Mercy - Fore River Short Stay Hospital
Siemens Building Technologies, Inc.
Equipment Submittals

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Mercy at the Fore

2 System Operation:

A. Activation of any system fire, supervisory, or trouble, initiating device will cause the following actions and indications in the Fire Command Center and the remote annunciator.

B. Fire Alarm Condition:

1. Sounds an audible alarm and displays a custom screen/message defining the specific alarm point initiating the alarm.
2. Logs to the system history archives all activity pertaining to the alarm condition.
3. Sounds a pre-announce slow whoop tone for (3) cycles followed by a digitized custom evacuation message which then is repeated until the panel is reset. The strobe lights will flash until the system is reset.
4. Transmits an alarm signal to the Portland Fire Dept. via the masterbox.
5. A simultaneous message will be delivered via all alarm speakers installed in stairways informing occupants of the imminent shutdown of elevator circuits and the expected high traffic load in the stairwells.
6. An automatic announcement or tone evacuation signal may be interrupted by the operation of the system microphone to give voice evacuation instructions overriding the pre-programmed sequences.
7. Status lights next to speaker selection switches on the control panel will indicate speaker circuit selection.
8. Audible signals may silenced from the fire alarm control panel by an alarm silence switch. Visual signals will flash until system reset.

9. A signal dedicated to sprinkler system waterflow alarm will not be silenced while the sprinkler system is flowing at a rate of flow equal to a single head.
10. Activation of any smoke detector in a single elevator lobby or an elevator equipment room will, in addition to all other alarm condition actions , cause the recall of that bank of elevators to the basement and the lockout of the controls. In the event of recall initiation by a detector in the basement lobby, the recall will be to the alternate floor.
11. Heat detectors installed in elevator shafts and machine rooms will activate an elevator power shunt trip breaker. The heat detectors are rated at a temperature (135degrees)below the ratings of the sprinkler heads in respective locations to insure that the power will be shut off before activation of the sprinkler system.
12. Remote LCD annunciators will display the alarm condition via unique messages.
13. System operated duct detectors and BAU logic will accomplish HVAC shut down.
14. Print alarm conditions on system printer.

C. Supervisory Condition:

1. Display the origin of the supervisory condition.
2. Activate supervisory audible and dedicated visual signal.
3. Audible signals will be silenced from the control panel by the supervisory acknowledge switch.
4. Record within system history the initiating device and time of occurrence of the event.

5. Print supervisory condition to system printer.
6. Transmits a supervisory signal nowhere.
7. Remote LCD annunciator will display the supervisory condition.

D. Trouble Condition:

1. Display the origin of the trouble condition.
2. Activate trouble audible and visual signals at the control panel and as indicated on the drawings.
3. Audible signal will be silenced from the fire alarm control panel by a trouble acknowledge switch.
4. Trouble reports for primary system power failure to the master control will be automatically delayed for a period of time equal to 25% of the system standby battery capacity to eliminate spurious reports as a result of power fluctuations.
5. Record within system history, the occurrence of the event, the time of occurrence and the device initiating the event.
6. Print trouble condition to system printer.
7. Remote LCD annunciators will display the trouble condition via unique messages as required by the system owner. LED type annunciator displays, conventional and graphic style will indicate alarm zoning as specified.
8. Transmits a trouble signal to nowhere.

SIEMENS BUILDING TECHNOLOGIES
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SCARBOROUGH, MAINE 04074

PROJECT: Mercy Fore River Short Stay Hospital

16725 1.9,D4

To Whom it may concern:

Siemens Building Technologies (SBT) representatives will provide jobsite supervision, as requested, for the fire alarm system installation. SBT reps will also program devices, program the FACP, perform final testing, and will provide training to owners personell on system operation.

SIEMENS

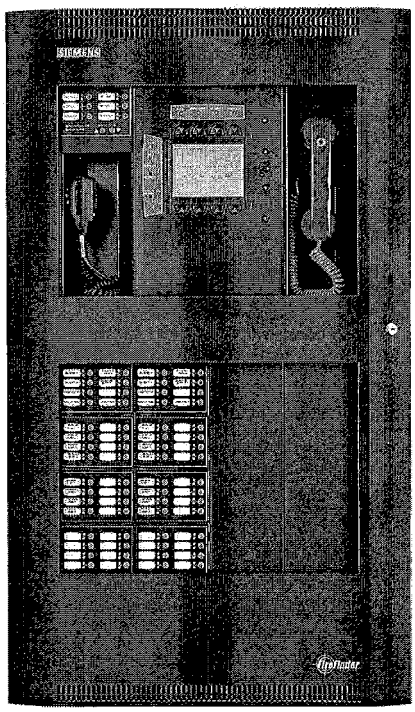
Fire Safety

FireFinder XLSV

Digital Emergency Voice Alarm/Communication System

ENGINEER AND ARCHITECT SPECIFICATIONS

- 8 Digital Audio Channels
- Live and Pre-Recorded Message Capability
- Warden's Page
- Modular Design
- 25 or 70.7 VRMS Audio Signals
- Central or Distributed Amplification
- Flexible System Architecture
- Style Y (Class B) or Z (Class A) Speaker Circuits
- LED Annunciator Modules
- Style Y or Z Audio Risers
- High Quality Amplifiers
- Backup Amplification
- Selectable Tones with Backup
- Auxiliary Audio Input
- Remote Intelligent Audio, Strobe and Telephone Zone Modules
- Optional Firefighter's Telephone System
- Separate Call-in and Telephone Zone Fault Indication
- Fan Control Modules
- Custom Recordable Messages
- Background Music and Convenience Paging



- UL Listed, ULC Listed, CSFM, NYMEA Approved, FM Approval Pending

Description

The FireFinder XLSV is a digital Emergency Voice Alarm and Communication System designed to be used as a part of the Siemens Fire Safety FireFinder XLS Life Safety System. Its operation is fully integrated with the FireFinder XLS and programmed via a Windows laptop computer.

The system will respond rapidly to either automatic or manual commands from system logic or switch modules located on the command console(s). Digital Audio signals such as Evacuation 1, Evacuation 2, Alert 1, Alert 2, or page can be routed to any number of speaker circuits. A wide selection of microcontroller controlled tones with backup are available. One or more speaker and strobe circuits can be mapped to switches though the Zeus Windows based programming software. Switches can be used to manually activate or deactivate any zone. Through the use of multi-color LEDs a clear indication is provided showing which zones are active and linked to which audio channel.

The Live Voice Module (LVM) includes a dynamic microphone with push-to-talk switch and ready-to-page indicator light along with a small local speaker and volume control for monitoring audio signals. An optional pre-announce tone is also available.

In addition, the XLSV meets current NFPA code requirements by providing another two digital audio channels available for background music and convenience paging.

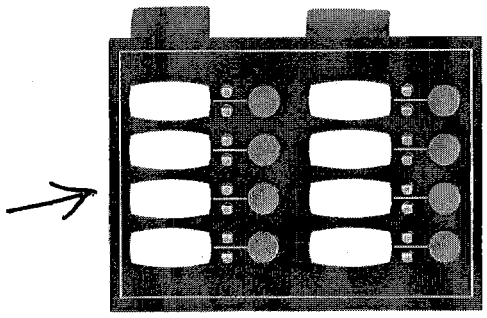
As an option, the system can provide a Firefighter's Telephone that can provide both an "acknowledge" tone and a busy signal. Clear indication is provided at the command console as to which telephone zones are active. The Firefighter's MasterTelephone provides a red master telephone with retractable coil cord and push-to-talk button.

CATALOG NUMBER **6340**

Remote paging can be provided from any telephone zone (Warden's Page) with selection at the command console. In addition, specific telephone zones can be pre-selected as automatic page zones on a selective or All Call basis.

Speaker zones are selectable for either 25 Volt or 70.7 Volt operation and either Style Y (Class B) or Style Z (Class A) wiring configuration. Strobe circuits may also be wired as Style Y or Style Z.

Speaker, Strobe and Firefighter's Telephone zones can be provided as either modules or plug-in type cards, installed in the main enclosure or remote voice system transponders. The cards are plugged into the standard XLS CC-5/ CC-2 card cages. The XLS Control Point Module HCP can also be used to provide a remote telephone zone, speaker zone or notification appliance circuit.

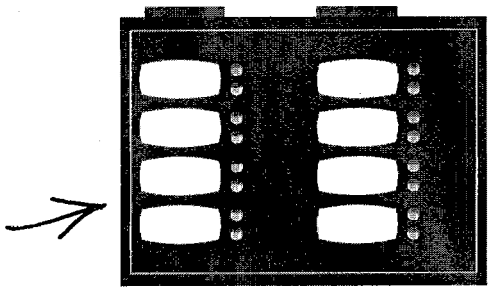


SCM-8

SCM-8 Switch Control Module

The SCM-8 is a FireFinder XLS option module which provides manual control of the Emergency Voice Evacuation System or manual fire system control. Each SCM-8 module provides eight momentary pushbutton switches and 16 LED's to indicate their status. Each switch is assigned two LED's and a label to indicate the switch's programmed usage. The label slides behind a clear protective membrane. One of the LED's assigned to each switch is a dual color LED used to indicate what type of signal is active.

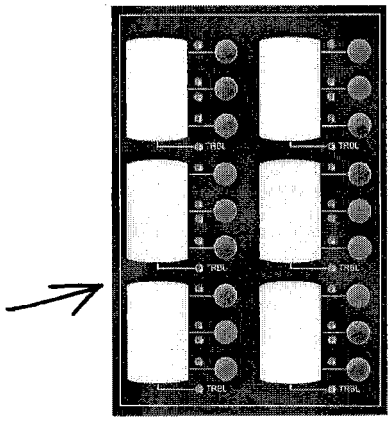
Each SCM-8 and each switch is fully programmable and may be used to control speaker circuits, and a wide range of general system functions such as All Call, All Evac, Warden's Page, Speaker, etc. Any number of circuits may be grouped and controlled by a single switch. Switch usage and zone groupings are assigned using the ZEUS system programming software. The SCM-8s are mounted on a hinged panel as a partof the FireFinder XLS Command Console enclosure.



LCM-8

LCM-8 LED Control Module

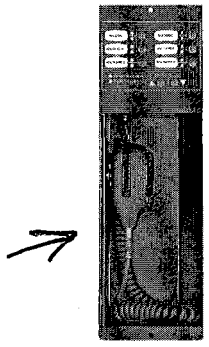
The LCM-8 is an FireFinder XLS option module which provides LED annunciation of system activity. Each LCM-8 module contains eight groups of 2 LED's, each of which can be assigned to desired outputs using the ZEUS programming software. Eight LED's are dual color capable of being lighted either RED or GREEN flashing or steady. The remaining LED's are AMBER flashing or steady. A space is provided for labeling of LED functions. The label slides behind a clear protective membrane. The LCM-8 dimensions are identical to the SCM-8 and is mounted on the same hinged panel as a part of the FireFinder XLS Command Console enclosure.



FCM-6

FCM-6 Fan, Motor, dampers Control Module

The FCM-6 is an FireFinder XLS command console option module that provides manual control of building HVAC system fans, motors, and dampers. EachFCM-6 module provides (6) sets of (3) push button switches for manual system control. Each switch has 3 associated LEDs to indicate Fan/Damper/Motor status: OFF (Red LED), ON (Green LED), TROUBLE(Yellow LED).



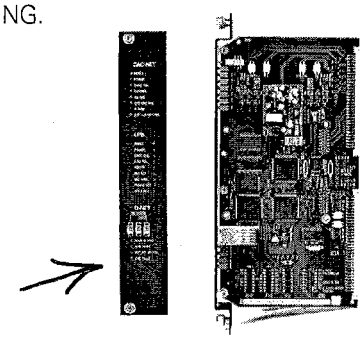
LVM

LVM Live Voice Module

The LVM provides a supervised high quality dynamic microphone to give fire fighters a means of sending live voice messages to specified audio zones. The LVM mounts on the Inner Door of a CAB1, CAB2, CAB3 or Remote Lobby Enclosure. It includes a microphone with a push-to-talk switch and retractable coiled cord. The microphone and push-to-talk switch are fully supervised.

The LVM also provides a green preannounce LED which indicates the preannounce signal is active at the selected zones and a green ready to page LED which indicates that selected zones are ready to be paged. The preannounce signal can be programmed as a tone or message and the duration is adjustable from 0 to 10 seconds in 1 second increments. A built-in speaker with volume control allows the monitoring of the audio channels.

The front panel of the LVM contains six switches and six pairs of LEDS. Each pair contains one bi-color (red/green) and one yellow LED. These switches can be programmed for manual voice functions as well as generic system functions. When the switches are used as generic switches all LEDS can be programmed for ON, OFF or FLASHING.



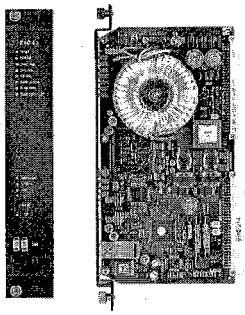
DAC-NET

DAC-NET Digital Audio Card

The DAC-NET provides the audio source for the FireFinder XLS Voice Evacuation System. It also provides D-NET network communication to and from the PMI and between enclosures. It is capable of transmitting 8 digital channels of audio via two pairs of wire. One DAC-NET is required in each XLS Voice enclosure. A maximum of 32 DAC-NETs are allowed on a single XLS FireFinder system. It can be wired Class A (Style 7) (four pairs of wires) or Class B (Style 4) (two pairs of wires). The DAC-NET Card plugs into one slot in the CC-5 or CC-2 Card Cage. It has on-board LEDs for system status and troubleshooting. Indication of power, communication, internal operation, ground fault, and trouble conditions are provided.

The DAC-NET Card contains an on-board microprocessor that provides communication with switch modules, LED modules, microphone, telephone zone cards, and zone amplifiers across the Control Area Network CAN Bus. It can supervise up to 99 CAN address modules.

The DAC-NET contains on board tones and prerecorded EVAC and ALERT messages. In addition custom messages or tones can be downloaded to the DAC-NET using the XLS Software Tool Zeus for a total of 5 minutes of storage memory.

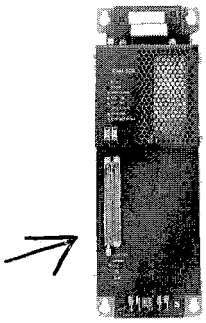


ZAC-40

ZAC-40 Zone Amplifier Card (40 Watt)

The ZAC-40 is a combination 40 watt amplifier/speaker zone for use with Firefinder XLS. Style Y, Z or "A/B" speaker zone wiring configurations are supported. ZAC-40 is power limited and can be configured to provide 40 watts of audio at 25VRMS, 70VRMS or 100 VRMS. It is a plug-in card which mounts in a CC-5 or CC-2 Card Cage. The ZAC-40 is capable of amplifying any one of the 8 digital audio channels that are transmitted from the DAC-NET (Digital Audio Card) via the digital audio bus ASI (Audio Serial Interface). The ZAC-40 amplifier is supervised for functionality.

The ZAC-40 provides a single 40 Watt speaker zone that supports 2 speaker circuits. The ZAC-40 can be used for one to eight channel applications or as a bulk amplifier for one or two channel applications feeding high level audio to the ZIC-4A, ZIC-8B. It can also be used for single channel applications feeding high level audio to the HCP.



ZAM-180

ZAM-180 Zone Amplifier Module (180 Watt)

The ZAM-180 is a combination 180 watt amplifier/speaker zone for use with FireFinder XLS. Style Y or Z speaker zone wiring is supported as well as split zone (A/B) speaker zone wiring configurations on Style "Y". ZAM-180 can be configured to provide 150 watts of audio

at 25VRMS, 180 watts of audio at 70VRMS or 165 watts of audio at 100VRMS. It mounts in one module space on the CAB-MP mounting plate. The ZAM-180 is capable of amplifying any one of the 8 digital audio channels that are transmitted from the DAC-NET (Digital Audio Card) via the digital audio bus ASI (Audio Serial Interface). The ZAM-180 amplifier is supervised for functionality.

The ZAM-180 can be used as a single 180 Watt speaker zone for one to eight channel applications or as a bulk amplifier for one or two channel applications feeding high level audio to the ZIC-4A or ZIC-8B.

FMT

FMT Fireman's MasterTelephone

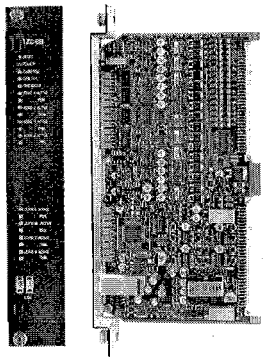
The FMT provides firefighters with an emergency telephone system for communication with remote locations. The FMT mounts to the rear of the Inner Door of a CAB1, CAB2, CAB3, or REMBOX4 Enclosure. It includes a handset for the operator of the telephone system.

The XLSV firefighter's telephone unit is designed for maximum performance in communication. The FMT circuitry allows the master telephone and at least 5 telephone stations to be off hook simultaneously with no degradation of audio quality.

The FMT also supports Warden Page function which allows live voice announcements from any remote telephone.

Telephone zone call-ins are annunciated on the appropriate SCM-8 switch module. Remote stations receive an acknowledge tone when dialing into the command center prior to the call being answered indicating a call-in in progress and a busy tone if calling into the command center and another telephone zone is already on line.

Diagnostic LEDs are located on the back of the FMT to indicate power is applied to the module and failure of the card, CAN communication or phone.



TZC-8B

TZC-8B Firefighter's Telephone Zone Card

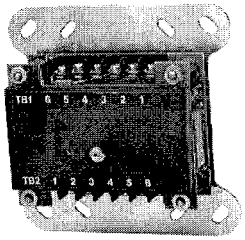
TheTZC-8B provides a way for emergency response personnel located throughout a building to speak to one another during emergency situations.

TheTZC-8B is an XLSV option module which plugs into a CC-2 or CC-5 card cage providing 8 firefighters telephone zones.The zones have an off-hook acknowledge tone as well as a Command Console busy tone.

Each telephone zone uses a single pair of wires and is individually supervised in a Class B type mode. Field wires are connected to one or more phone jacks or stations.

Zones are also individually power limited per NEC 760. Each zone also contains transient protection.

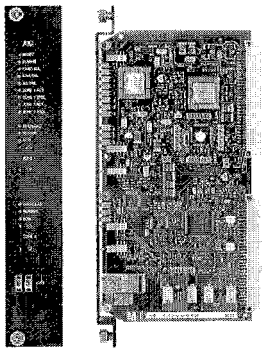
Up to 5 telephone stations may be off-hook simultaneously in a party line mode with no loss of audio quality.



HCP

HCP

The HCP provides an intelligent control point for the FireFinder XLS Control Panel. The HCP can be programmed as an independent, remotely located telephone zone, speaker zone or notification appliance circuit. The HCP is designed to be used with the Siemens Fire Safety notification appliance product line.The HCP communicates through the DLC analog loop and can be wired either Class A (Style Z) or Class B (StyleY).The 24 VDC power input comes from either the control panel or from any UL listed power limited, auxiliary power supply.

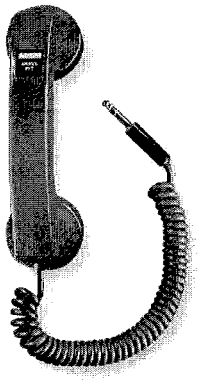


AIC

AIC Audio Input Card

The AIC Audio Input Card provides two external isolated analog inputs to the FireFinder XLS voice system. The AIC Card also provides two dry contact inputs used to separately activate the two audio inputs. The 2 external isolated analog inputs to the voice system for external sources such as tape recorder, CD player, PBX interface (for convenience paging from the telephone system). The 2 dry contact inputs can activate the two audio inputs separately. This permits each input to be controlled automatically via system logic or manually through switches on the voice control panel.

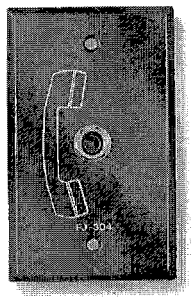
The maximum number of AIC Cards on a single FireFinder-XLSV System (single node) is two.



PFT

Portable Firefighter'sTelephones

Models PFT and PFT-P Portable Firefighter'sTelephones are available for field connection to the emergency telephone system. Each phone consists of a rugged, high-impact plastic handset with a red retractable coiled phone cord attached. A ¼" phono-type plug assembly is attached to the end of the phone cord for connection to the field-mounted phone jacks.The PFT-P includes a momentary spring-action push-to-talk switch mounted in the handset. This allows users to depress the button to activate the mouthpiece of the handset when speaking, to reduce background noise on the system.The Model MTE-2 Telephone Enclosure includes the enclosure and door with clear lens, and can be used to store up to six PFT or PFT-P telephone handsets in a locked cabinet.



FJ-304

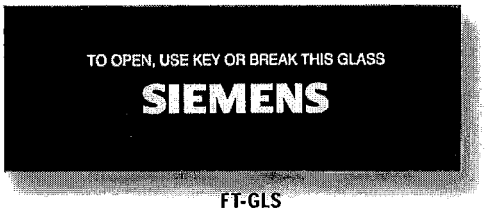
RemoteTelephone Jacks

Models FJ-303, FJ-303SS, FJ-304, and FJ-304SS Remote Telephone Jacks are connected to the emergency telephone system.They are wired to the telephone zone circuits on the ModelTZC-8BTelephone Zone Card located in the FireFinder XLS system enclosure.There is no limit to the number of remote telephone jacks that can be connected to a single telephone zone circuit.The remote telephone jacks are mounted to a single gang electrical box. Models FJ-303 and FJ-303SS have flying leads connected to the phone jack, while the FJ-304 and FJ304SS have screw terminals.The FJ-303 and FJ-304 have a red baked enamel finish with a white silk-screened telephone handset icon on them, while the FJ-303SS and FJ-304SS have a brushed stainless steel finish with the handset icor

FB-300 with FTS

RemoteTelephone Stations

Remote telephone stations for the emergency telephone system consist of a handset/hook assembly, a wall-mounted back box, and a locked door with a breakable glass front.The models FTS, FTS-P, FTS-C, FTS-CL, and FTS-PLC RemoteTelephone Stations consist of a handset (similar to the PFT), a back plate, a handset cradle with magnetic latch mounted to the back plate, and a connection cable from the handset to the back plate.The -P designates that a momentary push-to-talk button is included in the handset.The -C designates that an armored cable is used in place of a coiled retractable cord between the handset and the back plate.The -L designates that an integral LED is mounted to the back plate to indicate that the phone is connected to the system when the handset is off-hook. The remote telephone station must be used with either the FB-300 or FB-301S remote telephone station box.The FB-300 is used for flush-mount configurations, and the FB-301S is used for surface mount configurations.The remote station/box assembly also needs the FC-300S cover with key locked door and breakable glass. Additional replacement glass for the FC300S is available as the Model FT-GLS.



FT-GLS

Ordering Information

Model Number	Description	Part Number
AIC	Audio Input Card	315-035300
DAC-NET	Digital Audio Card	315-035100
FB-300	RemoteTelephone Stations	500-680587
FCM-6	Fan Control Module Switches (On-Off-Auto)	500-033140
FJ-304	Remote telephone Jacks	315-092673
FMT	Fireman's MasterTelephone	315-034100
HCP	Intelligent Control Point	500-034860
LCM-8	LED Annunciator Module (8 LED Sets)	500-033100
LVM	Live Voice Module	315-034090
PFT	Portable Frefighter'sTelephones	500-699427
PMI	Operator Interface/ System CPU	500-033070
SCM-8	Switch Module (8 Switches)	500-033040
TZC-8B	FireFighter'sTelephone Zone Card	315-034110
ZAC-40	Zone Amplifier Card (40Watt)	315-035400
ZAM-180	Zone Amplifier Module (180Watt)	315-035600

See catalog sheet No. 6300 for ordering information on additional FireFinder XLS equipment.

*Note: FireFinder XLSV equipment is listed and approved as part of the FireFinder XLS system.The name FireFinder XLSV is used to describe a FireFinder XLS system that utilizes Voice Evacuation System equipment.

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Fire Safety

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May 2007
New Issue

SIEMENS

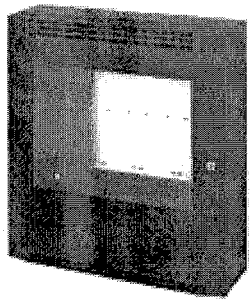
Fire Safety

FireFinder XLS Fire Alarm Enclosures & Equipment

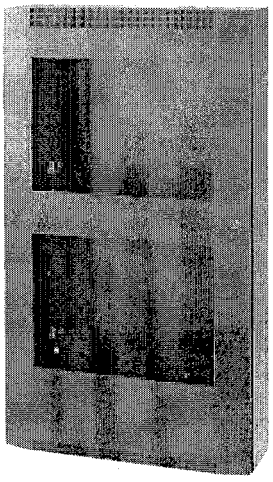
Models: CAB 1, CAB2-BB, CAB2-BD, CAB3-BB, CAB3-BD, CAB-MP, ID-MP, ID-SP, ID-FP, BCM, OD-LP, OD-BP, OD-GP, REMBOX2, and REMBOX4

ENGINEER AND ARCHITECT SPECIFICATIONS

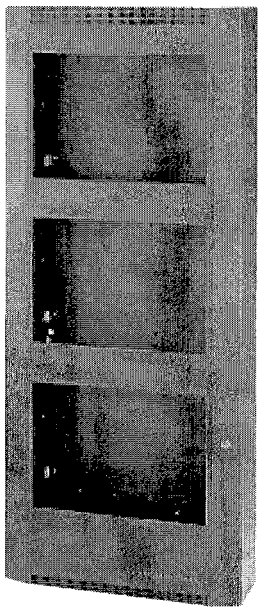
- 1, 2, and 3-row enclosures for the FireFinder XLS system
- Mounting plates for enclosure and inner door modules
- Blank plates for inner and outer doors
- Lens and grill plates for outer door
- Outer doors can open from either side
- UL, ULC Listed, FM Approval pending



CAB1



CAB2



CAB3

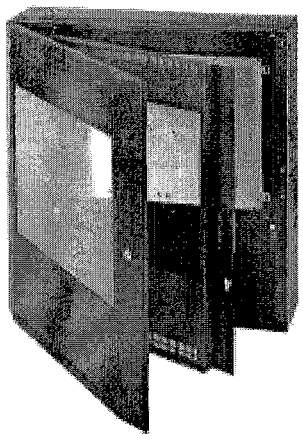
Description

The Models CAB1, CAB2, and CAB3 enclosures and their accessories provide a complete set of hardware for mounting all FireFinder XLS main system and remote transponder cards and modules. The hardware allows the FireFinder XLS system to be configured for a wide variety of applications and allows for future system upgrades. Included in the enclosure series are backbox and door sets, removable mounting plates and clear lenses, louvered ventilation grill plates, and blank plates for use with the enclosure doors. All enclosures come with ground straps for the inner and outer doors, shield termination lugs, grounding lugs, and tie wrap lances for securing wire. They can also mount system backup batteries up to 31 amp-hour in capacity. All equipment is approved for operation over the temperature range of 0°C to 49°C.

CAB1 Single Row Enclosure

The Model CAB1 is the smallest of the FireFinder XLS enclosures. It can house a single CAB-MP cabinet mounting plate for mounting card cages, power supplies and bulk amplifiers. The CAB1 also has four mounting slots on the inner door for mounting a PMI interface and Model ID-MP switch module brackets.

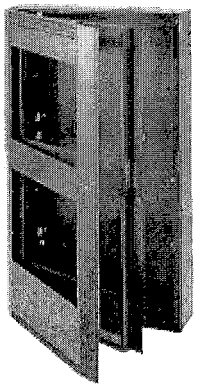
The CAB1 comes complete with a black back box, black inner and outer doors, a single lock and key set on the outer door, a single CAB-MP cabinet mounting plate (installed), and a single OD-LP outer door lens plate (installed). A red version called the CAB1-R is also available. Approximate size is 27" high, 26" wide, and 8" deep.



CAB1 Enclosure

CAB2 Two Row Enclosure

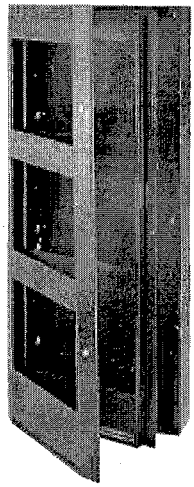
The Model CAB2 is the mid-sized FireFinder XLS enclosure capable of housing up to two CAB-MP cabinet mounting plates. The inner door has two rows of four mounting slots. The outer door has space for mounting two outer door plates (Models OD-LP, OD-BP or OD-GP). The outer door can be configured to open from either side. The CAB2 consists of the CAB2-BB back box, the CAB2-BD black inner and outer door package, two CAB-MP cabinet mounting plates, and one OD-LP lens plate. The outer door has a single lock and key set installed. Red doors are available in the CAB2-RD. Additional door mounting plates must be ordered separately. Approximate size is 45" high, 26" wide, and 8" deep.



CAB2 Enclosure

CAB3 Three Row Enclosure

The Model CAB3 is the largest single FireFinder XLS enclosure available. It can house up to three CAB-MP cabinet mounting plates in the enclosure, and three rows of inner door mounting slots. The outer door can be configured to open from either side. The CAB3 consists of the CAB3-BB back box, the CAB3-BD black inner and outer door package, three CAB-MP cabinet mounting plates, and one OD-LP lens plate. The outer door has two locks and key sets installed. Red doors are available in the CAB3-RD. Additional door mounting plates must be ordered separately. Approximate size is 63" high, 26" wide, and 8" deep.



CAB3 Enclosure

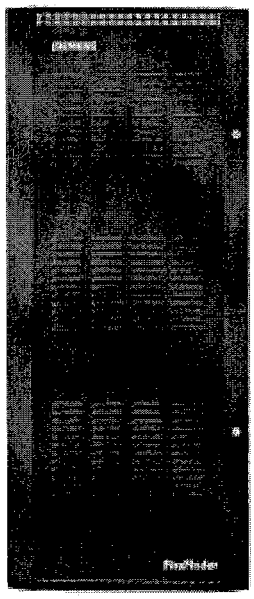
Enclosure Trim Kits

Trim kits are available for all system enclosures for semi-flush mounting applications. The Model CAB1-TK (for black enclosures) and the Model CAB1R-TK (for red enclosures) fit the CAB1 and CAB1-R enclosures. Similarly, the CAB2-TK and CAB2R-TK fit the CAB2 enclosure, and the CAB3-TK and CAB3R-TK fit the CAB-3 enclosure.

CAB2-XBD Door

Remote Transponders

The FireFinder XLS system can use remote transponders for mounting additional modules like amplifiers without requiring a PMI or any control switches. Special doors are available for systems using CAB2 or CAB3 remote transponders. These doors, Models CAB2-XBD and CAB3-XBD, omit the unused inner door and come complete with ventilation louvers built into the door. The CAB2-XBD fits on a CAB2-BB and the CAB3-XBD fits on a CAB3-BB. The transponder doors are supplied in black. Complete box and door kits are available as Model CAB2-X and Model CAB3-X.



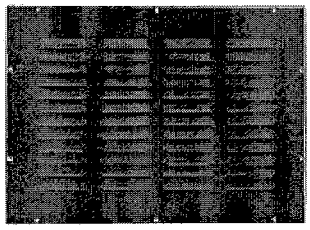
CAB3-XBD Door

Ordering Information

Model	Description	Part Number
CAB1	Complete single row black cabinet	500-633007
CAB1R	Complete single row red cabinet	500-633728
CAB2	Complete two-row black cabinet with back box, inner door, outer door, two CAB-MP mounting plates and one OD-LP lens plate	599-633762
CAB2R	Complete two-row red cabinet	599-633763
CAB2-BB	Two-row black back box	500-633009
CAB2-RB	Two-row red back box	500-634941
CAB2-BD	Two-row black inner & outer door set	500-633008
CAB2-RD	Two-row red inner & outer door set	500-633755
CAB3	Complete three-row black cabinet with back box, inner door, outer door, three CAB-MP mounting plates and one OD-LP lens plate	599-633764
CAB3R	Complete three-row red cabinet	599-633765
CAB3-BB	Three-row black back box	500-633011
CAB3-RB	Three-row red back box	500-634942
CAB3-BD	Three-row black inner & outer door set	500-633010
CAB3-RD	Three-row red inner & outer door set	500-633757
CAB1-TK	Single row cabinet black trim kit	500-633013
CAB1R-TK	Single row cabinet red trim kit	500-633729
CAB2-TK	Two-row cabinet black trim kit	500-633014
CAB2R-TK	Two-row cabinet red trim kit	500-633753
CAB3-TK	Three-row cabinet black trim kit	500-633015
CAB3R-TK	Three-row cabinet red trim kit	500-633754
CAB2-X	Complete CAB2 with transponder door (no inner door)	599-034252
CAB2-XBD	CAB2 transponder door	500-633768
CAB3-X	Complete CAB3 with transponder door (no inner door)	599-034253
CAB3-XBD	CAB3 transponder door	500-633769
CAB-MP	Back box module mounting plate	500-633012
ID-MP	Inner door module mounting plate (four per package)	500-633027
ID-SP	Inner door single module blank plate (two per package)	500-633028
ID-FP	Inner door four module blank plate	500-633029
BCM	Blank control module plate (four per package)	500-033320
OD-LP	Outer door lens plate	500-633016
OD-BP	Outer door blank plate	500-633017
OD-BP-R	Outer door red blank plate	500-634919
OD-GP	Outer door grill plate	500-633018
OD-GP-R	Outer door red grill plate	500-634920
REMBOX2	Two module black remote box lobby enclosure	500-633772
REMBOX2-MP	Mounting plate for OCM-16, SIM-16 in a REMBOX2	500-364211
REMBOX4	Four module black remote box lobby enclosure	500-633914
REMBOX4-MP	Mounting plate for OCM-16, SIM-16 in a REMBOX2	500-634212

OD-GP Outer Door Grill Plate

The Model OD-GP also covers an entire row on the outer door of a system cabinet, but has four rows of ventilation louvers on it. The OD-GP is mounted in front of system bulk amplifiers, card amplifiers, or other modules that generate heat. Using the OD-GP will permit airflow across these modules to aid in heat dissipation. A single grill plate is included with each OG-GP.



