caused by electrical interference.

Maintenance Warnings: When the drift compensation performed for a detector reaches a certain level, the performance of the detector may be compromised, and special warnings are given. There are three warning levels: (1) Low Chamber value, usually indicative of a hardware problem in the detector; (2) Maintenance Alert, indicative of dust accumulation that is near but below the allowed limit; (3) Maintenance Urgent, indicative of dust accumulation above the allowed limit.

Sensitivity Adjust: Nine sensitivity levels are provided for alarm detection. These levels can be set manually, or can change automatically between day and night. Nine levels of pre-alarm sensitivity can also be selected, based on predetermined levels of alarm. Pre-alarm operation can be latching or self-restoring, and can be used to activate special control functions.

Self-Optimizing Pre-Alarm: Each detector may be set for "Self-Optimizing" pre-alarm. In this special mode, the detector "learns" its normal environment, measuring the peak analog readings over a long period of time, and setting the pre-alarm level just above these normal peaks.

Cooperating Multi-Detector Sensing: A patented feature of ONYX intelligent sensing is the ability of a smoke sensor to consider readings from nearby sensors in making alarm or pre-alarm decisions. Without statistical sacrifice in the ability to resist false alarms, it allows a sensor to increase its sensitivity to actual smoke by a factor of almost two to one.

Field Programming Options

Autoprogram is a timesaving feature of the NFS-2-640. It is a special software routine that allows the NFS-2-640 to "learn" what devices are physically connected and automatically load them in the program with default values for all parameters. Requiring less than one minute to run, this routine allows the user to have almost immediate fire protection in a new installation, even if only a portion of the detectors are installed.

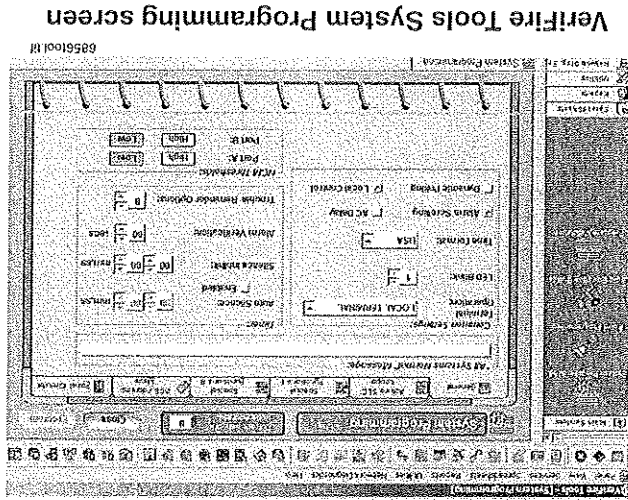
Keypad Program Edit (with KDM-R2) The NFS-2-640, like all NOTIFIER intelligent panels, has the exclusive feature of program creation and editing capability from the front panel keypad, while continuing to provide fire protection. The architecture

```
ENTER PROG OR STAT PASSWORD, THEN ENTER
<ESCAPE TO ABORT> *****
0=CLR 1= AUTO 2=POINT 3=PASSWORD 4=MESSAGE
5=ZONES 6=SPL FUNCT 7=SYSTEM 8=CHECK PRG
```

Above: Keypad program editing.
Below: Autoprogram function.

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AUTOPROGRAM PLEASE WAIT
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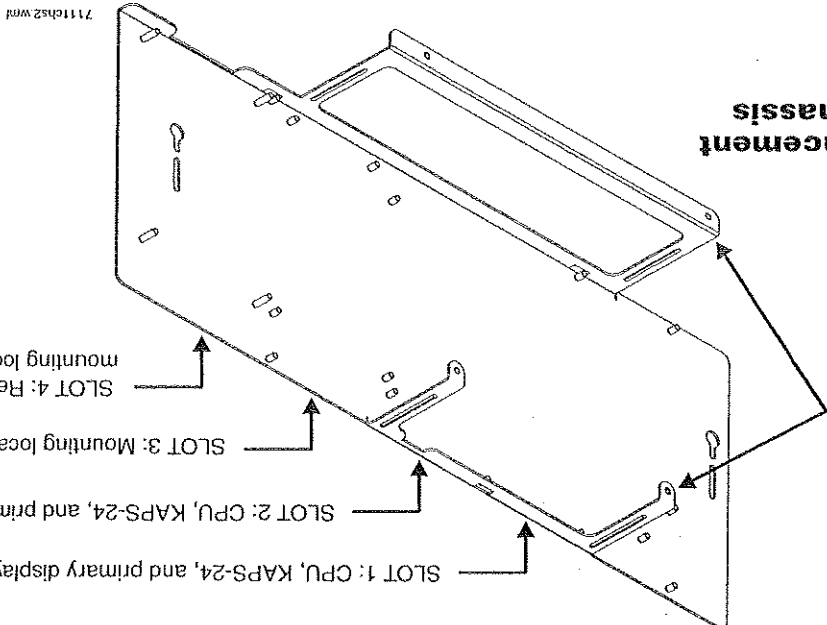
```
L1:80 DETS, 15 MODS L2:93 DETS, 35 MODS
BELLS 04
```



Layers: The CHS2-M2 accepts four layers of equipment, including the control panel. The CPU2-640 fills three positions (left to right) in the first-installed layer (the back of the chassis); its integral power supply occupies (the left) two positions in the next two layers; the optional display occupies (the left) two positions at the front, flush with the door. Some equipment, such as the NCA-2, may be door-mounted directly in front of the control panel. The NCA-2 mounts onto the DP-DISP with NCA-2RETR0 kit; see NCA-2 data sheet for mounting options (DN-7047). The NCA-2 can be used as a primary display for the NFS2-640 (use NCA/640-2-KIT) by directly connecting their network ports (required in Canadian stand-alone applications).

Expansion: Installing an LEM-320 Loop Expander Module adds a second SLC loop to the control panel. The LEM-320 is mounted onto the CPU2-640, occupying the middle-right, second (back) slot on the chassis. If networking two or more control panels, each unit requires a NCM-W (wire) or NCM-F (fiber) Network Control Module. The NCM-W/F can be installed in any panel output module position (see manual!); the default position is at the back of the chassis next to the control panel. **Option boards** can be mounted in front of the LEM-320 or NCM module; for ease of access, complete installation of those devices before mounting another layer.

SLOT 1: CPU, KAPS-24, and primary display.
 SLOT 2: CPU, KAPS-24, and primary display.
 SLOT 3: Mounting location for LEM-320.
 SLOT 4: Recommended mounting location for NCM-F.



Equipment Placement in CHS2-M2 Chassis

Keypad/display unit attaches to chassis rails.

Placement of Equipment in Chassis and Cabinet

The following guidelines outline the NFS2-640's flexible system design.

Rows: The first row of equipment in the cabinet mounts in chassis CHS2-M2. Mount the second, third, or fourth rows of equipment in chassis CHS-4MB (see NFS2-640 Installation Manual regarding panel output modules) or CHS-4L (for voice components, see Voice Alarm System Manual).

Wiring: When designing the cabinet layout, consider separation of power-limited and non-power-limited wiring as discussed in the NFS2-640 Installation Manual.

Positions: A chassis offers four basic side-by-side positions for components; the number of modules that can be mounted in each position depends on the chassis model and the size of the individual module. There are a variety of standoffs and hardware items available for different combinations and configurations of components.

It is critical that all mounting holes of the NFS2-640 are secured with a screw or standoff to ensure continuity of Earth Ground.

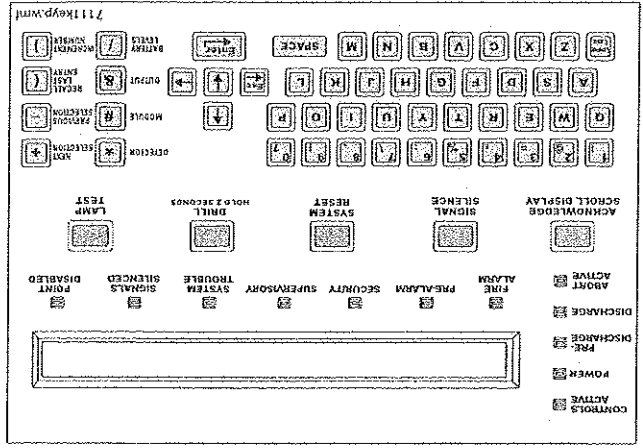
KDM-R2 Controls and Indicators

Program Keypad: QWERTY type (keyboard layout, at right).

12 LED indicators: Power; Fire Alarm; Pre-Alarm; Security; Supervisory; System Trouble; Signals Silenced; Points Disabled; Control Active; Abort; Pre-Discharge; Discharge.

Membrane Switch Controls: Acknowledge/Scroll Display; Signal Silence; Drill; System Reset; Lamp Test.

LCD Display: 80 characters (2 x 40) with long-life LED backlight (see illustration at right).



Configuration Guidelines

Stand-alone and network systems require a main display. On single-CPU systems (one CPU2-640/640E), display options are the KDM-R2 or the NCA-2. On network systems (two or more CPU2-640/640Es), at least one NCA-2 or NCS announcement device is required. Other options listed as follows:

KDM-R2: 80-character backlit LCD display with QWERTY programming and control keypad. Order two BMP-1 blank modules and DP-DISP2 mounting plate separately. Requires top row of a cabinet. Required for each stand-alone 80-character display system. The KDM-R2 may mount in network nodes to display "local" node information as long as at least one NCA-2 or NCS network display is on the system to display network information.

NCA-2: Network Control Annunciator, 640 characters. On single CPU2-640/640E systems, the NCA-2 is the Primary Display for the panel and connects directly to the CPU2-640/640E. On network systems (two or more CPU2-640/640Es), one network display (either NCA-2 or NCS) is required for every system. On network systems, the NCA connects (and requires) an NCM network communications module. Mounts in a row of FACP node or in two annunciator positions. Mounting options include DP-DISP2, ADP-4B, or in an annunciator box, such as the ABS-2D. In CAB-4 top-row applications, a DP-DISP2 and two BMP-1 blank modules are required for mounting. See NCA-2 data sheet DN-7047.

CPU2-640: Central processing unit with integral 3.0 amp (6.0 A in alarm) power supply for an NFS2-640 system. Includes CPU factory-mounted to chassis **CHS2-M2**; one Signalling Line Circuit (3.0 A in alarm). Bracket installation kit required to mount NCA-2 to CHS2-M2 chassis with CPU2-640/640E.

DP-DISP2: Dress panel for top row in cabinet with CPU2-640/640E installed.

ADP2-640: Dress panel for middle rows with CPU2-640/640E.

BMP-1: Blank module for unused module positions.

BP2-4: Battery plate, required.

Option Modules

AUDIO OPTIONS

DVC: Digital Voice Command, digital audio processor with message storage for up to 16 minutes of standard quality (2 minutes at high quality) digital audio. See DN-7045.

DVC-EM: Digital Voice Command, digital audio processor with message storage for up to 32 minutes of standard quality (4 minutes at high quality) digital audio. See DN-7045.

DVC-KD: Keypad for local announcement and controls; status LEDs and 24 user-programmable buttons. See DN-7045.

DVC-A/O: DVC Analog Output board provides four analog output circuits for use with AA or XPIQ Series amplifiers. Four-channel operation supported. See DN-7045.

CA-1: Chassis, occupies one tier of a CAB-4 Series enclosure. The left side accommodates one DVC and a DVC-KD (optional); and the right side houses a CMIC-1 microphone and its well (optional). See DN-7045.

CA-2: Chassis assembly, occupies two tiers of a CAB-4 Series enclosure. The left side accommodates one DVC mounted on a half-chassis and one NCA-2 or BP-GA2 mounted on a half-chassis. The right side houses a microphone/handset well. The CA-2 assembly includes CMIC-1 microphone. ADDR Series doors with two-tier visibility are available for use with the CA-2 configuration: ADDR-B4, ADDR-C4, ADDR-D4 (below).

TELH-1: Firefighter's Telephone Handset for use with the DVC when mounted in the CA-2 chassis. See DN-7045.

ADDR-B4: Two-tier-sized door designed for use with the CA-2 chassis configuration. ADDR Series doors are similar to CAB-4 Series "DR" doors, but a clear window space exposes the top two tiers of the CAB-4 enclosure. Use an SBB-B4 backbox with the ADDR-B4. See DN-7045, DN-6857.

ADDR-C4: Three-tier-sized door designed for use with the CA-2 chassis configuration. ADDR Series doors are similar to CAB-4 Series "DR" doors, but a clear window space exposes the top two tiers of the CAB-4 enclosure. Use an SBB-C4 backbox with the ADDR-C4. See DN-7045, DN-6857.

ADDR-D4: Four-tier-sized door designed for use with the CA-2 chassis configuration. ADDR Series doors are similar to CAB-4 Series "DR" doors, but a clear window space exposes the top two tiers of the CAB-4 enclosure. Use an SBB-D4 backbox with the ADDR-D4. See DN-7045, DN-6857.

DPA-1: Dress panel, used with the CA-1 chassis when configured with a DVC, DVC-KD, and CMIC-1. See DN-7045.

DPA-1A4: Dress panel, used with the CA-1 chassis when the CMIC-1 is not used. Provides mounting options on right two bays for two ACS annunciators, or for blank plates. See DN-7045.

BP-GA2: Blank plate for CA-2 chassis, used for NFS2-640 Firefighters Telephone Applications with no NCA-2.

CMIC-1: Optional microphone and microphone well assembly used with the CA-1 chassis.

RM-1/RM-1SA: Remote microphone assemblies, mount on ADP-4 (RM-1) dress panel or CAB-RM/RMR (RM-1SA) stand-alone cabinets. See DN-6728.

FTM-1: Firephone Control Module connects a remote firefighter telephone to a centralized telephone console. Reports status to panel. Wiring to jacks and handsets is supervised.

AA-30: Audio Amplifier, 30 watts. Switch-mode power. Includes amplifier and audio input supervision, backup input, and automatic switchover, power supply, cables. See AA Series data sheet, DN-3224.

AA-120/AA-100: Audio Amplifier provides up to 120 watts of 25 Vrms audio power for the NFS-640. The amplifier contains an integral chassis for mounting to a CAB-B4, -C4, or -D4 backbox (consumes one row). Switch-mode power. Includes audio input and amplified output supervision, backup input, and automatic switchover to backup tone. Order the AA-100 for 70.7 Vrms systems and 100 watts of power. See AA Series data sheet, DN-3224.

XPIQ: The XPIQ quad intelligent voice transponder for distributed multichannel voice evacuation systems, an integrated audio amplification and distribution subsystem controlled by FACP. Capable of playing up to four simultaneous messages. Accepts up to four 25-watt amplifiers. See XPIQ data sheet, DN-6823.

POWER SUPPLIES, STANDARD CABINETS

FPCS-24: The FPCS-24 is a remote six-amp (four-amp continuous) repeater/power supply. See FPCS-24 data sheet, DN-5132.

FPCS-24S6/24S8: Remote six-amp and eight-amp power supplies with battery charger. See FPCS-24S6/24S8 data sheet, DN-6927.

CHS-4: Chassis for mounting up to four APS-6RS.

CHS-4L: Low-profile four-position Chassis. Mounts two AA-30 amplifiers or one AMG-E and one AA-30.

DP-1B: Blank Dress panel. Provides dead-front panel for unused tiers or to cover AA-30, AA-120, or one AMG-E and one AA-30.

CAB-4 Series: The CAB-4 Series cabinets are fabricated from 16-gauge steel with unique full-front LEXAN®, reverse-silk-

screened for durability. The cabinet assembly consists of two basic parts: a Backbox (SB8--4), and a Locking Door (DR--4) that may hinge right or left. Cabinets are available in four sizes, "A" through "E", with one to four tiers. A trim ring option is available for semi-flush mounting. See *CAB-4 Series data sheet, DN-6857*.

CAB-M Series: Marine cabinets required for Lloyd's Register or U.S. Coast Guard listed use. See *DN-5063*.

COMPATIBLE DEVICES, EIA-232 PORTS

PRN-5: 80-column printer. See *DN-6769*.

PRN-6: 80-column printer. See *DN-6956*.

VS4095/S2: Printer, 40-column, 24 V. Mounted in external backbox. See *DN-3260*.

CRT-2: Video display terminal. See *DN-3756*.

COMPATIBLE DEVICES, EIA-485 PORTS

ACS: Annunciator Control Modules ACM/AEM-24AT and ACM/AEM-28A; remote serial annunciator/control systems. See *data sheets, DN-0524 and DN-6862*.

ACM-24AT: ONYX Series ACS annunciator - up to 96 points of annunciation with Alarm or Active LED, Trouble LED, and switch per circuit. Active/Alarm LEDs can be programmed (by power-up switch selection) by point to be red, green, or yellow; the Trouble LED is always yellow. See *DN-6862*.

AEM-24AT: Same LED and switch capabilities as ACM-24AT, expands the ACM-24AT to 48, 72, or 96 points. See *DN-6862*.

ACM-48A: ONYX Series ACS annunciator - up to 96 points of annunciation with Alarm or Active LED per circuit. Active/Alarm LEDs can be programmed (by power-up switch selection) in groups of 24 to be red, green, or yellow. Expandable to 96 points with one AEM-48A. See *DN-6862*.

AEM-48A: Same LED capabilities as ACM-48A, expands the ACM-48A to 96 points. See *DN-6862*.

FDU-80: 80 character, backlit LCD display. Mounts up to 6,000 ft. (1828.8 m) from panel. Up to 32 per NFS2-640. See *FDU-80 data sheet DN-6820*.

LDM: Lamp Driver Modules LDM-32, LDM-E32, and LDM-R32; remote custom graphic driver modules. See *LDM data sheet, DN-0551*.

ACM-8R: Remote Relay Module with eight Form-C contacts. Can be located up to 6,000 ft. (1828.8 m) from panel on four wires. See *ACM-8R data sheet, DN-3558*.

RPT-485: Repeater, isolator, and/or fiber-optic medium; repeats EIA-485 over twisted pair or converts to fiber-optic medium. See *RPT data sheet, DN-4737*.

SCS: Smoke control stations SCS-8, SCE-8, with lamp drivers SCS-8L, SCE-8L; eight (expandable to 16) circuits. See *SCS data sheet, DN-4818*.

TM-4: Transmitter Module. Includes three reverse-polarity circuits and one municipal box circuit. Mounts in panel module position (single-address-style) or in CHS2-M2 position. See *DN-6860*.

UDACT: Universal Digital Alarm Communicator Transmitter, 636 channel. See *DN-4867*.

UZC-256: Programmable Universal Zone Coder provides positive non-interfering successive zone coding. Microprocessor-controlled, field-programmable from IBM@-compatible PCs (requires optional programming kit). Up to 256 programmable codes. See *UZC-256 data sheet, DN-3404*.

COMPATIBLE INTELLIGENT DEVICES

BEAMHK: Heating kit for transmitter/receiver unit of FSB-200(S) below. See *DN-6985*.

BEAMHRK: Heating kit for use with the reflector of FSB-200(S) below. See *DN-6985*.

BEAMLRK: Long-range accessory kit, FSB-200(S) below.

BEAMMRK: Multi-mount kit, FSB-200(S) below.

BEAMSMK: Surface-mount kit, FSB-200(S) below.

FSB-200: Intelligent beam smoke detector. See *DN-6985*.

FSB-200S: Intelligent beam smoke detector with integral sensitivity test. See *DN-6895*.

FSI-851: Low-profile FlashScan ionization detector, will replace FSI-751. See *DN-6934*.

FSI-751: Low-profile FlashScan ionization detector. See *DN-6714*.

FSP-851: Low-profile FlashScan photoelectric detector, will replace FSP-751. See *DN-6935*.

FSP-751: Low-profile FlashScan photoelectric detector. See *DN-6714*.

FSP-851T: Low-profile FlashScan photoelectric detector with 135°F (57°C) thermal, will replace FSP-751T. See *DN-6935*.

FSP-751T: Low-profile FlashScan photoelectric detector with 135°F (57°C) thermal. See *DN-6714*.

FST-851: FlashScan thermal detector 135°F (57°C), will replace FST-751. See *DN-6936*.

FST-751: FlashScan thermal detector 135°F (57°C). See *DN-6716*.

FST-851R: FlashScan thermal detector 135°F (57°C) with rate-of-rise, will replace FST-751R. See *DN-6936*.

FST-751R: FlashScan thermal detector 135°F (57°C) with rate-of-rise. See *DN-6716*.

FST-851H: FlashScan 190°F (88°C) high-temperature thermal detector. See *DN-6936*.

FSD-751P: FlashScan photo duct detector with relay and housing. See *DN-6821*.

FSD-751RP: FlashScan photo duct detector with relay and housing, will replace FSD-751P. See *DN-6955*.

FSD-751RPL: Low-flow FlashScan photo duct detector with relay and housing, will replace FSD-751RPL. See *DN-6955*.

FAPT-851: FlashScan Acclimate Plus low-profile multi-sensor detector, will replace FAPT-751. See *DN-6937*.

FAPT-751: Acclimate Plus low-profile multi-sensor detector. See *DN-6833*.

FSH-751: FlashScan HARSH Hostile Area Smoke Head. See *DN-6875*.

FSL-751: FlashScan VIEW laser photo detector, will replace LPX-751. See *DN-6886*.

LPX-751: Low-profile VIEW laser photo detector. See *DN-5306*.

B224RB: Low-profile relay base.

B224BI: Isolator base for low-profile detectors.

B710LP: Low-profile base. Standard U.S. style.

B501: European-style, 4" (10.16 cm) base.

B501BH: Sounder base, includes B501 base above.

FMM-1: FlashScan monitor module. See *DN-6720*.

FDM-1: FlashScan dual monitor module. See *DN-6720*.

FZM-1: FlashScan two-wire detector monitor module. See *DN-6720*.

FMM-101: FlashScan miniature monitor module. See *DN-6720*.

FCM-1: FlashScan NAC control module. See *DN-6724*.

FRM-1: FlashScan relay module. See *DN-6724*.

NBG-12LX: Manual fire alarm station, addressable. See *DN-6726*.

ISO-X: Isolator module. See *DN-2243*.

DN-7111: A3 • 8/3/07 — Page 7 of 10

Other Options

- XP6-C:** FlashScan six-circuit supervised control module. See DN-6924.
- XP6-MA:** FlashScan six-zone interface module; connects intelligent alarm system to two-wire conventional detection zone. See DN-6925.
- XP6-R:** FlashScan six-relay (Form-C) control module. See DN-6926.
- XP10-M:** FlashScan ten-input monitor module. See DN-6923.

DP1-232: Direct Panel Interface, specialized modem for extending serial data links to remotely located FACPs and/or peripherals. See DN-6870.

LEM-320: Loop Expander Module. Expands each 640 to two Signaling Line Circuits. See DN-6881.

NCM-W: Network Communications Module, Wire. Order one NCM per network node (CPU-640, CPU2-640, NCA, NCA-2). See DN-6861.

NCM-F: Network Communications Module, Fiber. Order one NCM per network node (CPU-640, CPU2-640, NCA, NCA-2). See DN-6861.

NCSS-W-ONYX: Network Control Station, Wire, UL-Listed graphics PC with mouse, 17" color flat-screen LCD monitor. Order as necessary for network systems. Each NCS consumes one of 103 network addresses. See DN-6868 (previous NCS-W), ONYX DN-6869.

NCSS-F-ONYX: Network Control Station, Fiber, UL-Listed graphics PC with mouse, 17" color flat-screen LCD monitor. Order as necessary for network systems. Each NCS consumes one of 103 network addresses. See DN-6868 (previous NCS-F), ONYX DN-6869.

