Norris Inc.

PO Box 2551
2257 West Broadway
South Portland, ME 04106

1.800.370.3473
fax 207.879.0540

www.norrisinc.com

Please fax this information to the Administrative Sales Assistant at the So. Portland Office at (207)-879-0540.

Building Owner Information Form

Job Name:	Project #:

Electrical Contractor:

NFPA requires this information for proper documentation

The contractor MUST provide all of the information with an

asterisk below before ANY equipment can be released.

If building owner contact is unknown provide contact name/tel. of GC and check box

Electrical Contractor Contact Name:	
Estimated Date Equip. Needed:	*Estimated Finals Date:

*Building Owner:

*Job Site Address:

*City:	State:	Zip:

*Contact Name:_____Check here if GC

State

*Phone #:	Fax #:

Thank you for your cooperation.

Please advise the building owners that if this system is equipped with a digital communicator, then they MUST also make monitoring arrangements prior to a certificate of occupancy. Norris Inc. will attempt to contact the building owners

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STOP!

THIS COPY IS FOR YOUR ELECTRICIAN

ON THE JOB-SITE

PLEASE BE SURE THIS COPY IS FORWARDED

1) A riser diagram is enclosed. **DO NOT USE THE ENGINEER'S RISER SHOWN ON THE PLANS.** If there is any information that you question, call us immediately.
2) **YOU MUST CALL AT LEAST FIVE DAYS IN ADVANCE TO SCHEDULE FINAL CONNECTION ASSISTANCE.**
3) All of your wires must be labeled and clear of any grounds, shorts or opens and must maintain polarity throughout. Meter out all circuits before calling for final connection assistance. If applicable verify End of Line resistors are in place.
4) If using shielded cable, the drain wires must be connected and fully insulated (wrapped with tape) so that neither the shield or the drain wire touches the backbox.
5) Unless special arrangements are made, we will make one final job-site visit. If a special visit is required for an elevator inspection or partial occupancy, then additional charges may apply if special arrangements were not made ahead. Call your customer service representative.
6) If you have any defective or left-over parts DO NOT WRITE ON THEM OR THE BOXES. Save the original box, all mounting hardware and instructions. Returns that do not conform to this practice will not be accepted for credit.
7) If the system is being monitored through a digital communicator, then please turn to page 2.

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IMPORTANT INFORMATION FOR THE BUILDING OWNERS
SPECIAL NOTE REGARDING ALARM MONITORING SERVICES

Included within your alarm system package is a digital communicator, which sends a coded message to a private 24-hour central station if your alarm system is activated. This is a code requirement for most fire alarm systems. As a service to our customer, we offer central station monitoring services from our local UL Listed central station at extremely competitive rates.

If the central station monitoring contract is purchased through Norris Inc. prior to our scheduled start-up; we will connect, program, and test the communicator at no additional charge.

Should the building owners decide to obtain monitoring services from another company, then the cost for programming and testing the communicator will be the sole responsibility of the firm they have contracted with. Furthermore, if programming changes are made to the system by persons other than Norris Inc. technicians, then the company performing the changes shall be solely liable for any personal injury or loss of life or damage to or loss of property arising out of the use of or inability to use the system and it shall result in a waiver of any system warranties.

We appreciate that you understand the delicate nature of this life safety and/or security system and realize that serious problems may arise when modifications to the system are made including very simple programming changes.

Call Norris Inc. at 1-800-370-FIRE (3473) to make arrangements for central station monitoring services.

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SUBMITTAL PACKAGE

Project: **Motherhouse Senior Housing**

System: **Fire Alarm System**

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

Date: **July 24th, 2017**

Norris Inc.

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South Portland, ME 04106

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www.norrisinc.com

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.

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LIMITED WARRANTY

Norris, Inc. warrants that the products of its manufacturers shall be free from defects in materials or workmanship as warranted by the manufacturer which is typically for a one (1) year period from the completed installation date, but not always. The completed installation date will be the date when the end-user was able to begin using or started using the product(s) or the system, whether partially or in its entirety. For projects that have a specification or bid instructions to follow which contains specific warranty requirements, Norris Inc. will always honor the warranty terms exactly as specified in the project's specifications or bid documents, which may be more or less in coverage and duration than the manufacturer's warranty. In performing hundreds of projects per year with thousands of different products it is impossible for Norris, Inc. to track the terms and details of specified or individual product warranties. Therefore Norris, Inc. will request that the owner's representative provide these special warranty details when the warranty work is requested; otherwise a standard one year warranty on the equipment will be honored. The manufacturer's warranty is for equipment only and does not include any labor and/or shipping costs. All warranties provided by Norris, Inc. are limited with the same limitations included with the manufacturer's warranty which is included in the manuals of the products being provided.

The warranty will apply only if such goods have been properly installed, are subject to normal proper use and have not been modified in any manner whatsoever. Upon return of the defective product, Norris, Inc. will, at its sole discretion, either repair or replace, at no cost, such goods determined to have a defect in materials or workmanship. In cases of a warranty repair, Norris, Inc. will use its sole discretion to determine if a suitable replacement part can be provided on loan while the repairs are being performed.

All warranty work is performed during regular business hours. If emergency warranty work is required, the customer will pay the difference between the emergency service bill and our normal hourly charges.

Norris, Inc.'s limited warranty does not apply to those products that are damaged due to misuse, abuse, negligence, exposure to adverse environmental conditions, acts of God or have been modified in any manner whatsoever.

Norris, Inc.'s Standard terms and conditions are provided with our invoices. Those Terms and Conditions shall be provided upon request.

NORRIS, INC. SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM LOSS OF LIFE &/OR PROPERTY OR OTHER DAMAGE OR LOSSES OWING TO THE FAILURE OF NORRIS INC. PRODUCTS BEYOND THE COST OF REPAIR OR REPLACEMENT OF ANY DEFECTIVE PRODUCTS.

NORRIS, INC. MAKES NO WARRANTY OF FITNESS OR MERCHANTABILITY AND NO OTHER WARRANTY, ORAL OR WRITTEN, EXPRESS OR IMPLIED AS ALLOWED TO THE FULLEST EXTENT OF THE LAW.

OUR CONTINUOUS COMMITMENT TO OUR ENVIRONMENT

At Norris, Inc. we are proudly committed to continuous environmental improvement for a sustainable future and to develop strong partnerships within our community.

Our mission while running our operations is to do everything within our power to improve the environmental quality of our world and to work together to create a clean and safe place to live in and work in for future generations.

We will incorporate and promote green practices within our operations with policies to support it, a system of rewarding those that fully embrace it and then will regularly review our practices for continuous improvement.

We will establish policies, make investments in technologies and set the example in our own operations to include our ongoing commitment to go paperless and making it a requirement to Reuse, Reduce & Recycle, to turn off unneeded lights, to not allow our vehicles to idle, to encourage carpooling and to utilize practical energy efficient transportation.

We will always be 100% compliant with all applicable environmental laws and regulations and will report any violations.

We will remain committed to working locally and whenever possible to sell and use locally manufactured products.

We will insist that every purchase we make will include a review of its environmental impact with a very high priority to selecting the greenest products and services available.

We will remain committed to selling low energy products. This includes promoting wireless technologies, using existing wire infrastructures in our installations, promoting solar powered devices, using our Remote Services in lieu of on-site service calls and performing calculations to minimize power supply and battery needs.

We will educate our employees and customers to illustrate that green practices and purchases are almost always less costly in the long run.

We will support and give priority to organizations that show the strongest commitment to the environment.

We will actively encourage and promote the same responsible green practices that we utilize in the work place to our employees for use in their everyday personal lives.

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REMOTE INTERNET CONNECTIONS

As an added service to our customers and in order to facilitate the commissioning of the system(s) being provided within this submittal and then later provide warranty support Norris, Inc. may (at Norris, Inc.'s option) use internet connections to gain access to the system(s) being provided. Many methods can be used, but the most popular is utilizing software named LogMeIn. This software or any other method used to connect to the customer's network will allow Norris, Inc.'s technicians the ability to get onto the programming and diagnostic levels of the system(s) being provided via the building owner's or tenant's data network and program, diagnose or make needed changes to the operation of the system(s). This will provide a better working atmosphere to perform programming from a controlled environment without the disruptions of a construction job-site and will allow fast and efficient troubleshooting and/or servicing if problems should occur later. Acceptance of this submittal by those approving it shall constitute an acceptance and approval to perform the work necessary to install and/or enable these network connections if Norris, Inc. chooses to do so. It is the sole responsibility of the submittal approvers to advise the building owners and/or tenants that Norris, Inc. has the ability to gain access to their network. At the specific request of those approving this submittal or the contractor that Norris, Inc. is working for or the building owners or tenants that own the network, Norris, Inc. can remove or disable the ability to connect to the building's network. However, leaving it in place will allow for quicker and more cost effective service when it is needed. Under absolutely no circumstances shall Norris, Inc., its principals, employees or heirs be held responsible for any losses incurred as a result of this network connection or the inability for the network connection to operate as expected.

NOTIFIER®
by Honeywell

This is to certify that

Norris, Inc.

is an authorized Engineered Systems Distributor for **NOTIFIER**

During the years of **2017**

Signed for and on behalf of NOTIFIER

Vice President Global Sales

Norris Inc

2257 West Broadway
South Portland, ME 04106
1-800-370-3473

MANCINI ELECTRIC
179 SHERIDAN STREET
PORTLAND, ME 04101
Tel:207-774-5829   Fax:207-772-1686

Motherhouse Senior Housing

Description

NOTIFIER-CPU2-640, Addressable Fire Alarm Panel w/ Voice Evac
NOTIFIER-NCA-2, Network Control Ann
NOTIFIER-NCA/6402KIT, Chassis Mount
NOTIFIER-DP-DISP2, Dress Plate
NOTIFIER-CA-1, Chassis, DVC
NOTIFIER-DPA-1, Dress Plate
NOTIFIER-CMIC-1, Chassis with paging microphone
NOTIFIER-DP-1B, Dress Panel, Blank NOTIFIER-BP-4, Battery Dress Plate
NOTIFIER-DVC-EM, Digital Voice
NOTIFIER-DVC-KD, Digital Voice Command, Keypad
NOTIFIER-DAA2-7525, Digital Amplifier
IM-12120, 12V 12AH Battery
NOTIFIER-BMP-1, Blank Module Dresss Plate
Space Age-E120VGT, Surge Protection
NOTIFIER-DR-D4, Door, Lock & Keys
NOTIFIER-SBB-D4, Back Box, Black
ADI-IM-12180, 12V 18AH Battery
NOTIFIER-UDACT-2, Digital Communicator
R5-804R8, SILVER SATIN 8' PLUG - PLUG
R5-RJ31X, UL 8P8C RJ31X JACK NOTIFIER-LCD2-80, Remote Annunciator
NOTIFIER-ABF-1B, Annunciator Back Box
NOTIFIER-RM-1SA, Remote Mic
NOTIFIER-CAB-RMR, Remote Cabinet, Red
NOTIFIER-NBG-12LX, Addressable Pull Station
NOTIFIER-FSP-851, Intelligent Address Photo detector
NOTIFIER-FST-851, Intelligent Address 135 degree thermal detector
NOTIFIER-FST-851H, Intelligent Address 195 degree thermal detector
NOTIFIER-B210LPBP, Conventional Flanged mnt. Base; Pkg. of 10

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PORTLAND, ME 04101

Tel:207-774-5829   Fax:207-772-1686

Motherhouse Senior Housing

Description

NOTIFIER-CO1224TR, Convent/Carbon Monoxide Detector,12/24 VDC,w/sounder

NOTIFIER-FMM-101, Address Mini Mod.

NOTIFIER-FRM-1, Address Relay Mod.

NOTIFIER-FCPS-24S8, 8.0 amps, 120 VAC remote charger PS.

IM-1270, 12V 7AH Battery

NOTIFIER-ZNAC-4, Class A (Style Z) NAC option Mod

NOTIFIER-SPSR, Speaker Strobe, Wall, Red

NOTIFIER-SPSCR, Speaker Strobe, Ceiling, Red

NOTIFIER-SRL, strb r wall

Space Age-SSU00690, Fire Alarm Records Cabinet

O6ELOCKFA, Circuit Lock Out Kit

AES Radio Masterbox

AES-7788F, UL Fire 8 Zone, Red

EK-TRG1640, 16.5VAC, 45VA Transformer

AES-7230, Standard Coaxial Surge Protector, N female N female

NOTIFIER-R-10T, Relay, SPDT, Multivolt, Track mnt.

SR-3025TM, Tamper Switch

SPAAGEELE-VS000091, AES Radio Disconnect Enclosure

KNOX3270, Black Knox Box, Recessed

GENTEX-7139CS-W, 120VAC/9VDC Sng/Mult. Smoke w/ 177cd strobe

GENTEX-CO1209, 120VAC/9VDC Sng/Mult. Co Detector

GENTEX-GXS-120177WW, 120VAC Strb FX. 177 Cd Strb, Wall Wht

NFS2-640(E)

Intelligent Addressable Fire Alarm System

NOTIFIER®
by Honeywell

Intelligent Fire Alarm Control Panels

General

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

In stand-alone or network configurations, ONYX Series products meet virtually every application requirement.

The NFS2-640's modular design makes system planning easier. The panel can be configured with just a few devices for small building applications, or networked with many devices to protect a large campus or a high-rise office block. Simply add additional peripheral equipment to suit the application.

A host of other options are available, including single- or multi-channel voice; firefighter's telephone; LED, LCD, or PC-based graphic annunciators; networking; advanced detection products for challenging environments, and many additional options.

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

- Certified for seismic applications when used with the appropriate seismic mounting kit.
- Approved for Marine applications when used with listed compatible equipment. *See DN-60688.*
- 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 (Addressable pull stations, normally open contact devices, two-wire smoke detectors, notification, or relay) per SLC. 318 devices per loop/636 per FACP or network node.
- Standard 80-character display, 640-character large display (NCA-2), or display-less (a node on a network).
- Network options:
  – High-speed network for up to 200 nodes (NFS2-3030, NFS2-640, NFS-320(C), NFS-320SYS, NCA-2, DVC-EM, ONYXWorks, NFS-3030, NFS-640, and NCA).
  – Standard network for up to 103 nodes (NFS2-3030, NFS2-640, NFS-320(C), NFS-320SYS, NCA-2, DVC-EM, ONYXWorks, NCS, NFS-3030, NFS-640, NCA, AFP-200, AFP-300/400, AFP-1010, and AM2020). Up to 54 nodes when DVC-EM is used in network paging.
- 6.0 A 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, Security, and Supervisory relays.
- VeriFire® Tools online or offline programming utility. Upload/Download, save, store, check, compare, and simulate panel databases. Upgrade panel firmware.
- Autoprogramming and Walk Test reports.
- Multiple central station communication options:
  – Standard UDACT
  – Internet
  – Internet/GSM
- 80-character remote annunciators (up to 32).

NFS2-640

NFS2-640-DVC_right.jpg

- 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 automatic counter.
- Presignal/Positive Alarm Sequence (PAS).
- 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.
- Battery charger supports 18 – 200 AH batteries.
- Non-alarm points for lower priority functions.
- Remote ACK/Signal Silence/System Reset/Drill via monitor modules.
- Automatic time control functions, with holiday exceptions.
- Surface Mount Technology (SMT) electronics.
- Extensive, built-in transient protection.
- Powerful Boolean logic equations.
- Support for SCS Series smoke control system in HVAC mode.

NCA-2 AS PRIMARY DISPLAY

- Backlit, 640-character display.
- Supports SCS Series smoke control system in FSCS mode when SCS is connected to the NCA-2 used as primary display.
- Supports DVC digital audio loop.
- Printer and CRT EIA-232 ports.
- EIA-485 annunciator and terminal mode ports.
- Alarm, Trouble, Supervisory, and Security relays.

FLASHSCAN® INTELLIGENT FEATURES

- Polls up to 318 devices in less than two seconds.
- Activates 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 — up to nine levels.
- Pre-alarm ONYX intelligent sensing — up to 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.
  - **IntelliQuad™** – 1.0 to 4.0%/foot obscuration.
  - **IntelliQuad™ PLUS –** 1.0 to 4.0%/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 (NFPA-72 compliant).
- Maintenance alert (two levels).
- Self-optimizing pre-alarm.

FSL-751 (VERY INTELLIGENT EARLY WARNING)
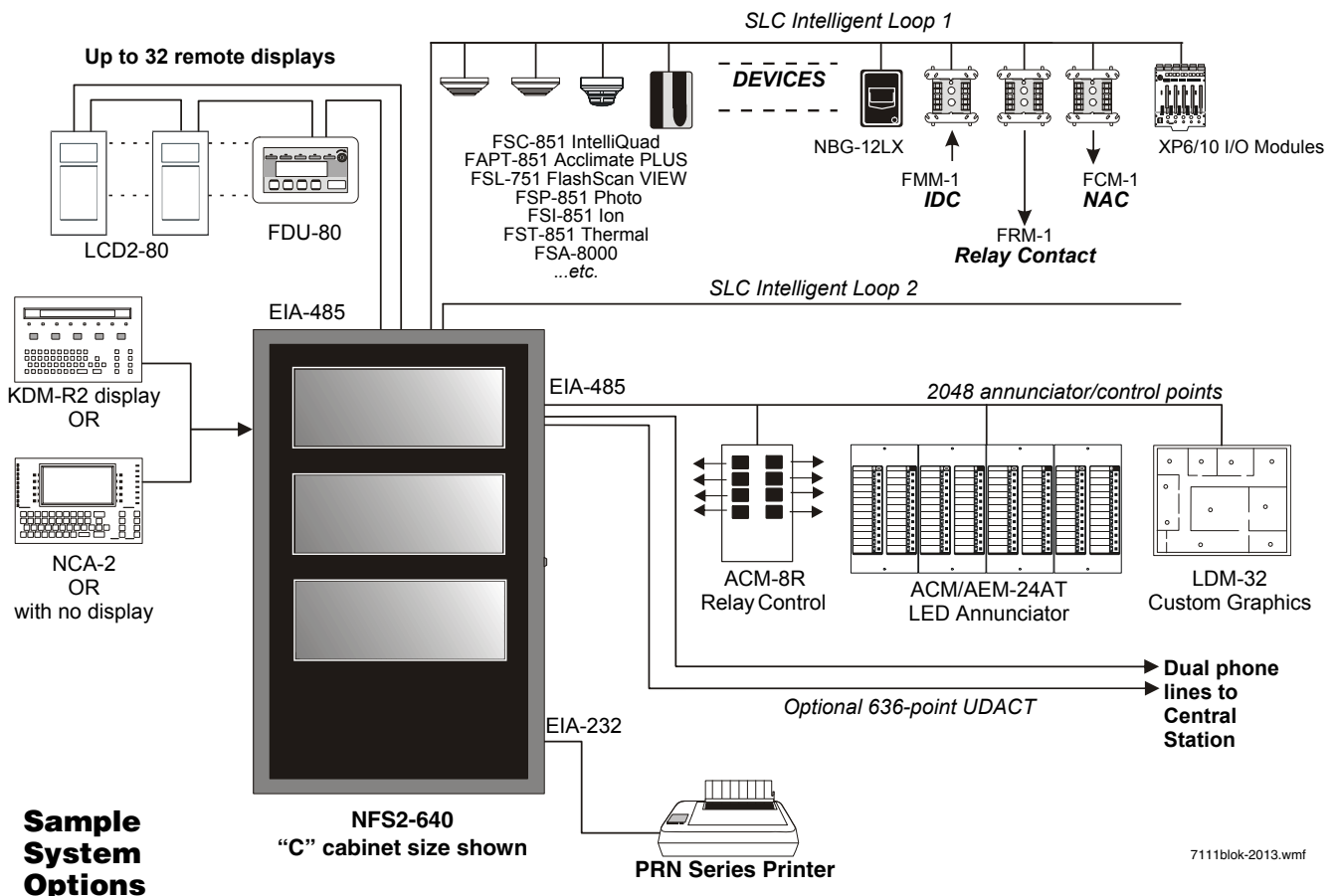### SMOKE DETECTION TECHNOLOGY

- Advanced ONYX intelligent sensing algorithms differentiate between smoke and non-smoke signals (U.S. Patent 5,831,524).
- Addressable operation pinpoints the fire location.
- Early warning performance comparable to the best aspiration systems at a fraction of the lifetime cost.

FAPT-851 ACCLIMATE PLUS
LOW-PROFILE INTELLIGENT MULTI-SENSOR

- Detector automatically adjusts sensitivity levels without operator intervention or programming. Sensitivity increases with heat.
- Microprocessor-based technology; combination photo and thermal technology.
- Low-temperature warning signal at 40°F ± 5°F (4.44°C ± 2.77°C).

Sample System Options

Up to 32 remote displays

LCD2-80   FDU-80

KDM-R2 display OR

NCA-2 OR with no display

EIA-485

EIA-232

NFS2-640 "C" cabinet size shown

PRN Series Printer

SLC Intelligent Loop 1

DEVICES

FSC-851 IntelliQuad
FAPT-851 Acclimate PLUS
FSL-751 FlashScan VIEW
FSP-851 Photo
FSI-851 Ion
FST-851 Thermal
FSA-8000
...etc.

NBG-12LX

FMM-1
IDC

FRM-1
Relay Contact

FCM-1
NAC

XP6/10 I/O Modules

SLC Intelligent Loop 2

EIA-485

2048 annunciator/control points

ACM-8R Relay Control

ACM/AEM-24AT LED Annunciator

LDM-32 Custom Graphics

Optional 636-point UDACT

Dual phone lines to Central Station

7111blok-2013.wmf

FSC-851 INTELLIQUAD
ADVANCED MULTI-CRITERIA DETECTOR

- Detects all four major elements of a fire (smoke, heat, CO, and flame).
- Automatic drift compensation of smoke sensor and CO cell.
- High nuisance-alarm immunity.

FSA-8000 INTELLIGENT FAAST DETECTOR

- Connects directly to the SLC loop of compatible ONYX series panels
- Provides five event thresholds that can be individually programmed with descriptive labels for control-by-event programming; uses five detector addresses.
- Uses patented particle separator and field-replaceable filter to remove contaminants.
- Advanced algorithms reject common nuisance conditions

FCO-851 INTELLIQUAD™ PLUS
ADVANCED MULTI-CRITERIA FIRE/CO DETECTOR

- Detects all four major elements of a fire.
- Separate signal for life-safety CO detection.
- Optional addressable sounder base for Temp-3 (fire) or Temp-4 (CO) tone.
- Automatic drift compensation of smoke sensor and CO cell.
- High nuisance-alarm immunity.

RELEASING FEATURES

- Ten independent hazards.
- Sophisticated cross-zone (three options).
- Delay timer and Discharge timers (adjustable).
- Abort (four options).
- Low-pressure CO_2 listed.

DIGITAL VOICE AND TELEPHONE FEATURES

- Up to eight channels of digital audio.
- 35, 50, 75, and 100/125 watt digital amplifiers (DAA2/DAX series and DS series; NCA-2 required as primary display).
- Solid-state digital message generation.
- Firefighter telephone option.
- 30- to 120-watt high-efficiency amplifiers (AA Series).
- Backup tone generator and amplifier option.
- NFS2-640 can also integrate with the FirstCommand Emergency Communications System. *See DN-60772.*

HIGH-EFFICIENCY OFFLINE SWITCHING
3.0 A POWER SUPPLY (6.0 A IN ALARM)

- 120 VAC (NFS2-640); 240 VAC (NFS2-640E).
- Displays battery current/voltage on panel (with display).

FlashScan, Exclusive World-Leading Detector Protocol

At the heart of the NFS2-640 is a set of detection devices and device protocol — FlashScan (U.S. Patent 5,539,389). 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 protocol can also activate many output devices in a fraction of the time required by competitive protocols. This high speed also allows the NFS2-640 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 NFS2-640 with industry-leading smoke detection capability. These complex algorithms require many calculations on each reading of each detector, and are made possible by the high-speed microcomputer used by the NFS2-640.

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; (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. The FACP "learns" what devices are physically connected and automatically loads 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 NFS2-640, 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 of the NFS2-640 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 NFS2-640 simultaneously monitors other (already installed) points for alarm conditions.

VeriFire® 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 NFS2-640 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.

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 the chassis shipped with the FACP. Mount the second, third, or fourth rows of equipment in a CHS-4 series chassis or, for Digital Voice Command products, in CA-1 or CA-2. (For DVC-EM and DAA2/DAX components see *DVC Manual*; for DS series components see *DS-AMP Manual*; for DVC-AO applications, see *AA Series Installation Manual*). Other options are available; see your panel's installation 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.

Layers: The control panel's chassis 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 center 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 mounted in the dress panel directly in front of the control panel. 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); see NCA-2 data sheet for mounting options *(DN-7047)*.

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.

Networking: If networking two or more control panels, each unit requires a Network Communication Module or High-Speed Network Communication Module. (HS-NCM can support two nodes; see "Networking Options" on page 5). These modules can be installed in any option board position (see manual), and additional option boards can be mounted in front of the network communication modules.

KDM-R2 Controls and Indicators

Program Keypad: QWERTY type *(keyboard layout, see figure)*.

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

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

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

Product Line Information

- "Configuration Guidelines" on page 4
- "Networking Options" on page 5
- "Auxiliary Power Supplies and Batteries" on page 5
- "Audio Options" on page 5
- "Compatible Devices, EIA-232 Ports" on page 5
- "Compatible Devices, EIA-485 Ports" on page 5
- "Compatible Intelligent Devices" on page 6
- "Enclosures, Chassis, and Dress Plates" on page 6
- "Other Options" on page 7

CONFIGURATION GUIDELINES

Stand-alone and network systems require a main display. On systems with one FACP (one CPU2-640/-640E), display options are the KDM-R2 or the NCA-2. On network systems (two or more networked fire panel nodes), at least one NCA-2, NCS, or ONYXWorks annunciation 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/ONYXWorks network display is on the system to display network information. (Non-English versions also available: KDM-R2-FR, KDM-R2-PO, KDM-R2-SP.)*

NCA-2: Network Control Annunciator, 640 characters. On single *CPU2-640/-640E* systems, the optional NCA-2 can be used as the Primary Display for the panel and connects directly to the *CPU2-640/-640E*. On network systems (two or more networked fire panel nodes), one network display (either NCA-2 or NCS/*ONYXWorks*) is required for every system. On network systems, the NCA-2 connects to (and requires) a standard Network Communication Module or High-Speed Network Communication Module. Mounts in a row of FACP node or in two annunciator positions. Mounting options include the 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. Required for NFS2-640 applications employing the DVC-EM with DAL devices. Non-English versions are available. For marine applications, order NCA-2-M; for non-English Marine applications, order NCA-2-M and the appropriate KP-KIT-XX. *See DN-7047.*

CPU2-640: Central processing unit (CPU) with integral 3.0 A (6.0 A in alarm) power supply for an NFS2-640 system. Includes control panel factory-mounted on a chassis; one Signaling Line Circuit expandable to two; documentation kit. *Order one per system or as necessary (up to 103 network nodes) on a network system. (Non-English versions also available: CPU2-640-FR, CPU2-640-PO, CPU2-640-SP.)*

CPU2-640E: Same as CPU2-640 but requires 240 VAC, 1.5 A, (3.0 A in alarm). *(Non-English versions also available: CPU2-640E-PO, CPU2-640E-SP.)*

NCA/640-2-KIT: Bracket installation kit required to mount NCA-2 to the CPU2-640/-640E's standard chassis.

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.

LEM-320: Loop Expander Module. Expands each NFS2-640 to two Signaling Line Circuits. *See DN-6881.*

Networking Options

NCM-W, NCM-F: Standard Network Communications Modules. Wire and multi-mode fiber versions available. *See DN-6861.*

HS-NCM-W/MF/SF/WMF/WSF/MFSF: High-speed Network Communications Modules that can connect to two nodes. Wire, single-mode fiber, multi-mode fiber, and media conversion models are available. *See DN-60454.*

RPT-W, RPT-F, RPT-WF: Standard-network repeater board with wire connection (RPT-W), multi-mode fiber connection (RPT-F), or allowing a change in media type between wire and fiber (RPT-WF). Not used with high-speed networks. *See DN-6971.*

ONYXWorks: UL-listed graphics PC workstation, software, and computer hardware. *See DN-7048 for specific part numbers.*

NFN-GW-EM-3: NFN Gateway, embedded. (Replaces NFN-GW-EM.) *See DN-60499.*

NWS-3: NOTI•FIRE•NET™ Web Server. *See DN-6928.*

CAP-GW: Common Alerting Protocol Gateway. *See DN-60576.*

VESDA-HLI-GW: VESDAnet high-level interface gateway. *See DN-60753.*

LEDSIGN-GW: UL-listed sign gateway. Interfaces with classic and high-speed NOTI•FIRE•NET networks through the NFN Gateway. *See DN-60679.*

OAX2-24V: UL-listed LED sign, used with LEDSIGN-GW. *See DN-60679.*

Auxiliary Power Supplies and Batteries

ACPS-610: 6.0 A or 10.0 A addressable charging power supply. *See DN-60244.*

APS2-6R: Auxiliary Power Supply. Provides up to 6.0 amperes of power for peripheral devices. Includes battery input and transfer relay, and overcurrent protection. Mounts on two of four positions on a CHS-4L or CHS-4 chassis. *See DN-5952.*

FCPS-24S6/S8: Remote 6 A and 8 A power supplies with battery charger. *See DN-6927.*

BAT Series: Batteries. NFS2-640 uses two 12 volt, 18 to 200 AH batteries. *See DN-6933.*

Audio Options

NOTE: *For mounting hardware, see "Enclosures, Chassis, and Dress Plates" on page 6 and peripheral data sheets.*

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. Capable of playing up to eight simultaneous messages when used with Digital Audio Loop (DAL) devices. *See DN-7045.*

DVC-RPU: Digital Voice Command Remote Paging Unit for use with DVC-EM. Includes the keypad/display. *See DN-60726.*

DS-DB: Digital Series Distribution Board, provides bulk amplification capabilities to the DVC-EM while retaining digital audio distribution capabilities. Can be configured with up to four DS-AMPs, supplying high-level risers spread throughout an installation. *See DN-60565.*

DVC-KD: DVC-EM keypad for local annunciation and controls; status LEDs and 24 user-programmable buttons. *See DN-7045.*

DS-AMP/E: 125W, 25 VRMS, or 100W, 70VRMS. 70VRMS requires DS-XF70V step-up transformer. Digital Series Amplifier, part of the DS-DB system. *See DN-60663.*

DS-RFM, DS-FM, DS-SFM: Fiber conversion modules for DVC-EM, DS-DB distribution board, and DAX and DAA2 Series amplifiers. *See DN-60633.*

DVC-AO: DVC Analog Output board provides four analog output circuits for use with AA Series amplifiers. Four-channel operation supported. *See DN-7045.*

DAA2-5025(E): 50W, 25 Vrms Digital Audio Amplifier assembly with power supply; includes chassis. *See DN-60556.*

DAA2-5070(E): 50W, 70.7 Vrms Digital Audio Amplifier assembly with power supply; includes chassis. *See DN-60556.*

DAA2-7525(E): 75W, 25 Vrms digital audio amplifier assembly with power supply; includes chassis. *See DN-60556.*

DAX-3525(E): 35W, 25 Vrms Digital Audio Amplifier assembly with power supply, includes chassis. *See DN-60561.*

DAX-3570(E): 35W, 70.7 Vrms Digital Audio Amplifier assembly with power supply, includes chassis. *See DN-60561.*

DAX-5025(E): 50W, 25 Vrms Digital Audio Amplifier assembly with power supply, includes chassis. *See DN-60561.*

DAX-5070(E): 50W, 70.7 Vrms Digital Audio Amplifier assembly with power supply, includes chassis. *See DN-60561.*

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

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.*

AA-30: Audio Amplifier, 30 watts, 25 Vrms. Includes amplifier and audio input supervision, backup input, and automatic switchover, power supply, cables. *See 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 DN-3224.*

DAA Series Digital Audio Amplifiers: Legacy DAA Series amplifiers are compatible with DVC-EM systems running SR4.0. For specific information on DAA-50 series amplifiers, refer to DN-7046. For information on DAA-7525 Series, refer to DN-60257.

NFC-25/50: 25 watt, 25 VRMS, emergency Voice Evacuation Control Panel (VECP) with integral commercial microphone, digital message generator, and single-/dual-channel Class A or Class B speaker circuits. *See DN-60772.*

Compatible Devices, EIA-232 Ports

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

VS4095/5: Printer, 40-column, 24V. Mounted in external backbox. *See DN-3260.*

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

Compatible Devices, EIA-485 Ports

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 powered-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 powered-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.*

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 DN-3558.*

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

LCD2-80: Terminal and ACS mode. 80-character, backlit LCD display. Mounts up to 6,000 ft. (1828.8 m) from panel. Up to 32 per FACP. *See DN-60548.*

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

SCS: Smoke control stations SCS-8, SCE-8, with lamp drivers SCS-8L, SCE-8L; eight (expandable to 16) circuits (HVAC only). *See 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-2: Universal Digital Alarm Communicator Transmitter, 636 channel. *See DN-60686.*

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. Mounts in **BB-UZC** or other compatible chassis (purchased separately). *See DN-3404.*

COMPATIBLE INTELLIGENT DEVICES

FSA-8000: Intelligent FAAST Fire Alarm Aspiration Sensing Technology®. Intelligent aspirating smoke detector. For Canadian applications, order FSA-8000A. *See DN-60792.*

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

FSB-200S: Intelligent beam smoke detector with integral sensitivity test. *See DN-6985.*

FSC-851: FlashScan IntelliQuad Advanced Multi-Criteria Detector. *See DN-60412.*

FCO-851: FlashScan IntelliQuad PLUS Advanced Multi-Criteria Fire/CO Detector. *See DN-60689.*

FSI-851: Low-profile FlashScan ionization detector. *See DN-6934.*

FSP-851: Low-profile FlashScan photoelectric detector. *See DN-6935.*

FSP-851T: FSP-851 plus dual electronic thermistors that add 135°F (57°C) fixed-temperature thermal sensing. *See DN-6935.*

FSP-851R: FSP-851, remote-test capable. For use with DNR(W). *See DN-6935.*

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

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

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

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

FSL-751: FlashScan VIEW laser photo detector. See *DN-6886.*

DNR: InnovairFlex low-flow non-relay duct-detector housing (order FSP-851R separately). Replaces FSD-751PL/FSD-751RPL. *See DN-60429.*

DNRW: Same as above with NEMA-4 rating, watertight. *See DN-60429.*

B224RB: Low-profile relay base. *See DN-60054.*

B224BI: Isolator base for low-profile detectors. *See DN-60054.*

B210LP: Low-profile base. Standard U.S. style. Replaces B710LP. *See DN-60054.*

B501: European-style, 4" (10.16 cm) base. *See DN-60054.*

B200S: Intelligent programmable sounder base, capable of producing a variety of tone patterns including ANSI Temporal 3. Compatible with sychronization protocol. See DN-60054.