OD-GP

Remote System Enclosures

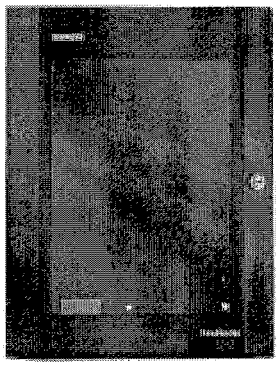
The Models REMBOX2 and REMBOX4 are FireFinder XLS system enclosures that are used for remotely mounting inner door modules like the PMI interface, switch modules, Model LVM live voice modules, and Model FMT firefighters master telephone modules. They are thinner than the regular CAB enclosures (just 5" deep overall) and are perfect for mounting in places where space is limited (like lobbies or behind a receptionist's desk). Due to their smaller depth, no card cages, power supplies or bulk amplifiers can be mounted in a REMBOX. However, modules such as the RNI remote network interface module, the OCM-16 output control module, and the SIM-16 supervised input module can be mounted in a REMBOX. Due to the depth of the live voice module and the firefighters master telephone, no OCM-16s or SIM-16s can be used simultaneously with the LVM or the FMT. Both the REMBOX2 and the REMBOX4 are designed for flush mounting with no trim kit required. Both enclosures also come with a clear lens plate on the cover.

REMBOX2 Two Module Remote Enclosure

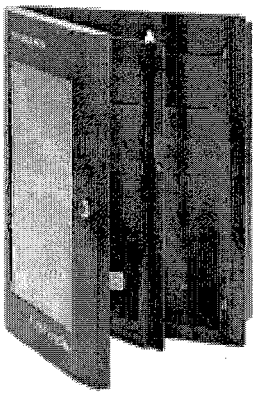
The REMBOX2 has two inner door module spaces, and can hold a single PMI, up to two switch module brackets, one LVM live voice module. Combinations are also allowed. The REMBOX2 can also mount a single RNI remote network interface on a bracket included in the backbox. A bracket called the REMBOX2-MP can be used to mount up to four OCM-16 output control modules or SIM-16 supervised input modules. The REMBOX2-MP must be purchased separately. Approximate size of the REMBOX2 is 14-1/2" wide, 18-1/2" high and 5" deep.

REMBOX4 Four Module Remote Enclosure

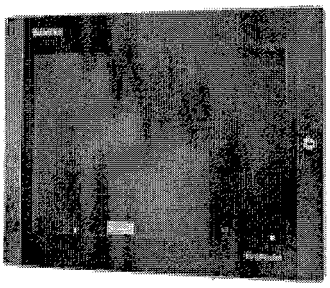
The REMBOX4 has space for mounting four inner door modules. Any combination of PMIs (two module spaces), switch module brackets, LVMs or FMTs (one module space each) can be used. Unused module spaces can be covered with Model ID-SP blank plates. The REMBOX4 can also mount a single RNI remote network interface on a bracket included in the backbox. A bracket called the REMBOX4-MP can be used to mount up to eight OCM-16 output control modules or SIM-16 supervised input modules. The REMBOX4-MP must be purchased separately. Approximate size of the REMBOX4 is 24" wide, 18-1/2" high and 5" deep.



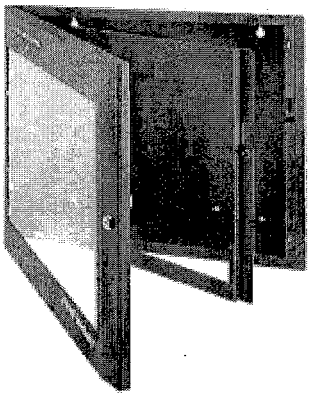
REMBOX2
Doors Closed



REMBOX2
Doors Open



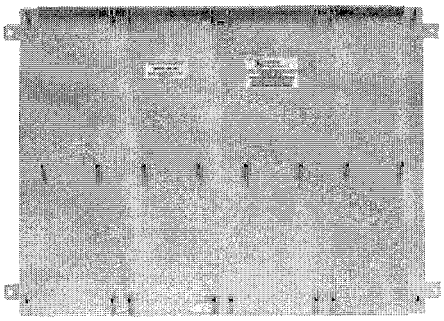
REMBOX4
Doors Closed



REMBOX4
Doors Open

CAB-MP Cabinet Mounting Plate

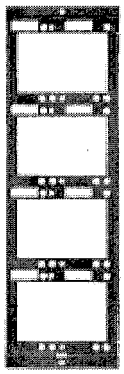
The Model CAB-MP cabinet mounting plate provides mounting for a single row of modules in a FireFinder XLS cabinet. Four module spaces are available on the CAB-MP. The CAB-MP is used to mount the CC-5 card cage, the CC-2 card cage, the PSC-12 power supply, the PSX-12 power supply extender, and the ZAM-80/180 zone amplifiers.



CAB-MP

ID-MP Inner Door Mounting Plate

The Model ID-MP inner door mounting plate is mounted on the inner door of a CAB enclosure. ID-MPs are used to mount Model SCM-8 switch control modules, Model LCM-8 LED control modules, or Model FCM-6 fan control modules. Four mounting plates are included in each Model ID-MP. Each mounting plate has four spaces for control modules, and can hold either four SCM-8s (one control module space each), four LCM-8 (one control module space each), or two FCM-6s (two module spaces each). Combinations are also allowed. Blank spaces in the ID-MP can be covered using the Model BCM blank control module plate. Up to four ID-MPs can be mounted in a single row on the inner door.



ID-MP

ID-SP Inner Door Blank Single Plate

The Model ID-SP is used to cover any single module blank spaces on the inner door not used to mount the PMI or an ID-MP. Up to four ID-SPs can be mounted in a single row on the inner door. Two blank plates are included in each Model ID-SP.

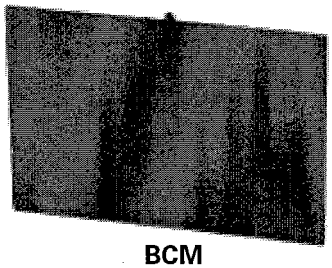
ID-SP

ID-FP Inner Door Full Blank Plate

The Model ID-FP is a blank plate that covers the full opening of the row on an inner door. It is used for applications requiring full dead front protection. A single full blank plate is included in the ID-FP.

BCM Blank Control Module plate

The Model BCM is used on the ID-MP to cover any blank areas where control modules are not used. Up to four BCMs can be mounted on a single ID-MP. Four blank module plates are included in each Model BCM.



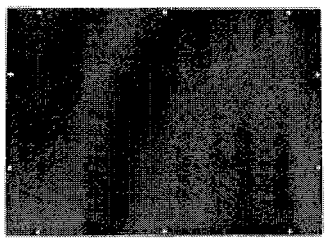
BCM

OD-LP Outer Door Lens Plate

The Model OD-LP is a clear plastic lens plate mounted on the outer door of a system cabinet. It is used to allow operators to see the system interface and controls mounted on the inner door, but restricts access to unauthorized users. It covers an entire row on the outer door. A single lens plate is included with each OD-LP.

OD-BP Outer Door Blank Plate

The Model OD-BP is used to cover an entire row on the outer door of a system cabinet. It is used when there is no PMI or control modules mounted on the adjacent row of the inner door. A single blank plate is included in each OD-BP.



OD-BP

NOTICE: The use of other than Fire Safety detectors and bases with Fire Safety equipment will be considered a misapplication of Fire Safety equipment and as such void all warranties either expressed or implied with regard to loss, damage, liabilities and/or service problems.

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Fire Safety

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9/06
5M
SFS-IG
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September 2006
Supersedes sheet dated 11/04

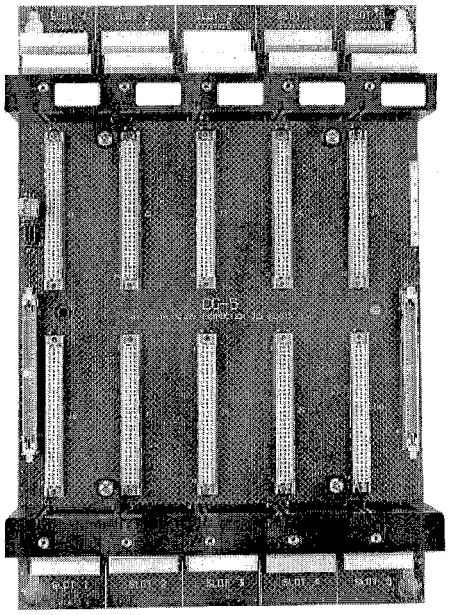
SIEMENS

CC-5 Card Cage-5 Slots

For FireFinder XLS Control Panels

ENGINEER AND ARCHITECT SPECIFICATIONS

- Common Cardcage for all FireFinder-XLS Fire & Voice option cards
- (5) slots to mount any option cards – with no restrictions
- Mounts on CAB-MP – (2) module spaces
- Removable terminal blocks
- Color coded & numbered terminal blocks
- All field wiring terminations on top (power limited)
- All internal wiring terminations on bottom (non-power limited)
- Molded card guides for card mounting
- Card position locator label on card guide
- All cards communicate via common 60 pin power/data bus
- Screw terminals wire sizes supported: 12 AWG – 24AWG
- DIN connectors
- UL/ ULC listed CSFM, NYMEA approved, FM pending



Description

The CC-5 card cage provides the physical mounting location and all wiring connection points for all fire and voice system options cards for the FireFinder-XLS system.

All cards plugged into the CC-5 card cage communicate with other FireFinder-XLS modules via a common (60) pin data bus. This (60) pin bus runs through the card cage making all communication data buses and signals available to all cards. Connectors are provided on the left & right side of the CC-5 to connect a (60) pin cable for communications with the FireFinder-XLS's operator interface, power supplies and amplifiers modules. There are no active components on the CC-5.

All field wiring to devices and circuits terminates on the CC-5 card cage. All cards designed for use with the CC-5 route their field wiring terminations to the "top" of the CC-5 – these connections are all power limited. Internal wiring connections distribute 24VDC to cards or high level audio signals (depending on application used) connect to the "bottom" of the CC-5 – these connections are all non-power limited.
All wiring connections to the CC-5 are to removable terminal blocks. Terminal blocks are rated for use with wire sized 12AWG to 24AWG. Each terminal block comes with a protective cover – that also serves as a handle to allow easy terminal block removal when wires are connected. The terminal blocks for each of the (5) card slots are color coded to provide technicians with a simple guide when replacing terminal blocks removed during wiring and commissioning. CC-5 card slot colors Slot 1 – Red , Slot 2 – Orange, Slot 3 – Yellow, Slot 4 – Green, Slot 5 – Blue. Each color coded connector is also numbered to make wiring terminations to the correct position on the terminal block simple and reduce the potential for wiring errors.

The CC-5 is shipped with two card guides (top and bottom) which mount to the CC-5 PCB. The "top" card guide contains a blank label for use by the installer to indicate the location or card slot position. This label serves as a reminder to the installer to insure the proper card goes in the correct card slot – this is important during commissioning when cards may be installed after the field wiring terminations have already been made – also for when cards are removed for service. All field wiring terminations are typically made to the CC-5 terminal blocks before the card guides are mounted and the option cards are installed.

The CC-5 mounts in two of the four available module spaces on the CAB-MP mounting plate for installation in the CAB1, CAB2 or CAB3 enclosures.

CATALOG NUMBER **6320**

Compatible FireFinder-XLS Cards

Any combination of (5) of the following option cards can be installed in the CC-5:

Model	Description	Part No.
Fire System Cards:		
DLC	Device Loop Card	500-033090
ZIC-4A	Zone Indicating Card 4 Circuits	500-033050
CRC-6	Controllable Relay Card	500-033250
NIC-C	Network Interface Card	500-033240
CDC-4	Conventional Detector Card	500-034200
Voice System Cards:		
DAC-NET	Digital Audio Card-Network	500-035100
AIC	Audio Input Card	500-035300
ZAC-40	Zone Amplifier Card-40 Watt	500-035400
TZC-8B	Telephone Zone Card	500-034110

Ordering Information

Model	Description	Part No.
CC-5	Card Cage 5 Slots	500-633037

Refer to Installation Instruction 315-033035

NOTICE: The use of other than Fire Safety detectors and bases with Fire Safety equipment will be considered a misapplication of Fire Safety equipment and as such void all warranties either expressed or implied with regard to loss, damage, liabilities and/or service problems.

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Fire Safety

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3/04
5M
SFS-IG
Printed in U.S.A.

March 2004
Supersedes sheet dated 1/03

SIEMENS

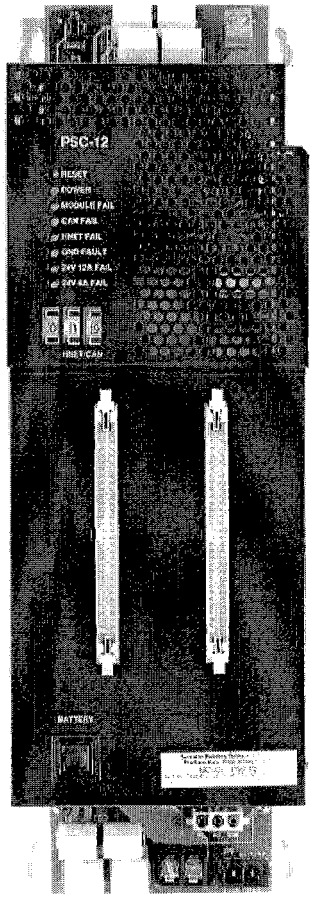
Fire Safety

PSC-12 Power Supply Charger Module

For the FireFinder XLS Control Panel

ENGINEER AND ARCHITECT SPECIFICATIONS

- Main system power supply
- Total power output 12 Amp @ 24VDC
- Built-in charger for up to 100AH batteries
- Universal AC Power input 120VAC – 240VAC @ 50/60Hz
- Off-line Switch Mode Power Converter
- Filtered & Regulated 24VDC
- Mounts on CAB-MP in (1) module space
- Common Alarm & Common Trouble Relays (Form "C" rated @ 2A)
- Two Programmable relays (Form "C" rated @ 2A)
- Provides 12A non-power limited 24 VDC output (internal use)
- 4 Amp power limited 24VDC output (external use)
- Supervised Intelligent Module – plain decimal addressing
- Communicates with PMI/CPC via common 60 pin power/data bus
- Downloadable module firmware
- Provides 24VDC and 6.2VDC power to all modules connected to 60 pin bus
- Ground Fault detection circuitry
- Optional enclosure tamper switch connection point (HTSW-1)
- Includes PTB Power Termination Board for AC field connections
- Optional 24VDC system power expansion with PSX-12 Power Supply extender.
- PSC-12 and PSX-12 share common batteries
- Up to (3) PSX-12's connected to PSC-12
- UL/ ULC listed, CSFM, NYMEA, City of Chicago, FM pending



Description

The PSC-12 is a high current power supply that provides the FireFinder-XLS primary regulated 24VDC power to operate. It is rated at 12Amps (Alarm)/5Amps (Standby) and has a built in battery charger capable of charging up to 100AH batteries. The PSC-12 is an addressable intelligent microprocessor controlled module that communicates it status to the system operator interface (PMI). The PMI is able to query the status of the power supply to obtain information regarding system charging current, terminal loading information, ground fault conditions and more.

CATALOG NUMBER **6322**

The PSC-12 is a universal power supply accepting AC power input levels from 120VAC to 240VAC @ 50HZ or 60HZ. No special configuration is required – the PSC-12 is designed to operate across these AC input ranges. This allows the PSC-12 to be used for all FireFinder-XLS power supply applications domestic and foreign.

The PSC-12 has an off-line switch mode power converter and power factor correction circuit to improve conductive RF emissions at low frequency. Due to its efficient off-line switch mode design, the PSC-12 draws an AC input power maximum of 4A@120VAC.

The PSC-12 communicates via H-Net protocol with other system cards and modules via the systems common 60 pin power/data bus. Via the 60 pin bus the PSC-12 provide the system with 6.2VDC (2Amps) and 24VDC (2Amps) to provide basic power to cards and modules- this 24VDC and 6.2VDC power is also referred to as "back plane current." Combined with the "back plane current," the PSC-12 provides 12Amps of power @ 24VDC. Two separate power output terminals are available: one power limited with 4A max @24VDC capacity and one non-power limited with 12A max @24VDC capacity (total not to exceed 12A). The PSC-12 also provides two connection points for the 60 pin power/data bus.

The PSC-12's 24 VDC outputs provide auto resettable current protection circuits for overload and short circuit conditions.

The battery sizes installed are entered in the software configuration tool. The PSC-12 can charge 15AH, 31AH, 75AH or 100AH batteries. The charger monitors and maintains the battery. The charger has three charge modes depending on the state of the batteries: Bulk (full) charge state, Trickle charge state and Float (maintenance) state. The charger monitors the batteries and automatically determines which of the charging modes to activate.

The PSC-12 can charge lead-acid batteries only. An optional thermister (HTHERM) is available for use with the PSC-12 to connect to the battery set to monitor battery temperature – to regulate the battery charge rate in the event that the batteries begin to overheat.

The PSC-12 mounts on one of the four available module spaces on the CAB-MP module mounting plate (which then mounts inside of the CAB1,CAB2 or CAB3 system enclosures).

The PSC-12 has (4) form "C" relays rated at 2Amps each. One relay is dedicated to automatically operate on "Any System Alarm" – this is the Common Alarm relay. Another is dedicated to automatically operate on "Any System Trouble" – this is the Common Trouble relay. Two additional relays are available to be programmed for activation based on system control logic.

When a door tamper switch is required in any of the CAB enclosures, the HTSW-1 tamper switch can be optionally connected to the PSC-12 to provide this functionality.

The PSC-12 has diagnostics LED's to indicate Power On, Module Failure (internal module failure), H-NET Failure (network communication failure), Ground Fault (internal to enclosure or on any 24VDC output circuits), 24VDC 12A fail and 24VDC 4A fail. The PSC-12 module is addressed using plain decimal push button address switches which clearly state the address of the module.

The PSC-12 also contains screw terminals for remote CAN bus module applications, remote paging microphones and telephones.

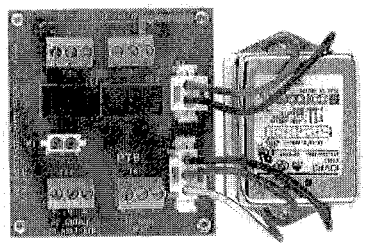
PTB Power Termination Board

Description

The PSC-12 comes packaged with a module called the PTB. The PTB is the Power Termination Board and is required for operation with the PSC-12. The PTB must be mounted in the lower right corner of the CAB enclosures. Mounting studs are provided in all enclosures to mount the PTB.

The PTB contains screw terminals for AC input power to be connected. The PTB contains an AC line filter and AC line power breaker rated at 5A. From another connector on the PTB, AC power is connected directly to the PSC-12 via a keyed cable harness. Each PTB supports building AC power connection circuits for two power supplies. Either one PSC-12 and optionally one PSX-12 Power Supply extender or two PSX-12's. When more than one PSX-12 Power Supply extender is used a second PTB is required and must be ordered separately.

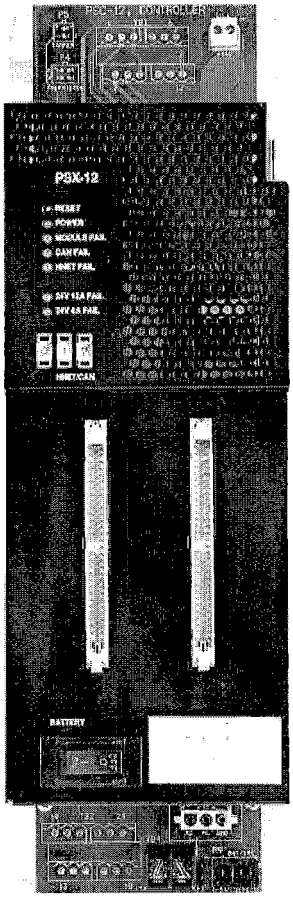
The PTB has an optional connector that can be used during system installation, commissioning & service to provide the technician with a place to plug in their laptop computer if required. The AC-ADPT is an optional accessory cable that allows connection on one side to the PTB via a keyed connector and on the other end directly into to the laptop's transformer. Most laptop computer external power transformers have removable AC power cords which can be replaced by the AC-ADPT to temporarily provide an AC power source for laptop computer used during system installation, service and maintenance calls when needed.



PTB

PSX-12 Power Supply Extender

- Auxiliary 24VDC Power Supply
- Total power output 12 Amp @ 24VDC
- Universal AC Power input 120VAC – 240VAC @ 50/60Hz
- Off-line Switch Mode Power Converter
- Filtered & Regulated 24VDC
- Provides 12A non-power limited 24 VDC output (internal use)
- 4 Amp power limited 24VDC output (external use)
- Mounts on CAB-MP (1) module space
- Supervised Intelligent Module – plain decimal addressing
- Communicates with PMI/CPC via common 60 pin power/data bus
- Downloadable module firmware
- Ground Fault detection circuit
- PTB PowerTermination Board for AC field connections
- PSC-12 and PSX-12 share common back-up batteries
- Up to (3) PSX-12's connected to PSC-12
- UL/ ULC listed, CSFM, NYMEA, City of Chicago, FM Approved



Description

The PSX-12 is a high current auxiliary power supply that expands the FireFinder-XLS systems main PSC-12 power supply and battery charger with an additional 24VDC power. It is rated at 12Amps.

The PSX-12 is an addressable intelligent microprocessor controlled module that communicates it status to the system operator interface (PMI) to report fault conditions. The PMI is able to query the status of the power supply to obtain information regarding terminal loading information, ground fault conditions and more.

The PSX-12 is a universal power supply accepting AC power input levels from 120VAC to 240VAC @ 50HZ or 60HZ. No special configuration is required – the PSX-12 is designed to operate across these AC input ranges. This allows the PSX-12 to be used with the PSC-12 for all FireFinder-XLS auxiliary power supply applications domestic and foreign.

The PSX-12 has an off-line switch mode power converter and power factor correction circuit to improve conductive RF emissions at low frequency. Due to its efficient off-line switch mode design, the PSX-12 draws an AC input power maximum of 4A@120VAC.

The PSX-12 communicates via H-Net protocol with other system cards and modules via the systems common 60 pin power/data bus. The PSX-12 provides a full 12Amps of power @ 24VDC. Two separate power output terminals are available: one power limited with 4A max @24VDC capacity and one non-power limited with 12A max @24VDC capacity (total not to exceed 12A). The PSX-12 also provides two connection points for the 60 pin power/data bus.

The PSX-12's 24 VDC outputs provide auto resettable current protection circuits for overload and short circuit.

The PSX-12 mounts on one of the four available module spaces on the CAB-MP module mounting plate (which then mounts inside of the CAB1,CAB2 or CAB3 system enclosures).

The PSX-12 has diagnostics LED's to indicate Power On, Module Failure (internal module failure), H-NET Failure (network communication failure), Ground Fault (internal to enclosure or on any 24VDC output circuits), 24VDC 12A fail and 24VDC 4A fail. The PSC-12 module is addressed using plain decimal push button address switches which clearly state the address of the module.

Electrical Ratings	PSC-12	PSX-12
Input Voltage	120 VAC/220 VAC/240VAC +10%, -15%	120VAC/220VAC/240VAC +10%, -15%
Input Current	4.0A Max. @ 120VAC 2.5A Max. @ 220VAC 2.0A Max. @ 240VAC	4.0A Max. @ 120VAC 2.5A Max. @ 220VAC 2.0A Max. @ 240VAC
24VDC Back Plane Current	2A Max.	NA
Screw Terminal 24VDC Current	Power Limited: 4A Max Non-Power Limited: 12A Max.	Power Limited: 4A Max. Non-Power Limited: 12A Max.
6.2VDC Back Plane Current	2A Max.	NA
24VDC Standby Current	150mA + 20mA per active relay	170mA

Model	Description	Part Number
PSC-12	Power Supply & Battery Charger 12A @ 24VDC	500-033340
PSX-12	Power Supply Extender 12A @ 24VDC	500-034120
PTB	Power Termination Board (only required for applications with more than (2) PSX-12's)	500-033390
HTSW-1	Door Tamper Switch	500-033350
AC-ADPT	Technician Laptop Power Connector	500-633992
BP-61	24VDC, 15AH Battery	175-387194
BTX-1	Set of 12V, 31AH Batteries	175-083897
BTX-2	Set of 12V, 55AH Batteries	175-083898
BTX-3	Set of 12V, 100AH Batteries	599-034220
CAB-BATT	Battery Enclosure for 75AH or 100AH Batteries	500-633917

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January 2005
Supersedes sheet dated 1/03

SIEMENS

Fire Safety

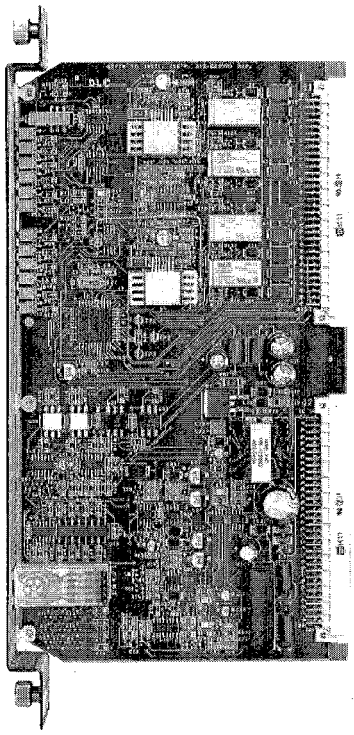
DLC Device Loop Card

For FireFinder™ XLS Control Panels

ENGINEER AND ARCHITECT SPECIFICATIONS

- Provides two intelligent addressable circuits
- 252 Addresses per DLC card
- Compatible with H-series detectors and devices
- Polarity Insensitive utilizing SureWire™ Technology
- DLC has 12 diagnostic LEDs for easy circuit diagnosis
- Supports T-Tapping
- On-board ground fault detection and short circuit isolation
- On-board microprocessor for dependable and efficient device communication
- Degrade Mode
- Style 4 (Class B) or Style 6 (Class A) wiring supported
- UL and ULC Listed, CSFM, NYMEA approved and FM pending

DLC Front View



DLC Side View

Description

The DLC Device Loop Card is the interface for connection with FireFinder XLS detectors and initiating devices including manual stations, control and input devices. The DLC plugs into one slot of the CC-2 or CC-5 card cage. Programming the DLC is accomplished using the FireFinder XLS Zeus configuration tool. The DLC takes one address on the network and communicates with two device circuits with a total of up to 252 detectors and devices. The DLC has 12 LEDs for diagnostic purposes and provides ground fault detection and zone isolation circuitry.

Application

The DLC initializes, operates and maintains all devices residing on its two circuits. The DLC communicates all relevant device and event information such as alarms and troubles to the FireFinder XLS control panel as well as supervising the circuit. The DLC is polarity insensitive greatly reducing commissioning time normally spent tracing down crossed field wiring.

The DLC communicates detector information such as sensitivity of intelligent fire detectors and logic function information to the PMI located at the control panel.

The DLC supports two isolated circuits with a total of up to 252 devices as well as relay and audible bases, remote lamps and duct detector housings in any combination. The microprocessor controls the on-board isolation to isolate the circuits if one is shorted allowing the other circuit to continue operating. The on-board microprocessor continues to operate even in the event of a CPU failure at the control panel for continued protection of life and property.

CATALOG NUMBER **6312**

Ordering Information

Model Number	Description	Part Number
DLC	Device Loop Card	500-033090
HFP-11	Fireprint Detector	500-033290
HFPT-11	Thermal Detector	500-033380
HTRI-S	Single Input Module	500-033370
HTRI-D	Dual Input Module	500-033360
HTRI-R	Single Input with Relay	500-033300
HTRI-M	Mini Input Module	500-034000
HMS-S	Manual Station-Single Action	500-033200
HMS-D	Manual Station-Dual Action	500-033400
HMS-M	Manual Station-Metal	500-033450
HMS-2S	Manual Station-2 Stage	500-033460
HMS-SA	Manual Station-Single Action, Auxilliary Contact	500-034150
ILED-HC	Intel Remote Lamp - Ceiling Field Mount	500-048637
ILED-HW	Intel Remote Lamp - Wall Field Mount	500-048809

Electrical Ratings

24V Back Plane Current:	0
Screw Terminal 24V Current:	100mA + 1.8mA per device
6.2V Back Plane Current:	200mA
24V Stand by Current:	145mA + 1.8mA per device

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March 2004
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SIEMENS

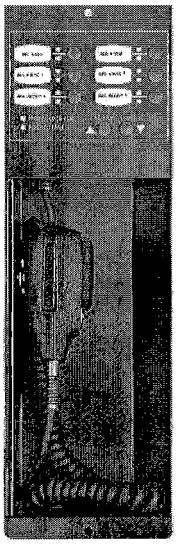
Fire Safety

LVM

Live Voice Module

ENGINEER AND ARCHITECT SPECIFICATIONS

- Dynamic Microphone with Push-To-Talk Switch
- Retractable Coil Cord
- Fully Supervised
- PreannounceTone LED
- Ready to Page LED
- Six Programmable Switches Built-In
- Six Pairs of LEDS Built-In
- Speaker With Volume Control
- Mounts to the Inner Door of CAB1, CAB2, CAB3, or Remote Lobby Enclosure
- UL Listed, ULC Listed



Description

The Siemens Building Technologies, Fire Safety Division Live Voice Module (LVM) provides a supervised high quality dynamic microphone to give fire fighters a means of sending live voice messages to specified audio zones. The LVM mounts on the Inner Door of a CAB1, CAB2, CAB3 or Remote Lobby Enclosure. It includes a microphone with a push-to-talk switch and retractable coiled cord. The microphone and push-to-talk switch are fully supervised.

The LVM also provides a green preannounce LED which indicates the preannounce signal is active at the selected zones and a green ready to page LED which indicates that selected zones are ready to be paged. The preannounce signal can be programmed as a tone or message and the duration is adjustable from 0 to 10 seconds in 1 second increments. A built-in speaker with volume control allows the monitoring of the audio channels.

The front panel of the LVM contains six switches and six pairs of LEDS. Each pair contains one bi-color (red/green) and one yellow LED. These switches can be programmed for manual voice functions as well as generic system functions. When the switches are used as generic switches all LEDS can be programmed for ON, OFF or FLASHING.

The Live Voice Module (LVM) is supervised by the DAC-NET Card and is assigned to one of the 99 DAC-NET sub addresses (CAN addresses).

Electrical Ratings

24V Current, 25ma max

Model Number	Description	Part Number
LVM	Live Voice Module	500-034090

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November 2004
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SIEMENS

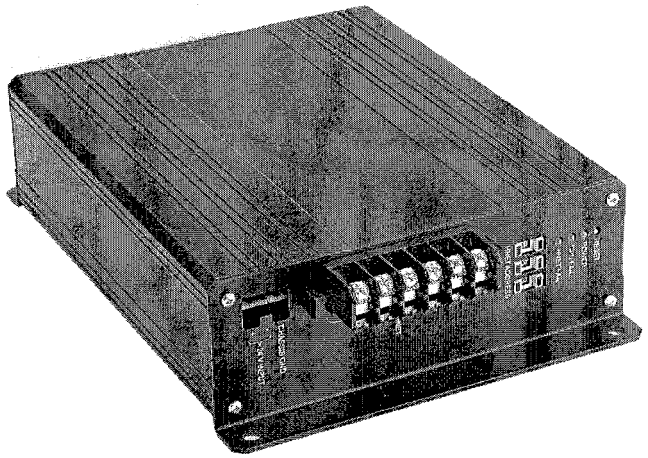
Fire Safety

RPM Remote Printer Module

For the FireFinder XLS Control Panels

ENGINEER AND ARCHITECT SPECIFICATIONS

- Provides an interface to remote printers
- Two serial ports and one parallel port provided
- Data port available to interface with external systems
- Supervised intelligent module
- Plain decimal addressing
- Supports Style 4 or Style 7 wiring
- Provided in its own enclosure
- Built-in transient protection
- Downloadable module firmware
- RS-485/RS-232 Port for connection to foreign systems (FSI)
- UL, ULC Listed, NYMEA & CSFM Approved



Introduction

The Model RPM Remote Printer Module provides a means of connecting the FireFinder XLS system to a printer for creating a hard copy of system status and configuration reports. Simultaneously, it provides an output port that can be configured to communicate with external systems.

Description

The RPM is remotely connected to the H-Net communication bus from any NIC-C output in a FireFinder XLS system enclosure using Style 4 or Style 7 wiring. There are two RS-232 (serial) printer ports and a single Centronics parallel interface on the RPM, allowing a serial or parallel printer (such as the PAL-1 Parallel Printer) to be connected to the system simultaneously with an FSI through a serial port. The FSI serial port can be configured as RS-232 or RS-485, and will provide data to a monitoring system with no control capabilities. When the PAL-1 is used with the RPM, the RPM supervises the printer for on/off line, power on, paper out, paper jam, and wiring fault conditions, as is required by Underwriters Laboratories for NFPA 72 proprietary systems. Event and report printing is generated at the Person-Machine Interface (PMI) on the main FireFinder XLS system.

The RPM has integral mounting flanges to allow the module to be mounted unobtrusively under a table or behind a desk. 24VDC is required to run the RPM, and it can be provided from a Model PSC-12 Power Supply or PSX-12 Power Supply Extender in the FireFinder XLS system enclosure. Power from other UL Listed 24VDC power sources is also acceptable. The RPM has screw terminals capable of supporting 12 to 22 gage wires. Communication with the FireFinder XLS system is done by connection to the NIC-C network interface card using Style 4 or Style 7 wiring. The H-Net communication from the FireFinder XLS system can be terminated on the RPM, or may pass through for communication with other modules. Diagnostic LEDs on the RPM indicate power and communication status.

The RPM also provides an RS-232 or RS-485 port for connection to foreign systems such as Building Management Systems.

A separate RPM is required for connection to foreign systems and it is enabled through the FireFinder XLS Zeus configuration tool.

