

Enterprise Electric, Inc.

46 Capitol Avenue
Lisbon Falls, ME 04252-0193
Ph : (207)353-2697

Letter of Transmittal

To: Kevin McCosh
Ledgewood Construction
27 Main Street
South Portland, ME 04106
Ph: 207-415-7993 Fax: (207) 767-1869

Transmittal #: 23
Date: 10/26/2009
Job: 01-09-004 Ocean Avenue Elementary School

Subject: 283111 fire alarm submittal Rev 1

- WE ARE SENDING YOU**
- Attached
 - Under separate cover via None the following items:
 - Shop drawings
 - Prints
 - Plans
 - Samples
 - Copy of letter
 - Change order
 - Specifications
 - Submittal

Document Type	Copies	Date	No.	Description
Submittal	1	10/26/09	283111-17 Rev 1	283111 Fire Alarm System

THESE ARE TRANSMITTED as checked below:

- For approval
- For your use
- As requested
- For review and comment
- FOR BIDS DUE
- Approved as submitted
- Approved as noted
- Returned for corrections
- Other
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- Resubmit ___ copies for approval
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Remarks:

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From:

Signature: _____

Enterprise Electric, Inc.

46 Capitol Avenue
Lisbon Falls, ME 04252-0193
Ph : (207)353-2697

Submittal

Job: 01-09-004

Ocean Avenue Elementary School
150 Ocean Ave
Portland, ME 04103

Spec Section No: 283111

Submittal No: 17

Revision No: 1

Sent Date: 10/26/2009

Spec Section Title:

Submittal Title: 283111 Fire Alarm System

Contractor:

Enterprise Electric, Inc.

Contractor's Stamp

General Contractor:

Ledgewood Inc.
Kevin McCosh

Architect's Stamp

Engineer's Stamp



GAMEWELL/ FCI FIRE ALARM SYSTEM
E 3 SYSTEM
OCEAN AVE SCHOOL
PORTLAND. MAINE

PREPARED FOR:
ENTERPRISE ELECTRIC
46 CAPITAL AVENUE
LISBON FALLS, ME 04252
ATTN: JOHN SEIGARS

R.B. ALLEN COMPANY, INC.
131 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

PREPARED BY: LH
REVIEWED BY: TB



10/23/2009

**Gamewell Fire Alarm System
Ocean Ave School Portland Maine**

**SUBMITTAL REVIEW RESPONSE
ITEMS NUMBERED TO MATCH SUBMITTAL REVIEW**

1. Added E3 FACP datasheet. Added ili95-mb datasheet for interface to Gamewell Apollo devices.
 2. White devices will be provided. Submittal has been updated
 3. Fire alarm to provide control as needed for Door Holders.
 4. Sti Pull stion covers will be provided WITHOUT horn.
 5. RB Allen has updated Sequence of operations.
- We will provide updates to Sequence of Operations as needed to meet the demands of Local, State, Engeneering needs for all interface functions.

OCEAN AVE SCHOOL
 PORTLAND, ME

<u>QTY.</u>	<u>CAT#</u>	<u>DESCRIPTION</u>	<u>DATA SHEET#</u>
1	E3BB-BB	B SIZED CABINET	9020-0649
1	E3ID2-B	INNER DOOR	9020-0649
1	PM-9	POWER SUPPLY	9020-0555
1	ILI-95-MB	MOTHER BOARD WITH 2 SLC	9020-0605
1	LCDE3	MAIN LCD DISPLAY	9020-0606
1	ASM-16	SWITCH MODULE	9020-0554
1	PM-9	MAIN POWER SUPPLY	9020-0555
1	ILI-95-MB-E3	MOTHER BOARD WITH 2 SLC	9020-0605
1	ASM-16	SWITCH MODULE	9020-0554
2	LCD-E3	MAIN LCD DISPLAY	9020-0606
1	E3-BB-RC/1NCC	C SIZE CABINET	9020-0649
1	E3-ILI-CPLATE	ILI PLATE	9020-0649
1	E3-ID2-C	INNER DOOR	9020-0649
1	DACT E3	DIALER	9020-0610
1	E3-BP	BLANK PLATE	9020-0649
2	INCC-BP	BLANK PLATE	9020-0649
6	ASLA 1075	7 AH BATTERIES	POWER PATROL
2	ASLA 1116	18 AH BATTERIES	POWER PATROL
15	MS-95	ADDRESSABLE PULL STATIONS	CS-2053
10	PID-95P	ADDRESSABLE POINT IDENTIFICATION MODULE	CS-2044
29	XP95P	PHOTO SMOKE DETECTORS	CS-2054
31	XP95T	ADDRESSABLE HEAT DETECTORS	CS-2055
60	XP95 B6EZ	DETECTOR BASES	CS-2048
5	XP95PDR	ADDRESSABLE DUCT SMOKE DETECTORS	CS-2049
5	70896-05	5 FT SAMPLING TUBE	CS-2049
5	30203-01	REMOTE LED	CS-2049
6	RCE-95	RELAY CONTROL MODULES	CS-2045
30	RSS24MCWFW	STROBES	WHEELLOCK
68	E50-24-MCWFW	SPEAKER STROBES	WHEELLOCK
33	E60-24MCC-FW	CEILING SPEAKER STROBES	WHEELLOCK

33	E60-EXT	EXTENDER RING	WHEELLOCK
19	1504-AQN5	FLUSH DOOR HOLDERS	85001-0421
3	FF8	BOOSTER POWER SUPPLY	CS-2282
1	INI-VGX-UTP	TRANSPONDER VOICE GATEWAY	9020-0648
1	INCCMIC	PAGING MICROPHONE MODULE	9020-0542
2	AM50	50 WATT AMPLIFIER	9020-0541
5	SSU-RIC2	RIC2 RELAYS	SPACE AGE
4	STI1200	STI1200 STOPPER COVER	STI1100
4	HSG	HORN STROBE GUARDS	SPACE AGE
1		BATTERY CALCULATIONS	
1		SEQUENCE OF OPERATIONS	
1		SYSTEM NAC CIRCUIT CALCULATIONS	
1		SYSTEM SPEAKER CIRCUIT CALCULATIONS	



by Honeywell

E3 Series™ Control Panel

Description

The E3 Series™ Expandable Emergency Evacuation System by Gamewell-FCI is in the forefront of the latest generation of fire alarm control panels. Employing the new high-speed Velociti™ sensors, the E3 Series provides previously unattainable polling speed and response together with the flexibility demanded by today's emergency evacuation systems. In addition to their high-speed polling rate, the Velociti™ series of sensors feature bi-polar LEDs that flash green for normal polling, and light red steadily to indicate an alarm.

The E3 Series is equipped with an 80-character LCD-E3 alphanumeric LCD display that allows 40 characters to be user-defined for customizing installations. Up to six (6), keyboard LCD displays may also be remotely located in addition to five of the familiar LCD-7100 remote displays, allowing for instant system status information to be available in any desired area of an installation.

A high-speed 32-bit processor easily tackles a wide array of applications from small office buildings to sophisticated high-rise installations.

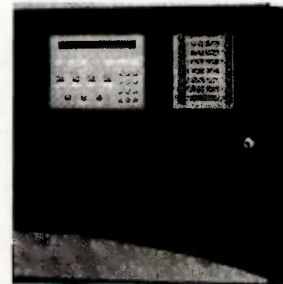
64-node networking is made possible by 625K baud/ARCNET communications using twisted-pair copper cable, fiber-optic cable, or a combination of both.

The basic E3 Series is equipped with an ILI-MB-E3 Intelligent Loop Interface-Main Board, Intelligent Loop Interface Expansion Board, and ASM-16 Addressable Switch Module that features sixteen (16), software programmable switches, each accompanied by red, green and yellow LEDs that can be programmed to indicate operation of the switches. Additional ASM-16 modules may be added to expand the operation to a plateau previously unimagined.

The Intelligent Loop Interface - Expansion Board (ILI-S-E3) provides the E3 Series control panel with two (2), additional signaling line circuits. The layout is similar to the ILI-MB-E3 with the exception that a number of components are omitted. It occupies one node on the Broadband network.

E3 Series™ and Velociti™ are trademarks of Honeywell International Inc

Expandable Emergency Evacuation System



E3 Series

Features

- Listed under UL Standard 864, 9th Edition.
- UL Listed for smoke control (dedicated and non-dedicated) when properly configured.
- Styles 4, 6, or 7* signaling line circuits.
- Two to 128 SLCs each supporting 159 sensors and 159 modules.
- 625K baud ARCNET communications using wire, fiber, or mixed configurations for installation flexibility.
- High-speed 32 bit processor.
- 4100 event history log.
- Advanced Boolean logic-based programming such as AND, OR, NOT, time delay and calendar functions configurable via computer programming.
- Supports up to sixteen (16), ASM-16 addressable switch or ANU-48 LED driver modules per ILI-MB-E3.
- Two (2), Class A, Style Z or Class B, Style Y, notification appliance circuits rated at 2.0 amps. per circuit.
- Integral city connection.
- Flexible 115,200 baud high speed RS-232 interface.
- 40 character user-defined text per device.
- Supports up to five (5), LCD-7100 displays and six (6), LCD-E3 keyboard displays per ILI-MB-E3.

*Style 7 wiring requires the use of System Sensor M500X Isolator Modules.

An ISO 9000-2000 Company

SIGNALING



LISTED
S1869



APPROVED
3025415



Approved
231-06-E



7165-0694-268
7165-0654-269



Class 1
Class 2
High Rise

City of
Chicago
Approved

City of
Denver
Approved

GAMEWELL-FCI

12 Clintonville Road, Northford, CT 06472-1610 USA • Tel: (203) 484-7161 • Fax: (203) 484-7118

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Description (Continued)

Each ILI-MB-E3 can support as many as sixteen (16), ANU-48 LED Driver modules supporting hundreds of LEDs on a 3rd party graphic annunciator for remote annunciation. The ANU-48 modules may be installed in any Listed remote annunciator. It can be remotely located via an RS-485 serial interface.

An array of cabinets allows for neat, compact, attractive installations.

Installation

The E3 Series expandable emergency evacuation system offers four (4), cabinet size options. A typical cabinet includes a backbox, an inner door, and an outer door. The E3 Series cabinet assembly is a compact 19 3/8" (49 cm) wide wall-mounted enclosure.

Cabinet A includes the following four options:

- Cabinet A1 inner door mounted to the backbox. The backbox houses one NGA module.
- Cabinet A2 inner door mounted to the backbox. The backbox houses one LCD-E3 module.
- Two or three-bay inner door mounted to the backbox. The backbox typically houses one (1) LCD-E3, or one (1) NGA, and one (1) or two (2), ASM-16 modules.

Cabinet B contains a space for the ILI-MB-E3, PM-9 modules and batteries set inside the backbox. Additional module options mounted on the backbox include the DACT-E3, RPT-E3 and ILI-S-E3. The 2-bay inner door houses one (1), LCD-E3 module and one (1), ASM-16 module.

Both Cabinets C and D include the following:

- Pre-assembled outer door that gives visibility to the fire fighter's phone handset and a microphone voice messaging system.
- Two inner door panel selections that may contain optional modules to meet the facility operation requirements.

For instructions on installing any of the above E3 Series cabinets, refer to the E3 Series Expandable Emergency Evacuation Installation/Operating Manual
Part Number: 9000-0574.

Features (Continued)

Velociti™ Intelligent Sensor Features:

- Poll 318 devices in less than two (2) seconds.
- Activate up to 159 outputs in less than five (5) seconds.
- LED's blink the associated device address during walk test.
- Fully digital, hi-precision protocol.
- Up to 9 levels of sensitivity adjustment.
- Pre-Alarm adjustable between 15 levels for both Alert and Action.
- Day/night automatic sensing adjustment.
- Sensitivity windows:
 - Ion 0.5 to 2% obscuration.
 - Photo 1 to 3% obscuration.
 - Laser .02 to 2% obscuration.
 - MCS Acclimate2F .5 to 4%, also self-adjustable options 1 to 2%, 2 to 3%, and 3 to 4%.
 - HARSH 1 to 3% obscuration.
- Drift compensation.
- Each Loop Card has its own integral processor providing maximum survivability on loss of any other component. SLC provides full response on loss of any other system processor.
- Optional programmable switches can be configured to enable, disable or group any combination of output devices.
- Integrated point or Grouped Cross Zoning allows for numerous devices installed at any location to cooperate and determine alarm condition.
- Automatic detector sensitivity testing.
- DIRTY and VERY DIRTY detector maintenance alerts.

Specifications

Operating Voltage:	24 VDC
Operating Temperature:	Not to exceed the range of 32° to 120° F (0 to 49° C)
Relative Humidity:	Not to exceed 93% non-condensing at 90° F (32° C)

Ordering Information

Model	Description
ILI-MB-E3	Intelligent Loop Interface-Main Board
ILI-S-E3	Intelligent Loop Interface-Expansion Board
LCD-E3	LCD-E3, LCD Keypad Display
RPT-E3-FO	Network Repeater (fiber and twisted-pair)
RPT-E3-UTP	Network Repeater (twisted-pair only)
DACT-E3	Digital Alarm Communicator Transmitter
ANU-48	ANU-48 LED Driver Module
ASM-16	Addressable Switch Module
NGA	LCD Network Graphic Annunciator
PM-9	Power Supply Module
LCD-7100	Remote LCD Display

For additional information on the cabinets, refer to the E3 Series™ Cabinets data sheet (Part Number: 9020-0649).

GAMEWELL-FCI

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by Honeywell

E3 Series[®] Cabinets

Description

The E3 Series[®] Expandable Emergency Evacuation System by Gamewell-FCI offers several cabinet size options. These cabinet options allow for neat, sturdy, attractive installations. The E3 Series cabinet assembly is a compact, wall-mounted enclosure. A typical cabinet includes a backbox and an outer locking door. In addition, there are several inner door choices to accommodate a variety of E3 sub-assemblies.

Each cabinet backbox includes mounting patterns to aid the installer in arranging and securing the sub-assemblies to the backbox. Backbox knockouts are also positioned at numerous points to allow a conduit access into the enclosure.

Three Annunciator Cabinet sizes provide maximum flexibility that can meet any application.

- Cabinet A offers 2 slot and 3 slot options to accommodate either of the following configurations:
 - Cabinet A, 2 slot allows space for one (1) LCD-E3 and either one (1) NGA or one (1) ASM-16/ANU-48.
 - Cabinet A, 3 slot provides space for either one NGA and two ASM-16s or three ASM-16s/ANU-48s.
- Cabinet A1 houses one NGA or one ASM-16/ANU-48.
- Cabinet A2 accommodates a single LCD-E3 display.

Cabinet B contains a space for the ILI-MB-E3, PM-9 sub-assemblies and batteries set inside the backbox. Additional sub-assembly options mounted on the backbox include the DACT-E3 and RPT-E3. The 2 slot inner door houses the following options:

- one (1) LCD-E3 module and
- either one (1) ASM-16/ANU-48 or one (1) NGA module

Both C and D size Command Center cabinets house a variety of E3 Broadband sub-assemblies in multiple configurations that provide a solution to a wide range of applications.

Two (2), flexible inner door panel selections are available for C and D size Command Center cabinets that may contain a fire fighter's phone handset, a microphone, and optional modules to meet the facility operation requirements.

E3 Series[®] is a registered trademark of Honeywell International Inc.

Lexan[®] is a registered trademark of GE Plastics, a subsidiary of General Electric Company.

Cabinets for the E3 Series[®]



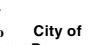
E3 Series[®] Cabinets

Features

- 16-gauge steel backbox
- Removable outer and inner doors
- Inner door bonding strap used to provide electrical continuity for grounding
- Backbox and door ground studs provide positive grounding. 180° opening door with full clearance
- Available in either black or red
- Lexan[®] windows appear on the doors of most cabinets, except the Cabinet C (INX) which uses louvered doors
- 90° opening door with zero clearance
- Keylock with quarter turn latch

An ISO 9000-2000 Company

SIGNALING



S1869

3025415

231-06-E

7165-0694:268

7165-0694:269

Class 1

Class 2

High Rise

GAMEWELL-FCI

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Ordering Information

Part Number	Description
Cabinet A:	
E3BB-BA	Backbox with Door, (Black)
E3BB-RA	Backbox with Door, (Red)
E3ID2-A	Cabinet A, Inner Door, 2 Slots
E3ID3-A	Cabinet A, Inner Door, 3 Slots
Cabinet A1:	
E3BB-BA1	Backbox with Door and Inner Door, (One-Bay), (Black)
E3BB-RA1	Assy, Backbox, A1 size, (Red)
Cabinet A2:	
E3BB-BA2	Backbox with Door and Inner Door, (LCD-E3), (Black)
E3BB-RA2	Assy, Backbox, A2 size, (Red)
Cabinet B:	
E3BB-BB	Backbox with Door, (Black)
E3BB-RB	Backbox with Door, (Red)
E3ID2-B	Cabinet B, Inner Door, 2 Slots
Cabinet C:	
E3BB-BC/INCC	Cabinet C, Black Backbox Enclosure, Command Center
E3BB-RC/INCC	Cabinet C, Red Backbox Enclosure, Command Center
E3BB-BC/INX	Cabinet C, Black Enclosure, Transponder
E3BB-RC/INX	Cabinet C, Red Enclosure, Transponder
E3ID2-C	Cabinet C, Inner Door, Command Center, 2 Slots
E3ID3-C	Cabinet C, Inner Door, Command Center, 3 Slots
Cabinet D:	
E3BB-BD	Backbox with Door, (Black)
E3BB-RD	Backbox with Door, (Red)
E3ID2-D	Cabinet D, Inner Door, 2 Slots
E3ID3-D	Cabinet D, Inner Door, 3 Slots

Optional Components

Part Number	Description
E3-BP	Inner Door, Blank Plate, 2 Slots
INCC-BP	Inner Door, Blank Panel, 1 Slot
90375	PM-9 Adapter Plate (for E3BB/INX Cabinets)

Bulk Amplification

Part Number	Description
AA-100	Audio Amplifier, 100W @70.7 V _{RMS} w/ built-in tone generator, 120 VAC
AA-120	Audio Amplifier, 120W @25 V _{RMS} w/ built-in tone generator, 120 VAC
ACT-1	Audio coupling transformer, for audio systems w/multiple supplies
FCI-CHG-120	Battery Charger, 25-120 A/H sealed lead-acid, mounts in FCI-LBB box
FCI-LBB	Battery box, accommodates batteries up to 55 A/H, (Black)

Ordering Information (Continued)

Bulk Amplification (Continued)

Part Number	Description
Cabinet C:	
FCI-DR-C4B	Blank door, lock & keys, for backbox accepting 3 chassis, (Black)
FCI-DR-C4BR	Blank door, lock & keys, for backbox accepting 3 chassis, (Red)
SBB-C4	Backbox, 3 chassis, (Black)
Cabinet D:	
FCI-DR-D4B	Blank door, lock & keys, for backbox accepting 4 chassis, (Black)
FCI-DR-D4BR	Blank door, lock & keys, for backbox accepting 4 chassis, (Red)
SBB-D4	Backbox, 4 chassis, (Black)

Specifications

Dimensions:

Cabinet	Width	Height	Depth
Cabinet A	19 1/4" (49 cm)	10" (25 cm)	3" (7.6 cm)
Cabinet A1:	8.75" (22.2 cm)	10" (25 cm)	3" (7.6 cm)
Backbox	13.25" (33.6 cm)	10" (25 cm)	3" (7.6 cm)
Cabinet A2:	19 3/8" (49 cm)	19 3/8" (49 cm)	4 1/2" (11 cm)
Backbox	19 3/8" (49 cm)	19 3/8" (49 cm)	4 1/2" (11 cm)
Cabinet B	19 3/8" (49 cm)	30" (76 cm)	4 1/2" (11 cm)
Cabinet C	19 3/8" (49 cm)	41" (104 cm)	4 1/2" (11 cm)
Cabinet D	19 3/8" (49 cm)	41" (104 cm)	4 1/2" (11 cm)

Inner Door Mounting Capacity

Number	Components
E3ID2-A,	Cabinet A, Inner Door, 2 Slots
1	LCD-E3 Display and
1	ASM-16/ANU-48
E3ID3-A,	Cabinet A, Inner Door, 3 Slots
1	NGA or ASM-16
2	ASM-16s/ANU-48s
E3ID-A1	Cabinet A1, Inner Door, (Included with Box)
1	NGA
E3ID-A2	Cabinet A2, Inner Door, (Included with Box)
1	LCD-E3
E3ID2-B,	Cabinet B, Inner Door, (Included with Box)
1	LCD-E3 Display and one (1) ASM-16/ANU-48
1	NGA and one (1) ASM-16/ANU-48
E3ID2-C,	Cabinet C, Inner Door, 2 Slots
1	LCD-E3 Display and
5	Any combination of ASM-16/ANU-48, NGA or Microphone Assemblies
1	Telephone Assembly

GAMEWELL-FCI

Inner Door Mounting Capacity (Continued)

Number Components

E3ID3-C, Cabinet C, Inner Door, 3 Slots	
7	Any Combination of ASM-16/ANU-48, NGA, or Microphone Assemblies
1	Telephone Assembly
E3ID2-D, Cabinet D, Inner Door, 2 Slots	
1	LCD-E3 Display
11	Any Combination of ASM-16/ANU-48, or NGA or Microphone and
1	Telephone Assembly
E3ID3-D, Cabinet D, Inner Door, 3 Slots	
13	Any Combination of ASM-16/ANU-48, NGA or Microphone Assemblies
1	Telephone Assembly

Backbox Mounting Capacity

Number Components

E3BB-BA1, A1 Size Box/Door, Black	
1	RPT-E3 Network Repeater
E3BB-BB, B Size Box/Door, Black	
1	PM-9 Power Supply
1	ILI-MB-E3 Loop Interface and
1	Additional ILI-MB-E3 Loop Interface or
1	DACT-E3 Digital Communicator and
1	RPT-E3 Network Repeater
E3-INCC-C Plate	
1	PM-9 Power Supply
1	INI-VG Series Voice Gateway
1	ILI-MB-E3 Loop Interface and
1	Additional ILI-MB-E3 Loop Interface or
1	DACT-E3 Digital Communicator and
1	RPT-E3 Network Repeater
1	Optional AM-50-Plate

Backbox Mounting Capacity (Continued)

Number Components

E3-ILI-C Plate	
1	PM-9 Power Supply
1	ILI-MB-E3 Loop Interface
2	Additional ILI-MB-E3 or ILI-S-E3
1	DACT-E3
1	RPT-E3
E3-INX-C Plate	
1	PM-9 Power Supply with one (1) PM-9 Adapter Plate
1	INI-VGX Voice Gateway
1	ILI-MB-E3 Loop Interface and
1	Additional ILI-MB-E3 Loop Interface or
1	DACT-E3 Digital Communicator and
1	RPT-E3 Network Repeater
4	AM-50 Amplifier
E3BB-BD, D Size Box/Command Center (Voice), Black	
1	PM-9 Power Supply
1	INI-VG Series Voice Gateway
4	ILI-MB-E3 Loop Interface and
1	Additional ILI-MB-E3 Loop Interface or
1	DACT-E3 Digital Communicator and
1	RPT-E3 Network Repeater
E3BB-BD, D Size Box/Command Center, Black	
1	PM-9 Power Supply
7	ILI-MB-E3 Loop Interface and
1	Additional ILI-MB-E3 Loop Interface or
1	DACT-E3 Digital Communicator and
1	RPT-E3 Network Repeater

by Honeywell

Description

The PM-9 Power Supply is a component of NetSOLO[®] and E3 Series[®] fire alarm and voice evacuation systems. It provides power to the INX Transponder assembly and all E3 Series components.