B200SCOA: Based on B200SA, with added CO detector markings in English/French. For Canadian applications only.

B200SR: Sounder base, Temporal 3 or Continuous tone. *See DN-60054.*

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.*

FTM-1: Firephone Telephone Module connects a remote firefighter telephone to a centralized telephone console. Reports status to panel. Wiring to jacks and handsets is supervised. See DN-6989.

FCM-1: FlashScan control module. *See DN-6720..*

FCM-1-REL: FlashScan releasing control module. *See DN-60390.*

FRM-1: FlashScan relay module. *See DN-6720..*

FDRM-1: FlashScan dual monitor/dual relay module. *See DN-60709.*

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

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

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.*

SLC-IM: SLC integration module, for VESDAnet detectors. *See DN-60755.*

ENCLOSURES, CHASSIS, AND DRESS PLATES

CAB-4 Series Enclosure: NFS2-640 mounts in a standard CAB-4 Series enclosure (available in four sizes, "A" through "D"). Backbox and door ordered seperately; requires BP2-4 battery plate. A trim ring option is available for semi-flush mounting. *See DN-6857.*

EQ Series Cabinets: EQ series cabinets will house amplifiers, power supplies, battery chargers and control modules. EQ cabinets are available in three sizes, "B" through "D". *See DN-60229. .*

CAB-BM Marine System: Protects equipment in shipboard and waterfront applications. Also order **BB-MB** for systems using 100 AH batteries. For a full list of required and optional equipment, see *DN-60688.*

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; covers DAA2/DAX series or AA-series amplifier.

NFS-LBB: Battery Box (required for batteries larger than 26 AH).

NFS-LBBR: Same as above but red.

CHS-BH1: Battery chassis; holds two 12.0 AH batteries. Mounts one the left side of DAA2 chassis. See DN-7046.

CA-1: Chassis, occupies one tier of a CAB-4 Series enclosure. The left side accommodates one DVC-EM 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-EM mounted on a half-chassis and one NCA-2 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).

CFFT-1: Chassis to mount firefighter's telephone and one ACS annunciator in a CAB-4 row. Includes TELH-1 firefighter's handset for the DVC-EM, chassis, phone well and mounting hardware. Order DP-CFFT dress panel separately.

DP-CFFT: CFFT-1 dress panel. Requires BMP-1 if no ACS annunciator is installed.

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.*

***Use ADDR-B4/C4/D4 when CA-2 chassis is installed in top two rows with NCA-2 or BP-CA2. Use standard door when CA-2 is not installed in top two rows. For additional configuration information, see the DVC application guide on http://esd.noti-fier.com.

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

DPA-2B: Dress panel used with CA-2 chassis assembly.

VP-2B: Dress panel, required when CA-2 chassis is installed in the top two cabinet rows.

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-CA2: Blank plate for CA-2 chassis.

BB-UZC: Backbox for housing the UZC-256 in applications where the UZC-256 will not fit in panel enclosure. Black; for red, order BB-UZC-R.

SEISKIT-CAB: Seismic mounting kit. Required for seismic-certified applications with NFS2-640 and other equipment mounted in CAB-4 Series Enclosures. Includes battery bracket for two 26 AH batteries.

SEISKIT-LBB: Seismic kit for the NFS-LBB. Includes battery bracket for two 55 AH batteries.

OTHER OPTIONS

411: Slave digital alarm communicator. See DN-6619.

411UDAC: Digital alarm communicator. See DN-6746.

IPDACT-2/2UD, IPDACT Internet Monitoring Module: Connects to primary and secondary DACT telephone output ports for internet communications over customer-provided Ethernet connection. Requires compatible Teldat VisorALARM Central Station Receiver. Can use DHCP or static IP. *See DN-60408.*

IPCHSKIT: IP Communicator Chassis Mounting Kit. For mounting an IPDACT-2/2UD onto the panel chassis or CHS-4 series chassis. Use IPENC for external mounting applications.

IPSPLT: Y-adapter option allow connection of both panel dialer outputs to one IPDACT-2/2UD cable input.

IPENC: External enclosure for IPDACT, includes IPBRKT mounting bracket; Red. For Black order IPENC-B.

IPGSM-4G: Internet and Digital Cellular Fire Alarm Communicator. Provides selectable configurable paths: cellular only, IP only, or IP primary with cellular backup. Connects to the primary and secondary ports of a DACT. For Canadian applications order IPGSM-4GC. *See DH-60769.*

NOTE: *For other options including compatibility with retrofit equipment, refer to the panel's installation manual, the SLC manual, and the Device Compatibility Document.*

System Specifications

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
  and NCA-2 *(observe power)*.. 32
- ACS annunciators per
  CPU2-640/-640E .... 32 addresses x 64 points
- ACS annunciators per
  NCA-2.................................. 32 addresses x 64 or 96 points

NOTE: *The NCA-2 supports up to 96 annunciator address points per ACM-24AT/-48A.*

ELECTRICAL SPECIFICATIONS

- Primary input power:
  - CPU2-640 board: 120 VAC, 50/60 Hz, 5.0 A.
  - CPU2-640E board: 220/240 VAC, 50/60 Hz, 2.5 A.
- Current draw (standby/alarm):
  - CPU2-640(E) board: 0.250 A. Add 0.035 A for each NAC in use.
  - KDM-R2: 0.100 A.
  - LEM-320: 0.100 A.

- Total output 24 V power: 6.0 A in alarm.

NOTE: The power supply has a total of 6.0 A. of available power. This is shared by all internal circuits. See Installation Manual for a complete current draw calculation sheet.

- Standard notification circuits (4): 1.5 A each.
- Resettable regulated 24V power: 1.25 A.
- Two non-resettable regulated 24V power outputs:
  - 1.25 A.
  - 0.50 A.
- Non-resettable 5V power: 0.15 A.
- Battery charger range: 18 AH – 200 AH. Use separate cabinet for batteries over 26 AH.
- Float rate: 27.6 V.

CABINET SPECIFICATIONS

- Systems can be installed in CAB-4 Series cabinets *(four sizes with various door options, see DN-6857)*. Requires BP2-4 Battery Plate.

SHIPPING WEIGHT

- CPU2-640/-640: 14.3 lb (6.49 kg).
- CPU2-640/-640E: 14.55 lb (6.60 kg).

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

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:** S635.
- **ULC Listed:** S635.
- **FM Approved.**
- **MEA:** 128-07-E.
- **FDNY:** COA#6085, #6121.
- **CSFM:** 7165-0028:0243.
- **City of Chicago.**
- **City and County of Denver.**
- **CCCF listed.**

Marine Applications: Marine approved systems must be configured using components itemized in this document. (See Main System Components, in "Product Line Information.) Specific connections and requirements for those components are described in the installation document, PN 54756. When these requirements are followed, systems are approved by the following agencies:

- **US Coast Guard** 161.002/50/0, 161.002/55/0 (Standard 46 CFR and 161.002).
- **Lloyd's Register** 11/600013 (ENV 3 category).

- **American Bureau of Shipping** (ABS) Type Approval.

NOTE: For information on marine applications, see DN-60688.

STANDARDS

The NFS2-640 complies with the following UL Standards and NFPA 72, International Building Code (IBC), and California Building Code (CBC) Fire Alarm Systems requirements:

- **UL 864, 9th Edition** (Fire).
- **UL 1076** (Burglary).
- **UL 2572** (Mass Notification Systems).
- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires TM-4).
- **REMOTE STATION** (Automatic, Manual, Waterflow and Sprinkler Supervisory) (requires TM-4).
- **PROPRIETARY** (Automatic, Manual and Waterflow). *Not applicable for FM.*
- **EMERGENCY VOICE/ALARM**.
- **OT, PSDN** (Other Technologies, Packet-switched Data Network).
- **IBC 2012, IBC 2009, IBC 2006, IBC 2003, IBC 2000** (Seismic).
- **CBC 2007** (Seismic).

ISO 9001
CERTIFIED
ENGINEERING & MANUFACTURING
QUALITY 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.
www.notifier.com

Made in the U.S.A.

NCA-2

ONYX® Series
Network Control Annunciator

General

The NOTIFIER **NCA-2** is a second-generation Network Control Annunciator for the **NOTI•FIRE•NET**™ network, compatible for use with ONYX® Series nodes such as the NFS2-3030, NFS-3030, NFS-320, NFS-640 and NFS2-640 fire alarm control panels, as well as first-generation NCA Network Control Annunciators. Additionally, the NCA-2 may be configured with DVC Series products to create one or more Digital Audio Command Centers on NOTI•FIRE•NET™. The NCA-2 provides system control and display capabilities for all, or for selected network nodes.

The NCA-2 display consists of a 640-character backlit LCD display, and a control interface consisting of "soft" keys used to navigate screen menus, "hard" keys with fixed control functions, and a QWERTY keypad.

When connected to one or more networked panels the NCA-2 provides network control and status/history display capabilities. It may also be configured as the Primary Display for displayless nodes on the network.

NCA-2 in* ABS-2D *backbox

Hardware Features

- Certified for seismic applications when used with the appropriate seismic mounting kit.
- Approved for Marine applications when a marine-listed version is used with marine-listed compatible equipment. *See DN-60688.*
- Full supervision of all inputs and network integrity.
- Enhanced-format 640-character LCD display with backlighting.
- ACS bus for LED or graphic annunciators (EIA-485).
- Optically isolated printer interface (EIA-232).
- 11 LED status indicators: Power, Controls Active, Fire Alarm, Pre-Alarm, Security, Alert, Supervisory, Trouble, Signal, Silence, CPU Failure, Point Disabled, Other Event.
- Alphanumeric QWERTY rubber keypad.
- Four status relays: Alarm, Trouble, Supervisory, Security (Form-C).
- Nonvolatile real-time clock can be synchronized with network by master node.
- Optional Security Keyswitch enables keypad functions.
- Optional Security Tamper switch.
- Supports up to 32 remote ACS annunciators and modules.
- Requires 24 VDC, and a network connection.
- RDP port for LCD-160 or terminal mode LCD2-80.

NOTE: *NCA-2 Firmware version 14.0 (and higher) can support LCD-160 on the RDP port, or LCD2-80 in terminal mode, but not both at the same time.*

Function Features

- Individual Enable/Disable or Group Enable/Disable local for networked ONYX series panels.

- Control ON/OFF networked ONYX series panel control points.
- Read Status networked ONYX series panel points and zones.
- Network paging control/HVAC control .
- Network-wide: Acknowledge, Silence, Reset.
- Lamp Test (local to NCA-2).
- History Buffer (1000 Alarm events; 4000 System events).
- Print NCA-2 programming and history reports.
- Report status of networked panels and their respective field devices to a central station via a single UDACT-2 *(see data sheet DN-60686)*.
- One Master level, nine User level passwords. The Master can assign each User access levels (programming, alter status).
- Interactive Summary Event Count display, event handling package.
- Online programming and alter-status programs.
- Intuitive user guidance program including interactive soft keys.
- Enhanced Read Status/Alter Status displays.
- New history filters for report displaying and printing: All Events, Only Alarms, Only Troubles, Only Supervisory, Only, Security, Time Interval, Point Range.
- Fully programmable node-mapping subsystem.
- Advanced/Basic Walk-Test program.
- Timer control for Auto Silence, AC Fail Delay.
- Meets Canadian ULC display requirements.
- Environmental adjustment controls to maximize LCD legibility.
- Meets NFPA requirements for Firefighter Smoke Control Station (FSCS) and HVAC.

- NCA-2 version 20 and higher complies with UL 2572 Mass Notification Systems.

NCA-2 Indicators and Controls

LED INDICATORS

- POWER (green) illuminates when 24 VDC power is applied; LED goes out if power is removed and NCA-2 is using a battery.
- CONTROLS ACTIVE (green) illuminates to indicate that the NCA-2 control functions are active.
- FIRE ALARM (red) illuminates when at least one fire alarm event exists; flashes when any of these events remain unacknowledged.
- PRE-ALARM (red) illuminates when at least one pre-alarm event exists; flashes when any of these events remain unacknowledged.
- SECURITY (blue) illuminates when at least one security event exists; flashes when any of these events remain unacknowledged.
- SUPERVISORY (yellow) illuminates when at least one supervisory event exists (i.e., sprinkler valve off normal, low pressure, fire pump running, guard's tour, etc.); flashes when any of these events remain unacknowledged.
- SYSTEM TROUBLE (yellow) illuminates when at least one trouble event exists; flashes when any of these events remain unacknowledged.
- OTHER EVENT (yellow) illuminates for any category of event not listed above; flashes when any of these events remain unacknowledged.
- SIGNALS SILENCED (yellow) illuminates if the NCA-2 Silence key has been pressed or if any other node sent a Network Silence command; flashes if only some points on a node are silenced.
- POINT DISABLED (yellow) illuminates when at least one disable exists on the network or in the system.
- CPU FAILURE (yellow) activated by the watchdog timer hardware, indicates an abnormal hardware or software condition. Contact technical support.

FIXED FUNCTION KEYS

- **Acknowledge**
- **Signal Silence**
- **System Reset**
- **Drill**
- **Fire Alarm Scroll/Display**
- **Security Scroll/Display**
- **Supervisory Scroll/Display**
- **Trouble Scroll/Display**
- **Other Event Scroll/Display**

The five keys labeled SCROLL/DISPLAY allow the user to scroll through messages for the particular event type. For example, pressing the FIRE ALARM SCROLL/DISPLAY key will scroll through all fire alarm events, as details of each are shown in the display area of the NCA-2.

NOTE: The OTHER EVENT SCROLL/DISPLAY key also scrolls between Pre-Alarm and Disabled events.

- **ACKNOWLEDGE** – press this key to acknowledge off all active events.

- **SIGNAL SILENCE** – press this key to turn off all control modules, notification appliance circuits, and panel output circuits that have been programmed as Silenceable.
- **SYSTEM RESET** – press this key to clear all latched alarms and other events and turn off event LEDs.
- **DRILL HOLD 2 SEC** – press this key, holding it down for two seconds, to activate all silenceable output circuits.

SPECIAL FUNCTION KEYS

- **PRINT SCREEN** – press this key to print what is currently on the LCD screen.
- **LAMP TEST** – press this key to test the LED indicators on the left of the keypad and to check firmware revision numbers.
- **NEXT SELECTION/PREVIOUS SELECTION** – these keys are used when setting parameters in NCA-2 data fields; for example, choosing a device type as a filter for requesting a Node History.
- **BATTERY LEVEL** – press this key to display voltage and charging current level for system batteries. Displays levels for local AMPS-24(E) or AMPS-24(E) connected to associated NFS2-3030 or NFS-3030 node.

Specifications

Temperature and humidity ranges: This system meets NFPA requirements for operation at 0°C to 49°C (32°F to 120°F); and at a relative humidity (noncondensing) of 85% at 30°C (86°F) per NFPA, and 93% ± 2% at 32°C ± 2°C (89.6°F ± 1.1°F) per ULC. 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 all peripherals be installed in an environment with a nominal room temperature of 15°C to 27°C (60°F to 80°F). Product weight is 3 lbs (1.36 kilograms).

ELECTRICAL REQUIREMENTS

The NCA-2 may be powered from a Main Power Supply AMPS-24(E) (see data sheet DN-6883) mounted in a seperate cabinet (see specifications below); or from any UL Listed non-resettable 24 VDC source from a NOTIFIER fire panel (see panel data sheets). The battery on the **NCA-2** motherboard is for RTC and SRAM; holds the history memory through power failure. Replacements are available (P/N 31004). Power source: 1) **AMPS-24** (120 VAC, 50/60 Hz, 4.5 A maximum) or **AMPS-24E** (240 VAC, 50/60 Hz, 2.25 A maximum) power supply; 2) the NFS-640, NFS2-640 and NFS-320 on-board power supply; or 3) a **supervised +24 VDC power supply** that is UL/ULC-listed for fire protective service. The current of the **NCA-2 is 400** mA with backlight and 200 mA with the backlight off.

Product Line Information

NCA-2: Network Control Annunciator. Requires a NCM-W or NCM-F network communications module for networking. In direct connect applications NCM not required. Non-English versions are available: NCA-2-FR, NCA-2-HE, NCA-2-KO, NCA-2-PO, NCA-2-SC, NCA-2-SP, NCA-2-TC, NCA-2-TH. For English marine applications, order NCA-2-M; for non-English Marine applications, order NCA-2-M and the appropriate KP-KIT-XX. (See DN-60688.)

NCM-W, NCM-F: Standard Network Communications Modules. Wire and multi-mode fiber versions available. *See DN-6861*.

HS-NCM-W/MF/SF/WMF/WSF/MFSF: High-speed network communications modules. Wire, single-mode fiber, multi-mode fiber, and media conversion models are available. *See DN-60454*

ABS-2D: Annunciator Backbox, Surface, black. Mounts one NCA-2 and one NCM-W/-F.

ABS-2DR: Same as above, but red.

CHS-2D: Chassis, required whenever the NCA-2 is mounted in an ABS-2D(R).

CHS-M3: Chassis, mounts an NCA-2 in a single row of a CAB-4 Series cabinet.

CA-2: Chassis, Audio, 2 rows. Mounts an NCA-2 and the DVC Digital Voice Command in two rows of a CAB-4 Series cabinet.

CAB-4 Series Enclosure: Available in four sizes, "A" through "D". Backbox and door ordered separately; requires BP2-4 battery plate.*See DN-6857.*

CAB-BM Marine System: Protects equipment in shipboard and waterfront applications. Order NCA-2-M; for non-English order NCA-2-M and the appropriate KP-KIT-XX. (See DN-60688.) Also order **BB-MB** for systems using 100 AH batteries. For a full list of required and optional equipment, see *DN-60688.*

DP-DISP: Annunciator Dress Plate. Dress plate is used when NCA-2 is mounted in the top row of a CAB-4 Series cabinet with a CHS-M3 chassis.

NCA-2RETRO: Kit for retrofit mounting the NCA-2 to a DP-DISP dress plate.

NCA/640-2-KIT: Mounting kit for directly mounting the NCA-2 to CPU2-640 chassis.

LCD-160: 160 character LCD annunciator. *See DN-66940*

LCD2-80: 80 character LCD annunciator. *See DN-60548*

TR-ABS2D: Trim ring for semi-flush mounting of ABS-2D.

Agency Listings and Approvals

These listings and approvals apply to the NCA-2. 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.

- UL Listed: file S635.
- ULC Listed: S635.
- FM approved.
- CSFM: 7165-0028:0224, 7165-0028:0243.
- MEA: 232-06-E.
- FDNY: COA#6114, COA#6121.

Marine Applications: Marine approved systems must be configured using components itemized in the Marine ONYX Systems datasheet DN-60688. Specific connections and requirements for those components are described in the Marine-EQ installation document, PN 54756. When these requirements are followed, systems are approved by the following agencies:

- **US Coast Guard** 161.002/55/0 (Standard 46 CFR and 161.002).
- **Lloyd's Register** 11/600013 (ENV 3 category).
- **American Bureau of Shipping** (ABS) Type Approval.

NOTE: For information on the CAB-BM marine system, see DN-60688.

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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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Made in the U.S. A.

DVC Series

Digital Voice Command
DVC-EM

NOTIFIER®
by Honeywell

Voice Control Systems

General

The DVC is the heart of an integrated, full-featured Audio Command Center. The DVC Digital Voice Command combines the capabilities of a powerful digital audio processor, an event-driven audio message generator, and a router. Designed for use with Digital Audio Loop (DAL) devices such as DAA2, DAX and DAA series digital amplifiers as well as the DS-DB, each DVC supports a dedicated audio network with up to eight channels of audio, five channels of firefighter telephone communications, and control and supervision for up to 32 DAL devices. The DVC has two wire digital audio ports to connect to wire DAL segments. Either or both ports may be converted to multi-mode fiber or single-mode fiber using fiber option modules. Larger audio systems incorporating hundreds of amplifiers can be created by networking additional DVC units via **NOTI·FIRE·NET™**.

The DVC may be networked with ONYX® Series panels via **NOTI·FIRE·NET** with an NCA-2, or with an NFS2-3030 (running in network monitor mode). A DVC can be connected directly with a single NFS2-640 or NFS2-3030 Fire Alarm Control Panel (FACP) to create a standalone integrated audio solution as well. Refer to the DVC manual for details.

When used as an Audio Command Center with Emergency Paging capability, the optional DVC-KD Keypad Display is required.

NOTE: Unless otherwise noted, the term "DVC" refers to the DVC-EM.

Features

- Programmable from NUP port using *VeriFire® Tools*.
- Up to 32 minutes of standard quality or 4 minutes of high quality digital audio storage of user-selected/created messages and tones. Supports twisted-pair wire media. Supports single- and multi-mode fiber-optic media when used with fiber option modules.
- 4-channel analog audio supported with optional DVC-AO
- Up to 1000 audio sequences.
- Message prioritization.
- Equations support flexible programming for distribution of messages.
- Electrically isolated digital audio ports for direct connection with up to 32 Digital Audio Loop (DAL) devices. Style 4 or 7 configurations supported.
- Optional DS-RFM, DS-FM, and DS-SFM fiber modules may be used to convert one or both Digital Audio Ports for operation with single-mode or multi-mode fiber.
- DCC (Display and Control Center) capabilities when used with optional DVC-KD.
- Firefighters' Telephone Communications to local FFT riser on DVC, 32 local DAL device FFT risers, and FFT communication to additional command stations via **NOTI·FIRE·NET**.
- Local paging microphone option.
- Remote microphone options.
- Optional Digital Voice Command Remote Paging Unit (DVC-RPU), or DVC-RPU mode.
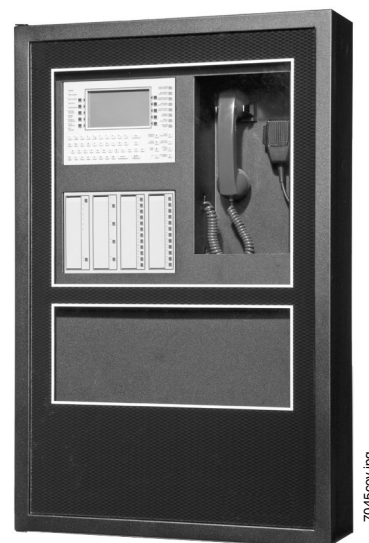
DVC
Shown using CA-2 mounting option,
SBB-C4, and ADDR-C4 door.

- Broad All-Call functionality when used with DVC-KD (DVC-Keyboard Display): All Call, Page Active Evac Areas, Page Active Alert Areas, Page Inactive Areas.
- Auxiliary input for 12 V$_{p-p}$ analog low-level audio sources. Includes user audio level adjustment feature.
- Auxiliary input accepts external audio sources such as telephone paging or background music. High impedance input accepts 600 ohm, line level, 1.0 VRMS, or 1.41 V$_{p-p}$ low level audio. Selectable AGC, user control of audio level, and audio supervision are supported.
- Associated NCA-2, or NFS2-3030 (programmed for network monitor mode) supports **NOTI·FIRE·NET** applications.
- Multiple audio command centers supported via **NOTI·FIRE·NET**.
- Distribution of one channel of standard-level paging audio on **NOTI·FIRE·NET**.
- Three standalone, non-network mode options:
  – NFS2-3030 (NUP to NUP) digital and analog.
  – NFS2-640 (NUP to NUP) analog audio only.
  – NFS2-640 with NCA-2 (NUP to NUP to NUP) digital and analog.
- Push-to-talk relay, or logic argument.
- Isolated alarm bus input, to be used for backup activation of alarm messages in the event network communication is lost.

Installation Options

The DVC provides flexible configurations based on one-row or two-row chassis options that mount into size "B", "C", or "D" CAB-4 Series cabinets.

The CA-2 supports a DVC, paging microphone, optional FFT telephone, and mounting location for an NCA-2 or NFS2-3030D CPU. The ADDR audio door series can be used when a CA-2 is mounted in the top two rows. The CA-1 supports a DVC and an optional microphone in a single row. For firefighters' telephone applications with a CA-1, the CFFT-1 can be mounted in the row below the CA-1.

NOTE: *For NFS2-640/DVC applications using DAL devices, an NCA-2 is required to annunciate DAL device events.*
Refer to the DVC System Audio Product Application Guide (part number M-AG-DVC) for more details on DVC applications).

Specifications

- **24 VDC power (TB1)**: 24 VDC, 1.0 A, non-resettable, power-limited by the source. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm²) twisted-pair.
- **Digital audio ports, wire media, A and B (TB2, TB3)**: Maximum distance per segment is 1900 feet (579.12 m) on Belden 5320UJ (18 AWG, TP) FPL cable: 18 AWG (0.821 mm²) twisted-pair, foil-shielded, power-limited. Consult wiring documentation provided in document P/N 52916ADD:C *Addendum to DVC and DAA Manuals*.
- **Digital audio ports, single- and multi-mode fiber-optic media:** (See notes below)
  – **DS-FM and DS-SFM fiber option module (no direct DAA connection)**:
    - *6.5dB maximum attenuation* for multi-mode with 50/125 micrometer cable @ 1310 nm.
    - *10dB maximum attenuation* for multi-mode with 62.5/125 micrometer cable @ 1310 nm.
    - *30dB maximum attenuation* for single-mode with 9/125 micrometer cable @ 1310 nm.
  – **DS-SFM (single-mode fiber DAA connection):**
    - *17dB maximum attenuation* for single-mode with 9/125 micrometer cable at 1310 nm going **from** the DS-SFM **to** the fiber DAA.
    - *4dB maximum attenuation* for single-mode with 9/125 micrometer cable going **from** the fiber DAA **to** the DS-SFM.
    - *12dB minimum attenuation* going **from** the DS-SFM **to** the fiber DAA.
  – DS-RFM (multi-mode fiber DAA connection):
    - Attenuation going **from** the fiber DAA **to** the DS-RFM:
  - 2dB *maximum attenuation* for multi-mode with 50/125 micrometer cable @ 850 nm for the DS-RFM.
  - 4dB *maximum attenuation* for multi-mode with 62/5/125 micrometer cable @ 850 nm for the DS-RFM.
    - Attenuation going **from** the fiber DS-RFM **to** the fiber DAA:
  - 12dB *minimum* attenuation*, 16dB for both cable types.
    Notes:
    1. If the length of the fiber run results in an attenuation of less than 12dB, a suitable attenuator must be used.
    2. ST® Style connection required at DAA end of any fiber connection. LC style connectors are required for the DS-FM, DS-RFM, and DS-SFM.
- **Auxiliary input A (AUX A, TB4)**: Signal strength from low-level analog audio input: maximum 1.0 VRMS, or 1.41 V_{p-p}. Optional supervision is selectable through programming. Recommended wiring: 18 AWG (0.821 mm²) twisted-pair; max. 14 AWG (2.08 mm²). Auxiliary input must be in the same room as the DVC.
- **Auxiliary input B (AUX B, TB14)**: Signal strength from low-level analog audio input: 12 V_{p-p} nominal, 15 V_{p-p} maxi-

mum. Optional supervision is selected through programming. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm²) twisted-pair.
- **Remote microphone interface (TB9)**: Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm²) twisted-pair. Power-limited. Maximum distance between remote microphone and DVC: 1000 feet (300 m).
- **Push-to-talk interface (TB10)**: Dry contact. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm²) twisted-pair.
- **Alarm bus (TB12)**: Power-limited by source. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm²) twisted-pair.
- **FFT riser (TB13)**: Power-limited output. Class A (Style Z) or Class B (Style Y) operation. Style Y two-wire connections require a 3.9K ohm, 1/2 watt resistor (P/N K-3.9K). Maximum wiring resistance (including individual telephone zone to last handset) permitted is 50 ohms, 10,000 feet (3048 m) maximum wiring distance at 12 AWG (3.31 mm²) to last handset.
- **Optional DVC-AO analog audio output circuits (TB5, TB6, TB7, and TB8)**: Supervised, power-limited outputs. Signal strength: +12 V_{p-p} nominal, +15 V_{p-p} maximum. Recommended wiring: 18 AWG (0.821 mm²) twisted-pair; max. 14 AWG (2.08 mm²). Maximum impedance: 66 ohms.

Standards and Codes

The Digital Voice Command DVC and DVC-EM comply with the following standards:

- NFPA 72 2002 National Fire Alarm Code.
- Underwriters Laboratories Standards UL 864, 9th edition, and UL 2572.
- Underwriters Laboratories of Canada (ULC) ULC-S527-99 Standard of Control Units for Fire Alarm Systems.

Listings and Approvals

The listings and approvals below apply to the DVC and DVC-EM Digital Voice Command. 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**: S635.
- **ULC Listed**: S635.
- **FM Approved.**
- **CSFM**: 7165-0028:0224 (NFS2-3030); 7165-0028:0243 (NFS2-640).
- **FDNY:** COA#6114 (NFS2-3030): COA#6085, COA#6121 (NFS2-640).
- **City of Chicago** approved: High Rise, Class 1, Class 2 (NFS2-3030, NFS2-640, NCA-2).
- **City of Denver** approved (NFS2-3030).
- **PSB Corporation** approved *(Singapore) (NFS2-3030)*.

Product Line Information

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. *Supports twisted-pair wire media. Options: DS Fiber modules, DVC-RPU.*

DVC-RPU: Digital Voice Command Remote Paging Unit. Includes the keypad/display. Supports twisted-pair wire media; use DS fiber modules for fiber media. *See DN-60726.*

DVC-KD: Keypad for local annunciation and controls; status LEDs and 24 user-programmable buttons.

DVC-AO: Optional DVC Analog Output board provides four analog output circuits for use with AA or XPIQ Series amplifiers. Four-channel operation supported.

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)*.

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

CFFT-1: The CFFT-1 Chassis for Firefighters' Telephone mounts in the row directly under a DVC that is mounted in a CA-1 single row chassis. The CFFT-1 includes one FFT handset. The DP-CFFT Dress Plate (separately ordered, required) has one open position for mounting an ACS annunciator or a BMP-1 Blank Module Plate.

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 NFS2-3030 or NCA-2 mounted on a half-chassis. The right side houses a microphone/handset well. The CA-2 assembly includes a microphone. DPA-2B dress plate is required *(below)*; the VP-2B Vent Plate is also required for top row configurations. ADDR Series doors with two-tier visibility are available for use with the CA-2 configuration: ADDR-B4, ADDR-C4, ADDR-D4 *(below)*.

DPA-2B: Dress plate required for CA-2 chassis assembly.

VP-2B: Vent plate required for cabinet configurations where the DPA-2B is used for the top two row position.

TELH-1: Firefighters' Telephone Handset for use with the DVC when mounted in the CA-2 chassis. Order separately.

ADDR-B4: Two-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. 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-6857.*

ADDR-C4: Three-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. 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-6857.*

ADDR-D4: Four-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. 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-6857.*

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

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.

ACT-4: Audio-coupling transformer. Used to electronically isolate DVC-AO analog risers.

ACT-25, ACT-70: Audio-coupling transformers for 25V and 70V high-level audio. Used to isolate and convert high-level audio to low-level, supporting applications with large numbers of analog amplifiers.

DAX-3525(E)/DAX-3570(E): 35W, 25 or 70.7VRMS. Digital audio amplifiers with charging power supply and 2 Class B or 1 Class A output, shipped mounted on chassis. Options: BDA-25/70 backup amplifier, DS Fiber modules.

DAX-5025(E)/DAX-5070(E): 50W, 25 or 70.7VRMS. Digital audio amplifiers with power supply and 2 Class B or 1 Class A output, shipped mounted on chassis. Options: BDA-25/70 backup amplifier, DS Fiber modules.

DAA2-5025(E)/DAA2-5070(E): 50W, 25 or 70.7VRMS. Digital audio amplifiers with charging power supply and 4 Class B or 2 Class A outputs, shipped mounted on chassis. RM-1 port, FFT port, Aux audio port. Supports optional BDA for backup amplifier or 2-channel operation, and DS Fiber modules.

DAA2-7525(E): 75W, 25VRMS. Digital audio amplifiers with power supply and 4 Class B or 2 Class A outputs, shipped mounted on chassis. RM-1 port, FFT port, Aux audio port. Supports optional BDA for backup amplifier or 2-channel operation, and DS Fiber modules.