CATALOG NUMBER **6325**

This port is to be used for primary or secondary monitoring of the FireFinder XLS by the foreign system. Control of the XLS through this port is only allowed for use with authorized UL approved products. The communication is bi-directional and includes handshakes to verify that data sent by the XLS has been received by the monitoring system.

Electrical Ratings

24V Back Plane Current:	0
ScrewTerminal 24V Current:	150mA
6.2V Back Plane Current:	0
24V Standby Current:	150mA

Ordering Information

Model Number	Description	Part Number
RPM	Remote Printer Module for the FireFinder XLS System	500-033270
PAL-1	UL Listed Parallel Printer	500-692407

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SIEMENS

Fire Safety

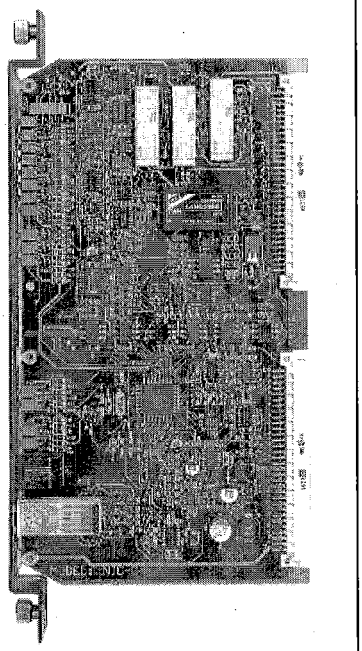
NIC-C

Network Interface Card

ENGINEER AND ARCHITECT SPECIFICATIONS

- HNET communications
- XNET communications
- CAN network communications
- Supports Style 4 or Style 7 wiring for XNET or HNET
- Supervises the HNET or XNET and CAN network
- Diagnostic LEDs
- Isolates short circuit faults
- Ground fault detection
- Network repeater
- Downloadable firmware
- UL, ULC Listed
- NYMEA, CSFM Listed

NIC-C Front View



NIC-C Side View

Introduction

The Model NIC-C Network Interface Card provides HNET or XNET network communications between enclosures. In addition to the HNET or XNET communication the NIC-C provides CAN network communication within an enclosure or external to the enclosure. The HNET or XNET can be wired Style 4 or Style 7. The CAN network can be wired Style 4 only.

Description

A single NIC-C provides either HNET or XNET. The CAN interface is available regardless of the HNET or XNET usage.

When the NIC-C is used for HNET communications it provides communication between enclosures on a single system. It is set for HNET usage and an HNET address. The maximum HNET NIC-Cs on a single system (single node) is 64. The NIC-C supervises the HNET network to insure proper operation. The NIC-C also isolates a short circuit fault to each individual segment of the HNET network. The NIC-C provides an electrical repeater for each HNET pair.

When the NIC-C is used for XNET communications it provides communication between systems. It is set for XNET usage and an HNET address. The maximum of XNET NIC-Cs on a single system (single node) is one, for a total of 64 XNET NIC-Cs on a Peer-To-Peer Networked System. The XNET NIC-C Card must reside in the same enclosure as the PMI (Person Machine Interface). MXL systems may also reside on the same XNET with FireFinder-XLS systems. The NIC-C supervises the XNET network to insure proper operation. The NIC-C also isolates a short circuit fault to each individual segment of the XNET network. The NIC-C provides an electrical repeater for each XNET pair.

The FireFinder-XLS will also report all events over the XNET to the Network Command Center NCCNT-G which is required for Global Control. The events will be displayed on the NCCNT-G and can be acknowledged, audibles silenced and system reset from the NCCNT-G. The NCCNT-G Command Center can also be used to perform Maintenance Commands on an individual FireFinder-XLS on the XNET.

CATALOG NUMBER **6338**

The NIC-C Card takes one card slot and mounts in a CC-2 or CC-5 Card cage inside a CAB-1, CAB-2, or CAB-3 Enclosure.

The NIC-C provides the CAN network which supports the LCM-8/SCM-8/FCM-6/OCM-16/SIM-16 CAN modules. Up to 99 CAN module addresses are available per enclosure.

The NIC-C Card has diagnostic LEDs that indicate Card Fail, CAN Fail, HNET Fail, XNET Fail, Ground Fault, Loop A Fail and Loop B Fail, as well as LEDs to indicate Power, Style and Active Networks.

Ordering Information

Model Number	Description	Part Number
NIC-C	Network Interface Card	500-033240

Electrical Ratings

24V Back Plane Current:	120mA
Screw Terminal 24V Current:	0
6.2V Back Plane Current:	0
24V Standby Current:	120mA

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January 2004
New Issue

SIEMENS

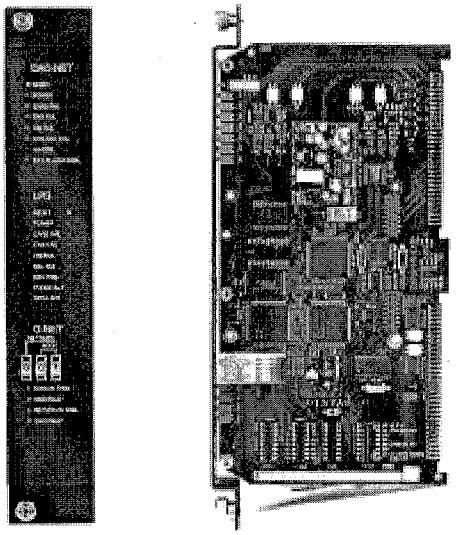
Fire Safety

DAC-NET

Digital Audio Card for the FireFinder XLS System

ENGINEER AND ARCHITECT SPECIFICATIONS

- Audio signal source
- Transmits 8 audio channels
- Class B (Style 4) via two pairs of wires
- Class A (Style 7) via four pairs of wires
- Programmable custom messages or tones
- 5 Minutes of message/tone storage memory
- On Board Microprocessor
- Built-in Ground Fault Detection
- Provides communication via the CAN bus with up to 99 of the following modules: SCM-8, LCM-8, FCM-6, FMT, TZC-8B, LVM, ZAC-40, ZAM-180
- UL Listed, ULC Listed



Description

The Digital Audio Card DAC-NET provides the audio source for the FireFinder XLS Voice Evacuation System. It also provides D-NET network communication to and from the PMI and between enclosures. It is capable of transmitting 8 digital channels of audio via two pairs of wire. One DAC-NET is required in each XLS Voice enclosure. It can be wired Class A (Style 7) (four pairs of wires) or Class B (Style 4) (two pairs of wires). The DAC-NET Card plugs into one slot in the CC-5 or CC-2 Card Cage. It has on-board LEDs for system status and troubleshooting. Indication of power, communication, internal operation, ground fault, and trouble conditions are provided.

The DAC-NET Card contains an on-board microprocessor that provides communication with switch modules, LED modules, microphone, telephone zone cards, and zone amplifiers across the Control Area Network CAN Bus. It can supervise up to 99 CAN address modules.

The DAC-NET contains on board tones and prerecorded EVAC and ALERT messages. In addition custom messages or tones can be downloaded to the DAC-NET using the XLS SoftwareTool Zeus for a total of 5 minutes of storage memory.

The D-NET is supervised for open, short and ground fault. Each input/output is electrically isolated. The maximum distance between two DAC-NETs is 2,300 feet (14 AWG to 18 AWG twisted unshielded wire) A maximum wiring length can be up to 23,000 feet of twisted unshielded wire through the entire D-NET network with up to a total of 32 DAC-NET nodes.

Electrical Ratings

Supervisory Current: 230 mA

Ordering Information

Model Number	Description	Part Number
DAC-NET	Digital Audio Card	500-035100

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May 2006
Supersedes sheet dated 1/03

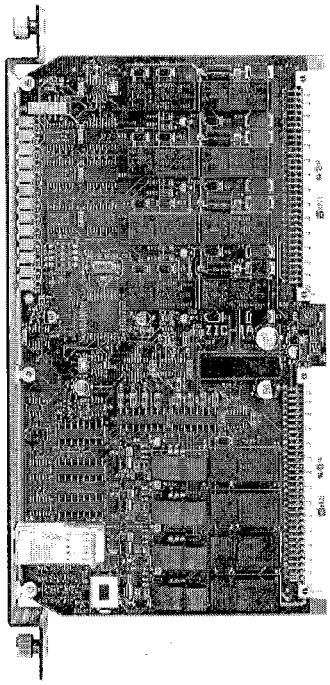
ZIC-4A Zone Indicating Card

For the FireFinder XLS System

ENGINEER AND ARCHITECT SPECIFICATIONS

- Operates Audible or Visual Notification Appliances
- Three Unique Signals from each circuit
- Operates Audio Speakers (25V, 70V or 100V RMS)
- One or Two Channel Voice Operation
- Four Class A (Style Z) or Class B (StyleY) Circuits
- 24 VDC 4.0 Amps Per Circuit
- City Tie or Leased Line Output
- Releasing Service
- Fully Programmable
- Coded Audibles Available
- Built-in Strobe Synchronization
- Bell Follower Application Available
- March Time/Uniform Code 3
- Selectable Degrade Operation
- Silenceable/Non-Silenceable Option
- Automatic/Manual Control
- On Board Microprocessor
- Built-in Ground Fault Detection
- Circuits Power Limited Per NEC 760
- NFPA 13, Pre-Action and Deluge
- NFPA 2001, FM-200 Releasing
- NFPA 12A, Halon Releasing
- UL Listed, ULC Listed, CSFM, NYMEA approved and FM Pending

ZIC-4A Front View



ZIC-4A Side View

Description

The Zone Indicating Card ZIC-4A provides four fully supervised programmable output circuits for use on the FireFinder XLS Fire Alarm Control Panel. The ZIC-4A supplies four Class B (StyleY) or Class A (Style Z) type output circuits, power limited to 4.0 amps maximum per circuit. Each circuit can be independently programmed for use with listed audible or visual notification appliances, listed emergency audio speakers, municipal tie boxes, leased lines, or as releasing circuits. The ZIC-4A plugs into one slot in the CC-5 or CC-2 Card Cage, and has on-board LEDs for system status and troubleshooting. Indication of power, communication, internal operation, and ground fault conditions are provided, as well as indication of circuit activation or trouble conditions. All system status conditions are also reported to the system Person-Machine Interface, the PMI.

Each circuit or output may be controlled automatically with system logic programmed with the ZEUS programming tool or manually using the FireFinder XLS keypad on the PMI. Automatic control may also be time based. Each circuit or output can be manually "Armed" or "Disarmed" through the PMI keypad. When any circuit or output has been "Disarmed," the PMI display will indicate the affected circuit or output and the "Partial System Disable" LED will illuminate, until the circuit or output has been returned to the "Armed" condition. The ZIC-4A circuits can also be manually energized or de-energized when in the "Disarmed" state using the PMI. The ZIC-4A contains an on-board microprocessor which allows notification circuit

outputs to function in a degrade mode even if the main FireFinder XLS processor or the local network communication link has failed. In a degrade mode a ZIC-4A will respond to an alarm or trouble from any intelligent addressable initiating device or conventional zone initiating device connected in the same local enclosure.

Standard NAC zone– Each of the four circuits on the ZIC-4A can be configured for use as a standard Notification Appliance Circuit. The NAC output can be used as a steady, strobe synchronized, or zone coded output. The available codings include ANSI Temporal, March Time 120 pulse per minute (PPM), March Time 60 PPM, March Time 30 PPM, Canadian Two-stage 30 PPM, Canadian Two-stage 120 PPM and custom coding. Outputs may be programmed through logic to transmit up to three different signal types depending on event priority. For instance, the same circuit can be programmed to transmit the ANSI Temporal pattern for evacuation, March Time 120 PPM for tornado notification, and a custom code for recall.

Standard speaker zone – Each of the four circuits on the ZIC-4A can be configured for use as a standard speaker circuit in single or dual channel systems. The ZIC-4A can be used with the ZAM-180 bulk amplifier or the ZAC-40 amplifier card. Each circuit on the ZIC-4A is limited to 96 Watts per zone.

Releasing zone – Each of the four circuits on the ZIC-4A can be configured for use as a releasing circuit. This circuit can be used to release FM-200, Halon, Pre-action or Deluge sprinkler systems. The releasing circuit can use power directly from the FireFinder XLS system. No external regulated power supply is required. The releasing circuit can be optionally configured for use in Canada.

Municipal Tie – Each of the four circuits on the ZIC-4A can be configured so that it can be connected to and activate a municipal city tie box. The circuit meets the requirement of some jurisdictions to allow the box to be reset before the fire alarm control panel. A Model LLM-1 Leased Line Module is required for this feature.

Leased Line – Each of the four circuits on the ZIC-4A can be configured for connection to a leased line. The circuits can be programmed to transmit alarm, supervisory, or trouble signals. A Model LLM-1 Leased Line Module is required for this feature.

Bell Follower – Each of the four circuits on the ZIC-4A can be configured as a NAC that can follow the input from another NAC in an external fire alarm control panel. Circuit 1 on a ZIC-4A within a FireFinder XLS system enclosure can be configure as the Bell Follower – Master and is connected to the external NAC. Any other ZIC-4A circuit in that enclosure can be configured to follow the state of the Master. This feature can be used to synchronize coded or ANSI Temporal patterns for audibles with another fire alarm control panel.

Technical Data

Output Current Active (max) -	4.0 A (24VDC) per output
Mounting -	Plugs in 1 slot of CC-5 or CC-2
Output Wiring Limitations-	
At 4.0 amps -	0.8 ohms max.
At 3.5 amps -	1.0 ohms max.
At 3.0 amps -	1.2 ohms max.
At 2.5 amps -	1.5 ohms max.
At 2.0 amps -	2.0 ohms max.
At 1.5 amps -	2.7 ohms max.
At 1.0 amps -	4.2 ohms max.
At 0.5 amps -	8.7 ohms max.

Ordering Information

Model Number	Description	Part Number
ZIC-4A	Zone Indicating Card	500-033050

Controls and Indicators

RESET switch -	Re-initializes the ZIC-4A card only
POWER LED -	Indicates that power is applied to the ZIC-4A
CARD FAIL LED -	Illuminates when the card microprocessor has failed
CAN FAIL LED -	Illuminates when the CAN communication fails and the ZIC-4A is in degrade mode
HNET FAIL LED -	Illuminates when the HNET communication fails and the ZIC-4A is in degrade mode
GND FAULT LED -	Indicates the detection of a ground fault condition (either negative or positive) on the ZIC-4A field wiring
ZONE ACTIVE LEDs -	Illuminates to indicate that the zone has been activated either automatically or manually. There is one LED for each zone.
TROUBLE LEDs -	Indicates the presence of a trouble condition (either an open circuit or a short circuit) on the zone. There is one LED for each zone.

Electrical Ratings

24V Back Plane Current:	275mA
Screw Terminal 24V Current:	Total NAC current
6.2V Back Plane Current:	0
24V Standby Current:	90mA + 4mA per EOL

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March 2004
Supersedes sheet dated 1/03

SIEMENS

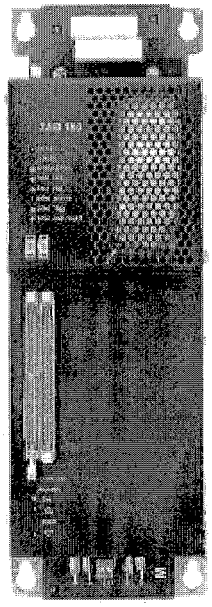
Fire Safety

ZAM-180

Zone Amplifier Module (180Watt) for the FireFinder XLS System

ENGINEER AND ARCHITECT SPECIFICATIONS

- 180 Watt Audio Amplifier
- Selectable audio levels
  - 25VRMS 150 Watts
  - 70VRMS 180 Watts
  - 100VRMS 165 Watts
- Local audio input
- Speaker Lines supervised when active or inactive
- Style "Y" or "Z" Wiring
- Split zone (A/B) Wiring on Style "Y"
- Mounts in one module space on the CAP-MP Mounting Plate
- Supports and switches up to 8 digital audio channels
- Internal Amplifier Supervision
- Back-up Amplification Available
- UL Listed, ULC Listed



Description

The Siemens Building Technologies, Fire Safety Division ZAM-180 is a combination 180 watt amplifier/speaker zone for use with FireFinder XLS. Style Y or Z speaker zone wiring is supported as well as split zone (A/B) speaker zone wiring configurations on Style "Y." ZAM-180 can be configured to provide 150 watts of audio at 25VRMS, 180 watts of audio at 70VRMS or 165 watts of audio at 100 VRMS. It mounts in one module space on the CAB-MP mounting plate. The ZAM-180 is capable of amplifying any one of the 8 digital audio channels that are transmitted from the DAC-NET (Digital Audio Card) via the digital audio bus ASI (Audio Serial Interface). The ZAM-180 amplifier is supervised for functionality.

The ZAM-180 can be used as a single 180Watt speaker zone for one to eight channel applications or as a bulk amplifier for one or two channel applications feeding high level audio to the ZIC-4A or ZIC-8B.

The speaker lines are supervised for open, short circuit and ground fault. They are supervised in both the active and inactive states.

To provide amplifier backup, additional ZAM-180s can be used to achieve the desired amplifier backup ratio of 1 to 1 or 1 to many.

The ZAM-180 takes one sub-address of the DAC-NET and receives its control and communication data from the DAC-NET via the CAN Bus on the DAC-NET.

The ZAM-180 contains an inherent Degrade Mode backup tone (Slow Whoop) which serves as a secondary backup to the primary backup tone or digital message provided by the DAC-NET.

A local audio input is provided to connect an external audio source. The local audio input is activated via an external contact. It has the lowest priority of all signals.

Typical Applications

Emergency
Fire Evacuation
Tornado Alert
Terror Alert
Building Emergency

Non- Emergency
Convenience Paging
Background Music

CATALOG NUMBER **6332**

Electrical Ratings

Frequency Range:	200 Hz to 12Khz
Amplifier Input:	1VRMS
Supervisory Current:	300mA
Dry Contact Input:	24V/10mA

Power Chart

Power Output	24VDC Load
180W	9.5A
140W	7.4A
100W	5.3A
60W	3.2A
20W	1.06A

Note: *Powered by PSC-12 or PSX-12*

Ordering Information

Model Number	Description	Part Number
ZAM-180	180 Watt Zone Amp	500-035600

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October 2005
Supercedes sheet dated 12/02

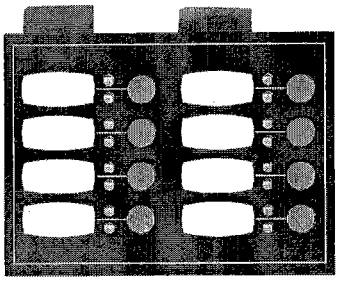
SIEMENS

Fire Safety

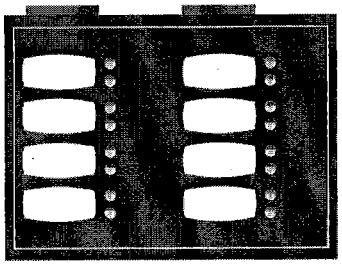
SCM-8/LCM-8/FCM-6

Switch Control Module/LED Control Module/Fan Control Module For the FireFinder XLS Control Panel

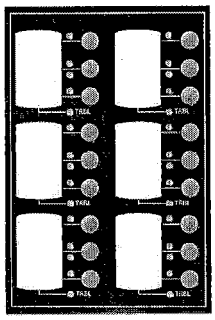
ENGINEER AND ARCHITECT SPECIFICATIONS



SCM-8



LCM-8



FCM-6

- Eight programmable switches (SCM-8)
- Protected space provided for labeling
- Discreet switches
- Multi-color LED's for clear indication of system status
- Modular
- Programmable LED annunciation
- Remotely mounted via CAN data bus
- Remote mounting in REMBOX2 or REMBOX4 enclosures

- Six sets of the push button programmable fan control switches (FCM-6)
- Manual on/off/automatic positions
- Positive feedback (supervised)
- LED indication of fan status (on/off and trouble)
- Protected label provided
- Modular
- Activation stagger timer
- (UL) Listed, ULC listed, NYMEA and CSFM pending

Description

SCM-8

The SCM-8 is a Siemens Building Technologies, Fire Safety Division FireFinder XLS option module which provides manual control of the Emergency Voice Evacuation System or manual fire system control. Each SCM-8 module provides eight momentary push button switches and 16 LED's to indicate their status. Each switch is assigned two LED's and a label to indicate the switch's programmed usage. The label slides behind a clear protective membrane.

One of the LED's assigned to each switch is a dual color LED used to indicate what type of signal is active. This LED may also be lighted steady or flashing to further indicate system status. For example, zones active to the Evacuation audio channel will have the LED lighted RED and steady; zones active to the Alert audio channel will have the LED lighted RED and flashing; zones selected for paging will have the LED lighted GREEN and flashing until the microphone key is pressed; when the zone transfer confirmation message is received by the XLS Command Console, the LED will change to steady GREEN, indicating that it is clear to page; telephone zones with a call-in in progress will have their LED flashing GREEN until selected at the Command Console at which time the LED will convert to steady GREEN etc. This allows the operator easy, clear access to the overall system condition at all times. The second LED is amber and is used to indicate a fault condition.

Each SCM-8 and each switch is fully programmable and may be used to control speaker circuits, and a wide range of general system functions such as All Call, All Evac, Warden's Page, Speaker, etc. Any number of circuits may be grouped and controlled by a single switch. Switch usage and zone groupings are assigned using the ZEUS system programming software.

The SCM-8s are mounted on a hinged panel as a part of the FireFinder XLS Command Console enclosure.

This equipment is approved for operation over the temperature range of 0°C to 49°C.

LCM-8

The LCM-8 is an FireFinder XLS option module which provides LED annunciation of system activity. Each LCM-8 module contains eight groups of 2 LED's, each of which can be assigned to desired outputs using the ZEUS programming software. Eight LED's are dual color capable of being lighted either RED or GREEN flashing or steady. The remaining LED's are AMBER flashing or steady.

A space is provided for labeling of LED functions. The label slides behind a clear protective membrane.

The LCM-8 dimensions are identical to the SCM-8 and is mounted on the same hinged panel as a part of the FireFinder XLS Command Console enclosure.

Any combination of SCM-8 and LCM-8 modules may be used.

This equipment is approved for operation over the temperature range of 0°C to 49°C.

FCM-6

The FCM-6 is an FireFinder XLS command console option module that provides manual control of building HVAC system fans, motors, and dampers. Each FCM-6 module provides (6) sets of (3) push button switches for manual system control. Each switch has 3 associated LEDs to indicate Fan/Damper/Motor status: OFF (Red LED), ON (Green LED), TROUBLE (Yellow LED).

When in the automatic position the red and green LEDs indicate fan/damper/motor status (On or Off) based on the system logic that can be programmed to automatically control the fan outputs. When manually switched to the Off position, the red LED will flash indicating that the output circuit used to turn off the Fan/Damper/Motor has activated. The red LED will light solid red to indicate positive feedback of the Fan/Damper/Motor actually turning off (via a monitored input). When manually switched to the On position, the green LED will flash indicating that the output circuit used to turn on the Fan/Damper/Motor has activated. The green LED will light solid green to indicate positive feedback of the Fan/Damper/Motor actually turning on (via a monitored input). See chart below.

During system reset when switches are turned manually to the "ON" or the "OFF" position their associated outputs do not change state. They stay either On or Off based on the switch's position. Outputs will only change state when manually controlled via the On/Off switch or based on system logic when switch is in the Auto position.

Switch Position	LED Indicators	Description
AUTO	OFF–Red Solid ON–Green Solid	Based on System Logic Driving Outputs
ON	Green Flashing Green Solid	Command Sent out to Turn On Outputs Output's On–Positive Feedback Received that Output is On
OFF	Red Flashing Red Solid	Command Sent Out to Turn Off Outputs Output's Off–Positive Feedback Received that Output is Off

The FCM-6's are mounted on a hinged panel as a part of the FireFinder XLS command console enclosure.

Any combination of the SCM-8, LCM-8 or FCM-6 modules may be mounted on the ID-MP. A six conductor cable is supplied for interconnection of the modules. A 30" cable (CCL) is available for connection between rows.

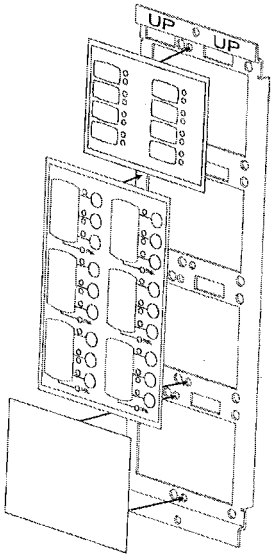
This equipment is approved for operation over the temperature range of 0°C to 49°C.

SCM-8, LCM-8, and FCM-6 can be remotely mounted up to 1000 feet from main enclosure. REMBOX2 and REMBOX4 lobby enclosures are required for remote SCM-8, LCM-8 and FCM-6 mounting. CSB sounder is optionally available for switch audible feedback for remote mounting applications.

Ordering Information

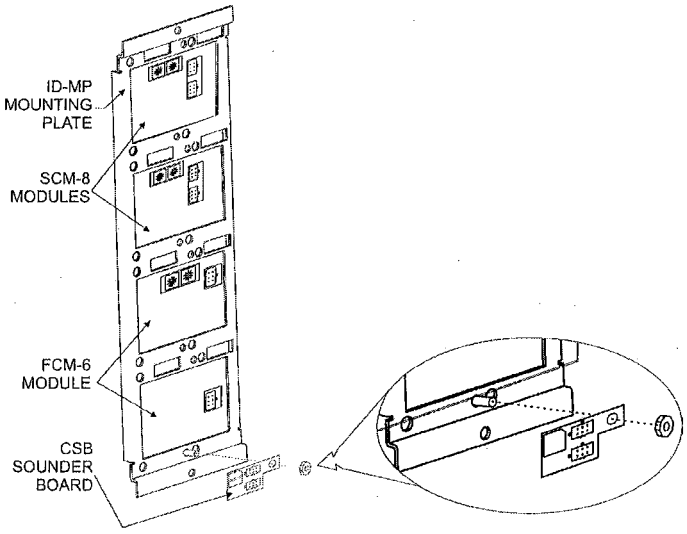
Model No.	Description	Part No.
SCM-8	Switch Module (8 Switches)	500-033040
LCM-8	LED Annunciator Module (8 LED Sets)	500-033100
FCM-6	Fan Control Module Switches (On–Off–Auto)	500-033140
ID-MP	Inner Door Mounting Plate (Accepts up to 4 Modules)	500-633027
CSB	CAN Sounder Board	500-033130
CCL	CAN-CABLE–Long 30 in. 6-Conductor	599-634214
BCM	Blank Plate	500-033320

Mounting Diagram



Installing FCM-6, LCM-8, SCM-8 Modules

Installation Diagram



Mounting the CSB

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July 2003
Supersedes sheet dated 12/01

SIEMENS

Installation Instructions
Model CAB-BATT/R

Battery Box

INTRODUCTION

The Model CAB-BATT/R Battery Box from Siemens Building Technologies, Inc. is used to house BTX-2 (75AH) and BTX-3 (100AH) batteries for the FireFinder-XLS System and up to 100AH battery sets for the FS-250 and FS-250C Systems. The CAB-BATT is black and the CAB-BATT-R is red. The CAB-BATT-R will be referred to in the remainder of this document as the CAB-BATT.

The CAB-BATT consists of a door and a backbox, as shown in Figure 1. The door is permanently hinged left.

The backbox can be placed on the floor directly underneath the CAB enclosure to which it supplies battery backup or it can be mounted on a flat surface with four user-supplied bolts that are a maximum of 3/8 inch in diameter.

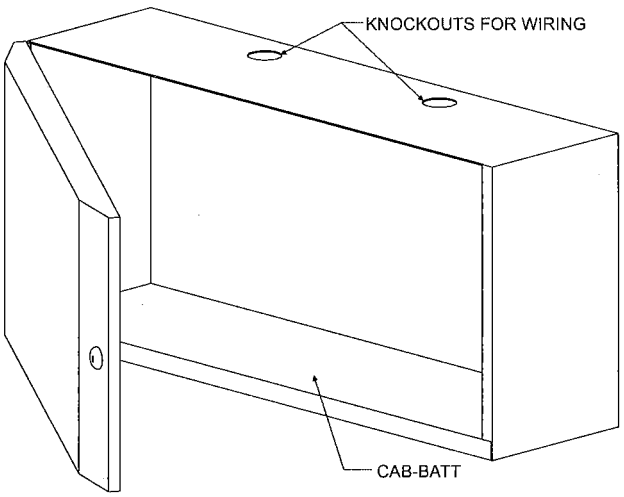

Figure 1
CAB-BATT Enclosure

NOTE **CABB-BATT Enclosure is for indoor use only in dry environments.**

INSTALLATION

Prior to installation consider the following:

- Weight and size of the enclosure.
- Local codes.

Install the backbox:

1. Select a clean, dry, shock and vibration free surface.

P/N 315-033917-5

Siemens Building Technologies
Fire Safety

2. Position the backbox directly beneath the CAB enclosure to which it will be wired, lining up the knockouts in the CAB-BATT with the knockouts in the CAB enclosure.
3. Position the backbox so that it is clear of obstructions and the front door opens freely.
4. Mark the locations of the two upper mounting bolts of the backbox on the wall. (Refer to Figure 2.)

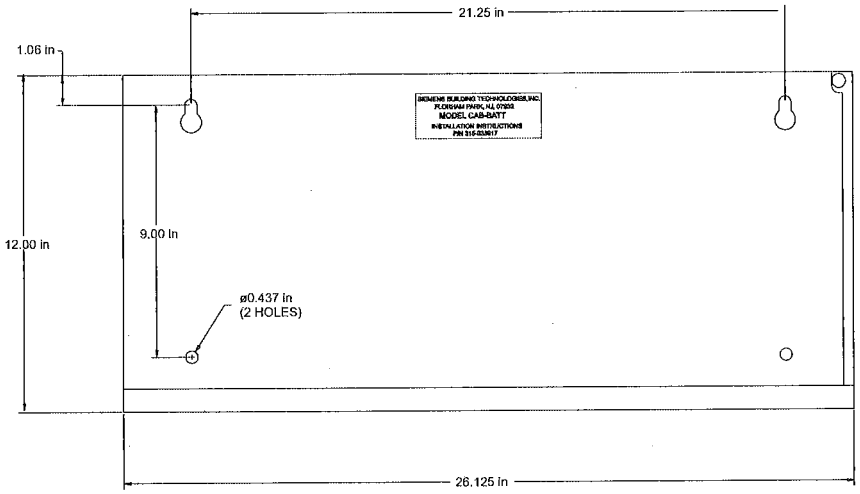

Figure 2
Mounting Holes For CAB-BATT

5. Drill the two holes located in the previous step and screw in the top bolts, leaving a small gap between the wall and each top bolt.
6. Place the backbox over the two top bolts and allow it to slide down over the bolts.
7. Mark, drill, and install the two bottom bolts in the backbox.
8. Tighten all four bolts securely against the back wall of the backbox.
9. Place the batteries in the bottom of the CAB-BATT.

WIRING

WARNING

The main AC power line must be turned OFF prior to installation.

Install Wiring

Wire in accordance with local codes and NEC 760.

1. Remove the knockouts in the top of the battery box and bottom of CAB enclosure for entry of battery wiring.
2. Connect the Battery Wire Assembly to the batteries in the CAB-BATT. If a longer wire is required, use a minimum of 12 AWG. For FireFinder-XLS, use P/N 465-633943, supplied with the PSC-12 (Refer to Figure 3 and the PSC-12 Installation Instructions, P/N 315-033060.) For FS-250 or FS-250C, use the Battery Cable Assembly supplied with the FS-250 / FS-250C hardware kit (Refer to Figure 4.)

