



Mammoth Fire Alarms

Incorporated

176 Walker Street Lowell, MA 01854

FIRE ALARM SYSTEM SUBMITTAL

LOCATION:

**MAINE COLLEGE OF ARTS
522 CONGRESS STREET
PORTLAND, ME.**

INSTALLER:

**MANCINI ELECTRIC
PORTLAND, ME.**

September 21, 2016

“Servicing the installer before and after the installation.”

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FIRE ALARM SYSTEM
FOR
MAINE COLLEGE OF ARTS
522 CONGRESS STREET
PORTLAND, ME.

MANCINI ELECTRIC

PAGE	QTY	PART #	DESCRIPTION
1-12	1	FX/2000MNS	NETWORK FACP 1/SLC 4/NAC 12A
1-12	1	QMB-5000N	AUDIO CARD CAGE (HOLDS 4QAA'S)
1-12	1	BBX-FXMNSR	COMPLETE ENCLOSURE (FX2000MNS)
1-12	1	DSPL-420	MODULAR LCD DISPLAY (4 LINES/20 CHAR EA)
1-12	1	FNC-2000	FIRE NETWORK CONTROL BOARD
1-12	1	ALCN-792M	NETWORK ANALOG LOOP MODULE
1-12	1	ANC-5000	AUDIO NETWORK CONTROL BOARD
1-12	4	QAA/5415/25	4 15 WATT CKT AMPLIFIER 25 VOLT
1-12	4	QAA/4CLA	CLASS A CONVERTER BOARD FOR QAA/5415
1-12	1	PS-2040	PANEL/AUDIO POWER SUPPLY TRANSFORMER
13-14	3	INX-10A	10 AMP SIGNAL BOOSTER 5 CLASS A/B CKTS
15-16	6	PS12120	12 AH 12V SEALED BATTERY
15-16	2	PS12350	35 AH 12V SEALED BATTERY
17-19	3		BATTERY CALCULATION SHEETS FOR INX-10A
20	1		STANDBY BATTERY CALCULATION SHEET
21-22	1	MS-710APU	ADDRESSABLE DBL ACTN PULL STAT W/BRK ROD
23-24	8	MIX-2251AP	ANALOG PHOTO DETECTOR
25-26	26	MIX-5251AP	ANALOG THERMAL SENSOR FIXED TEMP 135
25-26	34	B210LP	ANALOG BASE FOR SYSTEM SENSOR DEVICES
27-30	15	STR15	WALL MOUNT RED STROBE 15CD
27-30	4	STR30	WALL MOUNT RED STROBE 30CD
31	1	3150BEP/WM	EXPLOSION PROOF RED STROBE WALL MOUNT
32-35	1	E50H-24MCW-FR75	RED HIGH FID SPEAKER STROBE 75CD
32-35	66	E50H-24MCW-FW15	WHITE SPEAKER STROBE 15CD
32-35	21	E50H-24MCW-FW30	WHITE SPEAKER STROBE 30CD
32-35	58	E50H-24MCW-FW75	WHITE SPEAKER STROBE 75CD
32-35	2	E50H-24MCW-FW110	WHITE SPEAKER STROBE 110CD
32-35	1	E60H-24MCC-FW75	WHITE HIGH FID CLNG SPKR STRB 75CD
36-39	1	ET70WP2475WFR	SPEAKER STROBE 75CD WEATHERPROOF
36-39	1	IOB/R	SURFACE/WEATHERPROOF RED BACK BOX
40-42	1		ADDRESS DIRECTORY
43	1		CONTRACTOR'S CHECKLIST
44	1		WIRING ESTIMATOR
45	1		MAMMOTH FIRE ALARMS, INC. POLICIES




Description

Mircom's Flex-Net™ Mass Notification System (MNS) is designed to provide real-time information to all building occupants or personnel in the immediate vicinity of a building during emergency situations. The system allows for real-time information regarding the type of emergency as well as safely instructing people on where to go and what to do.

Mircom's Flex-Net MNS system offers building owners and facility managers with a simple solution to their safety requirements. The system is designed to automatically change as emergency situations change. In addition it is able to manage all mass notification functions, allow responding authorities the ability to override fire alarm notification, issue external voice announcements, and simultaneously distribute different emergency communications on any geographic scale required.

Designed with the industry's most advanced hardware and software, Mircom's Flex-Net MNS system provides reliable and clear audible and visual notification, live voice instruction and Internet based text messaging. In addition it can be easily integrated to other public safety systems for emergency communications to wide area networks.

Mircom's Flex-Net MNS is UL 2572 listed for Mass Notification and complies with NFPA 72-2010 and UFC/DOD standards for emergency communications systems. Based on the proven and reliable Flex-Net Intelligent Network Fire Alarm Control Panel and Audio System the Flex-Net MNS provides a rich feature set that allows for flexibility in any environment while reducing the installation and maintenance burden with an easy to install, modular setup.

Features

Mass Notification

- Storage and activation of pre-programmed intelligible voice messages
- Supervision of all Mass Notification (MNS) equipment
- Auxiliary inputs for general paging, background music, or other non-emergency functions
- Tamper resistant enclosures with password-protected features for enhanced access control
- One-Way and Two-Way EVACS capability
- Automatic response to MNS inputs
- Local and remote controls and indicators
- Synchronized evacuation zone signalling
- Voice message priority according to risk analysis and emergency response plan
- Visible notification and strobes support
- Local Operating Console (FX-LOC) that provides on-site monitoring/control of voice and notification appliances
- Large LCD displays
- Fire Alarm Control Panel Interface (FACI)
- Building Management System Interface (BMSI)
- Autonomous Control Unit providing real time status of all FX-LOC units
- UL 2572 Listed for Mass Notification

Fire Alarm Control

- Base system is equipped with one Intelligent Signaling Line Circuit (SLC). Expandable up to 21 SLCs.
- Each SLC is capable of supporting 99 Analog Sensors and 99 Addressable Modules which can be wired in Style 6 or 7 (Class A) or Style 4 (Class B)
- Four Style Z/Y (Class A/B) Notification Appliance Circuits rated at 1.7 Amps each
- Built-in Ethernet port
- Remote diagnostics via a built-in web server

Audio Control

- Multi-channel operation
- Control and Audio multiplex over one digital link
- Distributed audio
- 5 hard wire fire fighter telephone channels that can be expanded with intelligent fire phone modules
- 25 or 70 volt system
- Multiple amplifier sizes
- Max. of 180 watts per Integrated Fire & Audio panel
- Expansion to three 360 watts expansion cabinets for a total of 1260 watts of power per node

Network Features

- Up to 63 nodes
- Fully integrated digital network audio and control over a single pair of copper wire or fibre optic cable
- Supports over 5,000 points per node
- Supports over 250,000 points on a single network
- Peer-to-peer network communications
- Style 4 (Class B) or Style 6 or 7 (Class A) wiring configuration



S7010



S7010



7165-1477:111

NYC Fire Dept.
COA# 6064

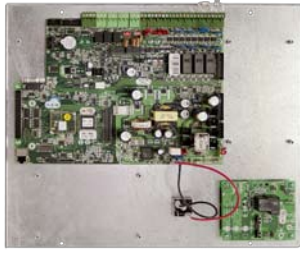
Factory Mutual
(Pending)

CATALOG NUMBER 5945

NOT TO BE USED FOR INSTALLATION PURPOSES.

Mircom reserves the right to make changes at any time without notice in prices, colours, materials, components, equipment, specifications and models and also to discontinue models.

FX-MNS Mass Notification Control Modules



FX-2000MNS Main Network Board

The FX-2000MNS main network board includes one intelligent Signaling Line Circuit (SLC) and Four Style Z/Y (Class A/B) NAC circuits. The FX-2000MNS has provisions to mount up to 9 internal adder modules and mounts in the BBX-FXMNS enclosure.



QMB-5000N Integrated Audio Network Chassis

The QMB-5000N includes the audio and telephone control which consists of an audio card cage designed for mounting the ANC-5000 Audio Network Controller Module, TNC-5000 Telephone Network Controller Module and up to four QAA style audio amplifiers. The QMB-5000N connects to the FX-2000MNS Network fire alarm main board and mounts in the BBX-FXMNS enclosure.



BBX-FXMNS Enclosure

The BBX-FXMNS enclosure supports the FX-2000MNS Network main board, DSPL-XXXX Main LCD display, QMB-5000N audio card cage, QMP-5101NV Master Paging Microphone and QMT-5302NV Master Telephone Handset. In addition the enclosure provides space for additional external modules and internal lobby control modules. The BBX-FXMNS holds up to 40 AH batteries and is available with white (BBX-FXMNS) or red (BBX-FXMNSR) doors.

BBX-FXMNS Dimensions: 61.5"H x 20"W x 9"D



NOT TO BE USED FOR INSTALLATION PURPOSES.



DSPL-420 Main Display Module

The DSPL-420 Main Display Module provides the FX-MNS with a 4 line by 20 character backlit LCD display, Common Controls buttons and Four Status Queues with selector switches and LEDs for Alarm, Supervisory, Trouble and Monitor. The DSPL-420 occupies one display position in the FX-MNS enclosure.



DSPL-2440 Graphical Main Display Module

The DSPL-2440 Graphical Main Display Module provides the FX-MNS with a 24 line x 40 character backlit LCD display, common controls buttons and four status queues with selector switches and LEDs for Alarm, Supervisory, Trouble and Monitor. The DSPL-2440 occupies one display position in the FX-MNS enclosure.



QMP-5101NV Network Master Paging Control Module

The QMP-5101N Network Master Paging Control Module includes the paging microphone and common control indicators. The QMP-5101NV allows for all call paging or selective paging with the QAZT-5302 Zoned Paging and Telephone Selector Modules. The QMP-5101NV is vertical mount unit that mounts in the BBX-FXMNS enclosure.



QMT-5302NV Network Master Firefighters' Telephone Control Module

The QMT-5302NV includes the Master Telephone Handset and common control indicators. The QMT-5302NV supports the QAZT-5302 Paging and Telephone selector modules. The QMT-5302NV is a vertical mount unit that mounts in the BBX-FXMNS enclosure.

Fire Network Controller Modules



FNC-2000 Fire Network Controller Module

The FNC-2000 provides network capability to the system. One Fire Network Controller Module is required per network node panel. In addition the FNC-2000 provides an interface for adding an optional FOM-2000-SP Fiber Optic Network Adder Module. The FNC-2000 mounts in the FX-MNS.



FOM-2000-SP Fiber Optic Network Adder Module

The FOM-2000-SP Fiber Optic Network Adder Module allows for the use of fiber optic cabling on the system. It seamlessly connects to the interface on the FNC-2000 Fire Alarm Network Controller Module.

Adder Loop Controller Modules



ALCN-792M Quad Loop Controller Module

The ALCN-792M Quad Loop Controller Module provides two Signaling Line Circuits (SLC) to the system consisting of 99 Analog Sensors and 99 Addressable Modules per loop. The ALCN-792M can be expanded with the use of the ALCN-792D Daughter Board Module. The ALCN-792M occupies one module slot.



ALCN-792D Daughter board for Quad Loop Controller Module

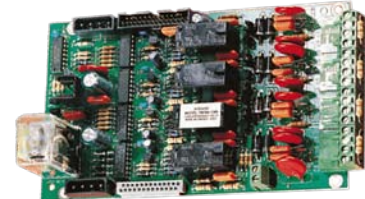
The ALCN-792D Daughter Board provides an additional two SLC when connected to the ALCN-792M Quad Loop Controller Module. The daughter board mounts on top of the ALCN-792M.

Adder Hardware Modules



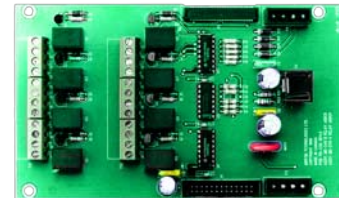
DM-1008A Eight Initiating Circuit Module

The DM-1008A provides 8 Style B (Class B) or 4 Style D (Class A) Initiating Circuits configurable for Alarm, Supervisory or Trouble zones. The DM-1008A occupies one module slot.



SGM-1004A Four Notification Appliance Circuit Module

The SGM-1004A provides 4 Style Z/Y(Class A/B) Notification Appliance Circuits configurable as Silenceable or Non-Silenceable. Each NAC circuit is rated at 1.7 Amps and has individual signal silence inputs (jumper selectable). The SGM-1004A occupies one module slot.



RM-1008A Eight Relay Circuit Module

The RM-1008A provides the system with eight individual configurable relays per module. Each relay provides one Form C contact rated at 28 VDC @1 Amp (resistive load) as well as a Green LED to indicate that the relay is active. The RM-1008A occupies one module slot.

Adder Auxiliary Modules



UDACT-300A Digital Alarm Communicator Module

The UDACT-300A Digital Communicator allows the system to transmit addressable point information to a central station. The UDACT-300A occupies one module slot.



PR-300 Polarity Reversal/City Tie Module

The PR-300 Polarity Reversal/City Tie Module provides the system with a supervised City Tie (24 VDC/200 mA max.) and Polarity Reversal connection (24 VDC (open circuit), 8 mA max. (shorted)). The PR-300 occupies one module slot.

Remote LCD Annunciators



RAXN-LCD Remote LCD Annunciator

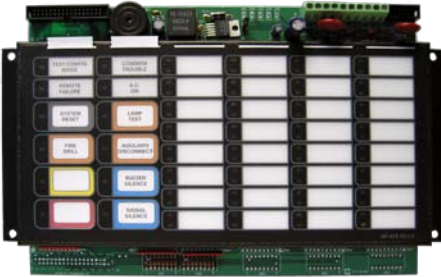
The RAXN-LCD Remote LCD Annunciator is equipped with a 4 line x 20 character back-lit alphanumeric LCD display that provides an exact replica of the main Flex-Net fire alarm control panel display. The RAXN-LCD occupies one display position in the BBX-FXMNS, BB-1000 or BB-5000 Series enclosures.



RAXN-LCDG Remote Graphic LCD Annunciator

The RAXN-LCDG Remote Graphic LCD Annunciator is equipped with a 24 line x 40 character back-lit graphical LCD display that is used to display 9 events per page. Each event is displayed over 2 lines with 40 characters per line allowing emergency information to be displayed in easy to read format. The RAXN-LCDG occupies one display position in the BBX-FXMNS, BB-1000 or BB-5000 Series enclosures.

Remote LED Annunciators



RAM-1032TZ Main Remote LED Annunciator

The RAM-1032TZ Main Remote LED Annunciator provides common annunciator functions and 32 points of LED annunciation. The RAM-1032TZ has indicators for A.C. On, Common Trouble and Signal Silence and controls for System Reset, Lamp Test, Fire Drill, Buzzer Silence and Signal Silence. The RAM-1032TZ occupies one display position in the BBX-FXMNS, BB-1000 or BB-5000 enclosures.