DS-DB: Digital Series Distribution Board, provides bulk amplification capabilities to the DVC while retaining digital audio distribuition capabilities. Can be configured with up to four DS-AMPs, supplying high-level risers spread throughout an installation. *See DN-60565.*

DS-AMP/E: 125W, 25 VRMS, or 100W, 70VRMS. 70VRMS requires DS-XF70V step-up transformer. Digital Series Amplifier, part of the DS-DB system. *See DN-60663.*

DS-BDA: Digital Series Backup Digital Amplifier, 25 or 70VRMS, can be configured to act as a one-to-one backup for DS-AMP/E amplifiers. Can also be programmed to provide a second audio channel for a DS-AMP. *See DN-60663.*

BDA-25, BDA-70: Backup Digital Amplifier, 25 or 70.7VRMS, can be configured to act as a one-to-one backup for DAX and DAA2 series amplifiers. For DAA2 Series only, supports alternative second channel operation.

DS-RFM, DS-FM, DS-SFM: Fiber conversion modules for *DVC*, DS-DB distribution board, and DAX and DAA2 Series amplifiers. *See DN-60633.*

DAA Series Digital Audio Amplifiers: Legacy DAA Series amplifiers are compatible with DVC systems running SR4.0. For DAA-50 series amplifiers, see DN-7046. For DAA-7525 Series, see DN-60257.

   – **DAA-5025:** 50W, 25Vrms Digital Audio Amplifier assembly with DAA-PS power supply board, shipped mounted to its chassis. Supports twisted-pair wire media. *(For multi-mode fiber-optic media order DAA-5025F. For single-mode fiber-optic media order **DAA-5025SF**.)*

   – **DAA-5070:** 50W, 70.7Vrms Digital Audio Amplifier assembly with DAA-PS power supply board, shipped mounted to its chassis. Supports twisted-pair wire media. *(For multi-mode fiber-optic media order DAA-5070F. For single-mode fiber-optic media order DAA-5070SF.)*

   – **DAA-7525:** 75W, 25Vrms Digital Audio Amplifier assembly with DAA-PS power supply board. Shipped mounted to its chassis (no battery charger on DAA-7525 power supply board). Supports twisted-pair wire media. *(For multi-mode fiber-optic media order DAA-7525F. For single-mode fiber-optic media order **DAA-7525SF**.)*

SEISKIT-CAB: Seismic kit for CAB-4 series cabinets. Includes battery bracket for two 26AH Power Sonic batteries and TELH-1 telephone handset strap. See document 53829.

SEISKIT-DAA: Seismic kit for DAA, DAA2 and DAX series amplifiers, required when using CHS-BH1 chassis. Includes battery bracket for two 12AH Power Sonic batteries. See document 53851.

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www.notifier.com

Made in the U.S. A.

CMIC-1
One-row Chassis-well and Microphone
Product Installation Document

CMIC-1 contains the hand-held MIC-1 microphone with push-to-talk button, a single-row chassis well for installation in chassis CA-1, and the microphone-mounting bracket.

1. Attach the microphone bracket to the single-well with the three self-tapping screws (P/N 38062) as shown in Figure 1.

2. Attach the single-well to chassis CA-1 with the three nuts (P/N 36045) as shown in Figure 2.

3. Snap the protective bushing (P/N 43268) around the microphone cord and feed the connector through the keyhole. Push the bushing into place until it is firmly seated (see Figure 3).

See the *CA-1 Installation Document* for instructions on mounting the CA-1 to the backbox and attaching a dress plate.
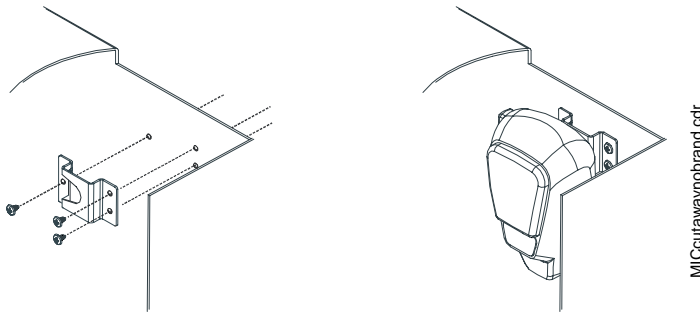
Figure 1 Installing the Microphone Bracket
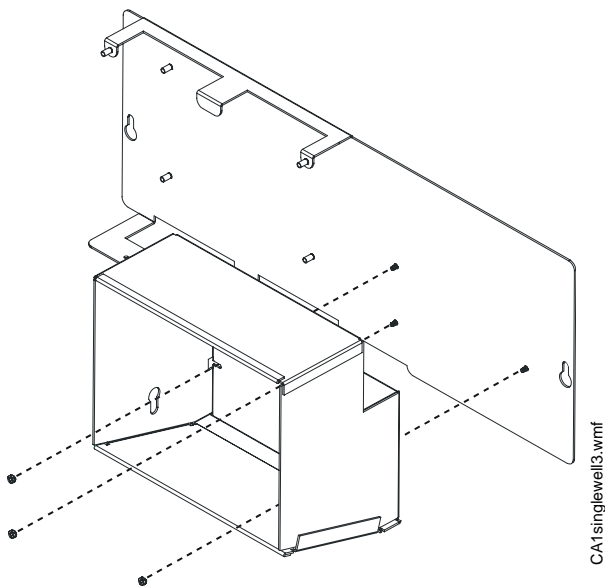
Figure 2 Attaching CMIC-1 onto CA-1
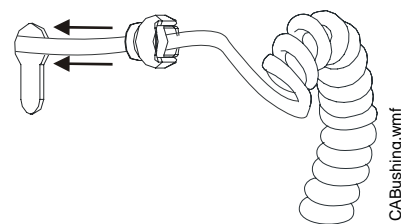
Figure 3 Attaching the Bushing

FCPS-24S6(C/E) & FCPS-24S8(C/E)

6- & 8-Amp 24-Volt Remote Power Supplies

⊙ NOTIFIER®
by Honeywell

Power Supplies

General

The FCPS-24S6E (6-amp) and FCPS-24S8E (8-amp) are remote power supplies with battery charger. The FCPS-24S6/-24S8 may be connected to any 12 or 24 volt fire alarm control panel (FACP) or may be used as stand-alone supplies. Primary applications include notification appliance circuit (NAC) expansion (to support ADA requirements and NAC synchronization) or auxiliary power to support 24 volt system accessories. The FCPS-24S6/-24S8 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). Alternately, the four outputs may be configured as all non-resettable, all resettable or two non-resettable and two resettable. The FCPS-24S6/-24S8 also contains a battery charger capable of charging up to 18 AH batteries. FCPS-24S6C & FCPS-24S8C are ULC-listed.

NOTE: *Unless otherwise specified, the terms FCPS-24S6 and FCPS-24S8 used in this document refers to the standard FCPS-24S6 and FCPS-24S8, FCPS-24S6C and FCPS-24S8C, the FCPS-24S6E and FCPS-24S8E*

Features

- UL-Listed NAC synchronization using System Sensor, Wheelock, or Gentex "Commander[2]" appliances.
- 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 jumped permanently "ON" (stand-alone mode).
- Four Class B (Style Y) or four Class A (Style Z, with ZNAC-4 module) NACs.
- 6-amp (FCPS-24S6) or 8-amp (FCPS-24S8) full load output, with 3 amps maximum/circuit, in NAC expander mode (UL 864).
- 4-amp (FCPS-24S6) or 6-amp (FCPS-24S8) continuous output in stand-alone mode (UL 1481).
- Compatible with coded inputs; signals passed through.
- Optional power-supervision relay (EOLR-1).
- 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 2-hour delay.
- Works with virtually any UL 864 fire alarm control which utilizes an industry-standard reverse-polarity notification circuit (including unfiltered and unregulated NAC power).
- Requires input trigger voltage of 9 - 32 VDC.
- Self-contained in compact, locking cabinet - 15"H x 14.5"W x 2.75"D (cm: 38.1H x 36.83W x 6.985D).

- Includes integral battery charger capable of charging up to 18 AH batteries. Cabinet capable of housing 7.0 AH batteries.
- Battery charger may be disabled via DIP switch for applications requiring larger batteries.
- Fixed, clamp-type terminal blocks accommodate up to 12 AWG (3.1mm²) wire.

Specifications

Primary (AC) Power:

- FCPS-24S6C/-24S8C: 120 VAC, 60 Hz, 3.2A maximum.
- FCPS-24S6E/-24S8E: 240 VAC, 50 Hz, 1.6A maximum.
- Wire Size: minimum #14 AWG (2.0mm²) 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 A at 24 VDC.

Auxiliary Power Output: Specific application power 500 mA maximum.

Output Circuits:

- +24 VDC filtered, regulated.
- 3.0 A maximum for any one circuit.
- Total continuous current for all outputs (stand-alone mode):
  – FCPS-24S6: 4.0 A maximum.
  – FCPS-24S8: 6.0 A maximum.
- Total short-term current for all outputs (NAC expander mode):
  – FCPS-24S6: 6.0 A maximum.
  – FCPS-24S8: 8.0 A maximum.

Secondary Power (Battery) Charging Circuit:

- Supports lead-acid batteries only.

- Float-charge voltage: 27.6 VDC.
- Maximum current charge: 1.5 A.
- Maximum battery capacity: 18 AH.

Applications

Example 1: Expand notification appliance power an additional 6.0 A (FCPS-24S6) or 8.0 A (FCPS-24S8). Use up to four Class B (Style Y) outputs or four Class A (Style Z) outputs (using ZNAC-4). For example, the FACP notification appliance circuits will activate the FCPS when reverse-polarity activation occurs. Trouble conditions on the FCPS are sensed by the FACP through the notification appliance circuit.

Example 2: Use the FCPS to expand auxiliary regulated 24-volt system power up to 4.0 A (FCPS-24S6) or up to 6.0 A (FCPS-24S8). Both resettable and non-resettable power options are available. Resettable outputs are created by connecting the resettable output from the FACP to one or both of the FCPS inputs.

Example 3: Use addressable control modules to activate the FCPS instead of activating it through the FACP notification appliance circuits. This typically allows for mounting the FCPS at greater distances* away from the FACP while expanding system architecture in various applications.

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 the FCPS provides power to the addressable control module.

NOTE: Addressable FACPs are capable of locating control and monitor modules at distances of up to 12,500 feet (3,810 meters).

Sync Follower/Generator Note

In some installations, it is necessary to synchronize the flash timing of all strobes in the system for ADA compliance. Strobes 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 FCPS-24S6/-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 attaches to the FCPS.

When the FCPS-24S6/-24S8 is configured (via DIP switch settings) as a "sync follower," the FCPS's NAC outputs track the strobe synchronization pulses present at the FCPS's sync input terminal. The pulses originate from an upstream FACP or other power supply.

When the FCPS-24S6/-24S8 are configured (via DIP switch settings) as a "sync generator," the FCPS's sync input terminals are not used. Rather, the FCPS is the originator of the strobe synchronization pulses on the FCPS's NAC outputs. In "sync generator" mode, the sync type (System Sensor, Wheelock, or Gentex) is selectable via DIP switch settings.

Standards and Codes

The FCPS-24S6 and FCPS-24S8 comply 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.

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.

- **UL Listed:** S635, S674
- **ULC Listed:** S635 (FCPS-24S6C & FCPS-24S8C)
- **CSFM Approved:** 7315-0028:225
- **MEA:** 299-02-E
- **FM Approved**

Ordering Information

FCPS-24S6: 6.0 A, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions.

FCPS-24S6C: Same as above, ULC-listed.

FCPS-24S6R: Same as FCPS-24S6 with red enclosure.

FCPS-24S6E: 6.0 A, 240 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions.

FCPS-24S8: 8.0 A, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions.

FCPS-24S8C Same as above, ULC-listed.

FCPS-24S8R: Same as FCPS-24S8 with red enclosure.

FCPS-24S8E: 8.0 A, 240 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions.

ZNAC-4: Class A (Style Y) NAC option module.

EOLR-1: 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).

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Made in the U.S.A.

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www.notifier.com

DAA2 Series

Digital Audio Amplifiers

by Honeywell

General

The DAA2 Series amplifiers are multi-featured amplifiers with digital audio functionality. Each DAA2 is capable of accessing and processing one of up to eight audio channels on the DVC audio loop, amplifying the signal, and distributing it via four Class B or two Class A outputs. A DAA2-50 or DAA2-75 series amplifier is capable of mounting an optional BDA Digital amplifier, which can be used to provide one-to-one amplifier backup, or to support two-channel operation, or increased output wattage to 100W (100W option applies to DAA2-50 series only, other rules apply).

The DAA2 has two wire digital audio ports to connect to wire DAL (digital audio loop) segments. Either or both ports may be converted to fiber using fiber option modules.

Up to 32 devices, such as DAA2 amplifiers, can be connected to the DAL on one DVC Digital Voice Command unit. DAA2 amplifiers may be mixed with DAX and DAA series amplifiers on the same DAL.

An optional Firefighter telephone riser on the DAA2 supports local and network FFT communications. A DAA2 also supports use of an RM-1 remote microphone.

DAA2 amplifiers can store backup alarm and trouble messages, and provide an adjustable background music input.

Features

- Listed to UL Standard 864, 9th edition.
- 50 W total output power at 25 V_{RMS} (all DAA2-5025 models) or 70 V_{RMS} (all DAA2-5070 models).
- 75 W total output power at 25 V_{RMS} (all DAA2-7525 models).
- Supports two Class A high-level audio outputs; or four Class B outputs.
- Optional BDA amplifers support alternative configurations.
  - Backup amplifier - supports one-to-one backup (all DAA2 models).
  - Primary amplifier - supports two-channel operation (all DAA2 models).
  - Primary amplifier - increase power up to 100W, one- or two-channel operation. (DAA2-50 series only, configuration rules apply.)
- Supports one-to-many amplifier backup applications using the same model DAA2.
- Firefighter telephone riser supports 7 active firefighter telephones. System Release 3.0 and higher supports optional configurations: direct connection for up to 7 firefighter telephones, or connection to multiple FTM-1 modules.
- Remote microphone paging option with RM-1.
- Audio output activation via network control-by-event equations resident within the DVC.
- Two wire digital audio ports that can be converted to fiber using fiber option modules. Support Style 4 or 7 configurations.
- Auxiliary input for 1 V_{RMS}, to be used for background music input, an interface with a telephone paging source, or other compatible audio sources. Audio levels can be adjusted by end user. Optional supervision through programming.
- Isolated alarm bus input, to be used for backup activation of alarm messages when normal digital communication is lost.
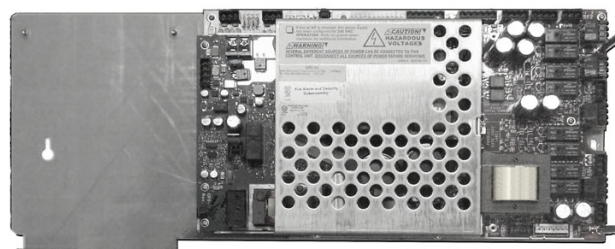
- Programmable through *VeriFire® Tools*.
- Up to 106 seconds of backup digital message storage for use in the event of communication loss (from the *VeriFire® Tools* message library, or created by the installer).
- Battery charger disable provides battery sharing option for up to four DAA2s.
- Disconnect of deeply-discharged battery (low battery disconnect).

Installation

The DAA2 arrives from the factory already installed on its chassis. The DAA2 mounts in one row of any EQ or CAB-4 Series cabinet: The CAB-4 row can be covered using a DP-1B dress panel, ordered separately.

One or two fiber option modules will plug directly onto a DAA2 for simple installation. A BDA backup amplifier mounts directly onto a DAA2.

Batteries for the DAA2 may be installed in any of the following configurations:

- In a CHS-BH1 optional battery chassis. The CHS-BH1 battery chassis will hold two 12.0 AH batteries, and mounts on the left side of the DAA2 chassis, so that the DAA2 and batteries are contained in a single cabinet tier.
- In the battery row (bottom) of the CAB-4 Series cabinet, or in the bottom row of an EQ Series cabinet.
- In a cabinet adjacent to the cabinet that holds the DAA2, with connections in conduit. External battery charging is supported.

Specifications

CPS-24 POWER SUPPLY BOARD

AC power (TB1): 120 VAC, 60 Hz input;
• DAA2-5025 - 4.68A max.

• DAA2-5070 - 4.69A max.
• DAA2-7525 - 4.68A max.
"E" versions, 220-240 VAC, 50/60 Hz input:
• DAA2-5025E - 2.68A max.
• DAA2-5070E - 2.68A max.
• DAA2-7525E - 2.68A max.
Recommended wiring: 12 to 14 AWG (1.6 mm O.D.) with 600 VAC insulation.
Secondary Power 5V and 24V AUX Outputs (TB2):
24 V AUX: Power-limited, 24V @ 0.5A, utilizes wire sizes 12-18 AWG (3.31 mm^2 - 2.08 mm^2.
5 V: Future Use.

Battery Connections: Supplied cable connections to batteries.

Battery Charger: Current-limited sealed lead acid battery charger which charges two 12 volt batteries in series, up to 200 AH.

	Charge 7AH to 26AH Batteries	Charge 26 AH to < 50 AH Batteries	Charge 50 AH to 200 AH Batteries
DAA2-5025 DAA2-5070	Yes	Yes	Yes
DAA2-7525	Yes	Yes	No
DAA2-5025 or DAA-5070 w/BDA in Group 2 of *VeriFire® Tools*.	No	No	No

Battery Charging Capabilities

DAA2 BOARDS

Digital Audio Ports, wire media, A and B (TB2, TB3): Maximum distance per segment is 1900 feet (579.12 m) on Belden 5320UJ (18AWG, TP) FPL cable: 18 AWG (0.821 mm^2) twisted-pair, unshielded, power-limited. For approved cable types, see wiring documentation, P/N 52916ADD: C *Approved Wire Cables for Digital Audio Loops*.

Digital Audio Ports, fiber media, fiber option modules:
Digital audio loop connectors support single- and multi-mode fiber with the use of fiber option modules. Refer to the Fiber Option Module datasheet for fiber specifications.

Alarm Bus: Power-limited, supervised by source. Recommended wiring: 14-18 AWG twisted-pair. Requires 16VDC minimum @ 20mA across the terminals to activate. Nominal 24VDC.

Remote Microphone Interface: RMI power: +24VDC, power-limited @ 100mA. Supervised. Recommended wiring: 14-18 AWG twisted-pair, Max. 14 AWG. Nominal AC signal strength 2.5V$_{RMS}$, 3V$_{RMS}$ Max. Maximum distance between remote microphone and DAA2: 100 ft (304.8 m).

FFT Riser: Power-limited output, supervised. Class A or Class B operation. Class B 2-wire connections require a 3.9k ohm 1/2 watt resistor (P/N R-3.9K). Max. wiring resistance (including individual telephone zone to last handset) permitted is 50 ohms, 10,000 ft (3048 m) max. wiring distance at 14 AWG to last handset.

Auxiliary Input: Signal strength from low-level analog audio input (such as background music or telephone paging): 1V$_{p-p}$ max. Optional supervision through programming. Recommended wiring: 14-18 AWG, twisted-pair. Auxiliary input source must be within 25 ft. (7.6 m) of the DAA2, and within the same room.

Speaker circuits: Power-limited outputs (exception: a DAA2-5070 speaker circuit used with any Canadian Room Isolator module is non-power limited. Speaker circuit 1 (TB10) can not be used.). Supervision determined by programming. DAA2-5025/70, Each circuit rated up to 50 watts*. DAA2-7525, each circuit rated up to 75 watts*. Recommended wiring: 12-18 AWG twisted-pair (shielded recommended). Class B or Class A: Class B requires 20k end-of-line resistors (included, P/N ELR-20K). Class A requires 10k end-of-line resistors

(included, P/N R-10K) on the return.
*total wattage may vary per configuration.

Backup: High-level audio input: 25V$_{RMS}$ (DAA2-5025 and DAA2-7525). 70 V$_{RMS}$ (DAA2-5070). Recommended wiring: 14-18 AWG. Not supervised when inactive. Supervised by backup source when active. Must be in same room or enclosure.

Standards and Codes

The DAA2 Series Digital Audio Amplifiers comply with the following standards:

• NFPA 72 2007 National Fire Alarm Code
• Underwriter Laboratories Standard UL 864
• Underwriter Laboratories of Canada (ULC) ULC-S527-99 Standard of Control Units for Fire Alarm Systems.
• Part 15 Class A conducted and radiated emissions as required by the FCC.

Listings and Approvals

These listings and approvals apply to the basic DAA2 Series Digital Audio Amplifiers. In some cases, certain modules may not be listed by certain agencies, or listing may be in process. Consult factory for latest listing status.

• UL Listed S635
• ULC LIsted: S635
• CSFM: 7165-0028:0234 (NFS2-640/NFS-320), 7165-0028:0224 (NFS2-3030)
• FDNY: #6067 (NFS2-640/NFS-320), #6065 (NFS2-3030)

Product Line Information

50 WATT DAA2 AMPLIFIERS

Shipped mounted to the chassis.

DAA2-5025: 120 VAC Digital Audio Amplifier (50 W, 25 V_{RMS}).

DAA2-5070: 120 VAC Digital Audio Amplifier (50 W, 70 V_{RMS}).

DAA2-5025E: 220-240 VAC Digital Audio Amplifier (50 W, 25 V_{RMS}).

DAA2-5070E: 220-240 VAC Digital Audio Amplifier (50 W, 70 V_{RMS}).

75 WATT DAA2 AMPLIFIERS

Shipped mounted to the chassis.

DAA2-7525: 120 VAC Digital Audio Amplifier (75 W, 25 V_{RMS}).

DAA2-7525E: 220-240 VAC Digital Audio Amplifier (75 W, 25 V_{RMS}).

BDA BACKUP DIGITAL AMPLIFIERS

BDA-25V: Backup Digital Amplifier (25 V_{RMS}), switch settings for 75, 50, and 35 W operation. Provides a second audio channel when programmed as a primary amplifier.

BDA-70V: Backup Digital Amplifier (70 V_{RMS}), switch settings for 50 and 35 W operation. Provides a second audio channel when programmed as a primary amplifier.

FIBER OPTION MODULES

DS-FM: Fiber option module for multi-mode fiber. Converts a wire DAP (digital audio port) to a multi-mode fiber port.

DS-SFM: Fiber option module for single-mode fiber. Converts a wire DAP (digital audio port) to a single-mode fiber port.

DS-RFM: Fiber option module for multi-mode fiber. Used exclusively for compatibility with multi-mode fiber DVC or DAA.

ACCESSORIES

CHS-BH1: Battery chassis: holds two 12.0 AH batteries. Mounts on the left side of the DAA2 chassis.

DP-1B: Dress panel: covers one tier of CAB-4 Series cabinet.sis.

ACT-25, ACT-70: Audio-coupling transformers. Used with AA-30 or DAA2-series amplifiers to drive thousands of amplifiers in large system applications.

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Made in the U.S. A.

BAT Series Batteries

Sealed Lead-Acid or Gell Cell

NOTIFIER®
by Honeywell

General

BAT Series Batteries feature a new part-numbering/listing system — providing an improved method of delivery for NOTIFIER-approved sealed lead-acid batteries for all your fire alarm system needs. Multiple brands of batteries are now offered under generic part numbers, reducing backorder situations and permitting us to deliver these products in a more timely fashion. NOTIFIER has approved the multiple brands listed below as possible product shipped for a given part number. Please note that any incoming orders for "PS Series" batteries will be converted to the equivalent BAT Series part numbers.

Features

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

6933cov.jpg

Agency Listings and Approvals

The listings and approvals below apply to BAT Series Batteries. 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 Recognized Components**: files MH19884 *(B & B Battery),* MH20567 *(UPG, previously Jolt),* MH20845 *(Power-Sonic).*

Part Number Reference

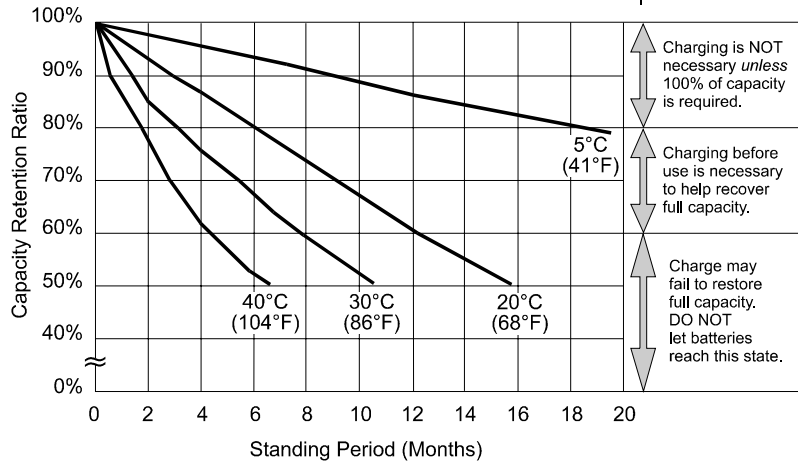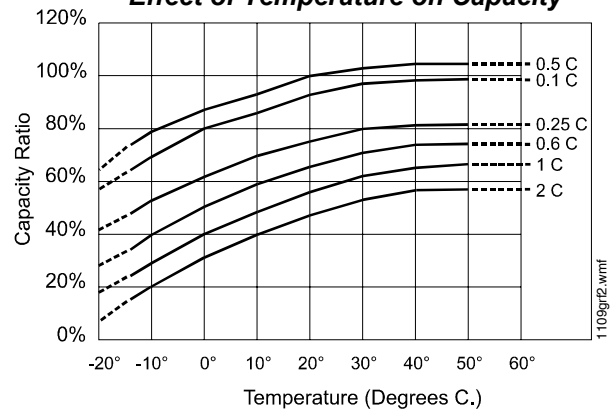| CURRENT Part Number	BATTERY DESCRIPTION	ALTERNATES APPROVED: manufacturers and P/Ns shipped under BAT P/Ns
BAT-1250	12 V, 5 AH, sealed.	BP5-12 (B&B Battery); PS-1250 (Power-Sonic); SA1250 (Jolt) to be replaced with UB1250 (UPG).
BAT-1250	12 V, 5 AH, sealed.	BP5-12 (B&B Battery); PS-1250 (Power-Sonic); SA1250 (Jolt) to be replaced with UB1250 (UPG).
BAT-1270	12 V, 7 AH, sealed.	BP7-12 (B&B Battery); PS-1270 (Power-Sonic); SA1272 (Jolt) to be replaced with UB1270 (UPG).
BAT-12120	12 V, 12 AH, sealed.	BP12-12 (B&B Battery); PS-12120 (Power-Sonic); SA12120 (Jolt) to be replaced with UB12120 (UPG).
BAT-12180	12 V, 18 AH, sealed.	PS-12180 (Power-Sonic); SA12180 (Jolt) to be replaced with UB12180 (UPG).
BAT-12180	12 V, 18 AH, sealed.	PS-12180 (Power-Sonic); SA12180 (Jolt) to be replaced with UB12180 (UPG).
BAT-12260	12 V, 26 AH, sealed.	BP26-12 (B&B Battery); PS-12260 (Power-Sonic); SA12260 (Jolt) to be replaced with UB12260 (UPG).
BAT-12550	12 V, 55 AH, sealed.	PS-12550 (Power-Sonic); XSA12550 (Jolt) to be replaced with UB12550 (UPG).
BAT-12550	12 V, 55 AH, sealed.	PS-12550 (Power-Sonic); XSA12550 (Jolt) to be replaced with UB12550 (UPG).
BAT-121000	12 V, 100 AH, gell cell.	PS-121000 (Power-Sonic); XSA121000A (Jolt) to be replaced with UB121000 (UPG).

POWER-SONIC

Part Number Reference

MODEL	Nominal Voltage V	Nominal Capacity @ 20 hr. rate A.H.	Discharge Current @20 hr. rate mA	DIMENSIONS									
				Width		Depth		Height		Height over terminal		Weight	
				in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg.
PS-1250	12	5	250	3.54	90	2.76	70	4.02	102	4.21	107	4.1	1.9
PS-1270	12	7	325	5.94	151	2.56	65	3.7	94	3.86	98	5.7	2.6
PS-12120	12	12	600	5.94	151	3.86	98	3.7	94	3.86	98	8.8	4
PS-12180	12	18	875	7.13	181	2.99	76	6.57	167	6.57	167	12.8	5.8
PS-12250	12	25	1300	6.89	175	6.54	166	4.92	125	4.92	125	18.7	8.5
PS-12550	12	55	3000	10.25	260	6.6	168	8.2	208	9.45	240	39.7	18
PS-121000	12	100	5000	12	305	6.6	168	8.2	208	9.45	240	65.7	29.8

Characteristic Discharge Curves

Discharge Time @ 20°C (68°F)
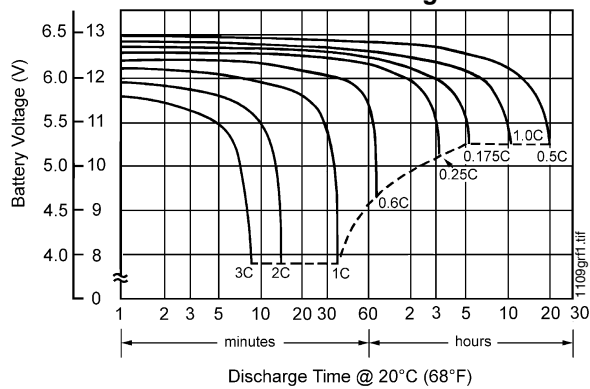
Effect of Temperature on Capacity

Temperature (Degrees C.)

Charging is NOT necessary *unless* 100% of capacity is required.

Charging before use is necessary to help recover full capacity.

Charge may fail to restore full capacity. DO NOT let batteries reach this state.

at left:
PS-121000
Shelf-Life
and Storage
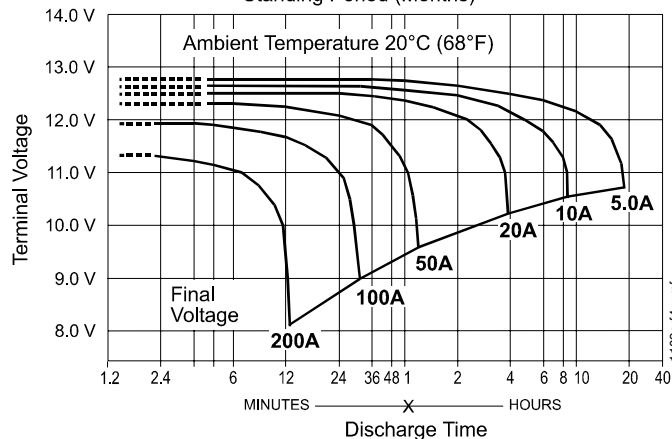
Discharge Time

at left:
PS-1210000
Discharge
Characteristics

UDACT-2

Universal Digital Alarm Communicator Transmitter

NOTIFIER ®
by Honeywell

Annunciator Control System

General

The Universal Digital Alarm Communicator Transmitter (UDACT-2) is designed for use on Notifier Fire Alarm Control Panels and on the NCA-2 Network Control Annunciator. When used in conjunction with the NCA-2 network control annunciator, the UDACT-2 can report the status of all control panels on NOTI•FIRE•NET™. The UDACT-2 transmits system status to UL listed Central Station Receivers via the public switched telephone network. The UDACT-2 can be installed in the panel cabinet or remotely in a separate enclosure.

NOTE: *The UDACT-2 can also be used with legacy panels. Please refer to the UDACT-2 manual for more information.*

The UDACT-2 upload/download programming and firmware updates are accomplished with VeriFire Tools. Refer to the Programming Section for further details.

The UDACT-2 is capable of transmitting the status of software zones (Alarm and Trouble), System Trouble, Panel Off-Normal, Supervisory, Bell Trouble, Low Battery, and AC Fail. The UDACT-2 is capable of transmitting all of the zone and point status associated with each panel.

When the UDACT-2 is used with the NFS-3030, NFS2-3030, and NCA-2 it is capable of reporting up to 2,040 points. Reporting may be in the form of points or zones (refer to the UDACT-2 manual for specific reporting parameters). Points transmitted may be programmed for a variety of types, including fire, waterflow, supervisory, etc.

NOTE: *Descriptions regarding point capacity, listed above, are for receivers which receive in Ademco Contact ID format. See chart on page 2 for compatible receivers.*

Features

- Programmable with VeriFire Tools version 6.60 or higher, allowing the UDACT-2 programming to be uploaded/downloaded and saved.
- Maximum of 14 point trouble messages transmitted per hour.
- Dual phone lines with line voltage detect.
- Compact in size: 6.75" x 4.25" (17.145 x 10.795 cm).
- USB port for upload/download programming.
- Manual Test Report function.
- Manual Transmission Clear function.
- Mounts in a separate enclosure (ABS-8RB or UBS-1B/R).
- Communicates vital system status including:
  – Independent zone fire alarm.
  – Independent zone non-fire alarm.
  – Independent zone trouble.
  – Independent zone supervisory.
  – AC (mains) Power Loss (programmable).
  – Low Battery and Earth Fault.
  – System Off-Normal.
  – 12 or 24 hour test signal.
  – Abnormal Test Signal per new UL requirements.
  – EIA-485 Communication Bus Failure.
- Annunciation of UDACT-2 Troubles including: loss of phone lines, communication failure with either Central Station, total communications failure.
- Individual LEDs for: Power, EIA-485 Loss, Manual Test, Kissoff, Comm Fail, Primary Line Seize, Secondary Line Seize and Modem Communications.
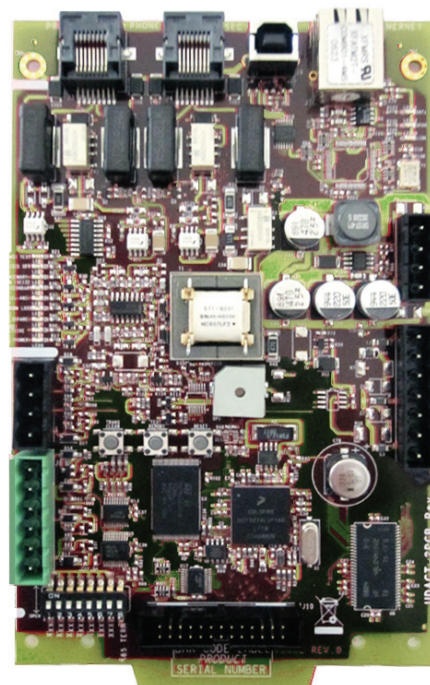
UDACT-2

- Open Collector relay driver for Total Communications Failure or UDACT-2 trouble.
- Real-time clock.
- Extensive transient protection.
- EIA-485 interface to host panel.