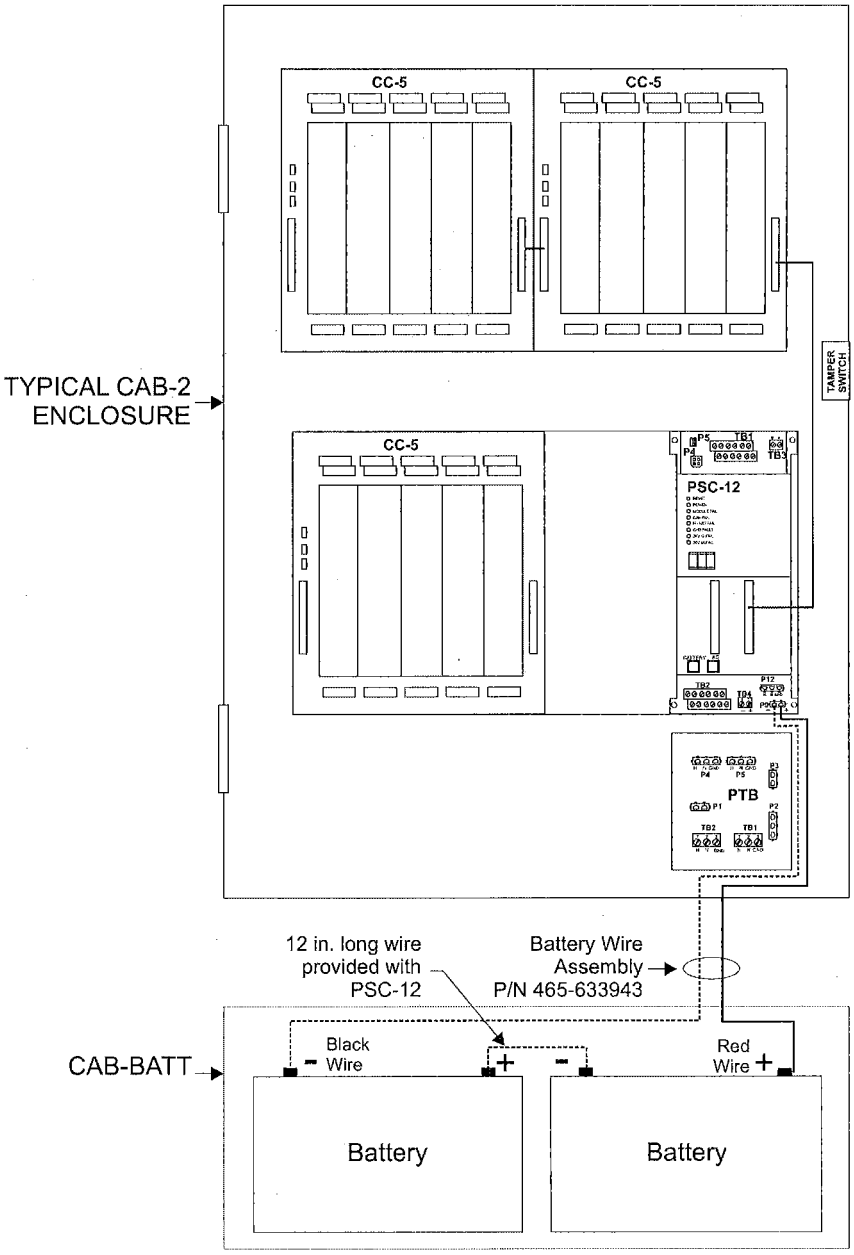

Figure 3
Typical Battery Connections From FireFinder-XLS To CAB-BATT

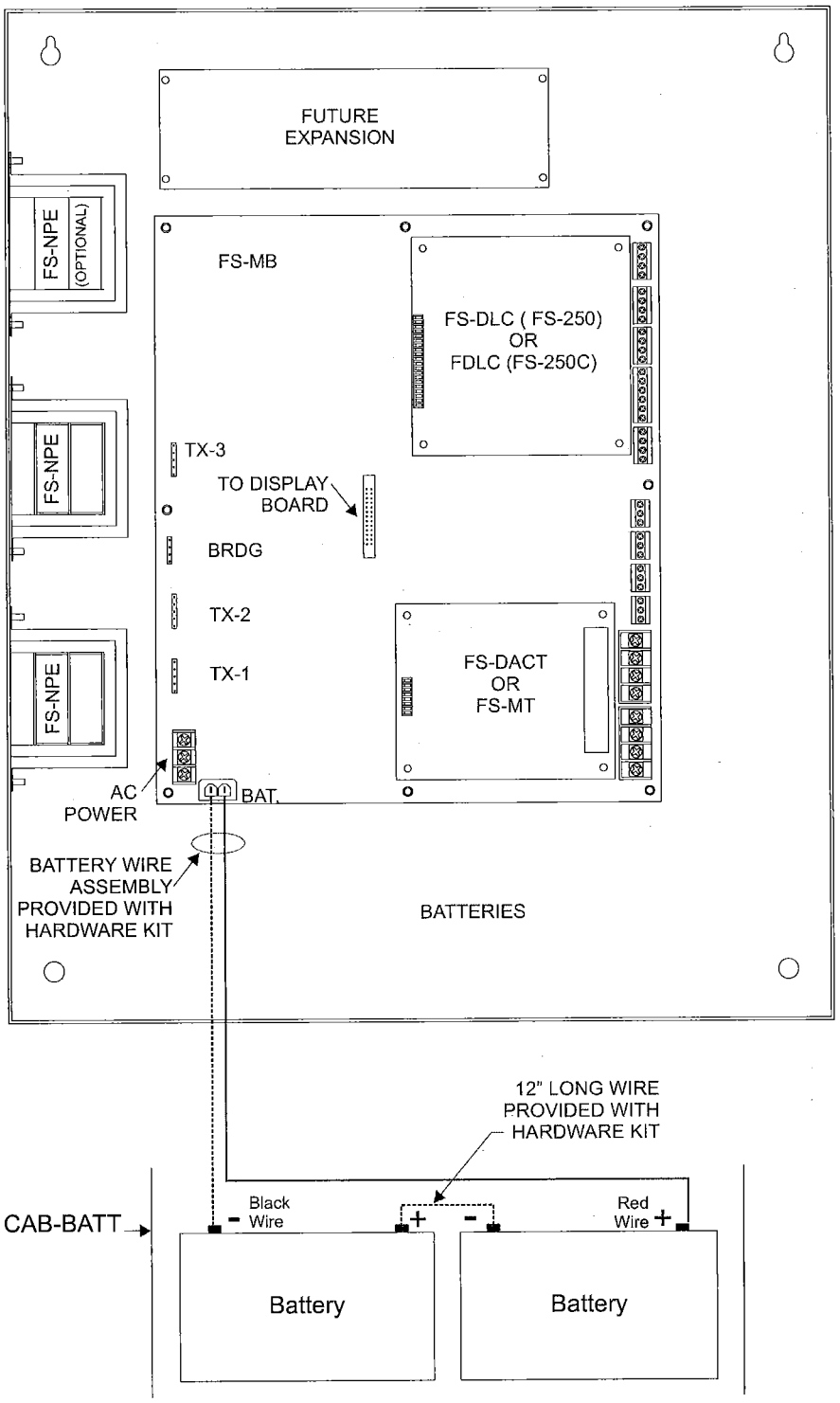

Figure 4
Typical Battery Connections From FS-250 / FS-250C To CAB-BATT

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SIEMENS

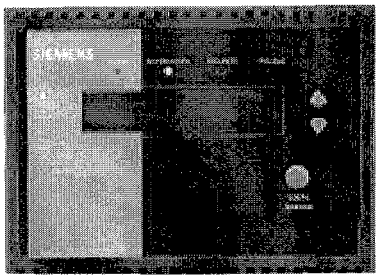
Fire Safety

SSD Series

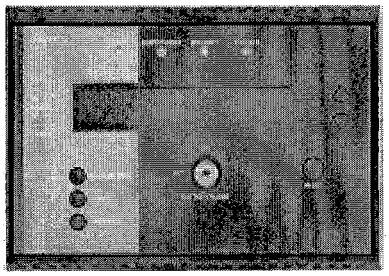
Models SSD, SSD-C, SSD-INT, SSD-C-INT, SSD-C-REM
System Status Display for the FireFinder XLS System

ENGINEER AND ARCHITECT SPECIFICATIONS

- 4 x 40 Backlit LCD display
- Event and Audible status LEDs
- Scroll buttons to view additional events
- Local sounder
- Supports Style 4 or Style 7 wiring
- Built-in transient protection
- Mounts in its own enclosure or REMBOX
- Optional local system control
- Downloadable firmware
- UL, ULC Listed



SSD



SSD-C with Control

Introduction

The SSD Series System Status Display is a remote LED/LCD display that shows the local status of a FireFinder XLS system. An LED illuminates when alarm, supervisory, trouble, and security events occur on the system. A four-line LCD will give details of the event in alphanumeric form. The display can be toggled to display additional events. Optional remote system control capabilities are available.

Description

The SSD Series display has separate LEDs for alarm, supervisory, trouble, and security events on the system. Each LED will flash when unacknowledged events of that type are present on the system. The LED will change to steady upon acknowledgment of the event. Also, there are two LEDs that indicate the state of audible circuits on the system: one LED to indicate that the circuits are active, and one to indicate that the circuits have been silenced.

The LCD display on the SSD Series display has four lines of forty characters each. When the FireFinder XLS system is in its normal supervisory state with no events present, the display will annunciate the system ID information along with the date and time. When an event occurs on the system, the LCD display will show the event type and address, the time of the event, the custom message for that address, the usage of the device, and whether the event is acknowledged or not. Additionally, the display will show the total number of all types of events present on the system. The display has a backlight feature that operates upon receiving any event information or when any operator buttons are pressed.

A local sounder is included with the SSD Series display that operates when any events are displayed on the system. The sounder can be optionally disabled through software programming. When an event is present, pressing any operator buttons will silence the local sounder.

The SSD Series display has two display control buttons that are used to display the next or the previous event information in the sequence, and a local sounder silence button. Programming for the SSD display is done with the Zeus programming tool.

Models SSD-C, SSD-C-INT, and Model SSD-C-REM have three additional control buttons for acknowledging events, silencing audible circuits, and resetting the system. The SSD-C and SSD-C-INT have an integral keyswitch that enables these control buttons to operate. The SSD-C-REM is located within a locked cabinet, so no additional keyswitch is required for enabling the control buttons.

The SSD Series display is remotely connected to the H-Net communication bus from any NIC-C interface in a FireFinder XLS system enclosure using Style 4 or Style 7 wiring. 24VDC is required to run the SSD Series display, and it can be provided from a Model PSC-12 Power Supply or PSX-12 Power Supply Extender in the FireFinder XLS system enclosure. Power from other UL Listed 24VDC power sources is also acceptable. The SSD Series display has screw terminals capable of supporting 12 to 22 gage wires. The H-Net communication from the FireFinder XLS system can be terminated on the SSD Series display, or may pass through for communication with other modules. Diagnostic LEDs on the SSD Series display indicate power and communication status.

Models SSD, SSD-C, and SSD-C-INT can be mounted in a 2-gang electrical box or a 4-inch square electrical box. No flush trim kit is required. The unit is approximately 10-1/2" wide, 6-1/8" high, and 1-1/2" deep.

The Model SSD-C-REM is mounted in a Model REMBOX2 or REMBOX4 Remote Lobby Enclosure, or any CAB enclosure inner door. The SSD-C-REM requires two module spaces in the remote lobby enclosure, and its bracket supports the mounting of four inner door modules (such as SCM-8s or LCM-8s) below the display. The inner door module spaces are arranged in two rows of two module spaces.

Ordering Information

Model Number	Description	Part Number
SSD	System Status Display	500-034170
SSD-C	System Status Display w/control	500-648733
SSD-INT	System Status Display w/international language overlays	500-034740
SSD-C-INT	System Status Display w/control & international language ovrlys.	500-034750
SSD-C-REM	System Status Display w/control for remote lobby enclosure	500-634773
REMBOX2	Small remote lobby enclosure	500-633772
REMBOX4	Large remote lobby enclosure	500-633914
BCM	Blank Control Module plate	500-033320

Electrical Ratings

24V Back Plane Current: 0

Screw Terminal 24V Current: 200mA

6.2V Back Plane Current: 0

24V Standby Current: 200mA

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June 2006
Supersedes sheet dated 1/03

SIEMENS

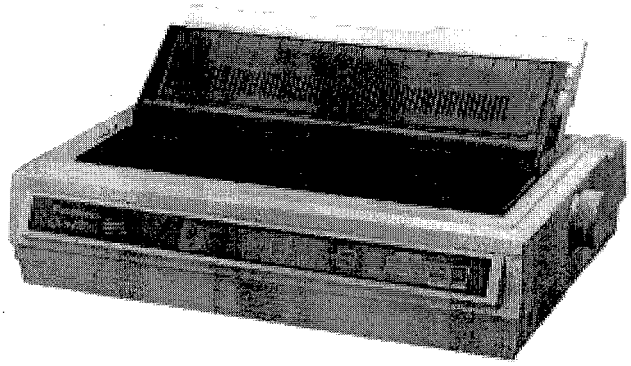
Fire Safety

PAL-1

Parallel Printer - Fire Alarm Panel Accessory

ENGINEER AND ARCHITECT SPECIFICATIONS

- Parallel Printer
- Supervised for Paper Out, On/Off Line, Power On, Paper Jam, Connection
- MXL, CXL,CXL-G, SCXL, CXL-GT NCC-GL, NCC-G, NCC-T, XLS
- High Speed
- 24 Pin Dot Matrix
- Wide Carriage, Tractor or Friction Feed
- NFPA 72 Proprietary
- UL Listed, ULC Listed, FM, CSFM and NYMEA Approved



Description

The PAL-1 is a UL listed parallel printer for use with the MXL, CXL, CXL-G, NCC-T, NCC-G, NCC-GL and XLS. It provides a hard copy record of all system events. It also allows printing of system maintenance and diagnostic reports. When used with the MXL the PAL-1 requires connection to PIM-2 and PIM-1. When used with CXL, the PIM-2 is required to connect the PAL-1 to the CXL's printer port on the CXC-2 module.

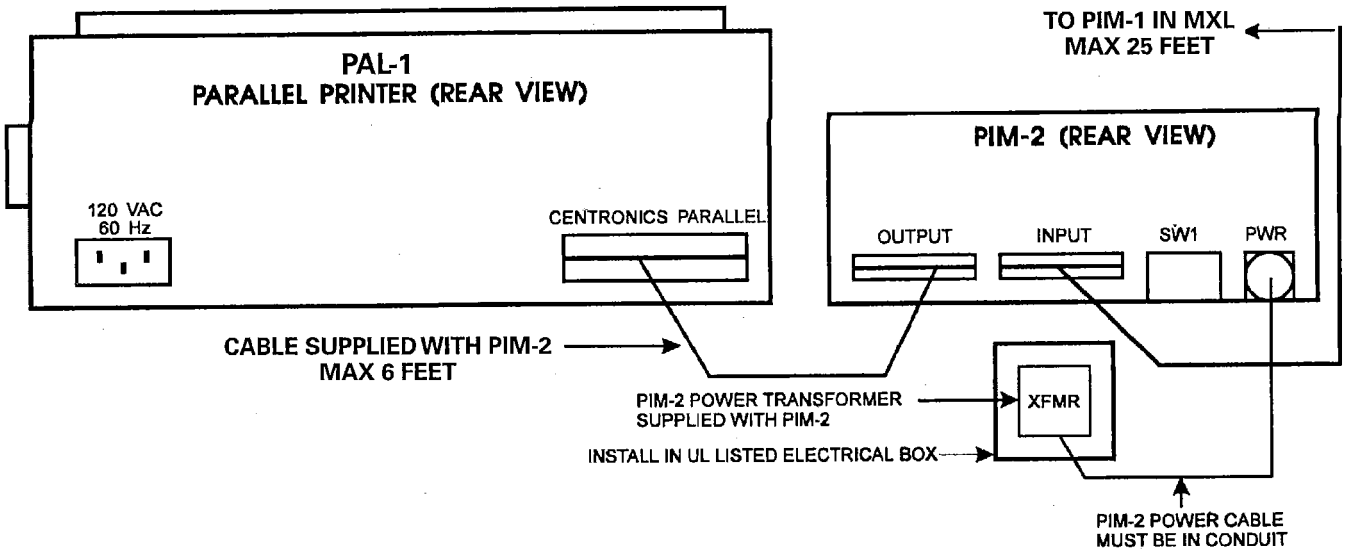
The printer is a 24 pin wide carriage dot matrix with Centronics® type interface. It is supervised for AC power, ON/OFF line, paper out, paper jam and connection to the FACP. It uses standard 14 inch tractor-feed paper (14¾ inch total width).

When used in an NFPA 72 proprietary configuration, a UL listed UPS must be supplied.

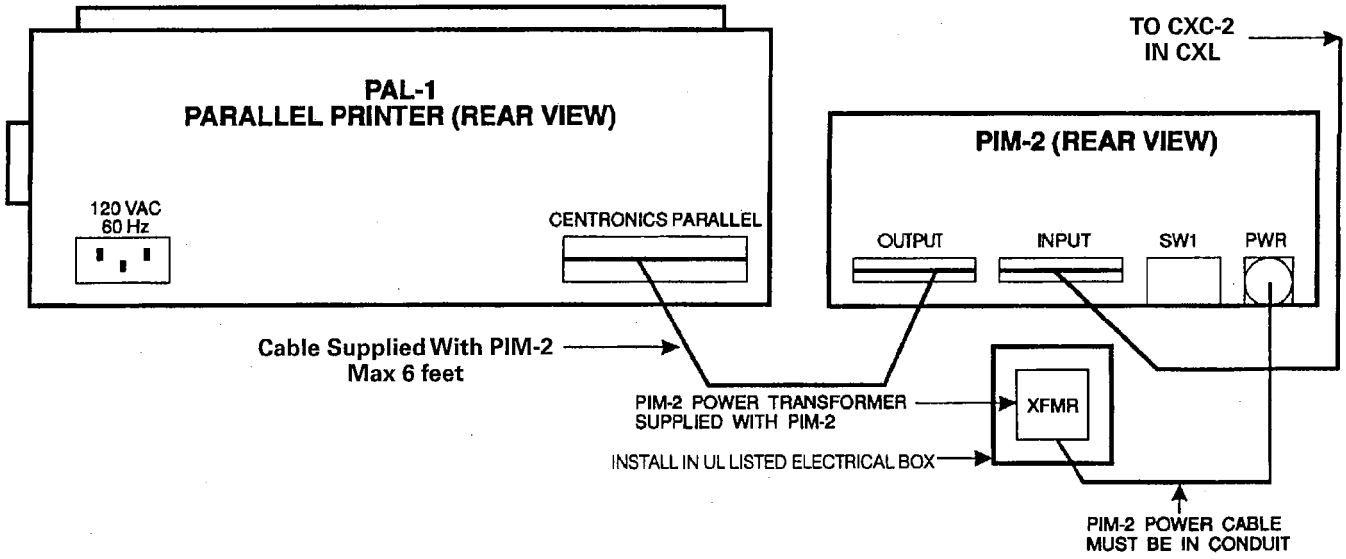
Ordering Information

Model Number	Description	Part Number
PAL-1	Supervised Parallel Printer	500-692407
	Installation Instructions	315-092408

PIM-2/MXL Connection Diagram



PIM-2/CXL Connection Diagram



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May 2006
Supersedes sheet dated 1/03

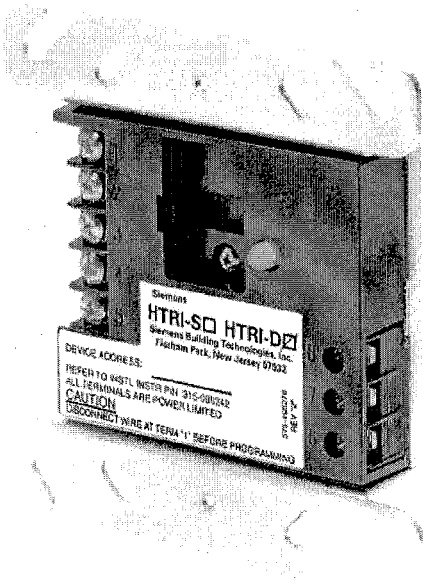
HTRI Series

FireFinder XLS and FS-250 Intelligent Initiating Devices Interface Modules

ENGINEER AND ARCHITECT SPECIFICATIONS

Intelligent Interface Modules for FireFinder XLS and FS-250 Series Fire Alarm Control Panels HTRI-S, HTRI-D, HTRI-R

- Interfaces and Supervises Normally Open or Normally Closed Contacts
- Integral SPDT Relay (up to 4 amps) on HTRI-R Model
- Dual Input on HTRI-D Model using a single address
- Polarity Insensitive with SureWire™ Technology
- Multi-color L.E.D. indicates status (green, amber, red)
- Easy front access to programming port and wiring terminals
- Mounts 4 inch square 2 ¼ deep box, or double gang box
- Dynamic Supervision
- Comes with 5x5 inch faceplate
- Two wire operation
- DPU Device Program/Test Unit programs and Verifies Device's Address and Tests Devices functionality
- Electronic Address Programming is Easy and Dependable
- ULC Listed
  CFSM, FM, NYMEA Approved



Introduction

The HTRI Series Intelligent interface modules are designed to provide the means of interfacing direct shorting devices to the FireFinder XLS and FS-250 Fire Alarm Control Panel loop circuit.

The HTRI Series Intelligent interface modules provide the market's most advanced method of address programming and supervision, combined with sophisticated control panel communication. Each HTRI Series interface module incorporates a microcomputer chip. The HTRI Series microcomputer chip technology and its sophisticated bi-directional communication capabilities with the control panel, achieve the state of an "Intelligence Device."

Description

The HTRI Series intelligent interface modules are available in three models. The HTRI-S and HTRI-R are designed to monitor a normally open or closed dry contact. The interface module reports the contact's status to the control panel. The HTRI-S model can only monitor and report the status of the contact, while the HTRI-R incorporates an addressable Form C relay. The HTRI-R relay and contact device input are controlled at the same address. For the control panel system, the relay and input contact can be controlled as a separate function. The relay is typically used where control or shunting of external equipment is required.

The HTRI-D is a dual input module and is designed to supervise and monitor two sets of dry contacts. The Dual Input Module only requires one address but responds independently to each input. The HTRI-D is ideal for monitoring a water flow switch and its respective valve tamper switch.

The HTRI has a multi-color Light Emitting Diode that flashes green when operating normally, amber if unit is in trouble condition, and red to indicate a change of state. The HTRI-D flashes twice, once for each address, the HTRI-R red L.E.D. indicates a change of state in the relay.

The device's microcomputer chip has the capacity of storing, in memory, identification information as well as important operating status information.

Siemens BuildingTechnologies, Inc., Fire Safety Division innovative technology allows all HTRI Series intelligent interface modules to be programmed by using the DPU Device Programming/Test Unit. The DPU is a compact, portable, menu driven accessory that makes programming and testing an interface device faster, easier and more dependable than previous methods. The DPU eliminates the need for mechanical addressing mechanisms, such as program jumpers, DIP switches or rotary dials, because the DPU electronically sets the HTRI interface's address into the interface's microcomputer chip nonvolatile memory. Vibration, corrosion and other conditions that deteriorate mechanical addressing mechanisms are no longer a cause for concern.

The HTRI Series is fitted with screw terminals for connection to an addressable circuit.

The HTRI Series is fully compatible on the same FireFinder XLS and FS-250 circuits with all intelligent H Series detectors, HMS Series addressable manual stations or any other addressable intelligent modules, such as the HZM or HCP.

All HTRI Series intelligent interface modules are UL listed.

Environmental operating conditions for all HTRI Series modules are 32°F (°C) to 120°F (49°C) with a relative humidity of not greater than 93% non-condensating.

Mounting Data

Addressable Interface Model HTRI-S, HTRI-D, HTRI-R mounts directly into a 4 inch square 2 ¼ deep box or a double gang box (user supplied). A 5 inch square off-white faceplate is included with each HTRI.

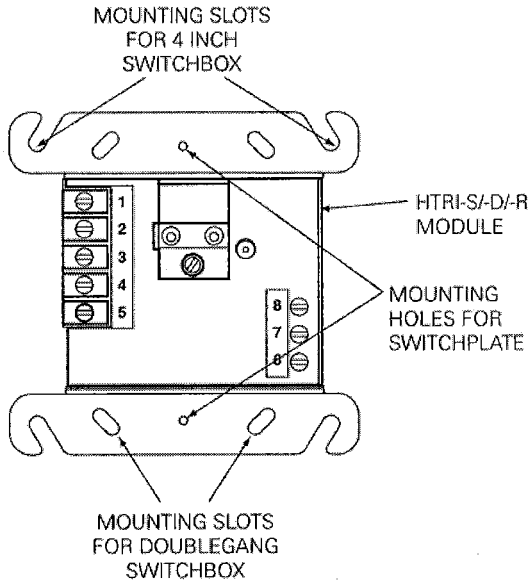


Figure A
Mounting the HTRI-S/-D/-R

Ordering Information

Model	Description	Shipping Wt. Lb.	Kg.	Part Number
HTRI-S	Single Input	7 oz.	2	500-033370
HTRI-R	Single Input w/Relay	7 oz.	2	500-033300
HTRI-D	Dual Input	7 oz.	2	500-033360

Electrical Ratings

Current Draw (Active or Standby): 1mA

HTRI-R Relay Ratings
Resistive: 4A, 125 VAC
4A, 30 VDC

Inductive: 3.5A, 120 VAC (0.6P.F.)
3.0A, 30 VDC (0.6P.F.)
2.0A, 120 VAC (0.4P.F.)
2.0A, 120 VAC (0.35P.F.)
2.0A, 30 VDC (0.35P.F.)

NOTICE: The use of other than Fire Safety detectors and bases with Fire Safety equipment will be considered a misapplication of Fire Safety equipment and as such void all warranties either expressed or implied with regard to loss, damage, liabilities and/or service problems.

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Fire Safety

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December 2004
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HMS Series Intelligent Initiating Devices

Manual Fire Alarm Boxes

ENGINEER AND ARCHITECT SPECIFICATIONS

HMS-S and HMS-D Intelligent Manual Fire Alarm Boxes for FireFinder XLS Control Panels

- Durable Design
- Shock and Vibration Resistant
- Pull Down Lever Remains Down Until Reset
- Custom Microcomputer Chip Technology
- Dynamic Supervision
- Polarity Insensitive with SureWire™ Technology
- Reset with Allen Key
- No Break Rods Necessary
- Two Wire Operation
- Surface or Semiflush Installation
- DPU Programs and Verifies Device's Address and Tests Device's Functionality
- Electronic Address Programming is Easier and More Dependable
- Single and Double Action Models Available
- (UL), Listed, CSFM, FM and NYMEA Submitted

HMS-S
Single-Action Station

HMS-D
Dual-Action Station

Introduction

HMS-S and HMS-D intelligent manual fire alarm boxes provide the markets' most advanced method of address programming and supervision, combined with sophisticated control panel communication. Each HMS manual fire alarm box incorporates custom microcomputer chip. The microcomputer chip technology, and its sophisticated bi-directional communication capabilities with the control panel, achieves the state of an "Intelligent Initiating Device."

Description

The HMS-S and HMS-D are constructed of durable molded polycarbonate material which is matte finished in red with raised white lettering. The housing accommodates a "pull-down" lever which, when operated, locks in position indicating the manual fire alarm box has been activated. The pull down lever remains down and locked until the manual fire alarm box is reset. The manual fire alarm box is reset only by opening the hinged housing cover with an allen key and then closing and locking the cover.

The HMS-S and HMS-D manual fire alarm boxes operate with FireFinder XLS Series control panels.

The manual fire alarm box's microcomputer chip has the capacity of storing, in memory, identification information as well as important operating status information.

Siemens Building Technologies Inc., Fire Safety Division innovative technology also allows all HMS Series Intelligent manual fire alarm boxes to be programmed by using the Model DPU Programmer/Tester. The Programmer/Tester is a compact, portable, menu driven accessory which makes programming and testing a manual fire alarm box device faster, easier and more dependable than previous methods. The DPU eliminates the need for the device's mechanical addressing mechanisms, such as program jumpers, dipswitches or rotary dials because the DPU electronically sets the manual fire alarm box's address into its microcomputer chip, nonvolatile memory. Vibration, corrosion and other conditions which deteriorate mechanical addressing mechanisms are no longer a cause for concern.

The HMS-S and HMS-D are fitted with screw terminals for connection to an addressable circuit. They can be either surface or semiflush mounted.

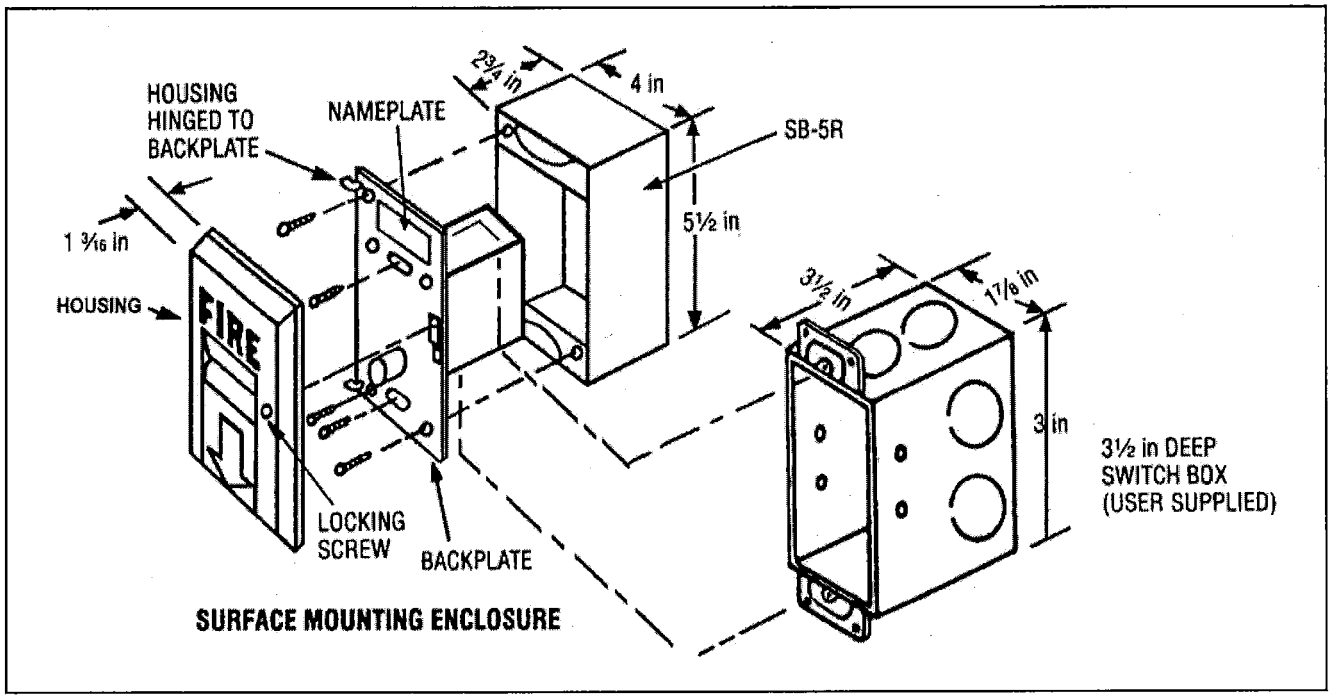
The HMS Series manual fire alarm boxes derive their power, communicate information and receive commands over a single pair of wires.

The HMS Series is compatible on the same circuit with all H Series detectors, interfaces or addressable conventional zone modules.

Ordering Information

Model	Description	Shipping Lbs.	Weight kg.	Part Number
HMS-S	Addressable Manual Fire Alarm Box Single Action	2.0	.90	500-033200
HMS-D	Addressable Manual Fire Alarm Box, Double Action	2.5	1.13	500-033400
SB-SR	Surface Mounting Box	1.5	.68	310-019860
LTP	ResetTool Package (Contains 2 tools)	.5	.23	500-620490

Mounting Data



Electrical Ratings

Current Draw (Active or Standby): 1.5mA

NOTICE: The use of other than Fire Safety detectors and bases with Fire Safety equipment will be considered a misapplication of Fire Safety equipment and as such void all warranties either expressed or implied with regard to loss, damage, liabilities and/or service problems.

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August 2005
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SIEMENS

Fire Safety

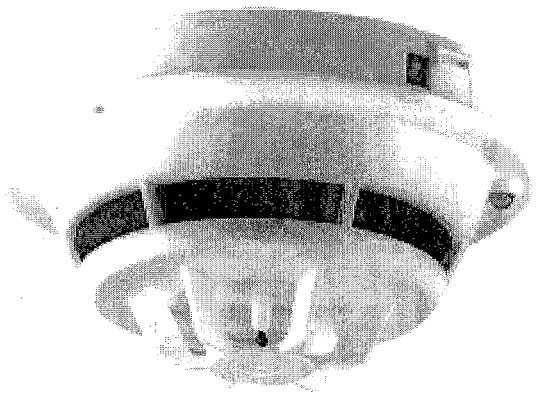
HFP-11 FireFinder™ Detector

Intelligent Fire Detector for FireFinder XLS and FS-250 Control Panels

ENGINEER AND ARCHITECT SPECIFICATIONS

Model HFP-11

- Most Sophisticated "Detector Intelligence" available today
- Multi-Criteria fire detection for the price of a photoelectric detector
- FirePrint™ Technology to discriminate between deceptive phenomena and an actual fire
- Easily programmed to match specific hazard profiles from the control panel
- Polarity Insensitive with SureWire™ Technology
- Pre-Alarm reporting based on fire profile selected
- Remote sensitivity measurement capability
- System logic activation based on any of three inputs from detector (smoke, heat or neural network)
- Detectors are self-testing, completing diagnostics every 4 seconds
- Field cleanable chamber with replaceable chamber parts available
- Multi-color detector status LED
- Two-wire operation
- Compatible Model DPU field device programmer/tester unit
- Supports software based automatic environmental compensation
- Optional fully programmable relay base, audible base, and duct housing
- ULC Listed, CSFM, FM, NYMEA Approved



Introduction

The Siemens Building Technologies, Fire Safety Division HFP-11 Intelligent Fire Detector provides the life safety industry with the most highly evolved detection system available today. The HFP-11 utilizes advanced detection technology that allows the detector to distinguish non-threatening deceptive phenomena, such as cigarette smoke, from actual fire hazards, while optimizing detection for the area in which it is installed. No other detection system available today offers a higher level of protection or nuisance alarm immunity. The HFP-11 uses state-of-the-art microprocessor circuitry with error check, detector self-diagnostics and supervision programs.

The HFP-11 intelligent fire detector is compatible with the Fire Safety Model DPU field device programmer/tester unit, which is a compact, portable, menu-driven accessory for electronically programming and testing detectors, easily and reliably. The DPU eliminates the need for cumbersome, unreliable mechanical programming methods, such as dials or switches and reduces installation and service costs by electronically programming and testing the detector prior to installation. The HFP-11 fire detector is compatible with the Fire Finder XLS series of control panels.

CATALOG NUMBER **6301**

Description

The HFP-11 is a plug-in, two-wire, multi-sensor detector with both photoelectric and thermal inputs and is compatible with Fire Finder XLS and FS-250 series of control panel systems. Each detector consists of a dust resistant, field-cleanable photoelectric chamber, a solid state non-mechanical thermal sensor, and microprocessor based electronics with a low-profile plastic housing. The HFP-11 utilizes state-of-the-art ASIC circuitry and surface mount technology for maximum reliability. Every HFP-11 fire detector is shipped with a protective dust cover. The HFP-11 fire detector utilizes an infrared light emitting diode (IRLED), and light sensing photodiode. Under normal conditions, light transmitted by the LED is directed away from the photodiode and scattered through the smoke chamber in a controlled pattern. The smoke chamber is designed to manage light dissipation and extraneous reflections from dust particles or other non-smoke airborne contaminants in such a way as to maintain stable, consistent detector operation. When smoke enters the detector chamber, light emitted from the IRLED is scattered by the smoke particles and is received by the photodiode.