ONYXWORKS-NW: Workstation with NFN wire PC card. ONYXworks workstation GUI software and hardware package for NOTI•FIRE•NET. Includes NFN Gateway (NFN-GW-PC-W) wire version.

ONYXWORKS-NF: Workstation with NFN fiber PC card. ONYXworks workstation GUI software and hardware package for NOTI•FIRE•NET. Includes NFN Gateway (NFN-GW-PC-F) fiber version.

ONYXWORKS-EW: Workstation with Echelon® wire PC card. ONYXworks workstation GUI software and hardware package for Building Systems Integration, WSSUP Workstation Supervisor. Includes Echelon Gateway (ECH-GW-PC-W) wire version.

NFN-GW-EM: NFN Gateway, embedded.

VeriFire-TC: VeriFire Tools CD-ROM. Contains programming software for the ONYX Series. Includes local panel connection cable. Programming PC requires a serial port connection. See DN-6871.

BAT Series: Batteries. NFS2-640 utilizes two 12 volt, 18 to 200 AH batteries. This series of products replaces the previous PS Series. See DN-6933.

NFS-LBB: Battery Box (required for batteries larger than 25 AH).

NFS-LBBR: Same as above but red.

Notes

SYSTEM SPECIFICATIONS



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System Capacity

- Intelligent Signaling Line Circuits 1 expandable to 2
 - Intelligent detectors 159 per loop
 - Addressable monitor/control modules 159 per loop
 - Programmable software zones 99
 - Special programming zones 14
 - LCD annunciators per CPU2-640/640E 32
 - ACS annunciators 32 addresses x 64 points per CPU2-640/640E
 - ACS annunciators 32 addresses x 64 or 96 points per NCA-2
- NOTE: The NCA-2 supports up to 96 annunciator address points per ACM-24/48.

Specifications

- Primary input power, CPU2-640 board: 120 VAC, 50/60 Hz, 3.0 A. CPU2-640E board: 220/240 VAC, 50/60 Hz, 1.5 A.
- Total output 24 V power: 6.0 A in alarm.
- NOTE: The power supply has a total of 6.0 Amps of available power. This is shared by all internal circuits.
- Standard notification circuits (4): 1.5 A each.
- Four-wire detector power: 1.25 A.
- Non-resettable regulated power outputs: 1.25 A each.
- Battery charger range: 18 AH – 200 AH. Use separate cabinet for batteries over 25 AH.
- Float rate: 27.6 V.

Cabinet Specifications

NFS2-640 systems can be installed in CAB-4 Series cabinets (four sizes with various door options, see DN-6857), or for approved marine applications, CAB-M Series cabinets (two sizes, see DN-5063). Requires BP2-4 Battery Plate.

Standards

The NFS2-640 complies with the following UL Standards and NFPA 72 Fire Alarm Systems requirements:

- UL 864, 9th Edition (Fire).
- UL 1076 (Burglary).
- LOCAL (Automatic, Manual, Waterflow and Sprinkler Supervisor).
- AUXILIARY (Automatic, Manual and Waterflow) (requires 4XTMF).
- REMOTE STATION (Automatic, Manual and Waterflow) (requires 4XTMF).
- PROPRIETARY (Automatic, Manual and Waterflow). *Not applicable for FM.*
- EMERGENCY VOICE/ALARM.

Agency Listings and Approvals

The listings and approvals below apply to the basic NFS2-640 control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL Listed: file S635.
- ULC Listed: file S635.
- FM Approved

Temperature and Humidity Ranges

This system meets NFPA requirements for operation at 0 – 49°C/32 – 120°F and at a relative humidity 93% ± 2% RH (noncondensing) at 32°C ± 2°C (90°F ± 3°F). However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15 – 27°C/60 – 80°F.

Agency Listings and Approvals

→ 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°). 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

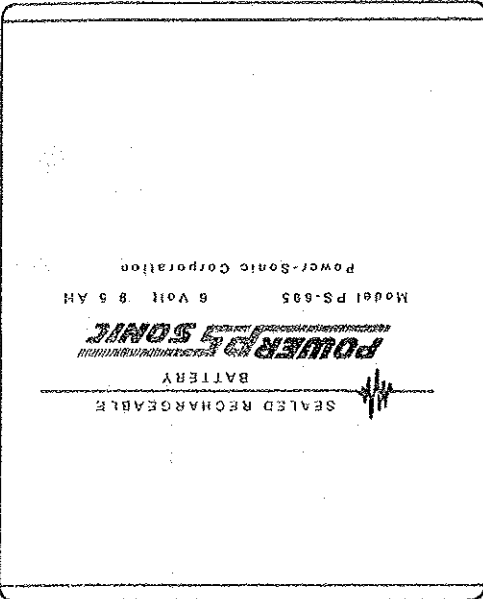
Use the PS Series batteries to provide backup power for control panels. Select batteries based on current requirements for your system and the capacity of its charger. These batteries can be used over a temperature range of -76°F to +140°F (-60°C to +60°C).

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 interconnection diagrams are shown in the literature accompanying each control panel.



The PS-695 Battery

1109001

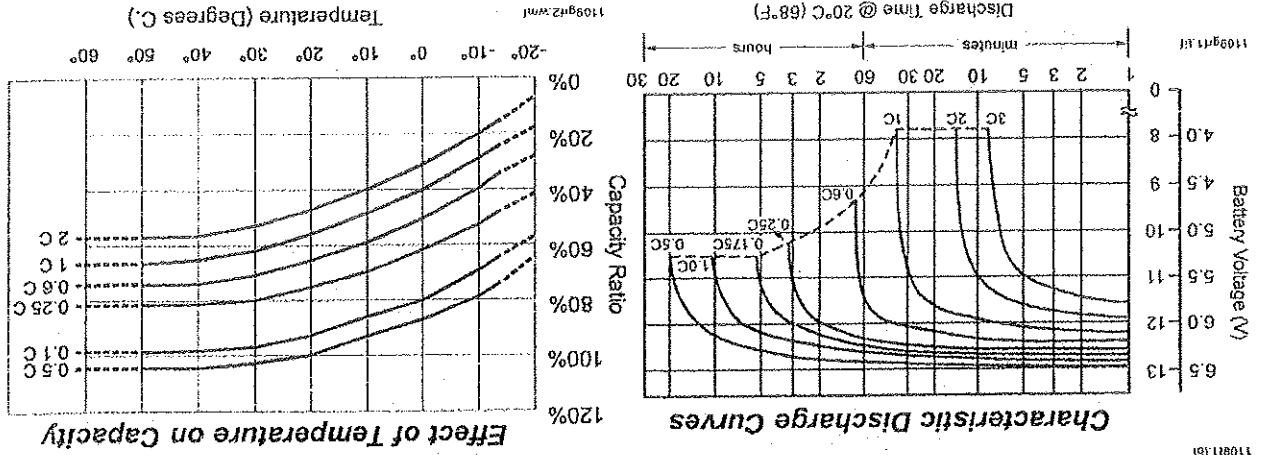
SEALD RECHARGEABLE BATTERY
POWER & SONIC
 Model PS-695 6 Volt 9.5 AH
 Power-Sonic Corporation

MH14328 (S)



ENGINEERING & MANUFACTURING

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NOTIFIER One Fire-Lite Place, Northford, Connecticut 06472

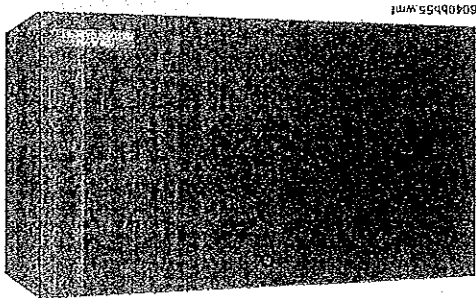


MODEL	Nominal Voltage V	Nominal Capacity @ 20 hr. rate A.H.	Nominal Discharge Current @ 20 hr. rate mA	Width				Depth				Height				Height over terminal		Weight lbs.	Weight kg.
				in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.		
PS-121000	12	100	5000	12.00	305	6.60	168	8.20	208	9.45	240	65.7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

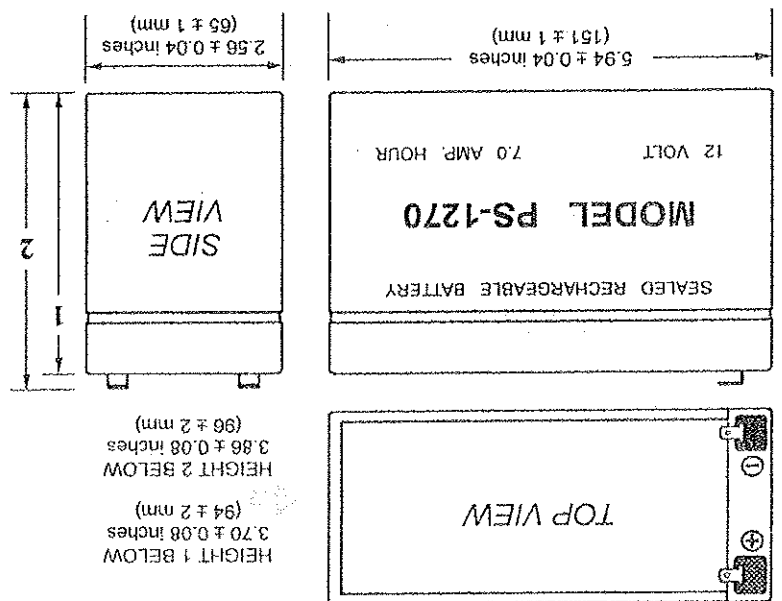
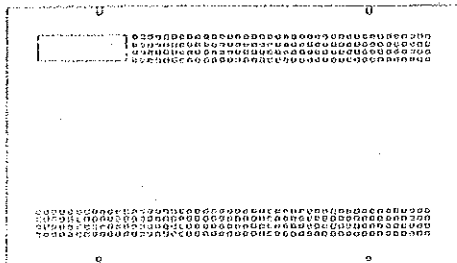
The fire control panel shall be equipped with secondary power provided by gelled-electrolyte batteries. The batteries shall be maintenance-free and shall be capable of powering the system in a manner and for a length of time determined by the governing regulations and the authority having jurisdiction.

ENGINEERING SPECIFICATIONS

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



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



The FDU-80 is a compact, cost-effective, 80 character, backlit LCD Fire Annunciator for use with the NOTIFIER FireWarden-100-2, NFS-640, NFS-320 Fire Alarm Control Panels (FACPs). The FDU-80 mimics the display of the control panel and displays complete system point status information. Up to 32 FDU-80s may be connected onto the EIA-485 Terminal Mode port of each control panel. The FDU-80 requires no programming, which saves time during system commissioning.

NOTES:

1. The FDU-80 is compatible with the NOTIFIER NFS-640 Rev. 2.01 or higher.
2. The FDU-80 can be used on the same data loop as the LCD-80/LCD-80TM annunciators revision 1.6 software or higher.

GENERAL

- 80-character Liquid Crystal Display
- Mimics all display information from the host panel.
- Control switches for System Acknowledge, Signal Silence, Drill and Reset with enable key.
- System status LEDs for Power, Alarm, Trouble, Supervisory, and Alarm Silenced.
- No programming necessary — FDU-80 connects to the terminal mode port.
- Displays device type identifiers, individual point alarm, trouble or supervisory, zone and custom alpha labels.
- Time and date display field.
- Aesthetically pleasing design.
- May be powered by 24 VDC from the host FACP or by remote power supplies (requires 24 VDC).
- Up to 32 FDU-80 annunciators per FACP.
- Plug-in terminal blocks for ease of installation and service.
- Can be remotely located up to 6,000 feet (1828.8 m) from host control panel.
- Local piezo sounder with alarm and trouble resound.
- Semi-flush-mounts to 2.188"/5.556 cm (minimum) deep, three-gang electrical box (NOTIFIER P/N 10103) or three-gangable electrical switchbox.
- Surface-mounts to NOTIFIER SBB-3 surface backup.

FEATURES

OPERATION

The FDU-80 annunciator provides the FACP with point annunciation with full display text on an 80-character LCD display. The FDU-80 also provides an array of LEDs to indicate system status, and also includes control switches for remote control of critical system functions.

The FDU-80 provides the FACP with up to 32 remote serially connected annunciators. All field-wiring terminations on the FDU-80 use removable, compression-type terminal blocks for ease of wiring and circuit testing.

Communication between the FACP and the annunciators is accomplished over an EIA-485 serial interface, which greatly reduces wire and installation cost over traditional systems. Six

- **UL Listed:** S635
- **ULC Listed:** CS100
- **MEA Listed:** 245-00-E
- **CSFM:** 7120-0028:209
- **FM Approved**

ORDERING INFORMATION

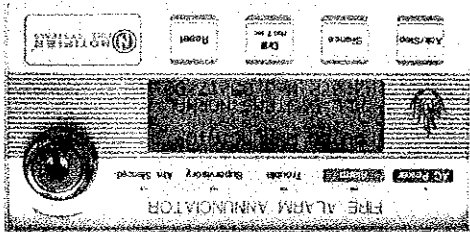
These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

AGENCY LISTINGS AND APPROVALS

The FDU-80 can be semi-flush mounted to a 2.188"/5.556 cm (minimum) deep, three-gang electrical box (NOTIFIER P/N 10103) or three-gangable electrical switchboxes. Alternatively, an SBB-3 surface backup is available for surface-mount applications.

INSTALLATION

Wires total are required: four for the EIA-485 communications (two in and two return); and two for the 24 VDC regulated power. Dip switches control local functions such as: piezo disable, control switches/key switch disable, transmit/receive mode.

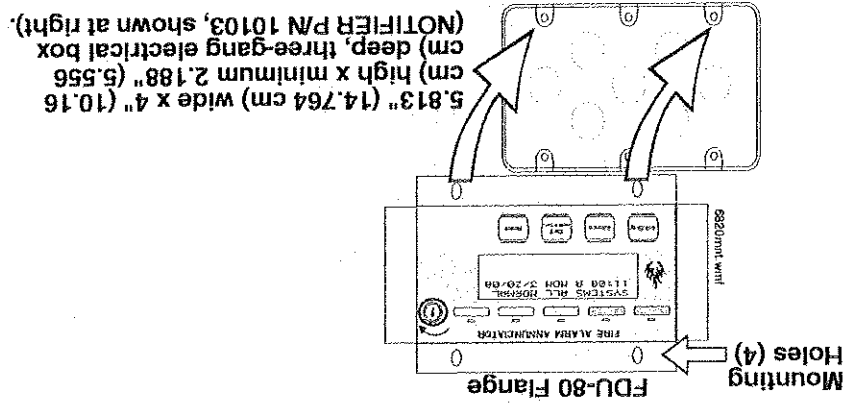


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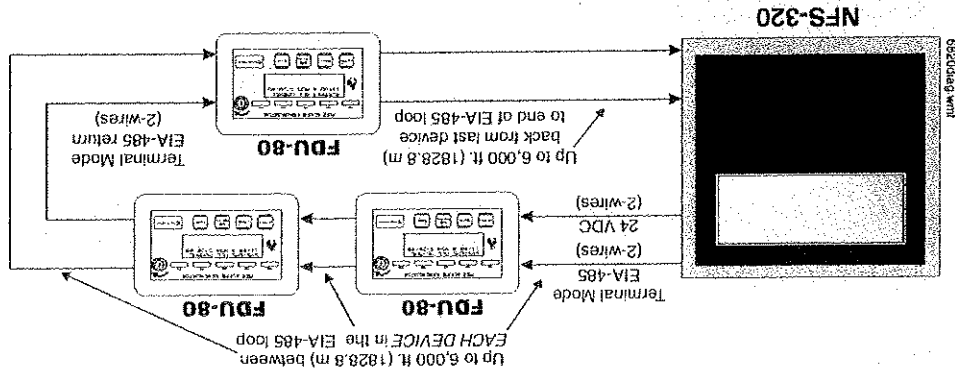


NOTE: Alternatively, FDU-80 annunciators can be mounted to the SBB-3 surface electrical switch boxes connected together. The FDU-80 annunciators can be semi-flush-mounted in a three-gang electrical box with a minimum depth of 2.188" (5.556 cm) (NOTIFIER P/N 10103).


MOUNTING TO BACKBOX(ES)

1. EIA-485: Maximum of 6,000 feet (1828.8 m) cable length from FACP to FDU-80 annunciators and back to FACP (6,000 feet [1828.8 m] total). Circuit is power-limited.
2. Up to 32 FDU-80 annunciators may be used on the EIA-485 circuit. When multiple FDU-80s are used, certain panels will require additional power supplies (refer to panel documentation).
3. Between each FDU-80 annunciator are four wires: a twisted-shielded pair for data communications and a pair for 24 VDC power. The return circuit only requires two wires for data communication supervision, wired from the last FDU-80 annunciator on the loop.
4. On the AFP-300/400, software revision 3.62 or higher is required.

NOTES:



FDU-80 TERMINAL MODE WIRING EXAMPLE

NOTIFIER 

by Honeywell

GENERAL

The NOTIFIER NBG-12LX is a state-of-the-art, dual-action (i.e., requires two motions to activate the station) pull station that includes an addressable interface for any NOTIFIER intelligent control panel. Because the NBG-12LX is addressable, the control panel can display the exact location of the activated manual station. This leads fire personnel quickly to the location of the alarm.

FEATURES

- Maintenance personnel can open station without causing an alarm condition.
- Built-in bicolor LED, which is visible through the handle of the station, flashes in normal operation and latches steady red when in alarm.
- Handle latches in down position and the word "ACTIVATED" appears to clearly indicate the station has been operated.
- Captive screw terminals wire-ready for easy connection to SLC loop (accepts up to 12 AWG/3.1 mm² wire).
- Semi-flush, mounts to a standard single-gang (2.125" [5.3975 cm] minimum depth), double-gang, or 4" (10.16 cm) square electrical box.
- Smooth dual-action design.
- Within ADA 5 lb. pull force.
- Highly visible.
- Attractive shape and textured finish.
- Key reset.
- Includes Braille text on station handle.
- Optional trim ring (BG-TR).
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Up to 99 NBG-12LX stations per loop on classic protocol systems.
- Up to 159 NBG-12LX stations per loop on FlashScan® protocol systems.
- Dual-color LED blinks green to indicate normal on FlashScan® systems.

CONSTRUCTION

Shell, door, and handle are molded of durable LEXAN® (or polycarbonate equivalent) with a textured finish.

OPERATION

Pushing in, then pulling down on the handle causes it to latch in the down/activated position. Once latched, the word "ACTIVATED" (in bright yellow) appears at the top of the handle, while a portion of the handle protrudes from

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 12 Clintonville Road, Northford, Connecticut 06472
 by Honeywell
NOTIFIER

ISO 9001
CERTIFIED
 ENGINEERING & MANUFACTURING
 QUALITY SYSTEMS

**The NBG-12LX
 Addressable Manual Pull Station**



the bottom of the station. To reset the station, simply unlock the station with the key and pull the door open. This action resets the handle; closing the door automatically resets the switch.

Each manual station, on command from the control panel, sends data to the panel representing the state of the manual switch. Two rotary decimal switches allow address settings (1 – 159 on FlashScan® systems, 1 – 99 on CLIP systems).

C1313066760047

BSMI

(AFP-200)
 161.002/23/3

U.S. Coast Guard

LISTED
 S692



California
 State Fire
 Marshal
 7150-0028:199



93/60141 (E3)
 02/6007



67-02-E
MEA

Patented, U.S. Patent No. D428,351; 6,380,846
 U.S. Patent Pending; 091686,286

Addressable Manual Pull Station
 with FlashScan®
NBG-12LX

June 13, 2005 DN-6726 • H-240

Section: Intelligent/Addressable Devices

PRODUCT LINE INFORMATION

NBG-12LX	Dual-action addressable pull station. Includes key locking feature.
SB-10	Surface backbox.
SB-I/O	Indoor/outdoor surface backbox.
BG-TR	Optional trim ring.

INSTALLATION

The NBG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface backbox. If the NBG-12LX is being semi-flush mounted, then the optional trim ring (BG-TR) may be used. The BG-TR is usually needed for semi-flush mounting with 4" (10.16 cm) or double-gang boxes (not with single-gang boxes).

ELECTRICAL SPECIFICATIONS

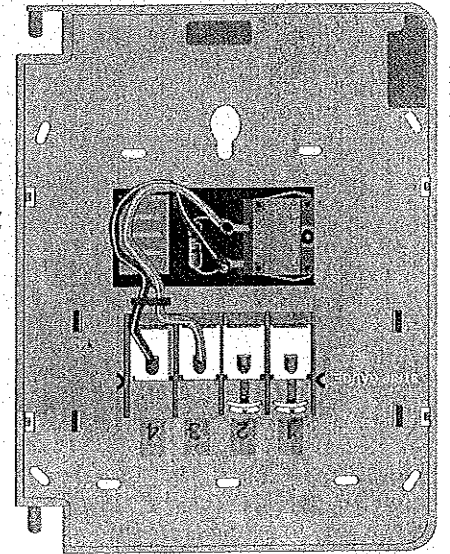
Normal operating voltage: 24 VDC.
 Maximum SLC loop voltage: 28.0 VDC.
 Maximum SLC loop current: 375 µA.

ARCHITECTURAL/ENGINEERING SPECIFICATIONS

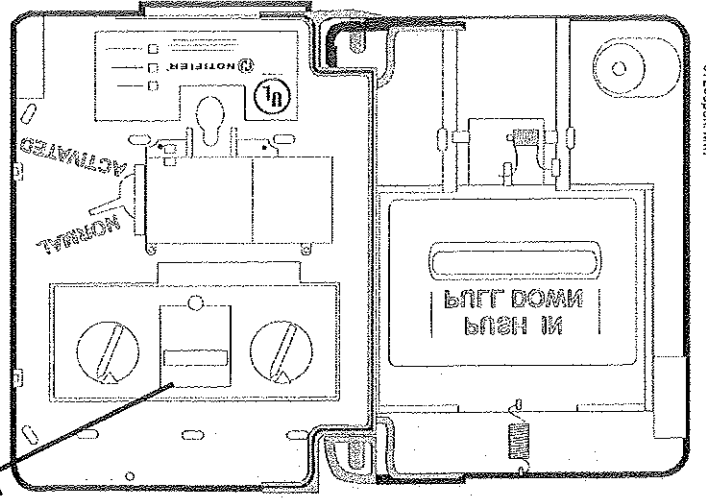
Manual Fire Alarm Stations shall be non-coded, with a key-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key. An operated station shall automatically condition itself so as to be visually 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 (2.54 cm) 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.

Manual stations shall connect with two wires to one of the control panel SLC loops. The manual station shall, on command from the control panel, send data to the panel representing the state of the manual switch. Manual stations shall provide address setting by use of rotary decimal switches. The loop pull LED shall be clearly visible through the front of the station. The LED shall flash white in the normal condition, and stay steadily illuminated when in alarm.

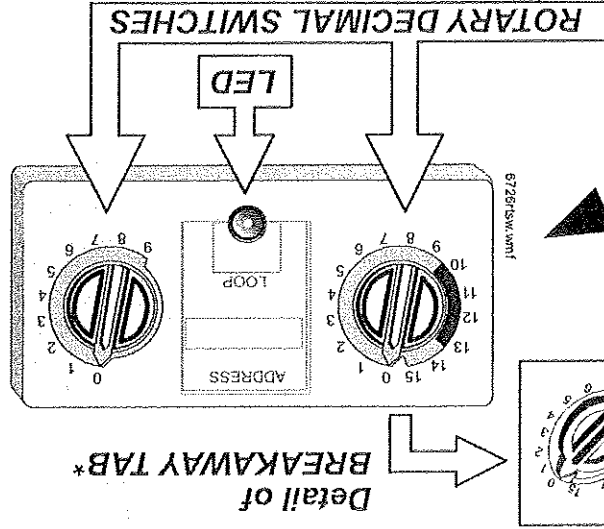
Back of station without door.