Programming

The UDACT-2 programming is created and downloaded using VeriFire Tools. This enables the unit to be programmed prior to installation, be easily modified, and saved either online or offline. A printed report with point or zone information can be generated from VeriFire Tools for an ONYX Series panel or network annunciator. The point report consists of the central station point address, ACS point, ACS point function, panel label, panel point, type code, custom and extended label, alarm verification, walktest participation, presignal, and PAS information. The zone report consists of a grid with the central station point address, ACS point address, source, ACS point function, custom label and panel label. This report may be sent to the Central Station for their records. VeriFire Tools also supports upgrading the UDACT-2 operating firmware.

Communication Formats

- Ademco Contact ID
- 4+2 Standard
- SIA

NOTE: *Ademco Contact ID must be used for independent zone reporting.*

Type Mode Feature

Ademco Contact ID format - only Use Type Mode to identify reports to Central Station as:

- Fire Alarm
- Supervisory
- Pull Station
- Heat Detector
- Waterflow
- Duct Detector
- Flame Sensor
- Smoke Zone
- Burglary
- 24 hour Non-Burglary
- High Temperature
- Low Temperature
- Low Water Pressure
- Low Water Level
- Pump Failure

Electrical Specifications

Standby current: 40 mA.

Current while communicating: 75 mA.

Maximum current *while communicating and with open collector output activated***:** 100 mA.

Voltage: Regulated 24 volts. Range: 21.2 to 28.2 volts.

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: S635
- FM Approved
- CSFM: 7165-0028:0243 (NFS2-640/320), 7165-0028:0224 (NFS2-3030)
- FDNY: COA#6085, COA#6098

Ordering Information

UDACT-2: Universal Digital Alarm Communicator Transmitter. Includes operating and programming instructions, and mounting hardware.

MCBL-7: DACT phone cord, 7 ft (2.13 m) long (two required).

ABS-8RB: Metal enclosure for externally mounting UDACT-2 up to 6,000 ft./1828.8 m from host FACP. 9.94" H x 4.63" W x 2.50" D (cm: 25.248 H x 11.760 W x 6.350 D).

UBS-1B: Metal enclosure with solid door, Black.

UBS-1BR: Metal enclosure with solid door, Red.

R-10E: SPDT Form-C relay. Contacts rated for 10 A @ 115 VAC. Connects to open collector relay driver.

R-20E: DPDT Two Form-C relays. Contacts rated for 10A @ 115 VAC. Connects to open collector relay driver.

FBD-1: Ferrite bead kit. Use for remote mounting only.

UL Listed Receivers

The chart below shows UL listed receivers compatible with the UDACT-2. A check in the protocol column indicates the receiver supports that protocol.

Receiver	4+2 Standard 1800/2300	Ademco Contact ID	SIA
Ademco 685 (1)	✔	✔	
Ademco MX8000 (2)	✔	✔	✔
Silent Knight 9500 (3)	✔	✔	✔
Silent Knight 9800 (4)	✔	✔	✔
FBI CP220FB (5)	✔	✔	✔
Osborne Hoffman 2000E (6)		✔	✔
Radionics 6600 (7)		✔	✔
SurGard MLR2 (8)	✔	✔	
SurGard System III (9)		✔	✔
SurGard MLR-2000 (10)		✔	

(1) With 685-8 Line Card with Rev 4.4d software

(2) With 124060V206B and 124063 Line Card Rev B

(3) With version V2.4 Receiver & 126047 Line Card Rev G

(4) With 124077V2.00 Receiver &126047 Line Card Rev M

(5) With software V3.9

(6) With V.7301 Receiver S/W

(7) With 01.01.03 Receiver S/W & Line Card 01.01.03

(8) With software V1.86

(9) With sotware V1.72

(10) With DSP4016 and V1.6 Line Card

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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.

Made in the U.S. A.

For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com

LCD2-80

Liquid Crystal Display
Terminal Mode/ACS Mode Annunciator

NOTIFIER®
by Honeywell

Annunciators

General

The LCD2-80 is a backlit LCD annunciator for the NOTIFIER fire alarm control panels, or network control annunciators that support the 80-character display format. LCD2-80s may be connected onto the four-wire EIA-485 terminal port.

The LCD2-80 mimics the display of NFS2-640, NFS2-3030, NFS-320, NCA-2 and legacy panels that supported the LCD-80/LCD-80TM. The NFS2-3030 and the NCA-2 also support LCD2-80s when set for LCD-80 supervision. Up to 32 LCD2-80s can annunciate and provide remote reset, acknowledge, drill and silence of the control panel from remote locations.

Features

- 80-character backlit Liquid Crystal Display (20 characters x 4 lines).
- Display mimics panel or NCA:
    - Event message.
    - 20 characters for point label.
    - 12 characters for extended label.
    - Time, date and point address.
- Control switches for System Acknowledge, Signal Silence Drill and System Reset.
- LEDS for general off-normal events with UL 864 9th Edition Panels.
  NOTE: The LEDs are only applicable when used with UL 864 Ninth Edition listed panels: NFS-320, NFS2-640, NFS2-3030, and NCA-2.
- ACS mode option for annunciation of user selected points. (VeriFire Tools 6.90 or higher required to program points.)
- Up to 6000 foot segments between units.
- Local piezo sounder with alarm/trouble resound.
- Displays all analog, addressable points.
- Displays device type identifiers.
- Displays device and zone custom alpha labels.
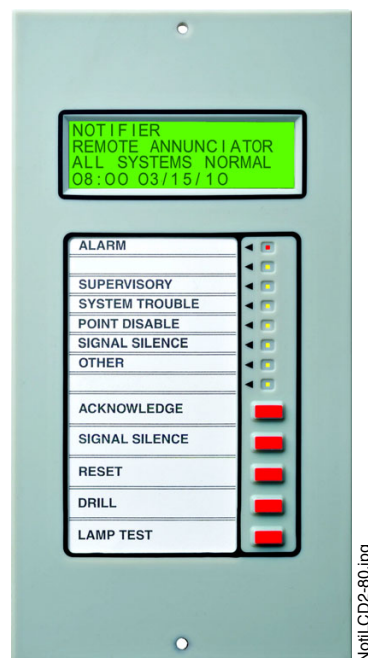
- LCD2-80 mounts with any CHS-4 chassis slot.
- Slide-in label can be customized.
- Flush/surface/panel mount option.
- LCD2-80 displays time, date, and custom messages received from the compatible panel or network annunciator.
- LCD2-80 is 8.25" (20.96 cm) high, 4.375" (11.11 cm) wide, and 1.75" (4.45 cm) deep.
- Up to 32 LCD2-80s may be used on one EIA-485 circuit.

NOTE: Must have sufficient regulated 24 volt power.
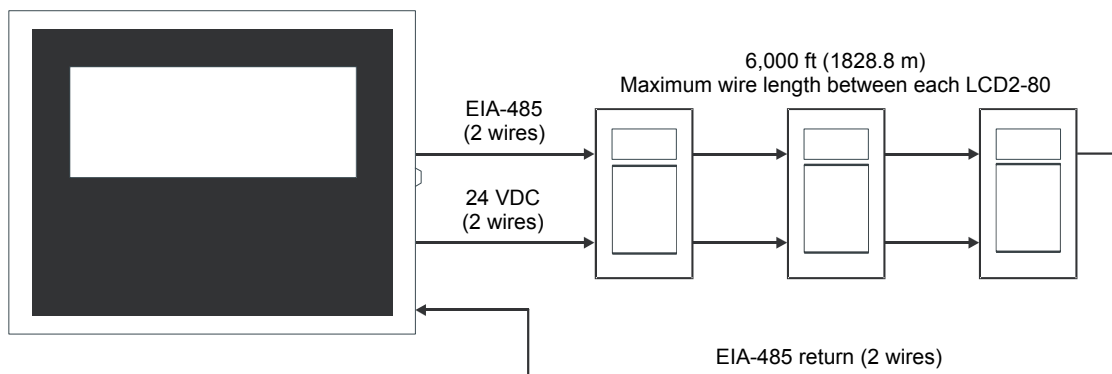
NFS-320, NFS2-640, NFS2-3030, or NCA-2 connecting to LCD2-80

The ABF-1DB Backbox

The **ABF-1DB** is a semi-flush-mount backbox for the NOTI-FIER LCD2-80 Series Annunciator. The ABF-1DB mounts one LCD2-80. It includes an attractive smoked-glass door with NOTIFIER keylock.

- **Dimensions, BOX only:** 9.938" (25.24 cm) high, 4.625" (11.75 cm) wide, 2.5" (6.35 cm) deep.
- **Dimensions, DOOR only:** 10.713" (27.21 cm) high, 6.0" (15.24 cm) wide, 0.75" (1.9 cm) deep.

Related Options

ABF-1DB: Semi-flush box with alternative smoked-glass door, any keylock.

ADP-4B: Annunciator dress plate, black. Allows panel mounting of up to four LCD2-80 modules in a CAB-4 Series cabinet.

ABF-1B: Annunciator flush box, 9.938" (25.24 cm) high, 4.625" (11.75 cm) wide, and 2.5" (6.35 cm) deep. Order AKS-1B key switch and APJ-1B phone jack if desired. Can also be mounted in ABF-2B or ABF-4B annunciator backboxes.

ABS-1TB: Deep surface backbox (mounts one LCD2-80).

ABS-2B: Annunciator surface box, 8.5" (21.59 cm) high x 8.92" (22.66 cm) x 2" (5.08 cm) deep. Knockouts are provided for use with 1/2" (1.27 cm) conduit. The annunciators mount directly to the ABS-2B without a dress plate.

ABS-2D: Annunciator backbox, surface, black.

ABF-2B: Annunciator flush box, 9.938" (25.24 cm) high x 9.188" (23.34 cm) wide x 3.75" (9.525 cm) deep. Includes a painted metal trim plate [11" (27.94 cm) high x 10.625" (26.99 cm) wide] and adhesive-backed annunciator label.

ABF-2DB: Annunciator semi-flush mount backbox. Black with a smoked glass door with a keylock.

AKS-1B: Key Switch (black) to enable/disable controls when mounted in ABF-1B or ABS-1TB.

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.

- **UL Listed:** S635.
- **ULC Listed:** S635.
- **FDNY:** COA# 6121, 6114.
- **CSFM:** 7165-0028:0243, 7165-0028-0224.
- **FM Approved.**

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www.notifier.com

Made in the U.S. A.

CAB-4 Series Cabinets

ONYX® Series Backboxes
with Locking Doors

®NOTIFIER
by Honeywell

General

All cabinets for NOTIFIER fire alarm control panels are fabricated from 16-gauge steel. The cabinet assembly consists of two basic parts: a backbox and a locking door. Cabinets are available in either black or red, with or without windows. The window model provides a tasteful combination to accent the decor of the finest lobby setting.

- The **key-locked door** is provided with a pin-type hinge, two keys and the necessary hardware to mount the door to the backbox.

- The **backbox** has been engineered to provide ease-of-entry for the installer. **Knockouts** are positioned at numerous points to aid the installer in bringing a conduit into the enclosure with a minimum of hardship.

- **Right- or left-hand hinges**, selectable in the field. Door opens 180°.

- Cabinets are arranged in **four standard sizes**, A (one tier) through D (four tiers), plus a **mini cabinet** (AA, one tier without a battery compartment). See *Ordering Information*.

- A **trim ring option** is available for semi-flush mounting.

- **Chassis bridge** available for assembling multiple CHS-4 chassis external to the backbox.

- Certified for seismic applications when used with the appropriate **seismic mounting kit**.

Ordering Information

A complete cabinet assembly consists of: a door, a backbox, an optional battery plate, and an optional semi-flush trim ring. For each cabinet required, order one "DR" door and one "SBB" backbox. The BP2-4 battery plate is required for each cabinet assembly that mounts batteries and/or a power supply in the lower position of the cabinet. The optional trim ring is an attractive "picture frame"-style black metal ring.

MINI "AA" SIZE, ONE TIER

DR-AA4: Door assembly, window, one tier (no battery compartment), BLACK, 9.8 lbs.

DR-AA4R: Door assembly, window, one tier (no battery compartment), RED, 9.8 lbs.

DR-AA4B: Door assembly, solid door, one tier (no battery compartment), BLACK.

DR-AA4BR: Door assembly, solid door, one tier (no battery compartment), RED.

SBB-AA4: Backbox assembly, one tier (no battery compartment), BLACK, 16.65 lbs.

SBB-AA4R: Backbox assembly, one tier (no battery compartment), RED, 16.65 lbs.

TR-AA4: Accessory semi-flush-mount trim ring, one tier (no battery compartment).

NOTE: *Black trim rings are used with red or black cabinets.*

ONE TIER, "A" SIZE

DR-A4: Door assembly, window, one tier, BLACK, 14.20 lbs.

DR-A4R: Door assembly, window, one tier, RED, 14.20 lbs.

DR-A4B: Door assembly, solid door, one tier, BLACK, 14.30 lbs.

NFS2-3030 and DVC in "C" sized CAB-4 cabinet

7045cov.jpg

DR-A4BR: Door assembly, solid door, one tier, RED, 15 lbs.

SBB-A4: Backbox assembly, one tier, BLACK, 21 lbs.

SBB-A4R: Backbox assembly, one tier, RED, 21 lbs.

TR-A4: Accessory semi-flush-mount trim ring, one tier (opening 24.062" [61.118 cm] W x 20.062" [50.958 cm] H), BLACK, 2.5 lbs.

NOTE: *Black trim rings are used with red or black cabinets.*

BP2-4: Battery plate. Used to cover battery and power supply when lower position is used in backbox, 3.10 lbs.

TWO TIERS, "B" SIZE

DR-B4: Door assembly, window, two tiers, BLACK, 17.45 lbs.

DR-B4R: Door assembly, window, two tiers, RED, 17.45 lbs.

ADDR-B4: Two-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. BLACK.

ADDR-B4R: Two-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. RED.

DR-B4B: Door assembly, solid door, two tiers, BLACK, 18.80 lbs.

DR-B4BR: Door assembly, solid door, two tiers, RED, 18.80 lbs.

SBB-B4: Backbox assembly, two tiers, BLACK, 26.88 lbs.

SBB-B4R: Backbox assembly, two tiers, RED, 26.88 lbs.

TR-B4: Accessory semi-flush-mount trim ring, two tiers (opening 24.062" [61.118 cm] W x 28.562" [72.548 cm] H), BLACK, 3 lbs.

NOTE: *Black trim rings are used with red or black cabinets.*

BP2-4: Battery plate. Used to cover battery and power supply when lower position is used in backbox, 3.10 lbs.

THREE TIERS, "C" SIZE

DR-C4: Door assembly, window, three tiers, BLACK, 20.75 lbs.

DR-C4R: Door assembly, window, three tiers, RED, 20.75 lbs.

ADDR-C4: Three-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. BLACK.

ADDR-C4R: Three-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. RED.

DR-C4B: Door assembly, solid door, three tiers, BLACK, 23.45 lbs.

DR-C4BR: Door assembly, solid door, three tiers, RED, 23.45 lbs.

SBB-C4: Backbox assembly, three tiers, BLACK, 32.60 lbs.

SBB-C4R: Backbox assembly, three tiers, RED, 32.60 lbs.

TR-C4: Accessory semi-flush-mount trim ring, three tiers (opening 24.062" [61.118 cm] W x 37.187" [94.455 cm] H), BLACK, 3.50 lbs.

NOTE: *Black trim rings are used with red or black cabinets.*

BP2-4: Battery plate. Used to cover battery and power supply when lower position is used in backbox, 3.10 lbs.

FOUR TIERS, "D" SIZE

DR-D4: Door assembly, window, four tiers, BLACK, 23.95 lbs.

DR-D4R: Door assembly, window, four tiers, RED, 23.95 lbs.

ADDR-D4: Four-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. BLACK.

ADDR-D4R: Four-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. RED.

DR-D4B: Door assembly, solid door, four tiers, BLACK, 28.40 lbs.

DR-D4BR: Door assembly, solid door, four tiers, RED, 28.40 lbs.

SBB-D4: Backbox assembly, four tiers, BLACK, 40 lbs.

SBB-D4R: Backbox assembly, four tiers, RED, 40 lbs.

TR-D4: Accessory semi-flush-mount trim ring, four tiers (opening 24.062" [61.118 cm] W x 45.812" [116.363 cm] H), BLACK, 3.80 lbs.

NOTE: *Black trim rings are used with red or black cabinets.*

BP2-4: Battery plate. Used to cover battery and power supply when lower position is used in backbox, 3.10 lbs.

ACCESSORIES

ADP-4B: Annunciator dress panel.

CAB-BM: For use with "B" sized cabinets in Marine applications. See DN-60688 for more information.

CB-1: Chassis bridge. Provides a bridge between CHS Series chassis.

DP-1B: Blank dress panel, covers one CAB-4 tier, BLACK.

SEISKIT-CAB: Seismic mounting kit. Required for seismic-certified applications with NFS2-3030, NFS2-640, and NFS-320SYS. Includes battery bracket for two 26 AH batteries.

VP-2B: Ventilator panel.

WC-2: Wire channel. Provides a pair of wire trays to neatly route wiring between CHS chassis.
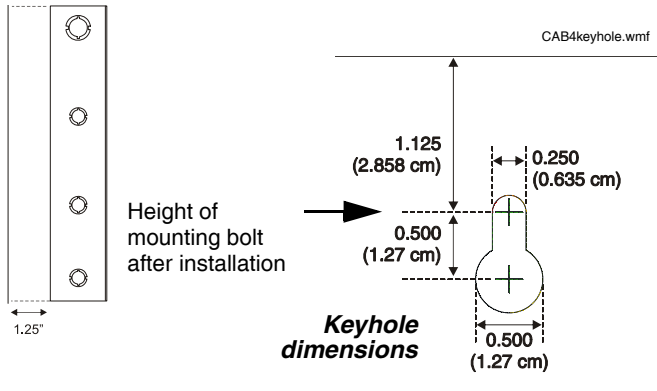
Agency Listings and Approvals

These listings and approvals below apply to the CAB-4 Series Cabinets. 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.

- **UL** Listed: S635
- **ULC** Listed: S635
- **MEA**: 317-01-E, 345-02-E
- **CSFM**: 7165-0028:0243 *(NFS2-640)*, 7165-0028:0224 *(NFS2-3030)*
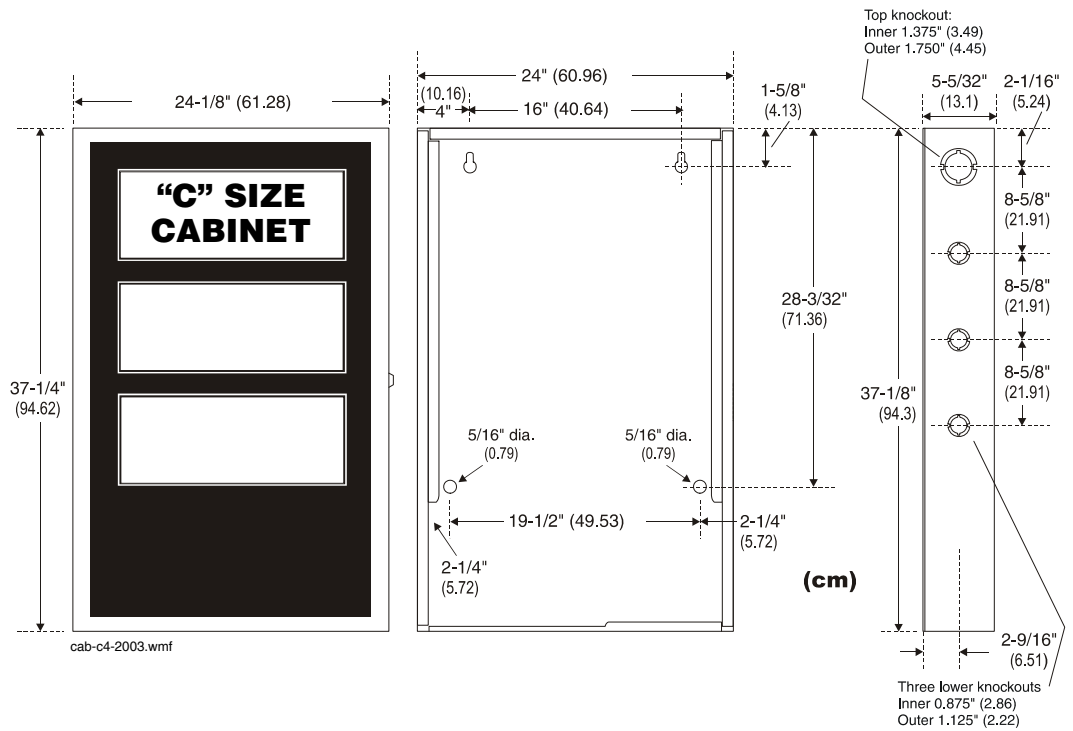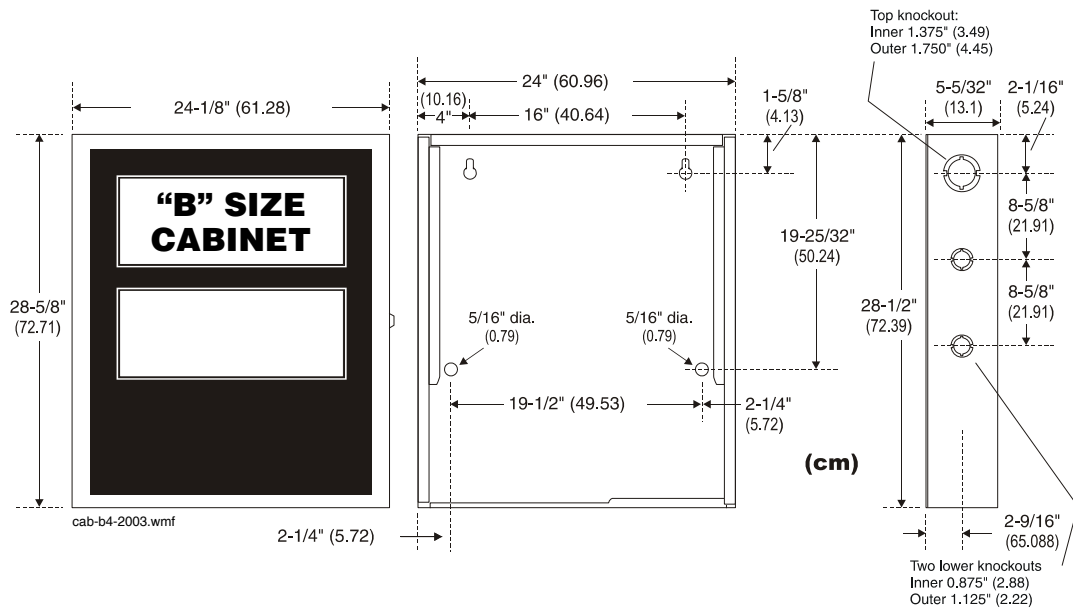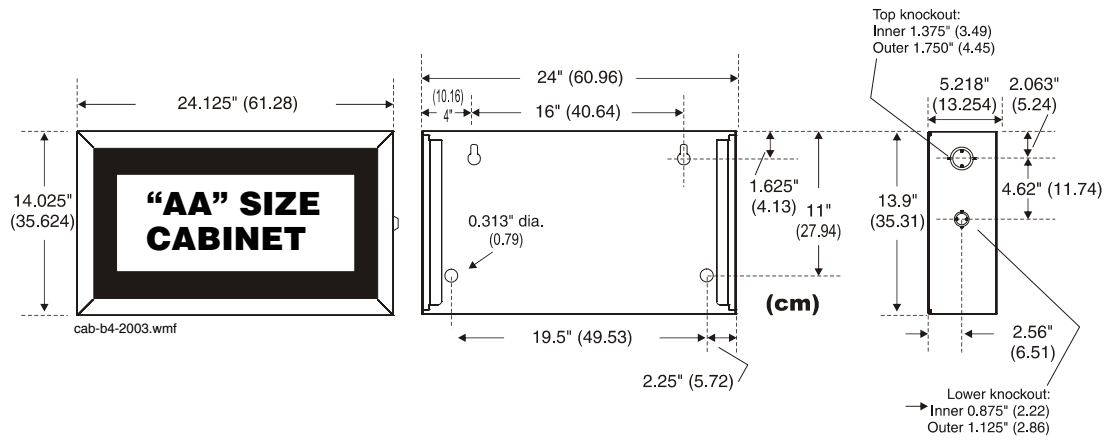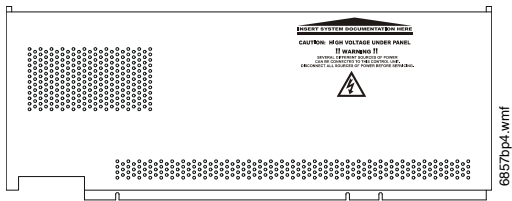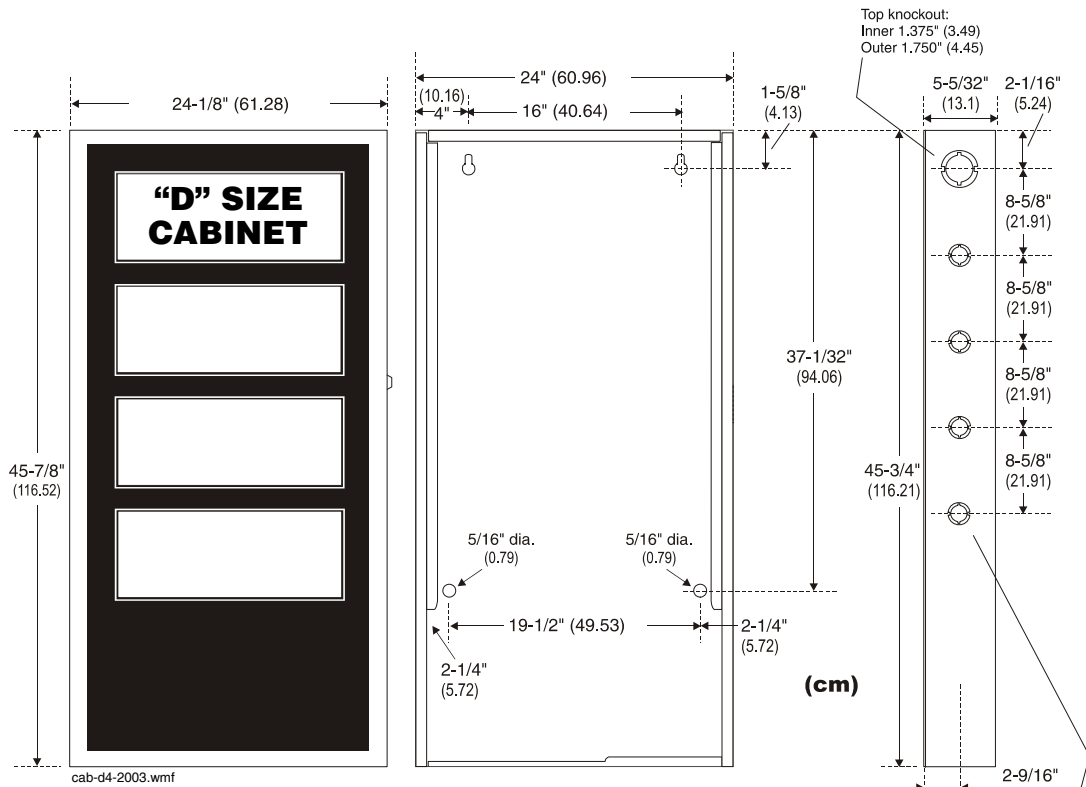- **FM** approved
- **FDNY:** COA# 6085, COA# 6098

CAB-4 Series cabinets with SEISKIT-CAB comply with seismic requirements of **IBC 2000, IBC 2003, IBC 2006, IBC2009**, and **CBC 2007**.

Cabinet Dimensions and Features

(13.097)
5.156"

(6.197)
2.44"

CAB4keyhole.wmf

**Knockouts on
top of cabinets.**

1.125
(2.858 cm)

0.250
(0.635 cm)

Height of
mounting bolt
after installation

0.500
(1.27 cm)

5.93"
(15.062)

7.12"
(18.084)

KNOCKOUTS:
Inner:
0.875" (2.223)
Outer:
1.125" (2.858)

5.93"
(15.062)

**Keyhole
dimensions**

0.500
(1.27 cm)

1.25"

6857ko.wmf

Top knockout:
Inner 1.375" (3.49)
Outer 1.750" (4.45)

24" (60.96)

(10.16)
4"

16" (40.64)

5-5/32"
(13.1)

2-1/16"
(5.24)

24-1/8" (61.28)

"A" SIZE
CABINET

1-5/8"
(4.13)

8-5/8"
(21.91)

20-1/8"
(51.12)

5/16" dia.
(0.79)

5/16" dia.
(0.79)

11-9/32"
(28.66)

20"
(50.80)

19-1/2" (49.53)

(cm)

cab-a4-2003.wmf

2-1/4" (5.72)

2-9/16"
(6.51)

Lower knockout:
Inner 0.875" (2.86)
Outer 1.125" (2.22)

"AA" SIZE CABINET

24.125" (61.28)

14.025" (35.624)

cab-b4-2003.wmf

24" (60.96)

(10.16)
4"

16" (40.64)

0.313" dia. (0.79)

1.625" (4.13)

11" (27.94)

19.5" (49.53)

2.25" (5.72)

(cm)

Top knockout:
Inner 1.375" (3.49)
Outer 1.750" (4.45)

5.218" (13.254)

2.063" (5.24)

13.9" (35.31)

4.62" (11.74)

2.56" (6.51)

Lower knockout:
Inner 0.875" (2.22)
Outer 1.125" (2.86)

"B" SIZE CABINET

24-1/8" (61.28)

28-5/8" (72.71)

cab-b4-2003.wmf

24" (60.96)

(10.16)
4"

16" (40.64)

1-5/8" (4.13)

19-25/32" (50.24)

5/16" dia. (0.79)

5/16" dia. (0.79)

19-1/2" (49.53)

2-1/4" (5.72)

2-1/4" (5.72)

(cm)

Top knockout:
Inner 1.375" (3.49)
Outer 1.750" (4.45)

5-5/32" (13.1)

2-1/16" (5.24)

28-1/2" (72.39)

8-5/8" (21.91)

8-5/8" (21.91)

2-9/16" (65.088)

Two lower knockouts
Inner 0.875" (2.88)
Outer 1.125" (2.22)

"C" SIZE CABINET

24-1/8" (61.28)

37-1/4" (94.62)

cab-c4-2003.wmf

24" (60.96)

(10.16)
4"

16" (40.64)

1-5/8" (4.13)

28-3/32" (71.36)

5/16" dia. (0.79)

5/16" dia. (0.79)

19-1/2" (49.53)

2-1/4" (5.72)

2-1/4" (5.72)

(cm)

Top knockout:
Inner 1.375" (3.49)
Outer 1.750" (4.45)

5-5/32" (13.1)

2-1/16" (5.24)

37-1/8" (94.3)

8-5/8" (21.91)

8-5/8" (21.91)

8-5/8" (21.91)

2-9/16" (6.51)

Three lower knockouts
Inner 0.875" (2.86)
Outer 1.125" (2.22)

"D" SIZE CABINET

24-1/8" (61.28)

45-7/8" (116.52)

cab-d4-2003.wmf

Top knockout:
Inner 1.375" (3.49)
Outer 1.750" (4.45)

24" (60.96)

(10.16)
4"

16" (40.64)

1-5/8" (4.13)

5-5/32" (13.1)

2-1/16" (5.24)

37-1/32" (94.06)

8-5/8" (21.91)

8-5/8" (21.91)

8-5/8" (21.91)

8-5/8" (21.91)

45-3/4" (116.21)

5/16" dia. (0.79)

5/16" dia. (0.79)

19-1/2" (49.53)

2-1/4" (5.72)

2-1/4" (5.72)

(cm)

2-9/16" (6.51)

Four lower knockouts
Inner 0.875" (2.86)
Outer 1.125" (2.22)

INSERT SYSTEM DOCUMENTATION HERE

CAUTION: HIGH VOLTAGE UNDER PANEL

!! WARNING !!

SEVERAL DIFFERENT SOURCES OF POWER
CAN BE CONNECTED TO THIS CONTROL UNIT.
DISCONNECT ALL SOURCES OF POWER BEFORE SERVICING.

6857bp4.wmf

The BP2-4 Battery Plate covers the Main Power Supply and the batteries in the cabinet. Only one BP2-4 is required per cabinet unless an AA cabinet is used (no battery compartment).

6897d4b.wmf
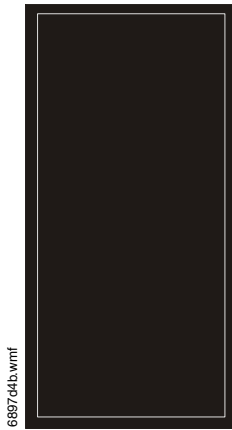
"D" sized cabinet with solid door. Solid door option available on all sizes in black or red.

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For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com

Made in the U.S. A.