RAX-1048TZ Programmable LED Annunciator Module

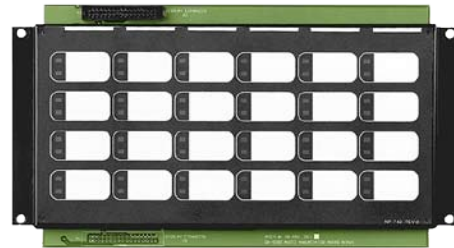
The RAX-1048TZ Programmable LED Annunciator Module provides 48 programmable bi-colored LEDs. The RAX-1048TZ connects to the main panel or either the RAXN-LCD or RAM-1032TZ when mounted remotely. The RAX-1048TZ occupies one display position in the BBX-FXMNS, BB-1000 or BB-5000 Series enclosures.

Programmable Modules



FDX-008 Fan Damper Control Module

The FDX-008 Fan Damper Control Module provides individually programmed circuits which can be used for fan or damper control. The FDX-008 connects to the main panel or the RAXN-LCD and occupies one display position in the BBX-FXMNS, BB-1000 or BB-5000 Series enclosures.



IPS-2424 Programmable Input Switches Module

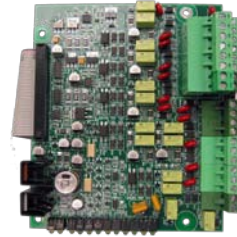
The IPS-2424 provides 24 programmable switches that can be configured for ancillary functions such as zone bypass or added common control functions. The IPS-2424 connects to the main panel or the RAXN-LCD when mounted remotely. The IPS-2424 occupies one display position in the BBX-FXMNS, BB-1000 or BB-5000 Series enclosures.

FX-MNS Audio and Telephone Network Controller Modules



ANC-5000 Audio Network Controller Module

The ANC-5000 provides audio microphone control on the network system. The ANC-5000 mounts on a plate in the QMB-5000N.



TNC-5000 Telephone Network Controller Module

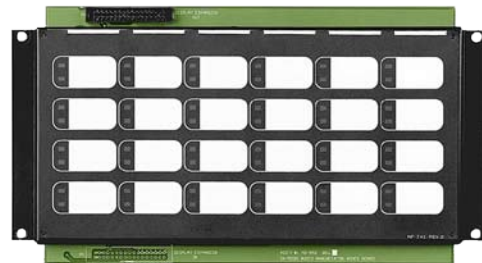
The TNC-5000 provides five hardwired telephone circuits for the local floor panel with the first circuit configurable for the master telephone handset. The TNC-5000 mounts in the QMB-5000N.

Paging Control Modules for Remote Applications



QMP-5101N Network Master Paging Control Module

The QMP-5101N Network Master Paging Control Module includes the paging microphone and common control indicators. The QMP-5101N allows for all call paging or selective paging with the QAZT-5302 Zoned Paging and Telephone Selector Modules. The QMP-5101N occupies one module space in the BB-5000 Series enclosures.



QAZT-5302 Zoned Paging and Telephone Selector Module

The QAZT-5302 Zoned Paging and Telephone Selector Module includes 24 zone selector switches and LEDs. The QAZT-5302 is used with the QMP-5101N Network Master Paging Control module or QMT-5302N Network Master Firefighters' Telephone module. Slide-in labels are provided to label the selector zones. The QAZT-5302 occupies one module space in the BB-1000 or BB-5000 Series enclosures.

Firefighter Telephone Control Modules



QMT-5302N Network Master Firefighters' Telephone Control Module

The QMT-5302N includes the Master Telephone Handset and common control indicators. The QMT-5302N supports the QAZT-5302 Paging and Telephone selector modules. The QMT-5302N occupies one module space in the BB-5000 Series enclosures.

Annunciator/Programmable Module Enclosures

- BB-1001: 9"H x 12.75"W x 1.2"D
- BB-1002: 18"H x 12.75"W x 1.2"D
- BB-1003: 26.4"H x 12.75"W x 1.2"D
- BB-1008: 33"H x 22.5"W x 1.25"D
- BB-1012: 45"H x 22.5"W x 1.25"D

Audio Amplifiers



QAA-5415-70 and QAA-5415-25 Quad 15 Watt Amplifiers

The QAA-5415-70 and QAA-5415-25 consist of four 15 watt supervised paging/speaker circuits which can be wired in Class 'B' (Style 'Y') only. The QAA-5415-70 is a 70 Volt amplifier and the QAA-5415-25 is a 25 Volt amplifier. Both models mount in either the QMB-5000N or QMB-5000B card cage and occupy one amplifier slot.

QAA-5230S-70/25 Dual 30 Watt Amplifier

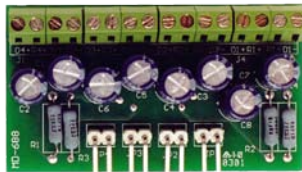
The QAA-5230S-70/25 consists of two 25 or 70 Volt 30 watt amplifiers. Each amplifier has two 15 watt supervised speaker outputs which are used for 'A' 'B' speakers per floor and are wired in Class 'B' (Style 'Y') only. The QAA-5230S-70/25 mounts in either the QMB-5000N or QMB-5000B card cage and occupies one amplifier slot.

QAA-5230-70/25 Dual 30 Watt Amplifier

The QAA-5230-70/25 consists of two 25 or 70 Volt 30 watt supervised paging/speaker circuits which can be wired in Class 'A' (Style 'Z') or Class 'B' (Style 'Y'). The QAA-5230-70/25 mounts in either the QMB-5000N or QMB-5000B card cage and occupies one amplifier slot.

QAA-5160-70/25 60 Watt Amplifier

The QAA-5160-70/25 consists of one 25 or 70 Volt 60 watt supervised paging/speaker circuit which can be wired in Class 'A' (Style 'Z') or Class 'B' (Style 'Y'). The QAA-5160-70/25 mounts in either the QMB-5000N or QMB-5000B card cage and occupies one amplifier slot.



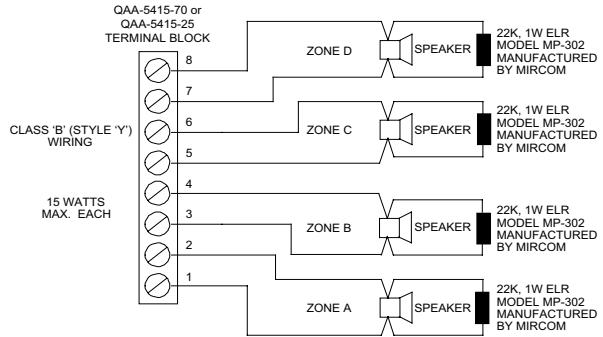
QAA-4CLA Class 'A' (Style 'Z') Converter Module

The QAA-4CLA converts each of the four Class 'B' (Style 'Y') outputs on a QAA-5415-70 or QAA-5415-25 Amplifiers to Class 'A' (Style 'Z'). The module attaches to the bottom of the amplifier. One QAA-4CLA is required for each amplifier.

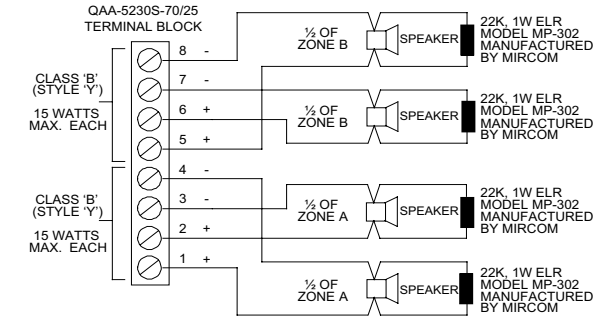
QAA-4CLAS Class 'A' (Style 'Z') Converter Module

The QAA-4CLAS converts each of the four Class 'B' (Style 'Y') outputs on a QAA-5230S-70/25 or QAA-5230S-525-70/25 Amplifier to Class 'A' (Style 'Z'). The module attaches to the bottom of the amplifier. One QAA-4CLAS is required for each amplifier.

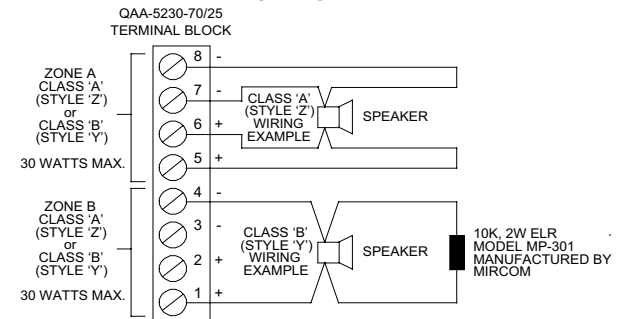
QAA 5415-70 or QAA-5415-25 Wiring Diagram



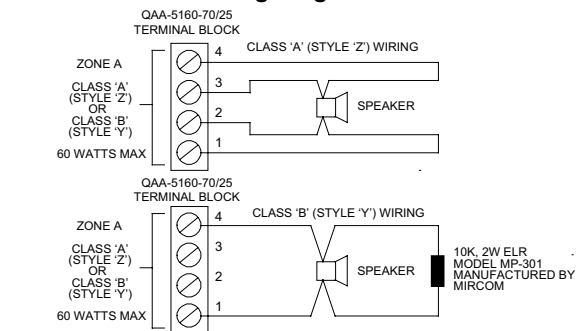
QAA-5230S-70/25 Wiring Diagram



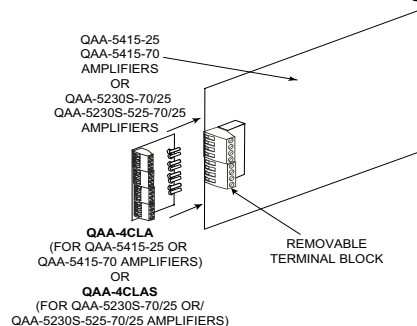
QAA-5230-70/25 Wiring Diagram



QAA-5160-70/25 Wiring Diagram



QAA-4CLA and QAA-4CLAS Connection Diagram



Network System Expansion Enclosures



FX-2009-12N Network Lobby Control Chassis

The FX-2009-12N Network Lobby Control Chassis consists of a base fire alarm panel with one isolated intelligent Signaling Line Circuit (SLC) Style 4, 6 or 7, Four Class A/B NAC circuits, a 4 line by 20 character LCD display, a 16 Zone LED Annunciator and a 12 Amp power supply. The FX-2009-12N has space to mount the FNC-2000 Fire Network Controller Module, ANC-5000 Audio Network Controller Module, TNC-5000 Telephone Network Controller Module and provision to mount up to 4 adder modules. The FX-2009-12N mounts in a BB-5000 Series enclosure and supports Audio Lobby Control modules, Fire Fighter's Lobby Control modules and FX-2000 Internal Annunciator / Programmable modules.



ECX-0012 Expander Chassis

The ECX-0012 Expander Chassis for the FX-2009-12N supports up to 12 adder modules and has space for 2 internal annunciator modules. The ECX-0012 mounts in the BB-5000 series enclosures.



BB-5008/BB-5014 Lobby Enclosures

The BB-5008 and BB-5014 lobby enclosures support the FX-2009-12N Network Lobby Control chassis and provide space for internal lobby control modules. The cabinets hold up to 24 AH batteries. The door and chassis hardware are ordered separately.

BB-5008 Dimensions: 36"H x 30"W x 7"D

BB-5014 Dimensions: 60"H x 30"W x 7"D

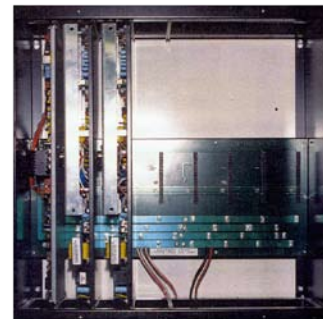


NOT TO BE USED FOR INSTALLATION PURPOSES.



QBB-5001 Audio Backbox

The QBB-5001 holds one QMB-5000B Audio Motherboard and Card Cage, one QPS-5000N Audio Power Supply, one QBC-5000N Audio Battery Charger and up to 40 Ah batteries.



QMB-5000B Audio Motherboard and Card Cage

The QMB-5000B supports 7 QAA style audio amplifiers. The QMB-5000B requires one QPS-5000N Audio Power Supply and one QBC-5000N Audio Battery Charger and mounts in the QBB-5001 Audio Backbox.



QPS-5000N Audio Power Supply

The QPS-5000N supports up to 360 watts and mounts in the QBB-5001 Audio backbox.



QBC-5000N Audio Battery Charger

The QBC-5000N will charge up to 65 Ah batteries and mounts in QBB-5001 Audio Backbox.

Note: The QBB-5001 Audio Backbox will hold up to 40 Ah batteries. Larger batteries will require a BC-160 Battery Cabinet.

Graphics Software



Open Graphic Navigator (OpenGN)

Mircom's Open Graphic Navigator (OpenGN) software is an advanced fire alarm management and warning system that provides building ready monitoring, control and software management solutions that allows a user to monitor remote sites from multiple operator workstations located anywhere in the world.

The OpenGN software is available in two versions: Network (OPENGN-ENT) and Non-Network (OPENGN-MINI) for use with the Mircom FX-2000 and Flex-Net Intelligent Fire Alarm Control panels. In addition Mircom offers the OpenGN Workstation that includes a UL/ULC listed All-in-One PC with an OPENGN-ENT user license.

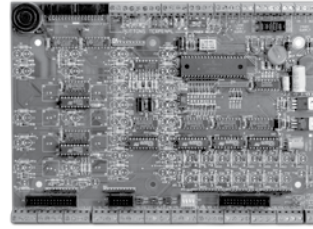
Power Supply Expansion



INX-10AC Internal Booster Power Supply Module

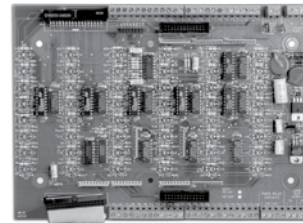
Mircom's INX-10AC is an Intelligent Booster Power Supply that extends the power capabilities of existing notification appliance circuits as well as provide power for other ancillary devices. The INX-10AC has 10 amps of power and mounts inside the BB-5014 enclosure.

Graphic Annunciator Driver Modules



MGD-32 Master Graphic Driver Module

The MGD-32 Master Graphic Driver Module provides common control inputs for the common control switches such as System Reset, Signal Silence, Auxiliary Disconnect, Fire Drill, Lamp Test, Acknowledge and General Alarm. The MGD-32 can also drive up to 32 supervised outputs. These output points are capable of driving LEDs or incandescent lamps. The MGD-32 mounts in a graphic annunciator wallbox or in the BB-5000 enclosures. An external power supply is required for incandescent lamps and lamp test.



AGD-048 Adder Graphic Driver Module

The AGD-048 Adder Graphic Driver Module can be used with the MGD-32 to support an additional 48 supervised outputs. The AGD-048 mounts in a graphic annunciator wallbox or in the BB-5000 enclosures.

Mounting Brackets



M500-BK9 Module Mounting Bracket

The M500-BK9 Module Mounting Bracket mounts inside the BB-5000 Series enclosures and provides space to mount up to nine M500 style intelligent modules.



M500-BK2 Module Mounting Bracket

The M500-BK2 Module Mounting Bracket mounts inside the BBX-FXMNS enclosure and provides space to mount up to two M500 style intelligent modules.