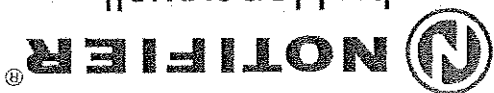
Terminal Connections
 1 SLC (-)
 2 SLC (+)



Cover open to show easy access to miniature monitor module, rotary switch, and UL label.



*Remove tab to select addresses above 99 (FlashScan® systems only).



by Honeywell

Intelligent/Addressable Devices

FSP-851 and FSP-851T Intelligent Plug-In Photoelectric Smoke Detectors with FlashScan®

General

Notifier 851 Series intelligent plug-in smoke detectors with integral communication provide features that surpass conventional detectors. Detector sensitivity can be programmed in the control panel software. Sensitivity is continuously monitored and reported to the panel. Point ID capability allows each detector's address to be set with decade address switches, providing exact detector location for selective maintenance when chamber contamination reaches an unacceptable level. The FSP-851 photoelectric detector's unique optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources. Dual electronic thermistors add 135°F (57°C) fixed-temperature thermal sensing on the FSP-851T. FSP-851 and FSP-851T detectors are compatible with all Notifier intelligent Fire Alarm Control Panels (FACP).

FlashScan® (U.S. Patent 5,539,389) is a communication protocol developed by Notifier engineering that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices in the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of earlier designs.

Features

- Sleek, low-profile design.
- Addressable-analog communication.
- Stable communication technique with noise immunity.
- Low standby current.
- Two-wire SLC connection.
- FlashScan (NFS-640, NFS-3030) and classic CLIP systems (AFP-100, AFP-200, AFP-300, AFP-400, NFS-640, AM2020/AFP1010, NFS-3030) compatible.
- Rotary, decimal addressing (1-99 on current classic systems, 1-159 on FlashScan systems).
- Optional remote, single-gang LED accessory (FA400Z).
- Dual LED design provides 360° viewing angle.
- Visible bi-color LEDs blink green every time the detector is addressed, and illuminate steady red on alarm.
- Remote test feature from the panel.
- Walk test with address display (an address on 121 will blink the detector LED: 121-pause-1 (FlashScan systems only)).
- Built-in functional test switch activated by external magnet.
- Built-in tamper-resistant feature.
- Sealed against back pressure.
- Constructed of off-white Bayblend®, designed to commercial standards, and offers an attractive appearance.
- 94-5V plastic flammability rating.
- SEMS screws for wiring of the separate base.
- Optional relay, isolator, and sounder bases.
- Backward compatible.

Specification

Size: 2.1" (5.3cm) high x 4.1" (10.4cm) diameter installed in B501 base, 6.1" (15.5cm) diameter installed in B710LP base.

Shipping Weight: 5.2oz. (147g).

Operating Temperature: FSP-851, 0°C to 49°C (32°F to 120°F); FSP-851T, 0°C to 38°C (32°F to 100°F). Low temperature signal for FSP-851T at 45°F +/- 10°F (7.22°C +/- 5.54°C).

UL Listed Velocity Range: 0-4000 f/min. (1219.2 m/min.), suitable for installation in ducts.

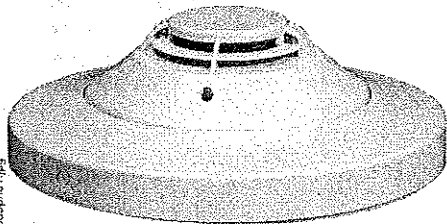
Relative Humidity: 10%-93% noncondensing.

Thermal Ratings: Fixed-temperature setpoint 135°F (57°C).

Notifier recommends spacing detectors in compliance with NFPA 72. In low airflow applications with smooth ceiling, space detectors 30 feet (9.144m) for ceiling heights 10 feet (3.148m) and higher. For specific information regarding detector spacing, placement, and special applications refer to NFPA 72, *System Smoke Detector Application Guide*, document A05-1003, is available at systemsensor.com.

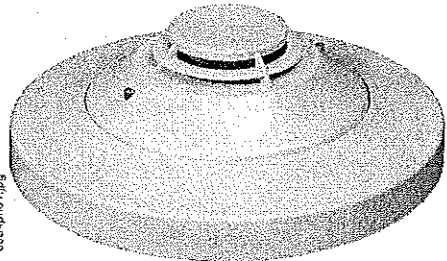
FSP-851 and FSP-851T are listed for use in ducts, but they are NOT listed for use inside duct smoke detector housings. See Duct Application Smoke Detectors Guide, document A05-1004, available at systemsensor.com, for details on pendant-mount applications.

FSP-851T with B710LP base



69354-not1.jpg

FSP-851 with B710LP base



69354-not1.jpg

- UL Listed: S1115
- ULC Listed: CS915 (FSP-962A, FSP-851TA)
- MEA Listed: 225-02-E
- FM Approved
- CSFM: 7272-0028:206
- Maryland State Fire Marshal: Permit # 2122
- BSMI: C1313066760036
- CCCF: Certif. # 2004081801000017 (FSP-851T)
- Certif. # 2004081801000016 (FSP-851)
- Lloyd's Register: 03/60011

Agency Listings and Approvals

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- NOTE:** 1) Because of inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for style 4 (Class "B") wiring. 2) When using relay or sounder bases, consult data sheet DN-2243 (ISO-X) for device limitations between isolator modules and isolator bases.
- 4.0" (10.16cm) square box.
 - 3.5" (8.89cm) or 4.0" (10.16cm) octagonal box.
 - Single-gang box (except relay or isolator base).
 - With B501BH or B501BHT base, use a 4.0" (10.16cm) square box.
 - With B224RB or B224BI base, use a 3.5" (8.89cm) octagonal box, or a 4.0" (10.16cm) octagonal or square box.

Mount base on an electrical backbox which is at least 1.5" (3.81cm) deep. Suitable mounting base boxes include:

- 4.0" (10.16cm) square box.
- 3.5" (8.89cm) or 4.0" (10.16cm) octagonal box.
- Single-gang box (except relay or isolator base).
- With B501BH or B501BHT base, use a 4.0" (10.16cm) square box.
- With B224RB or B224BI base, use a 3.5" (8.89cm) octagonal box, or a 4.0" (10.16cm) octagonal or square box.

Installation

FSP-851 plug-in detectors use a separate base to simplify installation, service, and maintenance. A special tool allows maintenance personnel to plug in and remove detectors without using a ladder.

Mount base on an electrical backbox which is at least 1.5" (3.81cm) deep. Suitable mounting base boxes include:

- B224RB Relay Base: Screw Terminals, up to 14AWG (2.0mm²); Relay Type, Form-C; Rating, 2.0A @ 30VDC resistive, 0.3A @ 110VDC inductive, 1.0A @ 30VDC inductive; Dimensions, 6.2" (15.748cm) x 1.2" (3.048cm) x 1.2" (3.048cm).
- B224BI Isolator Base: Dimensions, 6.2" (15.748cm) x 1.2" (3.048cm) x 1.2" (3.048cm).

- B501 base.
- B501BH or B501BHT: Sounder base assembly. Includes B501 base.
- B501: 4.1" (10.4cm) diameter.
- B710LP: 6.1" (15.5cm) diameter.

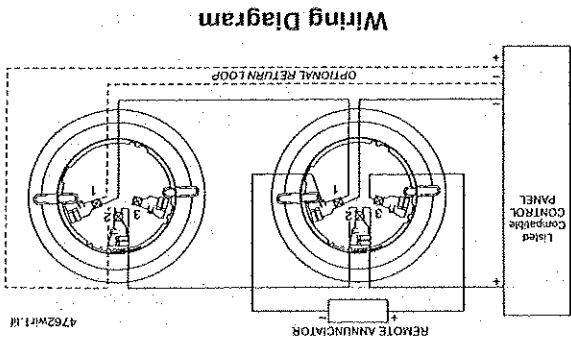
BASES AVAILABLE

LED Current (max.): 6.5mA @ 24VDC ("ON").

Standby Current (max. avg.): 250µA @ 24VDC (with no communication enabled); 360µA @ 24VDC (one communication every five minutes with LED enabled).

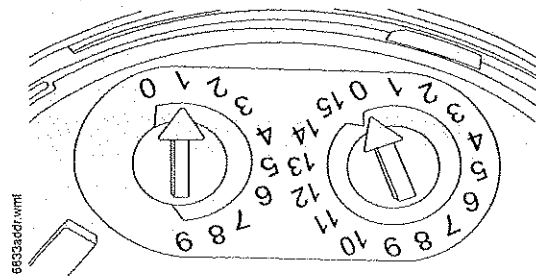
Voltage Range: 15-32 volts DC peak.

ELECTRICAL SPECIFICATIONS



Wiring Diagram

Address Dial on back of Detector





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.



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- Product Line Information**
- NOTE: "A" suffix indicates ULC listed model.*
- FSP-851: Low-profile intelligent photoelectric sensor. Must be mounted to one of the bases listed below.
 - FSP-851A: Same as FSP-851 but with ULC listing.
 - FSP-851T: Same as FSP-851 but includes a built-in 135°F (57°C) fixed-temperature thermal device.
 - FSP-851TA: Same as FSP-851T but with ULC listing.
- BASES**
- B710LPBP: Standard U.S. low-profile base, pkg. of 10.
 - B710LPA: Standard U.S. low-profile base, ULC listing.
 - B501BP: Standard European flangeless base, pkg. of 10.
 - B501A: Standard European flangeless base, ULC listing.
 - B501BH(A): Sounder base, includes B501(A) base.
 - B501BHT(A): Same as B501BH(A), but includes temporal sounder.
 - B224RB(A): Intelligent relay base.
 - B224BI(A): Intelligent isolator base. Isolates SLC from loop shorts.
- ACCESSORIES**
- F110: Retrofit replacement flange for older style bases. Converts old high profile base for use with FlashScan detectors.
 - RA400Z(A): Remote LED annunciator. 3-32VDC. Fits U.S. single-gang electrical box. Supported by B710LP(A) and B501(A) bases only.
 - SMK400: Surface mounting kit provides for entry of surface wiring conduit. For use with B501(A) base only.
 - RMK400: Recessed mounting kit. For use with B501(A) base only.
 - SMB600: Surface mounting kit for use with B710LP(A).
 - BCK-200B: Black detector covers, box of 10. For use with FSP-851 only.
 - M02-04-01: Test magnet.
 - M02-09-00: Test magnet with telescope stick.
 - XR2B: Detector removal tool. Allows installation and/or removal of FlashScan Series detector heads from base in high ceiling installations.
 - T55-127-000: Detector removal tool without pole.
 - XP-4: Extension pole for XR2B. Comes in three 5-ft. sections.
- DETECTOR GUARDS**
- NOTE: Some guards listed below may not be applicable to FPS models.*
- SDG-773: Smoke detector guard; cover is 7.0" (17.78cm) square x 3.0" (7.62cm) deep. This guard is mechanically compatible with FSP-751. It is UL-compatible listed with the FSP-851 (file UL S5515).
 - STI 9601: Low-profile, flush-mount smoke detector guard.
 - STI 9602: Low-profile, surface-mount, smoke detector guard, wire.*

STI 9609: High-profile, flush-mount, smoke detector guard, wire.*

STI 9605: High Profile, surface-mount, smoke detector guard, wire.*

STI 9604: Flush-mount, heat detector guard, wire.*

STI 9610: Surface-mount, heat detector guard, wire.*

STI-8200-SS: Flush-mount stainless steel smoke detector guard (compatibility pending).

STI-8230-SS: Surface mount stainless steel smoke detector guard (compatibility pending).

B710LPBP: Standard U.S. low-profile base, pkg. of 10.

B710LPA: Standard U.S. low-profile base, ULC listing.

B501BP: Standard European flangeless base, pkg. of 10.

B501A: Standard European flangeless base, ULC listing.

B501BH(A): Sounder base, includes B501(A) base.

B501BHT(A): Same as B501BH(A), but includes temporal sounder.

B224RB(A): Intelligent relay base.

B224BI(A): Intelligent isolator base. Isolates SLC from loop shorts.

F110: Retrofit replacement flange for older style bases. Converts old high profile base for use with FlashScan detectors.

RA400Z(A): Remote LED annunciator. 3-32VDC. Fits U.S. single-gang electrical box. Supported by B710LP(A) and B501(A) bases only.

SMK400: Surface mounting kit provides for entry of surface wiring conduit. For use with B501(A) base only.

RMK400: Recessed mounting kit. For use with B501(A) base only.

SMB600: Surface mounting kit for use with B710LP(A).

BCK-200B: Black detector covers, box of 10. For use with FSP-851 only.

M02-04-01: Test magnet.

M02-09-00: Test magnet with telescope stick.

XR2B: Detector removal tool. Allows installation and/or removal of FlashScan Series detector heads from base in high ceiling installations.

T55-127-000: Detector removal tool without pole.

XP-4: Extension pole for XR2B. Comes in three 5-ft. sections.

B224RB Relay Base: Screw terminals: up to 14 AWG (2.0 mm²). Relay type: Form-C. Rating: 2.0 A @ 30 VDC resistive; 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive. Dimensions: 6.2" (15.748 cm) x 1.2" (3.048 cm).

B501BH or B501BHT: Sounder base assembly. Includes B501 base.
B501: 4.1" (10.4 cm) diameter.
B710LP: 6.1" (15.5 cm) diameter.

Bases available:
LED current (max.): 6.5 mA @ 24 VDC ("ON"), every 5 seconds with LED enabled).
Standby current (max. avg.): 200 µA @ 24 VDC (without communication); 300 µA @ 24 VDC (one communication).
Voltage range: 15 - 32 volts DC peak.

ELECTRICAL SPECIFICATIONS:

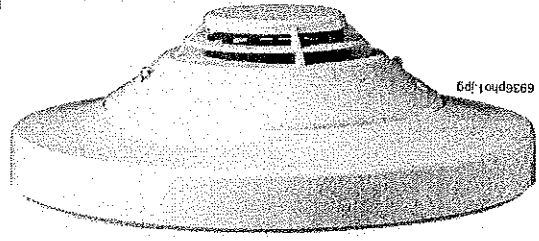
Thermal ratings: fixed-temperature setpoint 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C).
Relative humidity: 10% - 93% noncondensing.
Detector spacing: UL approved for 50 ft. (15.24 m) center to center. FM approved for 25 x 25 ft. (7.62 x 7.62 m) spacing.
Operating temperature range: FST-851 Series, FST-851R: -20°C to 38°C (-4°F to 100°F); FST-851H: -20°C to 66°C (-4°F to 150°F).
Shipping weight: 4.8 oz. (137 g).

Size: 2.1" (5.3 cm) high x 4.1" (10.4 cm) diameter installed in B501 base, 6.1" (15.5 cm) diameter installed in B710LP base.

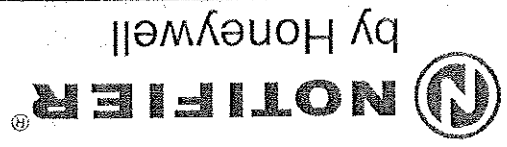
Specifications

- Plugs into separate base for ease of installation and maintenance. Separate base allows interchange of photoelectric, ionization and thermal sensors.
- SEMS screws for wiring of the separate base.
- Constructed of off-white Bayblend®, designed to commercial standards, and offers an attractive appearance.
- 94-5V plastic flammability rating.
- Remote LED output connection to optional RA400Z remote LED annunciator.
- Optional sounder, relay, and isolator bases.
- Optional recessed (RMK400) or surface (SMK400) base mounting kits.

FST-851 Series in B710LP base



Intelligent/Addressable Devices



- Sleek, low-profile, stylish design.
- State-of-the-art thermistor technology for fast response.
- Rate-of-rise model (FST-851R), 15°F (8.3°C) per minute.
- Factory preset at 135°F (57°C); high-temperature model at 190°F (88°C).
- Addressable by device.
- FlashScan® (NFS-640, NFS-3030) and classic CLIP system (AFP-100, AFP-200, AFP-300, AFP-400, NFS-640, AFP1010, AM2020, NFS-3030, NFS2-3030) compatible.
- Rotary, decimal addressing (1 - 99 on current classic systems, 1 - 159 on FlashScan® systems).
- Two-wire SLC connection.
- Visible LEDs "blink" every time the unit is addressed.
- 360°-field viewing angle of the visual alarm indicators (two bi-color LEDs). LEDs blink green in Normal condition and turn on steady red in Alarm.
- Integral communications and built-in device-type identification.
- Remote test feature from the panel.
- Built-in functional test switch activated by external magnet.
- Walk test with address display (an address of 121 will blink the detector LED 12-(pause)-1).
- Low standby current.
- Listed to UL 521.
- Backward-compatible.
- Built-in tamper-resistant feature.
- Designed for direct-surface or electrical-box mounting.
- Sealed against back pressure.

Features

Notifier FST-851 Series intelligent plug-in smoke detectors with integral communication provide features that surpass conventional detectors. Detector sensitivity can be programmed in the control panel software. Sensitivity is continuously monitored and reported to the panel. Point ID capability allows each detector's address to be set with decade address switches, providing exact detector locations for selective maintenance, when chamber contamination reaches an unacceptable level. FST-851 Series thermal detectors use an innovative thermistor sensing circuit to produce 135°F/57°C fixed-temperature (FST-851) and rate-of-rise thermal detection (FST-851R) in a low-profile package. FST-851H provides fixed high-temperature detection at 190°F/88°C. These thermal detectors provide cost-effective, intelligent property protection in a variety of applications. FST-851 Series detectors are compatible with all Notifier intelligent Fire Alarm Control Panels (FACPs).

FlashScan® (U.S. Patent 5,599,389) is a communication protocol developed by Notifier Engineering that greatly enhances the speed of communication between analog intelligent devices and certain NOTIFIER systems. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of earlier designs.

General

FST-851 Series Intelligent Thermal (Heat) Detectors with FlashScan®



- Lloyd's Register: 03/60011
- U.S. Coast Guard: 161.002/23/3 (AFP-200); 161.002/27/3 (AFP1010/AM2020); 161.002/42/1 (NFS-640)
- CCF: Certif. # 2004081801000018
- BSMI: C1313066760025
- CSFM: 7270-0028:196
- FM Approved
- MEA Listed: 383-02-E
- ULC Listed: CS630 (ML255)(FST-851A, FST-851HA, FST-851RA)
- UL Listed: S747

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

Agency Listings and Approvals

NOTE: 1) Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring. **2)** When using relay or sounder bases, consult data sheet DN-2243 (ISO-X) for device limitations between isolator modules and isolator bases.

- With B224RB or B224BI base, use a 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box, or a 4.0" (10.16 cm) square box.
 - With B501BH or B501BHT base, use a 4.0" (10.16 cm) square box.
 - Single-gang box (except relay or isolator base).
 - 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box.
 - 4.0" (10.16 cm) square box.
- Mount base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. Suitable boxes include:

The FST Series plug-in intelligent thermal detector uses a separate base to simplify installation, service, and maintenance. Installation instructions are shipped with each detector.

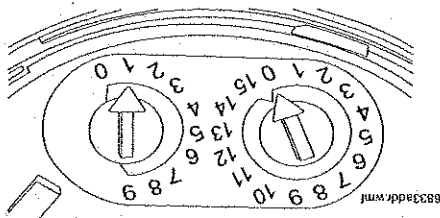
Installation

Use thermal detectors for protection of property. For further information, go to systemsensor.com for manual IS6-407-00, Applications Manual for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications.

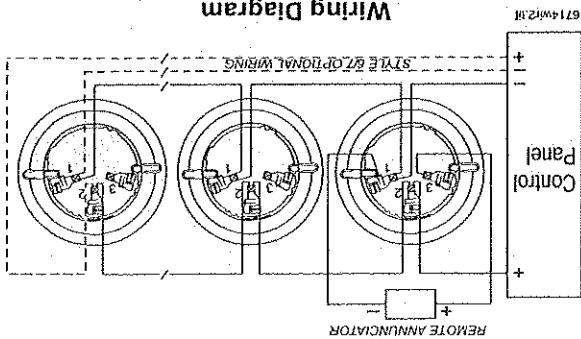
Applications

B224BI Isolator Base: Dimensions: 6.2" (15.748 cm) x 1.2" (15.748 cm). Maximum: 25 devices between isolator bases. See Note 2 under Installation.

Address dial on back of detector



Wiring Diagram





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.

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Product Line Information

"A" suffix indicates ULC Listed model.
 FST-851 Series: Intelligent thermal detector. Must be mounted to one of the bases listed below.
 FST-851 SeriesA: Same as FST-851 Series but with ULC Listing.
 FST-851R: Intelligent thermal detector with rate-of-rise feature.
 FST-851RA: Same as FST-851R but with ULC Listing.
 FST-851H: Intelligent high-temperature thermal detector.
 FST-851HA: Same as FST-851H but with ULC Listing.

BASES:

B710LPBP: Standard U.S. low-profile base, pkg. of 10.
 B710LPA: Standard U.S. low-profile base, ULC Listing.
 B501BP: Standard European flangeless base, pkg. of 10.
 B501A: Standard European flangeless base, ULC Listing.
 B501BH(A): Sounder base, includes B501(A) base.
 B501BHT(A): Same as B501BH(A), but includes temporal sounder.
 B224RB(A): Intelligent relay base.
 B224BI(A): Intelligent isolator base. Isolates SLC from loop shorts.

ACCESSORIES:

F110: Retrofit replacement flange for older style high profile bases. Converts bases for use with FlashScan® detectors.
 RA400Z(A): Remote LED annunciator. 3 – 32 VDC. Fits U.S. single-gang electrical box. Supported by B710LPBP(A) and B501(A) bases only.
 SMK400: Surface mounting kit provides for entry of surface wiring conduit. For use with B501(A) base only.
 RMK400: Recessed mounting kit. For use with B501(A) base only.
 SMB600: Surface mounting kit for use with B710LPBP(A).
 BCK-200B: Black detector covers, box of 10.
 M02-04-01: Test magnet.
 M02-09-00: Test magnet with telescope stick.

DETECTOR GUARDS:

NOTE: Some guards listed below may not be applicable to FST Series.
 ST19601: Low-profile, flush-mount smoke detector guard, wire.*
 ST19602: Low-profile, surface-mount, smoke detector guard, wire.*
 ST19609: High-profile, flush-mount, smoke detector guard, wire.*
 XP-4: Extension pole for XR2B. Comes in three 5-ft. sections.
 T55-127-000: Detector removal tool without pole.
 XR2B: Detector removal tool. Allows installation and/or removal of FlashScan® Series detector heads from base in high ceiling installations.

Product Line Information

ST19605: High-profile, surface-mount, smoke detector guard, wire.*
 ST1 9604: Flush-mount heat detector guard, wire.*
 ST1 9610: Surface-mount heat detector guard, wire.*
 *For dimensions and additional information on ST1 Steel Web Stoppers, see data sheet DN-4936.
 ST18200-SS: Flush-mount stainless steel smoke detector guard (compatibility pending).
 ST18230-SS: Surface-mount stainless steel smoke detector guard (compatibility pending).