The HFP-11 also utilizes a modern, accurate, shock-resistant thermistor to sense temperature changes. The "on-board" FirePrint technology allows the detector to gather smoke and thermal data, and to analyze this information in the detector's "neural network." By comparing data received with the common characteristics of fires, or fire fingerprints, the HFP-11 can compare these "Fire Prints" to those of deceptive phenomena that cause other detectors to false alarm. The advanced FirePrint technology allows the HFP-11 to accurately determine a true fire hazard from a non-threatening deceptive phenomena WITHOUT needing to use alarm delaying verification and confirmation techniques, which can increase the probability of losses due to fire. The HFP-11 provides the highest level of detector intelligence available today with a detector/control panel link that allows the user to program the detector for the specific hazard profile using a simple software menu selection. Detectors are optimized by selecting one of the following eleven applications:

- Office/Retail
- Lobby
- Computer Room
- Dormitory
- Healthcare
- Parking Garage
- Utility/Transformer Room
- Hostile Environment
- Precious Storage
- Air Duct
- Warehouse/Light Manufacturing

The software does the rest; no guessing on detector sensitivities or alarm verification; the control panel programs the HFP-11 detector for the protected area without hassle and without confirmation delays. Once optimized for the hazards in the protected area, the HFP-11 provides the best detection you can buy.

Should the operator or installer forget to program the detector, the HFP-11 will revert to a default setting that allows it to operate as an office environment detector.

The HFP-11's FirePrint technology monitors input from both the photo chamber and the thermal sensor, evaluating this information with sophisticated mathematical formulas, or algorithms, comparing this input to characteristics of both threatening fires and deceptive phenomena that would "fool" any ordinary detector. This technology was developed over years of research and reviewing the results of over 20 years of fire test data in one of the world's most advanced fire research centers.

The results of this research are the mathematical models that form the algorithms used in FirePrint. No other fire detector has this level of intelligence or this amount of research and development supporting it's design. The microprocessor's software can identify and disregard false input caused by radio frequency (RFI) and electromagnetic (EMI) interference, and validates all trouble conditions before annunciating or reporting to the control panel. The HFP-11 detector's microprocessor uses an integral EEPROM to store the detector's address and other critical operating parameters which include the assigned program values for alarm and trouble thresholds.

Communications within the detector itself and between the HFP-11 and the control panel, or with the DPU field device programmer/tester unit, are supervised and safe-guarded against disruption by reliable, microprocessor based error checking routines. Additionally, the micro-processor supervises all EEPROM memory locations and provides a high degree of EEPROM failure fault tolerance.

The HFP-11 determines its operating status to be normal, in alarm, or in trouble depending on the difference between the alarm threshold values stored in the detector's memory and the detector's latest analog measurement. The detector then communicates changes in its status to the control panel. In addition, the FireFinder XLS control panel will sample the value of the HFP-11's analog signal over a period of time in order to determine if those values indicate excessive buildup in the photo chamber; if so, the FireFinder XLS control panel will indicate that the particular detector requires maintenance.

The HFP-11 is listed as a self-testing device. The HFP-11's visible light emitting diode (LED) flashes green every 4 seconds to indicate it is communicating with the control panel and that it has passed its internal self-test. Should the detector sense a fault or failure within its systems, the LED will flash amber and the detector will transmit that information to the control panel. A quick visual inspection is sufficient to indicate the condition of the detector at any time. If more detailed information is required, a printed report can be provided from the Fire Finder XLS panel indicating the status and settings assigned to each individual detector. When the HFP-11 moves to the alarm mode, it will flash red and to continue flashing until the system is reset at the control panel. At that

same time, any user defined system alarm functions programmed into the system are activated. Detector sensitivity, calibration, and identification are dynamically supervised by the control panel. Detector sensitivity and pre-alarm levels are a function of the application chosen at the control panel and are controlled by the panel. If an alternate, non-FirePrint mode is selected, then the sensitivity can be changed from the control panel.

The DPU Device Program/Test Unit accessory is used to program and verify the detector's address. The technician selects the accessory's program mode to enter the desired address. The DPU automatically sets and verifies the address and tests the detector. The DPU operates on AC power or rechargeable batteries, providing flexibility and convenience in programming and testing equipment almost anywhere.

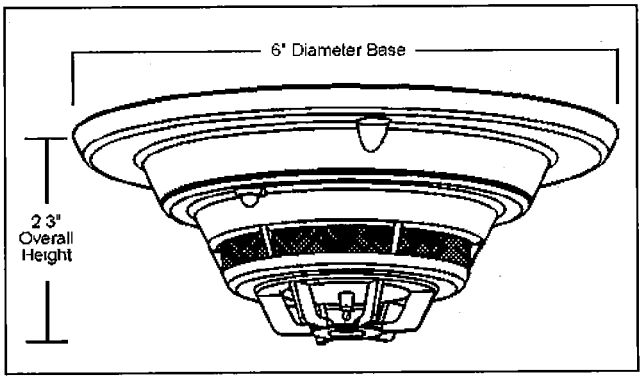
When in the test mode, the DPU will perform a series of diagnostic tests without altering the address or other stored data, allowing technicians to determine if the detector is operating properly. The HFP-11 fire detector may be installed on the same initiating circuit with HMS series manual stations, HTRI series interfaces, HCP output control devices, or HZM series of addressable, conventional zone modules. All HFP-11 detectors can be cleaned in the field, when required, by simply removing the detector cover and unsnapping the photo chamber. There is also the option of cleaning the interior of the detector with a clean, soft cloth or brush, or replacing the labyrinth and bug screen included in the detector maintenance kit, model DMK-11.

The HFP-11 uses the low-profile surface mounting base, model DB-11. This base mounts on a 4-inch octagon, square, or a single gang electrical box. The base utilizes screw clamp contacts for electrical connections and self-wiping contacts for increased reliability. The base can be used with the optional LK-11 detector locking kit which contains 50 detector locks and an installation tool, to prevent unauthorized removal of the detector head. The DB-11 base has integral decorative plugs to cover the outer mounting screw holes. All HFP-11 detectors are approved for operation within the UL specified temperature range of 32 to 100 degrees F (0 to 38 degrees C).

Application Data

Installation of the HFP-11 series of fire detectors requires a two-wire circuit. In many retrofit cases, existing wiring may be used. "T-tapping" is permitted only for Style 4 (Class B) wiring. The HFP-11 is polarity insensitive. This feature can greatly reduce installation an debugging time. HFP-11 fire detectors can be applied within the maximum 30 foot center spacing (900 sq. ft. areas) as referenced in NFPA 72. This applications guideline is based on ideal conditions, specifically, smooth ceiling surfaces, minimal air movement, and no physical obstructions between potential fire sources and the detector. Do not mount detectors in close proximity to ventilation or heating and air conditioning outlets. Exposed joints or beamed ceilings may also affect safe spacing limitations for detectors. Should questions arise regarding detector placement, observe NFPA 72 guidelines. Good fire protection system engineering and common sense dictate how and when fire detectors are installed and used. Contact your local Fire Safety distributor or sales office whenever you need assistance applying FirePrint in unusual applications. Be sure to follow NFPA guidelines and UL/ULC approved installation instructions, which are included with every Fire Safety detector, and local codes as for all fire protection equipment.

Dimensions



Technical Specifications

Operating Temperature: +32°F (0°C) to 100°F (38°C) per UL 268/268A

Humidity: 0-93% Relative Humidity Non-Condensing

Maximum spacing: 30 foot centers (900 sq. ft.) per NFPA 72 Chapter 5 and CAN/ULC-S524

Model	Description	Part Number
HFP-11	Addressable FirePrint Fire Detector	500-033290
DB-11	Detector Mounting Base for Series 11	500-094151
DB-11E	Detector Base (small)	500-094151E
AD-11P	Air Duct Housing for Series 11	500-095556
AD-HR	Air Duct Housing w/Relay for H-Series Intelligent Detector	500-033280
DB-HR	Relay Base for H-Series Intelligent Detectors	500-033220
ADBH-11	Audible base	500-033210
RL-HC	Remote (red) alarm indicator- 4" octagon box mount	500-033230
RL-HW	Remote (red) alarm indicator- single gang box mount	500-033310
LK-11	Base Locking Kit for Series 11 detectors	500-095360
DMK-11	Series 11 Maint Kit (replacement labyrinth and bug bug screen)	500-095338
In Canada Order:		
HFP-11C	Addressable FirePrint Fire Detector (ULC)	500-095112C
DB-11C	Detector Mounting Base for Series 11(ULC)	500-095687
AD-11PC	Air Duct Housing (ULC)	500-095984
DB-HRC	Relay Base for Series 11 Intelligent Detectors (ULC)	500-033220C
ADBH-11C	Audible Base for Series 11 Intelligent Detector (ULC)	500-033210C

NOTICE: The use of other than Fire Safety detectors and bases with Fire Safety equipment will be considered a misapplication of Fire Safety equipment and as such void all warranties either expressed or implied with regard to loss, damage, liabilities and/or service problems.

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October 2005
Supersedes sheet dated 7/03

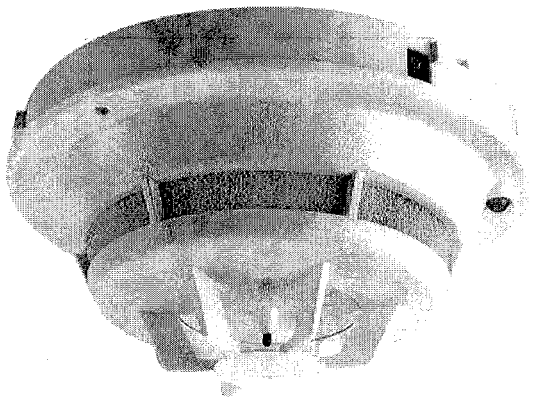
HFPT-11 Intelligent Thermal Detector

For FireFinder XLS™ and FS-250 Fire Alarm Control Panel

ENGINEER AND ARCHITECT SPECIFICATIONS

HFPT-11

- Microprocessor Based Design
- Rate of Rise and Fixed Temperature
- Innovative Technology Provides High Speed, Fault Tolerant System/Detector Communications
- Multi-Color Detector Status LED
- Polarity Insensitive Utilizing SureWire™ Technology
- Detectors are Self-Testing, Complete Diagnostics Every 4 Seconds
- Two-Wire Operation
- Compatible with DPU Device Programmer/Tester Unit
- UL ULC Listed, CSFM, FM, NYMEA Approved



Introduction

The HFPT-11 intelligent thermal detectors provide an advanced method of detection, address programming and supervision, combined with sophisticated control panel communication. The HFPT-11 detector uses a state-of-the-art thermistor providing 135°F fixed temperature and 15° per minute rate-of-rise alarm points. The user also has the option of disabling the rate-of-rise feature leaving just a fixed temperature sensor.

The HFPT-11 intelligent thermal detector is compatible with the Device Program/Test Unit (DPU). The DPU is a compact, portable, menu-driven accessory which makes programming and testing detectors faster, easier and more reliable than other methods. The DPU eliminates the need for cumbersome, unreliable mechanical programming methods and reduces installation and service costs by electronically programming addresses and functionally testing the HFPT-11's performance before the detector is installed.

The HFPT-11 thermal detector operates with the FireFinder XLS and FS-250 families of control panels.

The HFPT-11 intelligent thermal detector is Underwriters Laboratory and Underwriters Laboratory of Canada listed.

Description

The HFPT-11 is a plug-in, two-wire thermal detector, compatible with FireFinder XLS and FS-250 families of control panels. Each FPT-11 has microcomputer chip technology and highly stable solid state electronic circuitry.

The FPT-11 utilizes a modern, accurate, shock-resistant thermistor to sense temperature changes. This electronic sensing method virtually eliminates thermal lag associated with mechanical temperature sensing devices and provides almost instantaneous temperature information to the control panel. The HFPT-11, in its default mode, is a combination 135°F fixed temperature and 15° per minute, rate-of-rise detector. It can be programmed from the control panel as a fixed temperature detector without rate-of-rise, at the users option.

The HFPT-11 detector's microprocessor uses an integral EEPROM to store the detector's address. Communications within the detector itself and between the HFPT-11 and the control panel, or with the DPU, are supervised and safeguarded against disruption by reliable, microprocessor based error checking routines. Additionally, the microprocessor supervises all EEPROM memory locations and provides a high degree of EEPROM failure fault tolerance.

The HFPT-11 is listed as a self-testing device. The HFPT-11's visible light emitting diode (LED) flashes green every 4 seconds to indicate it is communicating with the control panel and that it has passed its internal self-test. Should the detector sense a fault

or failure within its systems, the LED will flash amber and the detector will transmit that information to the control panel. A quick visual inspection is sufficient to indicate the condition of the detector at any time. If more detailed information is required, a printed report can be provided from the FireFinder XLS panel indicating the status and settings assigned to each individual detector.

When the HFPT-11 moves to the alarm mode, it will flash red and continue flashing until the control panel is reset. At that same time, any user defined system alarm functions programmed into the system are activated.

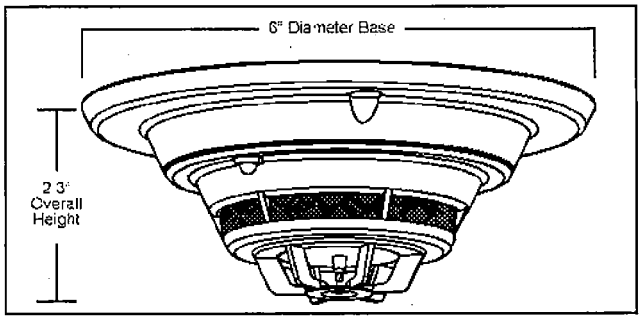
A Device Program/Test Unit (DPU) is used to program and verify the detector's address. The user selects the Program Mode to enter the desired address. The DPU Programmer/Tester then automatically sets and verifies the address as well as tests the detector. The DPU has rechargeable batteries, so a detector's address can be programmed by the user from the most convenient location. The user can also separately test the detector for functionality. When the user selects the Test Mode, a series of tests are automatically conducted and the user is informed whether the detector has passed or failed.

The HFPT-11 detector is compatible on the same FireFinder XLS or FS-250 initiating circuit with other H Series detectors, HMS manual stations, HTRI Series addressable interfaces, or HZM Series addressable conventional zone modules.

The HFPT-11 detectors use a surface mounting base, Model DB-11, which mounts on a 4-inch octagonal, square or single gang electrical box. Relay base Model DB-HR mounts to a 4-inch square deep electrical box.

Audible base Model ADBH-11 also mounts to a 4-inch square deep electrical box.

The DB-11, and the DB-HR and ADBH-11 use screw-clamp terminals for all electrical connections and self-wiping contacts for reliability. The bases also contain a provision for an optional concealed locking mechanism to prevent unauthorized removal of the detector head, Model LK-11.



Application Data

The FireFinder XLS and FS-250 control panels use loop circuits with each circuit capable of supporting up to 252 HFPT-11 intelligent detectors.

Locate the HFPT-11 on the ceiling, at least 4 inches from the side walls. For an ideal, smooth ceiling condition, place the detectors at a maximum center spacing of 50 feet (2500 square feet), 25 feet from side walls or room partitions.

Actual job conditions and sound engineering judgement must determine detector spacing. Consider environmental factors including ambient temperature fluctuation, and the nature of the fire hazard. Room or area configuration and ceiling type (sloped or flat, smooth or beamed) also dictates placement.

Should questions arise regarding detector placement, follow the drawing provided and/or approved by Siemens Fire Safety or by its authorized distributors. This is extremely important! The detector placements shown on these drawings were chosen after a careful evaluation of the area being protected. Extensive experience in design of the system assures the best detector placement by following these drawings.

Technical Specifications

Operative Temperatures:	+32°F (0°C) to 100°F (38°C)
Humidity:	0-93% Relative Humidity Non-condensating
Maximum Spacing:	50 Foot Centers (2500 Square Feet)
Current Draw:	1mA in alarm or supervisory mode

Ordering Information

Model	Description	Part Number
HFPT-11	Addressable Thermal Fire Detector	500-033380
DB-11	Detector Mounting Base	500-094151
DB-HR	Relay Base	500-033220
ADBH-11	Audible Base	500-033210
RL-HC	Remote (red) alarm indicator-octogan box mount	500-033230
RL-HW	Remote (red) alarm indicator-single gang box mount	500-033310
LK-11	Base Locking Kit for Series 11 detectors	500-695350
In Canada Order:		
ADBH-11C	Audible Base (ULC)	500-033210C
HFPT-11C	Addressable Thermal Fire Detector (ULC)	500-033380C
DB-11C	Detector Mounting Base (ULC)	500-095687
DB-HR-C	Relay Base (ULC)	500-033220C

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Fire Safety

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December 2004
Supersedes sheet dated 10/02

SIEMENS

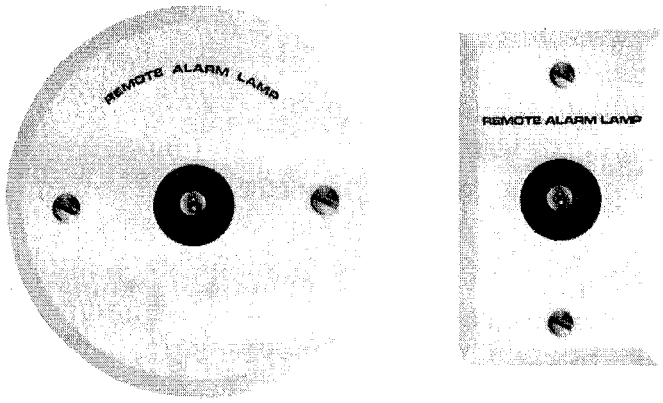
Fire Safety

RL-HC and RL-HW

Remote Alarm Lamps for FireFinder XLS and FS-250 Detectors

ENGINEER AND ARCHITECT SPECIFICATIONS

- Ⓤ, ULC Listed
- NYMEA, CSFM and FM Approved



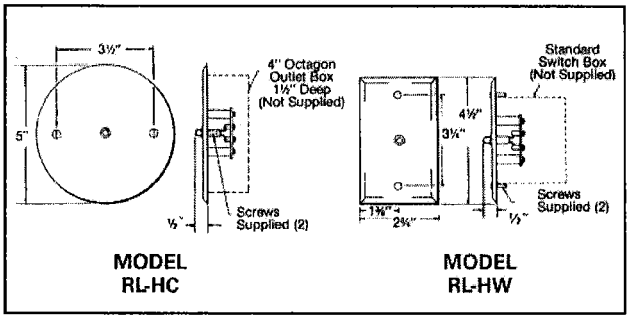
Description

The Siemens Building Technologies Inc., Fire Safety Division remote alarm lamps, models RL-HC and RL-HW, are designed for use with initiating devices that are concealed or otherwise not exposed to view (e.g. in false ceilings, under sub-floors, in unexposed ventilating ducts, normally locked vaults, within computer consoles, etc.). Even though the device initiating the alarm is out of sight, these remote alarm lamp assemblies will readily identify it. The RL-HC is designed for mounting on a 4" octagon outlet box and the RL-HW is designed for mounting on a standard single gang switch box. Although there is no mounting limitation, the RL-HC is normally ceiling mounted, while the RL-HW is normally mounted to a wall. The remote lamps may be placed up to 25 feet from the detector and use 14 to 18 gauge 3-conductor wire.

Mounting Data

The RL-HC and RL-HW have screw-type terminals for ease of installation. The mounting plates of both units are off-white plastic and present an attractive, pleasing appearance that will blend with any decor.

Mounting Diagram



Ordering Information

Model	Description	Part Number
RL-HC	Remote Lamp Ceiling	500-033230
RL-HW	Remote Lamp Wall	500-033310

NOTICE: The use of other than Fire Safety detectors and bases with Fire Safety equipment will be considered a misapplication of Fire Safety equipment and as such void all warranties either expressed or implied with regard to loss, damage, liabilities and/or service problems.

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December 2004
Supersedes sheet dated 1/03

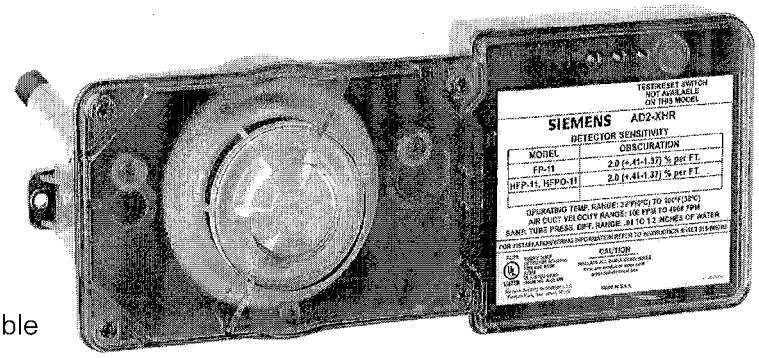
SIEMENS

Fire Safety

Air Duct Housings-AD2 Series

ENGINEER AND ARCHITECT SPECIFICATIONS

- For Series 11 Detectors
- Relay Models Available
- Design for Air Velocity Range of 100 to 4000 fpm
- Alarm LED Visible From Front
- Clear Housing Cover for Quick Identification of Detector Type Removable With Only Four Captive Screws
- UL Listed, CSFM Approved, ULC Listed



Introduction

The Siemens Building Technologies, Fire Safety Division air duct detector housings are designed to be used with the 11-Series detectors. Designed for installation directly to heating, ventilating and air conditioning duct systems, they comply with National Fire Protection Association Standard No. 90A. When equipped with photoelectric detectors, these units will signal the presence of hazardous quantities of products of combustion or smoke being carried through the duct system. Air duct detectors are not intended to be substituted for open area detection.

Air duct housings can be equipped with optional relays. These relays are utilized to operate any supplementary equipment when smoke or particles of combustion are detected.

Note: Most conventional time control equipment guarantee only one detector per zone when the detector operated relay function is critical. The connection of a remote lamp and a remote relay per detector is allowed with PXL or System 3™ only, other conventional systems may use either a remote lamp or a relay.

With the MXL series of control panels, up to 60 detectors per circuit having relays may be used. The connection of a remote lamp or a remote relay is allowed for each detector but not both.

With the FireFinder XLS series of control panels, up to 252 detectors per circuit having relays may be used. The Connection of an intelligent remote lamp and a remote Relay (ILED), is also allowed.

Air duct housings (see Ordering Information) are Underwriters Laboratories, Inc. listed.

Description

The Fire Safety air duct housing is uniquely designed to use the photoelectric detector.

Sensitivity of PE-11 detectors can be checked by viewing the LED or an RSAW-11 or RSAC-11 multicolor remote lamp. A green flash indicates the detector has passed its self test. Amber indicates a trouble condition, and red indicates an alarm state.

HFP-11, HFPO-11 and FP-11 sensitivity may be viewed from the multi-color LED on the detector or preferably may be printed by command on an optional printer from the MXL control panel.

The detector unit employs a cross-sectional sampling principle of operation. Inlet sampling tubes are available in four lengths (see table on reverse side). Outlet sampling tubes are one common length. A continuous cross-sectional sample of air moving through the duct stratification or skin effect phenomena occurring in the duct that could prevent combustion product or smoke (especially in large ducts) from reaching a spot type detector.

In addition, the unique design of the sampling chamber insures uniform sensitivity in air velocities, ranging from a low of 100 feet per minute to as high as 4000 feet per minute. The housing comes with two ½" conduit

knockouts and one ½" conduit opening for a number of 3 wiring entry ports.

The inlet sampling tube length is determined by the width of the air duct being protected. The inlet tube nearest to but greater than the duct width should be used (see table). The inlet tube can then be trimmed at the job site to the exact width of the duct. The outlet sampling tube for all ducts, irrespective of width, has a fixed length of approximately 5.5 inches and is supplied with the duct housing.

When the use of a remote relay is required, order model AD2-PR for conventional systems; AD2-XHR for addressable systems. When required the WP-2000 weatherproof enclosure for Duct Housing is available. For full details, refer to installation instructions part number 315-049708.

Sampling Tube Selection Table

Duct Width	Sampling Tube Model No.
For duct widths 6" to 1'	ST-10
For duct widths over 1' to 3'	ST-25
For duct widths over 3' to 5' (requires support)	ST-50
For duct widths over 5' to 10' (requires support)	ST-100

Maintenance of the detector is easily accomplished by the removal of the Series 11 duct housing sampling chamber cover. The detector, which plugs into the housing, is easily removed for cleaning by a trained technician.

All that is necessary for installation of the air duct detector is the cutting of three small holes for the sampling tube installation (template included) and the drilling of four holes for mounting the air duct housing. The unit is then easily mounted in place and connection made to the existing wires or terminals if optional accessories are utilized.

ST-50 and ST-100 require support. ST-100 is shipped in two five foot pieces with a coupling for field assembly.

Technical Data

Temperature Range	32°F (0°C) -100°F (38°C)
Altitude Range	No Altitude Limitations
Relative Humidity	10-85% (non-condensing/non-freezing)
Air Duct Velocity Range	100 - 4000 Ft/Min.
Sampling Tube Pressure Range of Differences	Greater than 0.01 amps less than 1.2 inches of water column

Note to Architect: When building codes regulate the location of detectors within ventilating systems, make sure that the number and locations of detectors is in accordance with the code regulations.

Order Information

Model	Description	Part Number
AD2-P	Air Duct Housing for use with FP-11, HFP-11, HFPO-11, PE-11	500-649706
AD2-PR	Air Duct Housing for use with PE-11 with relay	500-649707
AD2-XHR	Air Duct Housing for use with FP-11, HFP-11, HFPO-11, with relay	500-649708
ST-10	Sampling Tube for Ducts 6" to 1'	500-649710
ST-25	Sampling Tube for Ducts over 1' to 3'	500-649711
ST-50	Sampling Tube for Ducts over 3' to 5'	500-649712
ST-100	Sampling Tube for Ducts over 5' to 10'	500-649713

Product Includes

One Short Return (outlet) Tube

One Stopper

Two #12 + ¾" Sheet Metal Screws

Mounting Template

Note: *Detector and sampling tube to be purchased separately*

Note: Minimum hardware required is one Air Duct Housing Assembly, one Sampling Tube and one Detector.

NOTICE: The use of other than Fire Safety detectors and bases with Fire Safety equipment will be considered a misapplication of Fire Safety equipment and as such voids all warranties either expressed or implied in regard to loss, damage, liabilities and/or service problems

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Fire Safety

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September 2006
Supersedes sheet dated 4/06

SIEMENS

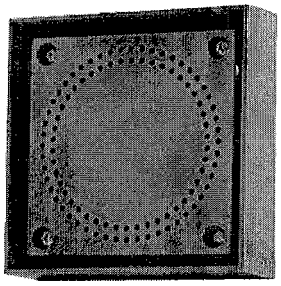
Fire Safety

S-LP Speaker Series

Clear-Speak™ Speakers and Speaker Strobes

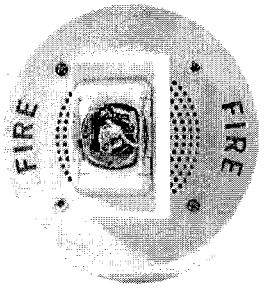
ENGINEER AND ARCHITECT SPECIFICATIONS

- **The Adapter** feature offers four field selectable candela values - 15/75, 30/75, 75 or 110
- Strobe operates in either sync or non-sync modes
- Clear audio reproduction with selectable audio power taps (1/4, 1/2, 1 & 2 watts)
- Low profile, only 1" deep
- Speakers are available with 25V or 70V audio line matching transformers
- Strobes meet ADA guidelines
- UL 1480 & UL 1971 listed, CSFM and MEA approved
- UL 1971 listed for both wall and ceiling mount
- ADA/NFPA/ANSI compliant
- Strobe synchronization requires the Dual Sync Control Module or PAD-3
- Terminals accept 12 awg wire
- Made in USA, ISO quality crafted

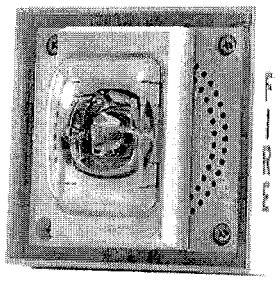


Speaker

Speaker w/ Adapter Strobe



Ceiling Mount



Speaker Strobe

Description

The Clear-Speak S-LP series speakers are highly efficient 2-watt (maximum output) speakers that have been designed for emergency voice evacuation applications. Each S-LP series speaker is designed to provide a frequency response within the human voice spectrum (ranging from 400 hz and 4000 hz).

The S-LP series speakers are listed in accordance with UL 1480 for speaker appliances and strobe combination units are listed in accordance with UL 1971 (signaling devices for the hearing impaired). The S-LP series speakers are low profile speakers that are available either in 25volt or 70volt versions. Each speaker provides a choice of 4 output taps (ranging form ¼ watt to 2 watt). All speakers are tapped at ¼ - watt at the factory.

Models include S-LP25, S-LP25-W, S-LP25-C, S-LP70, S-LP70-W, S-LP70-C, S-LP25-MCS, S-LP25-MCS-W, S-LP25-MCS-C, S-LP70-MCS, S-LP70-MCS-W, S-LP70-MCS-C, S-LP25MG, S-LP25MG-W, S-LP70MG, S-LP70MG-W, S-LP25MG-MCS, S-LP25MG-MCS-W, S-LP70MG-MCS, S-LP70MG-MCS-W. Variations of the speaker include 25 volt or 70 volt versions, wall and ceiling mount models, wall mount color variations (white or red), the option of providing the Adapter MultiCandela Strobe with the speaker (combination unit), and the option of using a metal grillplate rather than the standard plastic grillplate.

The Adapter feature offers four field selectable candela settings – 15/75, 30/75, 75, or 110.

DETAIL – ADAPTER SELECTOR SWITCH

CATALOG NUMBER **2551**

Replaces Catalog Sheet Number 2549

The strobes use a Xenon flashtube with solid state circuitry for maximum reliability and efficiency. The strobes have modern rounded dome shape made of clear polycarbonate for maximum performance. The strobes have a technology call InstaSync built into each unit. The InstaSync technology automatically recognizes the need for the strobe's synchronization function when a DSC (Sync) module or PAD-3 is used for driving the synchronization of a notification appliance circuit (NAC).

Engineering Specification

The audible speaker appliances shall be the Siemens Fire Safety ClearSpeak models S-LP25, S-LP25-W, S-LP25-C, S-LP70, S-LP70-W, S-LP70-C, S-LP25MG, S-LP25MG-W, S-LP70MG, and/or the S-LP70MG-W speakers or approved equal. The audible/visual speaker/strobe appliances shall be the Siemens Fire Safety ClearSpeak models S-LP25-MCS, S-LP25-MCS-W, S-LP25-MCS-C, S-LP70-MCS, S-LP70-MCS-W, S-LP70-MCS-C, S-LP25MG-MCS, S-LP25MG-MCS-W, S-LP70MG-MCS, and/or S-LP70MG-MCS-W speakers/strobes or approved equal. The audible segment of the S-LP series speakers shall be listed to UL 1480, Fire Protective Services for Speaker Appliances. The visual audible segment of the S-LP series speakers shall be listed to UL1971, Standard for Safety Signaling Devices for the Hearing-Impaired. The appliances shall be listed for indoor applications shall meet ADA/NFPA/ANSI standards.

The strobe segment of the S-LP series speaker appliances (S-LP25-MCS, S-LP25-MCS-W, S-LP25-MCS-C, S-LP70-MCS, S-LP70-MCS-W, S-LP70-MCS-C), S-LP25MG-MCS, S-LP25MG-MCS-W, S-LP70MG-MCS and/or S-LP70MG-MCS-W shall produce a flash rate of one (1) flash per second over the operating voltage range limits. The strobes shall consist of a xenon flash tube enclosed in a clear polycarbonate lens. The strobe shall provide a minimum of four (4) field selectable strobe intensity levels, 15/75cd, 30/75cd. 75cd, and 110cd. The appliance shall allow for authorized personnel to select a strobe intensity without requiring the removal of the appliance from its mounting surface. All strobe intensity settings shall be UL1971 listed for both wall and ceiling mount applications. The selector switch shall be tamper resistant. When strobe synchronization is required, the strobe segment will automatically initiate a synchronization protocol when a synchronization control module/circuit is installed on the NAC. All strobe segments shall not drift out of synchronization when a synchronization control module is installed on the NAC.

The audible segment have either a 25 or 70VRMS audio input matching transformer, and shall have field selectable taps of ¼, ½, 1 and 2 watts. All versions shall have a typical* sound output of 88dBA at 10ft. at 2-watts.

The S-LP series speaker and speaker/strobe appliances shall be designed for wall and ceiling mounting. To facilitate trouble-free installations and limit the potential for ground faults associated with shallow back boxes and deep appliances, the depth of wall mount speakers or speaker/strobe appliances shall be no more than 1" in depth, and the depth of ceiling mount speakers, and metal grill speakers or speaker/strobe appliances shall be no more than 1 – 3/32". All wall mount appliances shall have a square grill and will mount to a 4" square backbox. All ceiling mount appliances shall have a round grille and will mount to a 4" square backbox.

NOTE: These strobes are UL listed and rated as "special application", which represents appliances which have been investigated to operate as described in the product's installation instructions over the voltage range of 16-32 VDC or VFWR.

Environmental

Indoor: 32°F to 120°F (0°C to 49°C)
with 85% humidity

Primary Input Voltage

Speaker Transformer: 25V or 70V
Strobe: Operating voltage range limits
16-32 Vdc or VFWR

Typical dB Rating @ 10 ft.*	**(UL Rating @ 10 ft.)**
1/4W: 80 dB typical	(75 dB UL)
1/2W: 82 dB typical	(78 dB UL)
1W: 86 dB typical	(81 dB UL)
2W: 88 dB typical	(84 dB UL)

* Typical readings are frontal sound readings taken with a dB meter with signal mounted on wall. Readings, however, are not made in accordance with UL testing procedures and represent realistic use of the product.

Mounting

Flush: 4" square box
Surface: FBX-SF or FBX-S

See the National Electric Code for the exact size box needed as this is dependent on the quantity and size of the wire used.

Shipping Weight (approx.)

S-LP25, S-LP70, S-LP25-W, S-LP70-W, S-LP25MG, S-LP25MG-W, S-LP70MG, S-LP70MG-W: 1-1/4 lbs.

S-LP25-MCS, S-LP25-MCS-W,
S-LP70-MCS, S-LP70-MCS-W: 2 lbs.