The PM-9 is a switching power supply that provides 9 amperes of filtered and regulated 24 VDC (nominal). It has an internal battery charging circuit capable of maintaining up to fifty-five (55), A/H batteries. This module is designed for use with the Gamewell-FCI distributed audio networks.

Installation

Typically, the PM-9 Module can be mounted in the following E3 Series cabinets:

- Cabinet B and D, backbox.
- Cabinet C, INX-E3 sub-assembly plate.
- Cabinet C, INCC-E3 sub-assembly plate.

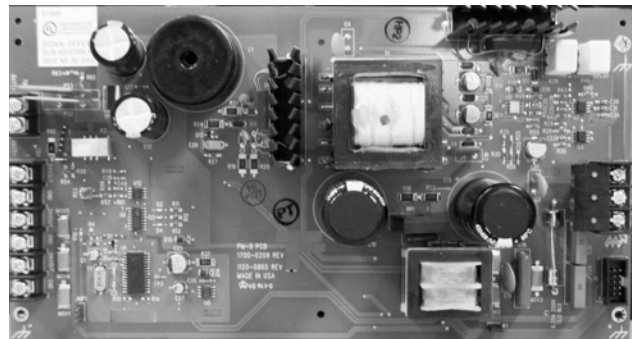
For instructions on installing the PM-9, refer to the E3 Series[®] Expandable Emergency Evacuation Installation/ Operating Manual, Part Number: 9020-0574 or the PM-9 Installation Instructions, Part Number: 9000-0548.

Specifications

Input Voltage:	120 VAC 60 Hz @ 3.5 A. max.
Output Voltage:	24 VDC (nominal) FWR
Output Current:	9 amperes
Alarm Current:	0.050 amp.
Operating Temperature:	32° to 120° F (0° to 49° C)
Relative Humidity:	0 to 93% (non-condensing) at 90° F (32° C)
Dimensions:	10 1/2" W x 5" H x 2" D (27 x 13 x 5 cm)

E3 Series[®] and NetSOLO[®] are registered trademarks of Honeywell International Inc.

PM-9 Power Supply



PM-9

Features

- Listed under UL Standard 864, 9th Edition
- 9 ampere, filtered, regulated power supply
- Energy and space saving switching technology
- Integral battery charger capable of recharging up to fifty-five (55), AH batteries (Batteries not furnished)

Ordering Information

Model	Description
PM-9	Power supply

An ISO 9000-2000 Company



GAMEWELL-FCI

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by Honeywell

ILI95-E3 Series

Description

ILI95-MB-E3

The Intelligent Loop Interface-Main Board (ILI95-MB-E3) is the main interface for the E3 Series[®] product line. With its state-of-the-art 32 bit RISC processor, this compact “panel on a board” provides a powerful addition to Gamewell-FCI’s single pair conductor solutions. This intuitive design provides two (2), signaling line circuits, two (2), notification application circuits, local energy city box output, auxiliary relay functions, and auxiliary power output. These features, combined with built-in network and serial protocols, allow this module to support a host of new and existing products, resulting in a building block approach to fire alarm panel design.

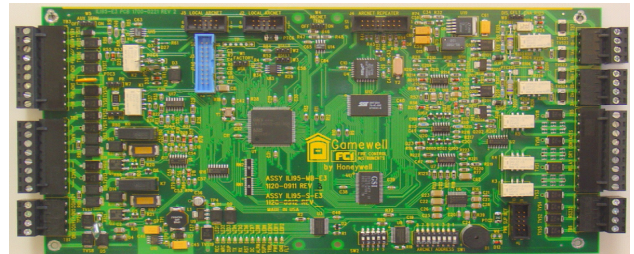
The ILI95-MB-E3 is network ready and occupies one of 64 nodes, operating at 625K baud. When this sub-assembly is integrated with proven Broadband components, the result is a flexible yet powerful integrated audio solution. When transmitting to remote locations, the optional RPT-E3 provides the ILI95-MB-E3 with valuable signal boosting and transient protection, as well as connectivity using both wire and fiber-optic cables.

The ILI95-MB-E3 provides two (2), signaling line circuits and terminals for the connections to up to 126 Apollo detectors and modules per SLC. The RS-485 interface can support up to a total of six (6) LCD-E3 and sixteen (16), ASM-16 and/or sixteen (16), ANU-48 remote LED driver modules.

The ILI95-MB-E3 relay outputs include system alarm, supervisory, and system trouble contacts. The ILI95-MB-E3 provides output for a local energy city master box or remote location which is non power-limited. All other wiring is power-limited.

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Intelligent Loop Interface-Main Board



ILI95-MB-E3

Features

ILI95-MB-E3 and ILI95-S-E3:

- Listed under UL Standard 864, 9th Edition
- Network ready integral 625K baud ARCNET
- 115.2K baud RS-232
- Signaling line circuits with:
 - Two (2), Class A, Style 6, 7* or Class B, Style 4 circuits
 - 40 Character user-defined text per device
 - Capacity of 126 analog/addressable devices per loop
- 4100 event history log

*Style 7 wiring requires the use of XP95-LI Isolator Modules.

ILI95-MB-E3 Only:

- Two (2), notification appliance circuits, Class “A”, Style Z or Class B, Style Y rated at 2.0 amps. per circuit
- RS-485 supporting sixteen (16), ASM-16 switch modules and/or ANU-48 LED driver modules
- Alarm, trouble, and supervisory dry contacts Form “C”, rated at 2 amp. @ 30 VDC (resistive)
- Supports six (6), local/remote LCD-E3 annunciators and five (5), LCD-7100 annunciators

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GAMEWELL-FCI

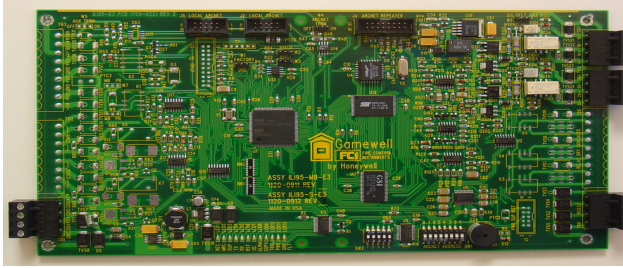
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ILI95-S-E3

ILI95-S-E3

The Intelligent Loop Interface - Expansion Board (ILI95-S-E3) provides the E3 Series control panel with two (2), additional signaling line circuits. The layout is similar to the ILI95-MB-E3 except a number of components are omitted. The ILI95-S-E3 occupies one node on the Broadband network. The ILI95-S-E3 provides two (2), signaling line circuits and terminals for the connections to up to 126 sensors / modules.

Installation

Typically, the ILI95-MB-E3 or ILI95-S-E3 can be mounted in the following E3 Series cabinets:

- Cabinet B and D, backbox
- Cabinet C, INX-E3 sub-assembly plate
- Cabinet C, INCC-E3 sub-assembly plate

For instructions on installing the ILI95-MB-E3 or ILI95-S-E3, refer to the E3 Series® Expandable Emergency Evacuation Installation/Operating Manual, Part Number: 9000-0574, the ILI95-MB-E3 Installation Instructions, Part Number: 9001-0017, or the ILI95-S-E3 Installation Instructions, Part Number: 9001-0018.

Specifications

Operating Voltage:	24 VDC FWR (from PM-9 Power Supply)
Operating Current:	0.081 amp.
Alarm Current:	0.150 amp. max.
Operating Temperature:	32° to 120° F (0° to 49° C)
Relative Humidity:	0 to 93%, non-condensing at 90° F (32° C)
	SLC 40 Ohms maximum line impedance.- 0.5 µf maximum line capacitance.

Ordering Information

Model	Description
-------	-------------

ILI95-MB-E3	Intelligent Loop Interface-Main Board
ILI95-S-E3	Intelligent Loop Interface-Expansion Board

GAMEWELL-FCI

by Honeywell

Description

The LCD-E3 provides the main panel display of the E3 Series® Expandable Emergency Evacuation System with indicating LEDs and operating switches. Up to six (6), LCD-E3 displays may be locally or remotely located from the panel via a local RS-485 bus of the ILI-MB-E3 sub-assembly.

The LCD-E3 includes an LCD display for the system status and the following switches and LED indicators:

Switches

- Alarm acknowledge
- Trouble acknowledge
- Signal silence
- System reset/lamp test
- Function buttons:
 - menu/back
 - back space/edit
 - OK
- 12 button keypad

LED Indicators

- AC Power On (green)
- Alarm (red)
- Supervisory (yellow)
- System Trouble (yellow)
- Power Fault (yellow)
- Ground Fault (yellow)
- System Silenced (yellow)

Installation

The LCD-E3 is adaptable for installation in any of the following E3 Series® System cabinets:

- "A" size cabinet, inner door (E3ID2-A)
- "A2" size cabinet, inner door (E3ID-A2)
- "B" size cabinet, inner door (E3ID2-B)
- "C" size cabinet, inner door (E3ID2-C)
- "D" size cabinet, inner door (E3ID2-D)

Specifications

- Operating Voltage:** 24 VDC FWR
(from PM-9 power supply)
- Operating Current:** 0.024 amp.
- Alarm Current:** 0.028 amp.
- Operating Temperature:** 32° to 120° F (0° to 49° C)
- Relative Humidity:** 0 to 93%, non-condensing at 90° F (32° C)

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LCD Keypad Display



LCD-E3

Features

- Listed under UL Standard 864, 9th Edition
- Provides an 80-character display of system events together with indicating LEDs and control switches
- The ILI-MB-E3 can support up to six (6), LCD-E3 displays, any or all of which may be remotely located via the RS-485 serial interface
- Easy to read backlit LED display, low power consumption

Ordering Information

Model	Description
LCD-E3	LCD keypad display

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by Honeywell

Description

The ASM-16 Addressable Switch Module is a component of NetSOLO® and E3 Series® fire alarm and voice evacuation systems. It serves as the point of interface between an operator and the system's audio evacuation, fire fighter intercom, and building control circuits.

The ASM-16 is a configurable switch input sub-assembly with sixteen (16), switches and forty-eight (48), status LEDs and may be remotely located via the RS-485 serial interface. Each ASM-16 addressable switch module has sixteen (16), push-button switches that can be programmed to serve any function the application demands.

An ASM-16 switch can be programmed as a speaker circuit switch, fire fighter phone switch, an auxiliary control switch using a bank of three (3), switches (one switch each for on-off-auto functions), or switches with custom defined functions (e.g. system reset, system silence, system acknowledge, all-call, phone patch, lamp test, alarm tone on, manual select, etc.).

Each ASM-16 switch also has three (3), fully programmable LEDs in red, yellow, and green. These LEDs can be programmed to work in concert with their associated push-button switch or they can be made to work independently as status indicators (e.g. on, off, normal, etc.).

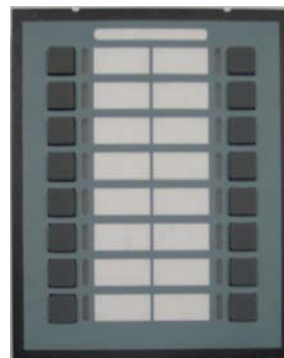
An INI-VGC assembly or ILI-MB-E3 can accommodate up to sixteen (16), ASM-16 modules for a total of 256 switches and 768 LEDs.

Specifications

Operating Voltage:	24 VDC (nominal) (from PM-9 power supply)
Operating Current:	0.011 amp. (with no LEDs lit)
Operating Temperature:	32° to 120° F (0° to 49° C)
Relative Humidity:	0 to 93% (non-condensing) at 90° F (32° C)

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ASM-16 Addressable Switch Module



Front View



Rear View

Features

- Listed under UL Standard 864, 9th Edition
- Each INI-VGC supports up to sixteen (16), ASM-16 switch modules for a total of 256 switches
- Each ILI-MB-E3 supports up to sixteen (16), ASM-16 switch modules for a total of 256 switches
- Each ASM-16 switch has three (3), fully programmable status, indicating LEDs: red, yellow, and green
- All switch functions are fully software programmable
- Slip-in label inserts allow easily modified switch designations

Ordering Information

Model	Description
ASM-16	Programmable switch module

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by Honeywell

Description

The Digital Alarm Communicator Transmitter (DACT-E3) is an optional component of the E3 Series® Expandable Emergency Evacuation System. The DACT-E3 sends digital signals over the telephone network to a central station. This module can be located in the main cabinet or remotely located via a local RS-485 serial interface.

The DACT-E3 is compatible with digital alarm communicator receivers (DACRs) that receive the following signaling formats:

- SIA DC8
- SIA DCS20
- Ademco Contact ID
- 3+1 2300 Hz
- 4+2 1400 Hz
- 4+2 2300 Hz
- 3+1 1400 Hz

In addition to the DACT-E3 being compatible with digital signaling formats, the DACT-E3 features numerous formats for communication to a central station. As a digital communicator, the DACT-E3 complies with FCC Part 8, Telecommunication Standards for DC and AC Ringer Equivalence.

Installation Instructions

The DACT-E3 is adaptable for installation in standard E3 Series® System cabinets. Typically, the DACT-E3 module mounts on standoffs on top of the left side of the ILI-MB-E3 module. Either unit can be easily connected to the backbox or sub-assembly plate depending on the cabinet module.

Note: For instructions on installing the DACT-E3, refer to the E3 Series® Expandable Emergency Evacuation Installation/Operating Manual, Part Number: 9020-0574 or the DACT-E3 Installation Instructions Part Number:9000-0580.

Specifications

Operating Voltage:	24 VDC (from PM-9 power supply)
Operating Current:	0.018 amp.
Alarm Current:	0.018 amp.
Operating Temperature:	32° to 120° F (0 to 49° C)
Relative Humidity:	0 to 93%, non-condensing at 90° F (32° C)

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Digital Alarm Communicator Transmitter



DACT-E3

Features

- Listed under UL Standard 864, 9th Edition
- Communicates with the E3, ILI-MB-E3 sub-assembly via RS-485
- Communicates in a variety of formats
- Transmits and verifies data to the central station
- Offers pre-programmed dialing to the central station phone number
- Performs on and off-hook status to the phone lines
- Traces proper central station "ACK" and "Kiss-off" tone
- Activates hang-up and release phone lines

Ordering Information

Model	Description
DACT-E3	Digital alarm communicator transmitter

An ISO 9000-2000 Company

SIGNALING



LISTED
S1869



APPROVED
3025415



Approved
231-06-E



City of
Chicago
Approved
7165-0694:268
Class 1
Class 2
High Rise

City of
Denver
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Power Patrol® Batteries

Specification Sheet

Sealed Lead-Acid Batteries

SLA1075

Technical Specifications

Nominal Voltage	12V	
Nominal Capacity	7.5 Ah (20 Hr Rate)	
Dimensions	Length	151 mm
	Width	65 mm
	Height	96 mm
Total Height w/ Terminal:	103 mm	
Weight	Approx 2.51 Kg (5.53 lbs)	

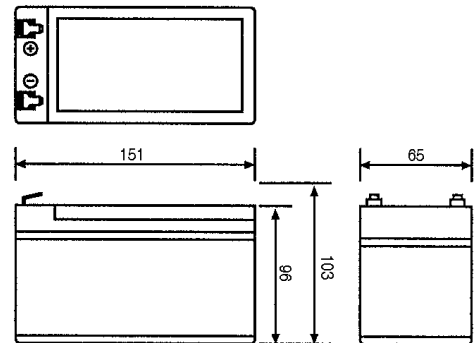
Capacity Characteristics

Cut-off Voltage	20 Hr Rate (.37 A)	7.5 Ah
1.75 v/c@	10 Hr Rate (.69 A)	6.98 Ah
1.70 v/c	5 Hr Rate (1.27 A)	6.37 Ah
1.55 v/c	1 Hr Rate (4.5 A)	4.5 Ah

		Bloc	Per Cell
Charge Voltage (constant)	Float	13.5~13.8	2.25~2.30
	Cycle	14.4~14.7	2.40~2.45
Discharge Current Amps (5 seconds maximum)	80		
Discharge Current Amps (maximum continuous)	50		
Max. Charge Current	2.16 A		
Approx. Final Charge Current	0.014 (14 mA)		
Approx. Final Charge Current	0.07 (70 mA)		
Terminal Type	Type A/ (Optional)		
Self Discharge	9 Months @ 21°C		
Case Material	ABS - Gray* or Black		

Due to changes in the manufacturing processes, specifications may change without notice.
*Gray option is Flame Retardant ABS.

Unit: mm(±0.50)



Power Patrol[®]

Batteries

Specification Sheet

Sealed Lead-Acid Batteries

SLA1116

Technical Specifications

Nominal Voltage	12V
Nominal Capacity	18.0 Ah (20 Hr Rate)
Dimensions	Length: 180 mm (7.20 in)
	Width: 76 mm (3.00 in)
	Height: 167 mm (6.60 in)
Total Height w/ Terminal:	167 mm (6.60 in)
Weight	Approx 6.2 Kg (13.85 Lbs.)
Terminal Type	Nut & Bolt (w/faston adapter)

Capacity Characteristics

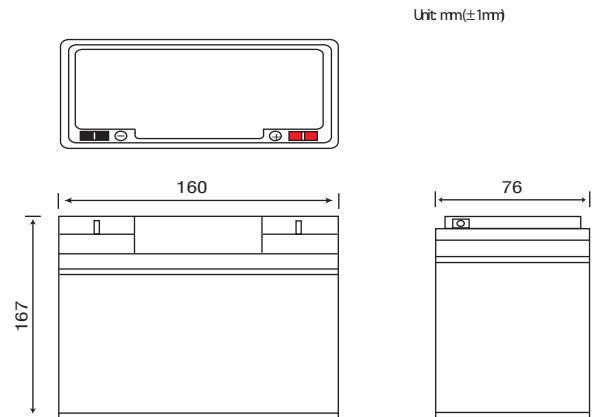
Cut Off Voltage	20 Hr Rate (0.90A)	18.0AH
1.75 v/c @ 25°C	10 Hr Rate (1.60A)	16.0AH
1.70 v/c	5 Hr Rate (2.9A)	14.5AH
1.55 v/c	1 Hr Rate (9.8A)	9.8AH

Charge Voltage (constant)

	Block	Per Cell
Float	13.5~13.8	2.25~2.30
Cycle	14.4~14.7	2.40~2.45

Discharge Current Amps	250
<i>(5 seconds maximum)</i>	
Discharge Current Amps	80
<i>(maximum continuous)</i>	
Max. Charge Current	5.1A
Approx Final Charge Current	0.03 (30 mA)
<i>(2.25 v/c Float)</i>	
Approx Final Charge Current	0.15 (150 mA)
<i>(2.45 v/c Cycle)</i>	
Self Discharge	9 months@21°C
Case Material	ABS - *Gray or Black

Due to changes in the manufacturing process, specifications may change without notice.
*Gray option is Flame Retardant ABS.



Actual Wattage / Ampere Capacity at Various Discharge Times (Volt per Cell @ 25° C)							
Cut Off Voltage	Time	5 Min	10 Min	15 Min	30 Min	45 Min	60 Min
		1.75 v/c	W	107.4	72.33	55.6	33.79
25°C	A	61.37	41.33	31.77	19.31	14.1	11.3
1.67 v/c	W	104.79	72.16	55.31	33.48	25.05	20.04
25°C	A	62.75	43.21	33.12	20.05	15.0	12.0
1.60 v/c	W	116.8	73.76	54.72	32.19	24.37	19.33
25°C	A	73.0	46.1	34.2	20.12	15.23	12.08

by Honeywell

Description

The Gamewell-FCI MS-95 is an easily recognized manual pull station with the distinctive bulls-eye design compatible with the Gamewell-FCI addressable 600 Series Fire Alarm Control Panels (FACPs). The MS-95 is approved to UL Standard 38 for manual stations, meets architectural requirements in all building interiors, and is readily noticed in a fire emergency. The addressable MS-95 manual pull station with a rugged toggle switch design offers exceptional resistance to accidental alarms caused by vibration and sudden shock. The MS-95 can be used for surface and semi-flush installations.

Operations

The manual pull station is activated by pulling forward on the readily identified bulls-eye alarm lever labeled "PULL" in distinctive white letters. Once pulled, this lever locks in the alarm position and remains there until manually reset.

To reset the alarm lever, the front cover of the pull station is released by turning the screw on the top of the cover or turning the key (on certain models). This unlocks the front cover which is then lowered. Once the front cover is lowered, the toggle switch is reset.

An optional breakglass rod may be used with all stations. The self-clearing design prevents jamming of the station and there is no danger to the operator from broken particles of glass. Space is provided within the station housing for storage of an additional replacement glass rod.

The MS-95 connects directly to the analog addressable circuit via two wires. The electronic circuitry has been designed to transmit data that can be interpreted as three (3) output operations:

- normal standby operation
- alarm operation
- trouble operation

In its standby mode of operation, the pull station's circuit monitor the switch for alarm conditions. A trouble condition

Addressable Manual Pull Station Alarm



CS-2053ph1.wmf

MS-95

Features

- Compatible with the Gamewell-FCI 600 Series analog addressable control panels.
- Field programmable.
- Durable construction.
- Compact design, blends with surroundings.
- Recessed pull lever prevents accidental operation.
- Surface or semi-flush installation.
- Double action option.
- Key reset option.
- Meets ADA requirements.
- Visible status LED.
- Terminal block model available (MS-95T).

An ISO 9000-2000 Company



GAMEWELL-FCI

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Operations (Continued)

occurs when the pull station is addressed by the control panel and either reports back a trouble response or does not respond at all. With the standard priority interrupt feature, the MS-95 will report its condition virtually instantaneously to the Gamewell-FCI FACP.

Programming

Programming of the MS-95 manual station address is accomplished by setting a single DIP switch easily accessible on the device's printed circuit board. All other programming is accomplished at the FACP.

Engineer's Specifications

The analog addressable manual pull station shall contain the electronic interface circuitry required for individual device identification, alarm reporting and trouble supervision. It shall communicate to the main control panel via the analog addressable circuit. The single-action station shall consist of a die-cast aluminum housing fitted with a pull out lever which, when operated, locks in position after activating an alarm initiating contact.