FSP-851(A) Series

Intelligent Plug-In Photoelectric Smoke Detectors with FlashScan®

NOTIFIER®
by Honeywell

General

Notifier FSP-851(A) 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 rotary, decimal address switches, providing exact detector location for selective maintenance when chamber contamination reaches an unacceptable level. The FSP-851(A) 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(A). The FSP-851R(A) is a remote test capable detector for use with DNR(A)/DNRW duct detector housings. FSP-851(A) series detectors are compatible with Notifier Onyx and CLIP series Fire Alarm Control Panels (FACPs).

FlashScan® (U.S. Patent 5,539,389) is a communication protocol developed by Notifier that greatly increases 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.
- Compatible with FlashScan® and CLIP protocol systems.
- Rotary, decimal addressing (1-99 on CLIP systems, 1-159 on FlashScan systems).
- Optional remote, single-gang LED accessory.
- 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 *(FlashScan systems only)*.
- Remote test feature from the panel.
- Walk test with address display (an address on 121 will blink the detector LED: 12-[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 fire-resistant plastic, 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.

Specifications

Sensitivity: 0.5% to 2.35% per foot obscuration

Size: 2.1" (5.3 cm) high; base determines diameter.

- **B210LP(A):** 6.1" (15.5 cm) diameter.
- **B501(A):** 4.1" (10.4 cm) diameter.
- **B200S(A):** 6.875" (17.46 cm) diameter.

FSP-851(A) in B210LP(A) Base

B210-2951.jpg

- **B200SR(A):** 6.875" (17.46 cm) diameter.
- **B224RB(A):** 6.2" (15.748 cm) diameter.
- **B224BI(A):** 6.2" (15.748 cm) diameter.

Shipping Weight: 5.2oz. (147g).

Operating Temperature range: FSP-851(A), 0°C to 49°C (32°F to 120°F). FSP-851T(A), 0°C to 38°C (32°F to 100°F). Low temperature signal for FSP-851T(A) at 45°F +/- 10°F (7.22°C +/- 5.54°C). FSP-851R(A) installed in a DNR(A)/DNRW, -20°C to 70°C (-4°F to 158°F).

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

Relative Humidity: 10%-93% noncondensing.

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

DETECTOR SPACING AND APPLICATIONS

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

ELECTRICAL SPECIFICATIONS

Voltage Range: 15-32 volts DC peak.

Standby Current (max. avg.): 300µA @ 24VDC (one communication every five seconds with LED enabled).

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

Installation

FSP-851(A) 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 (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see *DN-60054*.

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 the ISO-X(A) installation*

sheet I56-1380 for device limitations between isolator modules and isolator bases.

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.*

- **UL Listed:** S1115.
- **ULC Listed:** S1115 (FSP-851A, FSP-851RA, FSP-851TA).
- **MEA Listed:** 225-02-E .
- **FM Approved.**
- **CSFM:** 7272-0028:0206 .
- **Maryland State Fire Marshal:** Permit # 2122 **.**
- **BSMI:** CI313066760036.
- **CCCF:** Certif. # 2004081801000017 (FSP-851T) Certif. # 2004081801000016 (FSP-851).
- **U.S. Coast Guard:** 161.002/42/1 (NFS-640); 161.002/50/0 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).
- **Lloyd's Register:** 11/600013 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).

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.

FSP-851R: Low-profile intelligent photoelectric sensor, remote test capable. For use with DNRA/DNRW.

FSP-851RA: Same as FSP-851R but with ULC listing. For use with DNRA.

INTELLIGENT BASES

NOTE: "A" suffix indicates ULC Listed model.

NOTE: For details on intelligent bases, see DN-60054.

B210LP(A): Standard U.S. flanged low-profile mounting base.

B210LPBP: Bulk pack of B210LP; package contains 10.

B501(A): Standard European flangeless mounting base.

B501BP: Bulk pack of B501; package contains 10.

B200S(A): Intelligent, programmable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone.

B200SR(A): Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Replaces B501BH series bases in retrofit applications.

B224RB(A): Plug-in System Sensor **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.

B224BI(A): Plug-in System Sensor *isolator* detector base. Maximum 25 devices between isolator bases .

ACCESSORIES

F110: Retrofit flange to convert B210LP(A) to match the B710LP(A) profile, or to convert older high-profile bases to low-profile.

F110BP: Bulk pack of F110; package contains 15.

F210: Replacement flange for B210LP(A) base.

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B210LP(A) bases only.

SMB600: Surface mounting kit

M02-04-00: Test magnet.

M02-09-00: Test magnet with telescoping handle.

XR2B: Detector removal tool. Allows installation and/or removal of detector heads from bases in high ceiling applications.

XP-4: Extension pole for XR2B. Comes in three 5-foot (1.524 m) sections.

T55-127-010: Detector removal tool without pole.

BCK-200B: Black detector covers for use with FSP-851(A) only; box of 10.

WCK-200B: White detector covers for use with FSP-851(A) only; box of 10.

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www.notifier.com

FST-851(A) Series

Intelligent Thermal (Heat) Detectors with FlashScan®

NOTIFIER®
by Honeywell

Intelligent / Addressable Devices

General

Notifier FST-851(A) Series intelligent plug-in thermal detectors with integral communication has features that surpass conventional detectors. Point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector locations. FST-851(A) Series thermal detectors use an innovative thermistor sensing circuit to produce 135°F/57°C fixed-temperature (FST-851/A) and rate-of-rise thermal detection (FST-851R/A) in a low-profile package. FST-851H(A) provides fixed high-temperature detection at 190°F/88°C. These thermal detectors provide effective, intelligent property protection in a variety of applications. FST-851(A) Series detectors are compatible with Notifier Onyx and CLIP series Fire Alarm Control Panels (FACPs).

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 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.

Features

- Sleek, low-profile, stylish design.
- State-of-the-art thermistor technology for fast response.
- Rate-of-rise model (FST-851R/A), 15°F (8.3°C) per minute.
- Factory preset fixed temperature at 135°F (57°C); high-temperature model fixed at 190°F (88°C).
- Addressable by device.
- Compatible with FlashScan® and CLIP protocol systems.
- Rotary, decimal addressing (1-99 on CLIP 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.
- Backward-compatible.
- Built-in tamper-resistant feature.
- Designed for direct-surface or electrical-box mounting.
- Sealed against back pressure.
- 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 fire-resistant plastic, designed to commercial standards, and offers an attractive appearance.

FST-851(A) in B210LP(A) Base

B210-2251.jpg

- 94-5V plastic flammability rating.
- Remote LED output connection to optional RA100Z(A) remote LED annunciator.
- Optional sounder, relay, and isolator bases.
- Optional flanced surface mounting kit.

Specifications

Size: 2.1" (5.3 cm) high; base determines diameter.

- **– B210LP(A):** 6.1" (15.5 cm) diameter.
- **– B501(A):** 4.1" (10.4 cm) diameter.
- **– B200S(A):** 6.875" (17.46 cm) diameter.
- **– B200SR(A):** 6.875" (17.46 cm) diameter.
- **– B224RB(A):** 6.2" (15.748 cm) diameter.
- **– B224BI(A):** 6.2" (15.748 cm) diameter.

Shipping weight: 4.8 oz. (137 g).

Operating temperature range: FST-851(A) Series, FST-851R(A): –20°C to 38°C (–4°F to 100°F); FST-851H(A): –20°C to 66°C (–4°F to 150°F).

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.

Relative humidity: 10% – 93% noncondensing.

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).

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak.

Standby current (max. avg.): 300 µA @ 24 VDC (one communication every 5 seconds with LED enabled).

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

Applications

Use thermal detectors for protection of property. For further information, go to systemsensor.com for manual I56-407-00, Applications Manual for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications.

Installation

The FST Series plug-in intelligent thermal detectors use a separate base to simplify installation, service, and maintenance. Installation instructions are shipped with each detector. A special tool allows maintenance personnel to plug in and remove detectors without using a ladder

Mount base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see *DN-60054*.

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 the ISO-X(A) installation sheet I56-1380 for device limitations between isolator modules and isolator bases.*

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.*

- **UL Listed:** S747.
- **ULC Listed:** S6978.
- **MEA Listed:** 383-02-E.
- **FM Approved.**
- **CSFM:** 7270-0028:0196.
- **BSMI:** CI313066760025.
- **CCCF:** Certif. # 2004081801000018.
- **U.S. Coast Guard:** 161.002/42/1 (NFS-640); 161.002/50/0 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).
- **Lloyd's Register:** 11/600013 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).

Product Line Information

NOTE: *"A" suffix indicates ULC Listed model.*

FST-851: Intelligent thermal detector. Must be mounted to one of the bases listed below.

FST-851A: Same as FST-851 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.

INTELLIGENT BASES

NOTE: *"A" suffix indicates ULC Listed model.*

NOTE: *For details about intelligent bases and their mounting, see DN-60054.*

B210LP(A): Standard U.S. flanged low-profile mounting base.

B210LPBP: Bulk pack of B210LP; package contains 10.

B501(A): Standard European flangeless mounting base.

B501BP: Bulk pack of B501; package contains 10.

B200S(A): Addressable Intelligent, programmable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone.

B200SR(A): Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Replaces B501BH series bases in retrofit applications.

B224RB(A): Intelligent 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.

B224BI(A): Intelligent isolator base. Isolates SLC from loop shorts. Maximum: 25 devices between isolator bases; see Note 2 under Installation.

ACCESSORIES

F110: Retrofit flange to convert B210LP(A) to match the B710LP(A) profile, or to convert older high-profile bases to low-profile.

F110BP: Bulk pack of F110; package contains 15.

F210: Replacement flange for B210LP(A) base.

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Fits U.S. single-gang electrical box. Supported by B210LP(A) and B501(A) bases only.

SMB600: Surface mounting kit, flanged.

M02-04-00: Test magnet.

M02-09-00: Test magnet with telescoping handle.

XR2B: Detector removal tool. Allows installation and/or removal of FlashScan® Series detector heads from base in high ceiling installations. Includes T55-127-010.

T55-127-010: Detector removal tool without pole.

XP-4: Extension pole for XR2B. Comes in three 5-foot (1.524 m) sections.

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www.notifier.com

Intelligent Bases

B501(A), B200S(A), B200SR(A), B210LP(A), B2241BI(A), B224RB(A), Mounting Kits, and Accessories

NOTIFIER®
by Honeywell

Intelligent/Addressable Devices

General

Intelligent FlashScan® and CLIP mounting bases and kits provide a variety of ways to install NOTIFIER detectors in any application. Intelligent detectors can be mounted in either flanged or flangeless bases depending on junction box selection *(see Junction Box Selection Guide)*. Across this product line, detectors plug in easily to the base with SEMS screws; and models employ various 12 to 24 AWG wire ranges.

Relay, isolator, and sounder bases can be used to meet local code requirements. Relay bases provide one Form-C contact relay for control of auxiliary functions such as door closure and elevator recall. Isolator bases allow loops to continue to operate under fault conditions and automatically restore when the fault is removed. Sounder bases are available in temporal and non-temporal pattern versions depending on whether the signal is to be used for evacuation purposes.

Specifications

Diameter:

- B501: 4.1" (104 mm).
- B224BI, B224RB, B210LP: 6.1" (155 mm).
- B200S/SR/SCOA: 6.875" (17.46 cm).

Wire gauge:

- B224BI, B224RB: 14 to 24 AWG.
- B210LP, B501, B200S/SR/SCOA: 12 to 24 AWG.

Temperature range:

- B224BI, B224RB, B200S/SR/SCOA: 32°F to 120°F (0°C to 49°C).
- B210LP, B501: -4°F to 150°F (-20°C to 66°C).

Humidity range: 10% to 93% RH, non-condensing.

System temperature and humidity ranges: This system meets NFPA requirements for operation at 0°C to 49°C (32°F to 120°F); and at a relative humidity (noncondensing) of 85% at 30°C (86°F) per NFPA, and 93% ± 2% at 32°C ± 2°C (89.6°F ± 1.1°F) per ULC. 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 all peripherals be installed in an environment with a nominal room temperature of 15°C to 27°C (60°F to 80°F).

Electrical Ratings

FOR B200S/SR/SCOA:

External supply voltage: 16 to 33 VDC (VFWR)

Standby current: 500 µA maximum.

Alarm current:

- B200S: 35 mA maximum at high-volume setting; 15 mA maximum at low-volume setting.
- B200SR: 35 mA maximum.
- B200SCOA: 40mA Max. (DC), 70mA Max. (FWR)

SLC operating voltage: 15 to 32 VDC.

SLC standby current: 300 µA.

Sound output:

Flangeless Mounting Base B501(A)

Flanged Mounting Base B210LP(A)

Sounder Base B200S(A), B200SR(A), B200SCOA

Relay Base B224RB(A)

- B200S, high-volume*: Greater than 85 dBA minimum.
- B200S, low-volume*: Greater than 75 dBA minimum.
- B200SR*: Greater than 85 dBA minimum.
- B200SCOA, high-volume**: Greater than 87 dBA minimum.
- B200SCOA, low-volume**: Greater than 85 dBA minimum

Measured in a UL reverberant room at 10 feet, 24 Volts (continuous tone)
**Measured in a ULC anechoic room at 10 feet, 24 Volts continuous tone)*

FOR B224RB, B224BI:

Operating voltage: 15 to 32 VDC (powered by SLC).

Standby ratings: <500 µA maximum @ 24 VDC.

Set time (B224RB only): short delay 55 to 90 msec; long delay 6 to 9 seconds.

Reset time (B224RB only): 20 msec maximum.

Relay characteristics (B224RB only): two-coil latching relay; one Form-C contact; ratings (UL/CSA): 0.9 A @ 125 VAC, 0.9 A @ 110 VDC, and 3.0 A @ 30 VDC.

Product Line Information

INTELLIGENT BASES

B501: Flangeless mounting base.

B501A: Flangeless mounting base, ULC Listed.

B501BP: Bulk pack of B501 (10).

B210LP: Flanged mounting base.

B210LPA: Flanged mounting base, ULC listed

B210LPBP: Bulk pack of B210LP (10).

B200S: Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol. Only compatible with the NFS-320, NFS2-640 and NFS2-3030 operating version with version 15.0 or higher panel firmware.

B200SA: Same as B200S with ULC-listing.

B200SCOA: Same as B200S with ULC-listing and CO detector markings in English/French (required in Canada for ULC applications with FCO-851A).

B200SR: Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone.

B200SRA: Same as B200SR with ULC-listing.

B224RB: Relay base.

B224RBA: Relay base, ULC Listed.

B224BI: Isolator base.

B224BIA: Isolator base, ULC Listed.

MOUNTING KITS AND ACCESSORIES

SMB600: Surface mounting kit, flanged.

F110: Retrofit flange for converting high-profile bases to low-profile.

F110BP: Bulk pack of F110 (10).

F210: Accessory flange ring for B210LP(A) base (new design). 6-inch diameter.

F210BP: Bulk pack of F210 (10).

RA100Z: Remote LED annunciator.

RA100ZA: Remote LED annunciator, ULC Listed.

M02-04-00: Detector test magnet.

M02-09-00: Test magnet with telescoping handle.

XR2B: Detector removal tool for current heads *(T55-127-010 included)*.

XR2: Detector Remove Tool for use with low profile detector heads, and FSL-751.

XP-4: Extension pole for XR2/B *(5 to 15 ft/1.524 to 4.572 m)*.

T55-127-010: Detector removal head.

BCK-200B: Black detector kit, package of 10 (for use with photo and ion detectors).

WCK-200B: White detector kit, package of 10 (for use with photo and ion detectors).

Agency Listings and Approvals

The listings and approvals below apply to intelligent bases as noted. 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.

- **UL Listed:** S911
- **ULC Listed:** S911
- **FM Approved**
- **MEA:** 22-95-E, 205-94-E Vol. 2; 257-06-E
- **CSFM:** 7300-1653:0126, 7135-1653:0213, 7300-1653:0109

Junction Box Selection Guide

Base Models	Single Gang	3.5" Oct.	4.0" Oct.	4.0" Sq.	4.0" Sq. with 3.0" mud ring	50 mm	60 mm	70 mm	75 mm
B200S, B200SR, B200SCOA	Yes	Yes	Yes	Yes	Yes	No	No	No	No
B501	No	Yes	No	No	Yes	Yes	Yes	Yes	No
B210LP	Yes	Yes	Yes	Yes	Yes	No	No	No	No
B224RB	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
B224BI	No	Yes	Yes	Yes	No	No	No	Yes	Yes

NOTE: Box depth contingent on base and wire size.
Refer to National Electric Code or applicable local codes for appropriate recommendations.

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www.notifier.com

NBG-12LX

Addressable Manual Pull Station

⚲ 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 except FireWarden series panels, and the NSP-25 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 for inspection and address setting 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/3.25 mm² wire).
- Can be surface mounted (with SB-10 or SB-I/O) or semi-flush mounted. Semi-flush mount to a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box.
- Smooth dual-action design.
- Meets ADAAG controls and operating mechanisms guidelines (Section 4.1.3[13]); meets ADA requirement for 5 lb. maximum activation force.
- Highly visible.
- Attractive shape and textured finish.
- Key reset.
- Includes Braille text on station handle.
- Optional trim ring (BG12TR).
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Up to 99 NBG-12LX stations per loop on CLIP protocol loops.
- Up to 159 NBG-12LX stations per loop on FlashScan® protocol loops.
- Dual-color LED blinks green to indicate normal on FlashScan® systems.

Construction

Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

- **Shipping Weight:** 9.6 oz. (272.15 g)
- **Normal operating voltage:** 24 VDC.
- **Maximum SLC loop voltage:** 28.0 VDC.
- **Maximum SLC standby current:** 375 μA.
- **Maximum SLC alarm current:** 5 mA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**

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

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 (BG12TR) may be used. The BG12TR is usually needed for semi-flush mounting with 4" (10.16 cm) or double-gang boxes (not with single-gang boxes).

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 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).

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 polycarbonate material 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 SB-I/O; 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 poll LED shall be clearly visible through the front of the station. The LED shall flash while in the normal condition, and stay steadily illuminated when in alarm.

Product Line Information

NBG-12LX: Dual-action addressable pull station. Includes key locking feature. (Listed for Canadian and non-Canadian applications.)

NBG-12LXSP: Spanish/English labelled version.

NBG-12LXP: Portuguese labelled version.

SB-10: Surface backbox; metal.

SB-I/O: Surface backbox; plastic.

BG12TR: Optional trim ring.

17021: Keys, set of two.

NY-Plate: New York City trim plate.

Agency Listings and Approvals

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.

- **UL/ULC Listed:** S692 (listed for Canadian and non-Canadian applications).
- **MEA:** 67-02-E.
- **CSFM:** 7150-0028:0199.
- **FDNY:** COA #6085 (NFS2-640), COA #6098 (NFS2-3030).
- **BSMI:** CI313066760047.
- **U.S. Coast Guard.**
- **Lloyd's Register.**
- **FM Approved.**

Patented: U.S. Patent No. D428,351; 6,380,846; 6,314,772; 6,632,108.

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For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com

FMM-1(A), FMM-101(A), FZM-1(A) & FDM-1(A)

Monitor Modules with FlashScan®

ⓝ NOTIFIER®

by Honeywell

General

Four different monitor modules are available for Notifier's intelligent control panels for a variety of applications. Monitor modules 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(A)).

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

FMM-101(A) 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 that supervises a Style B (Class B) circuit of dry-contact input devices. Its compact design allows the FMM-101(A) to be mounted in a single-gang box behind the device it monitors.

FZM-1(A) is a standard-sized module that monitors and supervises compatible two-wire, 24 volt, smoke detectors on a Style D (Class A) or Style B (Class B) circuit.

FDM-1(A) is a standard-sized dual monitor module that monitors and supervises two independent two-wire Style B (Class B) dry-contact initiating device circuits (IDCs) at two separate, consecutive addresses in intelligent, two-wire systems.

FlashScan® (U.S. Patent 5,539,389) is a communication protocol developed by NOTIFIER that greatly increases 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(A) 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 loops; 01 – 99 on CLIP loops.
- LED flashes green during normal operation (this is a programmable option) and latches on steady red to indicate alarm.

The FMM-1(A) 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(A) can be used to replace MMX-1(A) modules in existing systems.

FMM-1(A) 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
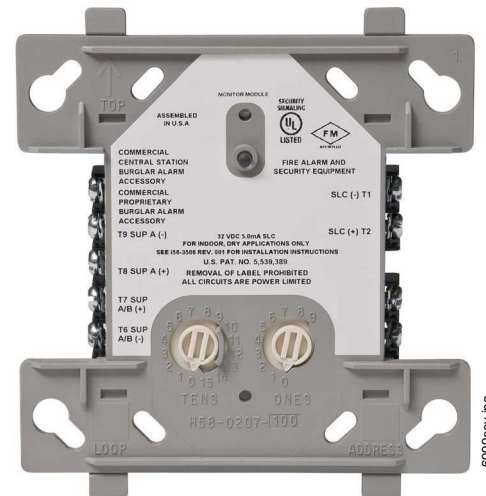
FMM-1(A) (Type H)

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.

FMM-1(A) OPERATION

Each FMM-1(A) uses one of the 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).

FMM-1(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.0 mA (LED on).

Average operating current: 350 µA (LED flashing), 1 communication every 5 seconds, 47k EOL.

Maximum IDC wiring resistance: 40 ohms.

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-101(A) Mini Monitor Module

- Built-in type identification automatically identifies this device as a monitor module to the panel.
- Powered directly by two-wire SLC loop. 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 loops; 01 – 99 on CLIP loops.
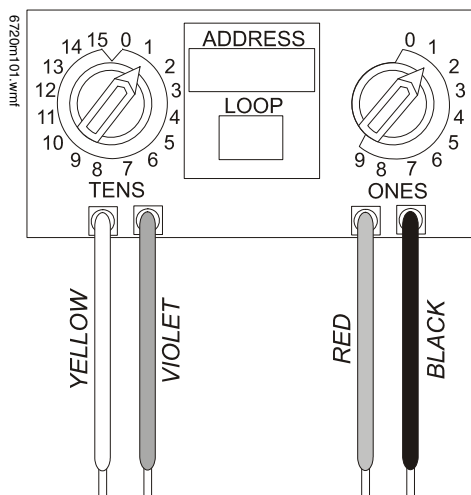
The FMM-101(A) Mini Monitor Module can be installed in a single-gang junction directly behind the monitored unit. Its small size and light weight allow it to be installed without rigid mounting. The FMM-101(A) is intended for use in intelligent, two-wire systems where the individual address of each module 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(A) can be used to replace MMX-101(A) modules in existing systems.

FMM-101(A) 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.

FMM-101(A) OPERATION

Each FMM-101(A) uses one of the 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).

FMM-101(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Average operating current: 350 µA, 1 communication every 5 seconds, 47k EOL; 600 µA Max. (Communicating, IDC Shorted).

Maximum IDC wiring resistance: 40 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 400 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 0.65" (1.651 cm) deep.

Wire length: 6" (15.24 cm) minimum.

FZM-1(A) Interface Module

- 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 loops, 01 – 99 on CLIP loops.
- LED flashes during normal operation; this is a programmable option.
- LED latches steady to indicate alarm on command from control panel.

The FZM-1(A) 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(A) can be used to replace MMX-2(A) modules in existing systems.

FZM-1(A) APPLICATIONS

Use the FZM-1(A) 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(A) OPERATION

Each FZM-1(A) uses one of the 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(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

Maximum IDC wiring resistance: 25 ohms.

Average operating current: 300 µA, 1 communication and 1 LED flash every 5 seconds, 3.9k eol.

EOL resistance: 3.9K ohms.

External supply voltage (between Terminals T3 and T4): DC voltage: 24 volts power limited. Ripple voltage: 0.1 Vrms maximum. Current: 90 mA per module maximum.

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.

FDM1(A) Dual Monitor Module

The FDM-1(A) 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(A) provides two Style B (Class B) IDC circuits ONLY. Style D (Class A) IDC circuits are NOT supported in any application.

FDM-1(A) SPECIFICATIONS

Normal operating voltage range: 15 to 32 VDC.

Maximum current draw: 6.4 mA (LED on).

Average operating current: 750 µA (LED flashing).

Maximum IDC wiring resistance: 1,500 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 240 µA

EOL resistance: 47K ohms.

Maximum SLC Wiring resistance: 40 Ohms.

Temperature range: 32° to 120°F (0° to 49°C).

Humidity range: 10% to 93% (non-condensing).

Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 2.125" (5.398 cm) deep.

FDM-1(A) AUTOMATIC ADDRESSING

The FDM-1(A) automatically assigns itself to two addressable points, starting with the original address. For example, if the FDM-1(A) is set to address "26", then it will automatically assign itself to addresses "26" and "27".

NOTE: "Ones" addresses on the FDM-1(A) 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.

⚠ **CAUTION:**
Avoid duplicating addresses on the system.

Installation

FMM-1(A), FZM-1(A), and FDM-1(A) 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. These modules are intended for power-limited wiring only.

The FMM-101(A) 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.

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:** S635
- **ULC:** S635
- **FM Approved**
- **CSFM:** 7300-0028:0219
- **MEA:** 457-99-E
- **U.S. Coast Guard:**
  - 161.002/23/3 *(AFP-200: FMM-1/-101, FZM-1)*
  - 161.002/42/1 *(NFS-640: FMM-1/-101)*
- **Lloyd's Register:**
  - 03/60011/E1 *(FMM-1/-101, FZM-1)*
  - 94/60004/E2 *(AFP-200: except FDM-1)*
  - 02/60007 *(NFS-640: FDM-1)*
- **FDNY:** COA #6038 (NFS2-640, NFS-320), COA# 6058 (NFS2-3030)

Product Line Information

NOTE: "A" suffix indicates ULC-listed model.

FMM-1(A): Monitor module.

FMM-101(A): Monitor module, miniature.

FZM-1(A): Monitor module, two-wire detectors.

FDM-1(A): Monitor module, dual, two independent Class B circuits.

SMB500: Optional surface-mount backbox.

NOTE: See installation instructions and refer to the SLC Wiring Manual, PN 51253.

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Made in the U.S. A.

FCM-1(A) & FRM-1(A) Series

Control and Relay Modules

by Honeywell

General

FCM-1(A) Control Module: The FCM-1(A) Addressable Control Module provides Notifier intelligent fire alarm control panels a circuit for Notification Appliances (horns, strobes, speakers, etc.). Addressability allows the FCM-1(A) to be activated, either manually or through panel programming, on a select (zone or area of coverage) basis.

FRM-1(A) Relay Module: The FRM-1(A) Addressable Relay Module provides the system with a dry-contact output for activating a variety of auxiliary devices, such as fans, dampers, control equipment, etc. Addressability allows the dry contact to be activated, either manually or through panel programming, on a select basis.

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 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.
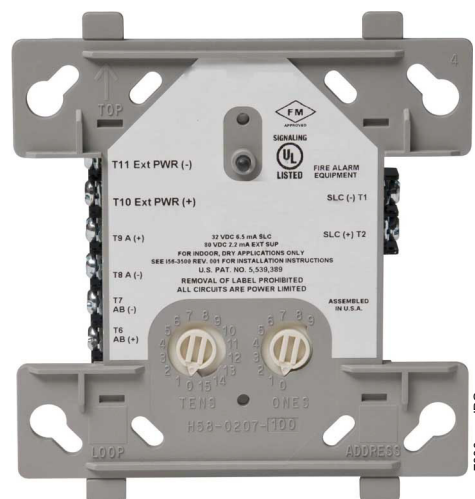
Features

- Built-in type identification automatically identifies these devices to the control panel.
- Internal circuitry and relay powered directly by two-wire SLC loop. The FCM-1(A) module requires power (for horns, strobes, etc.), or audio (for speakers).
- Integral LED "blinks" green each time a communication is received from the control panel and turns on in steady red when activated.
- LED blink may be deselected globally (affects all devices).
- High noise immunity (EMF/RFI).
- The FCM-1(A) may be used to switch 24-volt NAC power, audio (up to 70.7 Vrms).
- Wide viewing angle of LED.
- SEMS screws with clamping plates for wiring ease.
- Direct-dial entry of address 01– 159 for FlashScan loops, 01 – 99 for CLIP mode loops.
- Speaker, and audible/visual applications may be wired for Class B or A (Style Y or Z).

Applications

The FCM-1(A) is used to switch 24 VDC audible/visual power, high-level audio (speakers). The FRM-1(A) may be programmed to operate dry contacts for applications such as door holders or Air Handling Unit shutdown, and to reset four-wire smoke detector power.

NOTE: *Refer to the SLC Manual (PN 51253) for details regarding releasing applications with the FCM-1(A). Refer to the FCM-1-REL datasheet (DN-60390) for new FlashScan® releasing applications.*

Construction

- The face plate is made of off-white heat-resistant plastic.
- Controls include two rotary switches for direct-dial entry of address (01-159).

FCM-1(A)

- The FCM-1(A) is configured for a single Class B (Style Y) or Class A (Style Z) Notification Appliance Circuit.
- The FRM-1(A) provides two Form-C dry contacts that switch together.

Operation

Each FCM-1(A) or FRM-1(A) uses one of 159 possible module addresses on a SLC loop (99 on CLIP loops). It responds to regular polls from the control panel and reports its type and status, including the open/normal/short status of its Notification Appliance Circuit (NAC). The LED blinks with each poll received. On command, it activates its internal relay. The FCM-1(A) supervises Class B (Style Y) or Class A (Style Z) notification or control circuits.

Upon code command from the panel, the FCM-1(A) will disconnect the supervision and connect the external power supply in the proper polarity across the load device. The disconnection of the supervision provides a positive indication to the panel that the control relay actually turned ON. The external power supply is always relay isolated from the communication loop so that a trouble condition on the external power supply will never interfere with the rest of the system.

Rotary switches set a unique address for each module. The address may be set before or after mounting. The built-in TYPE CODE (not settable) will identify the module to the control panel, so as to differentiate between a module and a sensor address.

Specifications for FCM-1(A)

Normal operating voltage: 15 to 32 VDC.

Maximum current draw: 6.5 mA (LED on).

Average operating current: 350 µA direct poll, 375 µA group poll with LED flashing, 485 µA Max. (LED flashing, NAC shorted.)

Maximum NAC Line Loss: 4 VDC.

External supply voltage (between Terminals T10 and T11): Maximum (NAC): Regulated 24 VDC; Maximum (Speakers): 70.7 V RMS, 50W.

Drain on external supply: 1.7 mA maximum using 24 VDC supply; 2.2 mA Maximum using 80 VRMS supply.

Max NAC Current Ratings: For class B wiring system, the current rating is 3A; For class A wiring system, the current rating is 2A.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% non-condensing.

Dimensions: 4.5" (114.3 mm) high x 4" (101.6 mm) wide x 1.25" (31.75 mm) deep. Mounts to a 4" (101.6 mm) square x 2.125" (53.975 mm) deep box.

Accessories: SMB500 Electrical Box; CB500 Barrier

Specifications for FRM-1(A)

Normal operating voltage: 15 to 32 VDC.

Maximum current draw: 6.5 mA (LED on).

Average operating current: 230 μA direct poll; 255 μA group poll.

EOL resistance: not used.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% non-condensing.

Dimensions: 4.5" (114.3 mm) high x 4" (101.6 mm) wide x 1.25" (31.75 mm) deep. Mounts to a 4" (101.6 mm) square x 2.125" (53.975 mm) deep box.

Accessories: SMB500 Electrical Box; CB500 Barrier

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:** S635
- **ULC:** S3705 (A version only)
- **FM Approved**
- **CSFM:** 7300-0028:0219
- **MEA:** 14-00-E
- **FDNY:** COA #6067, #6065

Contact Ratings for FRM-1(A)

Current Rating	Maximum Voltage	Load Description	Application
3 A	30 VDC	Resistive	Non-Coded
2 A	30 VDC	Resistive	Coded
.9 A	110 VDC	Resistive	Non-Coded
.9 A	125 VDC	Resistive	Non-Coded
.5 A	30 VDC	Inductive (L/R=5ms)	Coded
1 A	30 VDC	Inductive (L/R=2ms)	Coded
.3 A	125 VAC	Inductive (PF=0.35)	Non-Coded
1.5 A	25 VAC	Inductive (PF=0.35)	Non-Coded
.7 A	70.7 VAC	Inductive (PF=0.35)	Non-Coded
2 A	25 VAC	Inductive (PF=0.35)	Non-Coded

NOTE: Maximum (Speakers): 70.7 V RMS, 50 W

Product Line Information

NOTE: "A" suffix indicates ULC Listed model.

FCM-1(A): Intelligent Addressable Control Module.

FRM-1(A): Intelligent Addressable Relay Module.

A2143-20: Capacitor, required for Class A (Style Z) operation of speakers.

SMB500: Optional Surface-Mount Backbox.

CB500: Control Module Barrier — required by UL for separating power-limited and non-power limited wiring in the same junction box as FCM-1(A).

NOTE: For installation instructions, see the following documents:

- *FCM-1(A) Installation document I56-1169.*
- *FRM-1(A) Installation document I56-3502.*
- *Notifier SLC Wiring Manual, document 51253.*

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CO1224T/CO1224A

Conventional
Carbon Monoxide Detector

NOTIFIER®
by Honeywell

General

Carbon monoxide (CO) is an odorless, colorless, tasteless and highly toxic gas that is produced when fuels, such as wood, gasoline, charcoal and oil, are burned with insufficient air. The majority of residential and commercial fatalities caused from these fuels come from heating systems, power tools and charcoal grills.

If carbon monoxide is detected, the **CO1224T/CO1224A** will alert by sounding and flashing a temp-4 signal alarm. Protection is guaranteed 24/7 by a central station if connected to a panel with a digital alarm communicator.