Local Operating Console Components



FX-LOC Lobby Operating Console

The FX-LOC Local Operating Console provides on-site monitoring/control of voice and notification appliances for Mass Notification applications. The FX-LOC enclosure supports one RAXN-LCD remote LCD annunciator, a QMP-5101N master paging microphone and one FDS-008 selector control panel (with an IM-10(A) monitor module mounted to the back) in a small compact enclosure. (Ordered separately)

Add suffix "R" for red door.

Dimensions: 25"H x 15"W x 5.5"D



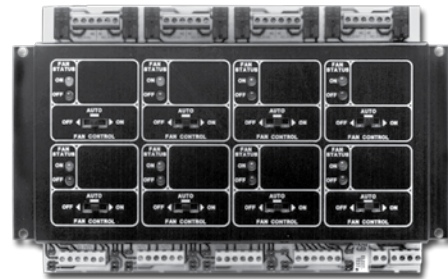
QMP-5101N Network Master Paging Control Module

The QMP-5101N Network Master Paging Control Module includes the paging microphone and common control indicators. The QMP-5101N interconnects between other QMP microphone modules at the FX-MNS and within the associated FX-LOC units. The QMP-5101N occupies one module space in the FX-LOC enclosure.



RAXN-LCD Remote LCD Annunciator

The RAXN-LCD Remote LCD Annunciator is equipped with a 4 line x 20 character back-lit alphanumeric LCD display that provides the exact functions as the FX-MNS main display. The RAXN-LCD occupies one display position in the FX-LOC enclosure.



FDS-008 Selector Control Panel

The FDS-008 Selector Control Panel provides eight audio area selection switches. The FDS-008 is power connected from the RAXN-LCD and connected within the FX-LOC to the IM-10(A) Ten Input Monitor Module. The FDS-008 occupies one display position in the FX-LOC enclosure.



IM-10(A) Ten Input Monitor Module

The IM-10(A) Ten Input Monitor module provides eight relay contact connections from the FDS-008 Selector Control Panel. In addition it provides an SLC connection the FX-MNS, if required. The IM-10(A) mounts behind the FDS-008 module in the FX-LOC enclosure.

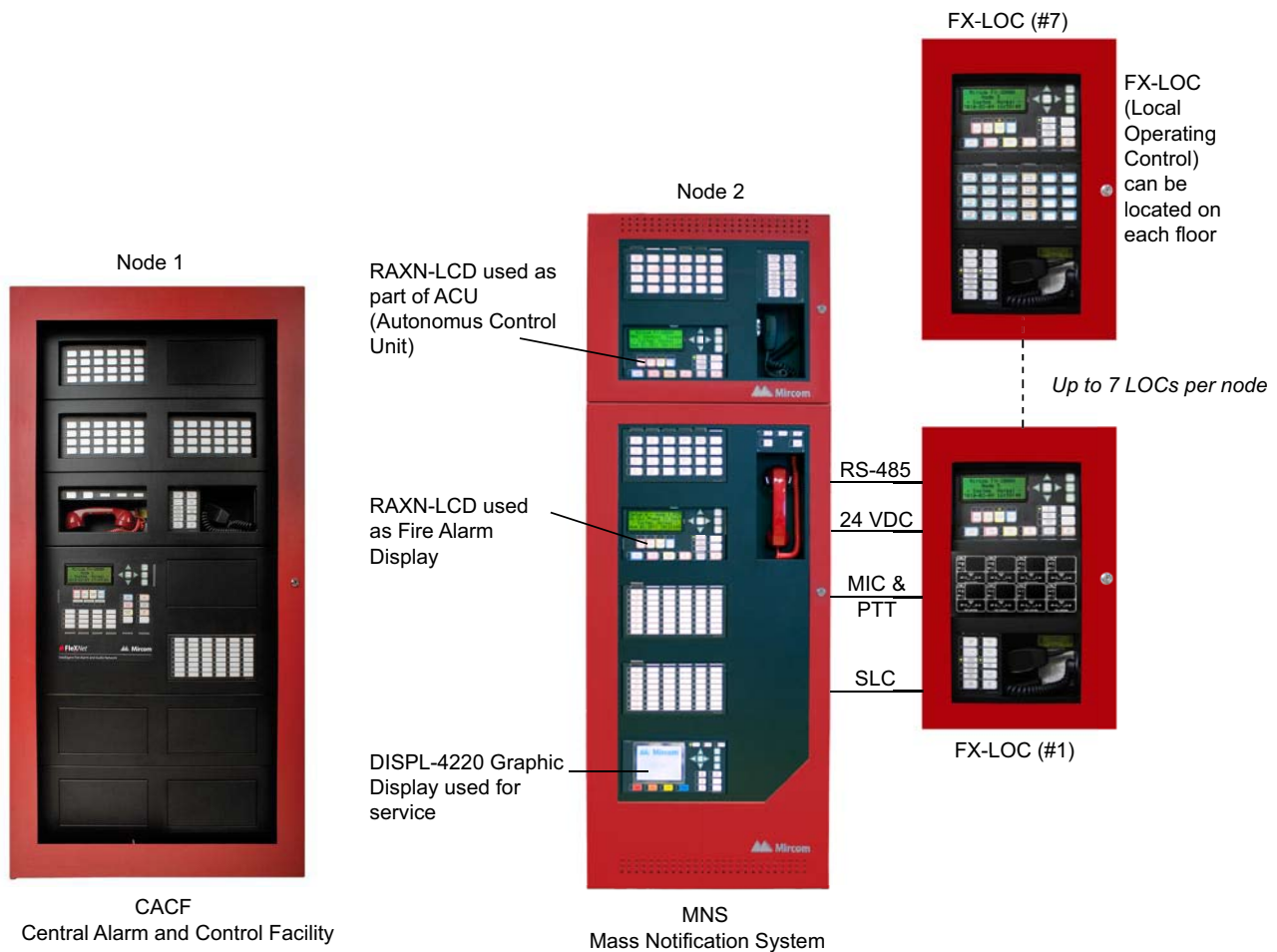
Mircom Mass Notification System

Mircom's Flex-Net Intelligent Fire Alarm & Emergency Communications Network is comprised of an Autonomous Control Unit (MNS-ACU) and the FX-LOC Local Operating Console that complies with the UL 2572 requirements for Mass Notification Systems (MNS).

The FX-LOC Local Operating Console along with the Flex-Net Network Fire Alarm provides compliance with the UL 2572 requirements for Mass Notification Systems (MNS).

The MNS-ACU Autonomous Control Unit is comprised of a BBX-FXMNS enclosure that includes a RAXN-LCD Annunciator and a Master Microphone to provide emergency audio. In addition the MNS-ACU is equipped with another RAXN-LCD which annunciates the fire alarm system events, a Master Telephone for emergency use and a DSPL-420 or DSPL-2440 LCD display which annunciates all system messages (Fire Alarm and Mass Notification). A maximum of seven FX-LOC units can be connected to a Flex-Net MNS node.

Sample In-Building Mass Notification System Configuration



Current Consumption

Model Number	Description	Standby (Amps)	Alarm (Amps)
Fire Alarm Components			
FX-2000MNS	Main Network Board	0.310	0.733
ALCN-792M	Dual Analog Loops	0.130	0.145
ALCN-792M/D	Quad Analog Loops	0.130	0.145
FNC-2000	Fire Network Controller Module	0.190	0.190
FOM-2000-SP	Fiber Optics Module	0.015	0.015
DM-1008A	8 Initiating Circuit Module	0.080	1 zone active: 0.125 2 zone active: 0.170 4 zone active: 0.275 6 zone active: 0.370 8 zone active: 0.465
SGM-1004A	4 Notification Appliance Circuit Module	0.060	0.258
RM-1008A	8 Relay Circuit Module	0.025	0.150
FDX-008/KI	Fan Damper Control Module	0.015	0.035
DSPL-420	Narrow Display	0.024	0.025
DSPL-2440	Graphic Display	0.029	0.035
UDACT-300A	Dialer Module	0.045	0.120
PR-300	City Tie Module	0.035	0.300
FDS-008	Selection Control Panel for MNS	0.024	112mA
RAX-1048(TZ)	Adder Annunciator Chassis	0.022	1 zone active: 0.026 2 zone active: 0.030 3 zone active: 0.035 4 zone active: 0.039 48 zone active: 0.262
RAM-1032(TZ)	Adder Annunciator Chassis	0.050	32 zone active: 0.300
AGD-048	Adder Graphic Driver Board	0.035	# of LEDs x 4mA
IPS-2424	Programmable Input Switches Module	0.010	0.015
Audio Components			
ANC-5000	Audio Network Controller Module	0.255	0.265
TNC-5000	Telephone Network Controller Module	0.195	0.215
QAA-5160-70/25	1 Zone 60W Amplifier	0.055	0.350
QAA-5230-70/25	2 Zone 30W Amplifier	0.055	0.350
QAA-5230S-70/25	2 Zone 30W Amplifier (split)	0.055	0.350
QAA-5415-70	4 Zone 15W Amplifier, 70V	0.055	0.350
QAA-5415-25	4 Zone 15W Amplifier, 25V	0.055	0.350
QMP-5101N	Master Paging Module	0.004	0.012
QMP-5101NV	Vertical Master Paging Module	0.004	0.012
QMT-5302N	Master Telephone Module	0.003	0.013
QMT-5302NV	Vertical Master Telephone Module	0.003	0.013
QAZT-5302	Paging/Telephone Zone Module	0.010	0.015

Electrical Specifications

Fire Alarm Primary Input Power	120V 60Hz / 240V, 50Hz 4 Amps / 2 Amp (primary)
Power Supply Ratings	12 Amps. max. (secondary)
For NAC Circuits	24VDC unfiltered, 10 Amps. max.
Battery Type	24VDC, Gel-Cell/Sealed Lead-Acid
Battery Charging Capability	17-65 AH batteries
Audio Primary Input Power (QPS-5000N)	120 VAC, 60Hz / 240 VAC, 50Hz 12 Amps

Dimensions for Annunciator Module Enclosures

Model	Dimensions
BB-1001	9"H x 12.75"W x 1.2"D
BB-1002	18"H x 12.75"W x 1.2"D
BB-1003	26.4"H x 12.75"W x 1.2"D
BB-1008	33"H x 22.5"W x 1.25"D
BB-1012	45"H x 22.5"W x 1.25"D

Ordering Information

Model	Description
Mass Notification Control Panels	
FX-2000MNS	FX-MNS Main Network Board with 12 Amp power supply and 120/240V transformer. Mounts in the BBX-FXMNS enclosure.
QMB-5000N	Integrated Audio Network Control Chassis. Mounts in the BBX-FXMNS enclosure.
PS-2040	FXMNS Network Fire Alarm and Audio Power Supply (120/240V)
BBX-FXMNS	Black backbox enclosure with white doors for FX-2000MNS. Add suffix 'R' for red doors.
DSPL-420	4 x 20 Main LCD Display for FX-2000MNS
DSPL-2440	Graphical Main Display for FX-2000MNS
FX-LOC	Local Operating Console enclosure for FXMNS. Add suffix "R" for red door.
Paging/Telephone Modules	
QMP-5101NV	Master Network Paging Control Module for FXMNS, Vertical Mount. For use in BBX-FXMNS.
QMT-5302NV	Master Network Telephone Module for FXMNS, Vertical Mount. For use in BBX-FXMNS.
QMP-5101N	Master Network Paging Control Module
QMT-5302N	Master Network Telephone Control Module
QAZT-5302	Paging and Telephone Selector Panel
Network Controller Modules	
FNC-2000	Fire Network Controller Module
FOM-2000-SP	Fiber Optic Network Adder Module
ANC-5000	Audio Network Controller Module
TNC-5000	Telephone Network Controller Module
Adder Loop Controller Modules	
ALCN-792M	Network Quad Loop Controller Module
ALCN-792D	Daughter board for ALC-792M Quad Loop Controller Module
Adder Hardwire Modules	
DM-1008A	Eight Class B (Style B) or 4 Class A (Style D) Initiating Circuit Module
SGM-1004A	Four Class A/B (Style Z/Y) Notification Appliance Circuit Module (Rated at 1.7 Amps per circuit)
RM-1008A	Eight Relay Circuit Module c/w eight form C relays (Rated for 28 VDC @ 1 Amp max. per relay)
Adder Auxiliary Modules	
UDACT-300A	Digital Alarm Communicator Transmitter/Dialer Module
PR-300	Polarity Reversal and City Tie Module
Remote Annunciators	
RAXN-LCD	Remote Network LCD Annunciator c/w 4 x 20 LCD display
RAXN-LCDG	Remote Graphic LCD Annunciator
RAM-1032TZ	Main Remote LED Annunciator c/w 32 Bi-Colored LEDs
RAX-1048TZ	Programmable LED Annunciator Module c/w 48 Bi-Coloured LEDs and 48 Trouble LEDs
Programmable Modules	
IPS-2424	Programmable Input Switches Module c/w 24 selector switches and 24 bi-coloured LEDs
FDX-008	Fan Damper Control Module

Graphic Annunciator Driver Modules	
MGD-32	Main Graphic Driver Module c/w 32 Supervised Outputs
AGD-048	Adder Graphic Driver Module c/w 48 Supervised Outputs
Audio Amplifiers	
QAA-5415-70	70 Volt Quad 15 Watt Amplifier
QAA-5415-25	25 Volt Quad 15 Watt Amplifier
QAA-4CLA	Class 'A' (Style 'Z') Converter Module for QAA-5415-25 and QAA-5415-70 Amplifiers
QAA-5230S-70/25	25 or 70 Volt Dual 30 Watt Amplifier split 'A' 'B' circuits per floor
QAA-4CLAS	Class 'A' (Style 'Z') Converter Module for QAA-5230S-70/25 and QAA-5230S-525-70/25 Amplifiers
QAA-5230-70/25	25 or 70 Volt Dual 30 Watt Amplifier
QAA-5160-70/25	25 or 70 Volt 60 Watt Amplifier
Graphics Software	
OPENGN-MINI	Open Graphic Navigator Software, Mini Edition for standalone Flex-Net Systems
OPENGN-ENT	Open Graphic Navigator Software, Enterprise Edition for Flex-Net Network Systems
OPENGN-CTRL	Open Graphic Navigator Workstation c/w Enterprise Edition and UL/ULC listed computer
Power Supply Module	
INX-10AC	Internal Booster Power Supply Module
Fire & Audio Expansion Components and Enclosures	
FX-2009-12	Large Network Main Chassis. Mounts in the BB-5000 series enclosures.
ECX-0012	Expander Chassis for the FX-2009-12N. Mounts in the BB-5000 series enclosures.
BB-5008	Lobby Control Wallbox Enclosure. Supports 8 Module Footprints.
DOX-5008M	White Metal Door for BB-5008. Add suffix 'R' for red enclosure.
CCH-5008	Custom Mounting Kit for BB-5008. One required per BB-5008.
BB-5014	Lobby Control Wallbox Enclosure. Supports 14 Module Footprints.
DOX-5014M	White Metal Door for BB-5014. Add suffix 'R' for red enclosure.
CCH-5014	Custom Mounting Kit for BB-5014. One required per BB-5014.
QBB-5001	Audio Backbox
QMB-5000B	Audio Motherboard and Card Cage
QPS-5000N	Audio Power Supply (120/240V)
QBC-5000N	Audio Battery Charger
Mounting Brackets	
M500-BK-9	M500 Series Mounting Bracket. Holds up to 9 modules in a BB-5000 Series enclosure.
M500-BK-2	M500 Series Mounting Bracket. Holds up to 2 modules in a BBX-FXMNS enclosure.
FX-LOC Components	
FDS-008	Selector Control Panel
IM-10	Ten Input Monitor Module (Add suffix "A" for ULC model.)