Specifications

Standby Current:	0.0005 A
Alarm Current:	0.0015 A
Operating Temperature:	0° C to 49° C (32° F to 120° F)
Relative Humidity:	85%, non-condensing
Material:	Die-cast aluminum
Finish:	Fire alarm red, smooth gloss enamel. Raised cast letters are highlighted. Target background for pull lever is white glossed enamel.
Dimensions MS-95:	4.625" high x 3.25" wide x 2.0" deep (11.75 H x 8.26 W x 5.08 D cm) (from the backplate).
MS-95T:	4.625" high x 3.25" wide x 1.625" deep (11.75 H x 8.26 W x 4.13 cm) (from the backplate).
MS-95 with key reset option:	6.25" high x 3.25" wide x 2.0" deep (15.88 H x 8.26 W x 5.08 D cm) (from backplate) with Cat 60 Key.
Surface Backbox P/N 28762:	4.625" high x 3.25" wide x 2.375" deep (11.75 H x 8.26 W x 6.03 D cm) tapped for 3/4" conduit.
Surface Backbox 71961:	6.25" high x 3.0" wide x 3.25" (15.88 H x 7.6 W x 8.26 D cm) deep.

Ordering Information

Model	Description
MS-95	Analog addressable manual pull station.
MS-95T	Analog addressable manual pull station with terminals.
30653	Double action option.
30653-01	Key reset option.
30653-02	Key reset/double action option.
27060	Breakglass rod.
28762	Surface backbox.
50397G	Weather proof gasket for MS-95 station.
72198	NYC backplate manual station backplate with 1" (2.54 cm) white stripe.
71961	Backbox, surface for key reset options.

GAMEWELL-FCI

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by Honeywell

Description

The Gamewell-FCI PID-95-P addressable point identification device is the interface between the non-powered, normally open, dry-contact devices and Gamewell-FCI's 600 Series of analog addressable Fire Alarm Control Panels (FACPs). Point identification devices monitor a single Style B circuit, and are designed for concealed mounting in an electrical backbox. The PID-95P can be surface-or-flush mounted and has a visible LED for alarm/annunciation.

Operation

The point identification device connects to the Signaling Line Circuit (SLC) via two wires. The PID-95 will monitor, via a two-wire supervised SLC circuit, contact-type devices such as a waterflow switch or manual station. Upon activation of the monitored device, the PID-95 will report its address to the 600 Series FACP via the analog SLC. The control panel will then activate into all alarm programmed outputs related to the PID-95.

Programming

The PID-95 is programmed by setting a single DIP switch, easily accessible on the device's printed circuit board. The DIP switch sets the address of the device and the priority interrupt (DIP SW #8). All other programming is accomplished at the FACP through a laptop computer or the control panel operator's display.

Standard Application

The PID-95 is the interface between dry-contact type devices and the SLC of the control panel. The PID-95 is a means of connecting and identifying monitor points without the use of conventional input modules at the main control panel. The use of PID-95s can dramatically reduce the field wiring required on many projects.

Point Identification Device



PID-95P



PID-95

CS-2044ph1.wmf

Features

- Monitors dry-contact devices.
- LED for alarm annunciation.
- Supervises DC power in.
- Field programmable.
- Priority interrupt.
- Plate-mounted version available for surface or flush mounting in 4" (11 cm) square, 4.688" (11.908 cm), or double gang boxes.

An ISO 9000-2000 Company



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Engineer's Specifications

Addressable interface devices shall be provided for the monitoring and supervision of contact type devices connected to the Fire Alarm Control Panel. The devices shall monitor a normally open dry contact. The addressable interface devices shall communicate to the main control panel via the analog addressable circuit. The interface device shall be Gamewell-FCI PID-95 or PID-95P.

Specifications

PID-95

Standby Current: 0.0005 A

Alarm Current: 0.0015 A

Operating

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

Relative Humidity: 85%, non-condensing

Mounting: 4" (10.16 cm) square backbox with blank cover plate

PID-95P

Standby Current: 0.0005 A

Alarm Current: 0.0015 A

Operating

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

Relative Humidity: 85%, non-condensing

Mounting: 4" (11 cm) 4.688" (11.908 cm), double gang Backbox.

Ordering Information

Model	Description
PID-95	Addressable point identification device for monitoring contact devices.
PID-95P	Addressable input interface device mounted on 4.688" (11.908 cm) plastic plate.
70839	Trim ring for flush-mounting on the PID-95P.

GAMEWELL-FCI

by Honeywell

Description

The Gamewell-FCI XP95-P analog addressable photoelectric sensor operates with the Gamewell-FCI analog addressable Fire Alarm Control Panels (FACPs). The photoelectric sensor digitally transmits its address and the chamber's analog values to the FACP for analysis. The photoelectric sensor is distinguished by the clear status LED, which flashes red briefly when the device is polled and turns on continuously when the device is in alarm.

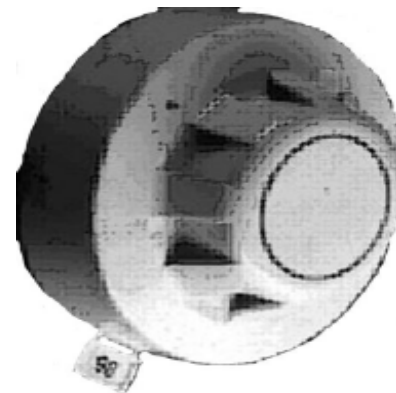
Operation

The XP95-P photoelectric sensor constantly monitors its sensing chamber and its internal electronics. The results are then reported along with the unit's address through the integral communications electronics located in the sensor head. The XP95 photoelectric sensor utilizes a patented smoke chamber and infrared smoke sensing design. The infrared emitter generates a burst of light every second, or in response to direct interrogation.

In clean air, the photo diode receives no light from the emitter because of the arrangement of the chamber. When smoke enters the chamber, it scatters light from the emitter onto the photo diode receptor in proportion to smoke characteristics and density. As the smoke content in the chamber increases, the signal from the photo diode receptor increases. This information is processed and conditioned by an on-board, advanced-technology ASIC and digitally transmitted to the FACP.

Trouble and Alarm conditions of the XP95 sensors are actually determined at the control panel. The status information of each sensor is analyzed for off-normal conditions by the FACP. If the sensor reports a condition that matches its programmed trouble signature, the FACP will detect that the sensor is in trouble and will follow its programmed response sequence. If the status reported matches the alarm signature, the FACP will follow the programmed alarm response for the specific device in alarm. When a sensor is in alarm, the integral LED in the sensor's housing will light continuously.

Photoelectric Smoke Sensor



XP95-P

CS-2054ph1.wmf

Features

- Compatible with the Gamewell-FCI 600 Series analog addressable control panels
- Fits 4.0" (10.16 cm) or 6.0" (15.24 cm) ultra-low-profile E-Z fit bases
- Audible alarm sounder base
- Four-wire relay base
- Address is stored in the sensor base
- Address is set by XPerT addressing card
- Two-color status LED
- Infrared smoke sensing design
- Continuous communications
- Optional remote LED

An ISO 9000-2000 Company



GAMEWELL-FCI

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Operation (Continued)

The XP95-P photoelectric device is connected to a two-wire SLC carrying both data and a 17 to 28 VDC supply voltage, and is insensitive to loop connection polarity. A remote LED indicator may be connected. The device is compatible with point-or group-addressable relay and sounder bases.

Engineer's Specifications

The contractor shall furnish and install, where indicated on the plans, photoelectric smoke sensors with one of the several addressable mounting base options available. The combination sensor head and twist-lock mounting base shall be UL Listed and UL Listed as compatible with the Gamewell-FCI 600 Series analog addressable fire alarm control panels. The base shall permit free interchange of sensor heads without requiring any additional wiring or additional programming of the head or base. The smoke sensor shall contain an integral LED that shall latch in when the unit goes into alarm. RF suppression techniques shall be employed to minimize false alarms. The photoelectric smoke sensor shall be the Gamewell-FCI model XP95-P.

Specifications

Standby Current: 340 μ A

Alarm LED Current: 0.00434 A

Remote Alarm

Output: 0.004 A @ 5 VDC

Temperature Range: 32°F to 140°F (0° C to 60° C)

Relative Humidity: (non-condensing) 0% to 95%

Recommended

Spacing:

Meets the 30 ft. (9.1 m) spacing guidelines in NFPA 72 Chapter 2. However, this spacing is based on ideal conditions and is to be used as a layout guide only. Appropriate installation-specific engineering is required.

Ordering Information

Model	Description
XP95-P	Photoelectric sensor, analog addressable (55000-650)
XP95-B4	4.0" (10.16 cm) mounting base with XPert addressing card (45681-2101)
XP95-B6R4	6.0" (15.24 cm) relay base (four-wire) with XPert addressing card
XP95-B6SNDR	6.0" (15.24 cm) mounting base with XPert addressing card and audible alarm sounder in the base
71112	Additional blank XPert addressing cards
30203	Remote LED (24 V) on single gang plate

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Description

The Gamewell-FCI XP95-T Analog Addressable Thermal Sensor operates with the Gamewell-FCI 600 Series analog addressable fire alarm control panels (FACPs). The Series XP95-T thermal sensor digitally transmits its address and the chamber's analog temperature value to the FACP for analysis.

Thermal sensors are readily distinguished from smoke by the open webs in the housing designed to allow for free movement of air around the exposed thermistor.

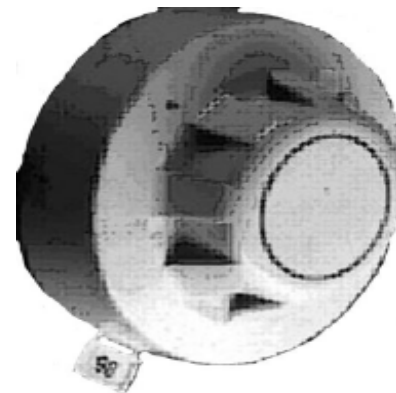
Operation

The XP95-T thermal sensor constantly monitors its sensing element as well as its internal electronics. The results are digitally reported along with the unit's address through the integral communication electronics located in the sensor head. The thermal sensor monitors temperature by using a single thermistor network which provides a voltage output proportional to the external air temperature. This signal is processed and conditioned by an on-board advanced technology ASIC that digitally transmits the ambient temperature data to the FACP when interrogated.

Trouble and Alarm conditions of the XP95 sensors are determined at the FACP. The status information of each sensor is analyzed for off-normal conditions by the control panel. If the sensor reports a condition that matches its programmed trouble signature, the FACP will report that the sensor is in trouble and will follow its programmed response sequence. Likewise, if the status reported matches the alarm signature, the FACP will follow the programmed alarm response for the specific device in alarm. When a sensor is in alarm, the integral LED in the sensor's housing will light continuously.

The XP95-T thermal sensor is calibrated to return a normal air temperature analog value to the FACP at 77° F. The device connects to a two-wire loop circuit carrying both data and a 117 to 28 VDC supply voltage, and is insensitive to loop connection polarity.

Analog Addressable Thermal Sensor



XP95-T

CS-2055ph1.wmf

Features

- Compatible with the Gamewell-FCI 600 Series analog addressable control panels
- Fits 4.0" (10.16 cm) or 6.0" (15.24 cm) ultra low-profile, and E-Z fit bases
- Audible alarm sounder base
- Address is stored in the sensor base
- Address is set by XPert addressing card
- Two-color status LED
- Fixed point or rate-of-rise functions
- Timed temperature increase causes an alarm
- Thermal adjustability programming
- Optional remote LED

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Operation (Continued)

A remote LED indicator can be connected. The device is compatible with point or group-addressable relay and sounder bases.

Engineer's Specifications

The contractor shall furnish and install, where indicated on the plans, electronic thermal sensors with one of the several addressable mounting base options available. The combination sensor head and twist-lock mounting base shall be UL Listed and UL Listed as compatible with the Gamewell-FCI 600 Series analog addressable fire alarm control panels.

The base shall permit free interchange of sensor heads without requiring any additional wiring or additional programming of the head or base. The sensor shall contain an integral LED that shall latch in when the unit goes into alarm. It shall be the Gamewell-FCI model XP95-T.

Specifications

Standby Current: 250 μ A
Alarm LED Current: 4 mA
Remote Alarm
Output: 4 mA @ 5 VDC
Temperature Range: -4°F to 154°F
Relative Humidity: (non-condensing) 0% to 95%
Recommended
Spacing: Smooth ceiling 60ft. (18.288 m) to walls 25 ft. (7.62 m)

Thermal Sensor Performance

Features:

- 1) Thermal sensors have a thermal adjustability programming range from 25°C to 90°C (77°F to 194°F) in 1°C increments.
- 2) Thermal Sensors have a thermal rate-of-rise feature. When enabled in programming, should the XP95-T sensor increase temperature by greater than 15°F in less than one minute, an alarm will be generated.

Ordering Information

Model	Description
XP95-T	Thermal sensor analog addressable (55000-450)
XP95-B6EZ	6.0" (15.24 cm) ultra-low-profile EZ-Fit mounting base with XPert card (45681-250)
XP95-B4	4.0" (10.16 cm) mounting base with XPert Addressing Card (45681-210)
XP95-B6R4	6.0" (15.24 cm) relay base (four-wire) with XPert addressing card
XP95-B6SNDR	6.0" (15.24 cm) mounting base with XPert addressing card and audible alarm sounder
71112	Additional blank XPert addressing cards
30203	Remote LED (24 V)

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by Honeywell

Series 95 Bases

Description

The Gamewell-FCI XP-95 Series bases provide superior flexibility for the installation of the Gamewell-FCI, XP95 family of addressable detectors. Whether the project requires a 4.0" (10.16 cm), relay or sounder base, the XP95 family has a base to meet building aesthetics, constraints, retrofit limitations or functional needs. The device address is held in the base, ensuring that the device address will not be changed no matter how often a detector is replaced, and verifying a consistent match between device type and device address.

Each XP95 analog addressable head is compatible with a wide variety of XP-95 bases, ranging from one-piece low-profile units to four-wire relay and sounder bases that can be controlled individually or as a group. The XP95 Series of detector bases has been designed to enable sensors to be plugged-in with minimum force and to have a "one-way-only" fit. Relay and sounder bases can be addressed and controlled individually or by a group in response to the sensor alarms.

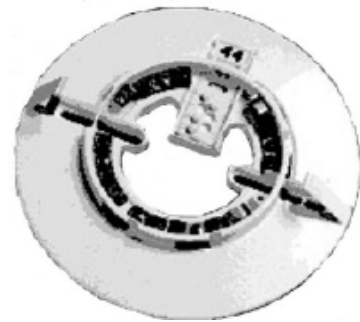
Programming

The only programming required at the Series 95 sensors is address setting, via the patented XPert addressing card. The card is inserted into the sensor base. When the sensor head is inserted into the base, the address is automatically relayed to the sensor. Changing the sensor does not require additional programming since the address remains on the XPert Card located in the base. All other sensor-specific programming is accomplished at the Fire Alarm Control Panel (FACP). The XPert addressing card ensures that only the correct device types can be installed in given locations after cleaning or other maintenance operations.

Installation

The complete range of Series 95 addressable mounting bases will accept any of the Series 95 sensors. The bases have a wide interior diameter for ease of access to wires and terminals. The design of the base is such that the

Analog Addressable Sensors



Series 95

CS-2048ph1.wmf

Features

- Compatible with all of the Gamewell-FCI 600 Series analog addressable detectors
- Base options include:
 - 4.0" (10.16 cm) or 6.0" (15.24 cm) ultra-low-profile bases feature "one-way" fit with low insertion force
 - 6.0" (15.24 cm) relay base (4 wire)
 - Audible alarm sounder bases controlled individually or by group
- Device address is stored in the sensor base
- Address is set by patented XPert addressing card
- Compatible with all Gamewell-FCI XP95 protocol detection devices

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Installation (Continued)

sensor will fit in only one way, and a simple clockwise motion (without force) is required to plug-in the sensor. The mounting base will have provisions for the insertion of the XPert addressing card as a means for programming and maintaining the sensor's address.

The XP95-B4 base 4.0" (10.16 cm) will mount directly to a 3.5" (8.89 cm) octagonal box (Raco 110 or equal) or a 4" (10.16 cm) octagonal box (Raco 125 or equal) with a round cover/plaster ring (Raco 727 or equal). The other Series 95 bases 6.0" (15.24 cm) will mount directly to a 3.5" (8.89 cm) octagonal box (Raco 110 or equal); to a 4.0" (10.16 cm) octagonal box (Raco 125 or equal); or to a 4.0" (10.16 cm) square backbox (Raco 190 or equal).

Engineer's Specifications

The contractor shall furnish and install, as indicated on the plans, either dual-chamber ionization (Gamewell-FCI model XP95-I) or photoelectric (Gamewell-FCI model XP95-P) smoke sensors, analog addressable multisensor (XP95-M) or electronic thermal sensor (Gamewell-FCI model XP95-T) with one of the several addressable mounting base available options. The combination sensor head and twist-lock mounting base shall be UL Listed and UL Listed as compatible with the Gamewell-FCI 600 Series analog addressable fire alarm control panels. The base shall permit free interchange of sensor heads without requiring any additional wiring or additional programming of the head or base.

Specifications

4" Base

Model: XP95-B4
Alarm Current: N/A
Standby Current: N/A
Relay Rating: N/A
Sounder Level: N/A
Captive Terminals: Yes

6" Base

Model: XP95-B6EZ
Alarm Current: N/A
Standby Current: N/A
Relay Rating: N/A
Sounder Level: N/A
Captive Terminals: Yes

Specifications (Continued)

Relay Base

Model: XP95-B6R4
Alarm Current: 0.0036 A
Standby Current: 2 μ A.
Relay Rating: 0.04 A @ 125 VAC resistive loading.
Sounder Level: N/A
Captive Terminals: Yes

Sounder Base

Model: XP95-B65NDR
Alarm Current: 0.030 A
Standby Current: 2 μ A.
Relay Rating: N/A
Sounder Level: 85 dB @ 10 ft.(3.048 m)
Captive Terminals: Yes

Ordering Information

Model	Description
XP95-B4	4.0" (10.16 cm) mounting base with XPert addressing card
XP95-B6R4	6.0" (15.24 cm) relay base (four-wire) with XPert addressing card
XP95-B6EZ	6.0" (15.24 cm) ultra-low-profile EZ-fit mounting base with XPert addressing card
XP95-B6SNDR	6.0" (15.24 cm) mounting base with XPert addressing card and audible alarm sounder in the base (MB-SDR-XP95)
30203	Remote LED (24 VDC)
71112	Additional Bbank XPert addressing cards

GAMEWELL-FCI

by Honeywell

Description

The Gamewell-FCI analog addressable duct smoke detectors provide early detection of smoke and products with combustion present in air moving through an HVAC duct. Fans, blowers and complete systems may be shut down or activated in fire alarm mode by the Fire Alarm Control Panel (FACP) in the event of smoke detection.

The Gamewell-FCI analog addressable duct smoke detectors may utilize either interchangeable photoelectric or ionization sensor heads. The external alarm indication is a light-emitting diode (LED), easily visible through the housing. A manual reset switch is provided on the front of the sensor.

Duct smoke detectors are also available with auxiliary relay contacts. The relay requires two additional wires for power and will activate when the sensor reaches alarm levels. All wiring must comply with local codes and regulations.

XP95 Duct Smoke Detectors digitally transmit their address and the chamber's analog value to the FACP for analysis.

Air sampling is accomplished by two tubes which protrude into the duct. An exhaust tube of one standard length 7.5" (19.05 cm) is provided with the sensor housing. Intake sampling tubes, which must be ordered separately, are supplied in three standard lengths: 2.5, 5, or 10 feet (0.762, 1.524, or 3.048 m).

Installation

Duct mounting is accomplished by the use of a template and four sheet metal screws, provided. The duct detectors are compatible with the analog loops on Gamewell-FCI's 600 Series Analog Addressable Control Panels.

Programming

The only programming required for the XP95 Duct Smoke Sensors is address setting. This is accomplished through the use of the XPert addressing card which is inserted into the sensor base.

Analog Addressable Duct Smoke Detectors

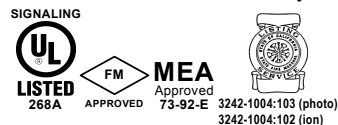


XP95 Series

Features

- Compatible with the Gamewell-FCI 600 Series analog addressable control panels
- Interchangeable "Plug-in" photoelectric or ionization heads
- Address is stored in the sensor base
- Address is set by XPert addressing card
- Remote alarm LED option
- Two-wire supply- polarity insensitive
- Very low standby current
- LED alarm indication on sensor head
- Rugged steel backbox with clear plastic cover
- Large terminal connection screws
- No additional screens or filters to clean or replace
- Relay version available with optional remote test unit
- Three standard tube lengths available: 2.5, 5, or 10 ft. (0.762, 1.524, or 3.048 m)

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Programming (Continued)

When the sensor head is inserted into the base, the address is automatically relayed to the sensor. Changing the sensor does not require additional programming since the address remains on the XPert card located in the base. All other sensor-specific programming is accomplished at the FACP.

Engineer's Specifications

The contractor shall furnish and install, where indicated on the plans, analog addressable air duct smoke detectors. The sensors shall be listed by Underwriter's Laboratories per UL 268A and UL-Listed as compatible with the Fire Alarm Control Panel (FACP). The sensors shall operate at air velocities from 300 to 4,000 feet (91.44 to 1219.20 m) per minute. The smoke sensor shall contain an integral LED that shall latch in when the unit goes into alarm, mounted at a 30° slant to provide a wide viewing angle.

A manual reset/test switch shall be located on the front of the device. The housing shall contain a sensor base which will accept photoelectric or ionization heads. All wiring must comply with local codes and regulations. The duct sensor housing shall have a metal chassis with a clear plastic cover and complete mechanical installation may be performed without removal of the cover. The duct smoke detector shall be the Gamewell-FCI model, XP95-ID(R) or XP95-PD(R) analog addressable duct smoke detector.

Specifications

Ambient Temperature:	32° F to 120°F (0°C to 49°C)
Humidity:	10% to 85% R.H
Material:	18 gauge steel backbox, clear plastic cover
Dimensions:	10.0" H x 8.25" W x 2.25" D (25.4 H x 21.0 W x 5.7 D cm)
Maximum Net Weight:	4.0 lbs. (1.814 kg)
Mounting:	Template and necessary hardware supplied
Radioactive Element:	For Ionization versions only: Americium 241 (0.9 microcuries)
Sensitivity:	Factory set (ion); or adjustable via the IF600 control panel (photoelectric)
Air Velocity:	300 to 4,000 feet per minute.
Pressure Differential:	0.01 to 1.2 inches (1.524 to 20.320 meters per second) of water
Standby Current:	Photoelectric: 340 µA Ionization: 280 µA
Alarm LED Current:	Photoelectric: 4 mA Ionization: 2 mA
Remote Alarm Output Range:	20 mA maximum; diode gated

Specifications (Continued)

Relay Versions Only:

Relay Contacts:	Two dry Form-C contacts
Relay Contact Ratings:	10 A @ 24 VDC resistive maximum
Operating Voltage:	24 VDC
Current:	Standby current: 0.010 A @ 24 VDC Alarm current: 0.055 A @ 24 VDC

Ordering Information

Model	Description
XP95-ID	Two-wire air duct, ionization smoke detector 24 VDC (RW-AAN)
XP95-PD	Two-wire air duct, photoelectric smoke detector 24 VDC (RW-AAP)
30203-01	Remote LED alarm indicator (two VDCs); used with XP95-PD and XP95-ID
XP95-IDR	Four-wire air duct, ionization smoke detector 24 VDC with relay (RW-ARN)
XP95-PDR	Four-wire air duct, photoelectric smoke detector 24 VDC with relay (RW-ARP)
30203	Remote LED alarm indicator (24 VDCs); used with relay versions
30007-02	Remote test station with alarm LED; used with relay versions
70896-02	Sampling tube, 2.5 feet (0.762 m)
70896-05	Sampling tube, 5 feet (1.524 m)
70896-10	Sampling tube, 10 feet (3.048 m)
XP95-I	Ionization sensor head (replacement)
XP95-P	Photoelectric sensor head (replacement)
72247	Duct detector enclosure (WP-1) (See Data Sheet CS-2308).