The CO1224T/CO1224A is specifically designed for system operation. This means the detector is fully listed to UL Standard 2075, offering a code required trouble relay, which sends a sensor failure or end-of-life signal to the control panel and the central station, as well as SEMS-type terminal Phillips-head screws, which provide a quicker and more positive wiring connection and code required wiring supervision. Also, the offers low current draw, allowing more detectors to be connected to the panel without having to purchase a more expensive panel or an extra power supply.

Add addressability to the   by supervising the circuit with a compatible monitor module such as the FMM-101(A).

Special to the CO1224T is RealTest™ technology that allows testing of its internal CO detector with a carbon monoxide gas agent. There are few steps: Hold the test button for two seconds, and after the green LED begins to flash about once per second, spray a small amount of CO into the detector. The detector will alarm to indicate presence of gas.

NOTE: *RealTest™ is only available on the UL-listed CO1224T. Refer to the installation documents for details and cautions.*

Features

- In the CO1224T, RealTest™ technology allows installer to test detector with CO gas.
- Full compliance with UL 2075.
- A code required trouble relay.
- Wiring supervision with SEMS terminals.
- A six-year end-of-life timer.
- 12/24 VDC.
- A current draw of 20mA in standby and 40mA in alarm.
- Versatile mounting for wall and ceiling.
- Electrochemical sensing technology.

Specifications

ARCHITECTS'/ENGINEERS' SPECIFICATIONS

Carbon monoxide detector shall be a System Sensor model number , listed to UL 2075 for Gas and Vapor Detectors and Sensors. The detector shall be equipped with a sounder and a trouble relay. The detector's base shall be able to mount to a single-gang electrical box or direct (surface) mount to the wall or ceiling. Wiring connections shall be made by means of SEMS screws. The detector shall provide dual color LED indication, which blinks to indicate normal standby, alarm, or end-of-life. When the sensor supervision is in a trouble condition, the detector shall send a trouble signal to the panel. When the

CO1224T.jpg

detector gives a trouble or end-of-life signal, the detector shall be replaced.

ELECTRICAL SPECIFICATIONS

Operating Voltage: 12/24 VDC

Audible Signal: 85 dB in alarm

Standby Current: 20 mA

Alarm Current: 40 mA (75 mA test)

Alarm Contact Ratings: 0.5 A @ 30 VDC

Trouble Contact Ratings: 0.5 A @ 30 VDC

PHYSICAL SPECIFICATIONS

Size: 5.1"L x 3.3"W x 1.3"H

Approximate Weight: 7 oz

Operating Temperature Range: 0°C to 40°C (32°F to 104°F)

Operating Humidity Range: 22% to 90% RH

Input Terminals: 14 to 22 AWG

Mounting: Single-gang backbox; surface mount to wall or ceiling.

Operation Modes

Operation Mode	Green LED	Red LED	Sounder
Normal (Standby)	Blink 1 per minute	–	–
Alarm	–	Blink in Temporal 4 pattern	Sound in Temporal 4 pattern
RealTest™ (CO1224T only)	Blink 1 per second	–	–

Hush Feature: Pushing the Test/Hush button will silence the sounder for 5 minutes (except in RealTest mode).

Trouble Feature: When the detector is in a trouble condition, it will send a trouble signal to the panel via the trouble contact.

End-of-Life Timer: After the sensor inside the detector has reached the end of its useful life, a trouble signal will be sent to the panel. This will indicate that it is time to replace the detect-tor. An electrochemical carbon monoxide detector life span is approximately six years, and the detector must be replaced by the date marked on the inside of the product.

MONITOR MODULE APPLICATIONS

When used in conjunction with the CO1224T or CO1224A, the monitor module should be programmed as a supervisory device type and is not suitable for evacuation purposes. Wire the module as an NFPA Style B (Class B) Initiating Device Circuit and terminate the with a 47K ohm End-of-line resistor (provided).

Listings and Approvals

The listings and approvals below apply to the CO1224T and CO1224A. 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:** E307195 (CO1224T)
*   **ULC Listed:** E304075 (CO1224A)

Product Line Information

CO1224T: 12/24 volt, 4-wire system-monitored carbon monoxide detector with RealTest™ Technology. Replaces CO1224.

CO1224A: 12/24 volt, 4-wire system-monitored carbon monoxide detector, ULC-listed for use in Canadian applications.

CO-PLATE: CO detector replacement plate, package of 5. Covers previously installed round detectors' footprints for a clean, low-profile finish.

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We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

Made in the U.S. A.

For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com

Indoor Selectable-Output Speaker Strobes and Dual Voltage Evacuation Speakers for Wall Applications

NOTIFIER®
by Honeywell

General

System Sensor L-Series selectable output speaker strobes and dual-voltage evacuation speakers can reduce ground faults and enable faster installation with lower current draw and modern aesthetics.

The System Sensor L-Series of speakers and speaker strobes reduce costly ground faults using a plug-in design and universal mounting plate that allow the installer to pre-wire mounting plates, dress the wires, and confirm wiring continuity before plugging in the speakers. In addition, a protective plastic cover prevents nicked wires by covering exposed speaker components.

These devices also enable faster installations by providing instant feedback to ensure that wiring is properly connected, rotary switches to select voltage and power settings, and 7 field-selectable candela settings for wall speaker strobes.

The low total harmonic distortion of the speaker offers high fidelity sound output while still offering high volume sound output for use in high ambient noise applications.

System Sensor L-Series makes installation easy.

- Attach a universal mounting plate to a 4 × 4 × $2^1/_8$ inch back box. Flush-mount applications do not require an extension ring.
- Connect the notification appliance circuit or speaker wiring to the terminals on the mounting plate.
- Attach the speaker or speaker strobe to the mounting plate by inserting the product tabs into the mounting plate grooves. Hinge the device into position to lock the product pins into the mounting plate terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

Features

- Plug-in design and protective cover reduce ground faults
- Universal mounting plate with an onboard shorting spring tests wiring continuity before installation
- No extension ring required
- Field selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, 185
- Automatic selection of 12- or 24-volt operation at 15 and 30 candela
- Rotary switch simplifies field selection of speaker voltage (25 and 70.7 Vrms) and power settings (¼, ½, 1 and 2 watts)
- Speakers offer high fidelity and high volume sound output
- Compatible with System Sensor synchronization protocol
- Electrical compatibility with existing SpectrAlert and SpectrAlert Advance products
- Tamper-resistant construction
- Updated modern aesthetics

SPSWL   **SPSRL**

Architectural/Engineering Specifications

GENERAL

L-Series speaker and speaker strobes shall mount to a 4 × 4 × $2^1/_8$ inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit and amplifier wiring shall terminate at the universal mounting plate. Also, L-Series speaker strobes, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between 8.5 and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Indoor L-Series products shall operate between 32°F and 120°F from a regulated DC, or full-wave rectified, unfiltered power supply. Wall-mount speaker strobes shall have field-selectable candela settings including 15, 30, 75, 95, 110, 135, 185.

SPEAKER

The speaker shall be a System Sensor L-Series model _____ dual-voltage transformer speaker capable of operating at 25.0 or 70.7 nominal Vrms. It should be listed to UL 1480 and shall be approved for fire protective service. The speaker shall have a frequency range of 400 to 4,000 Hz and shall have an operating temperature between 32°F and 120°F. The speaker shall have power taps and voltage that are selected by rotary switches.

SPEAKER STROBE COMBINATION

The speaker strobe shall be a System Sensor L-Series model _____ listed to UL1480 and UL 1971 and be approved for fire protective signaling systems. The speaker shall be capable of operating at 25.0 or 70.7 nominal Vrms selected via rotary switch, and shall have a frequency range of 400 to 4,000 Hz. The speaker shall have power taps that are selected by rotary switch. The strobe shall comply with the NFPA 72 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.

SYNCHRONIZATION MODULE

The module shall be a System Sensor Sync•Circuit model MDL3 listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1

Hz. The module shall mount to a $4^{11}/_{16} \times 4^{11}/_{16} \times 2^{1}/_{8}$ inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

PHYSICAL/ELECTRICAL SPECIFICATIONS

- **Standard Operating Temperature:** 32°F to 120°F (0°C to 49°C)
- **Humidity Range:** 10 to 93% non-condensing

DIMENSIONS, WALL-MOUNT

- SP Speaker: 6.5 in x 5 in x 2.3 in. (165 mm x 127 mm x 58 mm)
- SP Speaker with Surface Mount Back Box: 6.6 in x 5.1 in x 3.2 in (168 mm x 130 mm x 82 mm)
- SPS Speaker/Strobe (including lens and speaker): 6.5 in x 5.0 in x 2.3 in (165 mm x 127 mm x 58 mm)
- SPS Speaker/Strobe (including lens and speaker) with Surface Mount Back Box: 6.6 in x 5.1 in x 4.55 in. (168 mm x 130 mm x 116 mm)

ELECTRICAL/OPERATING SPECIFICATIONS:

- **Nominal Voltage (speakers):** 25 or 70.7 (nominal)
- **Maximum Supervisory Voltage (speakers):** 50 VDC
- **Strobe Flash Rate:** 1 flash per second
- **Nominal Voltage (strobes):** Regulated 12 VDC or regulated 24 DC/FWR
- **Operating Voltage Range (includes fire alarm panels with built in sync):** 8 to 17.5 V (12 V nominal) or 16 to 33V (24 V nominal)
- **Operating Voltage with MDL3 Sync Module:** 8.5 to 17.5 V (12 V nominal) or 16.5 to 33V (24 V nominal)
- **Frequency Range:** 400 to 4000 Hz
- **Power:** ¼, ½, 1, 2 watts

UL Current Draw Data

UL MAX. STROBE CURRENT DRAW (MA RMS)

Candela	8–17.5 Volts	16–33 Volts	
	DC	DC	FWR
15	88	43	60
30	143	63	83
75	N/A	107	136
95	N/A	121	155
110	N/A	148	179
135	N/A	172	209
185	N/A	222	257

SOUND OUTPUT SPEAKER STROBE

	¼ W	½ W	1 W	2 W
UL Reverberant (dBA @10 ft)	77	80	83	86
UL Anechoic (dBA @10 ft)	77	80	83	86

SOUND OUTPUT SPEAKER

	¼ W	½ W	1 W	2 W
UL Reverberant (dBA @10 ft)	79	82	85	88
UL Anechoic (dBA @10 ft)	79	82	85	88

Agency Listings and Approvals

The listings and approvals below apply to L-series devices. 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.

- **UL-Listed:**
  - S4048 Plain Speaker Strobes (Wall)
  - S4048 Spanish-labeled Speaker Strobes (Wall)
  - S4048 ALERT speaker strobes
- **UL/ULC-Listed:**
  - S4048 Speakers (Wall)
  - S4048 Speaker Strobes (Wall)
- **FM Approved**

Product Line Information

Note: ULC-listed devices include required French labeling. See Agency Listings for listing details.

WALL MOUNT

SPWL(A), SPRL(A). Speaker only (White, Red).

SPSWL(A), SPSRL(A). Speaker Strobe (White, Red).

SPSWL-P(A), SPSRL-P(A). Plain Speaker Strobe (White, Red).

SPSWL-ALERT. Speaker Strobe, Amber Lens (White).

SPSWL-CLR-ALERT. Speaker Strobe Clear Lens (White).

SPSRL-SP. Speaker Strobe, Fuego (White).

ACCESSORIES

RFPW, RFP. 7 in × 9.5 in Retrofit Plate (White, Red).

SBBSPW, SBBSPR. Surface Mount Back Box for Speakers and Speaker Strobes (White, Red).

TRW, TR. Wall Mount Trim Ring (White, Red).

Product Drawings: Dimensions and Surface Mounting
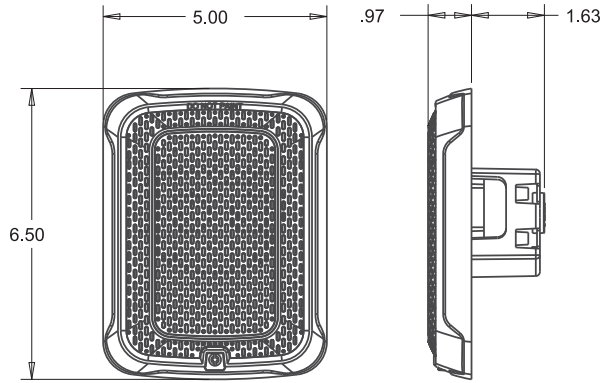
Wall-Mount Speaker
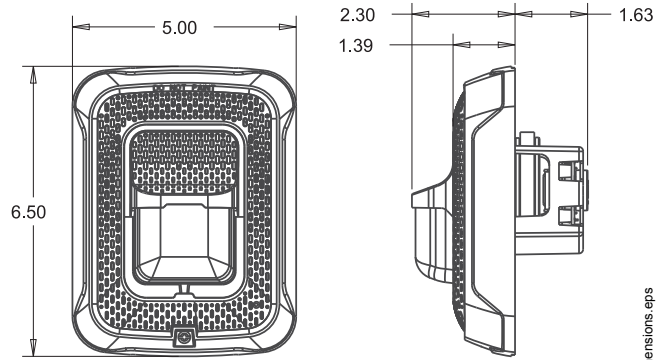
Wall-Mount Speaker Strobe
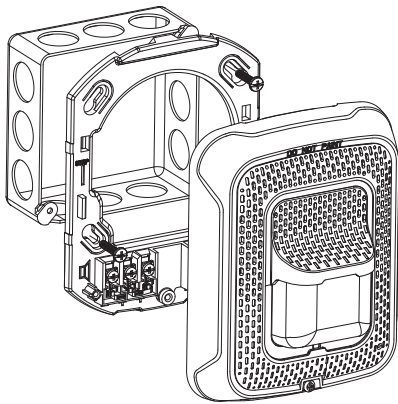
Wall-Mount Speaker Strobe with SBBSPRL Surface Mount Back

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www.notifier.com

Indoor Selectable-Output Speaker Strobes and Dual Voltage Evacuation Speakers for Ceiling Applications

NOTIFIER®
by Honeywell

General

The L-Series of speakers and speaker strobes reduce costly ground faults using a plug-in design and universal mounting plate. The installer can pre-wire mounting plates, dress the wires, and confirm wiring continuity before plugging in the speakers. In addition, a protective plastic cover prevents nicked wires by covering exposed speaker components.

These devices also enable faster installations by providing instant feedback to ensure that wiring is properly connected, rotary switches to select voltage and power settings, and 7 field-selectable candela settings for both wall and ceiling speaker strobes.

The low total harmonic distortion of the SP speaker offers high fidelity sound output while still offering high volume sound output for use in high ambient noise applications.

L-SERIES MAKES INSTALLATION EASY

- Attach a universal mounting plate to a 4" × 4" × $2^1/_8$" back box. Flush-mount applications do not require an extension ring.
- Connect the notification appliance circuit or speaker wiring to the terminals on the mounting plate.
- Attach the speaker or speaker strobe to the mounting plate by inserting the product tabs into the mounting plate grooves. Hinge the device into position to lock the product pins into the mounting plate terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

Features

- Plug-in design and protective cover reduce ground faults.
- Universal mounting plate with an onboard shorting spring tests wiring continuity before installation.
- No extension ring required.
- Field selectable candela settings on ceiling units: 15, 30, 75, 95, 115, 150, and 177.
- Automatic selection of 12- or 24-volt operation at 15 and 30 candela.
- Rotary switch simplifies field selection of speaker voltage (25 and 70.7 Vrms) and power settings (¼, ½, 1 and 2 watts).
- Speakers offer high fidelity and high volume sound output.
- Compatible with System Sensor synchronization protocol.
- Electrical compatibility with existing SpectrAlert and SpectrAlert Advance products.
- Tamper-resistant construction.
- Updated modern aesthetics.

SPSCRL, SPSCWL

Architectural/Engineering Specifications

General. L-Series speaker and speaker strobes shall mount to a 4" × 4" × $2^1/_8$" back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit and amplifier wiring shall terminate at the universal mounting plate. Also, L-Series speaker strobes, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between 8.5 and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Indoor L-Series products shall operate between 32°F and 120°F from a regulated DC, or full-wave rectified, unfiltered power supply. Speaker strobes shall have field-selectable candela settings including 15, 30, 75, 95, 115, 150, 177.

Speaker. The speaker shall be a System Sensor L-Series model dual-voltage transformer speaker capable of operating at 25.0 or 70.7 nominal Vrms. It should be listed to UL 1480 and shall be approved for fire protective service. The speaker shall have a frequency range of 400 to 4,000 Hz and shall have an operating temperature between 32°F and 120°F. The speaker shall have power taps and voltage that are selected by rotary switches.

Speaker Strobe Combination. The speaker strobe shall be a System Sensor L-Series modellisted to UL1480 and UL 1971 and be approved for fire protective signaling systems. The speaker shall be capable of operating at 25.0 or 70.7 nominal Vrms selected via rotary switch, and shall have a frequency range of 400 to 4,000 Hz. The speaker shall have power taps that are selected by rotary switch. The strobe shall comply with the NFPA 72 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.

Synchronization Module. The module shall be a System Sensor Sync•Circuit model MDL3 listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz. The module shall mount to a $4^{11}/_{16}$" × $4^{11}/_{16}$" × $2^1/_8$" back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining

two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical Specifications

- **Standard Operating Temperature:** 32°F to 120°F (0°C to 49°C).
- **Humidity Range:** 10 to 93% non-condensing.
- **Dimensions, Ceiling-Mount:**
  - **SPC Speaker:** Diameter 6.8 in, 173 mm. Depth: 1.0 in, 25 mm.
  - **SPC Speaker with Surface Mount Back Box:** Diameter: 6.9 in, 176 mm. Depth: 3.5 in, 89 mm.
  - **SPSC Speaker Strobe:** Diameter: 6.8 in, 173 mm. Depth: 2.8 in, 73 mm.
  - **SPSC Speaker Strobe with Surface Mount Back Box:** Diameter 6.9 in, 176 mm. Depth: 5.37 in, 136 mm.

Electrical/Operating Specifications

- **Nominal Voltage (speakers):** 25 Volts or 70.7 Volts (nominal).
- **Maximum Supervisory Voltage (speakers):** 50 VDC.
- **Strobe Flash Rate:** 1 flash per second.
- **Nominal Voltage (strobes):** Regulated 12 DC or regulated 24 DC/FWR (full wave rectified).
- **Operating Voltage Range (includes fire alarm panels with built in sync):** 8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal).
- **Operating Voltage with MDL3 Sync Module:** 8.5 V to 17.5 V (12 V nominal) or 16.5 V to 33 V (24 V nominal).
- **Frequency Range:** 400 to 4,000 Hz.
- **Power:** ¼, ½, 1, 2 watts.

UL Current Draw Data

UL MAX. STROBE CURRENT DRAW (MA RMS)

Candela	8-17.5 Volts DC	16-33 Volts DC	16-33 Volts FWR
15	87	41	60
30	153	63	86
75	NA	111	142
95	NA	134	164
115	NA	158	191
150	NA	189	228
177	NA	226	264

CEILING-MOUNT SPEAKER SOUND OUTPUT

Setting	UL Reverberant (dBA @10 ft)	UL Anechoic (dBA @10 ft)
¼ W	79	79
½ W	82	82
1 W	85	85
2 W	88	88

CEILING-MOUNT SPEAKER STROBE SOUND OUTPUT

Setting	UL Reverberant (dBA @10 ft)	UL Anechoic (dBA @10 ft)
¼ W	77	77
½ W	80	80
1 W	83	83
2 W	86	86

Agency Listings and Approvals

The listings and approvals below apply to L-series devices. 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.

- **UL-Listed:**
  - S4048 Plain Speaker Strobes (Ceiling)
  - S4048 Spanish-labeled Speaker Strobes (Ceiling)
  - S4048 ALERT speaker strobes
- **UL/ULC-Listed:**
  - S4048 Speakers (Ceiling)
  - S4048 Speaker Strobes (Ceiling)
- **FM Approved**

Product Line Information

Note: ULC-listed devices include required French labeling. See Agency Listings for listing details.

CEILING MOUNT SPEAKER STROBES

SPCWL(A), SPCRL(A). Speaker only (White, Red).

SPSCWL(A), SPSCRL(A). Speaker strobe (White, Red).

SPSCWL(A)-P. Plain speaker strobe (White).

SPSCWL-SP. Spanish-labeled "Fuego" speaker strobe (White).

SPSCWL-CLR-ALERT. "Alert" model speaker strobe with clear lens (White).

ACCESSORIES

SBBCWL, SBBCRL. Universal Ceiling Surface Mount Back Box (White, Red).

TRC-2W, TRC-2. Universal Ceiling Trim Ring (White, Red).

Product Drawings

6.80" diameter
(17.272 cm)

DO NOT PAINT

2.87"
(7.29 cm)

1.76"
(4.47 cm)

1.63"
(4.14 cm)
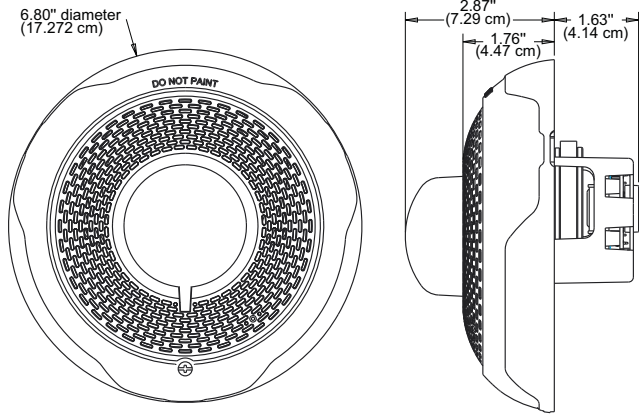
Speaker Strobe Dimensions

A0520-00.eps
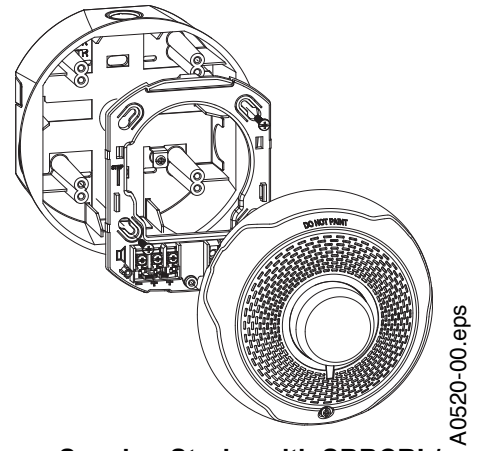
**Speaker Strobe with SBBCRL/
SBBCWL Surface Mount Back Box**

6.80" diameter
(17.272 cm)

DO NOT PAINT

1.00"
(2.54 cm)

1.63"
(4.14 cm)
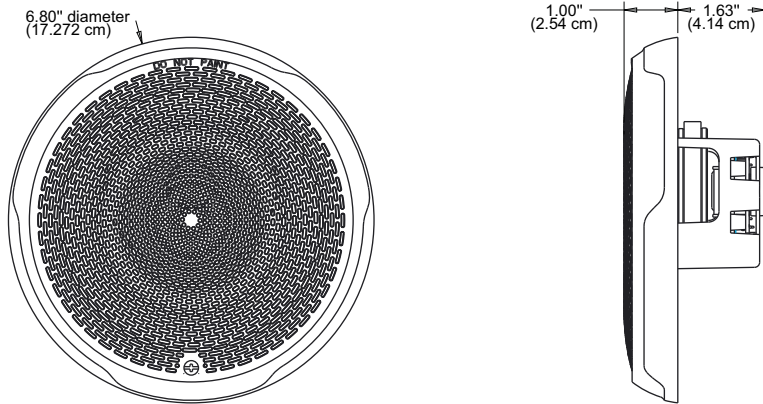
Speaker Dimensions

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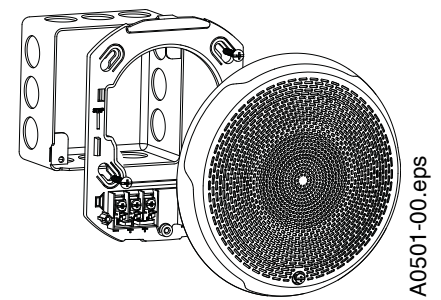
**Speaker with SBBCRL/SBBCWL
Surface Mount Back Box**

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www.notifier.com

Indoor Selectable-Output Horns, Strobes, and Horn Strobes for Wall Applications

NOTIFIER®

by Honeywell

Audio/Visual Devices

General

The L-Series offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draws and modern aesthetics. With white and red plastic housings, standard and small footprint devices, and plain, FIRE-printed devices, L-Series can meet virtually any application requirement.

The L-Series product line of wall-mount horns, strobes, and horn strobes include a variety of features that increase their application versatility while simplifying installation. All devices feature plug-in designs with minimal intrusion into the back box, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults.

To further simplify installation and protect devices from construction damage, L-Series utilizes a universal mounting plate for all standard and compact models with an onboard shorting spring, so installers can test wiring continuity before the device is installed.

Installers can also easily adapt devices to a suit a wide range of application requirements using field-selectable candela settings, automatic selection of 12- or 24-volt operation, and a rotary switch for horn tones with two volume selections.

Features

- Updated modern aesthetics.
- Small profile devices for Horns and Horn Strobes.
- Plug-in design with minimal intrusion into the back box.
- Tamper-resistant construction.
- Automatic selection of 12- or 24-volt operation at 15 and 30 candela.
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185.
- Horn rated at 88+ dBA at 16 volts.
- Rotary switch for horn tone and two volume selections.
- Universal mounting plate for all standard and all compact wall units.
- Mounting plate shorting spring checks wiring continuity. before device installation.
- Electrically Compatible with legacy SpectrAlert® and SpectrAlert Advance devices.
- Compatible with MDL3 sync module.
- Listed for wall mounting only.

Architectural/Engineering Specifications

General: L-Series standard horns, strobes, and horn strobes shall mount to a standard 2" x 4" x $1^7/_8$" back box, 4" × 4" × 1½" back box, 4" octagon back box, or double-gang back box. L-Series compact products shall mount to a single-gang 2" × 4" × $1^7/_8$" back box. A universal mounting plate shall be used for mounting ceiling and wall products for all standard-size models and a separate universal mounting plate shall be used for mounting compact wall models. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, L-Series products, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal

P2RL

P2GWL

SGWL

HWL

12 or 24 volts. When used with the Sync•Circuit Module, 12-volt-rated notification appliance circuit outputs shall operate between 8.5 and 17.5 volts; 24-volt-rated c appliance circuit outputs shall operate between 16.5 and 33 volts. Indoor L-Series products shall operate between 32 and 120 degrees Fahrenheit from a regulated DC or full-wave rectified unaltered power supply. Strobes and horn strobes shall have field-selectable candela settings including 15, 30, 75, 95, 110, 135, and 185.

Strobe. The strobe shall be a L-Series Model listed to UL 1971 and shall be approved for fire protective service. The strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 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. The horn strobe shall be a L-Series Model listed to UL 1971 and UL 464 and shall be approved for fire protective service. The horn strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 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 audibility options and an option to switch between a temporal three pattern and a non-temporal (continuous) pattern. These options are set by a multiple position switch. The horn on horn strobe models shall operate on a coded or non-coded power supply.

Synchronization Module. The module shall be a Sync•Circuit model MDL3 listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz and horns at temporal three. Also, while operating the strobes, the module shall silence the horns on horn strobe models over a single pair of wires. The module shall mount to a $4^{11}/_6$" × $4^{11}/_{16}$" × $2^1/_8$" back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

PHYSICAL/ELECTRICAL SPECIFICATIONS

- **Standard Operating Temperature:** 32°F to 120°F (0°C to 49°C).
- **Humidity Range:** 10 to 93% non-condensing.
- **Strobe Flash Rate:** 1 flash per second.
- **Nominal Voltage:** Regulated 12 DC or regulated 24 DC/FWR[1] (full wave rectified).
- **Operating Voltage Range[2]:** 8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal).
- **Operating Voltage Range:** MDL3 Sync Module 8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal).
- **Input Terminal Wire Gauge:** 12 to 18 AWG.
- **Wall-Mount Dimensions (including lens):** 5.6" L × 4.7" W × 1.25" D (143 mm L × 119 mm W × 32 mm D).
- **Compact Wall-Mount Dimensions (including lens):** 5.26" L x 3.46" W x 1.93" D (133 mm L x 88 mm W x 49 mm D).
- **Horn Dimensions:** 5.6" L × 4.7" W × 1.25" D (143 mm L × 119 mm W × 32 mm D).
- **Compact Horn Dimensions:** 5.25" L x 3.45" W x 1.25" D (133mm L x 88mm W x 32mm D).

Notes:

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

2. P, S, PC, and SC products will operate at 12 V nominal only for 15 cd and 30 cd.

L-Series Drawings

Compact Horn
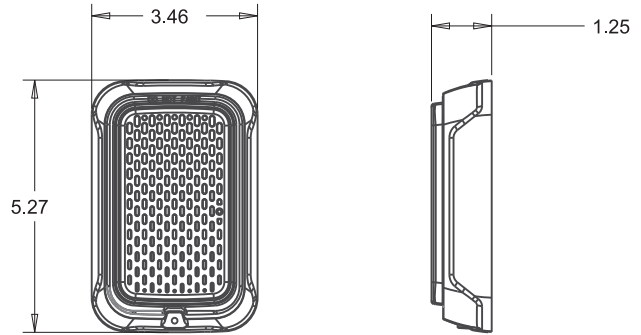
Compact Combo
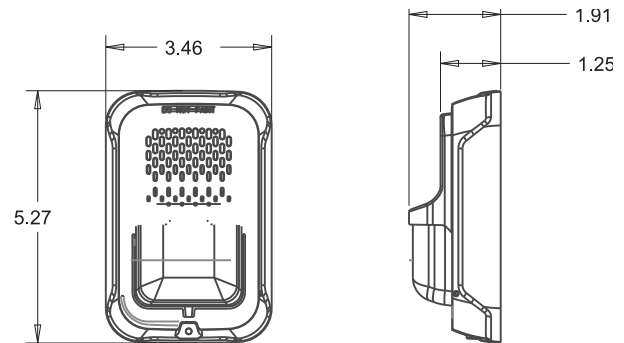
Horn
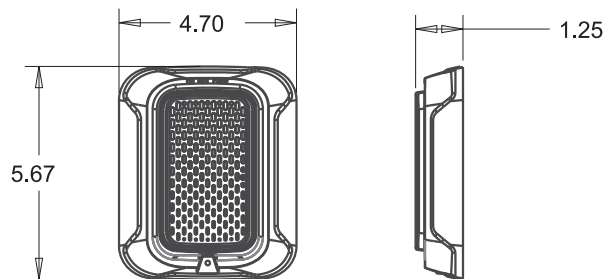
Combo
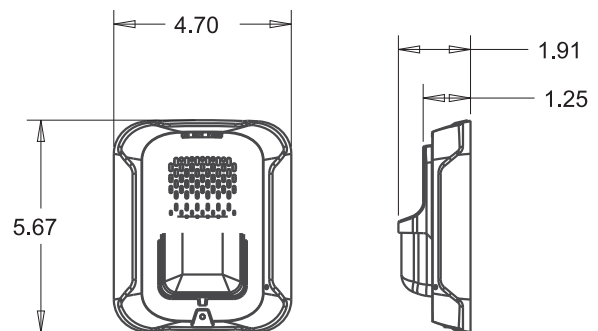
UL Current Draw Data

UL MAX. STROBE CURRENT DRAW (MA RMS)

Candela	8-17.5 Volts DC	16-33 Volts DC	16-33 Volts FWR
15	88	43	60
30	143	63	83
75	N/A	107	136
95	N/A	121	155
110	N/A	148	179
135	N/A	172	209
185	N/A	222	257

UL MAX. HORN CURRENT DRAW (MA RMS)

Sound Pattern	dB	8-17.5 Volts DC	16-33 Volts DC	16-33 Volts FWR
Temporal	High	39	44	54
Temporal	Low	28	32	54
Non-Temporal	High	43	47	54
Non-Temporal	Low	29	32	54
3.1 KHz Temporal	High	39	41	54
3.1 KHz Temporal	Low	29	32	54
3.1 KHz Non-Temporal	High	42	43	54
3.1 KHz Non-Temporal	Low	28	29	54
Coded	High	43	47	54
3.1 KHz Coded	High	42	43	54

UL MAX. CURRENT DRAW (MA RMS), 2-WIRE HORN STROBE, CANDELA RANGE (15-115 CD)

	DC Input: 8-17.5 Volts 15 cd	30 cd	DC Input: 16-33 Volts 15 cd	30 cd	75 cd	95 cd	110 cd	135 cd	185 cd	FWR Input: 16 FWR 15 cd	30 cd	75 cd	95 cd	110 cd	135 cd	185 cd
EM Temp Hi	98	158	54	74	121	142	162	196	245	83	107	156	177	198	234	287
EM Temp Low	93	154	44	65	111	133	157	184	235	68	91	145	165	185	223	271
EM Cont Hi	106	166	73	94	139	160	182	211	262	111	135	185	207	230	264	316
EM Cont Low	93	156	51	71	119	139	162	190	239	79	104	157	175	197	235	283
3.1K Temp Hi	93	156	53	73	119	140	164	190	242	81	105	155	177	196	234	284
3.1K Temp Low	91	154	45	66	112	133	160	185	235	68	90	145	166	186	222	276
3.1K Cont Hi	99	162	69	90	135	157	175	208	261	104	131	177	204	230	264	326
3.1k Cont Low	93	156	52	72	119	138	162	192	242	77	102	156	177	199	234	291

HORN TONES AND SOUND OUTPUT DATA: HORN AND HORN STROBE OUTPUT (DBA)

Pos.	Sound Pattern	dB	8-17.5 Volts DC	16-33 Volts DC	16-33 Volts FWR
1	Temporal	High	84	89	89
2	Temporal	Low	75	83	83
3	Non-Temporal	High	85	90	90
4	Non-Temporal	Low	76	84	84
5	3.1 KHz Temporal	High	83	88	88
6	3.1 KHz Temporal	Low	76	82	82
7†	3.1 KHz Non-Temporal	High	84	89	89
8†	3.1 KHz Non-Temporal	Low	77	83	83
9†	Coded	High	85	90	90
10	3.1 KHz Coded	High	84	89	89

Agency Listings and Approvals

The listings and approvals below apply to L-series devices. 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.