FCPS-2456 and FCPS-2458

6-Amp and 8-Amp

24-Volt Remote Power Supplies

Section: Power Supplies

California State Fire Marshal
7315-0028:225



MEA
299-02-E



DN-6927 • 07/20/04 — Page 1 of 3



GENERAL

The FCPS-2456 (6-amp) and FCPS-2458 (8-amp) are compact, cost-effective remote power supplies with battery charger. The FCPS-2456/-2458 may be connected to any 12- or 24-volt Fire Alarm Control Panel (FACP) or may be used as a stand-alone supply. Primary applications include Notification Appliance (bell) Circuit (NAC) expansion (to support ADA requirements and NAC synchronization) or auxiliary power to support 24-volt system accessories. The FCPS-2456/-2458 provides **regulated and filtered** 24 VDC power to four notification appliance circuits configured as either four Class B (Style Y) or Class A (Style Z, with **ZNAC-4** option module). Alternatively, the four outputs may be configured as all non-resettable, or two non-resettable and two resettable. The FCPS-2456/-2458 also contains a battery charger capable of charging up to 18 AH batteries.

FEATURES

- UL-listed NAC synchronization using System Sensor, Wheelock, or Gentex "Commander" appliances.
- Cascadable for up to ten power supplies (four for Gentex) with strobe timing maintained.
- Operates as a "sync follower" or as a "sync generator" (default). See note on page 2.
- Contains two fully-isolated input/control circuits — triggered from FACP NAC (NAC expander mode) or jumpered permanently "ON" (stand-alone mode).
- Four Class B (Style Y) or four Class A (Style Z, with ZNAC-4 module) NACs.
- 6-amp (FCPS-2456) or 8-amp (FCPS-2458) full load output, with 3 amps maximum/circuit, in NAC expander mode (UL 864), 4-amp (FCPS-2456) or 6-amp (FCPS-2458) continuous output in stand-alone mode (UL 1481).
- Compatible with coded inputs; signals passed through optional power-supervision relay (A77-716B).
- In stand-alone mode, output power circuits may be configured as: resettable (reset line from FACP required), non-resettable, or a mix of two and two.
- Fully regulated and filtered power output — optimal for powering four-wire smoke detectors, annunciators, and other system peripherals requiring regulated/filtered power.
- Power-limiting technology meets UL power-limiting requirements.
- Form-C normally-closed trouble relay.
- Fully supervised power supply, battery, and NACs.
- Selectable earth fault detection.
- AC trouble report selectable for immediate or 8-hour delay.
- Works with virtually any UL 864 fire alarm control which utilizes an industry-standard reverse-polarity notification circuit (including unfiltered and unregulated bell power).
- Requires input trigger voltage of 9.0 – 32 VDC.
- Self-contained in compact, locking cabinet — 15" (38.1 cm) high x 14.5" (36.83 cm) wide x 2.75" (6.985 cm) deep.
- Includes integral battery charger capable of charging up to 18 AH batteries. Cabinet capable of housing 7.0 AH batteries.

STANDARDS and CODES

The FCPS-2456/-2458 complies with the following standards:

- NFPA 72 National Fire Alarm Code.
- UL 864 Standard for Control Units for Fire Alarm Systems (NAC expander mode).
- UL 1481 Power Supplies for Fire Alarm Systems (stand-alone mode).

SPECIFICATIONS

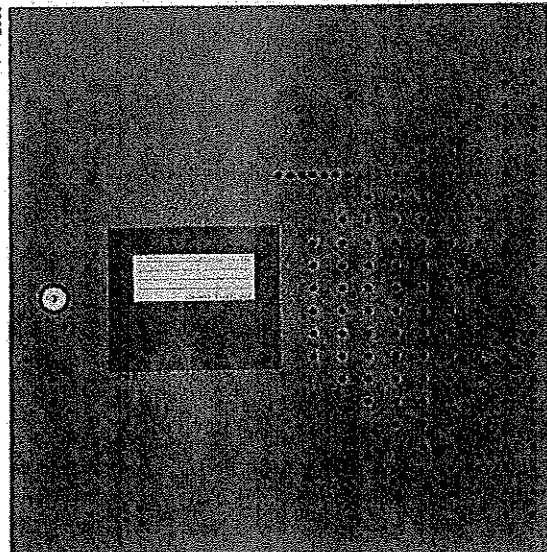
Primary (AC) power:

- FCPS-2456/-2458: 120 VAC, 60 Hz, 3.2 A maximum.
- Wire size: minimum #14 AWG (2.0 mm²) with 600 V insulation.

Control input circuit:

- Trigger input voltage: 9 to 32 VDC.
- Trigger current: 2.0 mA (16 – 32 V). Per input: 1.0 mA (9 – 16 V).

Trouble contact rating: 5 amps at 24 VDC.



6827.ppt1.jpg

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12 Clintonville Road, Northford, Connecticut 06472

ISO 9001
CERTIFIED
ENGINEERING & MANUFACTURING
QUALITY SYSTEMS

SYNC FOLLOWER/GENERATOR NOTE

In some installations, it is necessary to synchronize the flash timing of all strobes in the system for ADA compliance. Strokes accomplish this by monitoring very short timing pulses on the NAC power which are created by the FACP. When installed at the end of a NAC wire run, the FCP-2456/24S8 can track (i.e., "follow") the strobe synchronization timing pulses on the existing NAC wire run. This maintains the overall system flash timing of the additional strobes attached to the FCPs.

When the FCP-2456/24S8 is configured (via DIP switch settings) as a "sync follower," the FCP's NAC outputs track the strobe synchronization pulses present at the FCP's sync input terminal. The pulses originate from an upstream FACP or other power supply.

When the FCP-2456/24S8 is configured (via DIP switch settings) as a "sync generator," the FCP's sync input terminals are not used. Rather, the FCP is the originator of the strobe synchronization pulses on the FCP's NAC outputs. In "sync generator" mode, the sync type (System Sensor, Wheelock, or Gentex) is selectable via DIP switch settings.

PRODUCT LINE INFORMATION

FCPS-2456: 6.0 amp, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15" [38.1 cm] high x 14.5" [36.83 cm] wide x 2.75" [6.985 cm] deep), and installation instructions.

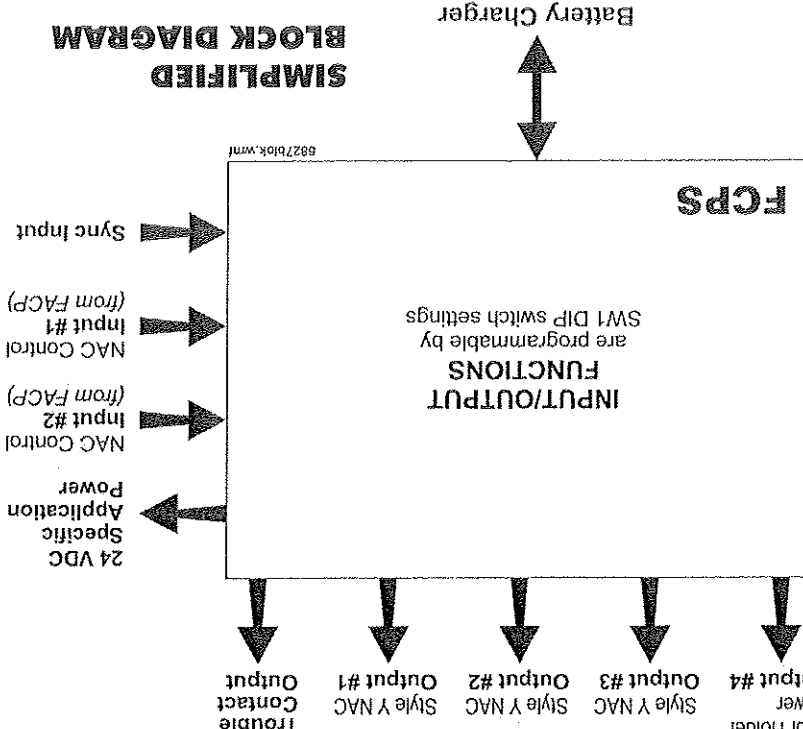
FCPS-2458: 8.0 amp, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15" [38.1 cm] high x 14.5" [36.83 cm] wide x 2.75" [6.985 cm] deep), and installation instructions.

ZNAC-4: Class A (Style A) or Class Z (Style Z) NAC option module. A77-716B: 12/24 VDC end-of-line relay for monitoring four-wire smoke detector power.

BAT-1270: Battery, 12 volt, 7.0 AH (two required, see BAT Series data sheet DN-6933).

PS-1270: Battery, 12 volt, 7.0 AH (two required, see PS Series data sheet DN-1109).

NOTE: All NAC outputs can be converted to Style Z with ZNAC-4 option module.



SIMPLIFIED BLOCK DIAGRAM

See the first page of this data sheet for listing agencies and file numbers. These listings and approvals apply to the FCP-2456 and the FCP-24S8. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

AGENCY LISTINGS AND APPROVALS

*Addressable FCPs are capable of locating control and monitor modules at distances of up to 10,000 feet (3048 meters).

addressable control module. the FCPs provides power to the sense FCPs trouble conditions. Local auxiliary power output from

For example, an addressable control module is used to activate the FCPs, and an addressable monitor module is used to sense FCPs trouble conditions. Local auxiliary power output from

system architecture in various applications. at greater distances* away from the FACP while expanding

appliance circuits. This typically allows for mounting the FCPs the FCPs instead of activating it through the FACP notification

Example 3: Use addressable control modules to activate the FCPs inputs.

both of the FCPs inputs. by connecting the resettable output from the FACP to one or

power options are available. Resettable outputs are created 6.0 amps (FCPS-24S8). Both resettable and non-resettable

24-volt system power up to 4.0 amps (FCPS-2456) or up to 6.0 amps (FCPS-24S8). Both resettable and non-resettable

Example 2: Use the FCPs to expand auxiliary regulated power up to 4.0 amps (FCPS-2456) or up to 6.0 amps (FCPS-24S8). Use

Example 1: Expand notification appliance power an additional 6.0 amps (FCPS-2456) or 8.0 amps (FCPS-24S8). Use

APPLICATIONS

- +24 VDC filtered, regulated.
- 3.0 amps maximum for any one circuit.
- Total continuous current for all outputs (stand-alone mode): for FCP-2456: 4.0 amps maximum; for FCP-24S8: 6.0 amps maximum.
- Total short-term current for all outputs (NAC expander mode): for FCP-2456: 6.0 amps maximum; for FCP-24S8: 8.0 amps maximum.

Secondary power (battery) charging circuit:

- Supports lead-acid batteries only.
- Float-charge voltage: 27.6 VDC.
- Maximum charge current: 1.5 amps
- Maximum battery capacity: 18 AH.

Output circuits:

- Auxiliary power output: specific application power 500 mA maximum.



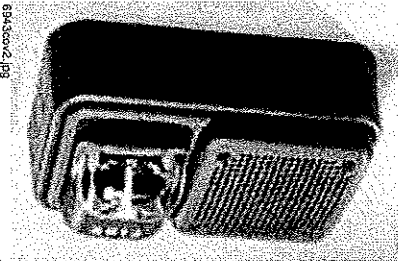
by Honeywell

Audio/Visual Devices

SpectraAlert® ↑
SP2, SP3 Series: SP2_1224MC, SP3_1224MC



SP2R1224MC mounted with BBS-SP2H



General

System Sensor® SpectraAlert® Selectable Output Speaker Strobes offer enhanced features that include the widest range of self-adjust for either 12 or 24 volt operation, along with the fidelity sound quality expected from SpectraAlert speaker technology. **Performance.** SpectraAlert Selectable Output Speaker/Strobes offer average current draws that are not only lower than conventional fixed-candela SpectraAlert products, but also lower than similar selectable candela products. In addition, the broad frequency response range and low harmonic distortion provided by SpectraAlert speaker technology provides an accurate and intelligible broadcast of evacuation messages.

Installation. SpectraAlert Selectable Output Speaker/Strobes offer a variety of installation-friendly features, such as the ability to mount to a 4.0" x 4.0" x 2.125" (10.16 x 10.16 x 5.398 cm) backbox without the need for an extension ring. Also, with the field-reversible strobe, the speaker/strobe may be either left- or right-mounted to avoid potential obstructions.

Flexibility. SpectraAlert Selectable Output Speaker/Strobes offer the broadest range of candela options. In addition, the 15 cd and 15/75 cd options can operate on either 12V or 24V, with no setting required; the device recognizes the applied voltage and self-adjusts to the correct setting automatically. The speaker voltage, either 25.0 or 70.7, and power tap settings, 1/4, 1/2, 1, or 2 watt, are field-selectable.

Aesthetics. SpectraAlert Selectable Output Speaker/Strobes incorporate the same stylish, low-profile design as the conventional SpectraAlert products, for a consistent and aesthetically pleasing appearance across the entire product line.

Features

- Fidelity sound quality (SP2).
- Enhanced SPL (SP3).
- Operates on either 12 V or 24 V.
- Widest range of candela options:
- 12 V: 15 and 15/75 candela options.
- 24 V: 15, 15/75, 30, 75, and 110 candela options.
- Easy candela selection.
- 25.0 and 70.7 volt speaker with four field-selectable power taps.
- Field-reversible strobe for left- or right-mounting.
- Synchronizable with MDL Sync-Circuit™ Module.
- Optional surface-mount backbox skirt available.

Engineering Specifications

Speaker/Strobe shall be a System Sensor Model approved for fire protective signaling systems. Speaker shall be capable of operating at 25.0 or 70.7 nominal Vrms, and shall have a frequency range of 400 – 4000 Hz. Speaker shall have power taps that are selected by shunts. The strobe shall consist of a xenon flash tube with associated lens/reflector system and operate on either 12 V or 24 V. The strobe shall also feature selectable candela output, providing options for 15 or 15/75 candela when operating on 12 V; and 15, 15/75, 30, 75, or 110 V when operating on 24 V. The strobe shall comply with the Americans with Disabilities Act requirement for visible signaling appli-

ances, flashing at 1 Hz over the strobe's entire operating voltage range.

Operating Specifications

Dimensions: 4.875" x 8.25" x 2.25" (12.383 x 20.955 x 5.715 cm).
 Mounting: 4.0" x 4.0" x 2.125" (10.16 x 10.16 x 5.398 cm) backbox.
 Indoor operating temperature: 32°F to 120°F (0°C to 49°C).

STROBE

Strobe operating voltage: 12 or 24 VDC and FWR unfiltered.
 Operating voltage range: 12 V: 8 – 17.5 V; 24 V: 16 – 33 V.
 Operating voltage range with Sync-Circuit module: 12 V: 9 – 17.5 V; 24 V: 17 – 33 V.

Explanation of published strobe specifications (see also current draws in Ordering Information below): In May 2004, Underwriters Laboratories changed standard UL 1971 to require that operating current measurements are made using RMS (root mean square) instead of peak or average values. RMS measurements more accurately predict the power consumption of a device since they take into account the entire current draw profile including surge, repetitive surge, and peak values. The published RMS current is the maximum operating current of that device within its operating voltage range. This current maximum may or may not occur at the endpoints of the voltage range. In May 2004, UL also changed the way they list the voltage range of a device. All 12 V products will be listed between 8 – 17.5 V and all 24 V products will be listed between 16 – 33 V. These devices are considered "regulated." Any product that does not operate within these ranges will be listed as a "special application" with its operating voltage specified on the device.

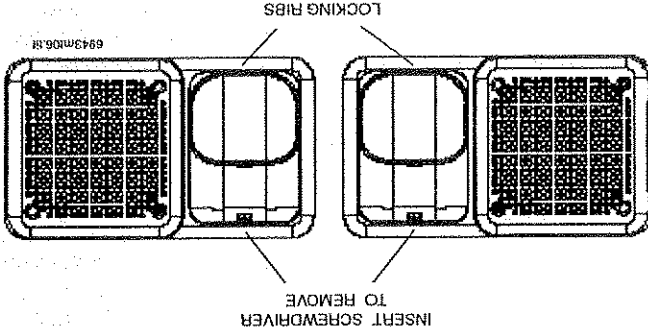


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Description	Red Models	White Models	Candela Setting		UL Maximum FWH Operating Current, STROBE (mA RMS)	UL Maximum DC Operating Current, STROBE (mA RMS)
			8 - 17.5 V	16 - 33 V		
Wall Speaker/Strobes: Standard SPL (SP2) High SPL (SP3)	SP2R1224MC SP3R1224MC	SP2W1224MC SP3W1224MC	15	112	64	127
			15/75	135	74	127
			30		93	
			75		158	
			110		208	
Surface-Mount Backbox Skirt	BBS-SP2R	BBS-SP2W				

Ordering Information and Current Draw



Removing the strobe screw and lifting the strobe assembly out of the rib slot allows the strobe to be rotated 180° and remounted to the base, resulting in a left-mounted strobe configuration.

Reversible Strobe Feature

UL Reverberant (dBA @ 10 ft/3.048 m)				
SP3	89	87	84	81
SP2	84	81	78	75
	2 W	1 W	1/2 W	1/4 W

Sound output:

U.S. Patent numbers: 6,049,446, 6,127,935.
 Power taps: 1/4, 1/2, 1, and 2 watts.
 Series will provide a flat (±10 dB) output from 100 to 15,000 Hz. The SP3 Series are UL listed from 400 to 4000 Hz. The SP2 and SP3 Series will provide a flat (±10 dB) output from 500 to 13,000 Hz.
 Frequency range: 400 - 4000 Hz. NOTE: The SP2 and SP3 input terminals: 12 to 18 AWG (3.31 to 0.821 mm²).
 Input voltage: 25.0 or 70.7 Vrms (nominal).

SPEAKER

Agency Listings and Approvals

The listings and approvals below apply to SpectraAlert Selectable Output Wall Speaker/Strobes. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL Listed: file S4048.
- UL Listed: file CS549 (SP2_1224MC(A)).
- CSFM approved: file 7320-1653:133.
- MEA approved:
- -127-02-E (SP2_1224MC(A)).
- -461-05-E (SP3_1224MC).

Audio/Visual Devices
P1224MC Horn/Strobe



S1224MC Strobe

Engineering Specifications
SpectraAlert horns, strobes and horn/strobes shall be capable of mounting to a standard 4.0" x 4.0" x 1.5" (10.16 x 10.16 x 3.81 cm) backbox or a single-gang 2.0" x 4.0" x 1.875" (5.08 x 10.16 x 4.763 cm) backbox using the universal mounting plate included with each SpectraAlert product. Also, SpectraAlert products, when used in conjunction with the accessory Sync-Circuit Module, shall be powered from a non-coded power supply and shall operate on 12 or 24 volts. 12-volt rated devices shall have an operating voltage range of 9 - 17.5 volts. 24-volt rated devices shall have an operating voltage range of 17 - 33 volts. SpectraAlert products shall have an operating temperature of 32° to 120°F (0°C to 49°C) and operate from a regulated DC or full-wave-rectified, unfiltered power supply.

STROBE

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

HORN/STROBE COMBINATION

Horn/Strobe shall be a System Sensor SpectraAlert Model listed to UL 1971 and UL 464 and shall be approved for fire protective service. Horn/strobe shall be wired as a primary signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The horn shall have two tone options, two audibility options (at 24 volts) and the option to switch between a Temporal 3 pattern and a Non-Temporal Continuous pattern.

General

System Sensor® SpectraAlert® Selectable Output Horns, Strobes, and Horn/Strobes offer enhanced features that include the widest range of candela options available and the capability to recognize and self-adjust for either 12- or 24-volt operation. With an overall feature set that combines performance, installation ease, flexibility, and a consistently pleasing appearance, the SpectraAlert Selectable Output devices provide both the innovation and efficiency synonymous with the SpectraAlert name.

Performance. SpectraAlert selectable output wall-mount horns, strobes, and horn/strobes offer key performance features long associated with the SpectraAlert name. The selectable-candela strobes and horn/strobes offer average current draws that are not only lower than conventional fixed-candela SpectraAlert products, but also lower than similar selectable-candela products. By consuming less current, the ability to connect even more devices per loop is possible, resulting in a lower installed cost.

Installation. SpectraAlert selectable output horns, strobes, and horn/strobes offer the same installation-friendly features synonymous with the SpectraAlert name, such as the option of two- and four-wire operation; the ability to use standard-sized backboxes with no encroachment into the box; and universal mounting incorporating the labor-saving QuickClick™ feature. Such labor-saving features make wire connections simple and fast, further reducing installed cost.

Flexibility. SpectraAlert selectable output strobes and horn/strobes offer the broadest range of candela options. In addition, the selectable output strobes and horn/strobes can operate on either 12 V or 24 V, with no setting required; the device recognizes and self-adjusts to the correct current automatically. Temporal 3 or Continuous tone options continue to be available, in either an Electromechanical or 3 kHz pattern.

Aesthetics. SpectraAlert selectable output horns, strobes, and horn/strobes incorporate the same stylish, low-profile design of the conventional SpectraAlert products, for a consistent and aesthetically pleasing appearance across the entire product line.

Features

- Operate on either 12 V or 24 V.
 - Widest range of candela options:
 - 12 V: 15 and 15/75 candela.
 - 24 V: 15, 15/75, 30, 75, 110 candela.
 - Easy candela selection.
 - Lower current draw.
 - Easy DIP switch selection for horn options.
 - Easy mounting with QuickClick.
 - Synchronizable with MDL Sync-Circuit™ module.
 - Meets UL 1971, NFPA 72, and ADA signaling requirements.
- NOTE:** All strobe and horn/strobe models incorporate a new patented voltage booster design that has a more consistent flash bulb voltage over the range of candela selections. The benefit to the customer is a high quality strobe device.

Voltages: 12 or 24 VDC and FWR unfiltered. **NOTE:** Full Wave Rectified (FWR) voltage is a non-regulated, time-varying power source that is used on some power supply and panel outputs.

Operating voltage range: 12 V: 8 - 17.5 V; 24 V: 16 - 33 V. **Operating voltage range with Sync-Circuit module MDL:** 12 V: 9 - 17.5 V; 24 V: 17 - 33 V. **NOTE:** The MDL causes a one-volt voltage drop in the notification appliance circuit.

Explanation of published voltage, current, and SPL specifications: In May 2004, Underwriters Laboratories changed standard UL 1971 to require that operating current measurements are made using RMS (root mean square) instead of peak or average values. RMS measurements more accurately predict the power consumption of a device since they take into account the entire current draw profile including surge, repetitive surge, and peak values. The published RMS current is the maximum operating current of that device within its operating voltage range. This current maximum may or may not occur at the endpoints of the voltage range. Similarly, UL tests the audibility of devices in accordance with UL 464 by measuring them across the operating voltage range to determine the minimum sound pressure level produced at any particular setting.

During May 2004, UL also changed the way they list the voltage range of a device. All 12 V products will be listed between 8 - 17.5 V and all 24 V products will be listed between 16 - 33 V. Those devices are considered "regulated." Any product that does not operate within these ranges will be listed as a "special application" with its operating voltage specified on the device.

U.S. Patent numbers: 5,593,569; 5,914,665; 6,049,446.

Current Draw Tables

NOTE: 1) Current draw for strobe-only products is shown in Table 1-A. 2) Current draw for horn-only products is shown in Table 1-B. 3) 12 VDC two-wire horn/strobe current is shown in Table 1-C. 4) 24 VDC two-wire horn/strobe current draw is shown in Table 1-D. 5) Current draw for other horn/strobe power supplies can be calculated by adding the strobe current in Table 1-A to the horn current in Table 1-B from the chosen settings.