GAMEWELL-FCI

by Honeywell

Description

The Gamewell-FCI Relay Control Element (RCE-95) is the interface between the Gamewell-FCI 600 Series Fire Alarm Control Panel (FACP) analog circuits and building functions such as door holders, elevators, dampers, motors and disconnects. The RCE-95 offers feedback input points for positive confirmation of the controlled device's activity. The RCE-95 works with all 600 Series analog addressable FACPs. For annunciation and feedback at the panel, Gamewell-FCI offers a Relay Control Display (RCD). The RCD is only available with the IF632 and IF650 FACPs.

The RCE-95 is either surface or flush mounted and has an integral LED which annunciates upon device activation.

Operation

The devices connect to the SLC circuit of the FACP via a two-wire non-polarized circuit. In its quiescent mode, the RCE-95 monitors its internal circuitry for status of the device itself and supervises an external control circuit for status.

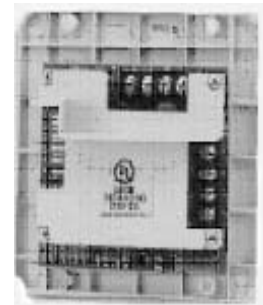
When a status change is detected, the event can be programmed to display on the optional RCD module. When an event is reported to the control panel that requires the activation of the RCE-95, the control panel communicates via the analog circuit to the RCE-95 for activation. The integral LED is also lit for annunciation at the device.

Programming

The RCE-95 is programmed by setting a single DIP switch easily accessible on the RCE-95's printed circuit board. The DIP switch is used to set the address of the device. All other programming is accomplished at the Fire Alarm Control Panel, either through a laptop computer or the control panel operator's display.

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Relay Control Elements



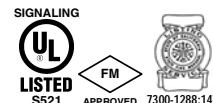
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RCE-95

Features

- Compatible with the Gamewell-FCI 600 Series analog addressable FACPs.
- Form-C dry relay contacts.
- Event or manual controllable relay functions.
- Positive feedback of relay activation.
- LED annunciates activation.
- Fully supervised.
- Surface or flush mounting.
- Field programmable.
- Style 4, 6, or 7 wiring.
- Screw terminals for field wiring connections.

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Mounting

The RCE-95 is designed to mount in a standard 4.688" (11.908 cm) electrical backbox. The RCE-95 should be mounted in an easily visible location so that the built-in LED may be seen for quick indication of proper connection and activation.

Engineer's Specifications

A programmable interface device shall be provided for the control and status reporting of programmed relay control functions. The RCE-95 shall communicate with the Fire Alarm Control Panel via an analog circuit (SLC) over a single pair of wires.

The device shall provide dry contacts and positive feedback of the controlled equipment's status annunciating upon activation. It shall be Gamewell-FCI RCE-95.

Specifications

Input Power:	24 VDC from analog circuit
Standby Current:	0.0005 A
Alarm Current:	0.0015 A
Operating	
Temperature:	0° C to 49°C (32°F to 120°F)
Relative Humidity:	85% non-condensing
Housing	
Requirements:	4.688" (11.908 cm) backbox
Contact Rating:	2.0 amp at 30 VDC 0.2 A at 120 VAC

Ordering Information

Model	Description
RCE-95	Relay control element device. XP95 protocol compatible.
70839	Trim ring for flush mounting the RCE-95.
RCD	Optional relay control display; provides annunciation of the RCE-95 control element devices at the FACP. One needed for every eight RCEs. Compatible only with the IF632 and IF650 FACPs

GAMEWELL-FCI

Series RSS and RSSP Strobes and Strobe Plates



Series RSS



Series RSS



Series RSSWP



RSS Round

Description

The Wheelock patented Series RSS Strobe Appliances and Series RSSP Strobe Plates have lower current draw while maintaining outstanding performance, reliability and cost effectiveness. These versatile appliances will satisfy virtually all requirements for indoor, wall or ceiling mount applications.

Strobe options for wall mount models include 1575 or the Wheelock Patented MCW multi-candela strobe with field selectable candela settings of 15/30/75/110cd or the high intensity MCWH strobe with field selectable 135/185cd. Ceiling mount models include the patented MCC multi-candela ceiling strobe with field selectable intensities of 15/30/75/95cd or the high intensity MCCH strobe with field selectable 115/177cd.

All models may be synchronized using the Wheelock SM, DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels incorporating the Wheelock Patented Sync Protocol. Synchronized strobes can eliminate possible restrictions on the number of strobes in the field of view. Wheelock's synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy as well as meeting the requirements of NFPA 72.

The Wheelock Series RSS Strobes employ a Patented Integral Strobe Mounting Plate that can be mounted to a single gang, double gang, 4" square, 100mm European backboxes or the SHBB surface backbox. If the flush backbox has side or top space between it and the finished wall, the NATP (Notification Appliance Trimplate) may be used. It provides an additional .65" of trim for the Appliance. An attractive cover plate is provided for a clean, finished appearance on all models.

The Series RSSP Multi-Candela Strobe Plates are a cost effective way to retrofit required wall strobe appliances to bells, horns, chimes, multitones or speakers and easily mounts to standard 4" backboxes or for surface mount use with the Wheelock SBL2 surface backbox.

Features

- Approvals include: UL Standard 1971, New York City (MEA), California State Fire Marshal (CSFM), Factory Mutual (FM), and Chicago (BFP) See approvals by model in Specifications and Ordering Information
- ADA/NFPA/UFC/ANSI compliant. Meets OSHA 29 Part 1910.165
- Wall mount Multi-Candela models are available with Field Selectable Candela Settings of 15/30/ 75/110cd or 135/185cd. Single Candela models are available in 1575cd
- Ceiling mount Multi-Candela models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd. (Round or Square)
- Strobes produce 1 flash per second over the regulated voltage range
- 12 and 24 VDC models with wide UL "Regulated Voltage" using filtered (DC) or unfiltered VRMS input voltage
- Synchronize using the Wheelock sync modules or panels with built-in Wheelock Patented Sync Protocol
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wire

For Weatherproof Series RSS See Datasheet S9004



NOTE: All CAUTIONS and WARNINGS are identified by the symbol **▲**. All warnings are printed in bold capital letters.

▲ WARNING: PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. VISIT WWW.COOPERWHEELLOCK.COM OR CONTACT COOPER WHEELLOCK FOR THE CURRENT INSTALLATION INSTRUCTIONS. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

General Notes:

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range". Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL Standard 1971.
- Series NS Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- Series NH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).
- **"Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".**

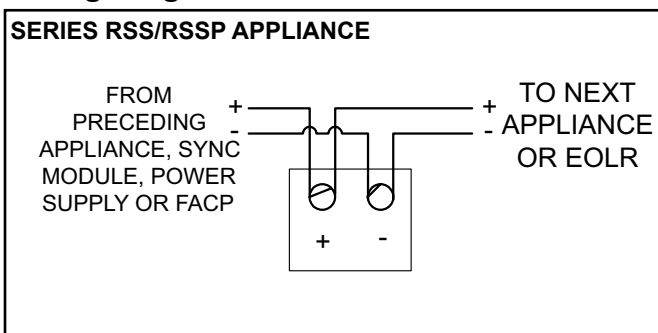
Table 1: Average RMS Current*

RSS/RSSP 24VDC Models	RSS/RSSP - Wall Mount							Ceiling Mount					
	241575W	24MCW				24MCWH		24MCC				24MCCH	
	1575cd	15cd	30cd	75cd	110cd	135cd	185cd	15cd	30cd	75cd	95cd	115cd	177cd
UL max*	0.090	0.060	0.092	0.165	0.220	0.300	0.420	0.065	0.105	0.189	0.249	0.300	0.420
RSS/RSSP 24VDC Models	RSS/RSSP Wall Mount	* RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range (16-33v for 24v units). For strobes the UL max current is usually at the minimum listed voltage (16v for 24v units). For audibles the max current is usually at the maximum listed voltage (33v for 24v units). For unfiltered FWR ratings, see installation instructions.											
	121575W												
12 vdc	0.152												
UL max*	0.255												

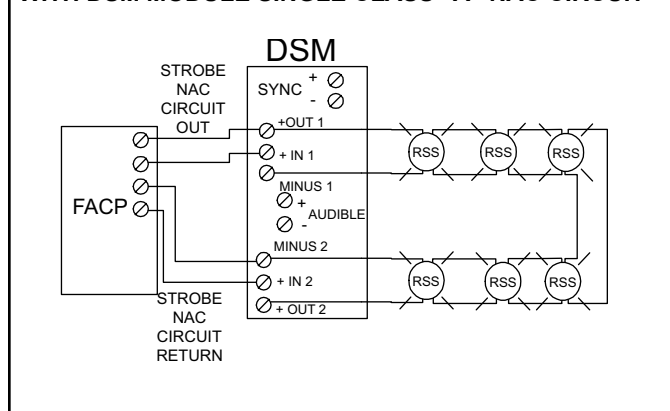
Table 2: Audibles/Speakers for RSSP Strobe Plate

Product	Series
Multitone Appliances	AMT, MT
Horns	AH, NH, HS
Motor Bells	MB-G6/G10
Speakers	ET-1010/1080, E70, ET70
Chimes	CH70

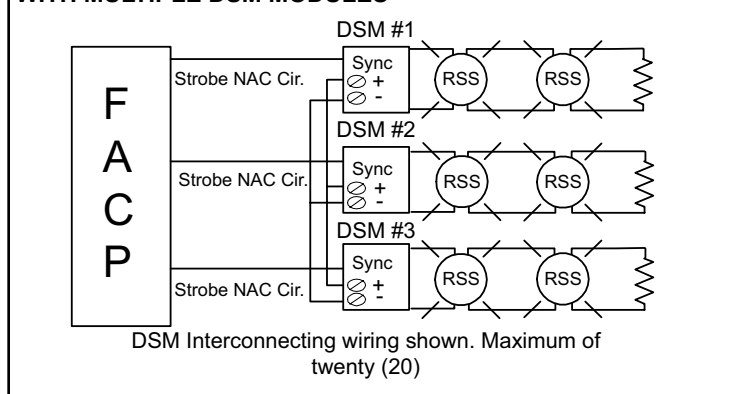
Wiring Diagrams #

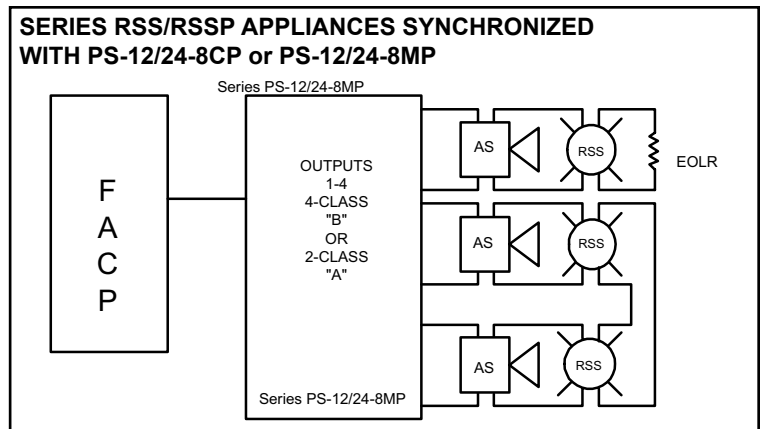
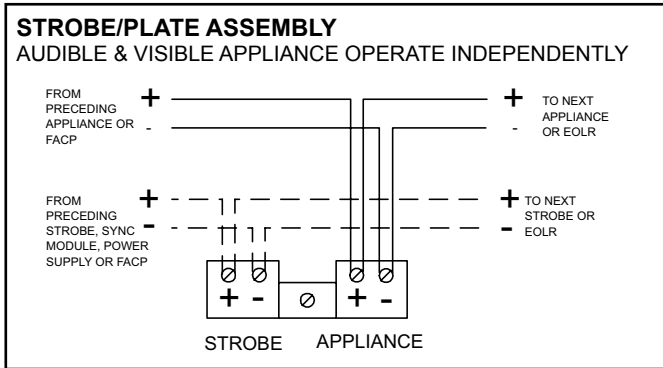
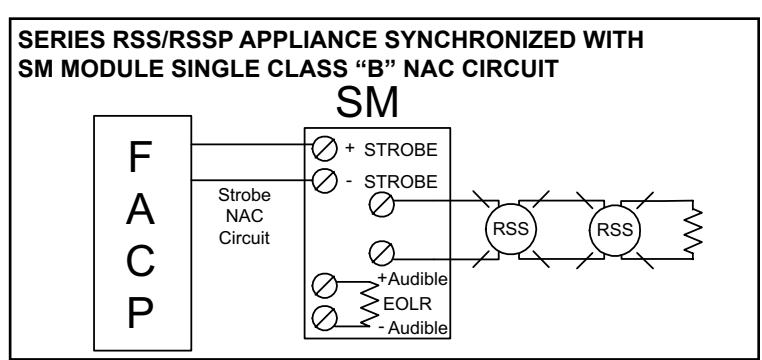
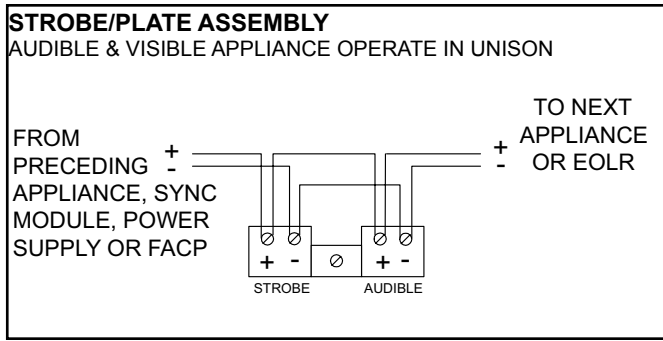


SERIES RSS/RSSP APPLIANCES SYNCHRONIZED WITH DSM MODULE SINGLE CLASS "A" NAC CIRCUIT



SERIES RSS/RSSP APPLIANCES SYNCHRONIZED WITH MULTIPLE DSM MODULES





For detail using SM or DSM Sync Module refer to Data Sheet S3000 or Installation Instructions P83123 for SM and P83177 for DSM. For wiring information on the power supplies refer PS-24-8MC.

Specifications and Ordering Information

Model	Order Code	Wall Mount	Ceiling Mount	Non-Sync	Strobe Candela	24 VDC	12 VDC	Color RED	Color WHITE	Mounting Options***	Square or Round	Agency Approvals				
												UL	MEA	CSFM	FM	BFP
RSS-24MCW-FR	940	X	-	X	15/30/75/110	X	-	X	-	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	X
RSS-24MCW-FW	9401	X	-	X	15/30/75/110	X	-	-	X	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	X
RSS-241575W-FR	7471	X	-	X	15 (75 on Axis)	X	-	X	-	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	X
RSS-241575W-FW	7788	X	-	X	15 (75 on Axis)	X	-	-	X	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	X
RSS-121575W-FR	7476	X	-	X	15 (75 on Axis)	-	X	X	-	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	X
RSS-121575W-FW	7468	X	-	X	15 (75 on Axis)	-	X	-	X	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	X
RSS-24MCC-FW	3158	-	X	X	15/30/75/95	X	-	-	X	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	*
RSS-24MCC-FR	3157	-	X	X	15/30/75/95	X	-	X	-	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	*
RSS-24MCCR-FW	3160	-	X	X	15/30/75/95	X	-	-	X	B,D,E,F,G,H,J,N,O,R,X	Round	X	X	X	X	*
RSS-24MCCH-FW	3461	-	X	X	115/177	X	-	-	X	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	*
RSS-24MCCHR-FW	3463	-	X	X	115/177	X	-	-	X	B,D,E,F,G,H,J,N,O,R,X	Round	X	X	X	X	*
RSS-24MCWH-FR	3465	X		X	135/185	X		X		B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	*
RSS-24MCWH-FW	3464	X		X	135/185	X			X	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	*
RSSWP-2475W-FR**	9013	X	-	X	180@ 77°F 75@ -31°F	X	X	X	-	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	*
RSSWP-2475W-FW**	3034	X	-	X	180@ 77°F 75@ -31°F	X	X	-	X	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	*
RSSP-121575W-FR	7798	X	-	X	15 (75 on Axis)	-	X	X	-	D,E,Z	Square	X	X	X	X	X
RSSP-24MCW-FR	9402	X	-	X	15/30/75/110	X	-	X	-	D,E,Z	Square	X	X	X	X	X
RSSP-241575W-FR	7793	X	-	X	15 (75 on Axis)	-	-	X	-	D,E,Z	Square	X	X	X	X	X

*PENDING

All models sync with Wheelock SM, DSM or PS-12/24-8CP or PS-12/24-8MP.

Models are available in either Red or White. Call Customer Service for Order Code & Delivery.

**For Weatherproof Series RSS Strobe specifications see data sheet S9004.

***Refer to data sheet S7000 for mounting options.

Architects and Engineers Specifications

The visual notification appliances shall be Wheelock Series RSS Strobe Appliances or approved equals. The Series RSS shall meet and be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service. The strobe shall be listed for indoor use and shall meet the requirements of FCC Part 15 Class B. The strobe appliances shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP). When Strobe Plates are to be installed, they shall be the Wheelock Series RSSP Strobe Plate and shall have the same electronic circuitry as the Wheelock Series RSS.

The Series RSS Strobe shall be of low current design. Where Multi-Candela appliances are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110cd or 135/185cd for wall mount and 15/30/75/95cd or 115/177cd for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on axis is required (e.g. ADA compliance).

When synchronization is required, the appliance shall be compatible with Wheelock's SM, DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels with built-in Wheelock Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate. The strobes shall be designed for indoor surface of flush mounting.

The Series RSS Strobe Appliances shall incorporate a Patented, Integral Strobe Mounting Plate that shall allow mounting to single-gang, double-gang, 4-inch square, 100mm European type backboxes, or the SHBB Surface Backbox. If required, an NATP (Notification Appliance Trimplate) shall be provided. An attaching cover plate shall be provided to give the Appliance and attractive appearance. The Appliance shall not have any mounting holes or screw heads visible when the installation is completed.

The Series RSSP Multi-Candela or single candela Strobe Plate shall mount to either a standard 4 inch square backbox for flush mounting, or the Wheelock SBL2 backbox for surface mounting.

All notification appliances shall be backward compatible.

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



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S0410 RSS/RSSP 02/08

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Long Branch, NJ 07740
P: 800-631-2148
F: 732-222-8707

www.coopernotification.com

FL Location

7565 Commerce Ct.
Sarasota, FL 34243
P: 941-487-2300
F: 941-487-2389

VA Location

P: 877-459-7726
F: 703-294-6560

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COOPER Notification

Series E50 Speaker and Speaker Strobes



SERIES E50
Speaker Strobe



SERIES E50
Speaker

Description

The Wheelock Series E50 Speakers and Speaker Strobes feature high efficiency sound output, with dual voltage (25/70 VRMS) capability and field selectable taps from 1/8 to 2 watts. They are designed to provide a sleek, aesthetic appearance for emergency voice/alarm communications systems. All Series E50 models mount to standard 4" x 2-1/8" electrical boxes (with no extension ring required) and incorporate a speaker mounting plate for faster installation. The grille cover snaps on so no mounting screws are visible. Attractive surface boxes are also available for surface installations.

The Series E50 Speaker Strobe models use Wheelock low current draw Series RSS strobes for wall mounted applications. Strobe options include patented MCW multi-candela strobes with field selectable candela settings of 15/30/75/110 cd or high intensity MCWH strobes with field selectable 135/185 candela. Models with 1575 candela (75 cd on axis) are also offered.

Series E50 Speakers and Speaker Strobes provide high audio output with clear audibility and are designed to meet the critical needs of the life safety industry for effective emergency voice communications, tone signaling and visible signaling to alert the hearing impaired.

The strobe portion of all Series E Speaker Strobes may be synchronized when used in conjunction with the Wheelock SM, DSM Sync Modules or the Wheelock's PS-24-8MC Power Supply with Patented Sync Protocol. Wheelock synchronized strobes offer an easy way to comply with ADA and NFPA regulations concerning photosensitive epilepsy.

Series E50 Speaker Strobes are UL Listed for indoor use under Standard 1971 (Signaling Devices for the Hearing-Impaired) and Standard 1480 (Speaker Appliances). All inputs employ IN/OUT wiring terminals for fast installation using #12 to #18 AWG wiring and are compatible with FACP line supervision.

Color options for the Series E50 Speakers and Speaker Strobes are red or off-white.

Features

- Approvals include: UL Standard 1971, UL Standard 1480, New York City (MEA), California State Fire Marshal (CSFM), Factory Mutual (FM) and Chicago (BFP). See approvals by model in Specifications and Ordering Information
- ADA/NFPA/ANSI compliant
- Complies with OSHA 29 Part 1910.165
- Wall mount speaker strobe models with field selectable candela settings of 15/30/75/110cd or 135/185cd (Multi-Candela models), or 1575cd (Single Candela model)
- Field selectable taps for 25 or 70 VRMS operation from 1/8 watt up to 2 watts
- High efficiency design for maximum output at minimum wattage across a frequency range of 400 to 4000 HZ
- 24 VDC strobes produce 1 flash per second with wide UL "Regulated Voltage" of 16 to 33 volts using filtered DC or unfiltered VRMS input voltage
- Synchronize with Wheelock SM, DSM or Wheelock PS-12/24-8CP and PS-12/24-8MP Power Supply with built-in sync protocol
- Mount to 4" square x 2-1/8" deep backbox with *no extension ring required*
- Snap on grille cover with no visible mounting screws
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires



NOTE: All CAUTIONS and WARNINGS are identified by the symbol ▲. All warnings are printed in bold capital letters.

▲ WARNING: PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. VISIT WWW.COOPERWHEELOCK.COM OR CONTACT COOPER WHEELOCK FOR THE CURRENT INSTALLATION INSTRUCTIONS. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

General Notes:

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range". Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL Standard 1971.
- Series NS Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- Series NH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).
- "Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".