- **UL/ULC-Listed**
  - S4011 Wall Horn Strobes
  - S5512 Wall Strobes
  - S5512 Wall Horns
- **FM Approved**

Product Line Information

Note: ULC-listed devices include required French labeling. See Agency Listings for listing details.

WALL HORN STROBES

P2WL(A), P2RL(A). 2-Wire, Horn Strobe (White, Red).

P2GWL(A), P2GRL(A). 2-Wire, Compact Horn Strobe (White, Red).

P2WL(A)-P, P2RL(A)-P. 2-Wire, Horn Strobe, Plain (White, Red).

P2WL-SP, P2RL-SP. 2-Wire, Horn Strobe, FUEGO (White, Red).

WALL STROBES

SWL(A), SRL(A). Strobe, Red (White, Red).

SGWL(A), SGRL(A). Compact Strobe (White, Red).

SWL(A)-P, SRL(A)-P. Strobe, Plain (White, Red).

SRL-SP. Strobe, FUEGO (Red).

SWL-CLR-ALERT. Strobe, ALERT (White).

SWL-ALERT. Strobe, Wall, Amber Lens, Alert (White).

HORNS

HWL(A), HRL(A). Horn (White, Red).

HGWL(A), HGRL(A). Compact Horn (White, Red).

ACCESSORIES

TR-2W, TR-2. Universal Wall Trim Ring (White, Red).

SBBWL, SBBRL. Wall Surface Mount Back Box (White, Red).

SBBGWL, SBBGRL. Compact Wall Surface Mount Back Box (White, Red).

Notes:

- All -P models have a plain housing (no "FIRE" marking on cover).
- All -SP models have "FUEGO" marking on cover.
- All -ALERT models have "ALERT" marking on cover.
- ULC-listed "A" models have FIRE/FEU marking on cover.

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ENGINEERING & MANUFACTURING
QUALITY 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.
www.notifier.com

UL LISTED

E120V-GT

Hybrid Surge Protection Device

Safety and performance is what Eclips is all about. While there are many varying criteria to be considered for surge protective devices (SPD), if the design engineer neglects the importance there can be serious implications for the client and equipment.

Every piece of electrical equipment is designed to operate at a specified nominal voltage. Typically equipment is designed to handle minor variations. However external sources such as lightning, motors, and short circuits cause wild and damaging variations.

Critical systems wired to your electrical service like Fire Alarm Control Panels (FACP), Mass Notification systems, amplifiers, motors, pumps (HVAC), power boosters and many more must require appropriate levels surge protection. The E120 series is an ideal choice for your 120V AC applications. because it has the robustness not only to absorb a spike, but to clamp long enough to trip the branch circuit breaker and still be functional for additional surges.

The number one cause of destruction, degradation and down-time of critical electrical equipment is from power surges and lightning strikes.

The E120V-GT device is an ideal solution to protect equipment. UL listed it maintains system integrity and protects against transients introduced into / onto electrical lines via poor atmospheric and utility conditions as well as internally generated inductive loads and transient TVSS. It reduces system downtime associated with power surges and lightning strikes. Prevents destruction and degradation of electrical components in the system. Fix your nuisance and non-billable service calls as a result of transients and poor power quality and show your customer you care about system integrity.

Standard Features:

- Available in 120 VAC
- UL Listed 1449 3rd Edition Type 2 & 3
- Includes lockout & labels per NFPA 72 2013 10.6.5.2
- Surface or conduit mounting
- Diagnostic indicator light
- Self restoring
- 3 Wire device (18" length)

ISO 9001 REGISTERED COMPANY

Made In U.S.A.

NFPA

RU - Uses UL Recognized Components

NEMA

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800.486.1723 Toll Free
508.485.0966 Local
508.485.4740 Fax

No Excuses, Just Solutions!

SPACE AGE ELECTRONICS, INC.

Specifications:

All 120volt AC equipment will have Transient Voltage Surge Suppression (TVSS) protection manufactured by Space Age Electronics, Inc., part number E120V-GT ECLIPS Brand. The Unit shall be UL listed to standard 1449 rev 3. The unit will be labeled clearly with indelible ink. Mounting can be conduit mounted with a ¾" pipe threaded nipple to secure in panel, or surface panel mount with 2 external mounting holes. The unit shall have thermal fuses to protect against fire in short circuit conditions. The E120V will have 18" long, 14 gauge wires (3x) ground wire must be green. The enclosure will be a non dielectric material UL94 QMFZ2/8 grade material providing UV protection. The unit shall provide visual indication (LED) that unit is protecting and functioning.

Specifications - Performance:

Short Circuit Current Rating (SCCR) :	5KA
Enclosure Material :	UL94 QMFZ2/8 (green)
VPR=700(L – N) 700 (L – G) 600 (N – G)	
Capacitance :	< 2,000 pf
Clamping Response Time :	< 5 nanoseconds
Current :	Non-Load Bearing
Max Operating Voltage (MCOV) :	140 volts AC, 50/60 Hz
Design :	Thermally Fused Hybrid
Operation Indicators :	LED

Specifications - Operating:

Service Voltage :	120 Single Phase
Circuits Protected :	L-N L-G N-G
Connection Type :	Hardwired
Installation Configuration :	Parallel

Specifications - Physical:

Weight :	5.2oz
Dimensions :	2.75" x 1.55" x 4" long
Operation Temperature :	-40 to +85º C

Specifications - Compliance:

UL Listed :	1449 Third Edition - VZCA
File Number :	E319370 Vol. 1 Sec. 1

Mechanical Drawing:
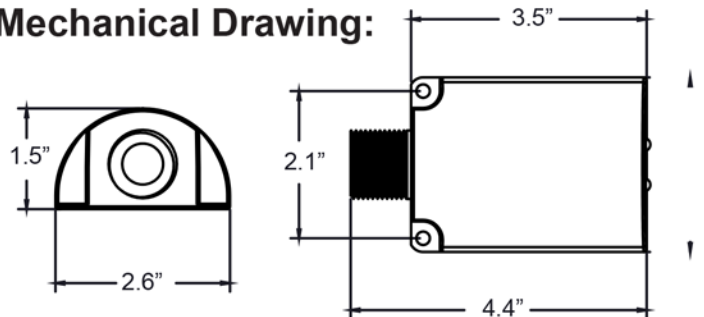
Wiring Diagram:
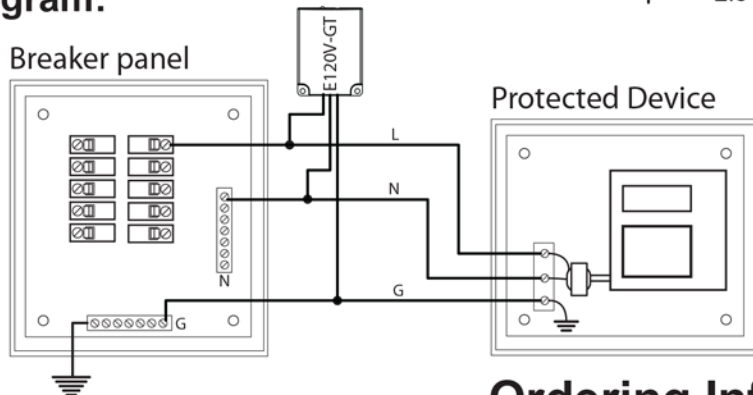
Ordering Information:

Part #	Description
E120V-GT	120V Hybrid Surge Protective Device
ELOCK-FA	Circuit Lockout Kit

7788F/7744F Series

Wireless Fire Alarm Communicators for AES-*IntelliNet*

AES | IntelliNet
CORPORATION | For Alarm Monitoring

Model 7788F

UL LISTED

Features – All models

- UL Listed commercial fire alarm applications.
- Meets NFPA 72 requirements
- Direct reporting to AES receiver across IntelliNet wireless mesh network
- Each Subscriber acts as transmitter/receiver/repeater
- Simple and fast activation on network
- On board status LEDs for easy set up
- 8 programmable zone inputs – 7788F
- 4 programmable zone inputs and 4 reverse polarity inputs – 7744F
- Easy programming via AES handheld programmer or PC
- Rugged metal housing ideal for any commercial fire alarm application

Models 7788F/7744F-ULP with IntelliPro Fire also includes

- IntelliPro Fire transmits full alarm data from virtually any fire alarm panel digital communicator
- Alarm format support for Contact ID, Pulse, or Bosch Modem IIe or Modem IIIa2
- Easy installation in AES subscriber
- Operates in applications with or without a phone line

Advanced Wireless Alarm Monitoring

The AES-*IntelliNet* mesh radio network offers unmatched reliability and speed in delivering wireless alarm signals to a central station without third party fees or reliance on networks owned by companies outside the security and fire alarm industry. AES-7788F/7744F Series Smart Subscriber Transceivers provide the wireless communication link between the fire alarm panel and the central station receiver. The 7788F/7744F Series is ideal for most commercial fire alarm applications. Each 7788F/7744F Series Subscriber is housed in a full sized, red, locked, steel cabinet and supports a range of alarm panel inputs including EOL fire, EOL supervised, and direct voltage from the panel (non-fire applications).

Supervised Operation

AES Smart Subscribers offer fully supervised operation that includes monitoring of operating power (both primary AC power and battery backup) and the connection to the radio network. Each Subscriber "checks in" with the AES central station receiver at least once every 24 hours. The supervision check in time can be set for as often as once per minute and, because the central station owns the wireless network, there is no additional cost for air time to transmit supervisory signals.

Full Data Reporting from Alarm Panel Digital Dialer

Models 7788F-ULP and 7744F-ULP come equipped with an IntelliPro Fire Full Data Module (AES-7794) which enables reporting of full alarm data captured from the fire alarm panel's digital communicator. IntelliPro Fire supports most alarm communication formats including Contact ID, Pulse, as well as Bosch Modem IIe and Modem IIIa2.

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

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

7788F/7744F Series

AES IntelliNet
CORPORATION | For Alarm Monitoring

Technical Specifications
7788F/7744F Series Subscribers

Dimensions
- 13.25"H x 8.5"W x 4.3"D
  (34cm H x 21.5cm W x 11cm D)

Weight
- Approx. 7 pounds (3.2 kilograms), excludes battery.

Radio Frequency
- Standard Frequency Range: 450-470MHz (others available)
- Output Power - 2 Watts (others available)

Antenna
- Included 2.5 db tamper resistant antenna mounts on enclosure
- Multiple remote antenna options available

Power Input
- 16.5VAC, 40VA (transformer not included)

Backup Battery
- Will charge 12V battery up to 7.5 AH. Requires 12VDC 7.5 AH battery for UL 864.

Alarm Signal Inputs (subscriber)
- 7788F – 8 individually programmable zones
- 7744F - 4 individually programmable zones and 4 reverse polarity inputs

UL Standards
- UL 864 Edition 9 – Standard for Control Units and Accessories for Fire Alarm Systems
- UL 365 – Standard for Police Station Connected Burglar Alarm Units and Systems
- UL 1681 – Standard for Central Station Burglar Alarm Units

Antenna Cut / Communication Trouble Output
- Form C relay; fail secure; rated for 24 VDC 1A resistive

Reset Button
- Located on main circuit board.

Operating Temperature
- 0° to 50° C (32° to 122°F)

Storage Temperature
- -10° to 60° C (14° to 140°F)

Relative Humidity
- 0 to 85% RHC, Non Condensing

AES-7794 IntelliPro Fire

Input / Output Connections
- RJ11 connection to AES subscriber for module data and power
- RJ11 connector for Handheld Programmer/PC programming
- RJ31X Telco connections - T and R both in and out via terminal strip and RJ45
- Alarm Panel digital communicator T and R both in and out via terminal strip and RJ45
- Trouble output: Form C relay detects if Subscriber is off the network

Alarm Formats
- Support for Contact ID and Pulse formats as well as Modem IIe and Modem IIIa2 converted to CID

Size
- 2.8 x 5.0 inches (7.1cm x 12.7cm)

Power Requirements
- 12 VDC nominal - primary and backup power provided by the AES 7788F/7744F or other Subscriber

How to Order

Model	Description
7744F	4 Zone Fire Alarm Subscriber with 4 reverse polarity inputs
7744F-ULP	7744F Fire Alarm Subscriber with IntelliPro Fire full data module
7788F	8 Zone Fire Alarm Subscriber
7788F-ULP	7788F Fire Alarm Subscriber with IntelliPro Fire full data module

Optional Accessories

7041E	Subscriber Handheld Programmer
7794	IntelliPro Fire Full Data Module

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 150 countries.

AES IntelliNet
CORPORATION | For Alarm Monitoring

For more information
Call 800-AES-NETS (800-237-6387)
AES Corporation | 285 Newbury Street | Peabody, MA 01960 USA
Tel. +1 978-535-7310 | Fax +1 978-535-7313 | Email info@aes-intellinet.com
Web www.aes-intellinet.com

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SIGNALING

UL® LISTED

SRD
ACE-11

SYSTEM RECORD DOCUMENTS

The SRD is the perfect item to help you meet demanding code requirements today. NFPA 72 2013 7.7.2.4 states that a cabinet must be "prominently labelled 'SYSTEM RECORD DOCUMENTS'."

The SRD is the perfect fit to meet todays demanding code requirements. SAE's number one goal is to manufacture code compliant solutions and this product allows you to do just that. NFPA 72 2013 7.7.2.1 states, "With every new system, a documentation cabinet shall be installed at the system control unit or other approved location at the protected premises."

This durable 16 gauge steel enclosure with a solid piano hinge and key lock will keep all of your code required documents in one safe place. With a 4GB USB flash drive it stores your fire alarm software safe and secure eliminating the occurrences of the software not being on site when technicians arrive to service the system. Along with your fire alarm software you can store your test & inspection, service records, manuals & system records. Using a standard USB B connector you may also store you records electronically (See NFPA 72 2013 7.5.6.7).

The SRD has designated hooks to organize key rings and hold important business cards for easy access and reference. Inside the cover it has an organized record for identifying equipment information, required documentation locations (See NFPA 72 2013 7.2.1).

Standard Features:
• Installed with a 4 GB digital flash drive with USB B connector
• 2 key ring hooks to hold system keys
• Business card holder for key contacts
• Overall dimensions are 12" x 13" tall and 2 1/4" deep
• 18 gauge steel box and cover for security
• Durable powder coat baked on finish other colors available
• Standard 3/4" cat 30 key lock. Other lock assemblies available
• Solid stainless steel piano hinge
• Permanently screened white ink 1" high "SYSTEM RECORD DOCUMENTS"
• Legend sheet for documentation, passwords and system information

NFPA MEMBER

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SPACE AGE ELECTRONICS, INC.

Specifications:

The system record documents box (SRD) shall be UL Listed, constructed of 18 gauge cold rolled steel. It shall have a red powder coat epoxy finish. The cover shall be permanently screened with 1" high lettering "SYSTEM RECORD DOCUMENTS " with white indelible ink. The access door shall be locked with a 3/4" barrel lock and the hinge shall be a solid width 12" stainless steel piano hinge. The enclosure will supply 4 mounting holes. Inside the enclosure will accommodate standard 8 1/2 x 11 manuals and loose document records that will be protected within the enclosure. A legend sheet will be permanently attached to the door for system required documentation, key contacts and system information. The SRD will have securely mounted inside a minimum of 4 Gigabyte digital flash memory drive with a standard USB B connector for uploading and downloading information. The drive shall not be accessible without tools to any person whom gains access to the records. The enclosure shall also provide 2 key ring holders with a location to mount standard business type cards for key contact personnel.

USB Storage Interface Requires Standard USB-B Connector

Key Ring Hooks

Business Card Holder

Legend sheet for storing system information including contacts, sign-off , maintenance & test information, and alternate locations of additional records.

Ordering Information:

Part #	Description
SSU00689	System Record Documents Cabinet RED
SSU00690	Custom screening with your Logo
EA0315	10 pack door legend sheet

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Multi-Voltage Conventional Relays

NOTIFIER®

by Honeywell

General

Notifier'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 interfacing.

The R-10T(A)/20T(A) and R-14T(A)/R-24T(A) models are multi-voltage relays with terminal strip field 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.

7015group.jpg

Multi-Voltage Conventional Relays

Specifications

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

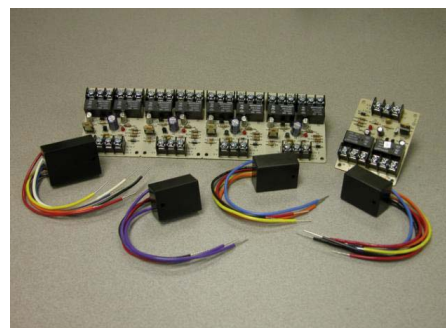|	
Operating Voltage Range:	18-35 VDC, 18-35 VAC, 115 VAC, 230 VAC.
Operating Current:	23 mA @ 24 VDC , 59 mA @ 24 VAC,150 mA @ 120 VAC, 180 mA @ 240 VAC [R-10T(A)/ R-14T(A)].
	40 mA DC max. @ 24 VDC, 24 VAC, 92 mA @ 24 VAC, 220 mA @ 120 VAC, 260 mA @ 240 VAC [R-20T(A)/R-24T(A)]
Humidity Range:	10% to 93% (non-condensing).
Dimensions:	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)
Contact Ratings:	24 VDC: 7A with L/R = 5 mS.
	120 VAC: 10 A.
	120 VAC: 1/6 HP.
	230 VAC: 7 A.

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

Operating Voltage Range:	18-35 VDC,. 18-35 VAC, 115 VAC, 230 VAC.
Operating Current:	23 mA DC max. @ 24 V, 59 mA @ 24 VAC, 150mA @ 120 VAC, 180 mA @ 240 VAC [R-10E(A)/ R-14E(A)].
	-40 mA DC max. @ 24 VDC, 24 VAC, 115 VAC, 230 VAC (R-20E/R-24E).
Humidity Range:	10% to 93% (non-condensing).
Dimensions:	R-10E(A)/R-20E(A): 5.1"L x 3.75"W x 2.5"H.
	R-14E(A)/R-24E(A): 11"L x 5.3"W x 2.5"H.
Operating Temperature:	-40° F to 158° F (-40° C to 70° C).
Contact Ratings:	24 VDC: 7 A with L/R = 5mS.
	120 VAC: 10 A.
	120 VAC: 1/6 HP.
	230 VAC: 7 A.

PR-1(A)

Operating Voltage Range:	18-35 VDC, 18-35 VAC, 120 VAC.
Operating Current:	15 mA DC max. @ 24 VDC, 24 VAC,120VAC.
Humidity Range:	10% to 93% RH.
Dimensions:	0.87" H x 2.01" W x 1.42" D.
Operating Temperature:	-40° F to 158° F (-40° C to 70° C).
Contact Ratings:	24 VDC: 7 A with LR = 5 mS.
	120 VAC: 7 A max. (0.35 PF).
	250 VAC: 10 A resistive.
	30 VDC: 10 A resistive.
Wire Length:	8" minimum.

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.

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 pigtails.

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 pigtails.

PR-3(A): Epxoy 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 pigtails.

EOLR-1(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.

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.

R-10E(A): Single (SPDT) relay mounted into a steel enclosure, 1 red activation LED.

R-14E(A): 4-gang (SPDT) relay mounted into a steel enclosure, 4 red activation LEDs.

R-20E(A): Single (DPDT) relay mounted into a steel enclosure, 1 red activation LED.

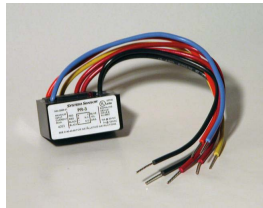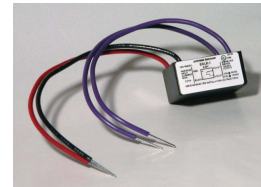**R-24E(A):** 4-gang (DPDT) relay mounted into a steel enclosure, 4 red activation LEDs.

PR-1(A)

PR-2(A)

PR-3(A)

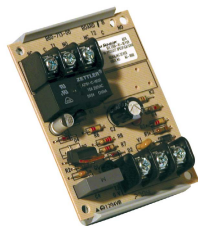**EOLR-1(A)**

R-10T(A)
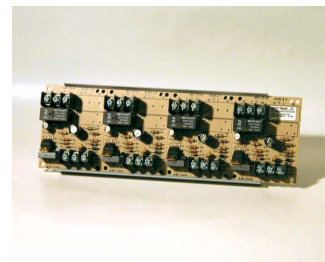
R-14T(A)
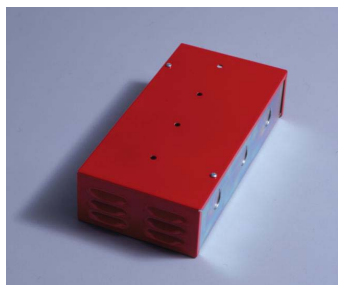
**R-20E(A) & R-24E(A)
Enclosures**

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

ISO 9001
CERTIFIED
ENGINEERING & MANUFACTURING
QUALITY 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.
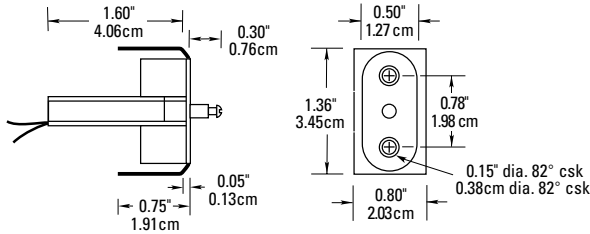www.notifier.com
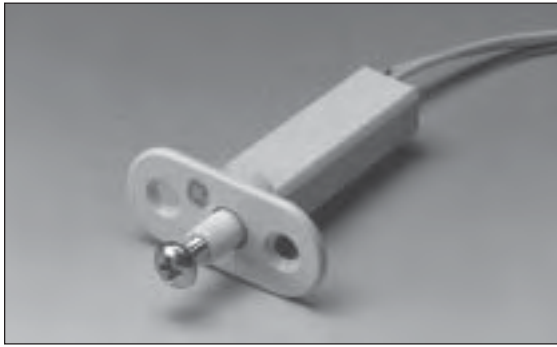
Recessed Pin Plunger

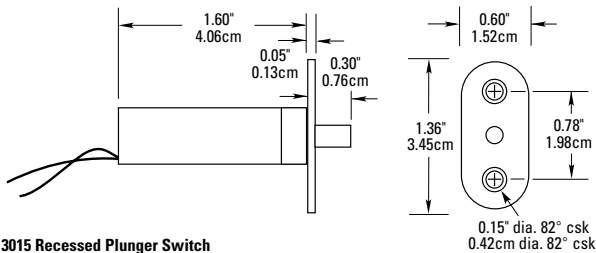## 3010 Series

Applications

- Model 3015 available in plate mount or clip mount configuration
- Model 3025 plunger self-adjusts to proper reach
  - Pulling out on plunger shunts switch
  - Disconnection while servicing equipment is unnecessary

3012 Clip Mount Plunger

3015 Recessed Plunger Switch

Includes: 1– Adjustable #6 x 32^1/$_2$" Phillips screw

3025 Tamper Switch

General Specifications

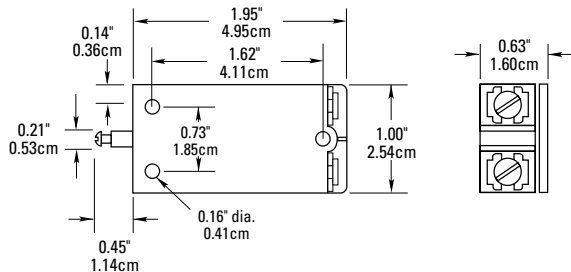|	
Enclosure	ABS plastic
Temperature Range	-40°F to 150°F (-40°C to 65°C)
Environmental	Contact Housing is made of flame-retardant ABS plastic. Reed switch is protected and held in place by a polyurethane potting material
NEMA Rating	1
Protection Class	IP 62
Response Time	1 msec max.
Life Cycles	100,000 Under Full Load, 10,000,000 Under Dry Circuit
Lead Types/O.D.	#22 wire / 0.05" (0.15cm)
Color Choices	Natural(N), Mahogany(M)
UL Listed	All Models

Order Information	Electrical Specifications					
Part Number	**Contact[1] Configuration**	**Load Rating (AC/DC)**	**Switching Voltage (AC/DC)**	**Switching Current (AC/DC)**	**Contact Resistance**	**Lead Length**
3012-M, N	N.O.	7.5W/VA	100V	0.5A	0.2 Ohms	1'
3015-M, N	N.O.	7.5W/VA	100V	0.5A	0.2 Ohms	1'
3027-M, N	SPDT	3W/VA	30V	0.25A	0.2 Ohms	1'
3025T-M, N	N.O.	7.5W/VA	100V	0.5A	0.2 Ohms	#6 Screw Terminal

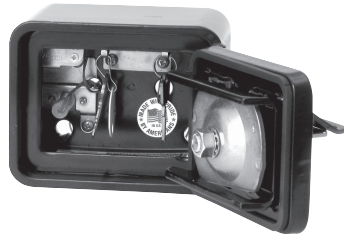***Warning— Each electrical rating is an individual maximum and cannot be exceeded!***
[1] Configuration with plunger out.

High Security Industrial/Government Key Box

Recessed Mount
with Face Flange

Surface Mount

The number one high-security KNOX-BOX® is used for most commercial applications including businesses, schools, government and public buildings, community associations and apartment complexes. The 3200 Series KNOX-BOX holds keys, access cards and other small items necessary for emergency access.
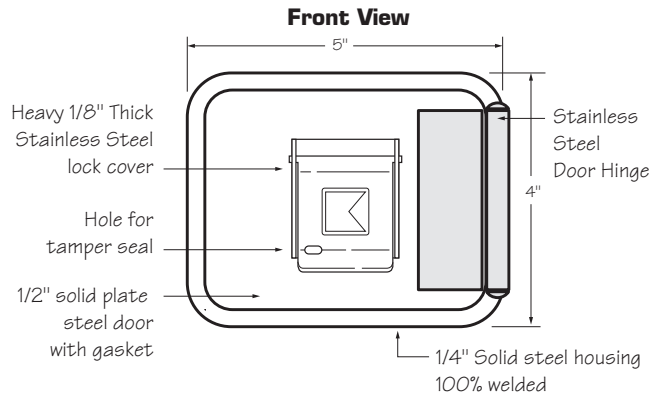
The hinged-door 3200 Series KNOX-BOX is more convenient than the lift-off door version because it allows single-handed operation and opened or closed, it's all one unit.
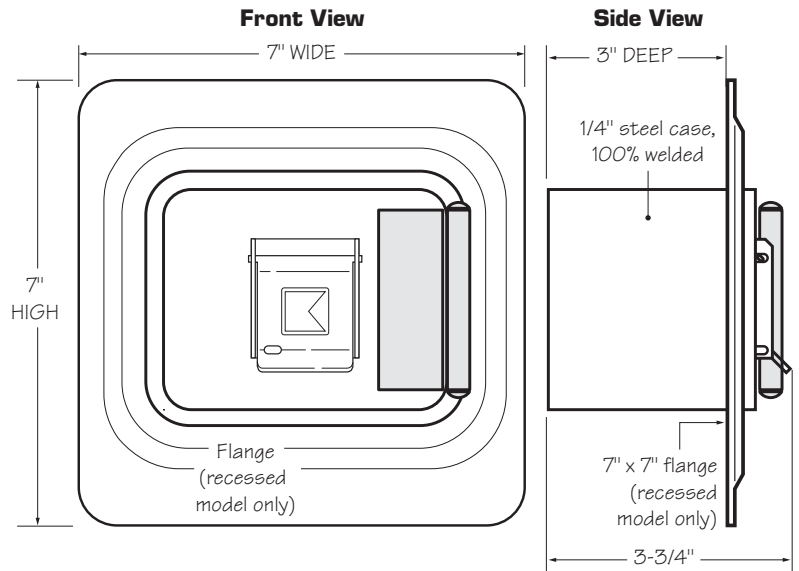
Features and Benefits

- Holds up to 10 keys and access cards in interior compartment

- Ensures high security. Box and lock are UL® Listed

- Includes a Knox-Coat® proprietary finishing process that protects Knox products up to four times better than standard powder coat

- Resists moist conditions with a weather resistant door gasket

- Hinged door allows single-handed operation

- Colors: Black, Dark Bronze or Aluminum
  Weight: Surface mount - 8 lbs.
            Recessed mount - 9 lbs.

Options

- Alarm tamper switches (UL Listed)

- Recessed Mounting Kit (RMK) for recessed models only

- Inside switch for use on electrical doors, gates and other electrical equipment

Front View

Heavy 1/8" Thick Stainless Steel lock cover

Hole for tamper seal

1/2" solid plate steel door with gasket

Stainless Steel Door Hinge

5"

4"

1/4" Solid steel housing 100% welded

3200 Surface Mount

Front View

7" WIDE

7" HIGH

Flange (recessed model only)

Side View

3" DEEP

1/4" steel case, 100% welded

7" x 7" flange (recessed model only)

3-3/4"

3200 Recessed Mount

Ordering Specifications

To insure procurement and delivery of the 3200 Series KNOX-BOX, it is suggested that the following specification paragraph be used:

KNOX-BOX surface/recessed mount with hinged door, with/without UL Listed tamper switches. 1/4" plate steel housing, 1/2" thick steel door with interior gasket seal and stainless steel door hinge. Box and lock UL Listed. Lock has 1/8" thick stainless steel dust cover with tamper seal mounting capability.

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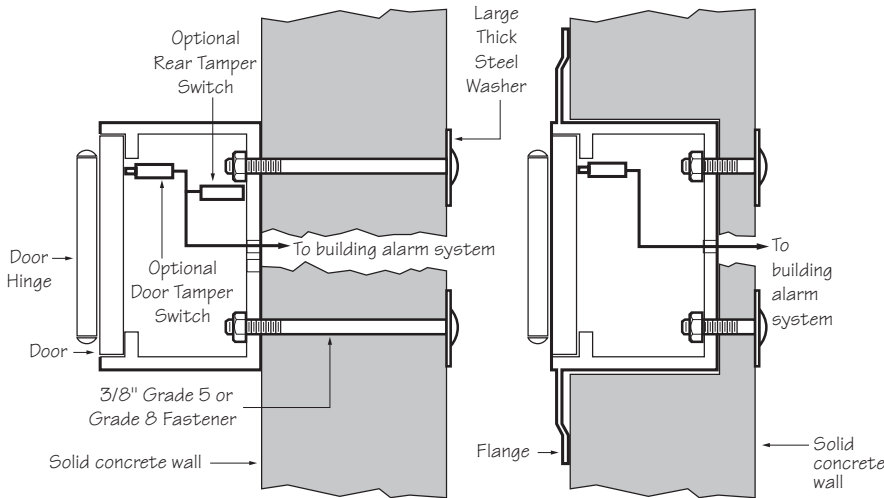Finish: Knox-Coat® proprietary finishing process
Colors: Black, Dark Bronze or Aluminum
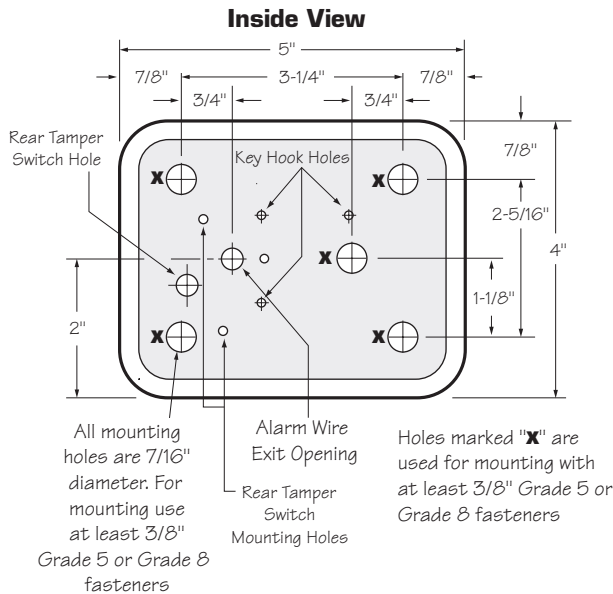P/N: 3200 Series KNOX-BOX (mfr's cat. ID)
Mfr's Name: **KNOX COMPANY**

**Suggested minimum mounting height
6 feet above ground**

Optional Rear Tamper Switch

Large Thick Steel Washer

Door Hinge

Optional Door Tamper Switch

To building alarm system

Door

3/8" Grade 5 or Grade 8 Fastener

Solid concrete wall

Flange

To building alarm system

Solid concrete wall

**3200 Series Hinged Door
Surface Mount**

**3200 Series Hinged Door
Recess Mount**

Inside View

5"

7/8"   3-1/4"   7/8"

3/4"   3/4"

Rear Tamper Switch Hole

Key Hook Holes

7/8"

2-5/16"

4"

1-1/8"

2"

x **x**

x **x**

x

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

Alarm Wire Exit Opening

Rear Tamper Switch Mounting Holes

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

Attention: KNOX-BOX® is a very strong device that MUST be mounted properly to ensure maximum security and resist physical attack.

Knox® Rapid Entry System
The Knox Company manufactures a complete line of high security products including Knox-Box key boxes, key vaults, cabinets, key switches, padlocks, locking FDC caps, plugs and electronic master key security systems. For more information or technical assistance, please call Customer Service at 1-800-552-5669.