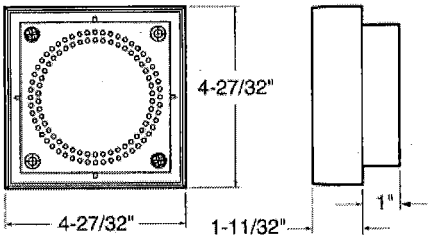
S-LP25-C, S-LP70-C: 1-1/2 lbs.

S-LP25-MCS-C, S-LP70-MCS-C, S-LP25MG-MCS, S-LP25MG-MCS-W, S-LP70MG-MCS, and/or S-LP70MG-MCS-W: 2 lbs.

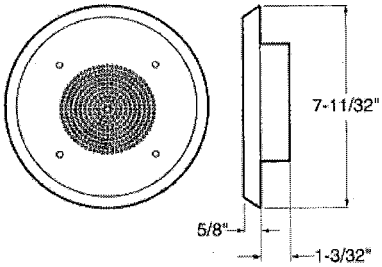
Applications

- For Emergency Voice Evacuation Systems (EVAC).

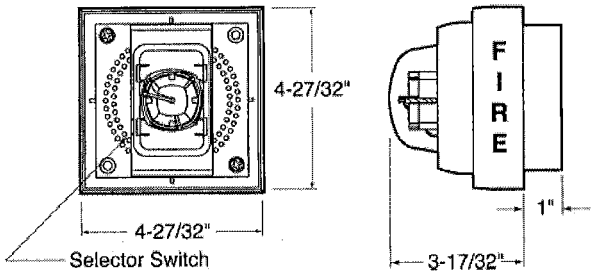
Dimensions



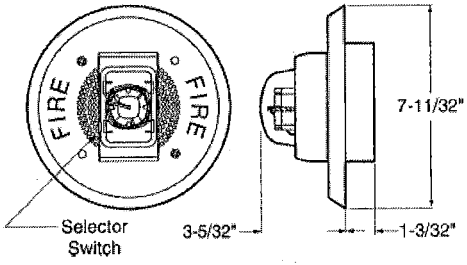
S-LP Series-Wall Mount



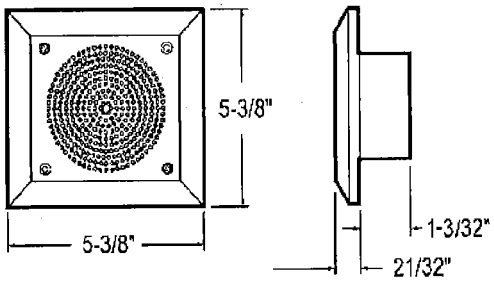
S-LP Series-Ceiling Mount



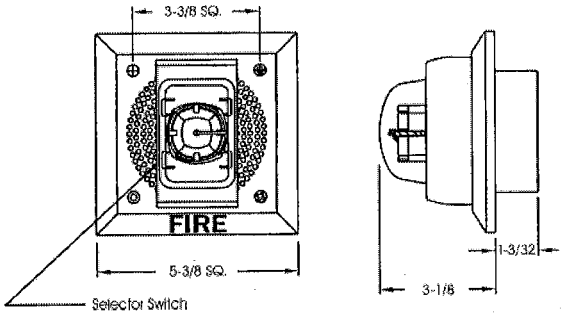
S-LP Series with Adapter Strobe-Wall Mount



S-LP Series with Adapter Strobe-Ceiling Mount



S-LPMG Series - Wall Mount



S-LPMG-MCS Series - Wall Mount

Ordering Information

Model Number	Description	Part Number	Wattage Taps
S-LP25	Speaker 25V	500-698800	1/4, 1/2, 1, 2
S-LP70	Speaker 70V	500-698801	1/4, 1/2, 1, 2
S-LP25-C	Speaker 25V (Ceiling)	500-698844	1/4, 1/2, 1, 2
S-LP70-C	Speaker 70V (Ceiling)	500-698845	1/4, 1/2, 1, 2
S-LP25-W	Speaker 25V (White)	500-698802	1/4, 1/2, 1, 2
S-LP70-W	Speaker 70V (White)	500-698803	1/4, 1/2, 1, 2
S-LP25MG	Speaker 25V Metal Faceplate	500-698866	1/4, 1/2, 1, 2
S-LP25MG-W	Speaker 25V Metal Faceplate (White)	500-698867	1/4, 1/2, 1, 2
S-LP70MG	Speaker 70V Metal Faceplate	500-698868	1/4, 1/2, 1, 2
S-LP70MG-W	Speaker 70V Metal Faceplate (White)	500-698869	1/4, 1/2, 1, 2

Model Number	Description	Part Number	Wattage Taps
S-LP25-MCS	25 Volt w/Adapter Strobe (Red)	500-699718	1/4, 1/2, 1, 2
S-LP25-MCS-W	25 Volt w/Adapter Strobe (White)	500-699720	1/4, 1/2, 1, 2
S-LP25-MCS-C	25 Volt w/Adapter Strobe (Ceiling)	500-699719	1/4, 1/2, 1, 2
S-LP70-MCS	70 Volt w/Adapter Strobe (Red)	500-699721	1/4, 1/2, 1, 2
S-LP70-MCS-W	70 Volt w/Adapter Strobe (White)	500-699723	1/4, 1/2, 1, 2
S-LP70-MCS-C	70 Volt w/Adapter Strobe (Ceiling)	500-699722	1/4, 1/2, 1, 2
S-LP25MG-MCS	25 Volt Metal Grill w/Adapter Strobe (Red)	500-648638	1/4, 1/2, 1, 2
S-LP25MG-MCS-W	25 Volt Metal Grill w/Adapter Strobe (White)	500-648640	1/4, 1/2, 1, 2
S-LP70MG-MCS	70 Volt Metal Grill w/Adapter Strobe (Red)	500-648639	1/4, 1/2, 1, 2
S-LP70MG-MCS-W	70 Volt Metal Grill w/Adapter Strobe (White)	500-648641	1/4, 1/2, 1, 2

Strobe Intensity Setting	Strobe Current Draw
15/75 cd	63 mA
30/75 cd	84 mA
75 cd	143 mA
110 cd	178 mA

Ceiling mount units are white. Specify 25Vac or 70Vac, strobe currents are Full Wave / Filtered.

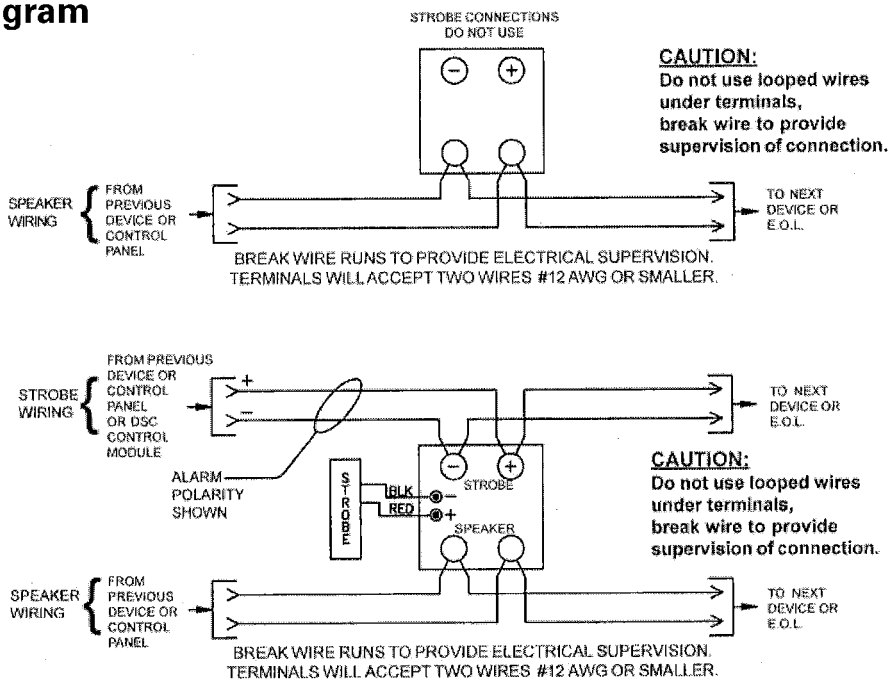
Minimum UL measurements are 78-87dB taken in free air at 360° around the device and averaged. Typical readings are frontal sound readings taken with a dB meter with signal mounted on wall. Environmental ratings 32°F to 120°F, (0°C to 49°C) with 85% RH.

Note: Before operating speaker, make sure that proper tap is selected on speaker. Select power tap by putting shorting jumper between pins next to wattage markings on back of basic speaker unit

Accessories

Model Number	Description
FIB	4" Square Back Box
FBX-S	1.7"D Surface Box
FBX-SF	2.7"D Surface Box
FBX-F	2.7"D Flush Box

Wiring Diagram



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March 2005
Supersedes sheet dated 6/04

SIEMENS

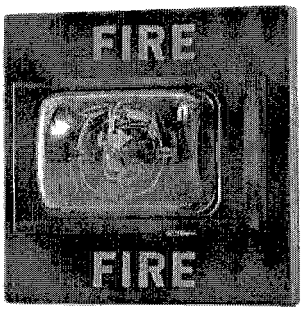
Fire Safety

Adapter™ Stand Alone Selectable Strobe

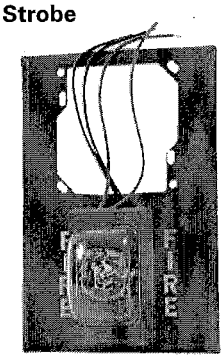
ENGINEER AND ARCHITECT SPECIFICATIONS

- **The Adapter** feature offers four field selectable candela strobe values – 15/75, 30/75, 75 or 110 for ceiling and wall mount
- Operates in either sync or non-sync mode
- Low current draw
- Integral universal mounting-single gang, double gang or 4" square box
- Colors- red or off-white
- ADA/NFPA/ANSI compliant
- UL 1971 listed for both wall and ceiling mount-CSFM, FM and ULC Listed
- Made in U.S.A., ISO 9001 certified
- A Dual Sync Control Module or PAD-3 is only required to activate the Instant Sync feature, nothing to set or change at the strobe unit

Agent Release Strobe



Adapter Strobe



Adapter Strobe Bell Plate

Description

The U-MCS series and U-MCS-6090V, U-MCS-6090V-W strobes combine state of the art electronics to provide reliability and low current draw to meet visual life safety applications. The Adapter feature offers four field selectable candela settings - 15/75, 30/75, 75 or 110.

Detail – Adapter selector switch

The integral universal mounting plate of the U-MCS provides for easy installation with single gang, double gang or 4" square box mounting. The lens construction provides high candela output with low current consumption while meeting UL and ADA standards.

The U-MCS-6090V, U-MCS-6090V-W provides the same strobe choices and is constructed of metal for mounting bell or chime devices to the plate.

The U-MCS Series & U-MCS-6090V, U-MCS-6090V-W use a Xenon flashtube with solid state circuitry for maximum reliability and efficiency. Strobes have a rounded dome shape made of clear polycarbonate.

The U-MCS Series uses a terminal block for easy installation and the U-MCS-6090V, U-MCS-6090V-W uses a pigtail (4 wire) connection.

Strobe Synchronization requires the Dual Sync Module or PAD-3.

Engineering Specifications

The visual notification appliances shall be Adapter U-MCS Series or U-MCS-6090V, U-MCS-6090V-W field selectable candela strobe appliance, or approved equal. They shall be listed to UL1971 (Standard for Safety Signaling Devices for the Hearing Impaired) for indoor applications, and shall be ADA/NFPA/ANSI compliant.

The strobe shall produce a flash rate of one (1) flash per second over the Operating Voltage Range limits of 16 to 32Vdc. The strobe light shall consist of a Xenon flash tube enclosed in a rugged, clear polycarbonate lens. Inputs shall be compatible with standard reverse polarity circuit supervision by an FACP. The Strobe shall be of low current design, and shall provide a minimum of four (4)

CATALOG NUMBER **2550**

field selectable strobe intensity settings, 15/75, 30/75, 75 and 110 candela. All settings shall be UL 1971 listed for both wall and ceiling mount applications. The selector switch shall be tamper-resistant.

It shall not be necessary to remove the strobe from the mounting surface to select the strobe intensity. When synchronization is required, the strobe shall be compatible with the Dual Sync Module, or other source of Siemens Building Technologies, Fire Safety Division Sync Protocol, and shall not drift out of synchronization.

The U-MCS Series Stand-Alone Strobe shall have an integral universal mounting plate that shall allow mounting to single- gang, two-gang, and 4" square backboxes, as well as FBX-S and FBX-F Surface Boxes. A cover trim plate shall be included to enhance appearance. There shall be no mounting holes or screw heads visible.

The Series U-MCS-6090V, U-MCS-6090V-W Strobe Plate shall facilitate the addition of a strobe to a bell installation. The Strobe Plate shall mount to a 4" square backbox for flush mounting.

U-MCS Specifications

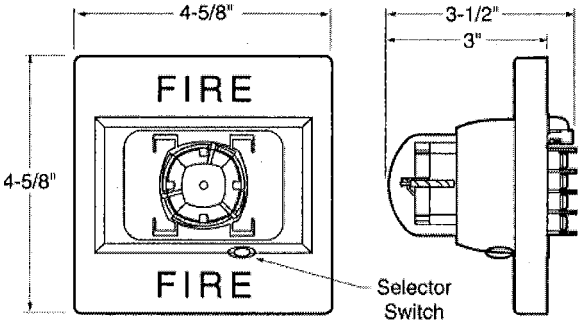
Environmental
32°F to 120°F (0°C to 49°C) at 85% RH

Input Voltage
16-32 Vdc regulated or FWR

Mounting
Integral universal mounting plate mounts to single gang, double gang or 4" square box.

Shipping Weight
9 oz. approx.

U-MCS Dimensions



NOTE: These notification appliances are UL listed and rated as "special application", which represents appliances which have been investigated to operate as described in the product's installation instructions.

Ordering Information

Stand-Alone Strobes-Wall Mount and Ceiling Mount

Model Number	Description	Part Number
U-MCS	Multicandela Selectable Strobe- Red	500-699701
U-MCS-W	Multicandela Selectable Strobe- White	500-699702

Retro-Plate Wall Mount

Model Number	Description	Part Number
U-MCS-6090V	Retro Plate Multicandela Selectable Strobe- Red	500-699703
U-MCS-6090VW	Retro Plate Multicandela Selectable Strobe- Red	500-699704

Stand-Alone Strobes-Wall Mount and Ceiling Mount - for Agent Release

Model Number	Description	Part Number
U-MCS-AR	Multicandela Selectable Strobe - Red For Agent Release	500-699746

Canadian Ordering Information

Stand-Alone Strobes-Wall Mount and Ceiling Mount

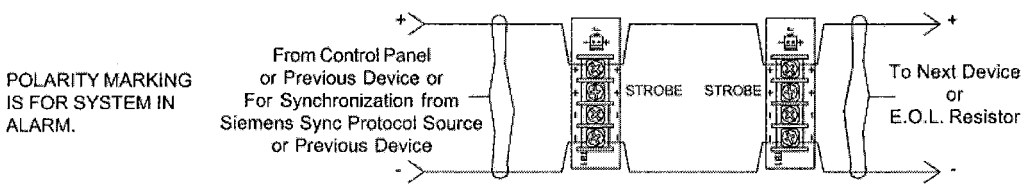
Model Number	Description	Part Number
CU-MCS	Multicandela Selectable Strobe- Red	500-699701C
CU-MCS-W	Multicandela Selectable Strobe- White	500-699702C

Retro-Plate Wall Mount

Model Number	Description	Part Number
CU-MCS-6090V	Retro Plate Multicandela Selectable Strobe- Red	500-699703C
CU-MCS-6090VW	Retro Plate Multicandela Selectable Strobe- Red	500-699704C

Strobe Intensity Setting	Strobe Current Draw
15/75 cd	63 mA
30/75 cd	84 mA
75 cd	143 mA
110 cd	178 mA

Typical Wiring



Do not Loop, "T" Tap or branch connect signal circuit field wires. Cut wire run to provide Electrical Supervision. Use care when positioning field wires so that minimum stress is on the appliance.

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March 2005
Supersedes sheet dated 6/04

SIEMENS

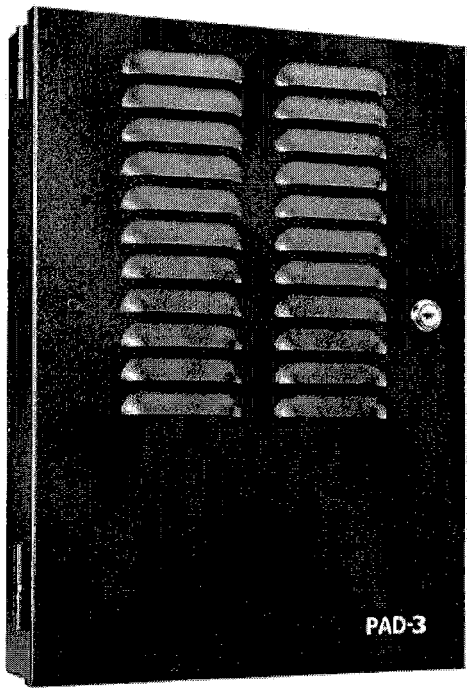
Fire Safety

PAD 3

Auxiliary Power Supply - Notification Appliance Extender

ENGINEER AND ARCHITECT SPECIFICATIONS

- 6 amps of Notification Appliance Power
- Advanced Microprocessor Control
- 24 VDC Output Voltage
- Four Power-Limited Notification Outputs
- Strobe Synchronization Option Built In
- Synchronized ANSI Temporal Pattern
- Class 'A' Selectable
- Ground Fault Detection
- Battery Supervision
- 3 Amp Auxiliary Power Output
- Trouble Contact for Monitoring
- Multiple Module Mounting in System 3 Enclosures
- Multiple Modules Share Battery Set
- UL, ULC Listed, CSFM, NYMEA and FM Approved



Introduction

The Model PAD-3 (PAD-3C for Canada) is a notification appliance circuit expander with a built-in auxiliary power output. It is designed for use with Siemens Building Technologies, Fire Safety Division fire alarm control panels. This power source is designed to provide the extra power required in buildings conforming to the Americans with Disabilities Act.

Features

The PAD-3 provides 6 amps of 24 VDC power for multiple uses. All 6 amps can be directed to 4 Notification Appliance Circuits (NAC s). Each is rated at 3 amps and is power limited. Either 1 or 2 inputs can control the four outputs. These outputs are compatible with all Fire Safety 24 VDC notification appliances.

The PAD-3 can be configured so that the inputs can be programmed as steady outputs, ANSI temporal outputs, or synchronized strobe outputs. It can also be programmed so that one input will silence U-MHU-Series horn/strobe horns while the strobes remain on using one set of wires.

The PAD-3 also offers a 3 amp auxiliary output for driving other portions of your fire alarm system such as door holders. This 24 VDC filtered output is power limited. When using this output, the total power available from the PAD-3 will not exceed 6 amps.

A trouble contact is provided for monitoring the PAD-3 with a fire alarm panel through the input. It also has a Form C dry contact for trouble monitoring. Therefore, the user has the option of connecting it to a conventional fire alarm panel's existing notification circuit, or controlling it with a TRI Series device on intelligent fire systems.

The PAD-3 offers battery supervision and management as is required of fire alarm system components. Ground faults are transmitted as are any other trouble conditions. Trouble conditions not only change the state of the trouble contact in the unit, but they also break the notification circuit input to create a trouble signal in the fire alarm control unit.

CATALOG NUMBER **3362**

This product is packaged in its own sheet metal enclosure with enough space to house the 7 amp-hour battery set required for back-up. The enclosure comes in black or red. System 3 enclosures may also be used to house multiple PAD-3 modules in a single enclosure. Two modules are capable of sharing the same battery set when mounted in the same enclosure.

Options

One or both PAD-3 signal inputs control the notification outputs, depending on the specific configuration setup. Possible configurations for the PAD-3 are:

For Option:	These Inputs:	Control These Outputs:	As:
1	Input 1	All Outputs	Class B Circuits
2	Input 1 Input 2*	All Outputs Silences horns on 1	Class B Circuits
3	Input 1 Input 2	Outputs 1 and 2 Outputs 3 and 4	Class B Circuits Class B Circuits
4	Input 1 Input 2	Output 1 Outputs 2, 3 and 4	Class B Circuits Class B Circuits
5	Input 1	Outputs 1-2, 3 and 4	Class A Circuit Pairs
6	Input 1 Input 2*	Outputs 1-2, 3 and 4 Silences horns on 1	Class A Circuit Pairs
7	Input 1 Input 2	Outputs 1 and 2 Outputs 3 and 4	Class A Circuit Pairs Class A Circuit Pairs
8	Input 1 Input 2	Outputs 1-2 Outputs 3 and 4	Class A Circuit Pairs Class B Circuits

*When used with U-MHU-Series horn/strobe units

Supervision

The Model PAD-3 supervises a variety of functions including:

- Low AC power
- Low battery condition
- Earth ground fault
- Auxiliary output power limit condition
- EOL supervision trouble or power limited condition at an output

When a trouble condition occurs, the PAD-3 creates a trouble condition on the fire control signal circuits to which it is connected. It still maintains the ability to be activated by the fire control. In addition, the PAD-3 provides a Form 'C' trouble relay output as an alternative to using the notification circuit trouble.

Electrical Specifications

AC Input:	120 VAC @ 2.5 amps
Output:	24VDC @ 6 amps
Auxiliary Power Circuit:	1
Notification Circuits:	4
Output Configuration:	2 Class A or 4 Class B or 1 Class A & 2 Class B
Amps per Output Circuit:	3.0
Notification Circuit Outputs:	24 VDC at 3.0 amps each, 24K ohm EOL resistor required on each Class B circuit
No. of Inputs:	2
Input Configuration:	2 Class B or 2 Class A
Input Voltage Range:	9-32 VDC
Maximum Input Current:	0.006 Amps
Battery Charging Capacity:	15.0 A.H
Trouble contact rating:	2.5A @250 VAC, 30 VDC
Ambient Temperature:	32°F to 120°F

Mechanical Specifications

Single Module Enclosure Model EN-PAD

Dimensions:	12"W x 16"H x 3"D
Color:	Black

Indicator Lights

AC Power On:	Green
Battery Trouble:	Yellow
Ground Fault:	Yellow
Auxiliary Trouble:	Yellow
Output 1 Trouble:	Yellow
Output 2 Trouble:	Yellow

Ordering Information

Model	Description	Part Number
PAD-3	Aux. power supply w/black enclosure	599-699189
PAD-3R	Aux. power supply w/red enclosure	599-699190
PAD-3-MB	Aux. power supply - main board only	500-699080
EN-PAD	Black enclosure for PAD-3	310-099073
EN-PADR	Red enclosure for PAD-3	310-099150

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August 2005
Supersedes sheet dated 9/03

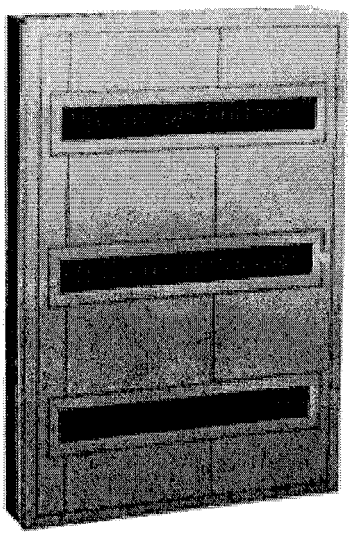
SIEMENS

Fire Safety

System 3™ Enclosures

ENGINEER AND ARCHITECT SPECIFICATIONS

- Attractive Styling
- Left or Right Hinged Door
- Surface or Semi-Flush Mounting
- Key Lock
- Dead Front Construction
- Optional Coast Guard Approved Enclosure Available
- Optional Red Door Available
- (UL) Listed, FM, CSFM, NYMEA Approved



Description

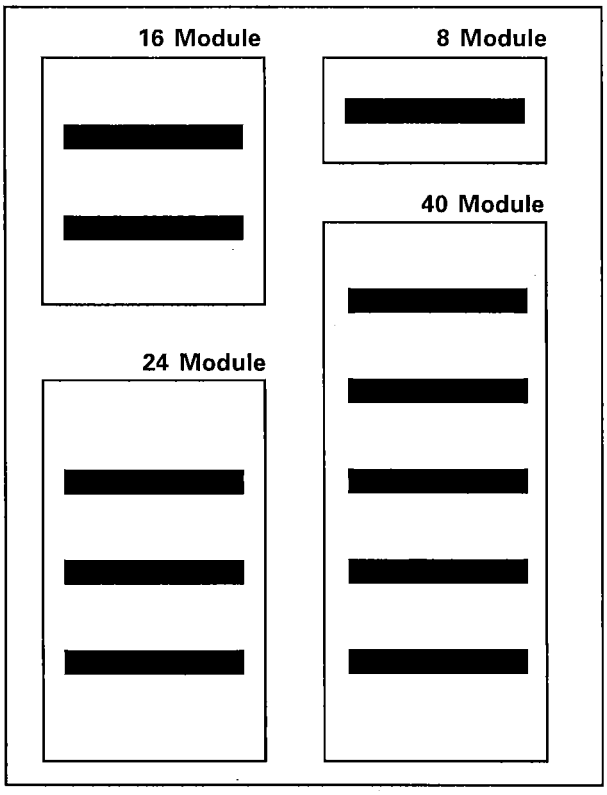
The Siemens Building Technologies, Fire Safety Enclosures are designed to accommodate System 3 control panels, input and output modules, and all power supplies utilized in the system. They can be either surface or semi-flush mounted.

Each enclosure consists of a back box and door cover assembly fabricated of heavy gauge sheet steel. The back box, which is finished in a black enamel, is designed for mounting the "Z" brackets and "U" channel supports on which are mounted the controls, modules, and power supplies.

The door is mounted with a sag resistant, steel piano hinge and is fitted with a key locking arrangement. Left hand or right hand mounting can be made on all enclosures as desired.

Each door contains full-width horizontal viewing slots, to permit visual identification of each row of modules and control panel for the various functions served by the system. The inside of the door is fitted with brackets to accommodate blank face plates to cover those positions in the back box not occupied by the control panel or modules.

Fire Safety enclosures are shipped unassembled (back box and door cover) to facilitate installation. All that is required is to bolt the complete system assembly in position in the back box and mount the hinged door cover assembly.



CATALOG NUMBER **3325**

Ordering Information

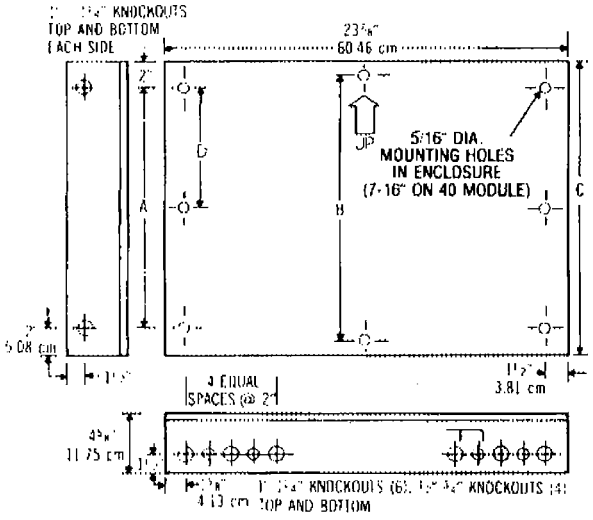
Back boxes, doors, rail/bracket kits with mounting hardware, and semi-flush mounting trim kits are available separately. To order, use the following module numbers.

Enclosure	Enclosure Kit*		Back Box		Door		Rail Kit		Flush Trim	
	Model No.	Part No.	Model No.	Part No.	Model No.	Part No.	Model No.	Part No.	Model No.	Part No.
8 Module	EA-31	599-021031	EB-31	310-021031	ED-31	305-021151	EK-31	545-083275	ET-31	300-021101
16 Module	EA-32	599-021032	EB-32	310-021032	ED-32	305-021152	EK-32	545-083276	ET-32	300-021102
24 Module	EA-33	599-021033	EB-33	310-021033	ED-33	305-021153	EK-33	545-083277	ET-33	300-021103
40 Module	EA-35	599-021035	EB-35	310-021035	ED-35	305-021155	EK-35	545-083278	ET-35	300-021105

*Enclosure kit consists of the backbox (EB), door (ED), and rail kit (EK)

Mounting Data

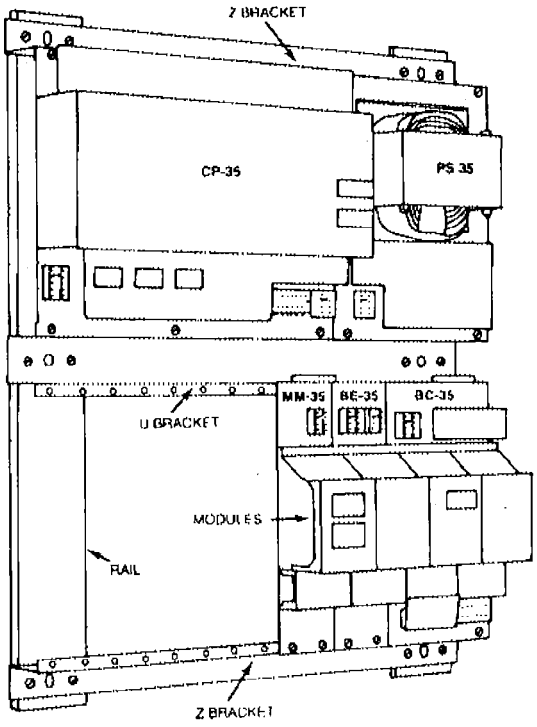
Encl. Model	Rail		Z Bracket		U Bracket	
	Qty.	Part No.	Qty.	Part No.	Qty.	Part No.
8 Module	2	320-021059	2	320-021071	1	320-021019
16 Module	2	320-021062	2	320-021071	1	320-021019
24 Module	2	320-021063	2	320-021071	2	320-021019
40 Module	2	320-021065	2	320-021071		



Enclosure	A	B	C	D
8 Module	10" 25.4 cm	—	14" 35.56 cm	—
16 Module	20⅛" 52.07 cm	22⅜" 56.83 cm	24½" 62.23 cm	—
24 Module	31" 78.74 cm	32⅞" 83.50 cm	35" 88.95 cm	15½" 39.37 cm
40 Module	52" 132.08 cm	53⅞" 136.84 cm	56" 142.24 cm	26" 66.04 cm

Typical Mounting Arrangement

(EB-32 shown)



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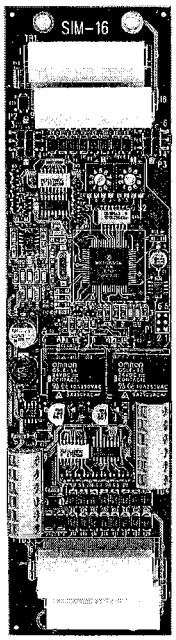
December 2004
Supersedes sheet dated 9/02

SIM-16 Supervised Input Module

For FireFinder XLS Control Panels

ENGINEER AND ARCHITECT SPECIFICATIONS

- Provides 16 general purpose inputs for remote sub-system monitoring
- Each input separately programmable for supervision or no supervision
- Provides Two form "C" relays
- Input circuits power limited
- Can be mounted remotely
- Programmable input circuit usage (alarm, trouble, supervisory, security, status, etc.)
- (UL) ULC Listed



Description

The SIM-16 Supervised input Module is a remotely located, general-purpose input module. It provides sixteen input circuits for remote system monitoring. Each input can be individually programmed as supervised (dry contact only) or unsupervised (general purpose input.) The SIM-16 has two Form C relays. The relays and inputs are programmed using the Zeus system programming tool.

Operation

The SIM-16 is mounted in an enclosure that is remotely located from the main control panel. Communication between the SIM-16 and the NIC-C (Network Interface Card) is through the Control Area Network (CAN) bus. Up to 99 SIM-16s can be used with a single NIC-C.

Each SIM-16 has two 10-position rotary switches that are used to set the board address on the CAN which is a sub-address of the NIC-C.

SIM-16 supervised input circuits can be a maximum of 500 feet in length.

Every time a change of state of the input is detected, a unique CAN message is sent to the NIC-C. A CAN message from the NIC-C directed to the SIM-16 controls the Form C relays.

The SIM-16 may be installed in a REMBOX or in any other UL864 approved enclosure. If using REMBOX2 or 4, mount the SIM-16 in one module space on a REMBOX2-MP or REMBOX4-MP using the four screws provided. Up to 4 SIM-16's will fit in a REMBOX2 and up to eight will fit in a REMBOX4. SIM-16 fits in a single system-3 module footprint.

Ordering Information

Model No.	Description	Part No.
SIM-16	Supervised Input Module	500-034060
CCL	CAN-CABLE Long 30 in. 6-conductor	599-634214
REMBOX2	REMBOX2	500-633772
REMBOX4	REMBOX4	500-633914

Electrical Ratings

24V Back Plane Current:	0
Screw Terminal 24V Current:	10mA per relay + 1.2mA per supervised input
6.2V Back Plane Current:	0
24V Standby Current:	20mA + 10mA per relay + 1.2mA per supervised input

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April 2003
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SIEMENS

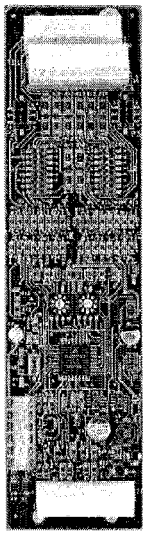
Fire Safety

OCM-16 Output Control Module

For FireFinder XLS Control Panel

ENGINEER AND ARCHITECT SPECIFICATIONS

- Provides 16 open collector outputs to drive LEDs, incandescent lamps or external relays
- Contains output for local audible
- Provides 2 inputs for momentary module "lamp test" and "local audible silence"
- All circuits are power limited
- Logic controls output activation
- Mounts remotely from control panel



OCM-16 Front View

OCM-16 Side View

Introduction

The OCM-16 Output Control Module is a remotely located, general-purpose output module. It provides sixteen open collector outputs to drive LEDs, incandescent lamps or external relays. There is an additional output for a local audible and two inputs for momentary lamp test as well as local audible silence switches.