Table 1: Average RMS Current

E50 Speaker Strobes	E50 Strobe Current - Wall Mount						
	241575W	24MCW				24MCWH	
	1575cd	15cd	30cd	75cd	110cd	135cd	185cd
24 vdc	0.060	0.041	0.063	0.109	0.140	0.195	0.270
UL max*	0.090	0.060	0.092	0.165	0.220	0.300	0.420

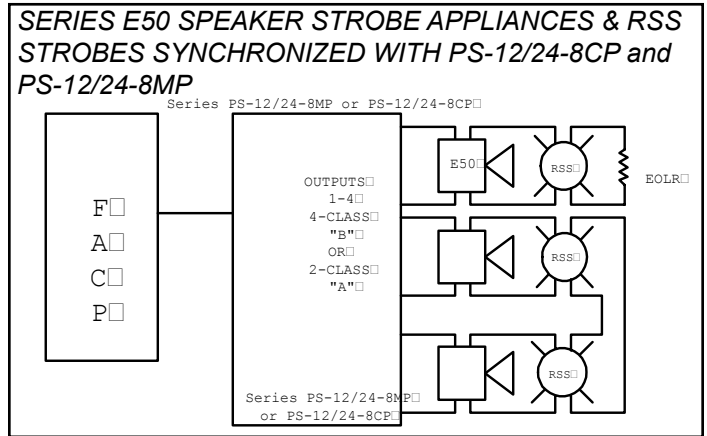
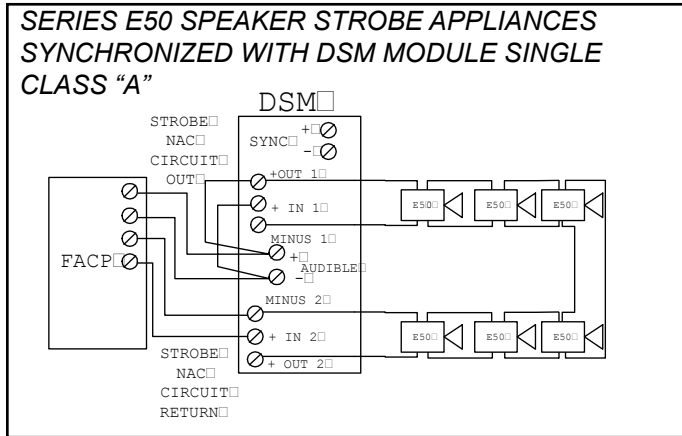
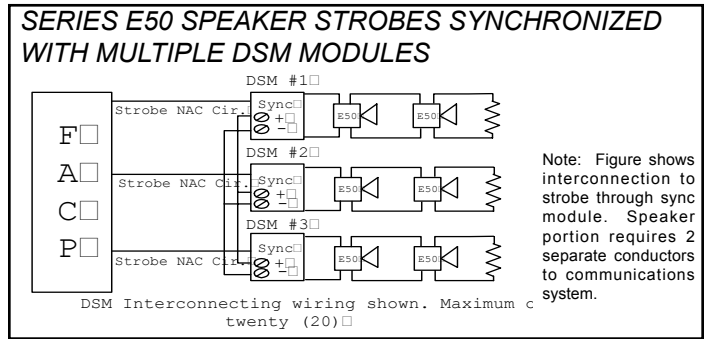
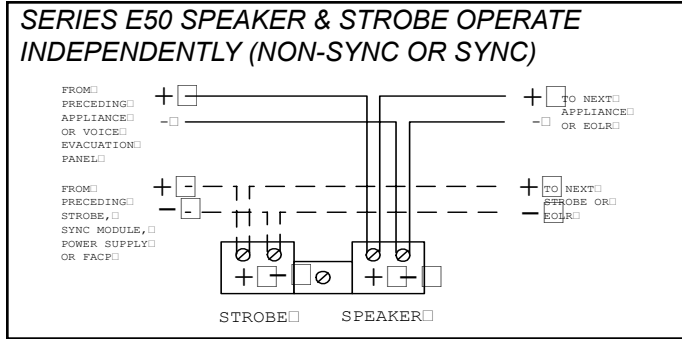
* RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range (16-33v for 24v units). For strobes the UL max current is usually at the minimum listed voltage (16v for 24v units). For unfiltered FWR ratings, see installation instructions.

Table 2: E50 UL Reverberant dBA @ 10 Feet**

watts	1/8	1/4	1/2	1	2
E50 Speaker	77	79.5	82.5	85	88
E50 Speaker Strobe	77	79.5	82.5	85	88

**dBA ratings are based on UL testing under UL Standard 1480

Wiring Diagrams#



Specifications and Ordering Information

Model	Order Code	Wall Mount	Ceiling Mount	Strobe Candela	Grill Color	Flush Mount Bacbox	Surface Mount Backbox	Mounting Options	Agency Approvals				
									UL	MEA	CSFM	FM	BFP
E50-R	0222	X	X	-	Red	4' x 4" x 2-1/8"	E50SB-R	E,O,P,Q,R,U,Y,AA	X	*	X	X	*
E50-W	0223	X	X	-	White	4' x 4" x 2-1/8"	E50SB-W	E,O,P,Q,R,U,Y,AA	X	*	X	X	*
E50-241575W-FR	0224	X	-	15 (75 on Axis)	Red	4' x 4" x 2-1/8"	E50SSB-R	E,Q,U,BB	X	*	X	X	*
E50-241575W-FW	0225	X	-	15 (75 on Axis)	White	4' x 4" x 2-1/8"	E50-SSB-W	E,Q,U,BB	X	*	X	X	*
E50-24MCW-FR	0226	X	-	15/30/75/110	Red	4' x 4" x 2-1/8"	E50SSB-R	E,Q,U,BB	X	*	X	X	*
E50-24MCW-FW	0227	X	-	15/30/75/110	White	4' x 4" x 2-1/8"	E50-SSB-W	E,Q,U,BB	X	*	X	X	*
E50-24MCW-MW	5219	X	-	15/30/75/110	White	4' x 4" x 2-1/8"	E50-SSB-W	E,Q,U,BB	X	*	X	X	*
E50-24MCWH-FR	0228	X	-	135/185	Red	4' x 4" x 2-1/8"	E50SSB-R	E,Q,U,BB	X	*	X	X	*
E50-24MCWH-FW	0229	X	-	135/185	White	4' x 4" x 2-1/8"	E50-SSB-W	E,Q,U,BB	X	*	X	X	*

*PENDING

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

Architects and Engineers Specifications

The speaker appliances shall be Wheelock Series E50 Speakers and the speaker strobe appliances shall be Wheelock Series E50 Speaker Strobes or approved equals. The speakers shall be UL Listed under Standard 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL Standard 1971 for Emergency Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class B.

All speakers shall be designed for a field selectable input of either 25 or 70 VRMS, with selectable power taps from 1/8 watt to 2 watts. All models shall have listed sound output of up to 89 dBA at 10 feet and a listed frequency response of 400 to 4000 Hz. The speaker shall incorporate a sealed back construction. All inputs shall employ terminals that accept #12 to #18 AWG wire sizes. The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall be of low current design. Where Multi-Candela Speaker Strobes are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110cd or 135/185cd for wall mounting. The selector switch for selecting the candela shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required.

When synchronization is required, the strobe portion of the appliance shall be compatible with the Wheelock's SM, DSM sync modules or Wheelock PS-24-8MC Power Supply with built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate.

The speaker and speaker strobe appliances shall be designed for indoor flush mounting to 4" x 2-1/8" electrical boxes without need for an extension ring or surface mounting to Wheelock's E50SB or E50SSB surface boxes. The speaker and speaker strobe shall incorporate a speaker mounting plate with a snap-on grille cover. The finish of the Series E50 speakers and speakers strobes shall be white or red.



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S0510 E50 02/08

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Sarasota, FL 34243
P: 941-487-2300
F: 941-487-2389

VA Location
P: 877-459-7726
F: 703-294-6560

Series E60 Speakers and Speaker Strobes



Description

The NEW Wheelock Series E60 Ceiling Speakers and Speaker Strobes are designed for high efficiency sound output, with dual voltage (25/70 VRMS) capability and field selectable taps from 1/8 to 2 watts. These E60 Multi-Candela ceiling appliances are part of the new family of ceiling mount strobe appliances that will also be available on strobes, horns and horn/strobes. Optional Extender (E60 Ext) is for mounting to 4" backboxes with no extension ring.

The Series E60 Speaker Strobe models incorporate the Low Current draw Series RSS Strobes. These ceiling mount round models are available in Wheelock patented MCC multi-candela ceiling strobe with field selectable intensities of 15/30/75/95cd or the high intensity MCCH strobe with field selectable 115/177cd.

Series E60 Speakers and Speaker Strobes provide high audio output with clear audibility and are designed to meet the critical needs of the life safety industry for effective emergency voice communications, tone signaling and visible signaling to alert the hearing impaired.

The low profile design incorporates a speaker mounting plate for faster and easier installation. Each model has a built-in level adjustment feature and snap-on cover with no visible mounting screws.

The strobe portion of all Series E60 Speaker Strobes may be synchronized when used in conjunction with the Wheelock SM, DSM Sync Modules or the Wheelock PS-24-8MC Power Supply with Patented Sync Protocol. Wheelock synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy.


Series E60 Speaker Strobes are UL Listed for indoor use under Standard 1971 (Signaling Devices for the Hearing-Impaired) and Standard 1480 (Speaker Appliances), and use a Xenon flashtube with solid state circuitry enclosed in a rugged Lexan® lens to provide maximum reliability for effective visual signaling. All inputs are supervised and employ IN/OUT wiring terminals for fast installation using #12 to #18 AWG wiring.

Color options for the Series E60 Speakers and Speaker Strobes are red and white.

Features

- Approvals include: UL Standard 1971, UL Standard 1480, New York City (MEA), California State Fire Marshal (CSFM), Factory Mutual (FM) and Chicago (BFP) See approvals by model in Specifications and Ordering Information
- ADA/NFPA/ANSI compliant
- Complies with OSHA 29 Part 1910.165
- **Ceiling mount strobe models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd (Multi-candela models)**
- Strobes produce 1 flash per second over the regulated voltage range
- 24 VDC with wide UL "Regulated Voltage" using filtered DC or unfiltered VRMS input voltage
- Synchronize with Wheelock SM, DSM or Wheelock PS-24-8MC Power Supply with built-in sync protocol
- Field selectable taps for 25 or 70 VRMS operation from 1/8 watt up to 2 watts
- High efficiency design for maximum output at minimum wattage across a frequency range of 400 to 4000 HZ
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires
- Optional Extender (E60 Ext) is for mounting to 4" backboxes with no extension ring.



NOTE: All CAUTIONS and WARNINGS are identified by the symbol . All warnings are printed in bold capital letters.

▲ WARNING: PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. VISIT WWW.COOPERWHEELLOCK.COM OR CONTACT COOPER WHEELLOCK FOR THE CURRENT INSTALLATION INSTRUCTIONS. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

General Notes:

- Strobes are designed to flash at 1 flash per second minimum over their “Regulated Voltage Range”. Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL Standard 1971.
- Series NS Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- Series NH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).
- **“Regulated Voltage Range” is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology “Listed Voltage Range”.**

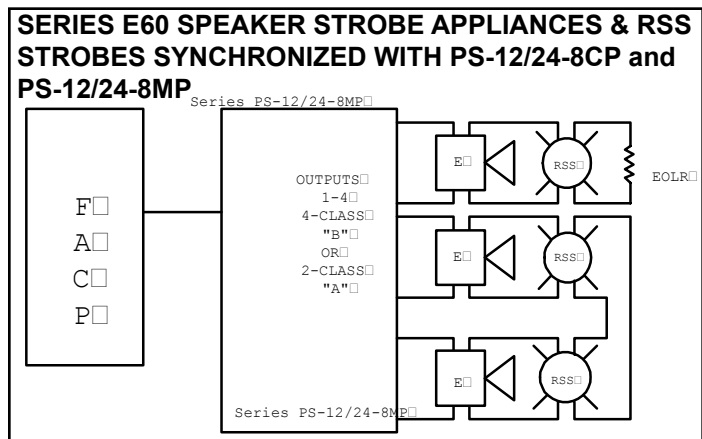
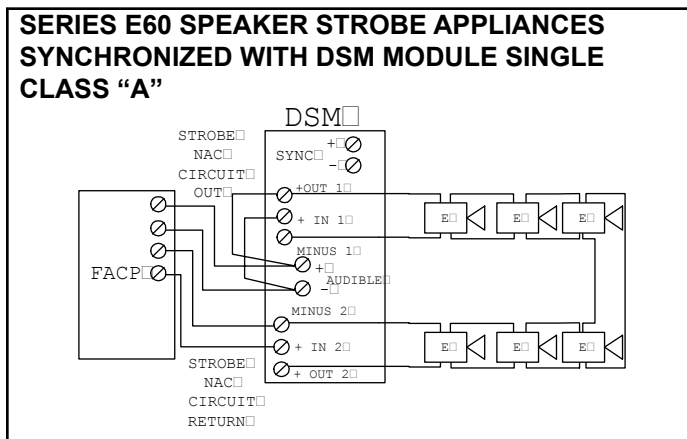
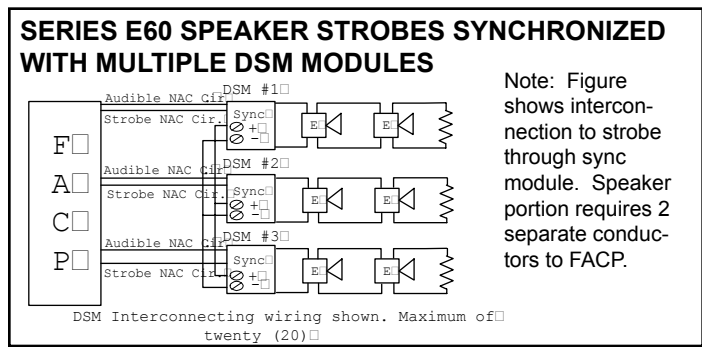
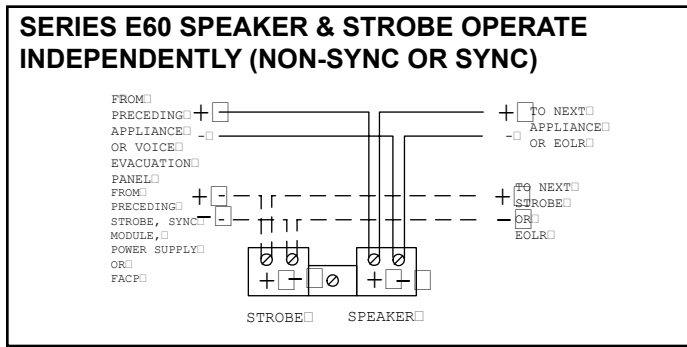
Table 1: Average RMS Current						
E60 Speaker Strobes	E60 Strobe Current - Ceiling Mount					
	24MCC				24MCCH	
	15cd	30cd	75cd	95cd	115cd	177cd
24 vdc	0.045	0.070	0.119	0.159	0.195	0.270
UL max*	0.065	0.105	0.189	0.249	0.300	0.420

Table 2: E60 UL Reverberant dBA @ 10 Feet**					
watts	1/8	1/4	1/2	1	2
E Speaker	77	79.5	82.5	85	88
E Speaker Strobe	77	79.5	82.5	85	88

**dBA ratings are based on testing under UL Standard 1480.

* RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range (16-33v for 24v units). For strobes the UL max current is usually at the minimum listed voltage (16v for 24v units). For audibles the max current is usually at the maximum listed voltage (33v for 24v units). For unfiltered FWR ratings, see installation instructions.

Wiring Diagrams#



For wiring information on the PS-24-8MC power supply, please refer to Data Sheet # S8900.

For detail using SM or DSM Sync Module refer to Data Sheet S3000 or Installation Instructions P83123 for SM and P83177 for DSM. For wiring information on the power supplies refer to Installation Instructions P84662.

Specifications and Ordering Information

Model	Order Code	Wall Mount	Ceiling Mount	Non-Sync	Strobe Sync w/ SM, DSM or PS-12/24-8CP/MP	Strobe Candela	Model Color RED	Model Color White	Mounting Options	Agency Approvals				
										UL	MEA	FM	BFP	CSFM
E60-R	3746		X	-	-	-	X	-	Q,U	X	X	X	*	X
E60-W	3745		X	-	-	-	-	X	Q,U	X	X	X	*	X
E60-24MCC-FR	3748	-	X	X	X	15/30/75/95	X	-	Q,U,V	X	X	X	*	X
E60-24MCC-FW	3747	-	X	X	X	15/30/75/95	-	X	Q,U,V	X	X	X	*	X
E60-24MCCH-FW	3749	-	X	X	X	115/177	-	X	Q,U,V	X	X	X	*	X
E60-24MCCH-FR	3750	-	X	X	X	115/177	X	-	Q,U,V	X	X	X	*	X
E60EXT-R**	3578						X			X	X	*	*	
E60EXT-W**	3757							X		X	X	*	*	

*PENDING

****E60 EXT** is an attractive extender ring that mounts behind the speaker to permit mounting to a 4" square x 2 1/8" deep electrical box without need for an extension ring on the box.

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

Architects and Engineers Specifications

The speaker appliances shall be Wheelock Series E60 Speakers and the Speaker Strobe appliances shall be Wheelock Series E60 Speaker Strobes or approved equals. The speakers shall be UL Listed under Standard 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL Standard 1971 for Emergency Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class B.

All speakers shall be designed for a field selectable input of either 25 or 70 VRMS, with selectable power taps from 1/8 watt to 2 watts. All models shall have listed sound output of up to 87 dB at 10 feet and a listed frequency response of 400 to 4000 Hz. The speaker shall also incorporate a sealed back construction. All inputs shall employ terminals that accept #12 to #18 AWG wire sizes. The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. The strobe shall be of low current design. Where Multi-Candela Speaker Strobes are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 15/30/75/95cd or 115/177cd for ceiling mount. The selector switch for selecting the candela shall be tamper resistant.

When synchronization is required, the strobe portion of the appliance shall be compatible with Wheelock SM, DSM sync modules or the Wheelock PS-24-8MC Power Supply with built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate.

The speaker and speaker strobe appliances shall be designed for indoor flush mounting. The speaker and speaker strobe shall incorporate a speaker mounting plate with a snap-on grille cover with no visible screws for a level, aesthetic finish and shall mount to standard electrical hardware.

The finish of the Series E60 Speakers and Speaker Strobes shall be white or red. All speaker and speaker strobe appliances shall be backward compatible.



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S1611 E60 02/08

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FL Location
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Sarasota, FL 34243
P: 941-487-2300
F: 941-487-2389

VA Location
P: 877-459-7726
F: 703-294-6560

www.coopernotification.com

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SAFEPATH®



COOPER Notification

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Description

The FireForce 8 (FF8) from Gamewell-FCI is a Notification Appliance Circuit (NAC) extender panel designed to extend the power capabilities of existing NACs and provide power (1.5 A) for other ancillary devices. The FF8 will connect to any brand of a UL-Listed Fire Alarm Control Panel (FACP) to provide Notification Appliance Circuit expansion.

Designed with advanced switch-mode power-supply technology, the FireForce 8 provides filtered and electronically-regulated power distributed to four (4) NACs. Each NAC is rated at 3.0 Amp. maximum, with a total output capacity of 8.0 Amp. The outputs may be configured as the following:

- Four (4), Class B (Style W, X, Y)
- Two (2), Class A (Style Z)
- Two (2), Class B and one Class A
- Four (4), Class A (Style Z) with the optional Class A adaptor installed

The FF8 includes an internal battery charger.

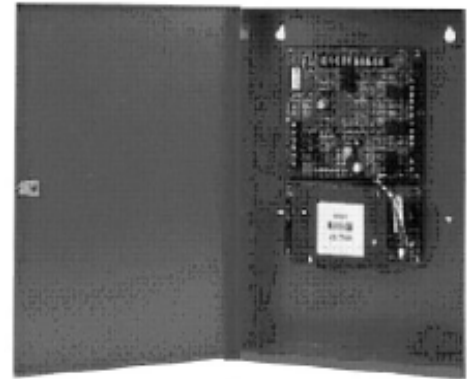
Gamewell-FCI's FF8 provides independent output circuit supervision. In the event of a NAC fault, the FF8 can be configured to notify the FACP. The FF8 has field-selectable, built-in strobe and horn sync protocols. Protocols support Faraday, Gentex, System Sensor, Amseco, and Cooper-Wheelock devices; or pass through a pre-generated sync protocol from a single synchronization source. This eliminates the need for additional individual sync modules. Independent horn silencing via sync protocol allows synchronized horns and strobes to operate on a single circuit.

One of the most challenging aspects of a retrofit application is locating the existing EOL resistor. In retrofit applications that have EOL values other than the 3.9K ohm EOL resistor normally used with the FF8, a single resistor matching the existing EOL can be used as a reference EOL for all outputs. This feature speeds installation and system check-out. The reference resistor must be within a range of 2K ohm to 25K ohm.

"FireForce 8" labeling is placed on the cabinet front, making the FF8 ideal for all retrofit applications.

For enhanced notification appliance circuit survivability, the FF8 can utilize its dual-activation inputs for redundant trip operation.

NAC Expander/Power Supply

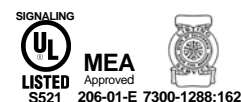


FireForce 8

Features

- Provides two fully-supervised input/control circuits
- Redundant activation option for survivability
- Multiple sync protocols, compatible with the following appliances: Cooper-Wheelock, Faraday, System Sensor, Amseco, and Gentex-as field-selectable options
- Four (4) configurable supervised NAC outputs
- 8.0 Amp., 24 VDC, fully regulated full-load output (power-limited)
- Output fault notification to FACP
- 1.5 A auxiliary power output
- Eight trouble and status LEDs
- Common trouble Form-C relay
- Isolated AC Fail Form-C relay, immediate or delayed six hours
- Ground fault detection
- 26 AH battery charger capability
- Selectable temporal coding
- Facilitates multiple NAC synchronization for large areas
- Optional multipack for up to four FF8s in a single lockable enclosure
- Optional Class A adaptor

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Engineer's Specifications

The Fire Alarm System shall be designed with remotely located Notification Appliance Circuit (NAC) Expander/Power Supplies for the support of notification appliances. The remote Power Supplies shall be fully supervised and shall provide 8.0 Amps. of notification appliance power and 1.5 Amps. of auxiliary power output. The NAC Extender Panel shall be able to select strobe synchronization protocol via an internal dip switch. There shall be five selectable protocols available. The NAC Extender Panel shall synchronize all outputs simultaneously. The NAC Extender Panel shall be able to use existing notification appliance circuit's end-of-line resistors in the range of 2K – 25K ohms for retrofit applications. The internal battery charging circuit shall charge up to 26 AH batteries. The NAC Expander/Power Supply shall be a Gamewell-FCI FireForce 8.

Options

31081

SCE-95 mounting plate provides a means to install two (2) SCE-95 modules. The addition of SCE-95s provides a means to run on FF8 outputs via a panel command on an SLC. The 31081 mounts over the main PCB and is hinged for access to FF8 terminal.

FF8-MP

Multipack FF8 option provides a means to place up to four (4) FF8s or 31085s (XP95 device mounting plates) in a single lockable enclosure. UL approved.