DC Operating Current, STROBE (mA RMS)	Candela Setting	
	8 - 17.5 V	16 - 33 V
FWR Operating Current, STROBE (mA RMS)	112	64
15/75	135	74
15/75	127	127
15	112	64
30	93	93
75	158	158
110	208	208

Current draw tables continued on next page.

Current Draw Table 1-A: STROBE, UL Maximum (mA RMS)

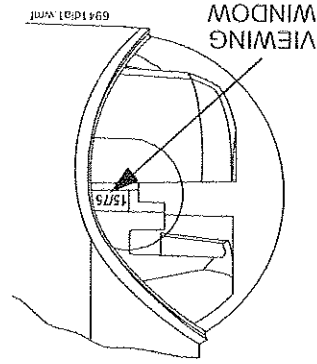
SpectralAlert Strobe Candela Selections

For strobe candela selection, adjust slide switch located on the rear of the product while watching the viewing window on the side of the reflector.

Permissible candela settings:

For 12 V operating voltage: 15 or 15/75.

For 24 V operating voltage: 15, 15/75, 30, 75, 110.



Module shall be a System Sensor Sync-Circuit listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectralAlert strobes at 1 Hz and on horn/strobe models, while operating the strobes, over a single pair of wires. The module shall be capable of mounting to a 4.688" x 4.688" x 2.125" (11.906 x 11.906 x 5.398 cm) back-box and shall control two Style Y (Class B) or one Style Z (Class A) circuit. Module shall be capable of multiple zone synchronization by daisy-chaining multiple modules together and re-synchronizing each other along the chain. The module shall not operate on a coded power supply.

Operating Specifications

Walk test: SpectralAlert horn/strobe and horn-only work on "walk tests" with time durations of 4 seconds or greater.

Input terminals: 12 to 18 AWG (3.31 to 0.821 mm²).

Dimensions: strobe and horn/strobe with universal plate: 5.0" x 5.625" x 2.938" (12.7 x 14.288 x 7.461 cm); **strobe and horn/strobe with small-footprint plate:** 3.375" x 5.625" x 2.313" (8.573 x 14.288 x 5.874 cm); **horn with universal mounting plate:** 5.0" x 5.625" x 1.313" (12.7 x 14.288 x 3.334 cm); **horn without mounting plate:** 2.938" x 5.313" x 1.313" (7.461 x 13.494 x 3.334 cm).

Weight, horn only: 7.2 oz. (204.117 g).

Weight, strobe and horn/strobe: 8.8 oz. (249.476 g).

Mounting: standard boxes 4.0" x 4.0" x 1.5" (10.16 x 10.16 x 3.81 cm) or 2.0" x 4.0" x 1.875" (5.08 x 10.16 x 4.763 cm).

Operating temperature (indoor): 32°F to 120°F (0°C to 49°C).

Maximum humidity (indoor): 95% as tested per UL 464.

Operating temperature (K Series, outdoor): -40°F to 151°F (-40°C to 66°C).

Outdoor rating: NEMA 3R (per UL 50).



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NOTE: 1) All of these Spectra™ products are designed for wall-mounting only. 2) All outdoor models MUST use weatherproof backbox model WBB. 3) Installation of less than 75 candela strobes may be permissible under the equivalent facilitation clause of the ADAAG (Sec. 2.2). However, it is the responsibility of the person or entity designing the fire alarm system to determine the acceptability of less than 75 candela strobes. 4) All 15/75 candela strobes or horn/strobes are recommended for 20' x 20' (6.096 m x 6.096 m) rooms or less.

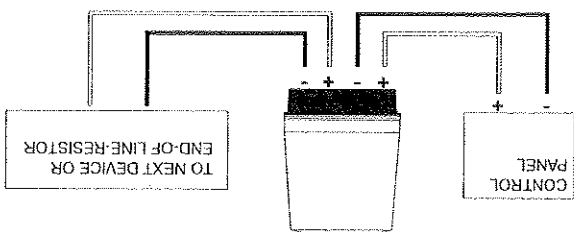
Model	Description	Model	Description
HORN/STROBES			
P124MC	Selectable output horn/strobe, 12/24 volt, red.	S124MC	Selectable output strobe, 12/24 volt, red.
P124MCW	Selectable output horn/strobe, 12/24 volt, white.	S124MCW	Selectable output strobe, 12/24 volt, white.
P124MCP	Selectable output horn/strobe, 12/24 volt, red, plain housing.	S124MCP	Selectable output strobe, 12/24 volt, red, plain housing.
P124MCPW	Selectable output horn/strobe, 12/24 volt, white, plain housing.	S124MCPW	Selectable output strobe, 12/24 volt, white, plain housing.
P124MCK	Selectable output horn/strobe, 12/24 volt, red, outdoor.	S124MCK	Selectable output strobe, 12/24 volt, red, outdoor.
P124MCS	Selectable output horn/strobe, 12/24 volt, red, "FUEGO" housing.	S124MCS	Selectable output strobe, 12/24 volt, red, "FUEGO" housing.
MOUNTING ACCESSORIES			
H12/24	Horn, 12/24 volt, red.	S-MP	Small-footprint mounting plate, red, for single-gang backbox.
H12/24W	Horn, 12/24 volt, white.	S-MPW	Small-footprint mounting plate, white, for single-gang backbox.
H12/24K	Horn, 12/24 volt, red, outdoor.	BBS	Surface-mount backbox skirt, red.
SYNC MODULES			
MDL	Sync-Circuit module, red.	D-MP	Universal mounting plate (replacement), red.
MDLW	Sync-Circuit module, white.	D-MPW	Universal mounting plate (replacement), white.
MDLWA	Sync-Circuit module, white, Canadian model.	WBB	Weatherproof backbox.

Ordering Information

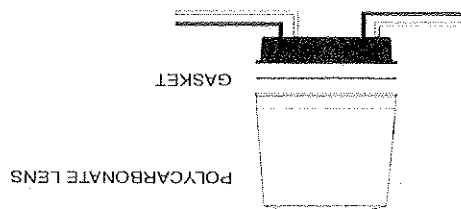
Selectable Horn Tones		8 - 17.5 V	16 - 33 V
Temporal, LOW Volume	Electromechanical	67	75
	3000 Hz Interrupted	68	75
Temporal, HIGH Volume	Electromechanical	71	80
	3000 Hz Interrupted	72	81
Non-Temporal, LOW Volume	Electromechanical	71	79
	3000 Hz Interrupted	72	79
Non-Temporal, HIGH Volume	Electromechanical	76	84
	3000 Hz Interrupted	77	86

Table 2: HORN Sound Measurements (dBA)

Model Number	Stock Number	Input Voltage	Strobe Lens Color	Average Current Amps	Rush Current Amps	Flash Rate (Flash/Min.)	Operating Temperature Range
SL-5 12A	4670021	12V DC	Amber	0.500	1.0	50-90	14°F - 122°F 0°C - 49°C
SL-5 12B	4670022	12V DC	Blue	0.500	1.0	50-90	
SL-5 12C	4670023	12V DC	Clear	0.500	1.0	50-90	
SL-5 12R	4670024	12V DC	Red	0.500	1.0	50-90	
SL-5 24A	4670009	24V DC	Amber	0.250	0.5	50-90	
SL-5 24B	4670010	24V DC	Blue	0.250	0.5	50-90	
SL-5 24C	4670011	24V DC	Clear	0.250	0.5	50-90	
SL-5 24R	4670012	24V DC	Red	0.250	0.5	50-90	



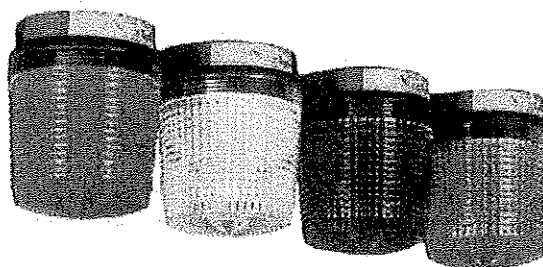
Wiring



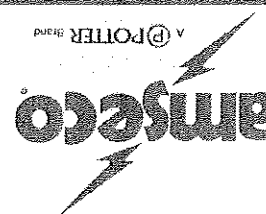
Strobe Structure

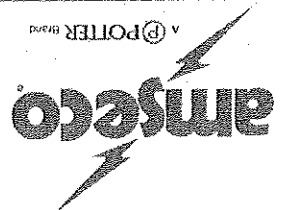
The SL-5 series strobes are a high performance, high intensity, solid state strobe, designed for applications where 360° visual annunciation is required. The strobe light is UL 1638 approved and is listed for general utility signaling. The strobe is polarized for connecting to supervised circuits and is designed with a xenon flash tube. The SL-5 is a high profile strobe with a low current draw of 250mA at 24V DC. The strobe can be used as a stand alone or in combination with other signaling devices to provide a visual verification signal. The SL-5 series strobes are recommended for use in areas such as; parking facilities, schools, corridors, apartments, office buildings, restaurants, hotels, and any other application where effective visual warning is required. Installation must comply in accordance with applicable standards and/or all state and local electrical codes and authority having jurisdiction.

- Designed to meet UL 1638 Visual Appliance Private Mode
- Polarized using filtered DC or unfiltered FWR input voltage
- 12 and 24V DC models
- Solid state circuitry and a xenon flash tube
- Impact resistant black abs base
- Interchangeable polycarbonate lens
- UL listed AWG#18 wire leads 10.6" long
- Optional surface mount plate model SP-SL1B
- Replacement interchangeable lens model SL-LG



SL-5 SERIES CONICAL STROBE LIGHTS



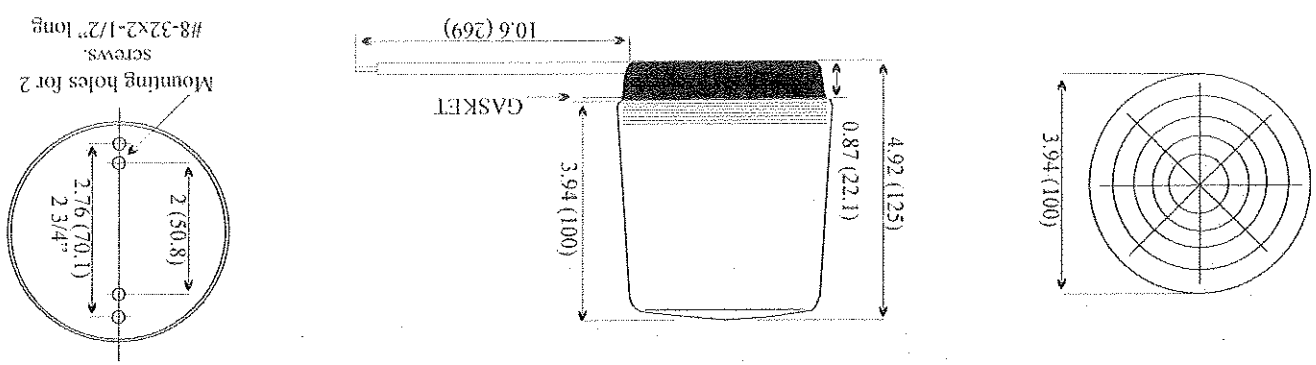


**SL-5 SERIES
CONICAL STROBE
LIGHTS**

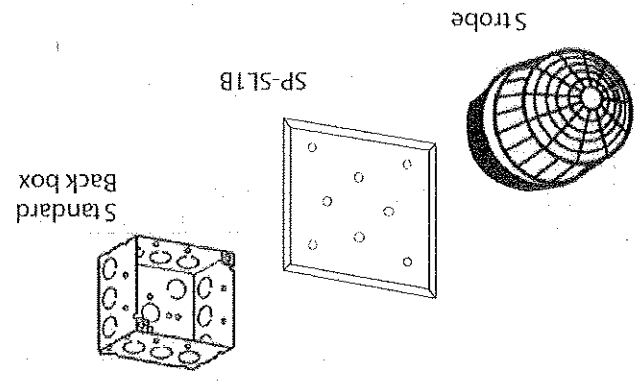
Engineering Specifications

The visual alarm indicating appliance shall be Amseco model SL-5 or equivalent device. The strobe shall be available in amber, blue, clear, and red lens and shall be listed in compliance with UL 1638 Visual Appliance Private Mode Emergency and General Utility for use in indoor applications. The signaling strobe shall operate from a non-coded regulated DC supply or full wave rectified, unfiltered supply. The signaling strobe shall be designed to produce a signal flash of 50-90 flashes per minute with continuously applied voltage. The strobe shall be capable of surface mounting to a 4" square box using Amseco's SP-SL1B plate. Visual signaling devices shall be installed as per plans and specifications.

Dimensions: inch (mm)

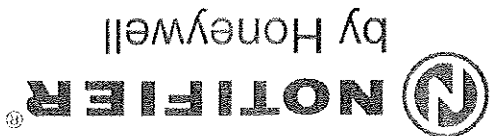


Surface Mounting



PA400 Series Mini-Alert™ Sounders

Audio/Visual Devices



General

System Sensors PA400 Series Mini-Alert™ sounders and sounder/strobes are suited to provide primary and secondary signaling for fire and security applications. PA400 sounders operate at 24 volts and are ideal for hotel, motel or residential fire system applications, where a smaller notification device is desired. PA400 sounders are available in red or white.

Features

- 12V and 24V operation.
- 1.5 cd add-on strobe available.

Specifications

Dimensions: 4.5" (11.43 cm) H x 2.75" (6.985 cm) W x 1.125" (2.858 cm) D.
 Weight: 2.4 oz. (159 g).
 Operating temperature range: 14°F and 140°F (-10°C to +60°C).

Mounting: For surface-mount; single-gang backbox. For flush-mount: 4.0" (10.16 cm) square x 2.75" (6.985 cm) deep backbox.

Input terminals: 12 to 18 AWG (3.31 to 0.821 mm²).

Nominal voltage: 12/24 VDC.

Operating voltage: 24 VDC FWR unfiltered. **NOTE: Actual 24V operating voltage cannot be less than 18 VDC or greater than 33 VDC.**

Maximum operating current at 12V: 20.8 mA; at 24V: 47.4 mA.

Sound output (UL): 82 dB. **NOTE: Sound output varies depending on voltage and sound selected.**

Engineering Specifications

Mini-Alert Sounders shall be a System Sensor model _____, capable of operating at 24 VDC. Sounder shall be listed to Underwriters' Laboratories Standard UL464 for fire protective signaling systems. Sounder shall have an operating temperature between 14°F and 140°F (-10°C to +60°C).

Agency Listings and Approvals

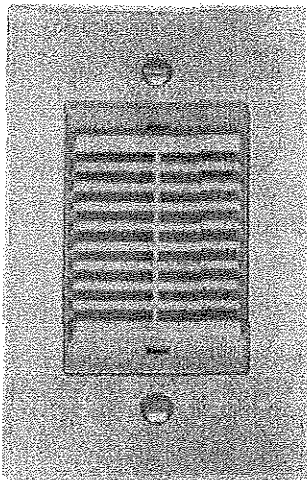
The listings and approvals below apply to PA400 Series sounders. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL Listed: file S4011.
- ULC Listed: file CS548.
- CSFM approved: file 7125-1209:169.
- FM approved.
- MEA approved: files 427-91-E, 33-95-E.

Product Line Information

PA400R: Mini-Alert sounder, red.
 PA400W: Mini-Alert sounder, white.

2405peoz.jpg



PA400R
 sounder



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.

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BRK SC9120B AC Powered Smoke and Carbon Monoxide Alarm with Battery Backup and Silence Feature

BRK SC9120B AC Powered Smoke and Carbon Monoxide Alarm with Battery Backup and Silence Feature

MODEL SC9120B
AC Powered Smoke and Carbon Monoxide Alarm with Battery Backup and Silence Feature
Combination smoke and carbon monoxide alarm saves time on installation and materials because only one electrical box is required. Meets code for both smoke and CO alarms.

Features

- Quick Plug-In Power Connector
- 120 VAC; Interconnectable
- Ionization Smoke Sensor
- Microprocessor controlled for fewer nuisance alarms
- Low battery and nuisance alarm silence
- Auto-self testing
- Latching Alarm Indicator
- Smart Interconnect
- Separate smoke & CO visual and audible warnings
- Battery Drawer Lock
- Mounting Bracket Lock
- AC Power Indicator
- Alarm Indicator Light
- Low Battery Warning "Chirp"
- Missing Battery Tab
- 9V Battery Included
- 5-Year Limited Warranty on Alarm

Description

The BRK Brands, Inc. Cat. No. SC9120B is a wire-in, 120V AC 60Hz single and/or multiple station smoke and carbon monoxide alarm specifically designed for residential and institutional applications including sleeping rooms of hospitals, hotels, motels, dormitories and other multi-family dwellings as defined in standard NFPA 101. Models 9120 and 9120B comply with UL217, CSFM, NFPA 72, HUD, FHA and other agencies that model their codes after the above agencies. They meet building codes where AC/DC smoke and carbon monoxide alarms are required either separately or in combination.

The alarms are interconnectable with up to 18 devices, of which 12 can be smoke alarms.

Features

Separate Separate Smoke & CO Smoke CO - Combination smoke and CO alarm eliminates the need for two electrical boxes and features a permanently installed CO sensor and a dual ionization smoke sensor.

"Intelligent Sensing Technology™" - Microprocessor controlled to reduce nuisance alarms.

Smart 3-wire Interconnect - sends a unique signal for smoke and CO on one interconnect wire

"Latching Alarm Alarm Indication" - When interconnected in a series, the unit that triggered the alarm rapidly flashes its red LED indicator. After the alarm condition subsides, the initiating unit will store in memory or "latch" the information and begin to flash the red LED indicator once every 5 seconds.

"Perfect Mount" system - features a gasketless base and a mounting bracket that keeps the alarm secure over a wide rotation range to allow for true alignment. This will allow fine-tuning on the positioning to compensate for out of aligned wall studs and to keep the wording level when wall mounting.

Single button test/silence - Eliminates confusion. Depending on what mode the alarm is in, pushing the button will test, silence, re-test the alarm when in silence and clear the latching feature.

85dB horn - meets UL standards

Easy access side-load battery drawer - Battery installation and removal can occur while the unit is mounted to the ceiling or wall via the side load battery compartment.

Battery backup power supply - keeps alarm working during a power failure, providing battery is installed properly and is fresh.

Other Contractor Preferred features:

- A dust cover to keep alarm clean during construction.
- Keyhole slots in the mounting bracket eliminate the need to remove the junction box screws for installation.
- Two locking features are provided to prevent battery theft and/or theft of the unit. - Connection to AC power is made with a "Quick-Connect" wiring harness.
- Installation is quick, easy and cost effective.

7000/7003

SERIES

Photoelectric Smoke Alarm For 120 VAC and 220 VAC Single Station Tandem and Specialty Applications

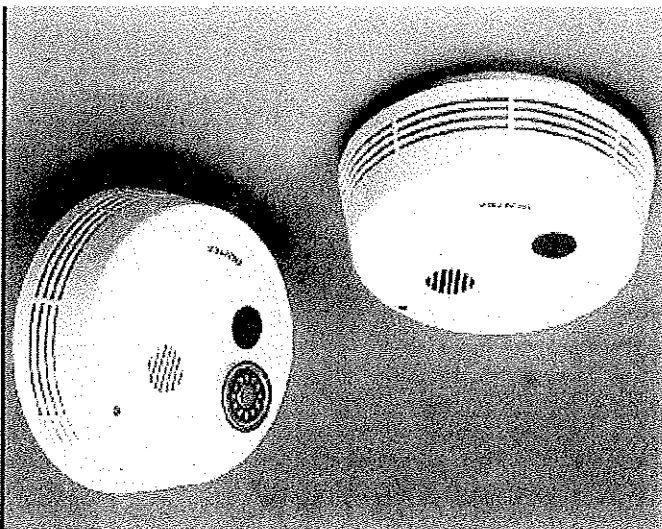
Applications

The 7000/7003 Series of photoelectric smoke alarms is designed for residential and other occupancies defined by NFPA 101, including homes, apartments, hospitals and hotels, in compliance with UL 217 and NFPA 72. Available in many different models, the 7000/7003 Series is engineered to virtually eliminate nuisance alarms and deliver outstanding performance wherever reliable fire protection is required.

The Gentex 7000/7003 Series provides an exclusive patented three position test feature that simulates a 0.85% and 3.5% actual smoke condition in full compliance with NFPA 72 and UL 217 standards. It also provides a maintenance indicator and makes the 100% testing requirement easy.

Options include self-restoring 135°F fixed temperature integral or isolated thermals, and Form A/Form C dry contacts for remote announcement. Tandem interconnection of up to 12 units is available on several models; tandem interconnection of up to 6 units is available on "F" models, which activate the dry contacts from a remote alarm through the tandem wire or a local alarm.

The 7003 Series provides the temporal 3 evacuation tone as a standard feature. When testing the 7003 Series it may take up to 16 seconds longer to go in or out of alarm.



Approvals



This symbol on the product's nameplate means it is listed by UNDERWRITERS LABORATORIES, INC.

- BFP (City of Chicago)
- BS+A/MEA #927-84-SA
- MSFM Listing #1929
- UL 217
- NFPA 72
- CSFM #7267-669-104

Also UL 1730 listed for Commercial Residential and Commercial Residential Multiple-station Smoke Alarms.