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CAT. 5945
Rev. 1



Description

Mircom's INX-10A is an Intelligent NAC expander/power supply that is compatible with the FX-2000 and FleX-Net Series Intelligent fire alarm control panels. Available in a 10 Amp configuration, the INX-10A can extend the power capabilities of existing notification appliance circuits as well as provide power for other ancillary devices. In addition, the INX-10A has the ability to operate with any UL/ULC Listed 24 VDC conventional fire alarm control panel to provide Notification Appliance Circuit expansion.

The INX-10A is equipped with five individual Class B (Style Y) or Class A (Style Z) output circuits that can be independently configured for NAC operation or auxiliary power. The INX-10A provides the option of configuring all five circuits as an output to provide general purpose power. In addition output circuits four and five can be configured to provide auxiliary power for four-wire detectors or door holders.

Each output circuit is rated for 2.5 Amps. When configured for NAC operation the outputs can be set for Steady, Temporal Code, California Code or March Time. In addition the output circuits have field selectable built-in strobe and horn synchronization protocols to support Amseco, System Sensor, Wheelock and Gentex devices, eliminating the need for additional external synchronization modules.

Features

- 10 Amp output
- 120 / 240V operation
- Compatible with Mircom's FX-2000 and FleX-Net Series Intelligent Fire Alarm Control panels
- Easily configured using DIP switches
- One isolated input from the host panel
- Five Class B (Style Y) or Class A (Style Z) synchronized output circuits
- DC regulated outputs
- Configurable AC Power fail delay
- Ground fault enable or disable
- Option available on configuration to enable or disable the battery charger on activation
- From 7 to 15 Address functions (Combination of inputs and outputs, depending on the application)
- Outputs individually controllable
- Separate Relay for Ground Fault and Common Trouble available on terminals
- Horn/Strobe synchronization protocols include Amseco, Gentex, System Sensor and Wheelock
- Two-wire horn/strobe Sync Mode allows audible notification appliances (horns) to be silenced while visual notification appliances (strobes) continue to operate
- Audible signals may be configured for Steady, Temporal Code, California Code and March Time
- Output circuits four and five can be configured to provide auxiliary power for four-wire detectors or door holders.
- Canadian two stage operation
- Output fault notification to fire alarm control panel
- Ability to sync outputs for multiple INX-10A units
- 2.5 Amp max. current per output
- 1.7 Amp auxiliary power output
- Built-in charger for sealed lead acid or gel type batteries
- Unit includes power supply, charger, red enclosure, cam lock, transformer and battery leads
- Compatible with any UL/ULC listed 24VDC conventional fire alarm control panel to provide Notification Appliance Circuit expansion



S5434



S5434



7315-1477:0163

CATALOG NUMBER 5321

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Mircom reserves the right to make changes at any time without notice in prices, colours, materials, components, equipment, specifications and models and also to discontinue models.

Modes of Operation

Intelligent NAC Expander (INX) Modes

The INX-10A features three modes of NAC Expander operation:

- INX Mode with Internal Sync
- INX Mode with External Sync
- INX Mode with Redundant Input

Input Mode with Internal Sync

In this mode all signal and sync strobe rates are produced in the INX-10A.

INX Mode with External Sync

When one of the Sync Inputs is activated, the INX-10A outputs follow the signal pattern of the Sync Input. The INX-10A must be configured as a slave to operate in this mode.

INX Mode with Redundant Input

The system continuously monitors the SLC loop. If there is no activity for a notable time, an SLC trouble is generated. While the SLC trouble is active, if either of the Sync Inputs are activated then all NAC outputs follow.

Power Supply Modes

In addition to the NAC expander modes, some or all of the NAC outputs on the INX-10A can be configured for the following power supply modes of operation:

- NAC Outputs as Power Supply Outputs
- NAC Outputs for Door Release
- NAC Outputs for 4-Wire Smoke Supply

NAC Outputs as Power Supply Outputs

This mode allows any NAC output to be configured as a power supply. The SLC and Sync inputs are ignored for the power supply outputs.

NAC Outputs for Door Release

This mode allows NAC circuits 4 and/or 5 to provide power for door holders.

NAC Outputs for 4-Wire Smoke Supply

This mode allows NAC circuits 4 and/or 5 to provide auxiliary power for 4-wire smoke detectors.

Specifications

Dimensions	
20"H x 14½"W x 4½"D	
AC Line Voltage	
120V 60Hz / 240V, 50Hz 2 Amps / 1 Amp (primary)	
NAC Circuits	
24VDC regulated, Power Limited 10A Total, 2.5A maximum per circuit	
Battery	
24VDC, Gel-Cell/Sealed Lead-Acid	
Charging Capability	
Up to 40 AH batteries	
Current Consumption	
Standby	200 mA
Alarm	350 mA

Common Indicators	
Power On Addressable Line Activity/Alarm Common Trouble Battery Charger/Trouble CPU Fail	
Trouble LEDs	
Auxiliary Output Trouble Synchronized Output Trouble Ground Fault Trouble	
Other LEDs	
Addressable (SLC) Loop Indicators (3 LEDs) Synchronized Input Indicators (2 LEDs) Synchronized Output Indicators (2 LEDs) Trouble LED Indicator Alarm Relay Indicator	
Controls	
Acknowledge Button Configuration DIP Switches	

Ordering Information

Model	Description
INX-10A	Intelligent NAC Expander, 10 Amps c/w backbox and red door
FA-300-TRB	Flush Trim Ring, Black

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CAT. 5321
Rev. 1



BATTERIES

The rechargeable batteries are of sealed lead calcium maintenance-free construction with a fully gelled electrolyte in a polypropylene case. These batteries will not leak or spill even if left upside down for extended periods of time.

ELECTRICAL SPECIFICATIONS

Nominal voltage	12 volts
Charging voltage	
Float	13.5 - 13.8 VDC
Cycle	14.4 - 14.8 VDC
Operating Temp. Range	
Discharge	-76° F to +122° F (-60° C to +50° C)
Charge	-4° F to +122° F (-20° C to +50° C)



PS12120



PS1270



PS12180



PS12350, PS12550

BATTERY FEATURES

- Long Life
- Completely Sealed
- Charge and Discharge in any Position
- Low Self Discharge
- Maintenance Free

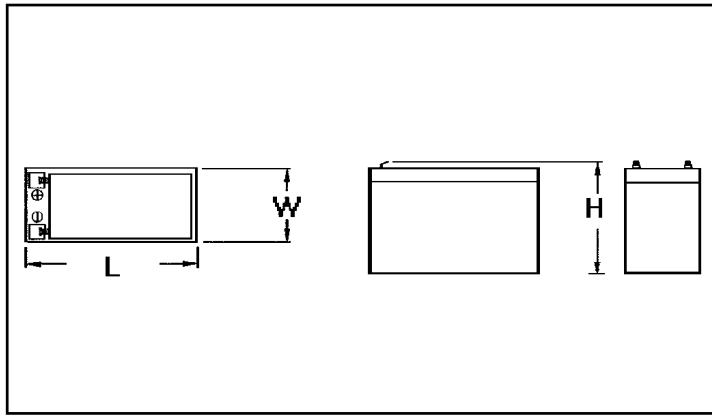
SPECIFICATIONS

Model	Capacity (20 hr. rate)	Terminal Type	Dimensions	Weight
PS1270	7 AH	Faston tab “.187” series	5.11 cm L x 10.03 cm H x 6.6 cm W 5.95” L x 3.95” H x 2.6” W	5.75 lbs. (2.61 kg)
PS12120	12 AH	Faston tab “.250” series	12.48 mm L x 5.97 mm H x 4.72 mm W 5.94” L x 3.70” H x 3.98” W	9.33 lbs. (4.24 kg)
PS12180	18 AH	Terminal posts w/5 mm nut & bolt connectors	18.11 cm L x 16.69 cm H x 7.59 cm W 7.13” L x 6.57” H x 2.99” W	13.2 lbs. (5.99 kg)
PS12350	35 AH	“L” blade w/.64 mm hole	19.69 cm L x 18.54 cm H x 12.95 cm W 7.75” L x 7.3” H x 5.1” W	24 lbs. (10.89 kg)
PS12550	55 AH	“L” blade w/6.4 mm hole at negative, 8.9 mm sq. cutout at positive	26.04 cm L x 22.23 cm H x 17.27 cm W 10.25” L x 8.75” H x 6.8” W	39 lbs. (17.69 kg)

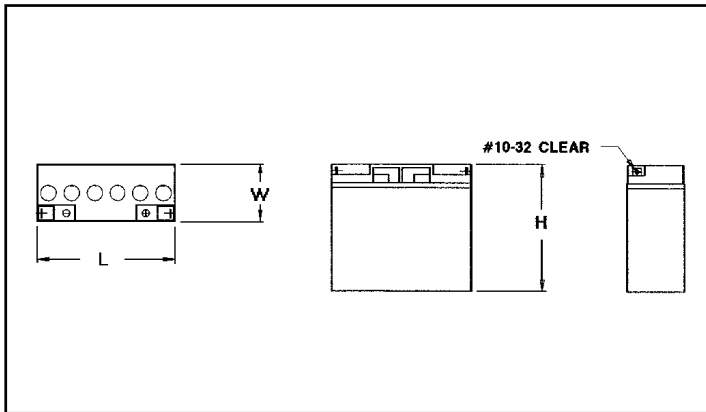
Specifications are provided for information only and are believed to be accurate. However, no responsibility is assumed by Mammoth Fire Alarms, Inc. for their use.

Specifications subject to change without notice.

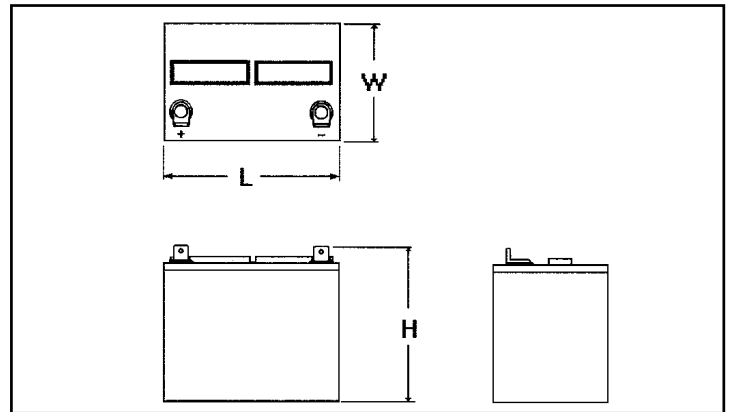
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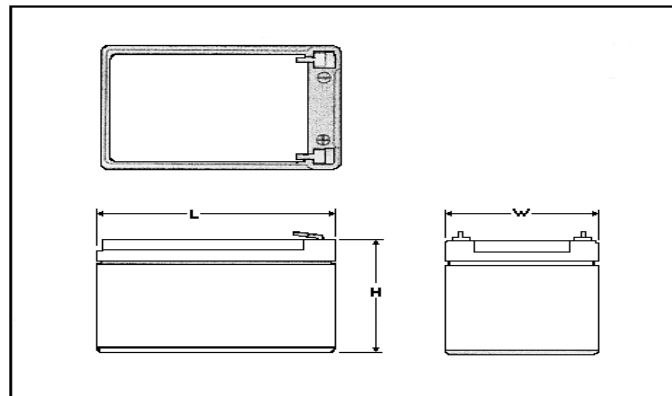
PS1270



PS12180



PS12350, PS12550



PS12120

ORDERING INFORMATION

Model	Description
PS1270	Sealed lead calcium battery, 7 AH
PS12120	Sealed lead calcium battery, 12 AH
PS12180	Sealed lead calcium battery, 18 AH
PS12350	Sealed lead calcium battery, 35 AH
PS12550	Sealed lead calcium battery, 55 AH

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 Specifications subject to change without notice.
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Features

- Dual Action
- Key resettable
- Permanently attached Intelligent Addressable Module
- Rotary switches for direct-dial entry of address. Each unit can have address set for 01-159 for Advanced Protocol mode and 01-99 for CLIP mode
- High-gloss red enamel finish
- Plastic breakrod
- Meets ADA 5 lb. maximum manual-force
- Mounts on standard single gang box, Mircom's BB-700 surface metal backbox or BB-700WP weather proof backbox

Description

Mircom's MS-710APU Advanced Protocol Intelligent Manual Station is made of a high quality, die-cast metal and is available as a dual-action device with key resets and a permanently attached intelligent module. The intelligent manual station has a pair of rotary decimal switches which allows for two digit address setting. Pulling the handle initiates the operation of the intelligent module.

The manual station is available with CAT-30 keys and mounts on a standard single gang backbox, Mircom model BB-700 interior surface metal backbox, or BB-700WP weather proof backbox.

Mircom's Advanced Protocol (AP) devices use a high speed communication protocol that greatly increases the speed of communication between the intelligent devices. Mircom's Advanced Protocol uses a superior group polling method as well as an interrupt feature that provide for a faster response to an alarm condition. In addition, the Advanced Protocol allows for greater system capacity with support for up to 318 devices per SLC circuit. The AP devices are backwards compatible to operate in CLIP mode for legacy system applications.

Operation

The MS-710APU Dual Action Intelligent Manual Station is operated by pushing the bar labelled "PUSH BAR" and then pulling down the handle marked "PULL HANDLE". The MS-710APU is reset by opening the station with the key, placing the handle in the normal upright position and re-locking the station.

Specifications

The manual station shall be Mircom's MS-710APU. Operating instructions shall be in raised English lettering and the unit shall be constructed of high quality die-cast metal and finished in red enamel paint to provide quick identification. Pulling the handle shall initiate immediate operation of the intelligent addressable module. All manual fire alarm stations shall be installed as per the specific requirements outlined in the UL codes, as well as all other applicable national or local codes. Final acceptance is subject to the local authority having jurisdiction.