31076

Class A adaptor converts the four (4) Class B outputs to four (4) Class A outputs.

Specifications

Primary Input Power:	120 VAC, 60 Hz, 3.0 A or 220 V, 1.5 A; jumper selectable
Secondary Power:	24-volt operation: two 7 – 24 AH batteries
Battery Charging Capacity:	Up to 26 AH batteries
Battery Space:	Up to two 12 AH batteries maximum inside the FF8 cabinet. Larger batteries require a separate battery cabinet
Total Output Power:	8.0 A maximum
Standby Current:	0.030 A
Auxiliary Power Output:	0.15 A under all conditions 1.5 A, if load is removed during operation (external relay or AC Fail relay use required).
NAC Output Ratings:	24 VDC fully regulated, 3.0 A maximum per circuit (8.0 A total)
End-of-Line Resistor Range:	2K to 25K, 1/2 watt
Common Trouble Relay, AC Fail Relay:	2.0 A/28 VDC or 120 VAC

Specifications (Continued)

Input Control Circuit:	16 – 30 VDC @ 5 mA minimum
Temperature Rating:	32°F to 120°F (0°C to 49°C)
Relative Humidity:	10 - 93%, non-condensing
Dimensions:	FF8 Cabinet: 18.0" H x 12.5" W x 4.5" D (45.72 H x 31.75 W x 11.43 D cm)
	FF8-MP Cabinet: 37.2" H x 24.0" W x 6.0" D (94.49 H x 60.96 W x 15.24 D cm)

Field Selectable NAC Signaling	
INPUT	OUTPUT (Follows Input)
Steady	Temporal
Steady	Steady - SYNC
Steady	Steady with Noise Eliminated
Sync	Sync

Ordering Information

Model	Description
FF8	24 VDC, 8.0 Amp., fire alarm NAC expander/ power supply with integral battery charger
FF8-MP	Multipack cabinet with one FF8 and space for up to three additional FF8-CMs or 31085s (See Options Section).
FF8-CM	Chassis assembly version of FF8, for mounting in FF8-MP spaces
31076	Class A adaptor, converts signal circuits to Class A wiring (See Options Section).
31081	Mounting plate for placing up to two SCE-95 modules into the FF8 (FF8 and FF8-MP compatible, See Options Section).
31085	Mounting plate for placing XP95 devices into the FF8-MP; includes standoffs for eight devices
BAT-1270	Battery, 12 VDC, 7 AH (two required for 24 V operation)
BAT-12120	Battery, 12 VDC, 12 AH (two required for 24 V operation)

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Description

The following sub-assemblies are components of the E3 Broadband Audio Evacuation System and optional components of the E3 Series™ Expandable Emergency Evacuation System:

- INI-VGC
- INI-VGE
- INI-VGX

INI-VGC

The INI-VGC Voice Gateway Module provides command and control functions for the INCC Command Center. The INCC serves as the point of interface between an operator and the system's audio evacuation, fire fighter intercom, and building control circuits.

A typical INCC assembly consists of an Intelligent Network Interface-Voice Gateway (INI-VGC) Module and one or more Addressable Switch Modules (ASM-16). Each INI-VGC can support up to sixteen (16), ANU-48 LED Driver Modules or ASM-16s for a total of 256 fully programmable switches and 768 LEDs (red, yellow, and green).

The INI-VGC occupies a single node on the E3 Broadband network and is connected by a single pair of twisted, unshielded wire, fiber-optic cable or any combination of the two. The INI-VGC-UTP is not equipped with fiber-optic connectors.

The INCC Command Center's INI-VGC module also provides connections for an optional emergency voice page microphone as well as a Fire Fighter telephone handset.

The INI-VGC is a fully digital voice/tone generator using state-of-the-art Digital Signal Processing (DSP) technology to produce the clearest, most audible signal possible. The INI-VGC provides an output to a local speaker for message verification and testing.

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INI-VG Command Center Voice Gateway



INI-VG

Features

The INI-VG Series include the following features:

- Listed under UL Standard 864, 9th Edition.
- All communication signals and control-by-event sequences over twisted, unshielded pair of wires or fiber-optic cable.
- Distributed architecture, including Style 7 wiring configuration, allows system components to continue normal operation with NO loss of function during single line fault conditions.
- Each INI-VGC or INI-VGE supports up to sixteen (16), ANU-48 LED drivers or ASM-16 switch modules for a total of 256 switches.
- INI-VGC connects to a voice page microphone and fire fighter's handset.
- Redundant command centers with microphone and fire fighter's handset easily configured by adding INCCs.
- Advanced digital signal processor (DSP) technology for efficient audio compression and filtering.
- Network data transfer rate at 625K baud.

The INI-VGX includes the following features:

- Software-programmable multi-channel digital audio applications.
- One Style 4 signaling line circuit (SLC) supporting up to thirty-two (32), addressable speaker circuits.
- AOM-MUXF for dual channel) and sixteen (16), addressable phone circuits (AOM-TELF).
- Supports up to 150 watts of audio power (AM-50 amplifier modules) with additional 50 watts of standby in a single, compact wall-mounted cabinet.
- 16 message capacity with up to 3 minute duration per INX and messages are easily field-configured via a laptop computer.

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INI-VGC (Continued)

The E3 Broadband Audio Evacuation System is a peer-to-peer, self regenerating, token ring network comprised of up to sixty-four (64), individual nodes. Each E3 Broadband node can be spaced on the network a maximum distance of 3,000 feet (914.4 m) or up to an 8dB loss using fiber-optic cable.

Built-in isolation at each node permits Style 4, 6, and 7 network configurations.

INI-VGE

The INI-VGE Voice Gateway Module provides command and control functions for the INCC Command Center. It provides bulk amplification.

A typical INCC assembly consists of an Intelligent Network Interface-Voice Gateway (INI-VGE) Module and one or more Addressable Switch Modules (ASM-16). Each INI-VGE can support up to six (6), ASM-16s for a total of 96 fully programmable switches and 288 LEDs (red, yellow, and green).

The INI-VGE occupies a single node on the E3 Classic network and is connected by a single pair of twisted, unshielded wire, fiber-optic cable or any combination of the two. The INI-VGE-UTP is not equipped with fiber-optic connectors.

The INCC Command Center's INI-VGE Module also provides connections for an optional emergency voice page microphone as well as a fire fighter telephone handset.

The INI-VGE is a fully digital voice/tone generator using state-of-the-art Digital Signal Processing (DSP) technology to produce the clearest, most audible signal possible. The INI-VGE provides an output capable of driving up to 20 Model AA-100 or AA-120 amplifiers.

INI-VGX

The INI-VGX Transponder Voice Gateway is a component of the E3 Broadband Audio Evacuation System and an optional component of the E3 Series Expandable Emergency Evacuation System. It is a multi-function module that incorporates:

- Network interface using twisted, unshielded wire or fiber-optic cable.
- Fully digital message generator.
- One (1) signaling line circuit for local peripheral devices.
- Local fire fighter phone riser.

It occupies a single DIP switch selectable address on the network and provides termination points for the network connection using either a pair of twisted, non-shielded wire (12 AWG max.) fiber-optic cable, or a combination of the two. The INI-VGX-UTP is not equipped with fiber-optic connectors.

The INI-VGX provides command and control for up to four (4), AM-50, 50 watt amplifiers in a single cabinet. The INI-VGX uses advanced Digital Signal Processing (DSP) tech-

nology for audio compression and filtering allowing E3 Broadband to produce the clearest audio possible. Background noise is automatically filtered during voice paging and fire fighter communications increasing audibility and eliminating the need for Push-to-Talk devices.

Specifications

INI-VGC, INI-VGE and INI-VGX

Operating Voltage: 24 VDC (nominal)

Operating Current: 0.150 amp. supervisory and alarm

Operating

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

Relative Humidity: 0 to 93% (non-condensing)

Protocol: Asynchronous with half-duplex data flow

Speed: RS-232 up to 64 KBps

RS-485 up to 128 KBps

St connectors*: Up to 200 microns (multimode),
Optimized for 62.5/125 microns

*St Connectors are omitted on the INI-VG-UTP Series.

*Model INI-VGC only

Ordering Information

INI-VGC

Model

INI-VGC

INI-VGC-UTP

Description

Command center voice gateway

Command center—(unshielded twisted-pair only)

INI-VGE

INI-VGE

INI-VGE-UTP

Command center voice gateway

Command center
(unshielded twisted-pair only)

INI-VGX

INI-VGX

INI-VGX-UTP

Transponder voice gateway

Transponder voice gateway
(unshielded twisted-pair)

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Description

The INCC Intelligent Network Command Center is a component of the E3 Series™ Expandable Emergency Evacuation and E3 Series™ Broadband Audio Evacuation System. The INCC Command Center serves as the point of interface between an operator and the system's audio evacuation, fire fighter intercom, and building control circuits. The INCC occupies a single node along the E3 Broadband network and is connected by a single pair of twisted, unshielded wire, fiber-optic cable or any combination of the two. Each E3 Broadband node can be spaced along the network a maximum distance of 3,000 feet (914.4 m) or up to an 8dB loss using fiber-optic cable. Built-in isolation at each node permits Style 4, Style 6, and Style 7 network configurations.

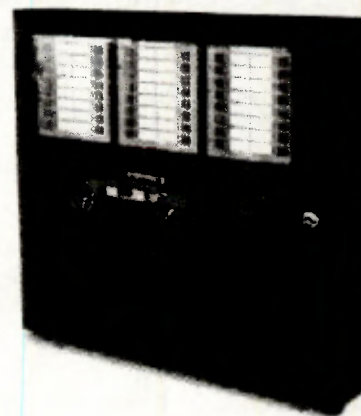
The E3 Broadband Audio Evacuation System is a peer-to-peer, self-regenerating, token ring network comprised of up to sixty-four (64), individual nodes. E3 Broadband employs proven technology and extends it to accomplish emergency voice evacuation, 2-way Fire Fighter communications, and building control applications. It is unique in the industry in requiring only a single pair of wires or a fiber-optic cable connection between nodes to convey all fire alarm, digital voice, fire fighter communications, paging, and building control signals.

A typical INCC assembly consists of an Intelligent Network Interface-Voice Gateway (INI-VGC) Module and one or more Addressable Switch Modules (ASM-16). INI-VGC. The INCC Command Center's INI-VGC module also provides connections for an optional emergency voice page microphone as well as a Fire Fighter telephone handset.

The INI-VGC is a fully digital voice/tone generator using state-of-the-art Digital Signal Processing (DSP) technology to produce the clearest, most audible signal possible. The INI-VGC provides an output to a local speaker for message verification and testing. It is ideal for a wide range of complex System Applications including high-rise or campus installations.

E3 Series™ is a trademark of Fire Control Instruments.

Intelligent Network Command Center



INCC

Features

- All communication signals and control-by-event sequences over twisted, unshielded pair of wires or fiber-optic cable including:
 - Audio Evacuation
 - Fan Control & Damper Shutdown
 - Voice Paging
 - Door Closures
 - Fire Fighter Intercom
 - Fire Alarm and Control Devices
 - Elevator Control
 - Horn/Stroke Circuit Activation
- Distributed architecture, including Style 7 wiring configurations, allow system components to continue normal operation with NO loss of function during single line fault conditions.
- Integrates with INX transponders and additional INCC command centers to create a complete audio evacuation system with up to 64 nodes.
- Each INI-VGC supports up to sixteen (16), ASM-16 switch modules for a total of 256 switches.
- INI-VGC connects to a voice page microphone and fire fighter's handset.
- Redundant command centers with microphone and fire fighter's handset easily configured by adding additional INCCs.
- Advance Boolean logic-based programming such as AND, OR, NOT, NOR, time delay, and calendar functions configurable through computer programming.
- Advanced digital signal processor (DSP) technology for efficient audio compression and filtering. Uses network data transfer rate at 625K baud.
- Listed under UL Standard 864, 9th Edition.

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ASM-16

Each Addressable Switch Module (ASM-16) has sixteen (16), push-button switches that can be programmed to serve any function the application demands. An ASM-16 switch can be programmed as a Speaker Circuit switch, Fire Fighter Phone switch, an Auxiliary Control switch using a bank of three (3), switches (one switch each for On-Off-Auto functions), or switches with custom defined functions (e.g. System Reset, System Silence, System Acknowledge, All-Call, Phone Patch, Lamp Test, Alarm Tone On, Manual Select, etc.). Each ASM-16 switch also has three (3), fully programmable status-indicating LEDs in Red, Yellow, and Green.

The INCC assembly is enclosed in one or more compact 19" wall-mounted enclosures. Its modular construction provides complete flexibility in system design. Each cabinet can contain the INI-VGC and up to six (6), ASM-16 modules. If more ASM-16 modules are required, they may be mounted in additional INCC cabinets. As many as six (6), ASM-16 modules can fit in the INCC cabinet. If a Microphone module is required, it would take the place of one ASM-16 position. A Fire Fighter handset would take the place of two ASM-16 positions. An INI-VGC can support as many as sixteen (16), ASM-16s for a total of 256 completely programmable switches.

The INCC operates on 24 VDC that can be sourced from the non-resettable auxiliary output of its associated power supply such as the PM-9.

A complete E3 Audio Evacuation System can be assembled from three (3) different panels: one or more E3 Series™ fire alarm control panels, one or more INCC Audio Evacuation Command Centers, and one or more INX transponders. This modular approach greatly simplifies the design and installation process and can be configured to meet the exact needs of the project.

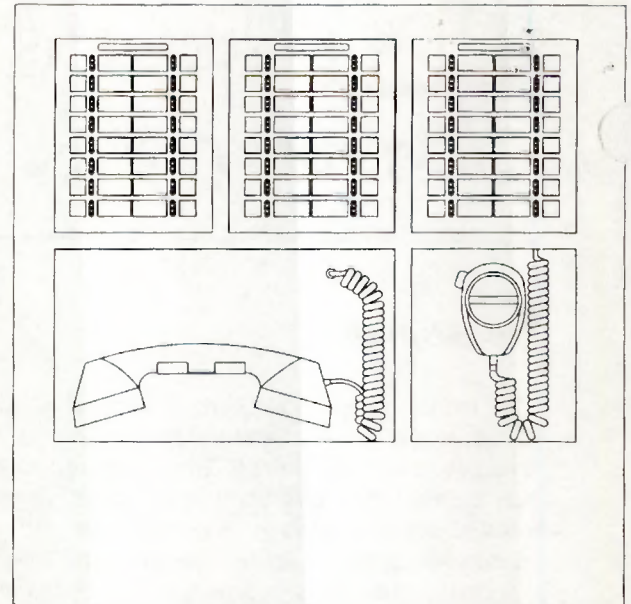


Figure 1 INCC with MIC and Handset

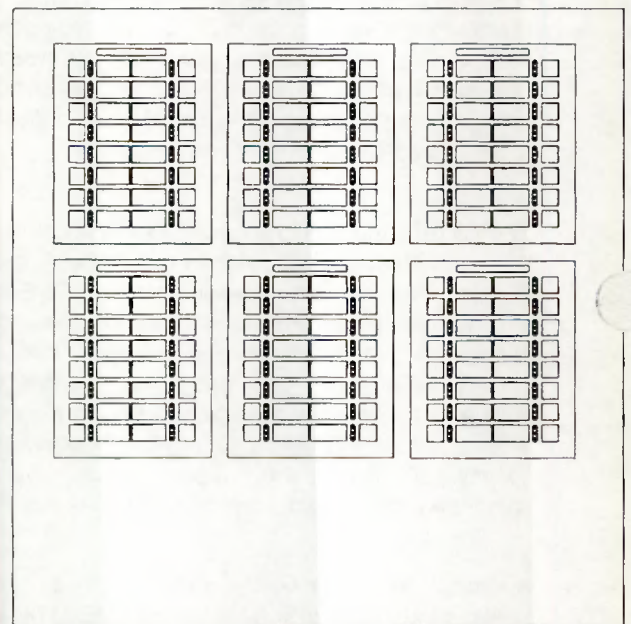


Figure 2 INCC with Six (6) ASM-16s

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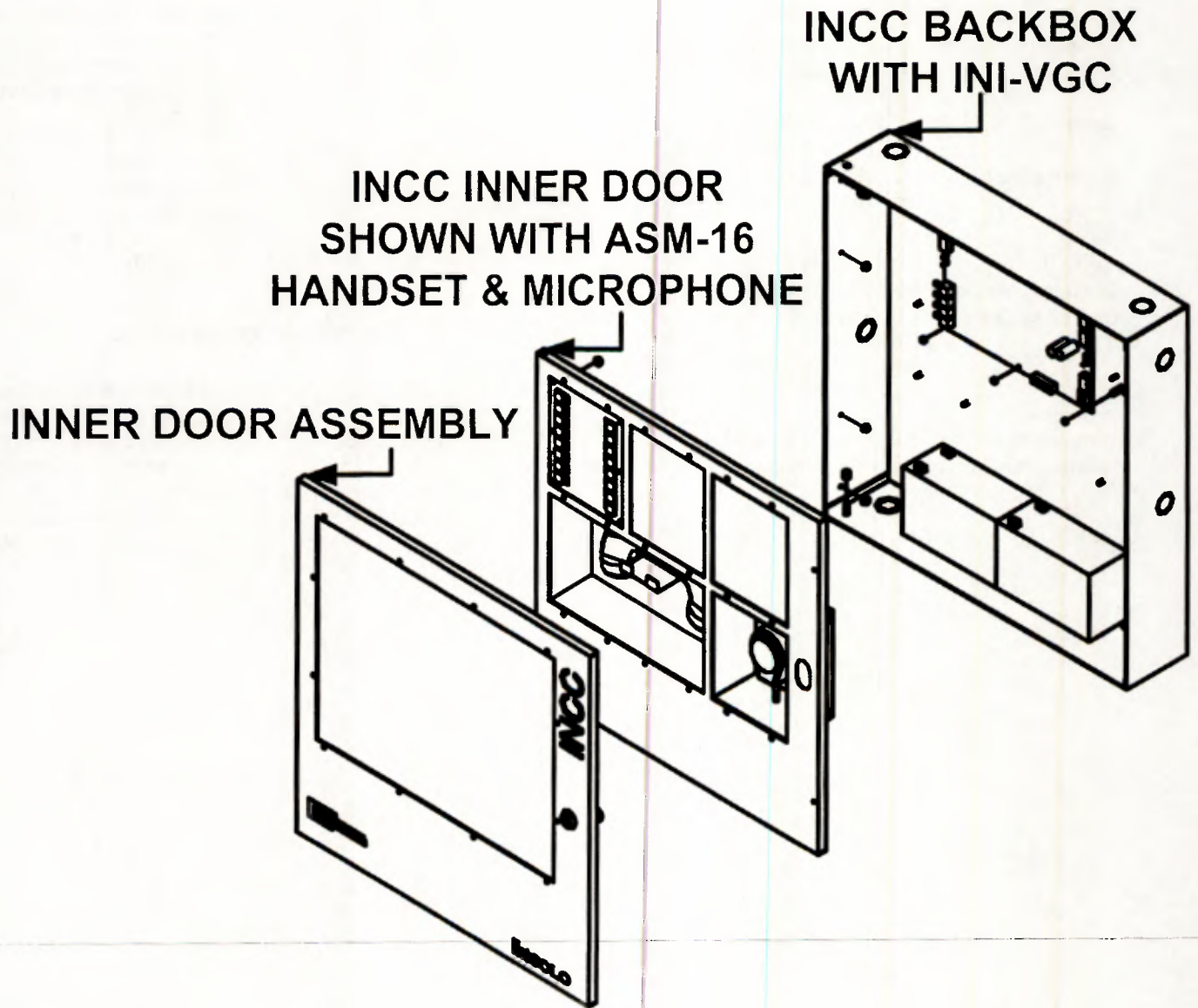


Figure 3 INCC Assembly

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Specifications

Description

INI-VGC

Operating Voltage: 24 VDC (nominal)
Operating Current: 0.150 amp. supervisory and alarm

Operating

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

Relative Humidity: 0 to 93% (non-condensing)

Protocol

Asynchronous with half-duplex data flow

Speed

RS-232 up to 64 KBps
RS-485 up to 128 KBps

St connectors

Up to 200 microns (multimode), optimized for 62.5/125 microns

ASM-16

Operating Voltage: 24 VDC (nominal)

Operating Current: 0.005 amp supervisory
0.005 amp alarm plus 0.003 amp per LED activated (0.195 amp max.)

Operating

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

Relative Humidity: 0 to 93% (non-condensing)

Ordering Information

Intelligent Network Command Center

INI-VGC	Command center voice gateway
ASM-16	Programmable switch module (occupies one single slot of inner door)
INCC-IDT	Inner door with one double slot for INCC=TEL fire fighter handset and 4 single slots
INCC-ID	Inner door with six (6), single slots
INCC-CAB	INCC backbox (black) with black outer door. 19" W x 19" H x 4" D (48 x 48 x 10 cm)
INCC-CABR	INCC backbox (black) with red outer door 19" W x 19" H x 4" D (48 x 48 x 10 cm)

Optional Accessories

INCC-TEL	Fire fighter telephone handset (requires INCC-IDT Inner Door)
INCC-MIC	Paging microphone module (occupies one single slot of Inner Door)
INCC-BP	Command center blank face plate (occupies one single slot of inner door)

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Description

The AM-50 Amplifier is a component of the E3 Series™, Expandable Emergency Evacuation System and the E3 Broadband Audio Evacuation System. The AM-50 is a 25 V_{RMS}, 50 watt, digital, switching power amplifier. As many as four (4), AM-50 amplifier modules can be installed in each INX cabinet.

Each AM-50 provides two (2), speaker circuits that can be wired Style Y (Class "B") or Style Z (Class "A"). The terminal connections can accommodate up to 12 AWG, twisted, shielded wire.

Each speaker circuit produces up to 50 watts of audio power at 25 V_{RMS} individually, through two (2), integral Class A/B speaker circuits or can divide the total 50 watts available between them in any combination. Each circuit may be individually activated.

An AM-50 can be programmed to respond to any one of 16 messages generated from its local INI-VGX Voice Gateway or individually selected for network voice paging.

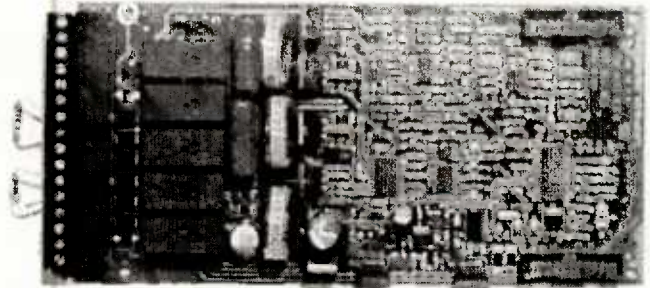
Note: The AM-50 amplifier may be installed in an INX cabinet whenever the E3 control is used in conjunction with the E3 Series™, Expandable Emergency Evacuation System.