- #### Standard Features
- 90dBA Solid-State Non-Latching Piezo Horn
 - 1 Year Warranty From Date of Purchase
 - Nominal 2.5% Sensitivity
 - 5-to-1 Signal-to-Noise Ratio
 - Pulsing LED Sensing Chamber
 - Fully Insect Screened
 - Functional Test Switch — Patented Three Position Test
 - Horn Frequency 3100Hz (Nominal)
 - Solid-State LED Condition Indicator
 - Quick-Disconnect Wiring Harness
 - Mounting Hardware Adapts to Standard Junction Boxes
 - Dust Cover to Prevent Contamination During Installation
 - On-Site Maintenance Washing Program
 - Temporal 3 Evacuation Sounding Device (7003 Series)
 - Complies With UBC/UFC (7003 Series)

7000/7200 Series

Model Number	Part Number	Voltage	Local 90 dBA Piezo	Integral 135°F Thermal	Isolated 135°F Thermal	Tandem Up To 12 Units	Tandem Up To 6 Units	Form A/C Contacts
7100	907-1109-2	120 VAC	•			•		
7100T	907-1110-2	120 VAC	•	•		•		
7100H	907-1111-2	120 VAC	•		•	•		
7100F	907-1113-2	120 VAC	•			•	•	•
7100TF	907-1114-2	120 VAC	•	•		•	•	•
7100HF	907-1115-2	120 VAC	•		•		•	•
7200	907-1204-2	220 VAC	•			•		
7200F	907-1207-2	220 VAC	•			•	•	•
7200T	907-1205-2	220 VAC	•	•		•		
7200H	907-1206-2	220 VAC	•		•	•		

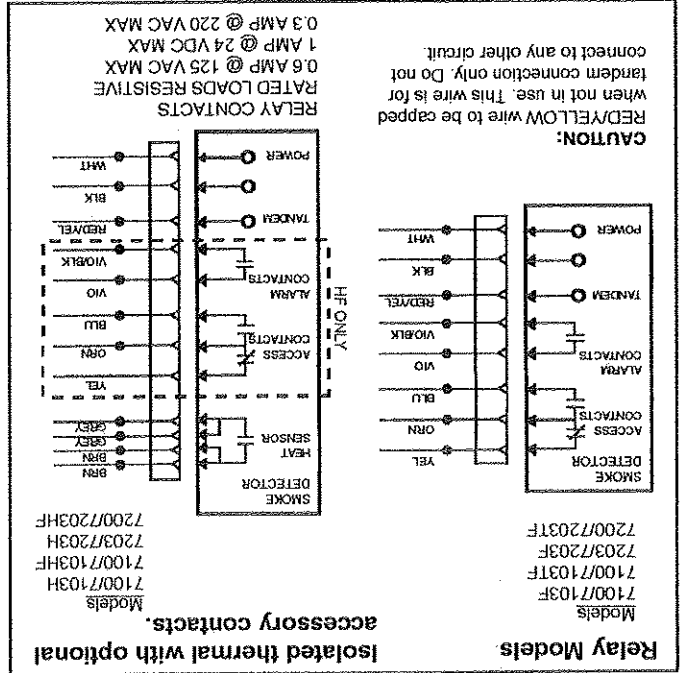
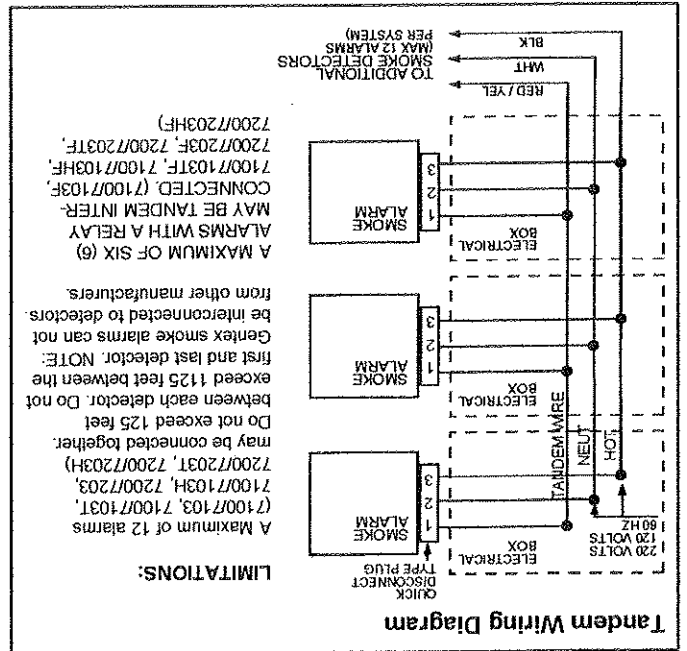
OPTIONS

7003/7203 Series (Temporal 3 Sounder)

Model Number	Part Number	Voltage	Local 90 dBA Piezo	Integral 135°F Thermal	Isolated 135°F Thermal	Tandem Up To 12 Units	Tandem Up To 6 Units	Form A/C Contacts
7103	907-1116-2	120 VAC	•			•		
7103T	907-1117-2	120 VAC	•	•		•		
7103H	907-1118-2	120 VAC	•		•	•		
7103F	907-1120-2	120 VAC	•			•	•	•
7103TF	907-1121-2	120 VAC	•	•		•	•	•
7103HF	907-1122-2	120 VAC	•		•		•	•
7203	907-1208-2	220 VAC	•			•		
7203F	907-1211-2	220 VAC	•			•	•	•
7203T	907-1209-2	220 VAC	•	•		•		
7203H	907-1210-2	220 VAC	•		•	•		

Notes:

The 7100/7103 Series are round units. Square units as 7107/713 also available.



24 units per carton
32 pounds per carton

GENTEX CORPORATION

- ### Electrical Specifications
- Operating Voltage (7100/7103) 120 VAC, 60Hz
 - Operating Voltage (7200/7203) 220 VAC, 50Hz
 - Operating Current (All Voltages) 45 mA
 - Operating Current (Relay Options) 70 mA
 - Operating Ambient Temp Range 40°F to 100°F
 - Alarm Horn Rating 90dB at 10 ft.
 - Nominal Sensitivity 2.5% Obscuration
 - "F" Auxiliary Relay 1 Form A & 1 Form C (0.6 amp)
 - "T" Integral Thermal (Self-Restoring) 135°F at 50 ft.
 - "H" Isolated Thermal Form A (Self-Restoring) 135°F at 50 ft.
 - Size Diameter: 6.5 in. OA (5.75 in. at Ceiling)
 - Depth: 2.625 in.

Architect & Engineering Specifications

The Photoelectric Smoke Alarm shall be a Gentex Model or approved equal which shall provide at least the following features and functions:

- Nominal sensitivity shall be 2.5%.
- The alarm shall utilize an infrared LED sensing circuit which pulses in 4 to 5 second intervals; when subjected to smoke the pulse rate shall increase 8 times. After 2 consecutive pulses in smoke, the detector will alarm.
- The alarm shall provide minimum 5-to-1 signal-to-noise ratio in the optics frame to assure stability of operation in environments of high RF and transient conditions.
- The sensing chamber shall be fully protected to prevent entrance of small insects, thus reducing the probability of false alarms.
- A solid state piezo alarm rated at 90dB at 10ft.
- A visual LED monitor (condition indicator) will pulse in normal operation and will remain solid in alarm.
- An easily accessible test knob shall be provided. The test knob in the TEST position will simulate an actual smoke condition of approximately 3.4% causing the detector to alarm within 20-36 seconds. It will also have the capability of testing to 0.85% as a required minimum. A magnetic switch closure or other switch closure, or smoke generating equipment which does not scatter the light beam or test sensitivity is not sufficient.
- The alarm shall have a tandem interconnect capability of up to 12 units or 6 units with relay.
- The manufacturer shall provide other compatible alarm models with the following optional features: a) 135°F fixed temperature isolated thermal with normally opened contact for remote connection to local alarm or annunciator; b) 135°F fixed temperature integral thermal; c) auxiliary Form A/Form C relay contacts for initiating remote functions and annunciator; d) relay option that is capable of activation by tandem interconnect wire. Thermal sensor shall be self-restoring.

California Fire Marshal.

All equipment shall be completely factory assembled, wired and tested, and the contractor shall be prepared to submit a certified letter testifying to this condition.

Alarms which do not meet all of the requirements of this specification will not be considered.

11. Unit shall also meet all requirements of the State of California Fire Marshal.

10. Unit must be UL 217 listed for both wall and ceiling mount interconnect wire. Thermal sensor shall be self-restoring.

9. The manufacturer shall provide other compatible alarm models with the following optional features: a) 135°F fixed temperature isolated thermal with normally opened contact for remote connection to local alarm or annunciator; b) 135°F fixed temperature integral thermal; c) auxiliary Form A/Form C relay contacts for initiating remote functions and annunciator; d) relay option that is capable of activation by tandem interconnect wire. Thermal sensor shall be self-restoring.

8. The alarm shall have a tandem interconnect capability of up to 12 units or 6 units with relay.

7. The manufacturer shall provide other compatible alarm models with the following optional features: a) 135°F fixed temperature isolated thermal with normally opened contact for remote connection to local alarm or annunciator; b) 135°F fixed temperature integral thermal; c) auxiliary Form A/Form C relay contacts for initiating remote functions and annunciator; d) relay option that is capable of activation by tandem interconnect wire. Thermal sensor shall be self-restoring.

6. A visual LED monitor (condition indicator) will pulse in normal operation and will remain solid in alarm.

5. An easily accessible test knob shall be provided. The test knob in the TEST position will simulate an actual smoke condition of approximately 3.4% causing the detector to alarm within 20-36 seconds. It will also have the capability of testing to 0.85% as a required minimum. A magnetic switch closure or other switch closure, or smoke generating equipment which does not scatter the light beam or test sensitivity is not sufficient.

4. The alarm shall have a tandem interconnect capability of up to 12 units or 6 units with relay.

3. The manufacturer shall provide other compatible alarm models with the following optional features: a) 135°F fixed temperature isolated thermal with normally opened contact for remote connection to local alarm or annunciator; b) 135°F fixed temperature integral thermal; c) auxiliary Form A/Form C relay contacts for initiating remote functions and annunciator; d) relay option that is capable of activation by tandem interconnect wire. Thermal sensor shall be self-restoring.

2. The alarm shall utilize an infrared LED sensing circuit which pulses in 4 to 5 second intervals; when subjected to smoke the pulse rate shall increase 8 times. After 2 consecutive pulses in smoke, the detector will alarm.

1. The alarm shall provide minimum 5-to-1 signal-to-noise ratio in the optics frame to assure stability of operation in environments of high RF and transient conditions.

0. The sensing chamber shall be fully protected to prevent entrance of small insects, thus reducing the probability of false alarms.

0. A solid state piezo alarm rated at 90dB at 10ft.

0. A visual LED monitor (condition indicator) will pulse in normal operation and will remain solid in alarm.

0. An easily accessible test knob shall be provided. The test knob in the TEST position will simulate an actual smoke condition of approximately 3.4% causing the detector to alarm within 20-36 seconds. It will also have the capability of testing to 0.85% as a required minimum. A magnetic switch closure or other switch closure, or smoke generating equipment which does not scatter the light beam or test sensitivity is not sufficient.

0. The alarm shall have a tandem interconnect capability of up to 12 units or 6 units with relay.

0. The manufacturer shall provide other compatible alarm models with the following optional features: a) 135°F fixed temperature isolated thermal with normally opened contact for remote connection to local alarm or annunciator; b) 135°F fixed temperature integral thermal; c) auxiliary Form A/Form C relay contacts for initiating remote functions and annunciator; d) relay option that is capable of activation by tandem interconnect wire. Thermal sensor shall be self-restoring.

0. California Fire Marshal.

0. All equipment shall be completely factory assembled, wired and tested, and the contractor shall be prepared to submit a certified letter testifying to this condition.

0. Alarms which do not meet all of the requirements of this specification will not be considered.

FMM-1, FMM-101, FZM-1, FDM-1 Monitor Modules with FlashScan®

Section: Intelligent/Addressable Devices

GENERAL

Four different monitor modules are available for NOTIFIER intelligent controls to suit a variety of applications. Monitor modules are used to supervise a circuit of dry-contact input devices, such as conventional heat detectors and pull stations, or monitor and power a circuit of two-wire smoke detectors (FZM-1).

FMM-1 — is a standard-sized module (typically mounts to a 4" [10.16 cm] square box) that supervises either a Class A (Style D) or Class B (Style B) circuit of dry-contact input devices.

FMM-101 — is a miniature monitor module (a mere 1.3" [3.302 cm) H x 2.75" (6.985 cm) W x 0.5" (1.270 cm) D) used to supervise a Class B (Style B) circuit. Its compact design allows the FMM-101 to often be mounted in a single-gang box behind the device it's monitoring.

FZM-1 — is a standard-sized module used to monitor and supervise compatible two-wire, 24 volt, smoke detectors on a Class A (Style D) or Class B (Style B) circuit.

FDM-1 — is a standard-sized dual monitor module used to monitor and supervise two independent two-wire initiating device circuits (IDCs) at two separate, consecutive addresses in intelligent, two-wire systems.

FlashScan® (U.S. Patent 5,539,389) is a new communication protocol developed by NOTIFIER Engineering that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel CPU stops the group poll and concentrates on single points. The net effect is response speed *greater than five times* that of other designs.

FMM-1 MONITOR MODULE

Built-in type identification automatically identifies this device as a monitor module to the control panel.

- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address: 01 – 159 on FlashScan systems, 01 – 99 on CLIP systems.
- LED flashes green during normal operation (this is a programmable option) and latches on steady red to indicate alarm.

The **FMM-1 Monitor Module** is intended for use in intelligent, two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It provides either a two-wire or four-wire fault-tolerant Initiating Device Circuit (IDC) for normally-open-contact fire alarm and supervisory devices. The module has a panel-controlled LED indicator. The FMM-1 can be used to replace MMX-1 modules in existing systems.

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

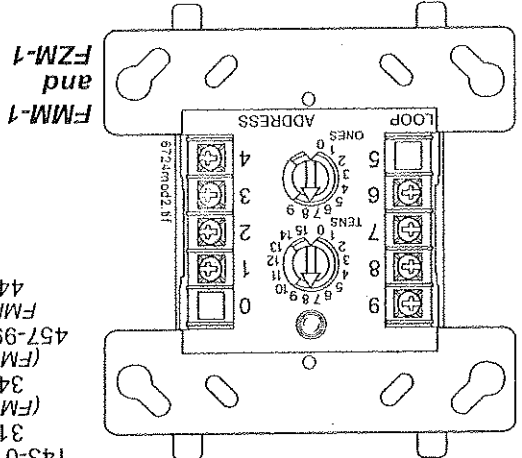
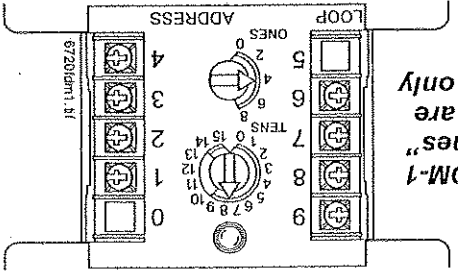
12 Clintonville Road, Northford, Connecticut 06472

by Honeywell
NOTIFIER

ISO 9001
CERTIFIED
ENGINEERING & MANUFACTURING
QUALITY SYSTEMS

FMM-1 Applications — Use to monitor a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with *special supervisory indication* at the control panel. Monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the Style B circuit. No resistor is required for supervision of the Style D circuit. Maximum IDC loop length is 2,500 ft./762 m (20 ohms maximum).

addresses are — note "ones" — 0, 2, 4, 6, 8 only



- 143-01-E (FDM-1)
- 317-01-E (FMM-1/101)
- 345-02-E (FMM-1/101)
- 457-99-E (FZM-1)
- 447-99-E (FMM-1/101)

MEA

- 03/60011 (E1)
- (FMM-1/101, FZM-1)
- 94/60004/E2 (AFP200)
- except FDM-1)
- 02/60007 (NFS-640: FDM-1)

7300-0028:202

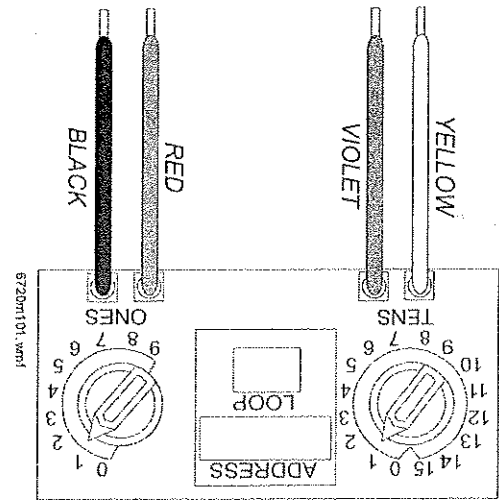
- U.S. Coast Guard 161.002/233 (AFP-200)
- FMM-1/101, FZM-1) 161.002/421 (NFS-640: FMM-1/101)
- California State Fire Marshal 7300-0028:202



FMM-101 Operation — Each FMM-101 uses one of 159 available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and Line Resistor (provided) terminates the circuit.

FMM-101 Applications — Use to monitor a single device or a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit/device is wired as an NFPA Style B (Class B) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the circuit.

The FMM-101 Mini Monitor Module can be installed in a single-gang junction directly behind the monitored unit. Its small size and light weight allow it to be installed without rigid mounting. The FMM-101 is intended for use in intelligent, two-wire systems where the individual address of each module is selected using rotary switches. It provides a two-wire initiating device circuit for normally-open-contact fire alarm and security devices. The FMM-101 can be used to replace MMX-101 module in existing systems.



- Built-in type identification automatically identifies this device as a monitor module to the panel.
- Powered directly by two-wire FACP. No additional power required.
- High noise (EMF/RFI) immunity.
- Tinned, stripped leads for ease of wiring.
- Direct-dial entry of address: 01 – 159 on FlashScan systems, 01 – 99 on CLIP systems.

FMM-101 MINI MONITOR MODULE

FMM-101 Specifications

• Nominal operating voltage: 15 to 32 VDC.
 • Maximum current draw: 5.1 mA (LED on).
 • Maximum operating current: 375 µA (LED flashing).
 • EOL resistance: 47K ohms.
 • Temperature range: 32°F to 120°F (0°C to 49°C).
 • Humidity range: 10% to 93% noncondensing.
 • Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4" (10.16 cm) square x 2.125" (5.398 cm) deep box.

FMM-1 Operation — Each FMM-1 uses one of 159 available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

FZM-1 Operation — Each FZM-1 uses one of 159 available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

FZM-1 Specifications

FZM-1 Applications — Use the FZM-1 to monitor a zone of two-wire smoke detectors. The monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. A 3.9 K ohm End-of-Line Resistor (provided) terminates the end of the Style B or D (class B or A) circuit (maximum IDC loop resistance is 25 ohms). Install ELR across terminals 8 and 9 for Style D application.

FZM-1 Operation — Each FZM-1 uses one of 159 available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

FZM-1 Interface Module is intended for use in intelligent, addressable systems, where the individual address of each module is selected using built-in rotary switches. This module allows intelligent panels to interface and monitor two-wire conventional smoke detectors. It transmits the status (normal, open, or alarm) of one full zone of conventional detectors back to the control panel. All two-wire detectors being monitored must be UL compatible with the module. The FZM-1 has a panel-controlled LED indicator and can be used to replace MMX-2 modules in existing systems.

- Supports compatible two-wire smoke detectors.
- Supervises IDC wiring and connection of external power source.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address: 01 – 159 on FlashScan systems, 01 – 99 on CLIP systems.
- LED flashes during normal operation (this is a program-mable option).
- LED latches steady to indicate alarm on command from control panel.

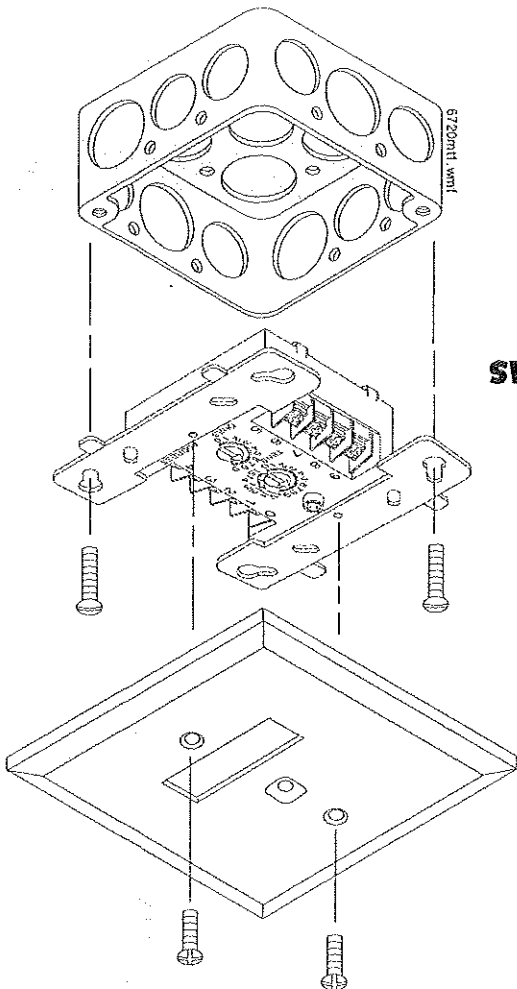
FZM-1 INTERFACE MODULE

FZM-1 Specifications

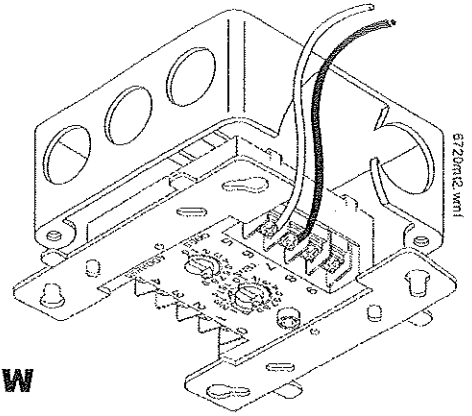
• Nominal operating voltage: 15 to 32 VDC.
 • Maximum operating current: 375 µA.
 • EOL resistance: 47K ohms.
 • Temperature range: 32°F to 120°F (0°C to 49°C).
 • Humidity range: 10% to 93% noncondensing.
 • Dimensions: 1.3" (3.302 cm) high x 2.75" (6.985 cm) wide x 0.5" (1.270 cm) deep.
 • Wire length: 6" (15.24 cm) minimum.

FMM-101 Specifications

• Nominal operating voltage: 15 to 32 VDC.
 • Maximum operating current: 375 µA.
 • EOL resistance: 47K ohms.
 • Temperature range: 32°F to 120°F (0°C to 49°C).
 • Humidity range: 10% to 93% noncondensing.
 • Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4" (10.16 cm) square x 2.125" (5.398 cm) deep box.



MOUNTING DIAGRAMS
for standard-sized modules



Face Plate for FMM-1, FZM-1, and FDM-1



Avoid duplicating addresses on the system.

CAUTION!

The FDM-1 automatically assigns itself to two addressable points, starting with the original address. For example, if the FDM-1 is set to address "56", then it will automatically assign itself to address "56" and "57". NOTE: "ones" addresses on the FDM-1 are 0, 2, 4, 6, or 8 only. Terminals 6 and 7 use the first address, and terminals 8 and 9 use the second address.

FDM-1 Automatic Addressing

Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 2.125" (5.398 cm) deep.
 Humidity range: 10% to 93% (non-condensing).
 Temperature range: 32° to 120°F (0° to 49°C).
 Maximum IDC wiring resistance: 1,500 ohms.
 EOL resistance: 47k ohms.
 Maximum operating current: 750 µA (LED flashing).
 Maximum current draw: 5.7 mA (LED on).
 Normal operating voltage range: 15 to 32 VDC.

FDM-1 Specifications

The FDM-1 Dual Monitor Module is intended for use in intelligent, two-wire systems. It provides two independent two-wire initiating device circuits (IDCs) at two separate, consecutive addresses. It is capable of monitoring normally open contact fire alarm and supervisory devices; or either normally open or normally closed security devices. The module has a single panel-controlled LED. NOTE: The FDM-1 provides two Class B (Style Y) IDC circuits ONLY. Class A (Style Z) IDC circuits are NOT supported in any application.

FDM-1 DUAL MONITOR MODULE

ARCHITECTS/ENGINEERS' SPECIFICATIONS

SMB500	Optional surface-mount backbox.
FDM-1	Monitor module, dual, two independent Class B circuits.
FZM-1	Monitor module, two-wire detectors.
FMM-101	Monitor module, miniature.
FMM-1	Monitor module.

PRODUCT LINE INFORMATION

The FMM-101 module is intended to be wired and mounted without rigid connections inside a standard electrical box. All wiring must conform to applicable local codes, ordinances, and regulations. The FMM-101 module is intended to be wired and mounted without rigid connections inside a standard electrical box. All wiring must conform to applicable local codes, ordinances, and regulations. These modules are intended for power-limited wiring only.

INSTALLATION

FMM-1, FDM-1, and FZM-1 modules mount directly to a standard 4" (10.16 cm) square, 2.125" (5.398 cm) deep, electrical box. They may also be mounted to the SMB500 surface-mount box. Mounting hardware and installation instructions are provided with each module. All wiring must conform to applicable local codes, ordinances, and regulations.

Specifications of these and all NOTIFIER products are available from NOTIFIER. FlashScan® and NOTIFIER® is a registered trademark of Honeywell International Inc. ©2005 Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.