Specifications

Dimensions	4.93" H x 3.56" W x 2.9" D
Nominal Operating Voltage	15–32 VDC
Maximum Alarm Current @ 24V	600 μ A
Average Operating Current @ 24V	400 μ A

Surface Mount Backboxes



BB-700 Surface Mount Backbox

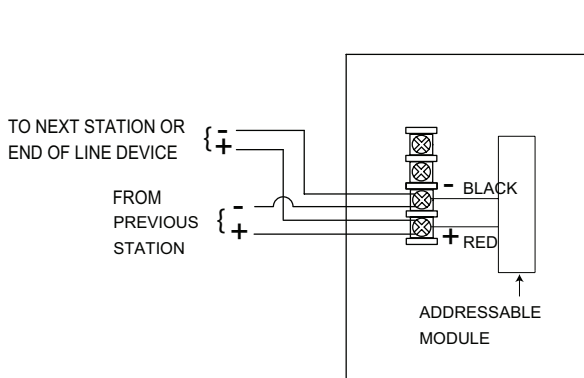
Dimensions:
5" H x 3.6" W x 2.0" D



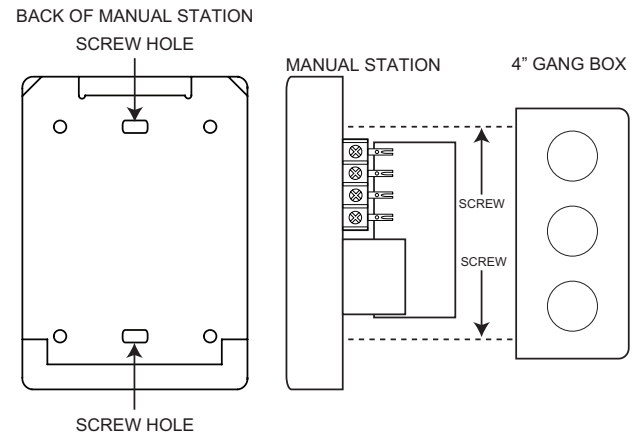
BB-700WP Weatherproof Surface Mount Backbox

Dimensions:
5" H x 3.6" W x 2.2" D

Wiring Diagram



Mounting Diagram



Ordering Information

Model	Description
MS-710APU	Advanced Protocol Intelligent Key Resettable Dual Action Manual Station
BB-700	Series 700 Interior Surface Mount Backbox, Red Finish
BB-700WP	Series 700 Weatherproof Surface Mount Backbox, Red Finish

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CAT. 5954
Rev. 0



Model MIX-2251AP sensor mounted in a B210LP base

Features

- Sleek, low profile design
- Available with photoelectric or ionization technology
- Photoelectric detectors are available with additional fixed temperature detection
- Dual LEDs indicate communications and activate steady when in alarm
- Low profile base provides easy interchangeability
- Low standby current
- Rotary switches for direct-dial entry of address. Each unit can have address set for 01-159 for Advanced Protocol mode and 01-99 for CLIP mode
- Magnetic test feature
- Superior EMI protection
- Sealed against dirt, insects, and back pressure

Description

Mircom's low profile intelligent plug-in smoke detectors with integral communications provide features that surpass conventional detectors. Sensitivity is continuously monitored and reported to the panel where the desired detector sensitivity can be programmed. Point ID capability allows each detector's address to be set with decade address switches, providing exact detector locations for selective maintenance when chamber contamination reaches an unacceptable level.

Mircom's Advanced Protocol (AP) devices use a high speed communication protocol that greatly increases the speed of communication between the intelligent devices. Mircom's Advanced Protocol uses a superior group polling method as well as an interrupt feature that provide for a faster response to an alarm condition. In addition, the Advanced Protocol allows for greater system capacity with support for up to 318 devices per SLC circuit. The AP devices are backwards compatible to operate in CLIP mode for legacy system applications.

MIX-1251AP Intelligent Ionization Smoke Sensor

The MIX-1251AP ionization sensor incorporates a unique single source, dual chamber design to respond quickly and dependably to a broad range of fires.

MIX-2251AP Intelligent Photoelectric Smoke Sensor

The MIX-2251AP provides a unique optical sensing chamber that senses smoke produced by a wide range of combustion sources.

MIX-2251TAP Intelligent Photoelectric Smoke Sensor with 135°F Fixed Temperature Heat Detector

The MIX-2251TAP adds dual electronic thermistors to the MIX-2251AP to provide 135°F (57°C) fixed temperature thermal sensing.

MIX-2251TMAP Intelligent Acclimate™ Multicriteria Smoke Sensor

The MIX-2251TMAP is a photoelectric smoke detector with supplementary 135°F thermal. Also known as Acclimate™, it uses advanced on-board software to combine the signals from the photo and thermal elements. The MIX-2251TMAP is a true multicriteria detector capable of rejecting nuisance sources, but still responding quickly to real fires. Acclimate has the capability of adjusting its sensitivity according to the type of environment that it is installed in, and rate-of-rise thermal detection. These thermal detectors provide cost effective, intelligent property protection in a variety of applications.



7271-1477-0159
(MIX-1251AP)
7272-1477-0161
(MIX-2251AP/TAP/TMAP)

Specifications

Voltage Range
15 to 32 VDC
Standby Current
300 uA @ 24 VDC (one communication every 5 sec. with LED blink enabled)
LED Current (max.)
6.5 mA @ 24 VDC (on)
Height
2.0 inches (51 mm)
Diameter
6.1 inches (155 mm) installed in B210LP Base 4.1 inches (104 mm) installed in B501 Base

Shipping Weight
Photoelectric models: 5.2 oz. (147 g) Ionization model: 5.4 oz. (153 g)
Operating Humidity Range
10% - 93% non-condensing
Operating Temperature Range
MIX-1251AP/MIX-2251AP: 32°F to 120°F (0°C to 49°C) MIX-2251TAP/MIX-2251TMAP: 32°F to 100°F (0°C to 38°C)
UL Listed Velocity Range
Ion: 0 - 1200 fpm (0 - 6.1 m/sec) Photo/Photo with Thermal: 0 - 4000 fpm (0 - 20 m/sec) (suitable for installation in ducts)

Ordering Information

Model	Description
Intelligent Smoke Sensors	
MIX-1251AP	Intelligent Ionization Smoke Sensor
MIX-2251AP	Intelligent Photoelectric Smoke Sensor
MIX-2251TAP	Intelligent Photoelectric Sensor with 135°F Fixed Temperature Heat Detector
MIX-2251TMAP	Intelligent Acclimate™ Multicriteria Smoke Sensor
Bases	
B501	Intelligent Flangeless Mounting Base
B210LP	Intelligent Flanged Mounting Base
B224RB	Intelligent Relay Base
B224BI	Intelligent Isolator Base
B200SR	Intelligent Standard Sounder Base (Compatible with B501BH Series)
Accessories	
RA-100Z	Remote LED Annunciator

Add suffix "A" for ULC listed model.

NOT TO BE USED FOR INSTALLATION PURPOSES.



Canada
25 Interchange Way
Vaughan, Ontario L4K 5W3
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ISO 9001:2008
REGISTERED



CAT. 5952
Rev. 0



Model MIX-5251AP sensor mounted in a B210LP base

Features

- Sleek, low profile design
- Available as 135°F fixed temperature, 135°F fixed temperature with rate-of-rise detection and high temperature 190°F fixed temperature
- Dual LEDs indicate communications and activate steady when in alarm
- Low profile base provides easy interchangeability
- Low standby current
- Rotary switches for direct-dial entry of address. Each unit can have address set for 01-159 for Advanced Protocol mode and 01-99 for CLIP mode
- Superior EMI protection
- Sealed against dirt, insects, and back pressure

Description

Mircom's low profile intelligent plug-in thermal detectors with integral communications provide features that surpass conventional detectors. Point ID capability allows each detector's address to be set with decade address switches, providing exact detector locations. These intelligent sensors utilize a state-of-the-art thermistor sensing circuit for fast response and are designed to provide open area protection with 50 foot spacing capability.

Mircom's Advanced Protocol (AP) devices use a high speed communication protocol that greatly increases the speed of communication between the intelligent devices. Mircom's Advanced Protocol uses a superior group polling method as well as an interrupt feature that provide for a faster response to an alarm condition. In addition, the Advanced Protocol allows for greater system capacity with support for up to 318 devices per SLC circuit. The AP devices are backwards compatible to operate in CLIP mode for legacy system applications.

MIX-5251AP Intelligent Heat Detector, 135°F Fixed Temperature

The MIX-5251AP uses an innovative thermistor sensing circuit to produce 135°F fixed temperature detection in a low profile package. This thermal detector provides cost effective, intelligent property protection in a variety of applications.

MIX-5251RAP Intelligent Heat Detector, 135°F fixed temperature with Rate-of-Rise Detection

The MIX-5251RAP provides both 135°F fixed and rate-of-rise thermal detection. This thermal detector provides cost effective, intelligent property protection in a variety of applications.

MIX-5251HAP Intelligent High Temperature Heat Detector, 190°F Fixed Temperature

The MIX-5251HAP provides 190°F (88°C) fixed temperature detection for high temperature applications.



S6299



S7498



7270-1477:0160

Specifications

Voltage Range
15 - 32 volts DC peak
Standby Current
300 uA @ 24 VDC (one communication every 5 sec. with LED enabled)
LED Current (max.)
6.5 mA @ 24 VDC (on)
Height
2.0 inches (51 mm)
Diameter
6.1 inches (155 mm) installed in B210LP Base 4.1 inches (104 mm) installed in B501 Base

Shipping Weight
4.8 oz. (137 g)
Operating Humidity Range
10% - 93% noncondensing
Thermal Ratings
Fixed Temperature Setpoint: 135°F (57°C) Rate of Rise Detection: 15°F/min. (8.3°C/min.) High Temperature: 190°F (88°C)
Operating Temperature Range
MIX-5251AP/MIX-5251RAP: -4°F to 100°F (-20°C to 38°C) MIX-5251HAP: -4°F to 150°F (-20°C to 66°C)

Ordering Information

Model	Description
Intelligent Heat Sensors	
MIX-5251AP	Intelligent Heat Detector, 135°F Fixed Temperature
MIX-5251RAP	Intelligent Heat Detector, 135°F Fixed Temperature with Rate-of-Rise Detection
MIX-5251HAP	Intelligent High Temperature Heat Detector, 190°F Fixed Temperature
Bases	
B501	Intelligent Flangeless Mounting Base
B210LP	Intelligent Flanged Mounting Base
B224RB	Intelligent Relay Base
B224BI	Intelligent Isolator Base
B200SR	Intelligent Standard Sounder Base (Compatible with B501BH Series)
Accessories	
RA-100Z	Remote LED Annunciator

Add suffix "A" for ULC listed model.

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CAT. 5953
Rev. 0



Strobe, Horn Strobe, and Horn Notification Appliances



Description:

The Wheelock® Exceder™ Series of notification appliances feature a sleek modern design that will please building owners with reduced total cost of ownership. Installers will benefit from its comprehensive feature list, including the most candela options in one appliance, low current draw, no tools needed for setting changes, voltage test points, 12/24 VDC operation, universal mounting base and multiple mounting options for both new and retrofit construction.

The Wheelock® Exceder™ Series incorporates high reliability and high efficiency optics to minimize current draw allowing for a greater number of appliances on the notification appliance circuit. All strobe models feature an industry first of 8 candela settings on a single appliance. Models with an audible feature 3 sound settings (90, 95, 99 dB). All switches to change settings, can be set without the use of a tool and are located behind the appliance to prevent tampering. Wall models feature voltage test points to take readings with a voltage meter for troubleshooting and AHJ inspection.

The Wheelock® Exceder™ Series of wall and ceiling notification appliances feature a Universal Mounting Base (UMB) designed to simplify the installation and testing of horns, strobes, and combination horn strobes. The separate universal mounting base can be pre-wired to allow full testing of circuit wiring before the appliance is installed and the surface is finished. It comes complete with a Contact Cover for protection against dirt, dust, paint and damage to the contacts. The Contact Cover also acts as a shunting device to allow pre-wire testing for common wiring issues. The Contact Cover is polarized to prevent it from being installed incorrectly and prevents the appliance from being installed while it is on the UMB. When the Contact Cover is removed the circuit will show an open until the appliance is installed. The UMB allows for consistent installation and easy replacement of appliances if required. Wall models provide an optional locking screw for extra secure installation, while the ceiling models provide a captivated screw to prevent the screw from falling during installation.

- Save up to **48%** in current draw*
- Up to **9** models now in **1** appliance
- Save up to **14%** cost of installation**


- Sleek Modern Aesthetics
- Finger Slide Switches
- Voltage Test Points
- Multiple Voltages
- 3 Audible Settings
90, 95, 99 dB
- 8 Candela Settings ***
Wall - 15/1575/30/75/95/110/135/185
Ceiling - 15/30/60/75/95/115/150/177
- Universal Mounting Base ***
Ceiling and Wall
Mounts to 5 Backbox Types
- Environmentally Friendly
Low Current Draw

Compatibility and Requirements

- Synchronize using the Wheelock® Sync Modules or panels with built-in Wheelock® Patented Sync Protocol
- Compatible with UL "Regulated Voltage" using filtered VDC or unfiltered VRMS input voltage
- Strobes produce 1 flash per second over the "Regulated Voltage" range

* Compared to competitive models
** Compared to previous models

*** Patented

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.COOPERNOTIFICATION.COM OR CONTACT COOPER NOTIFICATION 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:

General Notes:

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range".
- All candela ratings represent minimum effective strobe intensity based on UL Standard 1971.
- Series Exceder Strobe products are Listed under UL Standards 1971 and 464 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%) UL 464 (85% UL 1971).
- Series Exceder horns are under UL Standard 464 for audible signal appliances (Indoor use only).

Low Current Draw = Fewer Power Supplies

Strobe Ratings per UL Standard 1971

		UL Max Current*													
		24 VDC / 24 FWR												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
ST	8.0-33.0	0.057	0.070	0.085		0.135	0.163	0.182		0.205			0.253	0.110	0.140
STC	8.0-33.0	0.061		0.085	0.103	0.135	0.163		0.182		0.205	0.253		0.110	

Horn Strobe Ratings per UL 1971 & Anechoic at 24 VDC

		UL Max Current* at Anechoic 99 dBA													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	0.082	0.095	0.102		0.148	0.176	0.197		0.242			0.282	0.125	0.159
HSC	8.0-33.0	0.082		0.102	0.141	0.148	0.176		0.197		0.242	0.282		0.125	

		UL Max Current* at Anechoic 95 dBA													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	0.073	0.083	0.087		0.139	0.163	0.186		0.230			0.272	0.122	0.153
HSC	8.0-33.0	0.073		0.087	0.128	0.139	0.163		0.186		0.230	0.272		0.122	

		UL Max Current* at Anechoic 90 dBA													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	0.065	0.075	0.084		0.136	0.157	0.184		0.226			0.267	0.120	0.148
HSC	8.0-33.0	0.065		0.084	0.120	0.136	0.157		0.184		0.226	0.267		0.120	

Horn Ratings per UL Anechoic

Model	Regulated Voltage Range VDC	99 dB	95 dB	90 dB
HN	16-33.0	0.064	0.044	0.022
HNC	16-33.0	0.084	0.044	0.022
HN	8.0-17.5	0.047	0.026	0.017
HNC	8.0-17.5	0.047	0.026	0.017



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

Specification & Ordering Information

Model	Strobe Candela	Sync w/ DSM or Wheelock Power Supplies	12/24 VDC*	Mounting Options
Horn Strobes				
HSR	15/1575/30/75/95/110/135/185	X	X	UMB**
HSW	15/1575/30/75/95/110/135/185	X	X	UMB**
HSRC	15/30/60/75/95/115/150/177	X	X	UMB**
HSWC	15/30/60/75/95/115/150/177	X	X	UMB**
Strobes				
STR	15/1575/30/75/95/110/135/185	X	X	UMB**
STW	15/1575/30/75/95/110/135/185	X	X	UMB**
STRC	15/30/60/75/95/115/150/177	X	X	UMB**
STWC	15/30/60/75/95/115/150/177	X	X	UMB**
Horn				
HNR		X	X	UMB**
HNW		X	X	UMB**
HNRC		X	X	UMB**
HNWC		X	X	UMB**