Specifications

Operating Voltage:	24 VDC (nominal)
Operating Current:	0.086 amp.* supervisory, 2.206 amp max. alarm
Operating Temperature:	32° to 120° F (0° to 49° C)
Relative Humidity:	0 to 93%, (non-condensing) at 90° F (32° C)
Audio Output:	50 watts max. @ 25 V _{RMS}
Dimensions:	7 1/2" W x 3 1/2" H x 1 1/4" D (19 W x 9 H x 3 D cm)

E3 Series™ is a trademark of Fire Control Instruments.

AM-50 Amplifier



AM-50

Features

- Digital, switching amplifier technology.
- 50 watts of power.
- Two (2), speaker circuits, wired Style Y (Class B) or Style Z (Class A).
- Up to four (4), AM-50s can be controlled by the INI-VGX voice gateway.
- Listed under UL Standard 864, 9th Edition.

Ordering Information

Model	Description
AM-50	INX 50 watt amplifier

An ISO 9001-2000 Company



City of
Chicago
Approved
• Class 1
• Class 2
• High Rise

City of
DENVER
Approved

GAMEWELL-FCI

12 Clintonville Road, Northford, CT 06472 - Tel: (203) 484-7161 - Fax: (203) 484-7118

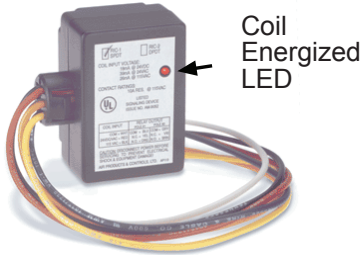
Specifications are for information only, are not intended for installation purposes, and are subject to change without notice. No responsibility is assumed by Gamewell-FCI for their use.

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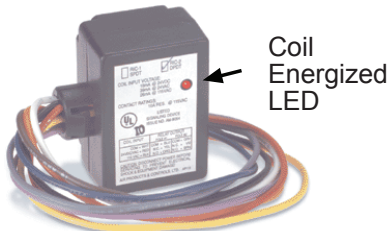
www.gamewell-fci.com

9020-0556 Rev. F page 1 of 1

NO EXCUSES!



The **SSU-RIC-1** Relay, SPDT, provides 10.0 Amp resistive form C contacts. The relay coil may be energized by one of three input voltages: 24VDC, 24VAC, or 115VAC. **SAE PN# SSU-RIC-1**



The **SSU-RIC-2** Relay, DPDT, provides 10.0 Amp resistive form C contacts. The relay coil may be energized by one of three input voltages: 24VDC, 24VAC, or 115VAC. **SAE PN# SSU-RIC-2**



The **SSU-RIC-3** Relay, SPDT, provides 10.0 Amp resistive form C contacts. The relay coil may be energized by one of two input voltages: 24VDC (non-polarized) or 24VAC. **SAE PN# SSU-RIC-3**

The **SSU-RIC-4** Relay is identical except the 24VDC is polarity sensitive. **SAE PN#**



- Uses UL Recognized Components

**ISO 9001
REGISTERED
COMPANY**



Space Age Electronics, Inc.
www.1sae.com
800.486.1723 voice
508.485.0966 direct
508.485.4740 fax



RIC Series Relays (1 - 4)

The RIC Series is ideal for applications where remote relays are required for control or status feedback. They are suitable for use with HVAC, temperature control, fire alarms, security, energy management and lighting control systems.

The RIC Series Relay Modules are multi-voltage devices providing 10 Amp resistive dry form C contacts. These relays may be energized by one of three input voltages: 24VAC, 24VDC or 115VAC. A red LED is provided which when illuminated, indicates the relay coil is energized on the RIC-1 and RIC-2 only.

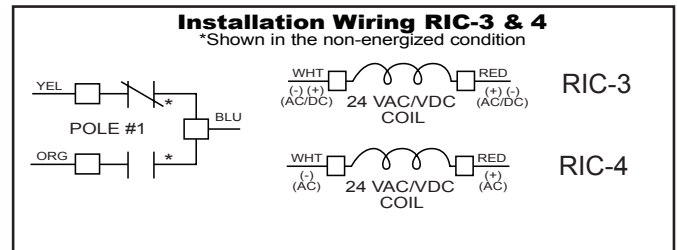
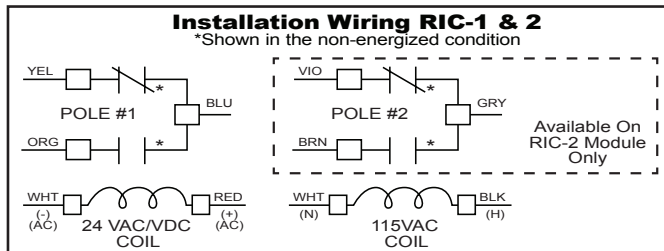
The RIC-3 and RIC-4 have a 2 - 3 Second "drop out" delay that allows the relay to remain actuated on dirty power or if a pulsed input is supplied.

To mount the RIC Series module, simply push the self-clinching spud through a 1/2" (12.7mm) knockout on a junction box and connect via the 12" long "flying" leads.

Standard Features:

- 10 Amp resistive dry form C contacts
- Coil input voltages: 24VAC, 24VDC, or 115VAC
- Contains a red LED which illuminates when the coil is energized (RIC 1 & 2 only)
- Wire nuts included for installation
- UL listed, file # S3403
- 12" wire leads
- Sturdy full plastic enclosure

Model Number	RIC-1	RIC-2	RIC-3	RIC-4
Power Requirements	24VAC, 24VDC, 115VAC	24VAC, 24VDC, 115VAC	24VAC, 24VDC (non-polarized)	24VAC, 24VDC (polarized)
Polarized	No	No	No	Yes (DC Only)
Energized LED Indication	Yes	Yes	No	No
Coil Requirements				
@24VDC	18mA	18mA	32mA	32mA
@24VAC	39mA	39mA	41mA	41mA
@115VAC	26mA	26mA	NA	NA
Delay upon De-Energization	No	No	2 - 3 Seconds	2 - 3 Seconds
Contact Configuration	SPDT	DPDT	SPDT	SPDT
Contact Ratings				
@28VDC	7Amp Resistive	7Amp Resistive	7Amp Resistive	7Amp Resistive
@115VAC	10Amp Resistive / 0.35PF Inductive	10Amp Resistive / 0.35PF Inductive	10Amp Resistive / 0.35PF Inductive	10Amp Resistive / 0.35PF Inductive
Wiring Leads	6 "Flying Leads" 12" - 18 AWG Wire Nuts Provided	6 "Flying Leads" 12" - 18 AWG Wire Nuts Provided	7 "Flying Leads" 12" - 18 AWG Wire Nuts Provided	7 "Flying Leads" 12" - 18 AWG Wire Nuts Provided
Ambient Temperature @85% RH, Non-Condensing	32°F to 120°F 0°C to 40°C	32°F to 120°F 0°C to 40°C	NA NA	NA NA
Ambient Temperature @93% RH, Non-Condensing	NA NA	NA NA	32°F to 120°F 0°C to 40°C	32°F to 120°F 0°C to 40°C
Mounting	Spud Mounting through 1/2" Knockout	Spud Mounting through 1/2" Knockout	Spud Mounting through 1/2" Knockout	Spud Mounting through 1/2" Knockout
Dimensions	2.5" H x 1.75" W x 1.3" D	2.5" H x 1.75" W x 1.3" D	2.5" H x 1.75" W x 1.3" D	2.5" H x 1.75" W x 1.3" D
Listings and Approvals				
UL	UOXX / 7.S3403	UOXX / 7.S3403	UOXX / 7.S3403	UOXX / 7.S3403
MEA	73-92-E Vol. 23	73-92-E Vol. 23	73-92-E Vol. 23	73-92-E Vol. 23
CSFM	7300-1004:101	7300-1004:101	7300-1004:101	7300-1004:101



Ordering Information:

Part #	Description
SSU-RIC-1	RIC-1 10 Amp Relay SPDT
SSU-RIC-2	RIC-2 10 Amp Relay DPDT
SSU-RIC-3	RIC-3 10 Amp Relay SPDT
SSU-RIC-4	RIC-4 10 Amp Relay SPDT



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508.485.0966 direct
508.485.4740 fax

No Excuses, Just Solutions!

This document is subject to change without notice, see doc #ED0479 for legal disclaimer

STI STOPPER® II

Protective Cover To Help Stop Malicious and Accidental False Fire Alarms

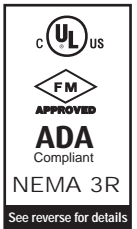
This unique and patented device has been helping stop false fire alarms around the world for more than 25 years, without restricting legitimate alarms. It offers excellent protection against physical damage (both accidental and intentional), dust and grime as well as severe environments inside and out. It is ideal for schools, colleges, hospitals, nursing homes, stores, hotels and public buildings of almost every kind where there is a threat of false fire alarms.

How It Works

Stopper II consists of a clear, tamperproof, super tough polycarbonate shield and frame that fits over a manual pull station. When lifted to gain access to the actual alarm, it sounds a piercing self-contained 95 dB or 105 dB warning horn (at one foot). Immediate attention is drawn to the area and a prankster will either run or be caught. The cover is connected to the frame by a cable. When the cover is lifted, it drops off of the frame and a horn will sound (models with horn). Horn will sound until the cover is snapped back onto the frame or for the life of the battery.



STI-1100



Features

- Proven effective for more than 25 years in helping stop false fire alarms without restricting legitimate alarms.
- Lifetime guarantee against breakage of the polycarbonate housing in normal use (one year on electronic components).
- Can be used as a guard against physical damage to a manual pull station, with or without the optional warning horn.
- Cover is UV-stabilized.
- Optional horn has choice of 95 dB or 105 dB at one foot.
- Standard red units have "In Case of Fire..." label unless specified no label or custom label (charge for custom label).
- Horn housing available in red, blue, green or yellow with optional custom labeling.
- When covering a pull station outside, UL requires stations to be listed for outdoor use.
- UL Listed to U.S. and Canadian safety standards (also for custom labeling).
- Larger sizes and surface mounted pull stations accommodated with STI-3100 conduit spacer.
- Polycarbonate rated -40° to 120°F (-40° to 49°C).
- Weather models have closed cell gaskets.
- Power source is 9 VDC alkaline battery included on standard Stopper II (remote powered unit is available).
- "RC" models include one form "C" dry relay contact and is capable of operating from 9-24 VDC remote power or internal 9 VDC battery power.
- Not just for pull stations, this cover can also help protect other devices such as EPO's, call boxes, telephones and emergency shutdowns just by changing the color and messaging.
- With backplate and gaskets, UL Listed to NEMA 3R Standards.



Safety Technology International, Inc.

2306 Airport Road • Waterford, Michigan 48327-1209

Phone: 248-673-9898 • Fax: 248-673-1246 • Toll Free: 800-888-4784 • E-mail: info@sti-usa.com • Web: www.sti-usa.com

Europe Branch Office • Unit 49G Pipers Road • Park Farm Industrial Estate • Redditch • Worcestershire • B98 0HU • England

Tel: 44 (0) 1527 520 999 • Fax: 44 (0) 1527 501 999 • Freephone: 0800 085 1678 (UK only) • E-mail: info@sti-europe.com • Web: www.sti-europe.com

STI STOPPER® II

Dimensions and Technical Information

Models Available

Stopper II Models Indoor Use:

- STI-1100** With horn for flush mount
- STI-1100RC*** With horn and relay flush mount
- STI-1130** With horn and spacer
- STI-1130RC*** With horn and relay with spacer
- STI-1200** Without horn flush mount
- STI-1230** STI-1200 with spacer

Weather Stopper® with gaskets (Indoor/Outdoor rated):

- STI-1150** Stopper II with horn flush mount (indoor/outdoor rated)
- STI-1150RC*** Stopper II with horn and relay flush mount (indoor/outdoor rated)
- STI-1155** Stopper II with horn and spacer (indoor/outdoor rated)
- STI-1155RC*** Stopper II with horn, relay and spacer (indoor/outdoor rated)
- STI-1250** STI-1200 flush mount and gasket
- STI-3150** STI-1200 with spacer and gaskets

Accessories:

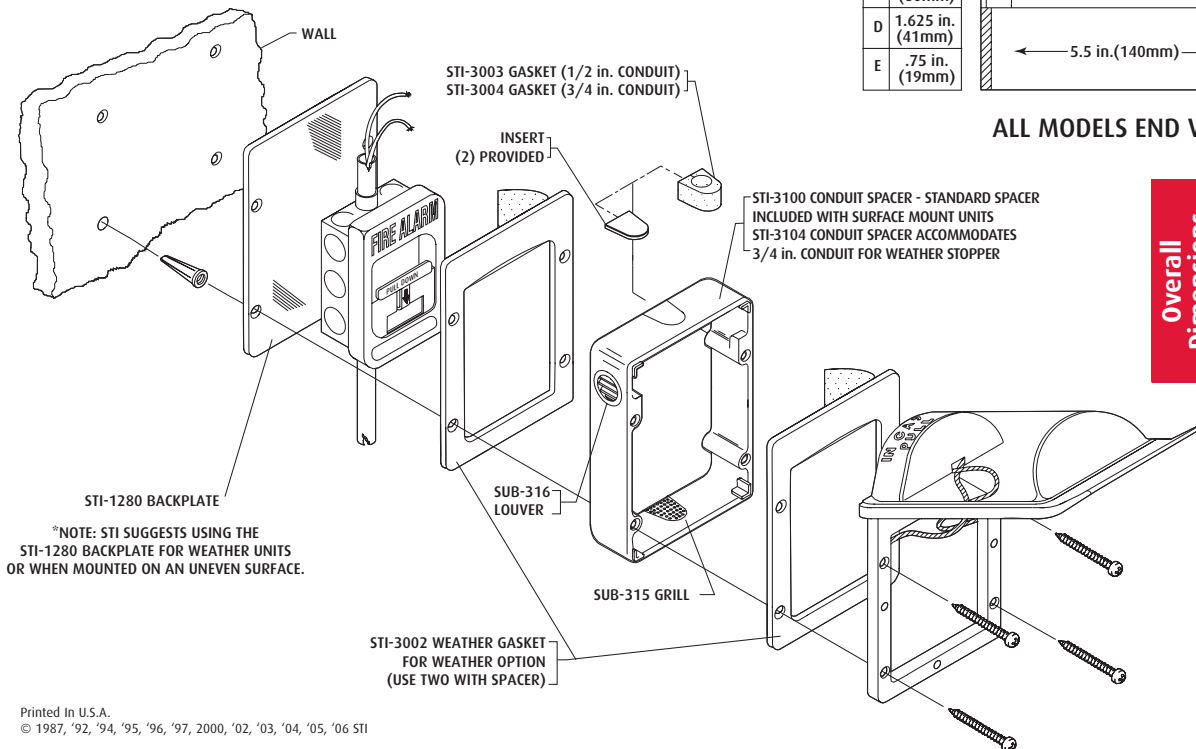
- STI-3100** 2" conduit spacer with 1/2" conduit entry (no gaskets included)
- STI-3104** 2" conduit spacer with 3/4" conduit entry (includes one 3/4" conduit entry gasket)
- STI-1102** Replacement horn for cover with alarm
- Custom-LBL** Custom text message for horn housing

Important Notice

Stopper II is intended to be used in areas where the incidence of false fire alarms from manual pull stations is high or has proven to be a serious problem. Any disadvantage of this device is more than balanced when one considers the consequences of false fire alarms, especially if fire service personnel and equipment are responding to a false fire alarm when they are needed for a real fire somewhere else. Add to this the disruption to the facility when false alarms occur. If you have, or may have, a problem with false fire alarms or physical/weather damage to your fire alarm activation devices, the Stopper II could prove invaluable.

***WARNING:** ⚠ For RC models: UL Listing does not permit relay contacts to connect to the fire alarm or a life safety function. The power supply for horns, according to UL Listing, cannot be connected to a UL Listed fire alarm system. For electrical specifications see install book. RC models contain one set of Form "C" dry contacts. Contacts rated 30 VAC/VDC 1 amp.

NOTE: End user must verify the alarm and battery every six months and replace battery annually or as required.



Approvals

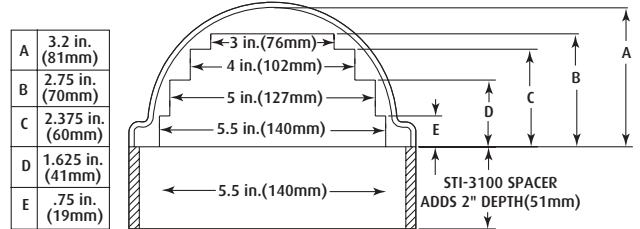
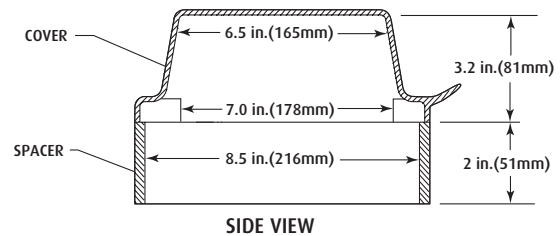
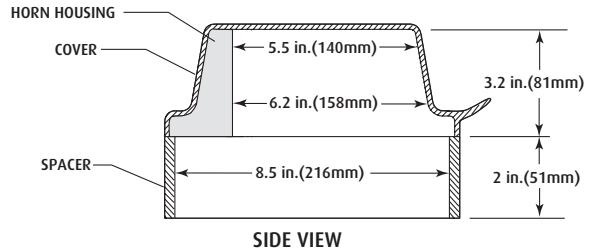
TESTING

It has been tested and approved or listed by:

- UL/cUL Listed No. S2466
- For fire alarm applications, UL38 requires outdoor listed stations for outdoor use
- Factory Mutual No. OG6A2.AY (STI-1100 and STI-1130 only)
- State of California (obtain local fire marshal approval)
- NEMA 3R Rated (only for Stopper II models with backplate and gaskets)
- MEA 49-00-E (STI-1200)
- ADA Compliant (UL Certified No. S2466)

PATENTS

- United States No. 4267549, Canada No. 1147828



Overall Dimensions

Flush models:
7.2W x 10.2H x 3.3D in.
(183 x 259 x 84mm)

Surface models:
7.2W x 10.2H x 5.5D in.
(183 x 259 x 140mm)

NO EXCUSES!

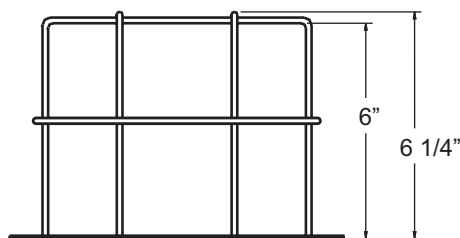
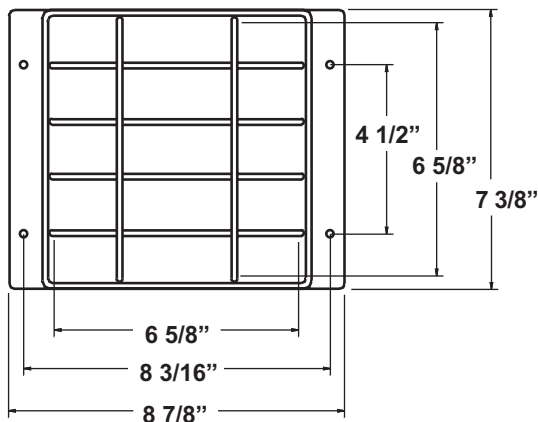


Horn Strobe Guard

The HSG Horn Strobe Guard is specifically designed to mount over audible, visual or combination appliances (i.e. horn/strobe). It assists in protecting the device from accidental blows and deterring vandalism in public areas.

The HSG's design provides maximum strength, air flow and visibility and mounts easily for new installation or retrofit. Constructed of heavy gauge tempered steel rod and designed to minimize interference with the operation of the device.