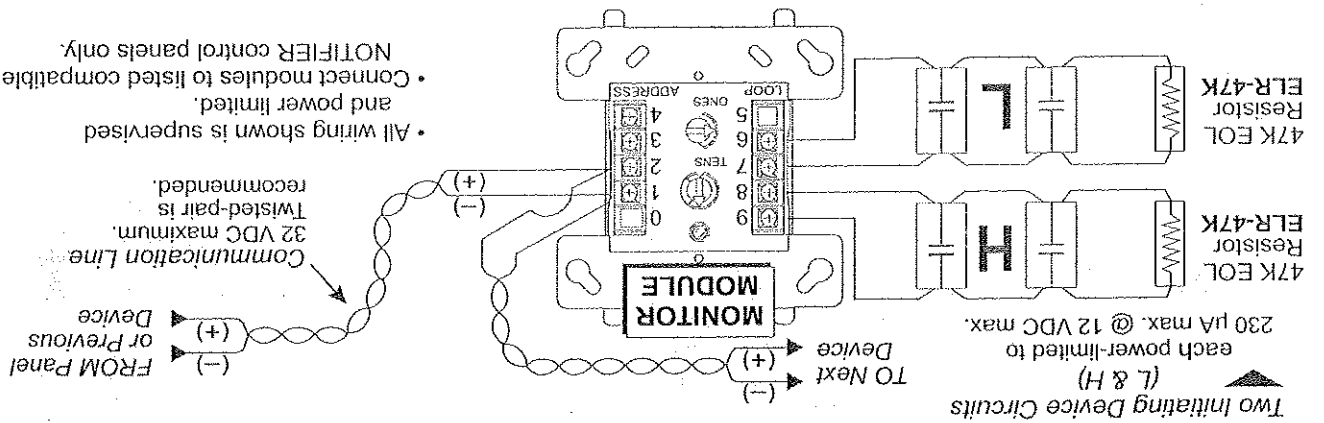
WIRING DIAGRAMS

The following wiring diagrams are included:

- 1) FDM-1, typical dual two-wire Style B initiating device circuit configuration.
- 2) FMM-101, typical two-wire Style B initiating device circuit configuration.
- 3) FMM-1, typical two-wire initiating circuit configuration, NFPA Style B.
- 4) FMM-1, typical four-wire fault-tolerant initiating circuit configuration, NFPA Style D.
- 5) FMM-1, typical two-wire initiating circuit configuration for security systems (with alarm versus short capability).
- 6) FZM-1, interface two-wire conventional detectors, NFPA Style B.
- 7) FZM-1, interface two-wire conventional detectors, NFPA Style D.
- 8) FRM-1, relay control module used to disconnect a power supply.

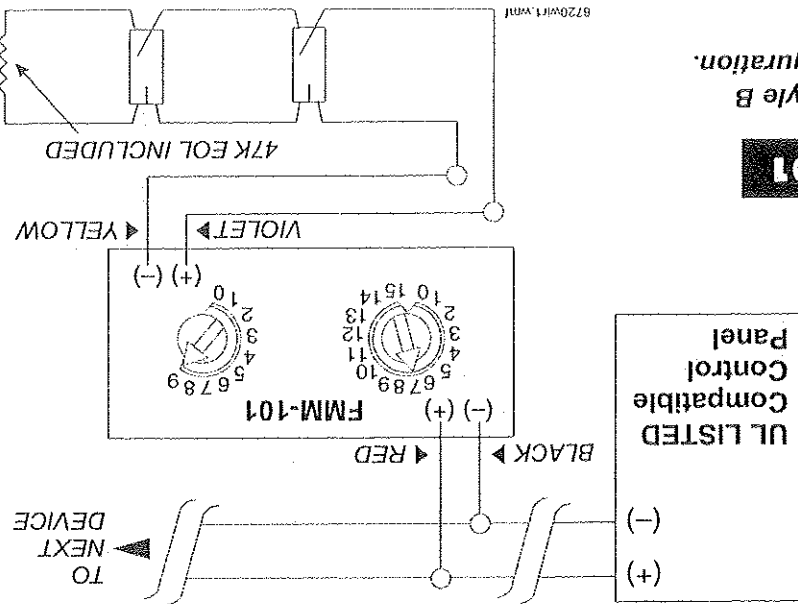
WIRING DIAGRAM: FDM-1

Fig. 1 FDM-1: Typical dual two-wire Style B initiating device circuit configuration.



WIRING DIAGRAM: FMM-101

Fig. 2 FMM-101: Typical two-wire Style B initiating device circuit configuration.



WIRING DIAGRAMS THIS PAGE: FMM-1

- Connect modules to listed compatible NOTIFIER control panels only.
- All wiring shown is supervised and power limited.
- Install contact closure devices per manufacturers' installation instructions.
- Any number of UL-listed contact closure devices may be used.
- **DO NOT MIX** fire alarm initiating, supervisory, or security devices on the same circuit.

Fig. 3 FMM-1: Typical two-wire initiating device circuit configuration, NFPA Style B.

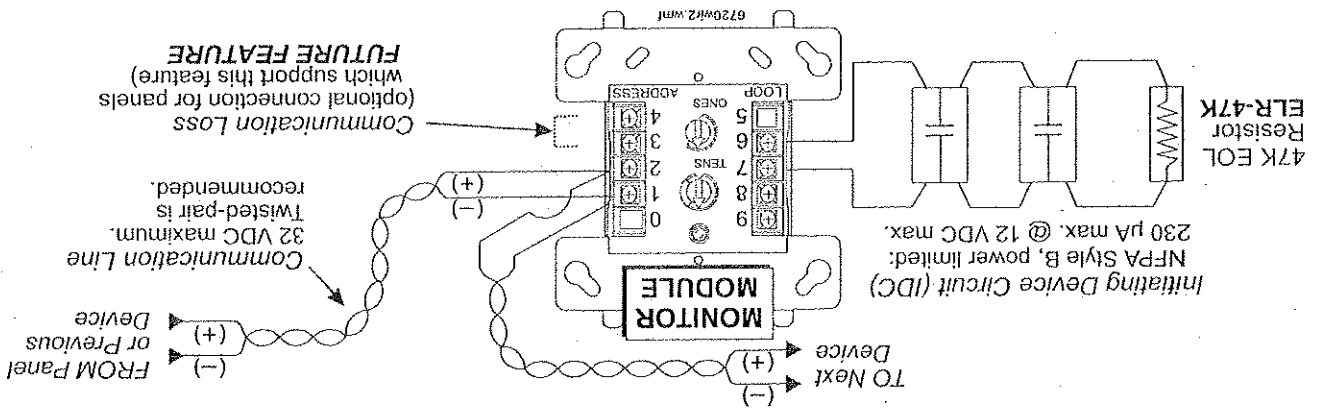


Fig. 4 FMM-1: Typical four-wire fault-tolerant initiating circuit configuration, NFPA Style D.

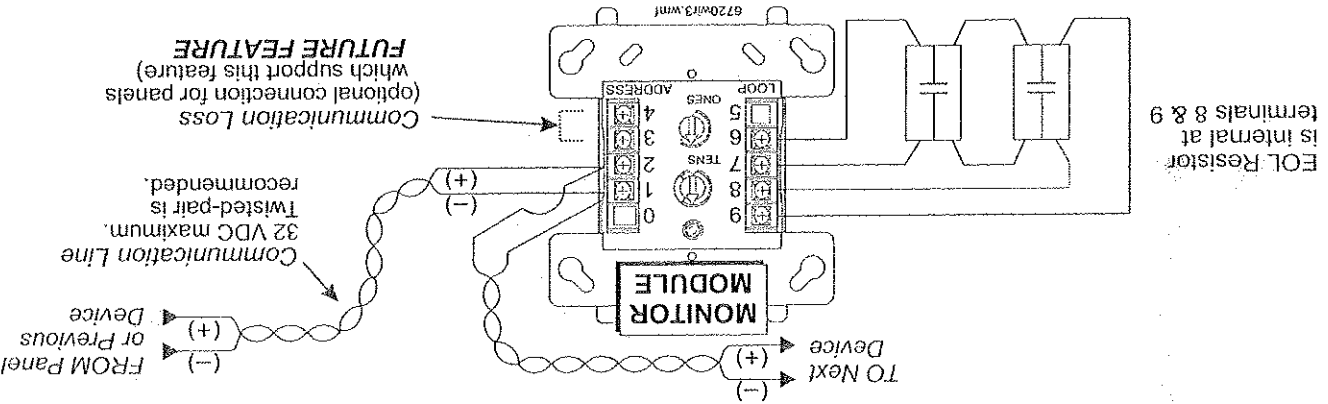
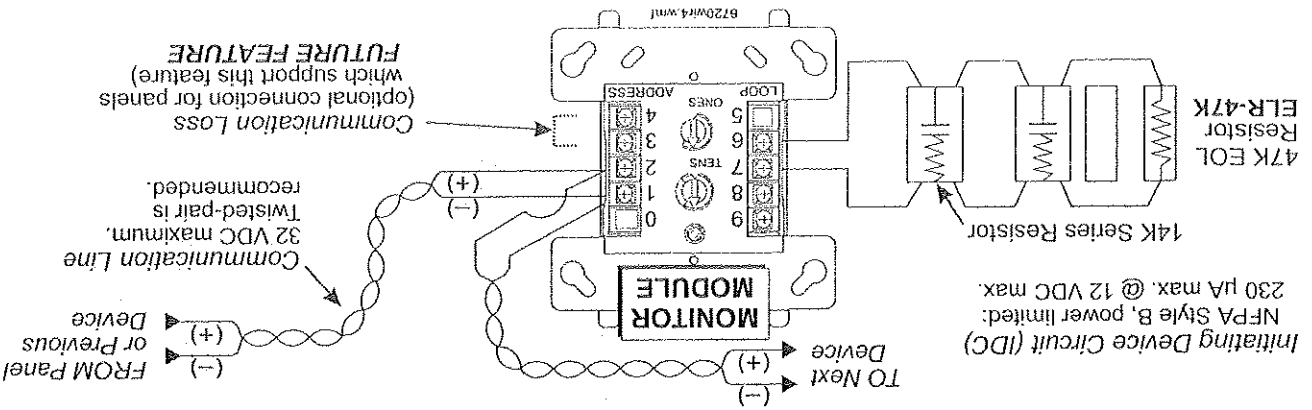
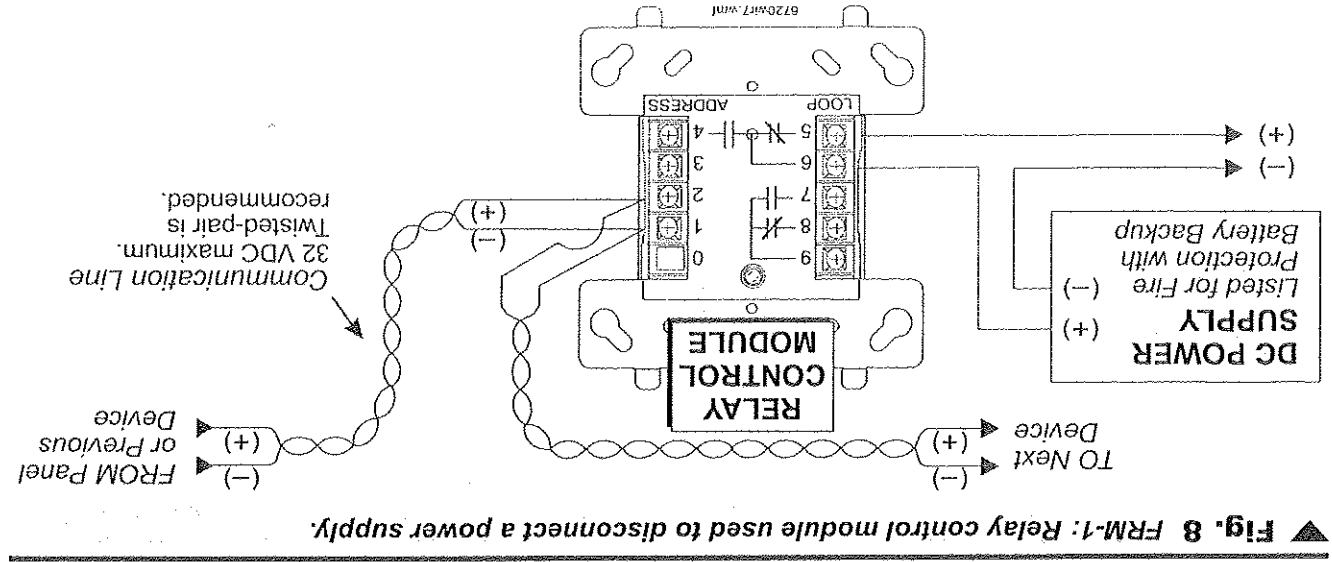
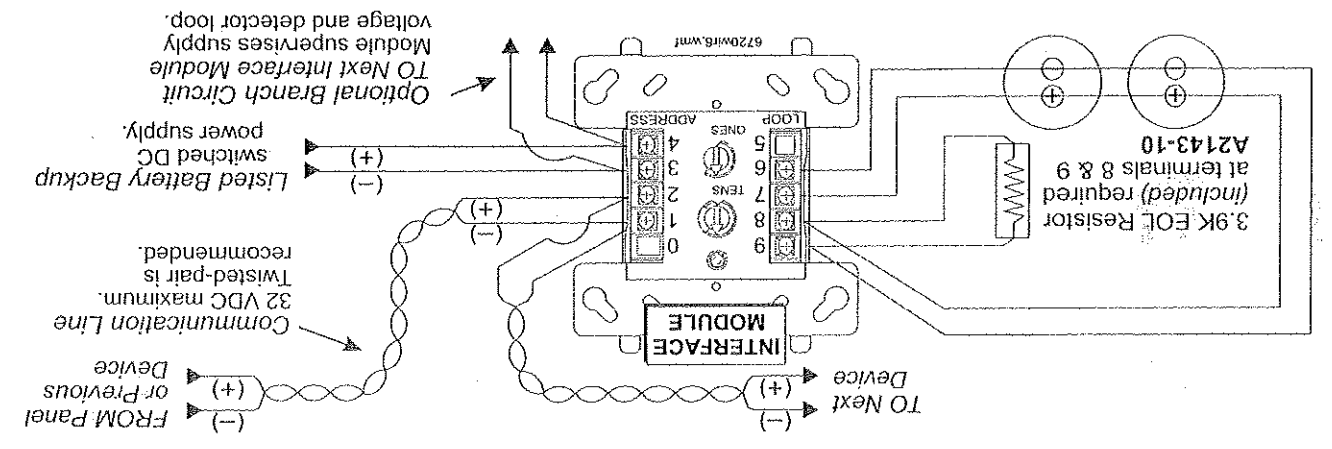


Fig. 5 FMM-1: Typical two-wire initiating circuit configuration for security systems (with alarm versus short capability).

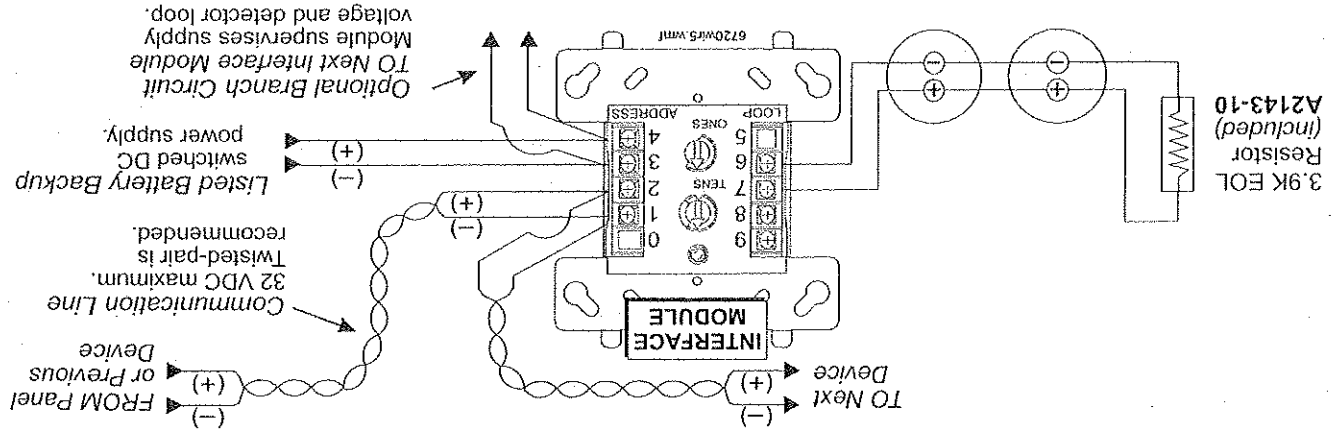




▲ Fig. 8 FRM-1: Relay control module used to disconnect a power supply.



▲ Fig. 7 FZM-1: Interface two-wire conventional detectors, NFPA Style D.



▲ Fig. 6 FZM-1: Interface two-wire conventional detectors, NFPA Style B.

used to switch power from a standard power supply; see Fig. 7 below.

WIRING DIAGRAMS THIS PAGE: FZM-1, FRM-1

- Connect modules to listed compatible control panels only.
- Terminal wiring must be power limited.
- **DO NOT MIX** fire alarm initiating, supervisory, or security devices on the same circuit.
- **DO NOT LOOP** wire under terminals. Break wire run to provide supervision of connections.
- Detectors must be UL listed compatible with module.
- Install detectors per manufacturers' installation instructions.
- Power to the interface module must be externally switched to reset the detectors. An FRM-1 relay control module can be used to switch power from a standard power supply; see Fig. 7 below.

ISO-X Fault Isolator Module

Section: Intelligent Addressable Devices

GENERAL

The NOTIFIER ISO-X Fault Isolator Module is used with the NFS-3030, AM2020, AFP1010, NFS-640, AFP-400, AFP-300, AFP-200, AFP-100 and System 5000 (equipped with an AIM-200 module) to protect the system against wire-to-wire short circuits on the SLC loops.

FEATURES

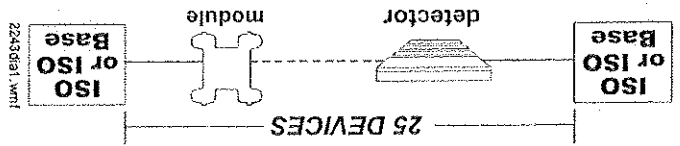
- Powered by SLC loop directly, no external power required.
- Mount in standard 4.0" (10.16 cm) square (2.125" [5.398 cm] deep) junction boxes.
- Integral LED blink to indicate normal condition. Illuminates steady when short circuit condition is detected.
- High noise (EMF/RFI) immunity.
- Wide viewing angle of LED.
- SEMS screws with clamping plates for ease of wiring.
- Opens SLC loop automatically on detection of short, preventing the short from causing failure of the entire loop.
- Automatically resets on correction of short.
- Supports Style 4, 6, or 7 wiring.

APPLICATIONS

The Fault Isolator Modules should be spaced between groups of sensors in a loop to protect the rest of the loop. Use to isolate short circuit problems within a section of a loop so that other sections can continue to operate normally. The ISO-X supports a maximum of 25 devices in-between isolators, except when using relay bases or IPX multisensors.

NOTE ON LOADS PER RELAY BASE AND MULTISENSOR DETECTORS/ISOLATORS/ISOLATOR BASES:

The maximum number of addressable devices between isolators (or B224BI isolator bases) is 25 devices.

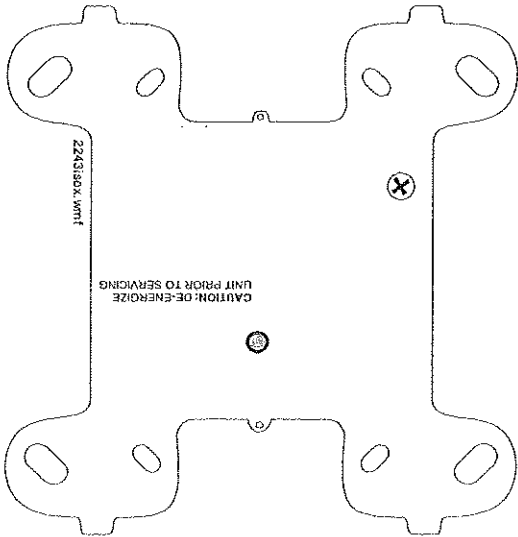


B224RB relay bases and IPX-751 multisensor detectors draw more current than all other intelligent devices. When calculating the 25-device maximum:

- B224RB represents 2.5 DEVICES.
- IPX-751 in a standard base represents 12 DEVICES.
- IPX-751 in a relay base represents 14.5 DEVICES.
- All other addressable devices represent 1 DEVICE.

See examples on page 2.

NOTE ON MAXIMUM NUMBER OF DEVICES: Up to 100 ISO-X modules and/or bases can be used per Signaling Line Circuit (SLC) without loss of additional module addresses due to current limitations. Each module or base added beyond 100 units reduces the capacity of an SLC by two address positions. All SLC field devices must have been purchased after February 1995 to meet the



ISO-X Fault Isolator Module

94/60004 (E2)
93/60140 (E2)



BSA
578-81-SA

317-01-E
447-99-E
104-93-E Vol. VI
290-91-E Vol. V

MEA

S635 (u0xx)
BP6480
(AMCX, APOU)

LISTED



CS699
CS118/CS733
(model ISO-XA)



US Coast Guard
161-002123/2 (AFP-200)
161-002127/3
(AFP1010, AM2020)
161-002142/1 (NFS-640)

7165-0028:141
7165-0028:164
7165-0028:181
7165-0028:214
7165-0028:224
7170-0028:153
7170-0028:182
7170-0028:204
7170-0028:216
7170-0028:223

CONSTRUCTION

The face plate is made of off-white plastic. Includes yellow LED indicator that pulses when normal and illuminates steady when a short is detected.

OPERATION

Automatically opens circuit when the line voltage drops below four volts. Fault Isolator Modules should be spaced between groups of addressable devices (maximum 25, see notes on page 1) in a loop to protect the rest of the loop. If a short occurs between any two isolators, then both isolators immediately switch to an open circuit state and isolate the groups of sensors between them. The remaining units on the loop continue to fully operate.

In Style 4 loops, the ISO-X is generally used at each T-tap devices on that branch. The LED indicator is on continuously during a short circuit condition.

The ISO-X Fault Isolator Module automatically restores the shorted portion of the communications loop to normal condition when the short circuit condition is removed.

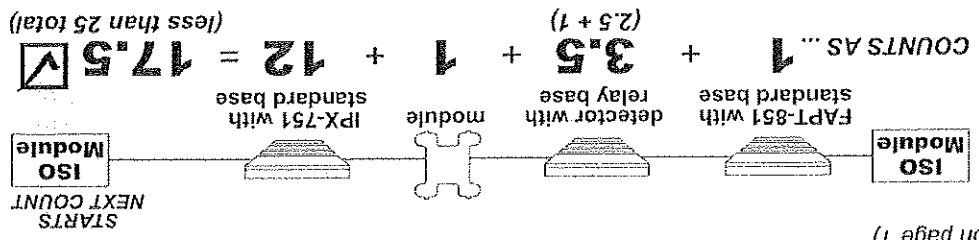
INSTALLATION

- Mount on a standard 4" (10.16 cm) mounting junction box which is at least 2.125" (5.398 cm) deep.
- Terminal screws are provided for "in and out" wiring.
- Installation instructions are provided with each module.
- Surface-mount box is available as an option.