Easy to remember model codes

8 candelas on 1 device

1 gang, 2 gang, 4" sq, 3.5" octal & 4" octal boxes

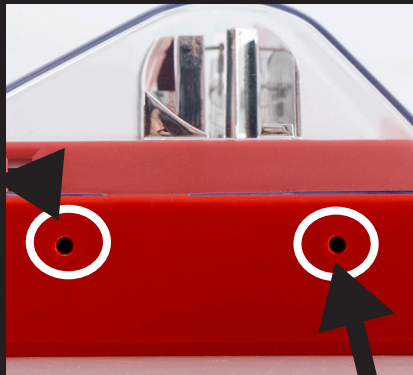
*12 VDC models feature 15 & 15/75 settings

**UMB = Universal Mounting Base

Model Legend

- HN = Horn
 - ST = Strobe**
 - HS = Horn Strobe
 - C = Ceiling Mount
 - W = White
 - R = Red**
- A = Agent Lettering (Strobes only)
 - AL = Alert Lettering (Strobes only)
 - N = No Lettering (Strobes only)

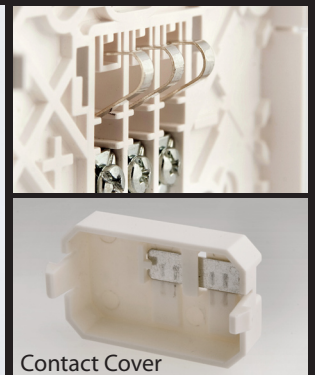
- Example 1: STRC = Strobe, Red, Ceiling Mount
- Example 2: HSR = Horn Strobe, Red, Wall Mount
- Example 3: HSW = Horn Strobe, White, Wall Mount
- Example 4: STW-AL = Strobe, White, Wall Mount, Alert Lettering



Voltage test points for quick troubleshooting and easy spot checking (wall models only)



8 candela settings



Common base for wall and ceiling with 5 mounting options

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

Architects and Engineers Specifications

The notification appliances shall be Wheelock® Exceder™ Series HS Audible Strobe appliances, Series ST Visual Strobe appliances and Series HN Audible appliances or approved equals. The Series HS and ST Strobes shall be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service. The Series HS and HN Audibles shall be UL Listed under Standard 464 (Fire Protective Signaling). All Series shall meet the requirements of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP) with the ability to operate from 8 to 33 VDC. Indoor wall models shall incorporate voltage test points for easy voltage inspection.

The Series HS Audible Strobe and ST 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. The Series shall be of low current design. Where Multi-Candela appliances are specified, the strobe intensity shall have 8 field selectable settings at 15, 15/75, 30, 75, 95, 110, 135, 185 candela for wall mount and 15, 30, 60, 75, 95, 115, 150, 177 candela for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 15/75 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required (e.g. ADA compliance). Appliances with candela settings shall show the candela selection in a visible location at all times when installed.

The audible shall have a minimum of three (3) field selectable settings for dBA levels and shall have a choice of continuous or temporal (Code 3) audible outputs.

The Series HS Audible Strobe, ST Strobe and Series HN Audible shall incorporate a patented Universal Mounting Base that shall allow mounting to a single-gang, double-gang, 4-inch square, 3.5-inch octal, 4-inch octal or 100mm European type back boxes. Two wire appliance wiring shall be capable of directly connecting to the mounting base. Continuity checking of the entire NAC circuit prior to attaching any notification appliances shall be allowed. Product shall come with Contact Cover to protect contact springs. Removal of an appliance shall result in a supervision fault condition by the Fire Alarm Control Panel (FACP). The mounting base shall be the same base among all horn, strobe, horn strobe, wall and ceiling models. All notification appliances shall be backwards compatible.

The Series HS and ST wall models shall have a low profile measuring 5.24" H x 4.58" W x 2.19" D. Series HN wall shall measure 5.24" H x 4.58" W x 1.6" D. The Series HSC and STC shall be round and have a low profile with a diameter of 6.68" x 2.63" D. Series HNC ceiling shall have a diameter of 6.68" x 1.50" D.

When synchronization is required, the appliance shall be compatible with Wheelock®'s DSM Sync Modules, Wheelock® Power Supplies or other manufacturer's panels with built-in Wheelock® Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync protocol fails to operate, the strobe shall revert to a non-synchronized flash-rate and still maintain (1) flash per second over its Regulated Voltage Range. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with Wheelock® synchronization protocol.

Wall Appliances – UL Standard 1971, UL Standard 464, California State Fire Marshal (CSFM), ULC, FM

Ceiling Appliances – UL Standard 1971, UL Standard 464, California State Fire Marshal (CSFM), ULC, FM

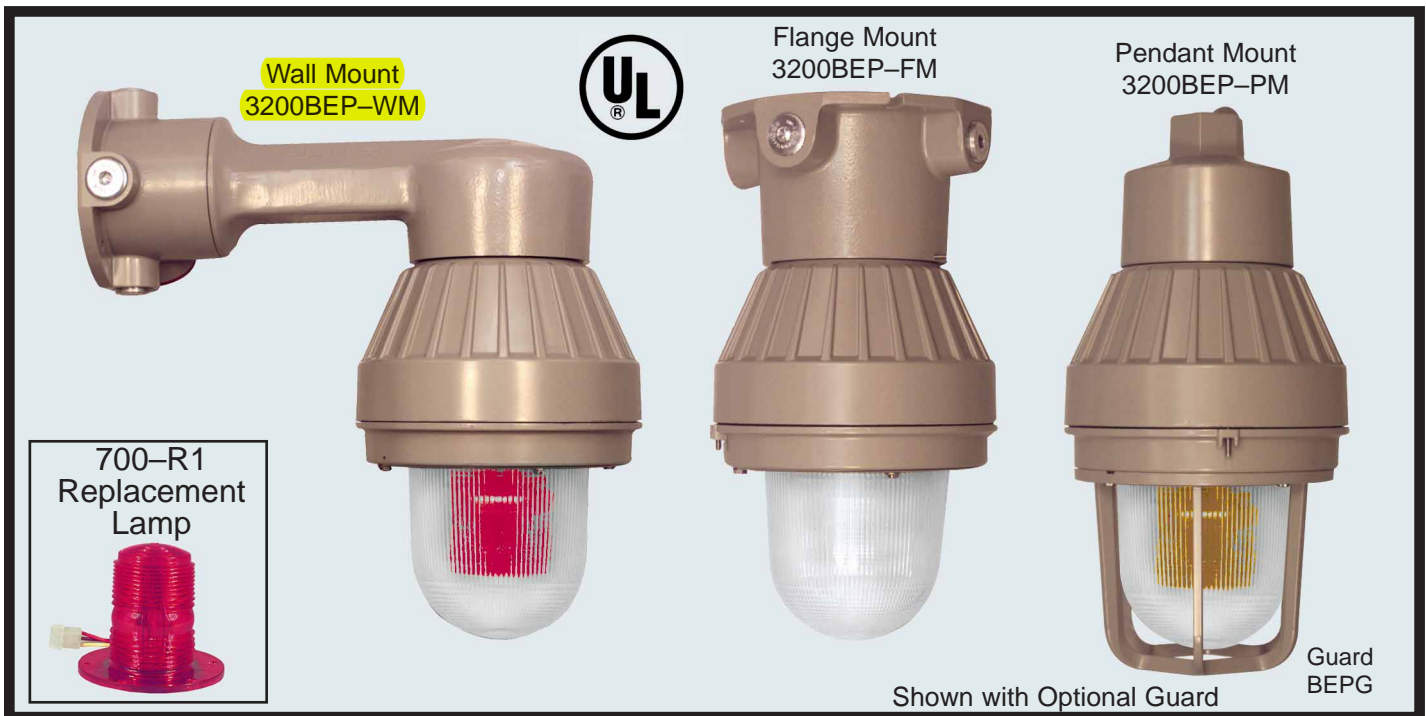


WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3 YEAR WARRANTY

Exceder - Spec Sheet 6/11

NJ Location
273 Branchport Ave.
Long Branch, NJ 07740
P: 800-631-2148
F: 732-222-8707
www.coopernotification.com

3200BEP EXPLOSION PROOF STROBE



The model 3200BEP family of single flash explosion proof UL listed strobe lights is designed for operation in hazardous areas rated Class I Group C & D (gas hazards) and Class II Group E, F, & G (dust hazards). Design features include a housing made of die cast high strength copper-free aluminum alloy with a baked powder epoxy finish, stainless steel hardware, o-ring sealed prestressed glass globe with double pitch acme threads for smooth assembly and ease of maintenance, and an optional guard which need not be removed for relamping. 3/4" conduit hubs are standard.

ORDERING INFORMATION

Please specify lens color and the model number desired. Colors available are AMBER, BLUE, CLEAR, GREEN, or RED.

Model No.	Description	Voltage	Approvals
3150BEP-FM	3/4" Flange Mount	12 thru 74VDC	UL
3200BEP-FM	3/4" Flange Mount	120VAC	UL
3300BEP-FM	3/4" Flange Mount	240VAC	UL
3150BEP-PM	3/4" Pendant Mt.	12 thru 74VDC	UL
3200BEP-PM	3/4" Pendant Mt.	120VAC	UL
3300BEP-PM	3/4" Pendant Mt.	240VAC	UL
3150BEP-WM	3/4" Wall Mount	12 thru 74VDC	UL
3200BEP-WM	3/4" Wall Mount	120VAC	UL
3300BEP-WM	3/4" Wall Mount	240VAC	UL

Options

EP-FM-1	Splice Box with 1" Hubs	UL
EP-PM-1	Splice Box with 1" Hubs	UL
EP-WM-1	Splice Box with 1" Hubs	UL
BEPG	Guard (Optional)	UL

SPECIFICATIONS

Lamp Type

700-R1-COLOR Xenon Strobe Lamp Assembly (specify color)

Voltage and Amperage

12-74VDC Draws 1.25 A avg. @ 12VDC tapering to 0.2 A avg. @ 74VDC
 120/240VAC Draws 0.17 A avg. @ 120VAC
 (50/60 Hz) Draws 0.075 A avg. @ 240VAC

Power Supply Output

13 Watts Standard, 11 Watts for 3150
 9 Joules per Flash Std., 8 Joules per flash for 3150

Temperature Range

-40° C to +55° C

Flash Rate

85 Flashes per Minute

Temperature Code

T6-Class I Groups C & D
 T4A-Class II Groups E, F, & G

Intensity

CLEAR 200 Candela eff.
 AMBER 170 Candela eff.
 BLUE 90 Candela eff.
 RED 40 Candela eff.
 GREEN 70 Candela eff.

Size and Weight

13.69" Tall x 7.44" Dia. 10 lbs. 6 oz.
 (347 mm) (188 mm) (4.7 kg)

Wheelock E50H & E60H High Fidelity Speakers & Speaker Strobes



Description

The Wheelock E50H Wall and E60H Ceiling Speakers and Speaker Strobes are designed for high fidelity sound output for indoor applications. With the widest frequency response range (300 to 8000 Hz) in the industry, the EH product line features leading intelligibility with crisp, clear voice messages and tone signaling, ideal for emergency communications, mass notification, and voice evacuation.

Providing a sleek aesthetic appearance, the wall and ceiling appliances feature dual voltage (25/70 VRMS) capability and field-selectable taps from 1/8 to 2 watts. For faster and easier installation, the low profile design incorporates a speaker mounting plate, and each model has a built-in level adjustment feature and snap-on cover with no visible mounting screws.

For visible signaling to meet the hearing impaired, the Series EH Speaker Strobe models incorporate the low current draw of the RSS Strobes.

Strobe options for wall mount models include 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 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.

The strobe portion of all Series EH Speaker Strobes may be synchronized when used in conjunction with the Wheelock DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels incorporating the Wheelock Patented Sync Protocol. Wheelock synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy.

Series EH Speaker Strobes are UL Listed for indoor use under Standard 1971 (Signaling Devices for the Hearing-Impaired) and Standard 1480 (Speaker Appliances), and ULC listed under CAN/ULC-S526 (Visual-audible Signal Appliances, Fire Alarm) and under CAN/ULC-S541 (Speakers, Fire Alarm). All inputs employ IN/OUT wiring terminals for fast installation using #12 to #18 AWG wiring.

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



Powering Business Worldwide

Features

- High Fidelity Sound Output
 - Efficient design for high intelligibility at minimum wattage across a frequency range of 300 to 8000 HZ
- 6 Field Selectable Settings in 1 Device
 - Wall mount models are available with Field Selectable Candela Settings of 15/30/75/110cd or 135/185cd (Multi-Candela models) or 1575cd (Single Candela model)
 - Ceiling mount models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd (Multi-candela models)
- Field Selectable Taps
 - 1/8 watt up to 2 watts
 - 25 or 70 VRMS operation
- Easy-to-Install
 - Low profile design incorporates speaker mounting plate for faster and easier installation
 - Snap on grille cover with no visible mounting screws
 - Quick installation with IN/OUT screw terminals using #12 to #18 AWG wires
 - 4" square backbox prevents wire damage
 - Series E50H- No extension ring required
 - Series E60H- Optional Extender (E60 Ext) is available for mounting to 4" square backboxes
- Strobe Synchronization Components
 - Meet synchronizing standards with Wheelock's DSM Sync Modules, PS Power Supplies or SAFEPATH products
- Compliance
 - UL 1971, UL 1480, ULC-S526, ULC-S541
 - Low frequency requirements of UL 464 (520 Hz) to meet NFPA's 520 Hz tone requirements for sleeping areas
 - California State Fire Marshal (CSFM)
 - ADA/NFPA/ANSI/OSHA
 - FCC Part 15, ICES

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

▲ WARNING

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Drawings

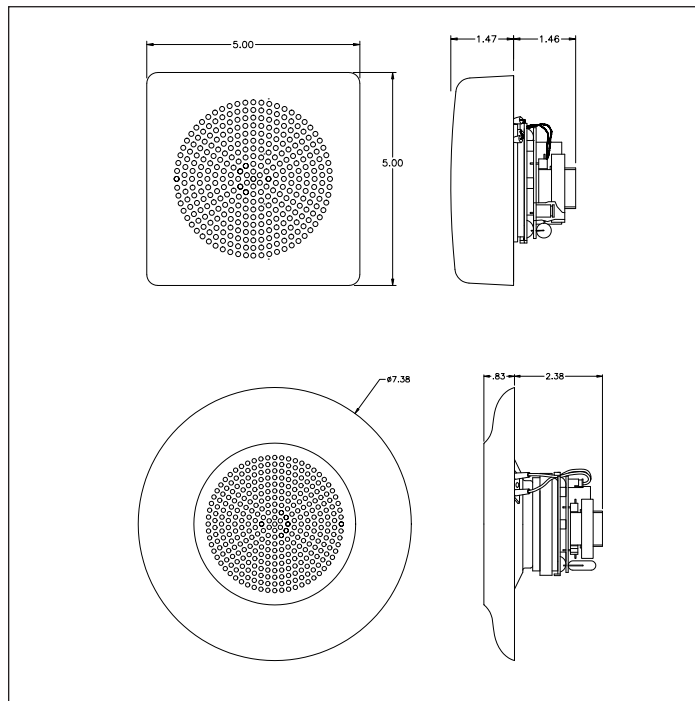


Figure 1. E50H (top) and E60H (bottom) Speakers - Front & Side Views

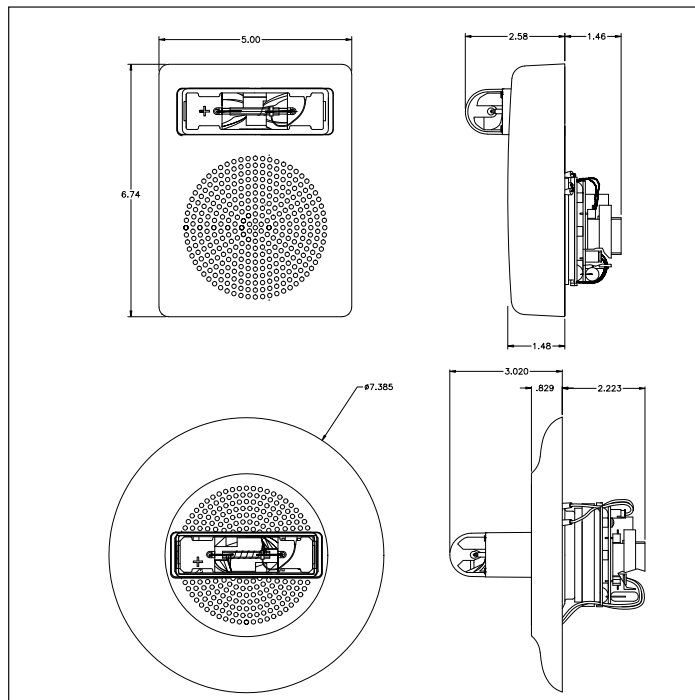


Figure 2. E60H (top) and E60H (bottom) Speaker Strobes - Front & Side Views

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 1971.