Dimensions:



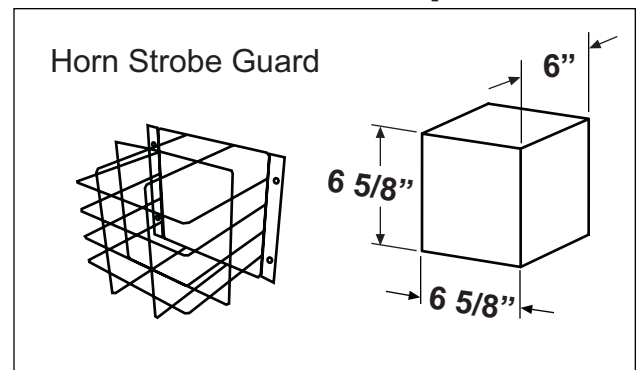
Standard Features:

- Heavy 7 gauge welded steel wire cage construction
- High aesthetic nickel chrome finish
- Overall dimensions: 8 7/8" wide x 7 3/8" high x 6 1/4" deep

Ordering Information:

Part #	Description
SSU03503	HSG Horn Strobe Guard - chrome

Usable Interior Space



ISO9001
REGISTERED



Integration Accessories

Space Age Electronics, Inc.
406 Lincoln Street
Marlboro, MA 01752-2195
www.1sae.com
800.486.1723—voice
508.485.0966
508.485.4740—fax



System Current Draw

E3 Series Control Panel with Broadband

Total Standby		0.484 A		Total Alarm		5.320 A		
Device	Standby Current				Alarm Current			
	Qty		Draw	Standby	Qty		Draw	Alarm
1. System Device								
Intel. Loop Interface, Main Board (ILI-MB-E3)	1	x	0.08100	0.08100	1	x	0.15000	0.15000
Intel. Loop Interface Supplement Board (ILI-S-E3)	0	x	0.08100		1	x	0.15000	0.15000
7100 Panel, 2 SLC	0	x	0.06500		0	x	0.08500	
7100 Panel, 2 SLC with DACT	0	x	0.08500		0	x	0.10500	
2. E3 Optional Modules								
LCD Display & Switch Control (LCD-E3)	1	x	0.02400	0.02400	1	x	0.02800	0.02800
ARCNET Repeater (RPT-E3)	0	x	0.01300		0	x	0.01300	
Digital Communicator (DACT-E3)	1	x	0.01800	0.01800	1	x	0.01800	0.01800
Optional Remote Serial Annunciator (LCD-7100)	0	x	0.05000		0	x	0.07500	
Network LCD Annunciator (NGA)	0	x	0.20000		0	x	0.20000	
Auxiliary Switch Sub-Assembly (ASM-16)	1	x	0.01100	0.01100	1	x	0.01100	0.01100
Remote LED Driver Module (ANU-48)	0	x	0.01100		0	x	0.01100	
3. 7100 Optional Modules								
Printer Transient Module (PTRM)	0	x	0.02000		0	x	0.02000	
Remote LED Driver Module (LDM-7100)	0	x	0.03500		0	x	0.20000	
Class A Option Module (CAOM)	0	x	0.00100		0	x	0.00100	
Municipal Circuit Option Module (MCOM)	0	x	0.00100		0	x	0.00100	
4. INI-VGC Command Center								
Intel. Network Command Center (INI-VGC)	0	x	0.15000		0	x	0.15000	
Addressable Switch Sub-assembly (ASM-16)	0	x	0.01100		0	x	0.01100	
Voice Paging Microphone (Microphone)	1	x	0.00100	0.00100	1	x	0.00100	0.00100
Firefighter's Telephone (Handset)	0	x	0.02000		0	x	0.02000	
Addressable Output Module-Telephone (AOM-TEL)	0	x	0.00200		0	x	0.00650	
5. INI-VGX Voice Gateway								
Intel. Network Voice Gateway (INI-VGX)	1	x	0.15000	0.15000	1	x	0.15000	0.15000
INX Power Supply Sub-Assembly (PM-9)	0	x	0.05000		0	x	0.05000	
Amplifier Sub-assembly, 50 watt (AM-50)	2	x	0.08600	0.17200	2	x	2.20600	4.41200
Addressable Output Module-Signal (AOM-2SF)	0	x	0.00200		0	x	0.00650	
Addressable Output Module-Telephone (AOM-TEL)	0	x	0.00200		0	x	0.00650	
Addressable Output Module-Audio (AOM-MUX)	0	x	0.00200		0	x	0.00650	
6. INI-VGE Command Center Voice Gateway								
Intel. Network Command Voice Gateway (INI-VGE)	0	x	0.15000		0	x	0.15000	
Addressable Switch Sub-assembly (ASM-16)	0	x	0.01100		0	x	0.01100	
Voice Paging Microphone (Microphone)	0	x	0.00100		0	x	0.00100	
Firefighter's Telephone (Handset)	0	x	0.02000		0	x	0.02000	
Addressable Output Module-Signal (AOM-2SF)	0	x	0.00200		0	x	0.00650	
Addressable Output Module-Telephone (AOM-TEL)	0	x	0.00200		0	x	0.00650	
Addressable Output Module-Audio (AOM-MUX)	0	x	0.00200		0	x	0.00650	
7. Smoke Detectors/Modules								
Smoke Detector	29	x	0.000340	0.009860	29	x	0.000000	0.000000
Pull	15	x	0.000400	0.006000	15	x	0.000000	0.000000
PID 95, PID-95P	10	x	0.000800	0.008000	10	x	0.000000	0.000000
Heat	1	x	0.000250	0.000250	1	x	0.000000	0.000000
XP95 PD Duct Smoke	5	x	0.000340	0.000000	5	x	0.000000	0.000000
RCE 95 Relay	6	x	0.000500	0.003000	6	x	0.000000	0.000000
	0	x	0.000000		0	x	0.000000	
	0	x	0.000000		0	x	0.000000	
	0	x	0.000000		0	x	0.000000	
	0	x	0.000000		0	x	0.000000	
8. Notification Appliances								
Booster Trip	1	x	0.000000	0.000000	1	x	0.400000	0.400000
	0	x	0.000000		0	x	0.000000	
	0	x	0.000000		0	x	0.000000	
	0	x	0.000000		0	x	0.000000	
	0	x	0.000000		0	x	0.000000	
	0	x	0.000000		0	x	0.000000	
	0	x	0.000000		0	x	0.000000	
	0	x	0.000000		0	x	0.000000	
	0	x	0.000000		0	x	0.000000	
	0	x	0.000000		0	x	0.000000	
Total Standby Load:			0.484 A	Total Alarm Load:			5.320 A	



System Power Requirements

E3 Fire Alarm Control Panel with Broadband

Protected Premises:	<u>Ocean Ave School</u>	Date:	<u>9/1/2009</u>
Address:			
City:	<u>Portland</u>	State:	<u>Me</u>
		Zip:	
Prepared By:	<u>RB ALLEN</u>	Phone:	
Address:		Email:	
City:		State:	
		Zip:	

Secondary Load Requirements

14.48 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
Secondary Standby Load 0.484 A	x	Required Standby Time	
		24 hours	11.62
Secondary Alarm Load 5.320 A	x	Required Alarm Time (hours)	
		0.084 hours	0.45
Total Secondary Load			12.07
Derating factor			x 1.20
Secondary Load Requirements			14.48 AH

Battery Selection

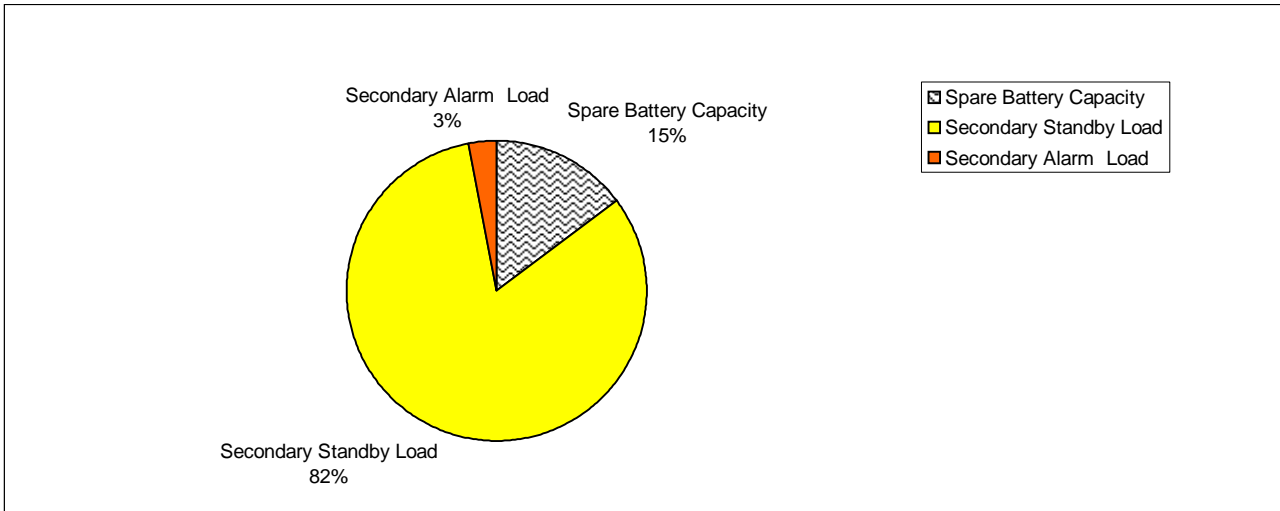
17.00 Amp Hours

Select batteries from the list

17 AH Battery (12 volt)

Battery Distribution Chart

Shows amp-hour distribution of your selections.



Spare Battery Capacity	2.52 Amp Hours
Secondary Standby Load	13.94 Amp Hours
Secondary Alarm Load	0.54 Amp Hours

System Current Draw

FF8 Strobe Booster Power Supply page 1 of 2

To add devices, copy and insert one of the rows in the table and enter the device current values.

Select devices using the "Qty" column.
 Use yellow cells to enter quantities and current values.
 To show selected devices, select "Show Selected Devices"
 To clear selected devices, select "Clear Quantities".

Total Current Draws

Current values based on the selections below.

Standby	0.030 A
Alarm	6.185 A

Device	Qty	Standby Current		Alarm Current		
		Draw	Standby	Qty	Draw	Alarm
Common Control	1	0.03000	0.03000	1	0.05500	0.05500
External Load, A+, A-, 24VDC	0	x 0.00000		0	x 0.00000	
NAC 1 and 2 -- Class B	1	x 0.00000	0.00000	1	x 0.06500	0.06500
Class B (NAC 1 and NAC 2 available)						
NAC 1 device load	1	x 0.00000	0.00000	1	x 1.50000	1.50000
NAC 2 device load	1	x 0.00000	0.00000	1	x 1.50000	1.50000
NAC 3 and 4 -- Class B	1	x 0.00000	0.00000	1	x 0.06500	0.06500
Class B (NAC 3 and NAC 4 available)						
NAC 3 device load	1	x 0.00000	0.00000	1	x 1.50000	1.50000
NAC 4 device load	1	x 0.00000	0.00000	1	x 1.50000	1.50000
Devices not listed	0	x 0.00000		0	x 0.00000	
Devices not listed	0	x 0.00000		0	x 0.00000	
Devices not listed	0	x 0.00000		0	x 0.00000	
Devices not listed	0	x 0.00000		0	x 0.00000	
Total Standby Load:			0.030	Total Alarm Load:		6.185

Show Selected Devices

Show All Devices

Clear Quantities

Class A (NAC 1 available)
 Class B (NAC 1 and NAC 2 available)
 Class A Adapter (NAC 1 and NAC 2 available)

Class A (NAC 3 available)
 Class B (NAC 3 and NAC 4 available)
 Class A Adapter (NAC 3 and NAC 4 available)

FF8 Strobe Booster Power Supply page 2 of 2
 Gamewell FireForce 8 Notification Appliance Circuit Expander

AC Branch Current Requirements **#REF!** Amps @ 120 VAC [Check](#)
 Current required by source to power the fire alarm system.

Primary Alarm Load **6.19** Amps [Check](#)
 Current load on the primary power supply during alarm conditions.

Secondary Load Requirements **2.19** Amp Hours [Check](#)
 Total Secondary Load from the calculation table below.

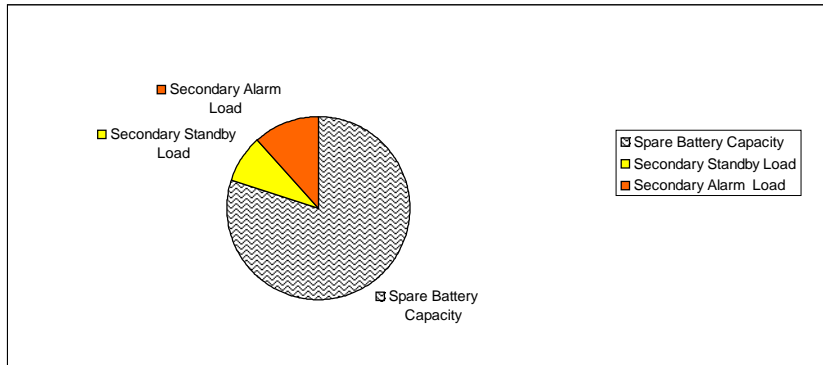
Current Draw		Time (hours)	Total (AH)
Secondary Standby Load 0.030 A	x	Required Standby Time	
		24 hours	0.72
Secondary Alarm Load 6.185 A	x	Required Alarm Time (hours)	
		0.167 hours	1.03
Total Secondary Load			1.75
Derating factor			x 1.25
Secondary Load Requirements			2.19 AH

Battery Selection **7** Amp Hours [Check](#)
 Select batteries from the list below.

7.0 AH B12V7 Battery (12 volt)

- Two Four (two 12VDC sets in parallel)

Battery Distribution Chart
 Shows amp-hour distribution of your selections.



**Gamewell Fire Alarm System
Ocean Ave School Portland Maine**

Sequence of Alarm Operation Narrative

1. The operation of a manual station or activation of any automatic alarm initiating device (smoke, heat, waterflow, sprinkler preaction or deluge water flow, kitchen hood fire suppression initiation) shall automatically:

- a. Sound all audible devices throughout the building in a synchronized code 3 temporal pattern, except in designated areas of assembly. In areas of assembly, sound 3 repetitions of synchronized code 3 temporal pattern followed by an approved pre-recorded voice evacuation message. Provide for manual voice messaging from the microphones located at the remote annunciator.
- b. Flash all visual signals throughout the building in a synchronized fashion.
- c. Flash an alarm LED and sound an audible signal at the FACP. Upon acknowledgement, the alarm LED shall light steadily and the audible shall silence. Subsequent alarms shall re-initiate this sequence.
- d. Initiate the transmission of an alarm to the Municipal Fire Station via the auto dialer.
- e. Visually indicate the alarm initiating device type and location via the LCD display located at the FACP.
- f. Visually annunciate on all system annunciator the initiating device type and location.
- g. Activate the outside weatherproof beacon.
- h. Record the alarm in the event history log,
- i. Alarm by an elevator lobby smoke detector shall recall all elevators that serve the lobby to the ground floor. If the alarm initiates on the ground floor, return the elevator to the floor above or as directed by the local authority having jurisdiction.
- j. Shunt trip hydraulic elevator power supply where associated with initiating device is mounted adjacent to sprinkler head.
- k. Activate prioritized output relays to shut down affected supply and return air handlers, and initiate stairwell and elevator pressurization or smoke exhaust fans as required.
- l. Operate prioritized outputs to release all magnetically held smoke doors throughout the building.
- m. activate emergency shutoff for gas valve

2. The operation of a sprinkler tamper, a duct smoke detector, kitchen fire suppression supervisories shall automatically:

- a. Flash a supervisory LED and sound an audible signal at the FACP. Upon acknowledgement, the supervisory LED shall light steadily and the audible shall silence. Subsequent supervisory shall re-initiate this sequence.
- b. Visually indicate the supervisory initiating device type and location via the LCD display located at the FACP.
- c. Initiate signal to central station via digital dialer

3. The report of a power failure, ground fault or open circuit shall automatically:

- a. Flash a trouble LED and sound an audible signal at the FACP. Upon acknowledgement, the trouble LED shall light steadily and audible shall silence. Subsequent trouble shall re-initiate this sequence.
- b. Visually indicate the trouble initiating device type and location via the LCD display located at the FACP.

SYSTEM NAC CIRCUIT CALCULATIONS

24VDC Notification Appliance Circuits

Note:

Nominal Notification Appliance Circuit (NAC) voltage is 24Vdc.
Minimum voltage at any device shall be 20Vdc.

WIRE RESISTANCE CHART	
WIRE SIZE	OHMS/1000 FT.
18 AWG	13
16 AWG	8
14 AWG	5.2
12 AWG	3.2

Using Ohm's Law, the NAC current requirement (total Current of all installed appliances) and the allowable voltage drop of 4 volts, the maximum allowable NAC circuit resistance is determined as follows:

$$R_{max} = \frac{V_{drop}}{I_{max}}$$

Where: R_{max} = Maximum allowable NAC resistance
 V_{drop} = Maximum allowable voltage drop at last device
 I_{max} = Maximum NAC current

As an example, the R_{max} of a fully loaded (2.5Amp) NAC is calculated as:

$$R_{max} = \frac{V_{drop}}{I_{max}} \quad \text{or} \quad R_{max} = \frac{4}{2.5} = 1.6\Omega$$

Knowing R_{max} , the maximum allowable length (D) of a circuit using any listed wire guage pair may be calculated using the following formula and the Resistance Chart above.

As an example, using 14guage wire:

$$D = \frac{R_{max}}{R/1000'} \times 1000 \quad \text{or} \quad D = \frac{1.6}{5.2} \times 1000 = 307.69 \text{ Ft.}$$

This table may be used as a guide in determining maximum circuit lengths under various conditions.

Final wire circuit lengths and voltage drop calculations can be recorded at project completion.

NAC Distance vs Load/Wire Guage Table				
NAC Current	18 AWG D (Ft)	16 AWG D (Ft)	14 AWG D (Ft)	12 AWG D (Ft)
.75 Amp	410.26	666.67	1025.64	1666.67
1.0 Amp	307.69	500.00	769.23	1250.00
2.0 Amp	153.85	250.00	384.62	625.00
2.5 Amp	123.08	200.00	307.69	500.00
3.0 Amp	102.56	166.67	256.41	416.67

Strobe circuit calculator			
Booster Box room number			111
Booster Box number			1
Booster Box cir # (1 thru 4)			1
Booster circuit number from 1 line drawings			#1
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
6	15 cd	0.041	0.246
1	30 cd	0.062	0.062
4	75 cd	0.116	0.464
0	110 cd	0.155	0
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			0.772
Total allowed length #16 wire 647.6683938			
Total allowed length #14 wire 996.4129135			
Total allowed length #12 wire 1619.170984			

Strobe circuit calculator			
Booster Box room number			136
Booster Box number			2
Booster Box cir # (1 thru 4)			1
Booster circuit number from 1 line drawings			#5
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
7	15 cd	0.041	0.287
2	30 cd	0.062	0.124
3	75 cd	0.116	0.348
1	110 cd	0.155	0.155
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			0.914
Total allowed length #16 wire 547.0459519			
Total allowed length #14 wire 841.6091567			
Total allowed length #12 wire 1367.61488			

Strobe circuit calculator			
Booster Box room number			111
Booster Box number			1
Booster Box cir # (1 thru 4)			2
Booster circuit number from 1 line drawings			#2
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
2	15 cd	0.041	0.082
3	30 cd	0.062	0.186
4	75 cd	0.116	0.464
2	110 cd	0.155	0.31
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			1.042
Total allowed length #16 wire 479.8464491			
Total allowed length #14 wire 738.2253064			
Total allowed length #12 wire 1199.616123			

Strobe circuit calculator			
Booster Box room number			136
Booster Box number			2
Booster Box cir # (1 thru 4)			2
Booster circuit number from 1 line drawings			#6
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
4	15 cd	0.041	0.164
1	30 cd	0.062	0.062
8	75 cd	0.116	0.928
0	110 cd	0.155	0
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			1.154
Total allowed length #16 wire 433.2755633			
Total allowed length #14 wire 666.5777896			
Total allowed length #12 wire 1083.188908			

Strobe circuit calculator			
Booster Box room number			111
Booster Box number			1
Booster Box cir # (1 thru 4)			3
Booster circuit number from 1 line drawings			#3
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
1	15 cd	0.041	0.041
0	30 cd	0.062	0
2	75 cd	0.116	0.232
0	110 cd	0.155	0
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			0.273
Total allowed length #16 wire 1831.501832			
Total allowed length #14 wire 2817.695125			
Total allowed length #12 wire 4578.754579			

Strobe circuit calculator			
Booster Box room number			136
Booster Box number			2
Booster Box cir # (1 thru 4)			3
Booster circuit number from 1 line drawings			#7
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
5	15 cd	0.041	0.205
2	30 cd	0.062	0.124
5	75 cd	0.116	0.58
0	110 cd	0.155	0
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			0.909
Total allowed length #16 wire 550.0550055			
Total allowed length #14 wire 846.23847			
Total allowed length #12 wire 1375.137514			

Strobe circuit calculator			
Booster Box room number			111
Booster Box number			1
Booster Box cir # (1 thru 4)			4
Booster circuit number from 1 line drawings			#4
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
12	15 cd	0.041	0.492
0	30 cd	0.062	0
2	75 cd	0.116	0.232
0	110 cd	0.155	0
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			0.724
Total allowed length #16 wire 690.6077348			
Total allowed length #14 wire 1062.473438			
Total allowed length #12 wire 1726.519337			

Strobe circuit calculator			
Booster Box room number			136
Booster Box number			2
Booster Box cir # (1 thru 4)			4
Booster circuit number from 1 line drawings			#8
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
5	15 cd	0.041	0.205
3	30 cd	0.062	0.186
4	75 cd	0.116	0.464
0	110 cd	0.155	0
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			0.855
Total allowed length #16 wire 584.7953216			
Total allowed length #14 wire 899.6851102			
Total allowed length #12 wire 1461.988304			

Strobe circuit calculator			
Booster Box room number	214H		
Booster Box number	3		
Booster Box cir # (1 thru 4)	1		
Booster circuit number from 1 line drawings	#9		
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
7	15 cd	0.041	0.287
0	30 cd	0.062	0
4	75 cd	0.116	0.464
0	110 cd	0.155	0
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			0.751
Total allowed length #16 wire 665.7789614			
Total allowed length #14 wire 1024.275325			
Total allowed length #12 wire 1664.447403			

Strobe circuit calculator			
Booster Box room number	214H		
Booster Box number	3		
Booster Box cir # (1 thru 4)	2		
Booster circuit number from 1 line drawings	#10		
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
5	15 cd	0.041	0.205
1	30 cd	0.062	0.062
4	75 cd	0.116	0.464
1	110 cd	0.155	0.155
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			0.886
Total allowed length #16 wire 564.3340858			
Total allowed length #14 wire 868.2062858			
Total allowed length #12 wire 1410.835214			

Strobe circuit calculator			
Booster Box room number	214H		
Booster Box number	3		
Booster Box cir # (1 thru 4)	3		
Booster circuit number from 1 line drawings	#11		
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
5	15 cd	0.041	0.205
1	30 cd	0.062	0.062
2	75 cd	0.116	0.232
1	110 cd	0.155	0.155
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			0.654
Total allowed length #16 wire 764.5259939			
Total allowed length #14 wire 1176.193837			
Total allowed length #12 wire 1911.314985			

Strobe circuit calculator			
Booster Box room number	214H		
Booster Box number	3		
Booster Box cir # (1 thru 4)	4		
Booster circuit number from 1 line drawings	#12		
Qty of strobes	Strobe cd	amps per strobe	total amps
0	1575 cd	0.064	0
4	15 cd	0.041	0.164
0	30 cd	0.062	0
4	75 cd	0.116	0.464
0	110 cd	0.155	0
0	135 cd	0.195	0
0	185 cd	0.27	0
Total booster cir amp draw			0.628
Total allowed length #16 wire 796.1783439			
Total allowed length #14 wire 1224.88976			
Total allowed length #12 wire 1990.44586			

System Speaker Circuit Calculations

25 or 70 Volt NAC Wire Lengths

The maximum allowable wire length is the farthest distance that a pair of wires can extend from the amplifier to the last speaker on the notification circuit without losing more than 0.5 dB of signal. Calculating the maximum allowable wire length using this method ensures that each speaker operates at its full potential.

Actual wire lengths can be recorded and submitted at project completion

The factors that influence the maximum allowable wire length are as follows:

- Wire Size
- Output signal level of the amplifier driving the circuit
- Number of speakers on the circuit

To calculate the maximum allowable wire length for a 0.5dB loss, use the following formula:

$$\text{Max Length} = \frac{59.25 \times \text{Amplifier Output}^2}{\text{Wire resistance} \times \text{Circuit Load}}$$

- Where amplifier output is the signal level in Vrms supplied by the amplifier
- Circuit load is the total watts required by the circuit
- Wire resistance is the resistance rating of the wires per 1000' ft. pair

EXAMPLE

The maximum length of a speaker circuit using 14 AWG and having a load of 40 Speakers tapped at 1 Watt at 25V would be as follows:

$$178 \text{ Ft.} = \frac{59.25 \times 25^2}{5.2 \times 40} = \frac{37,031}{208}$$

Assumed 25V system

Speaker ckt # from 1-li #1		
number of spks at tapped wattage	tapped	total watts
0	0.25	0
36	0.50	18
	0.75	0
	1.00	0
	1.25	0
	1.50	0
Total tapped watts		18
Max length with #16		257.1615
Max length with #14		395.633
Max length with #12		642.9036

Assumed 25V system

Speaker ckt # from 1-li #2		
number of spks at tapped wattage	tapped	total watts
0	0.25	0
38	0.50	19
	0.75	0
	1.00	0
	1.25	0
	1.50	0
Total tapped watts		19
Max length with #16		243.63
Max length with #14		374.81
Max length with #12		609.07

Assumed 25V system

Speaker ckt # from 1-li #3		
number of spks at tapped wattage	tapped	total watts
0	0.25	0
12	0.50	6
	0.75	0
12	1.00	12
	1.25	0
	1.50	0
Total tapped watts		18
Max length with #16		257.1615
Max length with #14		395.633
Max length with #12		642.9036