Operation

The OCM-16 is mounted in an enclosure that is remotely located from the main control panel. Communication between the OCM and the NIC-C is through the Control Area Network (CAN) bus.

Each OCM-16 has two 10 position rotary switches that are used to set the board address on the CAN which is a subaddress of the NIC-C. The 16 outputs of the OCM-16 are controlled by messages received from the NIC-C over the CAN bus. A CAN message can activate any or all of the 16 outputs to drive LEDs, incandescent 24 volt lamps or relays.

Electrical Ratings

24V Back Plane Current:	0
Screw Terminal 24V Current:	14mA + 10mA per LED
6.2V Back Plane Current:	0
24V Standby Current:	14mA + 10mA per LED

Whenever any of the outputs are activated, (LEDs, lamps or relays ON) the local audible (if installed) will sound until it is acknowledged. If the outputs are deactivated before the alarm is acknowledged, the alarm will silence.

Both the lamp test and audible silence switch on multiple OCM-16s can be connected to a single switch, one for each function. A single audible can also be used with multiple OCM-16s.

The OCM-16 may be installed in a REMBOX or in any other UL 864 approved enclosure. If using REMBOX2 or REMBOX4, mount the OCM-16 in one space on the REMBOX2-MP or REMBOX4-MP. Up to (4) OCM-16's will mount in REMBOX2. Up to (8) OCM-16's will mount in REMBOX4. OCM-16 fits in a single System-3 module footprint.

Ordering Information

Model No.	Description	Part No.
OCM-16	Output Control Module	500-033150
CCL	CAN-CABLE Long 30 in. 6-conductor	599-634214
REMBOX2	Small Lobby Enclosure	500-633772
REMBOX4	Medium Lobby Enclosure	500-633914

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January 2003
Supersedes sheet dated 12/01

SIEMENS

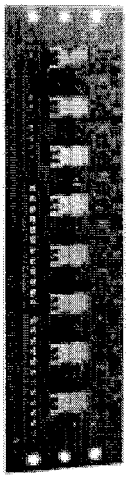
Fire Safety

SR-35

System 3™ Supplementary Relay

ENGINEER AND ARCHITECT SPECIFICATIONS

- 8 Relays per Module
- Hi or Low Going Input Activation
- 2A, 125 VAC or 30 VDC Contacts
- (UL) Listed, NYMEA, FM, CSFM and City of Chicago Approved



Description

The SR-35 relay module is designed to activate or deactivate external circuit controls such as fan shutdown, door releases, and other fire related equipment. The SR-35 contains eight independent relays with 2 amp SPDT contacts. Each relay can be selected to operate either on a high going input signal from appropriate System 3 modules or an open collector input signal such as those available on Siemens Building Technologies, Fire Safety Division XL3, MXL and SXL-EX systems. The position of actuation mode headers on each relay determines high going or low going signal activation.

Power to operate the relays is provided from the 24 VDC system power supply. The SR-35 module occupies only one standard module position in the System 3 enclosure. All terminals are of the clamp type and will accommodate 2 wires of up to #14 gauge.

The SR-35 is UL listed and NYMEA, FM, CSFM and City of Chicago approved.

Engineer and Architect Specifications

The Fire Safety Model SR-35 Supplementary Relay shall be provided for control of external fire related circuits. The module shall contain eight (8) independent 24 VDC relays fitted with SPDT contacts rated at 2 amp, 125 VAC or 30 VDC. Power to operate the relays shall be 24 VDC furnished by the system power supply. Each relay shall be provided with a program plug that will select either a high going input signal actuation or a low going signal.

A separate terminal shall be provided for individual actuation of each relay. All terminals shall be of the clamp type and will accommodate 2 wires of up to #14 gauge.

The unit shall be UL and NYMEA, FM, CSFM and City of Chicago approved.

Electrical Information

Current Requirements
Relays de-energized: None
Relay Energized - High Going - 26 mA per relay
Relay Energized - Low Going - 21 mA per relay

Ordering Information

Model	Description	Shipping Wt.	Part Number
SR-35	Supplementary Relay Module	2 lb.	500-887690

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August 2005
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SIEMENS

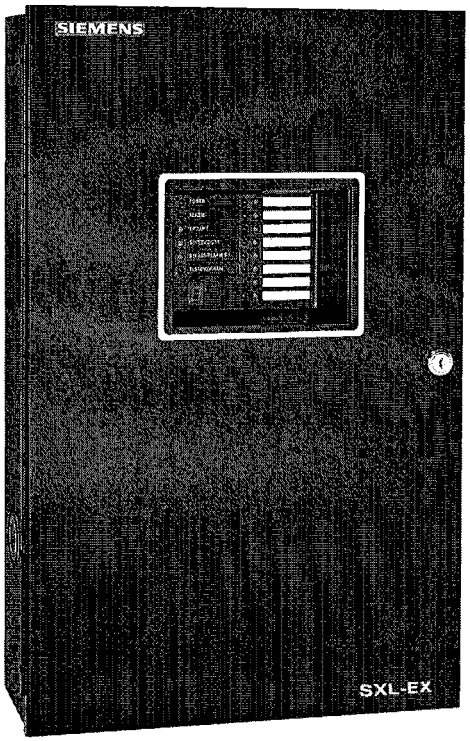
Fire Safety

SXL-EX

Conventional Zone Fire Alarm Control Panel

ENGINEER AND ARCHITECT SPECIFICATIONS

- 4 Zones — Expandable to 8 Zones
- Series 3 and Series 11 Compatible Detectors and Accessories
- Microprocessor Based Control
- Factory Programmed — Field Configurable
- 2 Style Y Notification Appliance Circuits
- 3 Amps Notification and Auxiliary Power
- 24 and 60 Hour Battery Backup
- 8 Form 'C' Relay Output Option
- 220/240 VAC, 50 HZ Power Supply Option
- Remote Serial Annunciator Option
- Sprinkler Supervisory Service
- Non-Silenceable Bell Service
- Alarm Verification by Zone
- One Person Test Feature
- Zone/Output Bypass Feature
- Subsequent Alarm and Trouble with 24 Hour Reminders
- Alarm, Trouble and Supervisory Last Event Records
- (UL) Listed, ULC Listed, CSFM Approved



Introduction

The Siemens Fire Safety SXL-EX is the next member in a family of products designed to provide cost effective, reliable life safety equipment to the fire alarm market. The microprocessor based fire alarm control panel is supplied with four conventional zones and is expandable to eight. It has many features required by today's demanding market such as field programmability, power limited circuits, one person test, remote annunciation and sufficient power to meet ADA requirements for signaling.

The SXL-EX is designed to meet the varied fire alarm needs of small office buildings, apartment buildings, department stores, hotels, strip malls or anywhere a cost efficient, general purpose fire alarm control panel is required.

Additionally, the SXL-EX can be used to supply remote bell power for larger systems such as MXL.

Description and Features

Initiating Circuits

The base SXL-EX has four conventional, Style B (Class B) zones which are typically compatible with the DI-3* ionization detector, the PE-11* photoelectric detector and PE-11T* photo-thermal detector, Siemens Fire Safety thermal, flame and beam detectors and the MS Series of manual stations. (Please refer to the detector compatibility list in the wiring diagram for specific compatibility questions).

Any combination of 30 compatible smoke detectors can be combined on a zone. Any number of thermal detectors, manual stations or other compatible direct shorting devices may be connected to each zone. All of these initiating devices can be mixed on the same zone providing the total power requirement of the zone does not exceed 9 mA supervisory current. The SXL-EX has the additional capacity to support detector accessories such as relays, remote alarm lamps and audible bases.

(* In Canada the DI-3C, PE-11C & PE-11TC, respectively)

CATALOG NUMBER **7906**

Initiating zones can be programmed for many functions. Alarm verification allows detector application in sensitive areas with or without manual stations mixed on the zone as allowed by code. Manual station operation shall not be delayed on verified zones. Generic zone function allows the NAC's in the SXL-EX to follow the action of a master fire alarm panel in the facility.

Initiating zones can also be bypassed as required for example during construction on the premises.

The system is expanded through the model SZE-4X expander which has an additional four initiating circuits in addition to relays and open collector outputs.

The system can alternately be expanded through the model SZE-8AX expander module which has an additional four Class A (Style D) initiating circuits. The SZE-8AX also converts the four initiating circuits and the two notification circuits on the main SXL-EX to Style D (Class A) and Style Z (Class A) respectively.

Notification Appliance Circuits

The base SXL-EX has two StyleY (Class B) Notification Appliance Circuits, each rated at 1.5 Amps. The total power output of the panel, between the two notification circuits and the auxiliary output, is limited to 3 Amps. The SXL-EX notification circuits are power limited to reduce installation costs without the addition of any hardware. Three (3) Amps is sufficient to provide power for many applications requiring appliances designed to ADA specifications.

Notification Circuits can be programmed for various codes. These include temporal, march time, simplified zone code, and number of rounds. They can also be inhibited during test and programming functions.

The two circuits can be individually programmed as non-silenceable. This steady operation can be used for strobes which must continue operation after audible devices are silenced.

For compatible notification appliances, see Siemens P/N 315-096363.

Relays and Outputs

The base SXL-EX has form "C" relays for general alarm and trouble rated at 1 Amp., 30 VDC. The model SZE-4X optional expander module has an additional four general purpose, programmable relays rated at 2 Amps., 30 VDC, plus four programmable open collector outputs.

Additionally, the model SRC-8 relay module provides eight general purpose, programmable relays rated at 2 Amps., 30 VDC/120 VAC. All remote operations in the fire alarm system are controlled from the SZE-4X or the SRC-8, both of which are installed within the SXL-EX enclosure.

Visual and Audible Indicators

The SXL-EX has visible LED annunciation by zone for alarm and trouble. Additionally, there is a system alarm LED and a system trouble LED. Supervisory zones utilize the zone trouble LED flashing in sync with a system supervisory LED to indicate an off normal situation.

Clustered with the system alarm, trouble and supervisory LEDs are also LEDs for AC power, bypass and test/program mode. A seven segment display reports a code for each system trouble and is also used during testing and programming functions. Trouble conditions are also annunciated by a piezo-electric sounder housed inside the SXL-EX.

Remote annunciation is accomplished through a serial connection with the model LED-3 or LED-4, eight zone LED annunciators. These units display alarm, supervisory and trouble conditions for 8 zones. A total of two modules can be attached to each system. The LED-3 comes with a black enclosure, the LED-4 with a white enclosure.

Auxiliary Power

The SXL-EX contains a $^1/_2$ Amp. auxiliary power circuit which is used to drive remote devices. The total power of the panel, between the auxiliary output and the two notification circuits, is 3 Amps.

Power Supply/Battery Charger

The power supply accepts a 120 VAC/60 Hz input or, optionally, a 220/240 VAC 50 Hz input. On loss of AC power the system switches to battery operation and indicates such by flashing the AC power LED on the display. Battery capacities of 24 and 60 hours are available. See accompanying chart for model numbers and details.

Manual Controls

The SXL-EX display has four switches for acknowledging alarm, supervisory and trouble conditions; silencing notification appliance circuits; resetting the system; and for the drill function. These switches are also used when programming the control unit.

Field Programmability and Test Functions

The following functions are field programmable in the SXL-EX. These features are generally not programmed in the unit as received from the factory. Field programming is accomplished through the display and does not require the use of a computer or any proprietary tools.

Initiating Circuits

Alarm Verification by Zone, Zone Bypass, Supervisory Zone or Generic Zone when the SXL-EX is to be used to provide remote notification appliance circuits.

(Note: The default mode is an alarm causing zone.)

Notification Appliance Circuits:

Non-silenceable, Simple Zone Coding, March Time, Temporal, Silence Inhibit, Cutoff Timers and Reminders.

(Note: The default mode is a steady signal.)

Outputs:
Bypass Outputs/Relays.

System Programming:

Zone to Output Matrix and Password Maintenance.

System tests features include the One Person Test feature, a Lamp Test, Search and Clear of the alarm, trouble and supervisory history buffer.

Engineer and Architect Specifications

The fire alarm control panel shall be a Siemens Fire Safety SXL-EX, shall utilize conventional zones, shall be microprocessor based and fully field programmable. The base panel shall include four initiating zones, relays for general alarm and trouble and two power limited notification circuits capable of a total of 3 Amps of power.

The system shall be expandable via a model SZE-4X expander module which contain an additional four conventional zones, four general purpose relays and four general purpose open collector outputs.

The fire alarm system shall have the following features: subsequent alarm and trouble, one person test feature, brown out protection, 24 or 60 hour battery backup. It also has the following selectable features: supervisory

zones, alarm verification by zone, non-latching zones, alarm, trouble and supervisory history, notification appliance circuit coding, alarm/trouble 24 hour reminder, and zone/output bypass.

Any initiating device circuit shall have the capability of being mapped to any optional output via the system programming function.

The fire alarm control panel shall be UL/ULC listed and meet the requirements of NFPA 72 for local fire alarm control for automatic or manual service, and for sprinkler supervisory and waterflow service.

It shall meet NFPA 72 requirements for central station service when connected to the model 5128 or 5129 digital fire communicator.

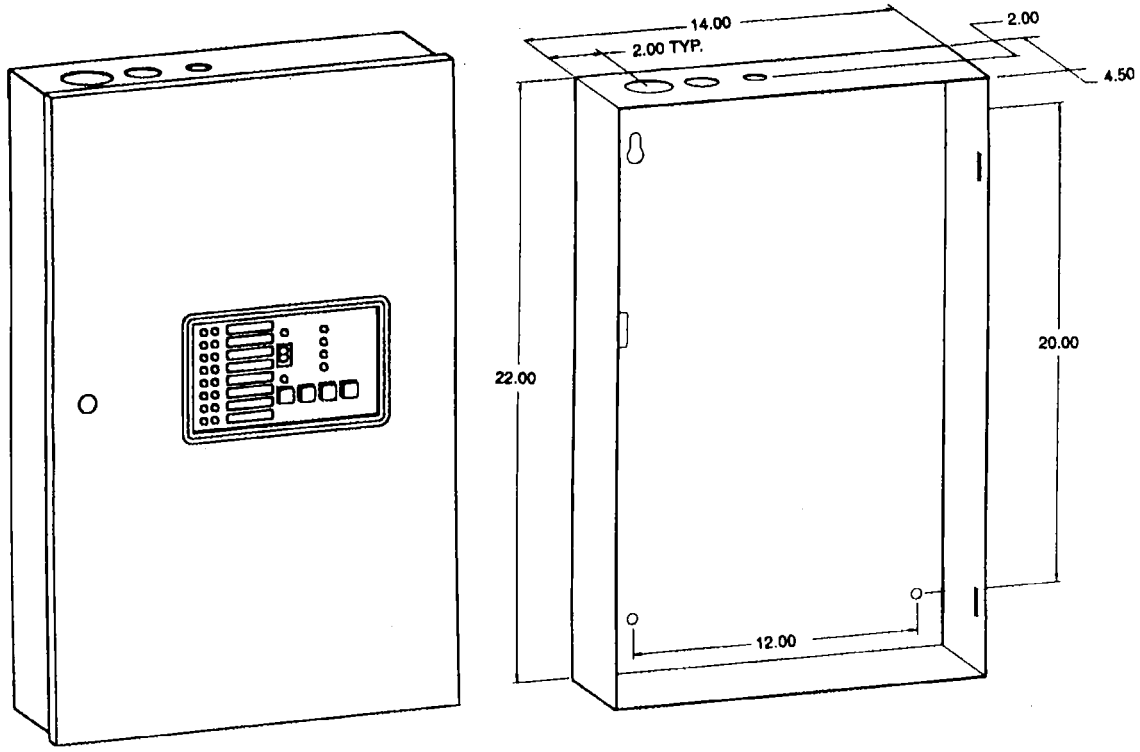
Ordering Information

Model Number	Description	Part Number
SXL-EX	4-Zone Fire Alarm Panel	599-696000
SZE-4X	4-Zone Expander Module	500-696006
SZE-8AX	Class "A" Expander Module	500-696007
SRC-8	8 Output Relay Module	500-692972
SLT-1	Municipal Tie/Leased Line Module	500-093285
Optional Assemblies		
SXL-EX-DF	4-Zone Fire Alarm Panel w/ Dead Front Construction	599-696005
SXL-EX-RED	4-Zone Fire Alarm Panel w/ Red Enclosure	599-696004
SXL-EX-INT	4-Zone Fire Alarm Panel, 220/240 VAC 50 Hz	599-696010
Accessory Items		
LED-3	Remote Annunciator - Black	500-693062
LED-4	Remote Annunciator - White	500-693317
MM-SX	Meter Module	500-696008
FT-SX	Semi-Flush Trim Kit	500-695890
Batteries		
BT-33	6 AH Battery Set	175-387141
BT-34	10 AH Battery Set	175-387140
BP-61*	15 AH Battery Set	175-389194

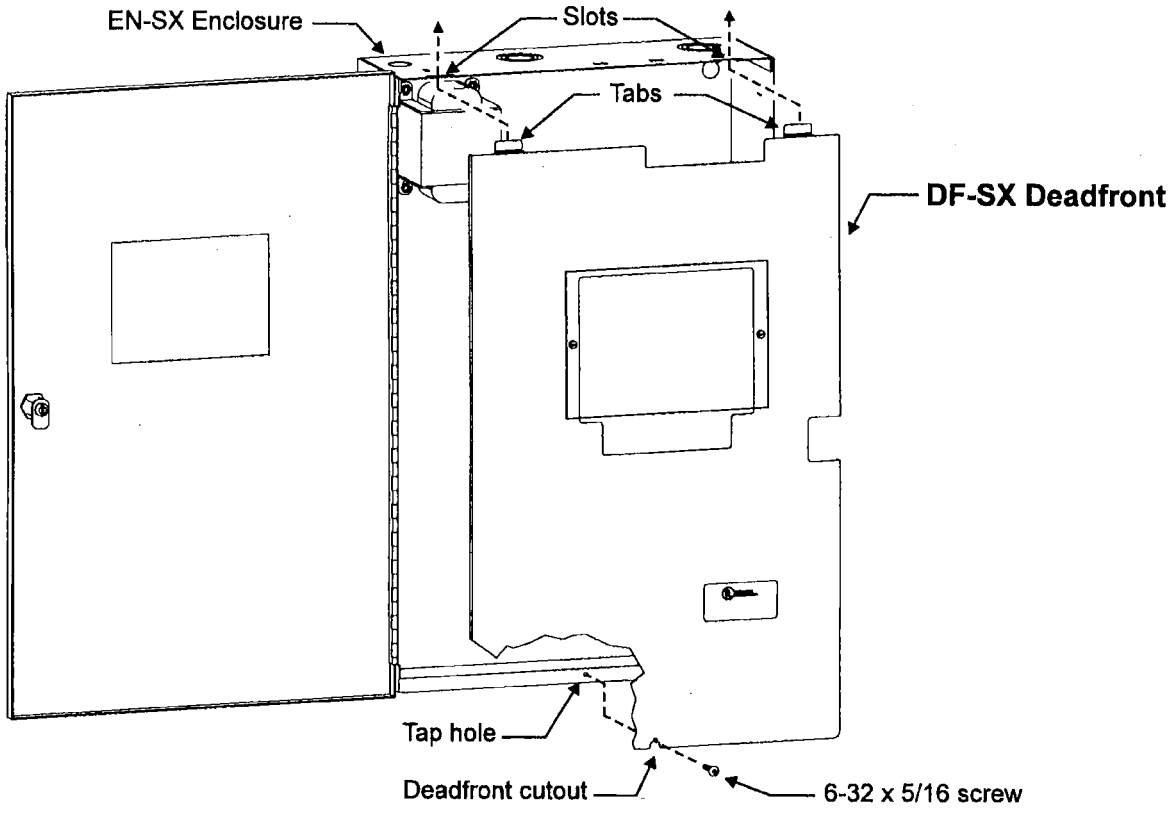
* BP-61 requires a separate enclosure, such as the BB-55.

Note: SXL-EX Operation Installation and Maintenance Manual is P/N 315-095999. See Catalog Number 7907 for SZE-4X.
See Catalog Number 7902 for SRC-8. See Catalog Number 7903 for LED-3 and LED-4. See catalog number 7905 for SLT-1.

Dimensional Data

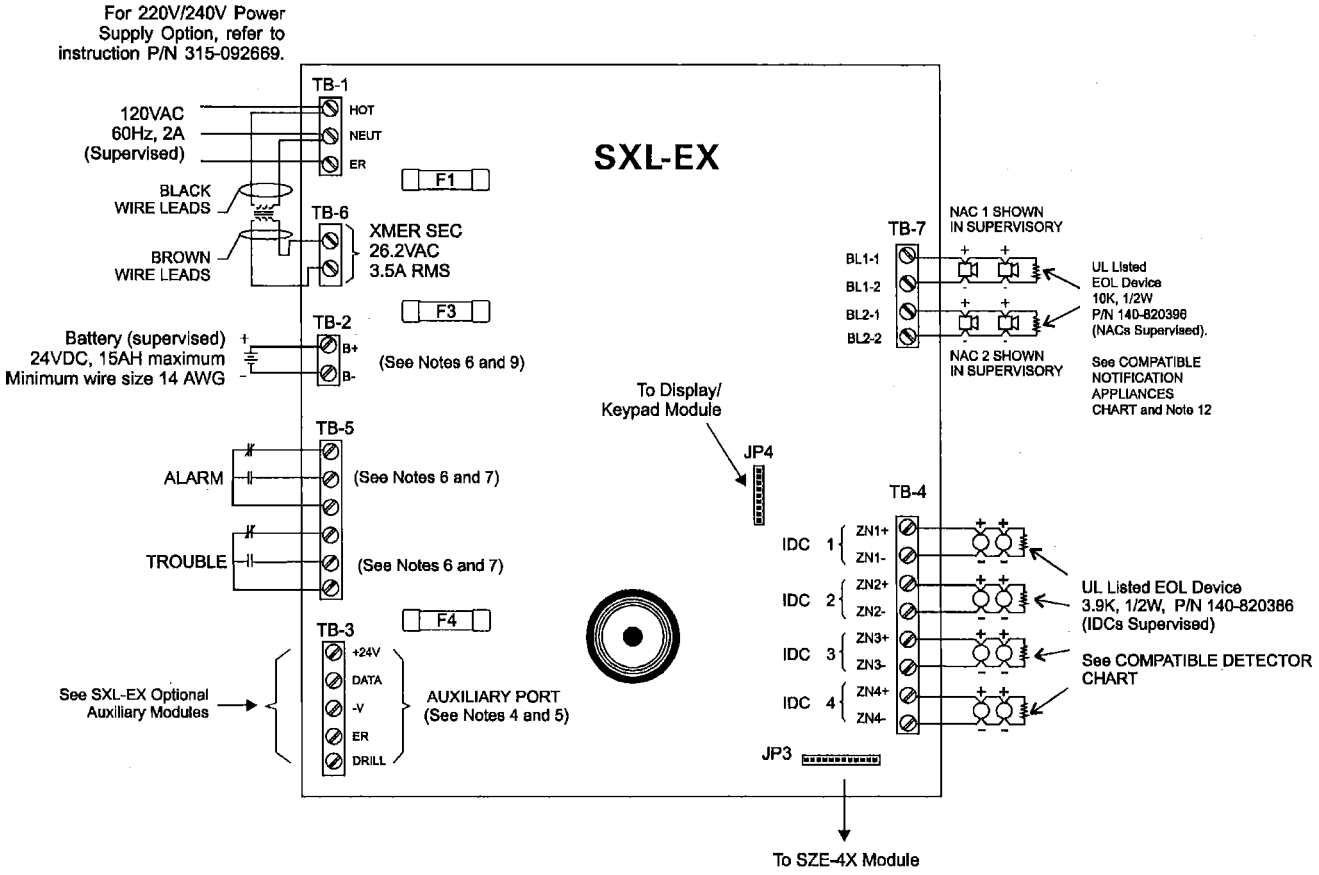


SXL-EX with Standard Enclosure



SXL-EX with Dead Front Enclosure

SXL-EX Main Board Connection Diagram



Fuse Replacement

Model Number	Description	Part Number
F1	8A, AC Input	105-217858
F2	15A, Batteries	105-224090
F3	.75A, AUX Port	105-280300

Alarm/Trouble Relay Electrical Ratings
1.0A at 30 VDC Resistive Only 0.5A at 30 VAC Resistive Only

NOTES:

1. All field wiring must be in accordance with NFPA 70, Article 760.
2. Make no wiring connections while the System is powered.
3. Alarm Relay Contacts are shown de-energized and Trouble Relay Contacts are shown energized. Suitable for resistive load only.
4. Auxiliary output rated 0.5 amps at +24 VDC filtered. Maximum line impedance of 5 ohms.
5. Combined current output for NAC1, NAC2, and auxiliary outputs is limited to 3.0 amps.
6. Equipment connected to these terminals must be located within the same room.
7. Refer to the SXL-EX Operation, Installation, and Maintenance Manual, P/N 315-095997, for further details.
8. No T-Tapping allowed.
9. Connect standby batteries only to terminals B+ and B-. The batteries may be installed in either the bottom of the cabinet or in a UL listed battery enclosure.
10. In all cases the Siemens Fire Safety model number is the compatibility identifier, including the control panel, module(s), and all compatible initiating devices.
11. When using the SLT-1 module, not suitable for remote station protected premises service where separate transmission circuits are required for fire, supervisory, and trouble signals.
12. All power limited wiring requires separation from non-power limited wiring. Refer to the SXL-EX Power Limited Wiring Instructions, P/N 315-095994.

Compatible Detectors			
Detector	**Quantity per Loop**	**Base**	**Installation Instructions Part No.**
DI-3/3H	30	DB-3S	315-081943-1
DI-A3/A3H	30	DB-3S	315-081943-1
DI-B3/B3H	30	AD-31	315-093234-3
DT-3P-135	30	DB-3S	315-084401-5
DT-11	30	DB-11 DB-3S with DB-ADPT	315-095429-1 315-095429-1
PB-1191A	1	PB-1191B	315-095424-2
PE-3/3T	30	DB-3S AD-3ILP	315-090875-6 315-093234-3
PE-11/11T	30	DB-11 DB-3S with DB-ADPT	315-094198-5 315-094198-5

Initiating Device Circuit Electrical Ratings

Voltage: 16.4-26.4 VDC
Supervisory Current: 9mA (max)
Alarm Current: 120mA (max)

Maximum line impedance of 25 ohms per IDC zone.

All IDC zones are supervised and power limited per NFPA 70, Article 760.

Each IDC zone must use at least 18 AWG, 300 V insulation, color coded wire for low voltage circuits where local codes require conduit. Where local codes permit, use limited energy shielded cable rated at 300V.

Each IDC zone will support one initiating device in alarm. The IDC zone compatibility is an unlimited number of shorting type devices. For smoke detector compatibility, see the Compatible Detectors chart.

Notification Appliance Circuit Electrical Ratings

Voltage: 24 VDC
Supervisory Current: 1.5mA (max)
Alarm Current: 1.5A (max)

Each NCA rated at 1.5A, +24 VDC.

Maximum line impedance per circuit of 3.0 ohms.

All NACs are supervised.

Each NCA must use at least 14 AWG, 300V insulation, color coded wire.

All NACs are power limited per NFPA 70, Article 760 for non-coded applications.

SZE-4X Form C Relay Electrical Ratings

2.0A at 30 VDC Resistive Only
0.5A at 30 VAC Resistive Only

Open Collector Electrical Ratings

50mA (max) at 26.4 VDC (max)

Siemens Building Technologies
Fire Safety

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SIEMENS

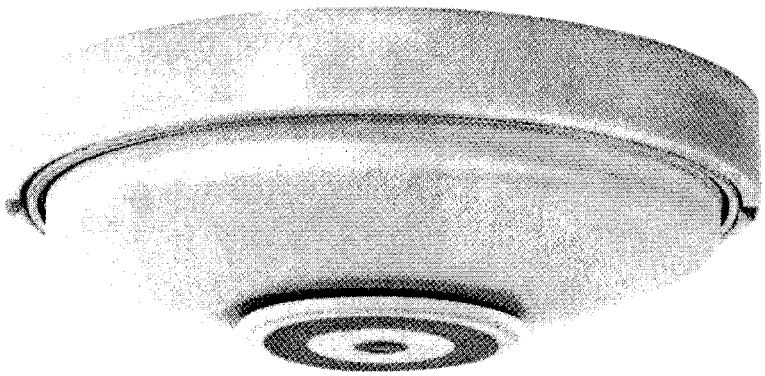
Fire Safety

DT-135R, DT-135F, DT-200R, DT-200F

Thermal Fire Detectors

ENGINEER AND ARCHITECT SPECIFICATIONS

- (UL) Listed
- FM Approved



Introduction

The Siemens Building Technologies, Fire Safety Division Thermal Fire Detectors are fixed temperature or combination fixed temperature rate-of-rise type. The combination detectors consist of two independently operated thermal elements. The rate-of-rise element is self-restoring. However, the fixed temperature is of the non-restoring type.

Underwriter's Laboratories, Inc., recommends the combination type thermal detector be used to protect a maximum of 2,500 square feet, and the fixed temperature type be used to protect a maximum of 625 square feet. Job conditions and engineering judgment, however, often dictate closer spacing to provide faster detection.

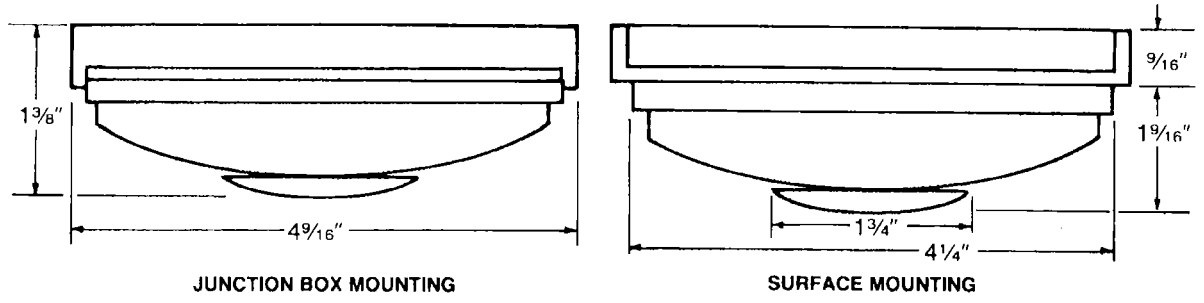
Rate-of-Rise Principle of Operation:

The rate-of-rise element consists of an air chamber, a flexible metal diaphragm and a moisture-proof, trouble-free vent which is carefully calibrated.

It is well known that air expands as it is heated, and contracts as it is cooled. For normal, day-to-day fluctuations of temperature, the expansion and contraction of the air within the chamber is automatically compensated by the "breathing" action of the vent.

However, when a fire occurs, air temperatures rise very rapidly and the air in the chamber expands faster than it can be vented. This creates a pressure which distends the diaphragm and closes electrical contacts.

Mounting Data



JUNCTION BOX MOUNTING

SURFACE MOUNTING

CATALOG NUMBER **6130**

The rate-of-rise action is not related to any fixed temperature level, but responds with the utmost promptness when the rate of temperature rise exceeds 15° per minute. If the heat is removed, the air within the chamber contracts and the switch moves to a normally open circuit position.

Fixed Temperature Principle of Operation

In a slow developing fire, the temperature may not increase rapidly enough to operate a rate-of-rise element.

In cases such as described a fixed temperature principle of operation is desired.

The detector utilizes a fixed temperature element made of fusible alloy and is of the non-restorable type.

The fusible alloy will melt and activate the detector when the surrounding air rises above the preset level of 135°F or 200°F.

The external heat collector drops away when the detector is activated therefore giving a quick visual confirmation that the detector has alarmed.

Installation

Each detector includes a thermoplastic reversible mounting plate. In one position it easily attaches to a 4" octagon junction box, 3" octagon box or plaster ring.

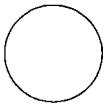
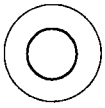
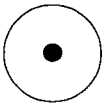
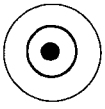
In reverse, the plate can be used for open wiring without a junction box. A $^1/_4$" space between detector and mounting surface allows for wire connections. All mounting screws are concealed.

The detector simply attaches to the mounting plate with a push and twist motion. No tools required.

Engineer and Architect Specifications

The thermal fire detector shall be a Fire Safety Model_____(insert number). It shall operate at a temperature of____degrees F (insert temperature).The detectors shall be listed by Underwriters' Laboratories, Inc., and Factory Mutual for use with Siemens Building Technologies, Fire Safety Division systems.

Ordering Information

Model Number	DT-135R	DT-200R	DT-135F	DT-200F
Description	Rate-of-rise and fixed temperature 135°F	Rate-of-rise and fixed temperature 200°F	Fixed temperature only, 135°F	Fixed temperature only, 200°F
Applications	Normal temperature fluctuations and ceiling temperatures not exceeding 100°F	Normal temperature fluctuations and ceiling temperatures exceeding 100°F but not 150°F	Unusually violent temperature fluctuations and ceiling temperatures not exceeding 100°F	Unusually violent temperature fluctuations and ceiling temperatures exceeding 100°F but not 150°F
Identification on Heat Collector	 NONE	 GRAY RING	 GRAY SPOT	 GRAY SPOT AND RING

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SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-G ckt 1
Area Covered	ground floor [part.]

Total Circuit Wattage	35	
Total Circuit Distance	1526	Ohm's Per 1000
Circuit Wire Gauge Required	14	3.07

Maximum Speaker Circuit Wire Resistance	26.85714
Calculated Speaker Circuit Wire Resistance	18.73928

CIRCUIT IS WITHIN LIMITS

SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-G ckt 2
Area Covered	ground floor [part.]

Total Circuit Wattage	29.5	
Total Circuit Distance	1398	Ohm's Per 1000
Circuit Wire Gauge Required	14	3.07

Maximum Speaker Circuit Wire Resistance	31.86441
Calculated Speaker Circuit Wire Resistance	17.16744

CIRCUIT IS WITHIN LIMITS

SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-1 ckt 3
Area Covered	first floor [part.]