Recessed Mounting Kit

The 3200 Recessed Mounting Kit (RMK) is used for recessed models only. It contains a shell housing and mounting hardware to be cast-in-place in new concrete or masonry construction. After construction is completed, the KNOX-BOX mounts inside the RMK. The RMK may only be used in new concrete or masonry construction.
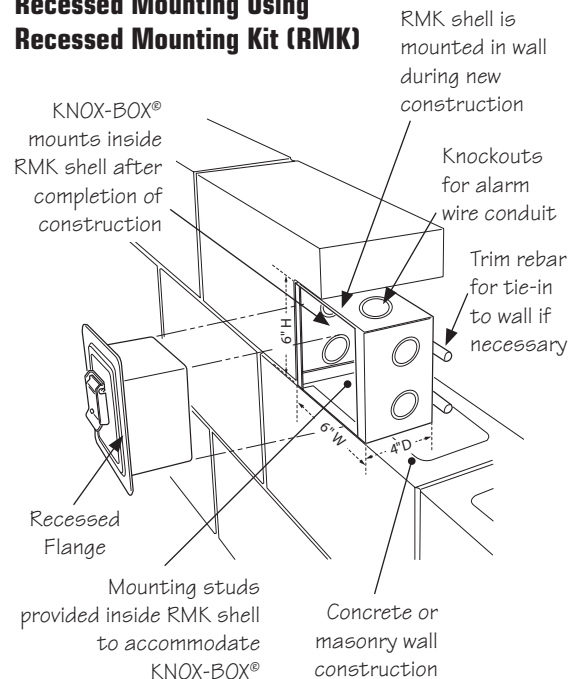
Installation In Cast Concrete

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

Dimensions

Rough-in Dimensions: 6-1/2"H x 6-1/2"W x 5"D

IMPORTANT: Care should be taken to insure that the front of the RMK shell housing, including the cover plate and screw heads, is flush with the finish wall. The RMK must be plumbed to insure vertical alignment of the vault.

Recessed Mounting Using
Recessed Mounting Kit (RMK)

RMK shell is mounted in wall during new construction

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

Knockouts for alarm wire conduit

Trim rebar for tie-in to wall if necessary

6"H

6"W   4"D

Recessed Flange

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

Concrete or masonry wall construction

MKT-KBSPEC-0019-E

GENTEX CORPORATION

Photoelectric Smoke Alarm with Visual Signaling Appliance

710/713CS/LS 7109/7139CS/ S E R I E S

Applications

The 710/713CS/LS and 7109/7139CS/LS photoelectric single/multiple station smoke alarms are designed to give reliable early warning of the presence of smoke where both audible and visual alarms are required. The series features a 90dBA solid state piezo signal and a 177 Candela strobe with "FIRE" lettering. The strobe is listed per UL 1971.

The smoke alarm operates on the light scattering principle, a superior method of detection in smoldering fires, utilizing a pulsing LED light source and a photodiode sensor in a fully screened sensing chamber.

Every 4 to 5 seconds the pulsing LED emits an infrared beam that by passes the photodiode under normal conditions. However, when smoke enters the sensing chamber, the infrared beam is deflected onto the sensor by the smoke particles. The LED pulse rate increases to 8 times the normal rate, and after the photodiode confirms that smoke is present for 2 consecutive pulses, it will produce the signal necessary to trip an alarm.

Upon activation, the alarm will emit a 90dBA local audible signal and activate the high intensity strobe. During the alarm period the strobe will flash at a brightness of 177 candela 60 times per minute. After the smoke has cleared from the detector, the unit will revert to the normal stand-by condition.

Standard Features
• Available in 120VAC
• 177 candela rating (UL 1971 listed)
• Horn frequency 3100Hz (nominal)
• Patented three position test switch
• Nominal 2.5% Sensitivity
• Quick-Disconnect Wiring Harness (CS Models)
• Form C Auxiliary Relay Contacts for Remote Annunciation (CS Models)
• 9VDC Battery Back-Up (7109/7139CS/LS) w/Audible Low Battery Chirp
• 120VAC with 9VDC Battery Back-up Models, Visual Does Not Operate on Battery Back-Up
• Relays Operate on Battery Back-Up
• Relay Contacts Will Activate From the Tandem Wire
• 90dBA Continuous Piezo Horn (710CS/LS & 7109CS/LS Series)
• 90dBA Temporal 3 Evacuation Piezo Horn (713CS/LS & 7139CS/LS Series)
• 5-to-1 Signal-to-Noise Ratio
• Fully Insect Screened
• Interconnect with all Gentex tandem capable smoke alarms
• Interconnect up to 6 Alarms (CS Models)
• Easy Wash™ on-site maintenance washing program
• 9 Foot Line Cord (LS Models)
• Mounting Hardware Adapts to Standard Junction Boxes
• Warranty is 1 Year From Date of Purchase

Easy Wash™ - On Site Maintenance Program

Product Listings

• **UL 217 and UL 1971 Listed**
• **CSFM: 7257-0569:104 (710/713CS/LS)**
         7257-0569:118 (7109/7139CS/LS)
• **BS+A/MEA: 285-91-E**
• **BFP (City of Chicago)**
• **MSFM Listing #1929**

Product Compliance
• **NFPA 72**
• **Americans with Disabilities Act (ADA)**

710CS/LS and 7109CS/LS Series - Continuous Piezo Sounder

Model Number	Part Number	Voltage	Wall Mount	Ceiling Mount	9 Foot Line Cord	Interconnect Up To 6 Units	Form C Contacts	9VDC Battery Back-Up
710CS-W	907-0231-002	120 VAC	●			●	●	
710CS-C	907-0232-002	120 VAC		●		●	●	
710CSX-W	907-0235-002	120 VAC	●			●	●	
710CSX-C	907-0236-002	120 VAC		●		●	●	
710LS	907-0239-002	120 VAC	●		●			
7109CS-W	917-0007-002	120 VAC	●			●	●	●
7109CS-C	917-0008-002	120 VAC		●		●	●	●
7109CSX-W	917-0010-002	120 VAC	●			●	●	●
7109CSX-C	917-0011-002	120 VAC		●		●	●	●
7109LS	917-0006-002	120 VAC	●		●			●

713CS/LS and 7139CS/LS Series - Temporal 3 Piezo Sounder

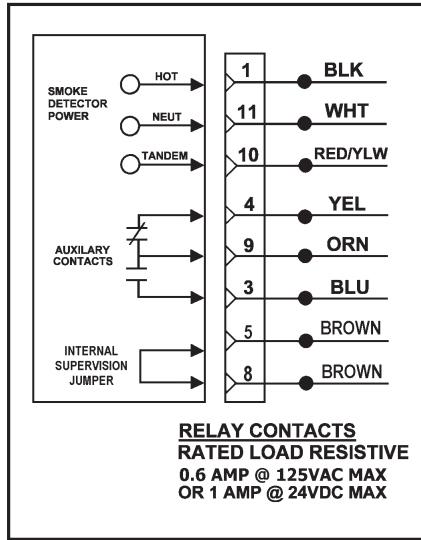| Model Number	Part Number	Voltage	Wall Mount	Ceiling Mount	9 Foot Line Cord	Interconnect Up To 6 Units	Form C Contacts	9VDC Battery Back-Up
713CS-W	907-0248-002	120 VAC	●			●	●	
713CS-C	907-0249-002	120 VAC		●		●	●	
713CSX-W	907-0252-002	120 VAC	●			●	●	
713CSX-C	907-0253-002	120 VAC		●		●	●	
713LS	907-0256-002	120 VAC	●		●			
7139CS-W	917-0019-002	120 VAC	●			●	●	●
7139CS-C	917-0020-002	120 VAC		●		●	●	●
7139CSX-W	917-0021-002	120 VAC	●			●	●	●
7139CSX-C	917-0022-002	120 VAC		●		●	●	●
7139LS	917-0018-002	120 VAC	●		●			●

NOTES:

Candela Rating: 177 Candela UL 1971 Listed Strobe Light   "W" = Wall Mount
Flash Rate per Minute: 60 Minimum   "C" = Ceiling Mount

• Available in square configuration only.
• Ceiling mount not available in line cord models.
• The X models have the ability to turn the strobe on from a field mounted relay
• When testing 713/7139 units, it may take up to 16 seconds longer for smoke alarm to go in or out of alarm mode.
• It is recommended that 710/713/7109/7139 Series smoke alarm be tested weekly.
• Refer to Technical Bulletin 002 for Easy Wash™ on site washing instructions
• 710/7109 units produce a non-temporal audible alarm and are therefore not intended for locations where the desired action of the occupant(s) is evacuation.
• 713/7139 units produce a temporal 3 audible alarm. Per NFPA 72, the American National Standard Audible Emergency Evacuation Signal as defined in ANSI S3.41, is required whenever the intended response is to evacuate the building.
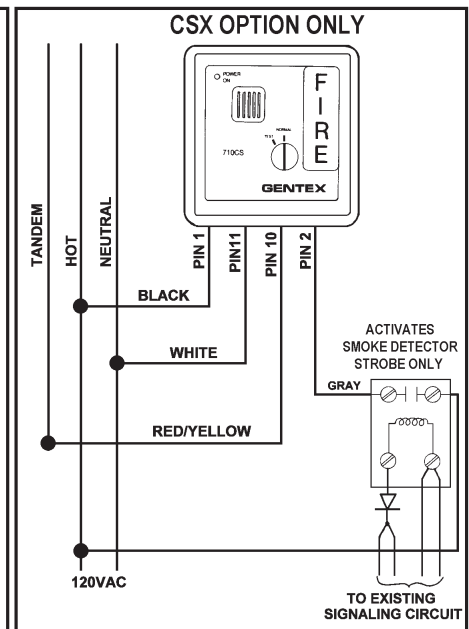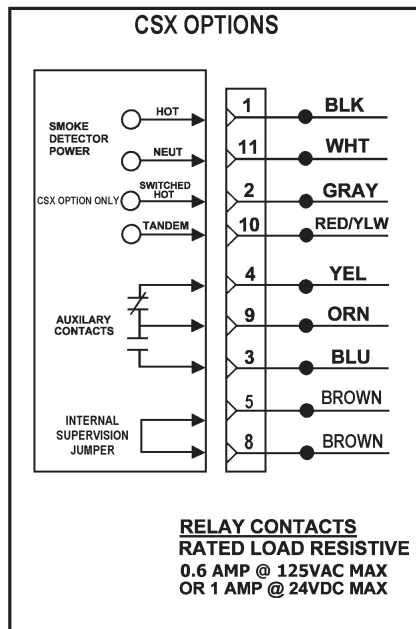
Wiring Diagram

710CS
7109CS
713CS
7139CS

SMOKE DETECTOR POWER
HOT
NEUT
TANDEM

AUXILARY CONTACTS

INTERNAL SUPERVISION JUMPER

1	BLK
11	WHT
10	RED/YLW
4	YEL
9	ORN
3	BLU
5	BROWN
8	BROWN

RELAY CONTACTS
RATED LOAD RESISTIVE
0.6 AMP @ 125VAC MAX
OR 1 AMP @ 24VDC MAX

UNIVERSAL MOUNTING PLATE

QUICK-DISCONNECT PLUG

FIRE
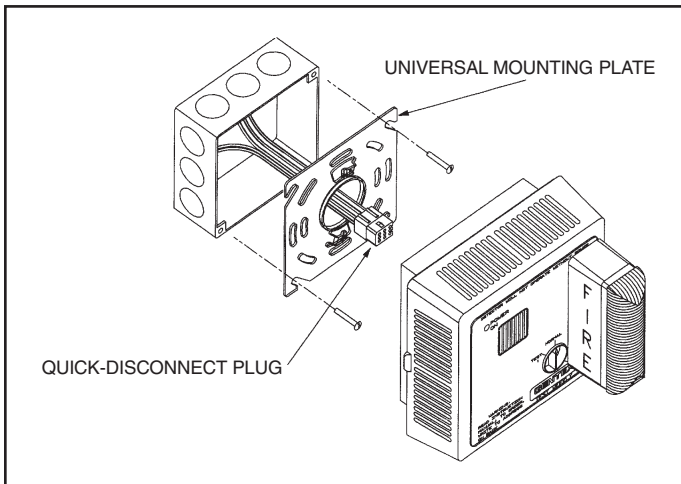
Electrical Specifications

Operating Voltage. . . . . .120 VAC, 60Hz
Operating Current. . . . . 0.400 amps (Peak)
Operating Ambient Temp Range. . . . . 40°F to 100°F
Alarm Horn Rating. . . . . 90 Decibels at 10 Ft.
Nominal Sensitivity. . . . . 2.5% Obscuration
Auxiliary Relay (Standard). 1 Form C (0.6 amp)
(710/713CS and 7109/7139CS)
Size . . . . .5.5" Square x 4.75" Overall Depth
Secondary Power Source. . . . . Alkaline 9VDC battery (supplied)
(7109CS/LS and 7139CS/LS)

The CSX models are used for remote annunciation of the strobe.

CSX OPTIONS

SMOKE DETECTOR POWER
HOT
NEUT
CSX OPTION ONLY SWITCHED HOT
TANDEM

AUXILARY CONTACTS

INTERNAL SUPERVISION JUMPER

1	BLK
11	WHT
2	GRAY
10	RED/YLW
4	YEL
9	ORN
3	BLU
5	BROWN
8	BROWN

RELAY CONTACTS
RATED LOAD RESISTIVE
0.6 AMP @ 125VAC MAX
OR 1 AMP @ 24VDC MAX

CSX OPTION ONLY

POWER ON
FIRE
710CS
GENTEX

TANDEM
HOT
NEUTRAL
PIN 1
PIN11
PIN 10
PIN 2

BLACK
WHITE
RED/YELLOW

ACTIVATES SMOKE DETECTOR STROBE ONLY
GRAY

120VAC

TO EXISTING SIGNALING CIRCUIT

Architect & Engineering Specifications

The photoelectric smoke alarm shall be a Gentex Model 710LS, 713LS, 7109LS, 7139LS or approved equal which shall provide at least the following features and functions.

1. Nominal sensitivity shall be 2.5%.
2. The smoke 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.
3. The smoke 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.
4. The sensing chamber shall be fully screened to prevent entrance of small insects, thus reducing the probability of false alarms.
5. A continuous piezo horn rated at 90dBA at 10 ft. (710CS/LS & 7109CS/LS units) and a temporal 3 piezo horn rated at 90dBA at 10 ft. (713CS/LS & 7139CS/LS units).
6. A visual LED monitor (condition indicator) will pulse in normal operation and steady on in alarm.
7. The visual signal shall have a minimal light output of 177 Candela.
8. An easily accessible test knob shall be provided. The test knob in the TEST position will simulate an actual smoke condition of approximately 3.5% causing the smoke alarm to alarm within 20-36 seconds. Also the alarm shall test for the most sensitive setting. An alarm during this test will be a maintenance indicator. Return to Gentex Corporation for maintenance.
9. The smoke alarm shall be provided with a 9 foot line cord with a strain relief connection, if a portable unit.
10. Unit must be capable of providing a monitored battery back-up.
11. Unit must be UL 217 and UL 1971 listed for wall mount.
12. Unit shall also meet all requirements of the State of California Fire Marshal, Bureau of Standards and Appeals and the Americans with Disabilities Act (ADA).

Architect & Engineering Specifications

The photoelectric smoke alarm shall be a Gentex Model 710CS, 713CS, 7109CS, 7139CS or approved equal which shall provide at least the following features and functions.

1. Nominal sensitivity shall be 2.5%.
2. The smoke 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 smoke alarm will alarm.
3. The smoke 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.
4. The sensing chamber shall be fully screened to prevent entrance of small insects, thus reducing the probability of false alarms.
5. A continuous piezo horn rated at 90dBA at 10 ft. (710CS/LS & 7109CS/LS units) and a temporal 3 piezo horn rated at 90dBA at 10ft. (713CS/LS & 7139CS/LS units).
6. A visual LED monitor (condition indicator) will pulse in normal operation and will remain solid in alarm.
7. The visual signal shall have a minimal light output of 177 Candela and will flash one time per second.
8. An easily accessible test knob shall be provided. The test knob in the TEST position will simulate an actual smoke condition of approximately 3.5% causing the smoke alarm to alarm within 20-36 seconds. Also the detector shall test for the most sensitive setting. An alarm during this test will be a maintenance indicator. Return to Gentex Corporation for maintenance.
9. The smoke alarm shall be provided with a Form C contact for remote annunciation purposes.
10. The manufacturer shall provide other compatible detector models with the following optional features: a) auxiliary Form C relay contact for initiating remote functions and annunciation; b) relay option that is capable of activation by tandem interconnect wire.
11. Unit must be capable of providing a monitored battery back-up.
12. Unit must be UL 217 and UL 1971 listed for wall mount or ceiling mount.
13. Unit shall also meet all requirements of the State of California Fire Marshal, Bureau of Standards and Appeals and the Americans with Disabilities Act ADA).

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

> 12 units per carton
> 21 pounds per carton

GENTEX
CORPORATION

Fire Protection Products Group • www.gentex.com
10985 Chicago Drive • Zeeland, Michigan 49464
616.392.7195 • 1.800.436.8391 • 616.392.4219 Fax

Gentex Corporation reserves the right to make changes to the product data sheet at their discretion.

551-0037-02

Printed on Recycled Paper

GENTEX CORPORATION

120VAC/9VDC Single/Multiple Station Carbon Monoxide Alarm

C O 1 2 0 9
S E R I E S

Applications

The CO1209 (120VAC/9VDC) Series of electrochemical sensor carbon monoxide alarms is for use as an evacuation device in all dwelling units, including but not limited to homes, apartments, hospitals, hotels and motels. The CO1209 Series is in compliance with ANSI/UL 2034 and NFPA 720.

The CO1209 Series is engineered to virtually eliminate nuisance alarms and deliver outstanding performance wherever reliable CO protection is required.

The CO1209 Series is provided with a 9VDC alkaline battery for electrical back-up in the event building power is lost. The battery impedance is verified and the alarm provides a low or missing battery warning. The battery drawer provides easy replacement without removing the unit from the wall or ceiling.

The Gentex CO1209 Series is provided with a push button test that simulates an actual CO condition in full compliance with NFPA 720 and UL Standards.

Features of the CO alarm series include, a temporal 4 tone for CO alarm annunciation, DUALINK® - differentiating tones indicating a smoke alarm (temporal 3) or a CO alarm (temporal 4), tandem capabilities with all Gentex tandem interconnect capable alarms, signal indicating CO sensor has reached end of life and solid state red LED to indicate CO presence. Options include Form A/Form C dry contacts for remote annunciation.

Product Listings

SIGNALING
UL LISTED

GENTEX CORP.
10985 CHICAGO DR.
ZEELAND, MI 49464

• ANSI/UL 2034 Listed
• CSFM: 5276-0659:143

Product Compliance

• NFPA 720
• IBC/IFC/IRC
• City & State Ordinances & Laws
• Quality Management System is
  certified to: ISO 9001:2008

NEMA MEMBER

ASSEMBLED IN
THE USA

Standard Features
• CO1209 available in 120VAC with 9VDC battery back-up
• Electrochemical sensor
• Horn frequency 3100 Hz (nominal)
• Meets sensitivity requirements of ANSI/UL 2034
• DUALINK® - differentiating tones indicating a smoke
  alarm (temporal 3) or a CO alarm (temporal 4)
• Temporal 4 sounding pattern for CO annunciation
• Optional auxiliary Form A/Form C relay contacts
• Relay contacts operate on battery back-up
• Tandem interconnect with current Gentex alarm models
• Push button self test and functional test feature
• Quick-disconnect wiring harness
• Non-latching (self restoring) alarm
• Red LED pulses every 15-30 seconds, green LED
  for AC power on
• Solid State red LED to indicate CO presence
• Mounting hardware adapts to standard junction boxes
• Dust cover to prevent contamination during installation
• Low or missing battery indicator
• End of life signal indicates CO sensor has reached
  depletion state and time to replace
• 1 year warranty from date of purchase
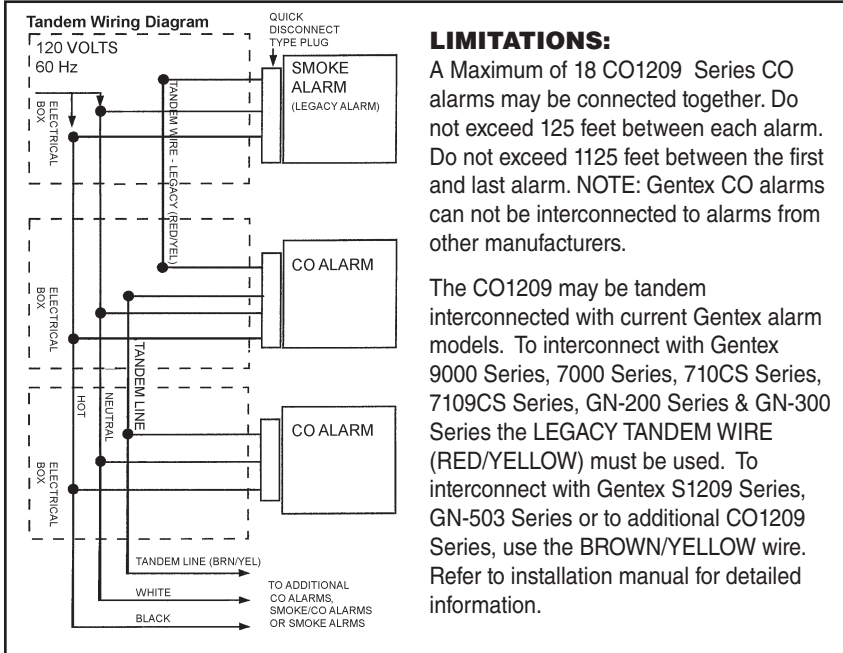• 5 year limited warranty on CO sensor

CO1209 Series Carbon Monoxide Alarm			
Model Number	Part Number	Voltage	Form A/ Form C Relay
CO1209	918-0009-002	120VAC/9VDC	
CO1209F	918-0010-002	120VAC/9VDC	●

Electrical Specifications

Operating Voltage...120VAC, 60Hz
Operating Current...0.045 amps
Operating Current (Relay Options)......................0.070 amps
Operating Ambient Temp Range........................40°F to 100°F
Alarm Horn Rating.......................................85dBA at 10 feet
Size...................................Diameter: 6.25 in. (15.875 cm) OA
                        (5.75 in. (14.605 cm) at Ceiling)
                        Depth: 1.8 in. (4.572 cm)
Secondary Power Source....................Alkaline 9VDC battery
                        Duracell® MN 1604
CO Sensing Cell...................................Electrochemical Cell

CO1209 Series Wiring Diagrams

Tandem Wiring Diagram

QUICK DISCONNECT TYPE PLUG

120 VOLTS 60 Hz

ELECTRICAL BOX

TANDEM WIRE - LEGACY (RED/YEL)

SMOKE ALARM (LEGACY ALARM)

ELECTRICAL BOX

CO ALARM

TANDEM LINE

HOT

NEUTRAL

ELECTRICAL BOX

CO ALARM

TANDEM LINE (BRN/YEL)

WHITE — TO ADDITIONAL CO ALARMS, SMOKE/CO ALARMS OR SMOKE ALRMS

BLACK

LIMITATIONS:
A Maximum of 18 CO1209 Series CO alarms may be connected together. Do not exceed 125 feet between each alarm. Do not exceed 1125 feet between the first and last alarm. NOTE: Gentex CO alarms can not be interconnected to alarms from other manufacturers.

The CO1209 may be tandem interconnected with current Gentex alarm models. To interconnect with Gentex 9000 Series, 7000 Series, 710CS Series, 7109CS Series, GN-200 Series & GN-300 Series the LEGACY TANDEM WIRE (RED/YELLOW) must be used. To interconnect with Gentex S1209 Series, GN-503 Series or to additional CO1209 Series, use the BROWN/YELLOW wire. Refer to installation manual for detailed information.

Relay Models

Models CO1209F

SUPERVISION WIRES

ACCESS CONTACTS

ALARM CONTACTS

TANDEM

POWER

GRAY
GRAY
YEL
ORN
BLU
VIO
VIO/BLK
RED/YEL (LEGACY)
BRN/YEL (NEW)
BLK
WHT
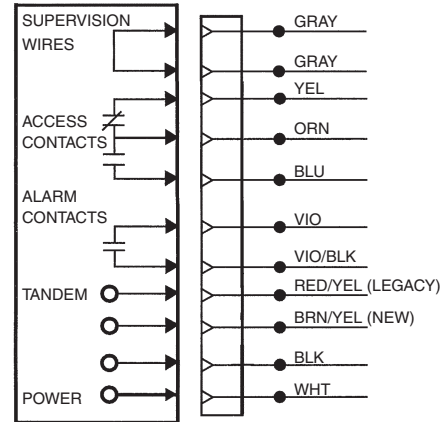
CAUTION:
RED/YELLOW & BROWN/YELLOW wire to be capped when not in use. This wire is for tandem connection only. Do not connect to any other circuit.

Architect & Engineering Specifications

The carbon monoxide alarm shall be a Gentex Model CO1209/CO1209F or approved equal which shall provide at least the following features and functions:
1. The carbon monoxide alarm shall utilize an electrochemical sensing element with expected 5-year life.
2. The carbon monoxide alarm is calibrated not to detect CO levels below 30PPM and will not alarm when exposed to constant levels of 30PPM for 30 days. The device will alarm at the following levels: 70 PPM CO between 1 to 4 hours. 150 PPM CO between 10 to 50 minutes. 400 PPM 4 to 15 minutes.
3. The CO1209 Series device shall have a Duracell® MN 1604 9VDC alkaline battery as a back-up in the event building power is lost.
4. The 9VDC battery impedance shall be verified by the circuit of the smoke/CO alarm.
5. The CO alarm shall provide an indicator when the battery is low in power or high impedance or is missing.
6. The CO alarm will provide an audible indicator at end of life of CO sensor.
7. A solid state piezo alarm rated at 85dBA at 10ft.
8. A visual LED monitor (condition indicator) will slow pulse in normal operation.
9. A red color LED will indicate presence of CO at the unit.
10. An easily accessible test button shall be provided. Push down on button for self test. Push button and hold until CO alarm activates for functional test. If device does not go into alarm, the device is not working properly.
11. The device shall have tandem interconnect capability of up to 12 units or 6 units with relay.
12. The CO1209 Series alarm shall have the capability to tandem interconnect with all Gentex tandem capable CO alarms, smoke alarms or combination smoke/CO alarms, including 7000/70003 Series, 9000/9003 Series, 710CS/713CS Series, 7109CS/7139CS Series, GN-200/ GN-300 Series, S1209 Series and GN-503 Series.
13. The CO alarm shall be non-latching (self-restoring).
14. Unit must be ANSI/UL 2034 listed for both wall and ceiling mount.
15. Unit shall be listed by Underwriters Laboratories and California State Fire Marshal (CSFM).

All equipment shall be completely factory assembled 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.

For complete product specifications, refer to product installation manual.

24 units per carton
24 pounds per carton

120VAC Remote Visual Signal

G X S - 1 2 0
S E R I E S

Applications

The GXS-120 Series is a high quality remote visual signaling appliance that offers dependable remote annunciation. The GXS-120 is ideal for applications where a dependable visual alarm is required in applications such as hotels, dormitories and apartments.

The GXS-120 Series has a constant flash rate of 1Hz. The GXS-120 Series is provided with a two position terminal block (12-18AWG).

The GXS-120 has a 177 candela strobe that meet the requirements of the ADA. GXS-120 appliances are ANSI/UL 1971 listed and are warranted for three years from the date of purchase.

Standard Features

- Nominal voltage 120VAC
- 177 candela strobe meets the requirements of NFPA 72 and meets the requirements of ADA
- Unit Dimensions: 4.5" high x 4.56" wide x 2.25" deep
- Terminal blocks (12-18 AWG)
- Flash rate 1Hz
- Wide variety of mounting options for new construction and retrofit applications
- ANSI/UL 1971 listed for fire protective service/signal for hearing impaired
- Faceplate available in red or off-white

GXS-120 Series Remote Strobe

Model Number	Part Number	Candela (ANSI/UL 1971)
GXS-120177WR	904-0780-002	177
GXS-120177WW	904-0758-002	177
GXS-120177CR	904-0781-002	177
GXS-120177CW	904-0759-002	177

GXS-120 Series Strobe Current Ratings

Candela	177cd
UL Max	209mA

NOTES:

Operating temperature: 32° to 120°F (0° to 49°C)
GXS-120 Series is **not** listed for outdoor use

"W" = Wall mount   "C" = Ceiling mount
"R" = Red faceplate   "W" = Off-White faceplate
"P" = Plain (no lettering)

The plain "P" units are non-returnable.

Product Listings

SIGNALING
UL®
LISTED

- ANSI/UL 1971
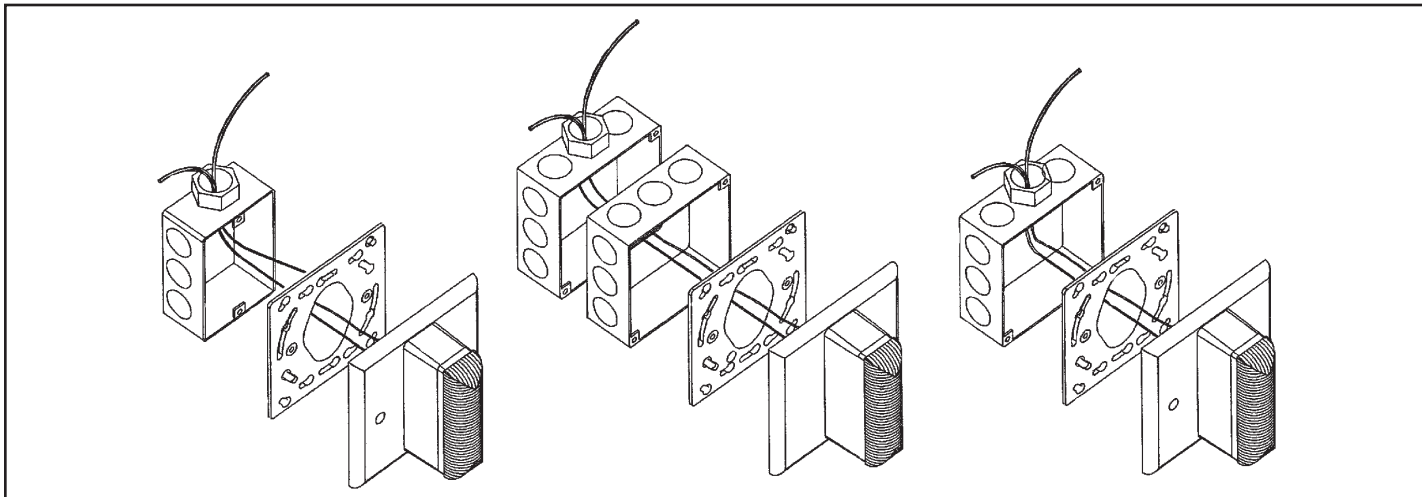- CSFM Listing 7125-569:114
- MEA #285-91-E
- BFP (City of Chicago)

Product Compliance

- Americans with Disabilities Act (ADA)
- NFPA 72
- IBC/IFC/IRC
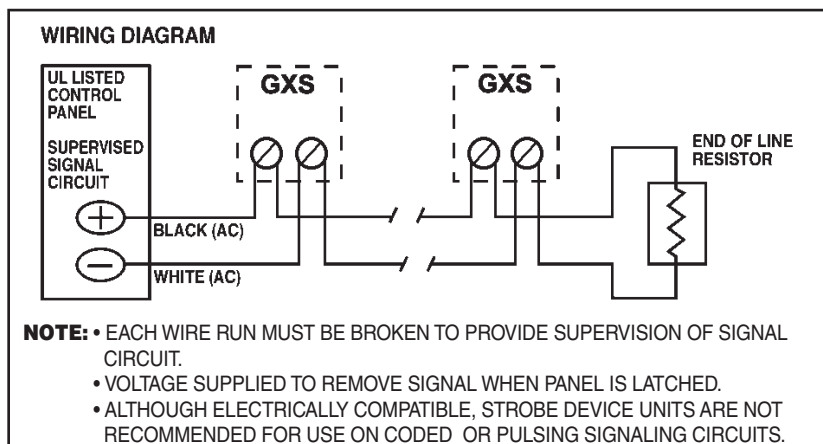- Quality Management System is certified to: ISO 9001:2008

NEMA MEMBER

ASSEMBLED IN THE USA

GXS-120

SERIES

Mounting Rough-in Box and Run Wiring

Wiring Diagram GXS-120

WIRING DIAGRAM

UL LISTED CONTROL PANEL

SUPERVISED SIGNAL CIRCUIT

GXS   GXS

END OF LINE RESISTOR

BLACK (AC)

WHITE (AC)

NOTE: • EACH WIRE RUN MUST BE BROKEN TO PROVIDE SUPERVISION OF SIGNAL CIRCUIT.
• VOLTAGE SUPPLIED TO REMOVE SIGNAL WHEN PANEL IS LATCHED.
• ALTHOUGH ELECTRICALLY COMPATIBLE, STROBE DEVICE UNITS ARE NOT RECOMMENDED FOR USE ON CODED OR PULSING SIGNALING CIRCUITS.

Architect & Engineering Specifications

The visual signal shall be the Gentex Model GXS-120 or approved equal. The visual appliance shall be ANSI/UL 1971 listed by Underwriters Laboratories.

The visual appliance shall be installed in accordance with the appropriate provisions of the National Fire Protection Association, American National Standards or other applicable state and local requirements.

The visual signal shall be capable of mounting to a single gang, double gang, double work box or 4" square back box. The visual signal shall have a constant flash rate of 1Hz regardless of listed input voltage.

24 units per carton
12 pounds per carton

551-0036-03