Table 1. Maximum RMS Current

Model	Regulated Voltage Range VDC	UL/ULC Max Current ^a								
		24MCW/24MCC 241575W				24MCWH/24MCCH				
		15	30	75	95	110	115	135	177	185
E50H	16.0-33.0	0.060	0.092	0.165		0.220		0.300		0.420
E60H	16.0-33.0	0.060	0.105	0.189	0.249		0.300		0.420	

Table 2. UL Listed Models and Ratings

Model	UL Reverberant dBA at 10 Feet ^b				
	1/8 watts ^c	1/4 watts	1/2 watts	1 watts	2 watts
E50H Speaker Strobe	73	76	79	82	84
E60H Speaker	74	77	80	83	85
E60H Speaker Strobe	74	77	80	82	85

Table 3. Specification & Ordering Information

Model	Order #	Strobe Candela	Red	White	Lettering	Wall	Ceiling	Mounting Options	Sync w/ DSM or Wheelock Power Supplies
Speakers									
E50H-R	9863		X		No Lettering	X		E, AA	
E50H-W	9864			X	No Lettering	X		E, AA	
E50H-ALW	3577			X	ALERT	X		E, AA	
E60H-R	9867		X		No Lettering		X	E	
E60H-W	9874			X	No Lettering		X	E	
E60H-ALW	3554			X	ALERT		X	E	
Speaker Strobes									
E50H-24MCW-FR	0092	15/30/75/110	X		FIRE	X		E, BB	X
E50H-24MCW-FW	0093	15/30/75/110		X	FIRE	X		E, BB	X
E50H-24MCW-ALR	3559	15/30/75/110	X		ALERT	X		E, BB	X
E50H-24MCW-ALW	3560	15/30/75/110		X	ALERT	X		E, BB	X
E50H-24MCW-NW	3575	15/30/75/110		X	No Lettering	X		E, BB	X
E50H-24MCWH-FR	0094	135/185	X		FIRE	X		E, BB	X
E50H-24MCWH-FW	0097	135/185		X	FIRE	X		E, BB	X
E50H-24MCWH-ALW	3561	135/185		X	ALERT	X		E, BB	X
E60H-24MCC-FR	0187	15/30/75/95	X		FIRE		X	E	X
E60H-24MCC-FW	0188	15/30/75/95		X	FIRE		X	E	X
E60H-24MCC-NW	0950	15/30/75/95		X	No Lettering		X	E	X
E60H-24MCC-ALW	3555	15/30/75/95		X	ALERT		X	E	X
E60H-24MCCH-FR	0189	115/177	X		FIRE		X	E	X
E60H-24MCCH-FW	0190	115/177		X	FIRE		X	E	X
Extender Ring									
E60EXT-R ^d	3578		X						
E60EXT-W ^d	3757			X					

Table 4. Specifications

Physical	
Material / Lens (Material type)	Red or white textured UV stabilized, colored impregnated engineered plastic. Exceeds 94V-0 UL flammability rating. / GE LEXAN 943A
Weight	E50H Speaker: 1.5 lbs (0.68 kg); E50H Speaker Strobe 1.6 lbs (0.73 kg); E60H Speaker: 1.6 lbs (0.73 kg); E60H Speaker Strobe 1.7 lbs (0.77 kg);
Dimensions	E50H Speaker: 5" W x 5" H x 1.47"D; E50H Speaker Strobe: 5" W x 6.74" H x 2.58"D; E60H Speaker: 7.38" Diameter x .83" D; E60H Speaker Strobe: 7.38" Diameter x 3.02" D
Operating Temperature	Indoor: 33.8°F to 120.2°F (0°C to 49°C) and maximum humidity of 93%
Mounting & Wire Connections	
Mounting (indoor only)	4" square backbox prevents wire damage; Series E50H - No extension ring required; Series E60H - Optional Extender (E60 Ext) is available for mounting to 4" square backboxes, E50 SSB, E50 SB for surface mount of E50H
Wire Connections	#12 through #18 AWG
Power & General	
Operating voltage	25/70 VRMS
Strobe Output Rating	UL 1971, ULC S526
Strobe Flash Rate	Strobes are designed to flash at 1 flash per second
Synchronization Models	Strobes can be synchronized with Wheelock's DSM Sync Modules, PS Power Supplies or SAFEPATH products, using Wheelock patented sync protocol
Frequency Range	300 Hz to 8000 Hz

^a RMS current ratings are per UL maximum 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 listed is usually at the maximum listed voltage (33v for 24v units). For unfiltered FWR ratings, see installation instructions.

^b dBA ratings are based on testing under UL Standard 1480.

^c 1/8 watt tap is for private mode only.

^d 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.

Architects and Engineers Specifications

Wheelock E50H-The speaker appliances shall be Wheelock E50H High Fidelity Speakers, and the High Fidelity Speaker Strobe appliances shall be Wheelock E50H Speaker Strobes or approved equals. The speakers shall be UL Listed under UL 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL 1971 for Emergency Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class A.

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 dBA at 10 feet and a listed frequency response of 300 to 8000 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 1971 at 15/30/75/110cd or 135/185cd for wall mounting. 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 the Wheelock's DSM sync modules or Wheelock Power Supplies 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 E50H speakers and speakers strobes shall be white or red.

The speaker shall be listed to the low frequency requirements of UL 464 (520 Hz) to meet NFPA's 520 Hz tone requirements for sleeping areas. UL 1971, UL 1480, ULC-S526, ULC-S541, CSFM, FCC.

Wheelock E60H -The speaker appliances shall be Wheelock E60H High Fidelity Speakers, and the High Fidelity Speaker Strobe appliances shall be Wheelock Series E60H Speaker Strobes or approved equals. The speakers shall be UL Listed under UL 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL 1971 for Emergency Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class A.

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 300 to 8000 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. 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 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 DSM sync modules or the Wheelock Power Supplies 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 E60H Speakers and Speaker Strobes shall be white or red. All speaker and speaker strobe appliances shall be backward compatible.

The speaker shall be listed to the low frequency requirements of UL 464 (520 Hz) to meet NFPA's 520 Hz tone requirements for sleeping areas.

UL 1971, UL 1480, ULC-S526, ULC-S541, CSFM, FCC.

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



WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3 YEAR WARRANTY

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Weatherproof Appliances - Series AH Audibles, AS Audible Strobes, MT Multitone Strobes, RSS Strobes and ET70 Speaker Strobes and Weatherproof Mounting Accessories



Description:

Designed for life safety, performance and reliability, Cooper Notification's Wheelock cost effective weatherproof notification appliances include:

Weatherproof Appliances	Series
Strobes	RSSWP
Horn Strobes	ASWP
Horns	AH-24WP, AH-12WP
Multitone Horn Strobes	MTWP
Multitone Horns	MT
Speaker Strobes	ET70WP
Speakers	ET-1010

All strobe models are UL dual listed - meeting both UL1638 and UL1971 requirements. As dual listed appliances, these weatherproof strobes, horn strobes and speaker strobes are listed for outdoor applications under UL 1638 as well as under UL 1971, the Standard for Safety Signaling Devices for Hearing Impaired. With an extended temperature range of -31°F to 150°F (-35°C to 66°C), Wheelock weatherproof appliances meet or exceed UL outdoor test requirements for rain, humidity and corrosion resistance while providing multiple strobe intensity options, including the highest strobe ratings available for area coverage per NFPA 72 strobe spacing tables (up to 185 candela for wall mounting and 177 candela for ceiling mounting).

To enable weatherproof mounting, Cooper Notification provides the industry's widest choice of mounting options for surface or unique semi-flush installation. Models are available for surface mounting to Wheelock weatherproof backboxes on walls or ceilings. The optional WP-KIT allows the weatherproof backboxes (IOB, WPBB or WPSBB) to be mounted to a recessed electrical box for concealed conduit installation. For semi-flush installation, the WPA* and WFPA* kits allow a customer to mount the weatherproof appliances to a recessed electrical box without the need for an external weatherproof backbox. See the Backboxes, Plates and Gaskets Table on page three of this document for a summarization of these mounting options and the required accessories.

All models may be synchronized using the Wheelock DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels incorporating the Wheelock Patented Sync Protocol. The horn output of horn strobes can be independently controlled on 2-wire circuits using the Wheelock patented sync protocol. MTWP horn strobe models are 4-wire appliances; the strobes can be synchronized while the audible can be connected to a coded fire alarm system or can be set to produce any of eight selectable tones.

Features:

- Approvals include: UL Standards 1971, 1638, 464 and 1480 California State Fire Marshal (CSFM), New York City (MEA), Factory Mutual (FM), Chicago (BFP) and ULC . See agency approvals by model number on page two of this document
- Compliance with the following requirements: NFPA, UFC, ANSI 117.1, OSHA Part 29, 1910.165, ADA
- Weatherproof with extended temperature range of -40°F to 150°F (-40°C to 66°C)*
- Dual Listed strobe models (UL 1638 and UL 1971)
- Industry's highest strobe candela options
- Synchronize using the Wheelock Sync Modules or panels with built-in Wheelock Patented Sync Protocol
- Models with field selectable tone, dBA and candela settings
- Wall or ceiling mounting options
- Surface or semi-flush mounting
- IN/OUT wiring termination accepting two #12-18 AWG wires at each terminal

The series RSSWP, ASWP, AH-24WP, MTWP-2475W, and MT-12/24 have UL / ULC approval down to -40°F. The ET-1010 and ET70WP have UL approval down to -40°F. The AH-12WP has UL approval down to -31°F.



E5946
S5391
S2652



151-92-E



7125-0785:131 (ASWP)
7125-0785:146 (ET70WP)
7125-0785:156 (MTWP)
7300-0785:154 (RSSWP)



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.COOPERNOTIFICATION.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 UL Listed Regulated Voltage Range.
- All candela ratings represent minimum effective Strobe intensity based on UL Standards 1971 and 1638 as indicated in candela ratings table.

Wall Mount



Strobe	Order Code
RSSWP-2475W-FR Red	9013
RSSWP-2475W-FW White	3034
RSSWP-24MCWH-FR Red	5161
RSSWP-24MCWH-FW White	5165

Audible Strobe	Order Code
ASWP-2475W-FR Red	9012
ASWP-24MCWH-FR Red	5137
ASWP-24MCWH-FW White	5140

Multi-tone Strobe	Order Code
MTWP-2475W-FR Red	8420
MTWP-2475W-FW White	3112
MTWP-24MCWH-FR Red	5132
MTWP-24MCWH-FW White	5134

Speaker Strobe	Order Code
ET70WP-2475W-FR Red	9077
ET70WP-2475W-FW White	3179
ET70WP-24185W-FR Red	4885
ET70WP-24185W-FW White	4891
ET70WP-24135W-FR Red	4872
ET70WP-24135W-FW White	4875

Ceiling Mount



Strobe	Order Code
RSSWP-2475C-FR Red	4338
RSSWP-2475C-FW White	4446
RSSWP-24MCCH-FR Red	5167
RSSWP-24MCCH-FW White	5187

Audible Strobe	Order Code
ASWP-2475C-FR Red	4251
ASWP-2475C-FW White	4502
ASWP-24MCCH-FR Red	5149
ASWP-24MCCH-FW White	5157

Multi-tone Strobe	Order Code
MTWP-2475C-FR Red	4457
MTWP-2475C-FW White	4478
MTWP-24MCCH-FR Red	5102
MTWP-24MCCH-FW White	5122

Speaker Strobe	Order Code
ET70WP-2475C-FR Red	4452
ET70WP-2475C-FW White	4454
ET70WP-24177C-FR Red	4845
ET70WP-24177C-FW White	4859
ET70WP-24115C-FR Red	4550
ET70WP-24115C-FW White	4732

Wall or Ceiling Mount



Audible	Order Code
AH-24WP-R Red	7416
AH-12WP-R Red	7415

Horn	Order Code
MT-12/24-R Red	5023

Speaker	Order Code
ET-1010-R Red	3135
ET-1010-W White	3137

UL Max. Current	AH	
	24 VDC	12 VDC
High (99) dBA	0.080	0.192
Med (95) dBA	0.043	0.108
Low (90) dBA	0.021	0.058

UL Reverberant dBA @ 10 Feet							
Watts	1/8	1/4	1/2	1	2	4	8
ET-1010	77	80	83	86	87	92	94
ET70WP	78	81	84	87	90	93	95

Series	Candela Ratings				ASWP		
	UL 1971	UL 1638 @ 77°F	UL 1638 @ -40°F	RSS, ET70WP and MTWP UL Max Current (Strobe Only)	High	Med	Low
2475W	30**	180	115	0.138	0.168	0.155	0.150
2475C	15	180	115	0.138	0.168	0.155	0.150
MCWH	135	135	56	0.300	0.355	0.340	0.335
	185	185	77	0.420	0.480	0.465	0.460
MCCH	115	115	47	0.300	0.355	0.340	0.335
	177	177	73	0.420	0.480	0.465	0.460
24185	185	185	77	0.420	**Wall mount rating only		
24177	177	177	73	0.420			

UL Max. Current (Audible)	MTWP/MT 24 VDC		MT 12 VDC	
	HI	STD	HI	STD
dBA				
Horn	0.108	0.044	0.177	0.034
Bell	0.053	0.024	0.095	0.020
March Time	0.104	0.038	0.142	0.034
Code 3 Horn	0.091	0.035	0.142	0.034
Code 3 Tone	0.075	0.035	0.105	0.021
Slow Whoop	0.098	0.037	0.142	0.035
Siren	0.104	0.036	0.152	0.030
Hi/Lo	0.057	0.025	0.114	0.026