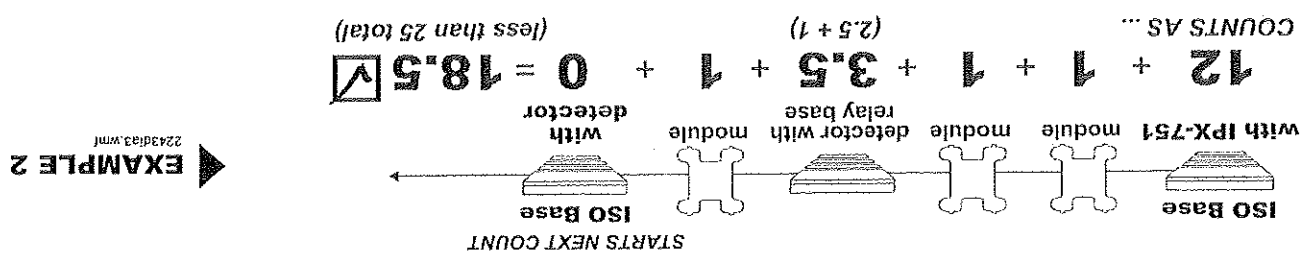
EXAMPLES OF DEVICE COUNTS

(see notes under Applications on page 1)

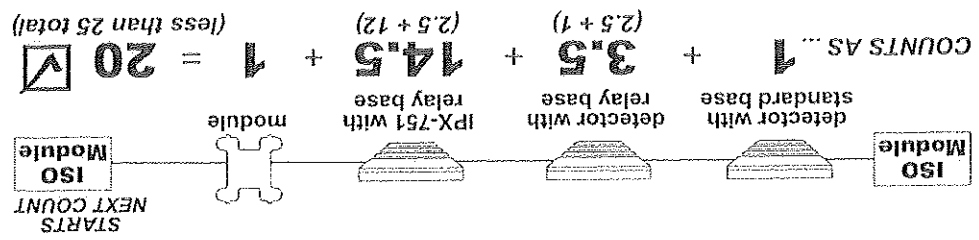
EXAMPLE 1



EXAMPLE 2



EXAMPLE 3



SPECIFICATIONS

Operating voltage: 15 – 32 VDC (peak).
 Current range: 5 mA for LED latched in alarm.
 Standby current: 400 µA maximum, plus supervision current.
 Pulsing current: 30 mA for 15 ms (CMX-1, CMX-2, FCM-1).
 Temperature range: 32°F to 120°F (0°C to 49°C).
 Relative humidity: 10% to 93%.
 Weight: 150 grams (5 oz.).

PRODUCT LINE INFORMATION

ISO-X Isolator Module.
 ISO-XA Isolator Module. Canadian (ULC) version.
 SMB500 Surface Mount Backbox.

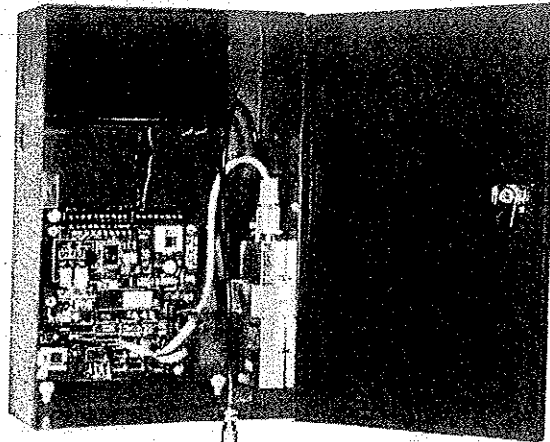
ARCHITECTURAL/ENGINEERING SPECIFICATIONS

Fault Isolator Modules shall be provided to automatically isolate wire-to-wire short circuits on an SLC loop. The Fault Isolator Module shall limit the number of modules or detectors that may be rendered inoperative by a short circuit fault on the SLC Loop. If a wire-to-wire short occurs, the Fault Isolator Module shall automatically open-circuit (disconnect) the SLC loop. When the short circuit condition is corrected, the Fault Isolator Module shall automatically reconnect the isolated section of the SLC loop. The Fault Isolator Module shall not require any address-setting, and its operations shall be totally automatic. It shall not be necessary to replace or reset an Fault Isolator Module after its normal operation. The Fault Isolator Module shall mount in a standard 4.0" (10.16 cm) deep electrical box, in a surface-mounted backbox, or in the Fire Alarm Control Panel. It shall provide a single LED which shall flash to indicate that the Isolator is operational and shall illuminate steadily to indicate that a short circuit condition has been detected and isolated.

7750F

RF Subscriber Unit

UL Fire and AA Burglary Listed
 NFPA-72 Compliant



UL Listed
 UL Listed Central station
 Remote Station
 864, 827, 1610, 365, 681
 CSFM

Advanced Wireless Alarm Monitoring

The 7750-F 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 7750-F supports a wide range of inputs such as NO/NC/EOL and direct voltage. It automatically senses phone line cuts and antenna cuts, and monitors battery and AC power status. Advanced status reporting, self-diagnostics and a built-in power supply make the 7750-F 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 burglary data.

Available Configurations

7750 F 4x4 - 4 reversing polarity inputs plus 4 programmable EOL inputs
 7750 F 8 - 8 programmable EOL inputs

Available Options

FireTap 7768
 IntellITap 7067
 NEMA 4 Enclosure
 High Gain Antenna
 Back Up Battery

• UL Listed

(Fire & AA Burglary)

• NFPA-72 Compliant

• 864, 827, 1610, 365, 681

• Options for Full Data for Fire and Burglary

• Available in 4 & 8 Zone Configurations

• Built-in Power Supply and Battery Charger





7750F 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: NON/C/EOL, trouble restore

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 AH option

Low Battery Reporting

22.5-minute test cycle

AC Status

Reports to central station after approximately 4 minutes without AC power, reports power restored after approximately 4 minutes of restored power

Antenna Cut (local reporting)

12 VDC signal output at output 4, 200 mA max load

Open Collector Output

200mA maximum load

Size

13.25"H x 8.5"W x 4.3"D

Weight

34cm x 21.5cm x 11cm

Colors

Available in standard Burglary Beige or Fire Red

Operating Temperature Range

Please specify when ordering

Storage Temperature Range

0° to 50°C, 32° to 122°F

Relative Humidity Range

0-85% RHC non-condensing

Back up Battery

12V, 7 AH option

Low Battery Reporting

22.5-minute test cycle

Alarm Signal Inputs

• 4 individually programmable Zones: NON/C/EOL, trouble restore

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 AH option

Low Battery Reporting

22.5-minute test cycle

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.

Please specify when ordering

- 7067 - IntelliTap
- 7768 - FireTap

polarity inputs with 4 EOL inputs and 4 reverse

- 7750F-4x4 RF subscriber unit
- 7750F-8 RF subscriber unit

Please specify when ordering

Available in standard Burglary Beige or Fire Red

Colors (excluding battery)

6.4 lbs, 2.9 kilograms

13.25"H x 8.5"W x 4.3"D

34cm x 21.5cm x 11cm

200mA maximum load

12 VDC signal output at output 4, 200 mA max load

after approximately 4 minutes of restored power

Reports to central station after approximately 4 minutes without AC power, reports power restored after approximately 4 minutes of restored power

12 VDC signal output at output 4, 200 mA max load

200mA maximum load

16.5 VAC, 40VA UL listed Class II transformer required

2 watts (requires FCC license)

450-470 MHz and 130-174 MHz, VHF and UHF. Others available

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

2 watts (requires FCC license)

16.5 VAC, 40VA UL listed Class II transformer required

12 VDC nominal

175mA standby; 800mA transmit

4 individually programmable Zones: NON/C/EOL, trouble restore

0-85% RHC non-condensing

0° to 50°C, 32° to 122°F

-10° to 60°C, 14° to 140°F

0-85% RHC non-condensing

12V, 7 AH option

22.5-minute test cycle

Available configurations

- 4 EOL inputs
- 8 EOL inputs
- 4 EOL inputs w/4 reverse polarity inputs

- NEMA 4 Enclosure

↩ AMSECO AS-XF1640Y - TRANSFORMER 16.0 VAC 40V



16.5 VAC, 40VA OUTPUT

- UL, CSA Approved
- Direct plug-in to a 120VAC, 60 Hz power outlet
- Attractive designer white housing
- Output power 20VA (watts)
- Heavy polyurethane insulated copper windings
- Single voltage primary and secondary
- Dimensions (mm): 2.16W x 1.96D x 3.18H (55 x 50 x 81)

ANTENNAS

Casstop Flex "Rubber Duck" Antenna, 2.5db - 460-470 MHz, 5W, 10" high, black vinyl clad flexible antenna, mounts on subscriber case, TNC connector, cable included, indoor use, order part no. 7214

Standard Antenna, 3db - 460-470 MHz, 50W, 18", stainless steel mast, universal mount, includes ground radials, in/outdoor use, order part no. 7210-3-UM

Stealth Antenna, 3db, 460-470MHz, 50W, 18", vinyl clad, easy hang mount, TNC connector on 10' cable included, indoor use, order part no. 7211

Hi Gain Antenna, 5db, 460-470MHz, 50W, 36", stainless steel mast, universal mount, includes ground radials, "N" connector, in/outdoor use, order part no. 7210-5-UM

Rugged Hi Gain Antenna, 6db, 460-470 MHz, 150W, 60" high, fiberglass mast, pipe mount, ground radials included, in/outdoor use, order part no. 7210-6-UC

Higher Gain Antenna, 7db, 460-470 MHz, 200W, 72" high, fiberglass mast, pipe mount, includes ground radials, in/outdoor use, order part number 7210-7-US

Central Station Antenna, 9db, 460-470 MHz, 200W, 96" high, fiberglass mast, pipe mount, includes ground radials, in/outdoor use, order part number 7210-9-UC

Low Loss Antenna Cable / RG58 low loss type, connectors are BNC male to N male, use with any ABS subscriber and antenna with "N" type connectors.

25 foot Cable, part no. 7220-25-N
10 foot Cable, part no. 7220-10-N

Bandpass Cavity Filter - Enhances radio performance by filtering out unwanted RF energy. Custom tuned to specified frequency. Connectors are N female to N female. Custom ordered, call for details.

Lighting Protector - N female to N female Coax Inline. A MUST for systems with outdoor antennas, order part number 7230

OTHER ACCESSORIES

Portable Programmer / Terminal for setting parameters of subscriber units. Also sends and receives text messages, monitors data flow and can be used for initial set up of receivers. Order part number 7041.

Cable / adapter for 7041 programmer for use on 7050-DLR, 7750/UL and receiver. Order part number 7241-E.

PC Programmer / Adapter provides programming of subscriber from a PC using a terminal program (use in place of the portable programmer). Order part no. 7043.

Output Cable & Connector for trouble output on 7050-E, 7450, 7750-F series subscriber units. Sold in packages of 10, order part no. 7240.

Weather Resistant Cases for AES Subscriber units are available, contact us for details.

Expansion Modules for 7050-DLR Subscriber Unit only

7065 Relay Output Module - provides 8 Form C relay outputs for the 7050-DLR. Relay are controlled from the central receiver through Net7K, or through custom designed applications. Up to 64 relays can be controlled by on 7050-DLR. Order part no. 7065.

7070 Zone Expansion Module - provides 16 additional zones for the 7050-DLR, programmable for EOL/NC/NO operation. Up to 4 modules can be added, providing an additional 64 zones to the original 8 for a total of 72 zones. Order Part No. 7070.

7072 Multi-Function Module - provides power supply for the 7050-DLR subscriber unit, plus inputs for tamper, AC and battery status. Also provides an output to report an antenna cut. Order Part No. 7070.

Multi-Voltage Conventional Relays



by Honeywell

Miscellaneous

General

System Sensor's multi-voltage conventional relays are used for high-current switching applications such as fan and damper assembly control, door control, air handling unit controls, and other types of system interlocking.

The R-10T(A)/20T(A) and R-14T(A)/R-24T(A) models are multi-voltage relays with terminal strip wiring connections, mounting track and hardware. The R-10T(A) is a single FORM-C (SPDT) relay with a red activation LED, and the R-14T(A) is a 4-gang 1 FORM-C (SPDT) relay with 4 red activation LEDs. The R-20T(A) is a single 2 FORM-C (DPDT) relay with red activation LED, and the R-24T(A) is a 4-gang 2 FORM-C (DPDT) relay with 4 red activation LEDs.

The R-10E(A)/R-20E(A) and R-14E(A)/R-24E(A) are similar to the T series track mount relays, but they are mounted into a steel enclosure. The enclosure has a removable front cover that provides easy access and a LED viewing hole on the top of the cover.

PR-1(A)/PR-2(A)/PR-3(A) are epoxy encapsulated multi-voltage relays. They are single pole double throw relays that use a red LED as a visible indication of relay coil energization. PR-3 is identical to PR-2 except it has an extra pair of wires for redundant power input.

Model EOLR-1(A) is an epoxy encapsulated single pole single throw, normally open relay that can be used as an end of line device in fire alarm systems, e.g. to supervise power supplies.

Specifications

R-10T(A)/R-14T(A)/R-20T(A)/R-24(A)T

Operating Voltage Range: 18-35 VDC, 18-35 VAC, 115 VAC, 230 VAC.

Operating Current:

23 mA @ 24 VDC, 59 mA @ 24 VAC, 150 mA @ 120 VAC, 180 mA @ 240 VAC [R-10T(A)/R-14T(A)].

40 mA DC max. @ 24 VDC, 24 VAC, 92 mA @ 24 VAC, 220 mA @ 120 VAC, 260 mA @ 240 VAC [R-20T(A)/R-24T(A)].

Humidity Range:

10% to 93% (non-condensing).
R-10T(A)/ R-20T(A): 2.5" L x 3.35" W x 1.2" H.
R-14T(A)/R-24T(A): 10" L x 3.35" W x 1.2" H.

Operating Temperature:

-40° F to 158° F (-40°C to 70°C)
24 VDC: 7A with L/R = 5 ms.
120 VAC: 10 A.
120 VAC: 1/6 HP.
230 VAC: 7 A.

Contact Ratings:

Wire Length: 8" minimum.

Wire Length:

30 VDC: 10 A resistive.
250 VAC: 10 A resistive.
120 VAC: 7 A max. (0.35 PF).
24 VDC: 7 A with LR = 5 ms.

Contact Ratings:

Operating Temperature: -40° F to 158° F (-40° C to 70° C).

Operating Temperature:

Dimensions: 0.87" H x 2.01" W x 1.42" D.

Dimensions:

Humidity Range: 10% to 93% RH.

Humidity Range:

Operating Current: 15 mA DC max. @ 24 VDC, 24 VAC, 120VAC.

Operating Current:

Operating Voltage Range: 18-35 VDC, 18-35 VAC, 120 VAC.

Operating Voltage Range:

PR-1(A)

Contact Ratings:

230 VAC: 7 A.
120 VAC: 1/6 HP.
120 VAC: 10 A.

Operating Temperature:

-40° F to 158° F (-40° C to 70° C).

Dimensions:

5.3" W x 2.5" H.
R-14E(A)/R-24E(A): 11" L x 3.75" W x 2.5" H.

Humidity Range:

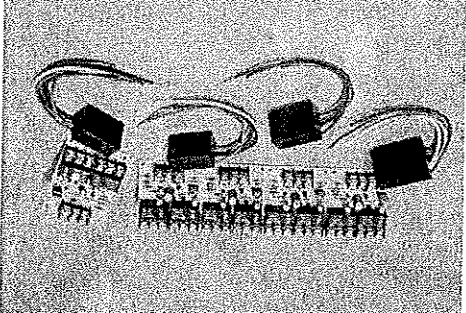
10% to 93% (non-condensing).
R-10E(A)/R-20E(A): 5.1" L x 3.75" W x 2.5" H.

Operating Current:

23 mA DC max. @ 24 V, 59 mA @ 24 VAC, 150 mA @ 120 VAC, 180 mA @ 240 VAC [R-10E(A)/R-14E(A)].

Operating Voltage Range: 18-35 VDC, 18-35 VAC, 115 VAC, 230 VAC.

Multi-Voltage Conventional Relays



701560051510

Agency Listings and Approvals

In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL/ULC Listed: S3705
- ULC Listed: CS669
- MEA: 419-04-E
- CSFM: 7300-1653-173

PRODUCT LINE INFORMATION

NOTE: "A" suffix indicates ULC listed model.

PR-1(A): Epoxy encapsulated single pull double throw (SPDT) relay. It also uses a red LED as a visible indication of relay coil energization with pigtail.

PR-2(A): Epoxy encapsulated single pull double throw (SPDT) activated by 10 to 40 VDC. It uses a red LED as a visible indication of relay coil energization with pigtail.

PR-3(A): Epoxy encapsulated single pull double throw (SPDT) activated by 10 to 40 VDC. It contains an additional black and red wire for redundant power input with pigtail.

EOLR(A): Epoxy encapsulated single pull single throw (SPST) normally open relay that is activated by 9 to 40 VDC. This relay can be used as an end of line device in fire alarm systems, e.g., to supervise power supplies.

R-10T(A): Single (SPDT) relay with a red activation LED.

R-14T(A): 4-gang (SPDT) relay with 4 red activation LEDs.

R-20T(A): Single (DPDT) relay with a red activation LED.

R-24T(A): 4-gang (DPDT) relay with 4 red activation LEDs.

R-10E(A): Single (SPDT) relay with a red activation LED.

R-14E(A): 4-gang (SPDT) relay with 4 red activation LEDs.

R-20E(A): Single (DPDT) relay with a red activation LED.

R-24E(A): 4-gang (DPDT) relay with 4 red activation LEDs.

PR-2(A)/PR-3(A)

Operating Voltage Range: 10 to 40 VDC.

Operating Current: 30 mA DC max.

Humidity Range: 10% to 93% RH.

Dimensions: 0.91" H x 1.65" W x 1.22" D.

Operating Temperature: -40° F to 158° F (-40° C to 70° C).

Contact Ratings: 120 VAC: 10 A (resistive load).

120 VAC: 7 A max. (0.35 PF).

250 VAC: 10 A max. (resistive load).

30 VDC: 10 A max. (resistive load).

Wire Length: 8" minimum.

EOLR-1(A)

Operating Voltage Range: 9 to 40 VDC.

Operating Current: 20 mA DC max.

Humidity Range: 10% to 93% RH.

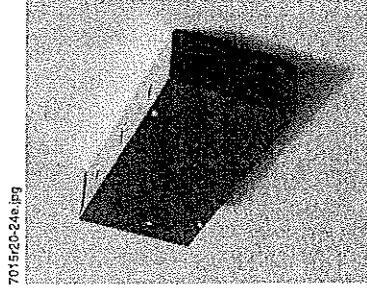
Operating Temperature: -22° F to 140° F (-30° C to 60° C).

Contact Ratings: 120 VAC: 0.5 A max. (resistive load).

30 VDC: 3 A max. (resistive load).

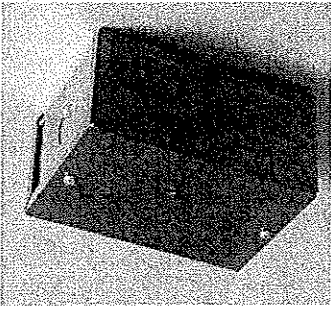
Wire Length: 8" minimum.

R-20E(A) & R-24E(A)
Enclosures



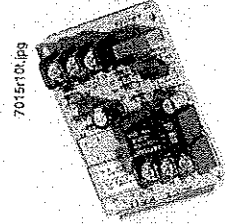
7015r20-24e.jpg

R-10E(A) & R-14E(A)
Enclosures



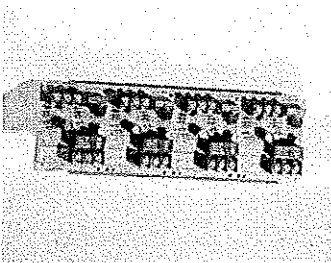
7015r10-14e.jpg

R-10T(A)



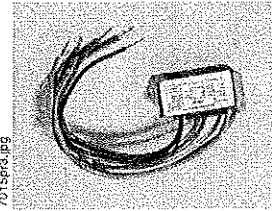
7015r10t.jpg

R-14T(A)



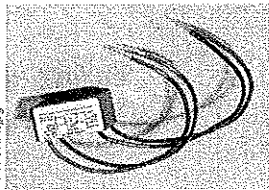
7015r14t.jpg

PR-3(A)



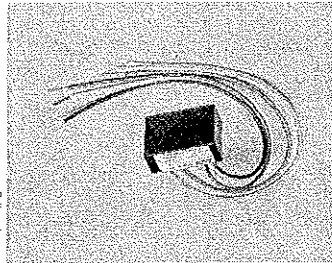
7015pr3.jpg

EOLR-1(A)



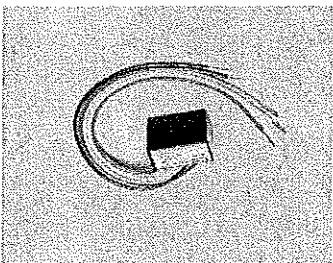
7015eolr1.jpg

PR-1(A)



7015pr1.jpg

PR-2(A)



7015pr2.jpg

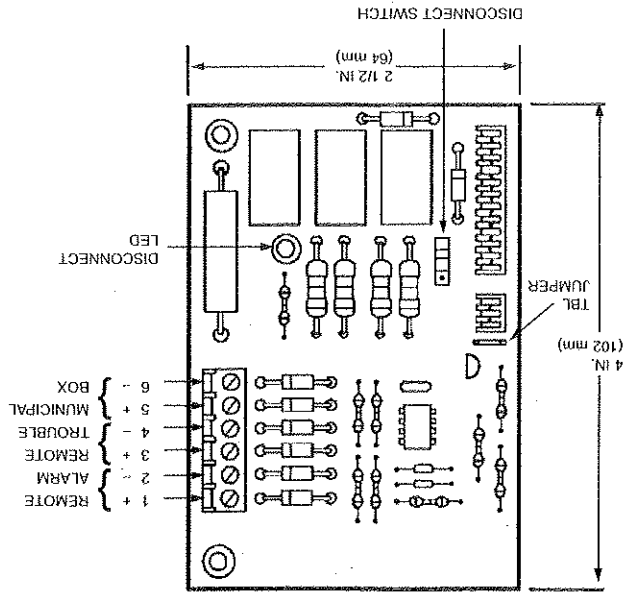


This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

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DETECTION AND CONTROL EQUIPMENT
DATA SHEET
4XTM TRANSMITTER MODULE

4XTM TRANSMITTER MODULE
(POLARITIES SHOWN IN ACTIVATED POSITIONS)



Description

The 4XTM Transmitter Module is an option for the Pyro-Chem control systems. The module provides a supervised output for local energy municipal box trans-mitter (for NFPA 72 Auxiliary Protective Signaling System) and alarm and trouble reverse polarity circuits (for NFPA 72 Remote Station Protective Signaling System). Also included is a DISABLE switch and disable trouble LED. A jumper option allows the reverse polarity circuit to open with a System Trouble condition if no alarm condition exists.

Technical Information

For Local Energy Municipal Box service (NFPA 72 Auxiliary Protective Signaling System):

- Supervisory Current 5.0 mA
- Trip Current 0.35 amps (subtracted from indicating appliance power)
- Coil Voltage 3.65 VDC
- Coil Resistance 14.6 ohms
- Total wire resistance between unit and trip coil 3 ohms

Ordering Information

Part No.	Description	Shipping Weight (kg)
417470	4XTM Transmitter Module	1 (0.5)

Listings and Approvals*

UL S635
 ULC CS118, CS733
 Factory Mutual Research Corporation
 (FMRC) 0V4A5.AY
 MEA 104-93-E

* Listings and Approvals are under NOTIFIER Division of Pitway Corporation