Model Number	Agency Approvals				
	UL	MEA	CSFM	FM	BFP
Strobe					
RSSWP-2475	X	X	X	X	-
RSSWP-24MCWH	X	-	X	-	-
RSSWP-24MCCH	X	-	X	-	-
Audible Strobe					
ASWP-2475	X	X	X	X	X
ASWP-MCWH	X	-	X	-	-
ASWP-MCCH	X	-	X	-	-
Multitone Strobe					
MTWP-2475	X	X	X	X	-
MTWP-MCWH	X	-	X	-	-
MTWP-MCCH	X	-	X	-	-
Horns/Audibles					
AH-24WP	X	X	X	X	X
AH-12WP	X	X	X	X	X
MT-12/24	X	X	X	X	X
Speaker Strobe					
ET70WP-2475	X	-	X	X	-
ET70WP-185	X	-	X	X	-
ET70WP-177	X	-	X	X	-
ET70WP-115	X	-	X	X	-
ET70WP-135	X	-	X	X	-

Mounting Accessories



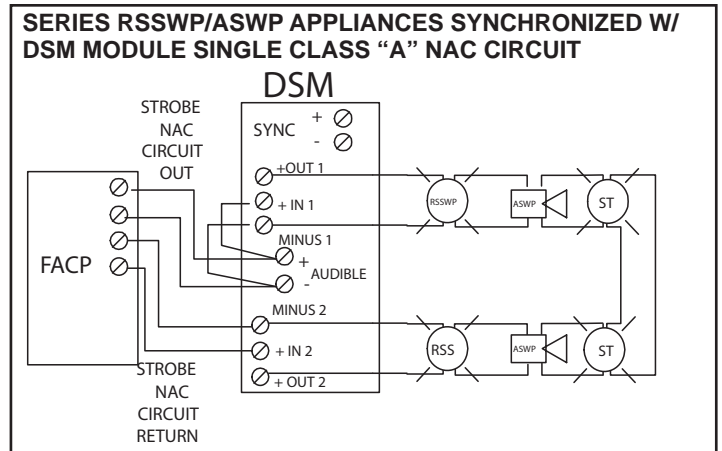
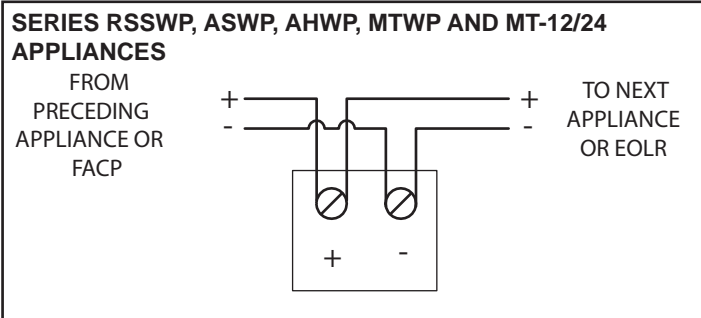
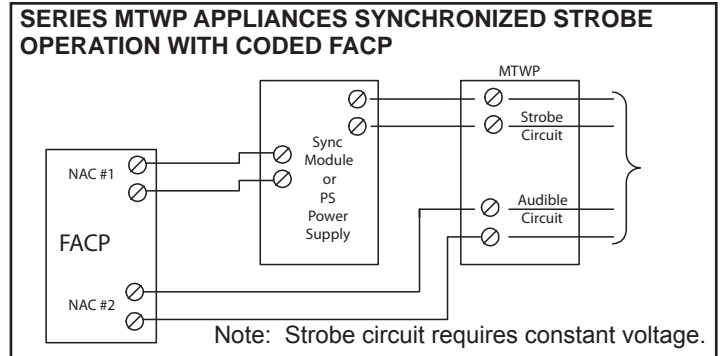
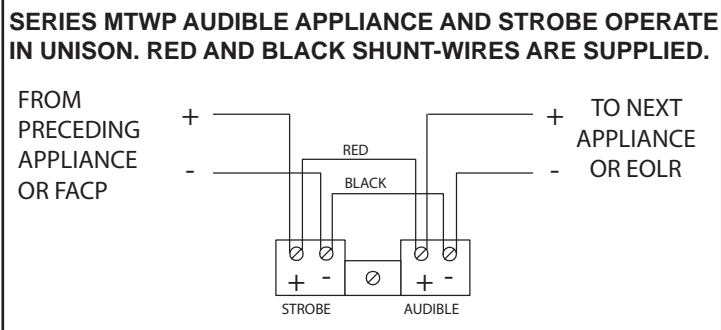
Gasket Kit		Order Code
WP-KIT		4486
Flush Plates		
WFPA-R	Red	4698
WFPA-W	White	4701
WFP-R	Red	4696
WFP-W	White	4697
Backboxes		
IOB-R*	Red	5046
IOB-W*	White	5047
WPSBB-R*	Red	9751
WPSBB-W*	White	3033
WPBB-R*	Red	9014
WPBB-W*	White	4692
WBB-R	Red	2959
WBB-W	White	2960

Mounting Options:

	Backboxes, Plates, Gasket Kits		
	Surface Mount		Flush Mount
	Exposed Conduit	Concealed Conduit	
RSSWP Strobes	WPSBB	WPSBB + WP-KIT	WFP
ET70WP Speaker Strobes	IOB	IOB + WP-KIT	WFP
ASWP Horn Strobes	WPBB	WPBB + WP-KIT	WFPA
AHWP Horns	WBB	-	WFP
ET-1010 Speakers	WBB	-	WFP
MTWP Multitone Horn Strobes	IOB	IOB + WP-KIT	WFP
Multitone Horn	IOB	IOB + WP-KIT	WFP

*IOB, WPSBB and WPBB models include weep holes and plug in the event that moisture may have entered the appliance

Wiring Diagrams



Note: Models are available in Red or White. Contact Customer Service for Order Code and Delivery.
#Refer to Data Sheet S7000 for Mounting Options

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

General

Weatherproof notification appliances shall be UL listed for outdoor use. Weatherproof Strobe appliances shall be listed under UL Standard 1638 (Standard for Visual Signaling Appliances) for Indoor/Outdoor use and UL Standard 1971 (Standard for Safety Signaling Devices for Hearing Impaired). The appliances shall be available for optional wall mounting or ceiling mounting to weatherproof backboxes using either exposed conduit or concealed conduit, or semi-flush mounting to a recessed electrical box in walls or ceilings using Wheelock mounting accessories.

Weatherproof Strobes

Weatherproof Strobe appliances shall produce a minimum flash rate of 60 flashes per minute over the UL Regulated Voltage Range of 16 to 33 VDC and shall incorporate a Xenon flashtube. The weatherproof strobes shall be available with UL 1971 candela ratings up to 185 cd for wall mounting and 177 cd for ceiling mounting. UL 1638 candela ratings up to 180 cd at 77°F shall be available. The strobes shall operate over an extended temperature range of -40°F to 150°F (-40°C to 66°C) and be listed for maximum humidity of 95% RH. Strobe inputs shall be polarized for compatibility with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP).

Weatherproof Audibles and Audible/Strobe Combinations Weatherproof horns and multitone audibles shall be listed for Indoor/Outdoor use under UL Standard 464. The horns shall be able to produce a continuous output or a temporal code-3 output that can be synchronized. The horns shall have at least 3 sound level settings. Horn/Strobe combinations shall be able to be synchronized on a single NAC.

Multitone audibles shall be able to produce 8 distinct tones selectable by dip switch and shall have at least 2 sound level settings. Multitone Audible/Strobe combinations shall have independent inputs for the audible and strobe. The strobes shall be able to be synchronized. The audibles shall be able to be coded when operated on a separate NAC.

Weatherproof Speakers and Speaker/Strobes

Weatherproof speakers and speaker/strobes shall be listed for Indoor/Outdoor use under UL Standard 1480. All speakers shall provide field selectable taps for 1/8W to 8W operation for either 25 VRMS or 70 VRMS audio systems and shall incorporate a sealed back construction for extra protection and improved audibility. Speakers without strobes shall be Wheelock Series ET-1010. They shall be listed to produce up to 94 dBA and shall incorporate a vandal resistant grille design. Speaker with strobes shall be Wheelock Series ET70WP. They shall be available for surface or semi-flush mounting to walls or ceilings and shall be listed to produce up to 93 dBA.

Synchronization Modules

When synchronization of strobes or temporal code-3 audibles is required, the appliances shall be compatible with the Wheelock Series DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels with built-in Wheelock Patented Sync Protocol. The strobes and audibles shall not drift out of synchronization at any time during operation.

Series ASWP audibles and strobes shall be able to be synchronized on a 2-wire circuit with the ability to silence the audible if required. The strobes on Series MT multitone audible/strobe appliances shall be able to be synchronized and shall be able to be operated on a separate circuit from the audibles while the audible circuit is connected to a coded or continuous NAC.

Weatherproof Mounting Accessories

Weatherproof mounting options shall include surface mounting or semi-flush mounting to walls or ceilings. Surface mounted appliances shall mount to Wheelock IOB, WBB, WPBB or WPSBB weatherproof backboxes using either exposed conduit or concealed conduit. For concealed conduit the weatherproof backbox shall be mounted to a recessed electrical box with Wheelock's WP-KIT to provide a weatherproof seal for the electrical box. Semi-flush mounted appliances shall mount to a recessed electrical box using Wheelock WFP or WFPA flush plates to provide a weatherproof seal between the electrical box and the appliance.



WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3 YEAR WARRANTY

S9004 WP 11/12

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www.coopernotification.com

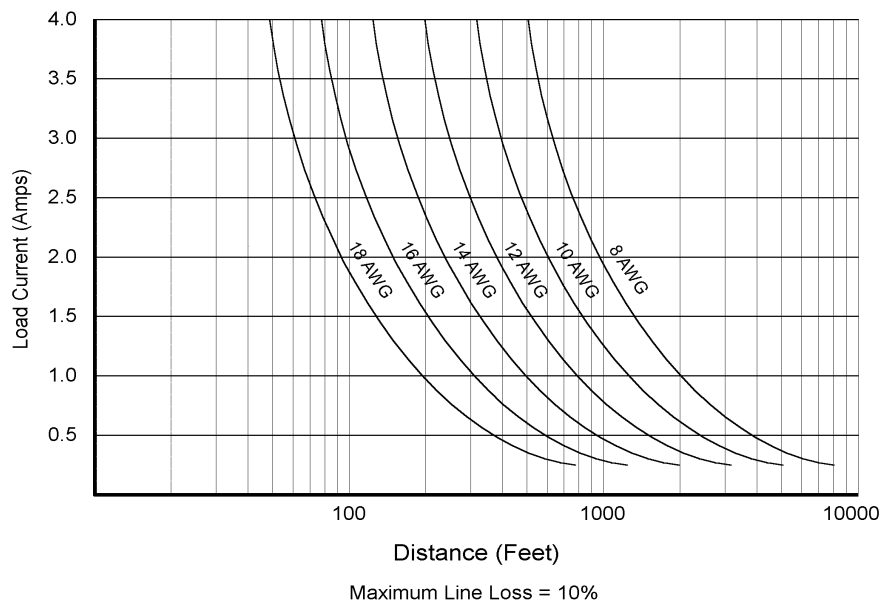


Mammoth Fire Alarms

Incorporated

176 Walker Street, Lowell, MA 01854-3126

Notification Appliance Circuit Wiring Estimator



To determine the required wire size for each notification appliance circuit, use the above chart and the following steps.

- ◆ Compute the notification appliance current. (Number of devices multiplied by the device current = amperes)
- ◆ Compute the distance in feet from the panel to the last notification appliance.
- ◆ Locate total appliance load (amperes) on the vertical axis of the chart; locate wire distance (in feet) on the horizontal axis; find the point where they intersect.
- ◆ Read wire size in AWG on the curved line to the right of the point of intersection.

“Servicing the installer before and after the installation”

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Mammoth Fire Alarms

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176 Walker Street Lowell, MA 01854

POLICIES

WARRANTY:

Mammoth Fire Alarms, Inc. warrants all equipment supplied by it to be free from defects for one (1) year from the date of shipment. Mammoth Fire Alarms, Inc. will repair or replace, at its option, any equipment that it determines to be defective. Said equipment will be returned to the purchaser. Mammoth Fire Alarms, Inc. shall not be obligated to repair or replace equipment that has been repaired by others, abused, improperly installed, altered or otherwise misused or damaged in any way, including damage caused by any Acts of God. Mammoth Fire Alarms, Inc. will not be responsible for any on-site dismantling, reassembling or reinstallation charges or costs.

TROUBLESHOOTING/SERVICE:

All field troubleshooting/service performed by Mammoth Fire Alarms, Inc. personnel will be billed per hour portal to portal, plus all costs for parts. All defective equipment that is under warranty will be replaced or repaired, at the option of Mammoth Fire Alarms, Inc. provided the equipment was not damaged during installation, damaged because of poor or improper installation, or damaged by any Acts of God. No troubleshooting will be performed, either over the telephone or in the field, if the customer's account is not current.

RETURNS FOR CREDIT:

Authorizations for merchandise to be returned for credit must be previously authorized and cannot exceed 60 days from the date of original Mammoth Fire Alarms, Inc. invoice. Merchandise authorized for return must be sent PREPAID and insured within 30 days of the date of the authorization. When merchandise is returned for credit and is returned for other than a Mammoth Fire Alarms, Inc. shipping error, a 20% charge will be made to cover handling, inspection and testing. Non-stock items will be assessed a 50% restocking charge. For credit to be issued, the item(s) must be in the original factory packaging. Custom and special ordered items will not be accepted for credit. Items damaged in transit will be deducted from the credit. Acceptance of goods returned for credit shall be at the sole discretion of Mammoth Fire Alarms, Inc. Receiving an RMA number from Mammoth Fire Alarms, Inc. is not a guarantee of issuance of credit.

RETURNS FOR REPAIR OR REPLACEMENT:

Mammoth Fire Alarms, Inc. requires prior approval before return of equipment for repair. The information required for equipment to be returned for repair is the product model number and the problem that existing with the unit. Confirmation will be faxed/mailed to you and then the return may be made. If the item(s) is under warranty (one year from the date of shipment) it will be repaired or replaced at our option. All items shipped to Mammoth Fire Alarms, Inc. must be shipped PREPAID. If the item(s) is out of warranty, but repairable, it will be repaired at a cost not to exceed 50% of the cost of a new unit.

MATERIALS DAMAGED UPON RECEIPT:

Any material physically damaged upon receipt must remain at the original place of delivery and in the original packaging. If the packaging is visibly damaged, the delivery driver should be instructed to make note of it prior to signing for the delivery. Mammoth Fire Alarms, Inc. Shipping Manager must then be contacted to arrange a replacement and an on-site evaluation of the damaged equipment. Mammoth Fire Alarms, Inc. cannot warranty any damaged equipment that has been removed from its original delivery location or does not contain the original packaging.

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Policies 02/02/15