Total Circuit Wattage	20.5	
Total Circuit Distance	1526	Ohm's Per 1000
	1301	
Circuit Wire Gauge Required	14	3.07

Maximum Speaker Circuit Wire Resistance	45.85366
Calculated Speaker Circuit Wire Resistance	18.73928

CIRCUIT IS WITHIN LIMITS

SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-1 ckt 4
Area Covered	first floor [part.]

Total Circuit Wattage	18.5	
Total Circuit Distance	1232	Ohm's Per 1000
Circuit Wire Gauge Required	14	3.07

Maximum Speaker Circuit Wire Resistance	50.81081
Calculated Speaker Circuit Wire Resistance	15.12896

CIRCUIT IS WITHIN LIMITS

SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital	
Date	7/23/2007	
Circuit Number	E3-2 ckt 5	
Area Covered	second floor [part.]	
Total Circuit Wattage	20.5	
Total Circuit Distance	1033	Ohm's Per 1000
Circuit Wire Gauge Required	14	3.07
Maximum Speaker Circuit Wire Resistance	45.85366	
Calculated Speaker Circuit Wire Resistance	12.68524	

CIRCUIT IS WITHIN LIMITS

SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-2 ckt 6
Area Covered	second floor [part.]

Total Circuit Wattage	17.5	
Total Circuit Distance	1127	Ohm's Per 1000
Circuit Wire Gauge Required	14	3.07

Maximum Speaker Circuit Wire Resistance	53.71429
Calculated Speaker Circuit Wire Resistance	13.83956

CIRCUIT IS WITHIN LIMITS

SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-3 ckt 7
Area Covered	third floor [part.]

Total Circuit Wattage	14	
Total Circuit Distance	973	Ohm's Per 1000
Circuit Wire Gauge Required	14	3.07

Maximum Speaker Circuit Wire Resistance	67.14286
Calculated Speaker Circuit Wire Resistance	11.94844

CIRCUIT IS WITHIN LIMITS

SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-3 ckt 8
Area Covered	third floor [part.]

Total Circuit Wattage	12	
Total Circuit Distance	871	Ohm's Per 1000
Circuit Wire Gauge Required	14	3.07

Maximum Speaker Circuit Wire Resistance	78.33333
Calculated Speaker Circuit Wire Resistance	10.69588

CIRCUIT IS WITHIN LIMITS

SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-4 ckt 9
Area Covered	fourth floor [part.]

Total Circuit Wattage	10	
Total Circuit Distance	684	Ohm's Per 1000
Circuit Wire Gauge Required	14	3.07

Maximum Speaker Circuit Wire Resistance	94
Calculated Speaker Circuit Wire Resistance	8.39952

CIRCUIT IS WITHIN LIMITS

SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-4 ckt 10
Area Covered	fourth floor [part.]

Total Circuit Wattage	10.5	
Total Circuit Distance	758	
		Ohm's Per 1000
Circuit Wire Gauge Required	14	3.07

Maximum Speaker Circuit Wire Resistance	89.52381
Calculated Speaker Circuit Wire Resistance	9.30824

CIRCUIT IS WITHIN LIMITS

SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-5 ckt 11
Area Covered	fifth floor [part.]

Total Circuit Wattage	8	
Total Circuit Distance	328	Ohm's Per 1000
Circuit Wire Gauge Required	14	3.07

Maximum Speaker Circuit Wire Resistance	117.5
Calculated Speaker Circuit Wire Resistance	4.02784

CIRCUIT IS WITHIN LIMITS

SIEMENS

Speaker Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-5 ckt 12
Area Covered	fifth floor [part.]

Total Circuit Wattage	8	
Total Circuit Distance	290	Ohm's Per 1000
Circuit Wire Gauge Required	14	3.07

Maximum Speaker Circuit Wire Resistance	117.5
Calculated Speaker Circuit Wire Resistance	3.5612

CIRCUIT IS WITHIN LIMITS

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital				
Date	7/23/2007				
Circuit Number	E3-G ckt 1				
Area Covered	ground floor [part.]				
Nominal System Voltage		20.4			
Minimum Device Voltage		16			
Total Circuit Current	1.025		Wire Gauge	Ohm's Per 1000	
CIRCUIT IS WITHIN LIMITS					
Distance from source to 1st device		68	14	3.07	
Wire Gauge for balance of circuit			14	3.07	

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	68	19.97	0.43	2%
Device 2	0.063	35	19.77	0.63	3%
Device 3	0.063	45	19.52	0.88	4%
Device 4	0.143	73	19.14	1.26	6%
Device 5	0.063	40	18.97	1.43	7%
Device 6	0.063	50	18.78	1.62	8%
Device 7	0.063	49	18.61	1.79	9%
Device 8	0.063	28	18.52	1.88	9%
Device 9	0.063	59	18.36	2.04	10%
Device 10	0.063	50	18.25	2.15	11%
Device 11	0.063	41	18.17	2.23	11%
Device 12	0.063	51	18.09	2.31	11%
Device 13	0.063	53	18.03	2.37	12%
Device 14	0.063	27	18.00	2.40	12%
Device 15	0.063	62	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
END		0	17.98	2.42	12%
Totals	1.025	731			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-G ckt 2
Area Covered	ground floor [part.]
Nominal System Voltage	20.4
Minimum Device Voltage	16
Total Circuit Current	0.945

CIRCUIT IS WITHIN LIMITS

	Distance	Wire Gauge	Ohm's Per 1000
Distance from source to 1st device	49	14	3.07
Wire Gauge for balance of circuit		14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	49	20.12	0.28	1%
Device 2	0.063	25	19.98	0.42	2%
Device 3	0.063	80	19.58	0.82	4%
Device 4	0.063	16	19.50	0.90	4%
Device 5	0.063	85	19.14	1.26	6%
Device 6	0.063	58	18.92	1.48	7%
Device 7	0.063	44	18.76	1.64	8%
Device 8	0.063	69	18.55	1.85	9%
Device 9	0.063	24	18.49	1.91	9%
Device 10	0.063	45	18.38	2.02	10%
Device 11	0.063	68	18.25	2.15	11%
Device 12	0.063	98	18.10	2.30	11%
Device 13	0.063	51	18.04	2.36	12%
Device 14	0.063	83	17.98	2.42	12%
Device 15	0.063	30	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
END		0	17.96	2.44	12%
Totals	0.945	825			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital			
Date	7/23/2007			
Circuit Number	E3-G ckt 3			
Area Covered	ground floor [part.]			
Nominal System Voltage		20.4		
Minimum Device Voltage		16		
Total Circuit Current	0.819		Wire	Ohm's
CIRCUIT IS WITHIN LIMITS			Gauge	Per 1000
Distance from source to 1st device		75	14	3.07
Wire Gauge for balance of circuit			14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	75	20.02	0.38	2%
Device 2	0.063	33	19.87	0.53	3%
Device 3	0.063	24	19.77	0.63	3%
Device 4	0.063	39	19.62	0.78	4%
Device 5	0.063	65	19.39	1.01	5%
Device 6	0.063	42	19.26	1.14	6%
Device 7	0.063	51	19.12	1.28	6%
Device 8	0.063	33	19.05	1.35	7%
Device 9	0.063	58	18.93	1.47	7%
Device 10	0.063	61	18.84	1.56	8%
Device 11	0.063	42	18.79	1.61	8%
Device 12	0.063	61	18.74	1.66	8%
Device 13	0.063	82	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
END		0	18.71	1.69	8%
Totals	0.819	666			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital			
Date	7/23/2007			
Circuit Number	E3-G ckt 4			
Area Covered	ground floor [part.]			
Nominal System Voltage		20.4		
Minimum Device Voltage		16		
Total Circuit Current	0.630		Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS				
Distance from source to 1st device		41	14	3.07
Wire Gauge for balance of circuit			14	3.07

Device Number	Device Current	Distance from previous device		Drop from source	Percent Drop
Device 1	0.063	41	20.24	0.16	1%
Device 2	0.063	80	19.96	0.44	2%
Device 3	0.063	97	19.66	0.74	4%
Device 4	0.063	47	19.54	0.86	4%
Device 5	0.063	68	19.38	1.02	5%
Device 6	0.063	55	19.27	1.13	6%
Device 7	0.063	54	19.19	1.21	6%
Device 8	0.063	98	19.07	1.33	7%
Device 9	0.063	111	18.99	1.41	7%
Device 10	0.063	81	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
END		0	18.96	1.44	7%
Totals	0.630	732			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital		
Date	7/23/2007		
Circuit Number	E3-1 ckt 5		
Area Covered	first floor [part.]		
Nominal System Voltage	20.4		
Minimum Device Voltage	16		
Total Circuit Current 0.945		Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS			
Distance from source to 1st device	30	14	3.07
Wire Gauge for balance of circuit		14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	30	20.23	0.17	1%
Device 2	0.063	45	19.98	0.42	2%
Device 3	0.063	82	19.57	0.83	4%
Device 4	0.063	99	19.11	1.29	6%
Device 5	0.063	25	19.00	1.40	7%
Device 6	0.063	40	18.85	1.55	8%
Device 7	0.063	30	18.74	1.66	8%
Device 8	0.063	74	18.52	1.88	9%
Device 9	0.063	32	18.43	1.97	10%
Device 10	0.063	63	18.28	2.12	10%
Device 11	0.063	42	18.20	2.20	11%
Device 12	0.063	48	18.13	2.27	11%
Device 13	0.063	53	18.07	2.33	11%
Device 14	0.063	30	18.04	2.36	12%
Device 15	0.063	50	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
END		0	18.02	2.38	12%
Totals	0.945	743			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital
Date	7/23/2007
Circuit Number	E3-1 ckt 6
Area Covered	first floor [part.]
Nominal System Voltage	20.4
Minimum Device Voltage	16
Total Circuit Current	0.693

CIRCUIT IS WITHIN LIMITS

		Wire Gauge	Ohm's Per 1000
Distance from source to 1st device	50	14	3.07
Wire Gauge for balance of circuit		14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	50	20.19	0.21	1%
Device 2	0.063	49	20.00	0.40	2%
Device 3	0.063	141	19.51	0.89	4%
Device 4	0.063	144	19.06	1.34	7%
Device 5	0.063	75	18.86	1.54	8%
Device 6	0.063	28	18.79	1.61	8%
Device 7	0.063	40	18.72	1.68	8%
Device 8	0.063	22	18.68	1.72	8%
Device 9	0.063	65	18.61	1.79	9%
Device 10	0.063	66	18.56	1.84	9%
END	0.063	30	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
END		0	18.54	1.86	9%
Totals	0.693	710			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital			
Date	7/23/2007			
Circuit Number	E3-1 ckt 7			
Area Covered	first floor [part.]			
Nominal System Voltage		20.4		
Minimum Device Voltage		16		
Total Circuit Current	0.945		Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS				
Distance from source to 1st device		55	14	3.07
Wire Gauge for balance of circuit			14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	55	20.08	0.32	2%
Device 2	0.063	10	20.03	0.37	2%
Device 3	0.063	47	19.79	0.61	3%
Device 4	0.063	61	19.51	0.89	4%
Device 5	0.063	87	19.14	1.26	6%
Device 6	0.063	30	19.02	1.38	7%
Device 7	0.063	48	18.85	1.55	8%
Device 8	0.063	29	18.76	1.64	8%
Device 9	0.063	29	18.69	1.71	8%
Device 10	0.063	54	18.56	1.84	9%
Device 11	0.063	44	18.48	1.92	9%
Device 12	0.063	23	18.44	1.96	10%
Device 13	0.063	41	18.39	2.01	10%
Device 14	0.063	27	18.37	2.03	10%
Device 15	0.063	23	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
END		0	18.36	2.04	10%
Totals	0.945	608			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital				
Date	7/23/2007				
Circuit Number	E3-1 ckt 8				
Area Covered	first floor [part.]				
Nominal System Voltage		20.4			
Minimum Device Voltage		16			
Total Circuit Current	0.693			Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS					
Distance from source to 1st device		25		14	3.07
Wire Gauge for balance of circuit				14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	25	20.29	0.11	1%
Device 2	0.063	20	20.22	0.18	1%
Device 3	0.063	35	20.09	0.31	1%
Device 4	0.063	54	19.93	0.47	2%
Device 5	0.063	48	19.80	0.60	3%
Device 6	0.063	65	19.65	0.75	4%
Device 7	0.063	81	19.49	0.91	4%
Device 8	0.063	56	19.40	1.00	5%
Device 9	0.063	83	19.31	1.09	5%
Device 10	0.063	44	19.27	1.13	6%
Device 11	0.063	41	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
END		0	19.26	1.14	6%
Totals	0.693	552			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital			
Date	7/23/2007			
Circuit Number	E3-2 ckt 9			
Area Covered	second floor [part.]			
Nominal System Voltage		20.4		
Minimum Device Voltage		16		
Total Circuit Current	0.756		Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS				
Distance from source to 1st device		51	14	3.07
Wire Gauge for balance of circuit			14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	51	20.16	0.24	1%
Device 2	0.063	33	20.02	0.38	2%
Device 3	0.063	47	19.84	0.56	3%
Device 4	0.063	35	19.72	0.68	3%
Device 5	0.063	43	19.59	0.81	4%
Device 6	0.063	35	19.49	0.91	4%
Device 7	0.063	47	19.38	1.02	5%
Device 8	0.063	30	19.32	1.08	5%
Device 9	0.063	43	19.26	1.14	6%
Device 10	0.063	55	19.19	1.21	6%
Device 11	0.063	60	19.15	1.25	6%
Device 12	0.063	40	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
END		0	19.13	1.27	6%
Totals	0.756	519			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital		
Date	7/23/2007		
Circuit Number	E3-2 ckt 10		
Area Covered	second floor [part.]		
Nominal System Voltage	20.4		
Minimum Device Voltage	16		
Total Circuit Current	0.819	Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS			
Distance from source to 1st device	58	14	3.07
Wire Gauge for balance of circuit		14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	58	20.11	0.29	1%
Device 2	0.063	43	19.91	0.49	2%
Device 3	0.063	41	19.73	0.67	3%
Device 4	0.063	39	19.58	0.82	4%
Device 5	0.063	22	19.51	0.89	4%
Device 6	0.063	31	19.41	0.99	5%
Device 7	0.063	69	19.22	1.18	6%
Device 8	0.063	44	19.12	1.28	6%
Device 9	0.063	74	18.98	1.42	7%
Device 10	0.063	67	18.88	1.52	7%
Device 11	0.063	100	18.76	1.64	8%
Device 12	0.063	74	18.70	1.70	8%
Device 13	0.063	83	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
Totals	0.819	745			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital			
Date	7/23/2007			
Circuit Number	E3-2 ckt 11			
Area Covered	second floor [part.]			
Nominal System Voltage		20.4		
Minimum Device Voltage		16		
Total Circuit Current	0.819		Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS				
Distance from source to 1st device		58	14	3.07
Wire Gauge for balance of circuit			14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	58	20.11	0.29	1%
Device 2	0.063	43	19.91	0.49	2%
Device 3	0.063	41	19.73	0.67	3%
Device 4	0.063	39	19.58	0.82	4%
Device 5	0.063	22	19.51	0.89	4%
Device 6	0.063	31	19.41	0.99	5%
Device 7	0.063	69	19.22	1.18	6%
Device 8	0.063	44	19.12	1.28	6%
Device 9	0.063	74	18.98	1.42	7%
Device 10	0.063	67	18.88	1.52	7%
Device 11	0.063	100	18.76	1.64	8%
Device 12	0.063	74	18.70	1.70	8%
Device 13	0.063	83	18.67	1.73	8%
Device 14		0	18.67	1.73	8%
Device 15		0	18.67	1.73	8%
Device 16		0	18.67	1.73	8%
Device 17		0	18.67	1.73	8%
Device 18		0	18.67	1.73	8%
Device 19		0	18.67	1.73	8%
Device 20		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
END		0	18.67	1.73	8%
Totals	0.819	745			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital			
Date	7/23/2007			
Circuit Number	E3-2 ckt 12			
Area Covered	second floor [part.]			
Nominal System Voltage		20.4		
Minimum Device Voltage		16		
Total Circuit Current	0.693		Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS				
Distance from source to 1st device		58	14	3.07
Wire Gauge for balance of circuit			14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	58	20.15	0.25	1%
Device 2	0.063	43	19.99	0.41	2%
Device 3	0.063	41	19.84	0.56	3%
Device 4	0.063	39	19.72	0.68	3%
Device 5	0.063	22	19.66	0.74	4%
Device 6	0.063	31	19.59	0.81	4%
Device 7	0.063	69	19.46	0.94	5%
Device 8	0.063	44	19.39	1.01	5%
Device 9	0.063	74	19.30	1.10	5%
Device 10	0.063	67	19.25	1.15	6%
Device 11	0.063	100	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
END		0	19.21	1.19	6%
Totals	0.693	588			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital			
Date	7/23/2007			
Circuit Number	E3-3 ckt 13			
Area Covered	third floor [part.]			
Nominal System Voltage		20.4		
Minimum Device Voltage		16		
Total Circuit Current	1.134		Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS				
Distance from source to 1st device		50	14	3.07
Wire Gauge for balance of circuit			14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	50	20.05	0.35	2%
Device 2	0.063	47	19.74	0.66	3%
Device 3	0.063	48	19.45	0.95	5%
Device 4	0.063	62	19.09	1.31	6%
Device 5	0.063	55	18.79	1.61	8%
Device 6	0.063	63	18.47	1.93	9%
Device 7	0.063	62	18.18	2.22	11%
Device 8	0.063	31	18.05	2.35	12%
Device 9	0.063	40	17.90	2.50	12%
Device 10	0.063	48	17.73	2.67	13%
Device 11	0.063	112	17.38	3.02	15%
Device 12	0.063	27	17.31	3.09	15%
Device 13	0.063	36	17.23	3.17	16%
Device 14	0.063	45	17.14	3.26	16%
Device 15	0.063	56	17.05	3.35	16%
Device 16	0.063	73	16.97	3.43	17%
Device 17	0.063	58	16.92	3.48	17%
Device 18	0.063	60	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
END		0	16.90	3.50	17%
Totals	1.134	973			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital			
Date	7/23/2007			
Circuit Number	E3-3 ckt 14			
Area Covered	third floor [part.]			
Nominal System Voltage		20.4		
Minimum Device Voltage		16		
Total Circuit Current	1.260		Wire	Ohm's
CIRCUIT IS WITHIN LIMITS			Gauge	Per 1000
Distance from source to 1st device		50	14	3.07
Wire Gauge for balance of circuit			14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	50	20.01	0.39	2%
Device 2	0.063	50	19.65	0.75	4%
Device 3	0.063	35	19.40	1.00	5%
Device 4	0.063	29	19.21	1.19	6%
Device 5	0.063	63	18.82	1.58	8%
Device 6	0.063	90	18.30	2.10	10%
Device 7	0.063	32	18.13	2.27	11%
Device 8	0.063	63	17.81	2.59	13%
Device 9	0.063	83	17.42	2.98	15%
Device 10	0.063	41	17.25	3.15	15%
Device 11	0.063	42	17.09	3.31	16%
Device 12	0.063	68	16.85	3.55	17%
Device 13	0.063	23	16.78	3.62	18%
Device 14	0.063	21	16.72	3.68	18%
Device 15	0.063	51	16.60	3.80	19%
Device 16	0.063	63	16.48	3.92	19%
Device 17	0.063	35	16.43	3.97	19%
Device 18	0.063	32	16.39	4.01	20%
Device 19	0.063	20	16.38	4.02	20%
Device 20	0.063	35	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
END		0	16.36	4.04	20%
Totals	1.260	926			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital				
Date	7/23/2007				
Circuit Number	E3-4 ckt 15				
Area Covered	fourth floor [part.]				
Nominal System Voltage		20.4			
Minimum Device Voltage		16			
Total Circuit Current	0.756			Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS					
Distance from source to 1st device		33		14	3.07
Wire Gauge for balance of circuit				14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	33	20.25	0.15	1%
Device 2	0.063	58	20.00	0.40	2%
Device 3	0.063	29	19.89	0.51	3%
Device 4	0.063	34	19.77	0.63	3%
Device 5	0.063	33	19.67	0.73	4%
Device 6	0.063	61	19.50	0.90	4%
Device 7	0.063	72	19.34	1.06	5%
Device 8	0.063	62	19.22	1.18	6%
Device 9	0.063	62	19.12	1.28	6%
Device 10	0.063	95	19.01	1.39	7%
Device 11	0.063	55	18.97	1.43	7%
Device 12	0.063	90	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
END		0	18.93	1.47	7%
Totals	0.756	684			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital		
Date	7/23/2007		
Circuit Number	E3-4 ckt 16		
Area Covered	fourth floor [part.]		
Nominal System Voltage	20.4		
Minimum Device Voltage	16		
Total Circuit Current 0.819		Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS			
Distance from source to 1st device	52	14	3.07
Wire Gauge for balance of circuit		14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.063	52	20.14	0.26	1%
Device 2	0.063	46	19.92	0.48	2%
Device 3	0.063	49	19.72	0.68	3%
Device 4	0.063	34	19.58	0.82	4%
Device 5	0.063	70	19.34	1.06	5%
Device 6	0.063	97	19.04	1.36	7%
Device 7	0.063	19	18.99	1.41	7%
Device 8	0.063	45	18.89	1.51	7%
Device 9	0.063	84	18.72	1.68	8%
Device 10	0.063	43	18.66	1.74	9%
Device 11	0.063	66	18.58	1.82	9%
Device 12	0.063	76	18.52	1.88	9%
Device 13	0.063	77	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
END		0	18.49	1.91	9%
Totals	0.819	758			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital		
Date	7/23/2007		
Circuit Number	E3-5 ckt 17		
Area Covered	fifth floor [part.]		
Nominal System Voltage	20.4		
Minimum Device Voltage	16		
Total Circuit Current	0.712	Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS			
Distance from source to 1st device	50	14	3.07
Wire Gauge for balance of circuit		14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.178	50	20.18	0.22	1%
Device 2	0.178	73	19.94	0.46	2%
Device 3	0.178	75	19.78	0.62	3%
Device 4	0.178	130	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
END		0	19.64	0.76	4%
Totals	0.712	328			

SIEMENS

Strobe Circuit Voltage Drop Calculation

Project Name	Mercy Hospital		
Date	7/23/2007		
Circuit Number	E3-5 ckt 18		
Area Covered	fifth floor [part.]		
Nominal System Voltage	20.4		
Minimum Device Voltage	16		
Total Circuit Current	0.712	Wire Gauge	Ohm's Per 1000
CIRCUIT IS WITHIN LIMITS			
Distance from source to 1st device	50	14	3.07
Wire Gauge for balance of circuit		14	3.07

Device Number	Device Current	Distance from previous device	At Device	Voltage Drop from source	Percent Drop
Device 1	0.178	50	20.18	0.22	1%
Device 2	0.178	103	19.84	0.56	3%
Device 3	0.178	91	19.64	0.76	4%
Device 4	0.178	46	19.59	0.81	4%
Device 5		0	19.59	0.81	4%
Device 6		0	19.59	0.81	4%
Device 7		0	19.59	0.81	4%
Device 8		0	19.59	0.81	4%
Device 9		0	19.59	0.81	4%
Device 10		0	19.59	0.81	4%
Device 11		0	19.59	0.81	4%
Device 12		0	19.59	0.81	4%
Device 13		0	19.59	0.81	4%
Device 14		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
END		0	19.59	0.81	4%
Totals	0.712	290			

SIEMENS

FireFinder XLS

Date 7/23/2007	Project Name: Mercy Hospital -Main Panel	**Sales Outlet**

XLS Power Supply & Battery Calculations MAX Load Configuration

Power Supply - Supervisory Load Current

Module Part Number & Description		QTY	Module Current	EOL Current	Device Current	Total 24 VDC Standby Current
PMI	Person Machine Interface	1	230 mA			0.230 Amps
PMI-REM	Remote Annunciator		230 mA			0.000 Amps
PSC-12	Power Supply/Battery Charger	1	150 mA			0.150 Amps
	Active Relays	4			20 mA per active relay	0.080 Amps
PSX-12	Power Supply Extender	1	170 mA			0.170 Amps
CPC	Central Processor Card					
CRC-6	Controllable Relay Card		51 mA			0.000 Amps
	Active Relays	0			20.5 mA per active relay	0.000 Amps
DLC	Device Loop Card	2	145 mA			0.290 Amps
	Devices	504			1.8 mA per device	0.907 Amps
CDC-4	Conventional Detector Card					
NIC-C	Network Interface Card	1	120 mA			0.120 Amps
WAC	Wide Area Card					
RPM	Remote Printer Module	1	150 mA			0.150 Amps
ZIC-4A	Zone Indicating Card	3	90 mA			0.282 Amps
	Active Circuits	12		1 mA per circuit		0.012 Amps
	Devices	-				
ZIC-8B	Zone Indicating Card					
	Active Circuits					
	Devices					
ZAC-40	Zone Amplifier Card 40 Watts		150 mA			0.000 Amps
	Speaker Load Watts	N/A				
ZAC-40	Backup		150 mA			0.000 Amps
ZAM-180	Zone Amplifier Module 180 Watts	2	280 mA			0.560 Amps
	Speaker Load Watts	N/A				
ZAM-180	Backup		280 mA			0.000 Amps
ARC	Audio Router Card					
AIC	Audio Interface Card (External Input)		150 mA			0.000 Amps
DAC-NET	Digital Audio Card with Network	1	230 mA			0.230 Amps
LVM	Live Voice Microphone	1	25 mA			0.025 Amps
LPB	Local Page Board	1	100 mA			0.100 Amps
TRC	Tape Recorder Card					
FRC	Firefighter Riser Card					
FMT	Firefighter Master Telephone		150 mA			0.000 Amps
	Active Handsets	0			30 mA per handset	0.000 Amps
TZC-8	Telephone Zone Card		280 mA			0.000 Amps
	Active Zones	0			35 mA per zone	0.000 Amps
FCM-6	Fan Control Module	2	14 mA			0.028 Amps
	Active LEDs	12			1 mA per LED	0.012 Amps
LCM-8	LED Control Module	6	14 mA			0.084 Amps
	Active LEDs	48			1 mA per LED	0.048 Amps
SCM-8	Switch Control Module	2	14 mA			0.028 Amps
	Active LEDs	16			1 mA per LED	0.016 Amps
CSB	CAN Sounder Board					
OCM-16	Output Control Module		14 mA			0.000 Amps
	Active LEDs	0			10 mA per LED	0.000 Amps
SIM-16	Supervised Input Module		20 mA			0.000 Amps
	Active Outputs	0		1.2 mA/supv'd input		0.000 Amps
	Active Relays	0			10 mA per active relay	0.000 Amps
RNI	Remote Network Interface		75 mA			0.000 Amps
SSD	System Status Display		200 mA			0.000 Amps
HZM	Conventional Zome Module					0.000 Amps
					Total Supervisory Current	**3.522 Amps**

SIEMENS

FireFinder XLS

Date 7/23/2007	Project Name: Mercy Hospital -Main Panel	**Sales Outlet**

Power Supply - Active Load Current MAX Load Configuration

Module Part Number & Description		QTY	24 VDC Current					6.2 VDC Current	
			Back Plane Current		Screw Terminal 24V Current		Total 24 VDC Current (Total 1 + Total 2)	Per Card	Total
			Per Card	Total 1	Per Card	Total 2			
PMI	Person Machine Interface	1	230 mA	0.230			0.230		
PMI-REM	Remote Annunciator	0	230 mA	0.000			0.000		
CPC	Central Processor Card	0							
CRC-6	Controllable Relay Card	0	10 mA	0.000			0.000	120 mA	0.000
	Active Relays	0	20.5 mA	0.000			0.000		
DLC	Device Loop Card	2			95 mA	0.190	0.190	200 mA	0.400
	Devices	504			1.8 mA	0.907	0.907		
CDC-4	Conventional Detector Card	0							
NIC-C	Network Interface Card	1	120 mA	0.120			0.120		
WAC	Wide Area Card	0							
RPM	Remote Printer Module	1			150 mA	0.150	0.150		
ZIC-4A	Zone Indicating Card	3	275 mA	0.825			0.825		
	Active Circuits	12			1 mA	0.012	0.012		
	Devices	-			Total NAC		0.000		
ZIC-8B	Zone Indicating Card								
	Active Circuits								
	Devices								
ZAC-40	Zone Amplifier Card 40 Watts	0			150 mA	0.000	0.000		
	Speaker Load Watts	0			53 mA/W	0.000	0.000		
ZAC-40	Backup Amplifier	0			150 mA	0.000	0.000		
ZAM-180	Zone Amplifier Module 180 Watts	1			280 mA	0.280	0.280		
	Speaker Load Watts	180			53 mA/W	9.540	9.540		
ZAM-180	Backup Amplifier	1			280 mA	0.280	0.280		
ARC	Audio Router Card	0							
AIC	Audio Interface Card (External Input)	0	30 mA	0.000			0.000	200 mA	0.000
DAC-NET	Digital Audio Card with Network	1	140 mA	0.140			0.140		
LVM	Live Voice Microphone	1			25 mA	0.025	0.025		
LPB	Local Page Board	1	50 mA	0.050			0.050	200 mA	0.020
TRC	Tape Recorder Card	0							
FRC	Firefighter Riser Card	0							
FMT	Firefighter Master Telephone	0			150 mA	0.000	0.000		
	Active Handsets	0			30 mA	0.000	0.000		
TCZ-8	Telephone Zone Card	0			275 mA	0.000	0.000		
	Active Zones	0			35 mA	0.000	0.000		
FCM-6	Fan Control Module	2			14 mA	0.028	0.028		
	Active LEDs	12			1 mA	0.012	0.012		
LCM-8	LED Control Module	6			14 mA	0.084	0.084		
	Active LEDs	48			1 mA	0.048	0.048		
SCM-8	Switch Control Module	2			14 mA	0.028	0.028		
	Active LEDs	16			1 mA	0.016	0.016		
CSB	CAN Sounder Board	0							
OCM-16	Output Control Module	0			14 mA	0.000	0.000		
	Active LEDs	0			10 mA	0.000	0.000		
SIM-16	Supervised Input Module	0			20 mA	0.000	0.000		
	Active Relays	0			10 mA	0.000	0.000		
	Active Inputs	0			1.2 mA	0.000	0.000		
RNI	Remote Network Interface	0	75 mA	0.000			0.000		
SSD	System Status Display	0			200 mA	0.000	0.000		
HZM	Conventional Zome Module	0			100 mA	0.000			
	Totals		**1.365**	**Amps**	**11.600**	**Amps**	**12.965 Amps**	**0.420**	**Amps**
			2 Amps MAX				**12 Amps MAX**	**2 Amps MAX**	

Minimum Number of Power Supplies = 2

SIEMENS

FireFinder XLS

Date	7/23/2007	Project Name:	Mercy Hospital -Main Panel	**Sales Outlet**

MAX LOAD CONDITION

Backup Battery Calculations

Total Supervisory Current	3.52 Amps	Standby Battery Model Supplied	75 AH
Standby Time Required	4 Hours	Standby Battery Size	75.000 AH
AMP/Hour Required	14.09 AH		
Standby Battery With Reserve	18.32 AH	Reserve Battery Power	56.685 AH

DESIGN LOAD CONDITION

CRC-6	Controllable Relay Card	0	51 mA			0.000 Amps
	Active Relays				20.5 mA per active relay	0.000 Amps
DLC	Device Loop Card	2	145 mA			0.290 Amps
	Devices				1.8 mA per device	0.000 Amps
TZC-8	Telephone Zone Card	0	280 mA			0.000 Amps
	Active Zones				35 mA per zone	0.000 Amps
FCM-6	Fan Control Module	2	14 mA			0.028 Amps
	Active LEDs				1 mA per LED	0.000 Amps
LCM-8	LED Control Module	6	14 mA			0.084 Amps
	Active LEDs				1 mA per LED	0.000 Amps
OCM-16	Output Control Module	0	14 mA			0.000 Amps
	Active LEDs				10 mA per LED	0.000 Amps
SIM-16	Supervised Input Module	0	20 mA			0.000 Amps
	Active Outputs			1.2 mA/supv'd input		0.000 Amps
	Active Relays				10 mA per active relay	0.000 Amps
ZAC-40	Zone Amplifier Card 40 Watts	0			150 mA	0.000 Amps
	Speaker Load Watts				53 mA/W	0.000 Amps
ZAM-180	Zone Amplifier Module 180 Watts	2			280 mA	0.280 Amps
	Speaker Load Watts				53 mA/W	0.000 Amps

150 mA	0.000
53 mA/W	0.000

Backup Battery Calculations

Total Supervisory Current	2.47 Amps	Standby Battery Model Supplied	75 AH
Standby Time Required	4 Hours	Standby Battery Size	75.000 AH
AMP/Hour Required	9.88 AH		
Standby Battery With Reserve	12.84 AH	Reserve Battery Power	62.161 AH

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FireFinder XLS

Date 7/23/2007	Project Name: Mercy Hospital -Main Panel **Sales Outlet**				
XLS Power Supply & Battery Calculations Design Load					
Power Supply - Supervisory Load Current					
Module Part Number & Description		**QTY**	**Module Current**	**EOL Current**	**Device Current**	**Total 24 VDC Standby Current**
PMI	Person Machine Interface	1	230 mA			0.230 Amps
PMI-REM	Remote Annunciator	0	230 mA			0.000 Amps
PSC-12	Power Supply/Battery Charger	1	150 mA			0.150 Amps
	Active Relays	4			20 mA per active relay	0.080 Amps
PSX-12	Power Supply Extender	1	170 mA			0.170 Amps
CPC	Central Processor Card	0				
CRC-6	Controllable Relay Card	0	51 mA			0.000 Amps
	Active Relays	0			20.5 mA per active relay	0.000 Amps
DLC	Device Loop Card	2	145 mA			0.290 Amps
	Devices	0			1.8 mA per device	0.000 Amps
CDC-4	Conventional Detector Card	0				
NIC-C	Network Interface Card	1	120 mA			0.120 Amps
WAC	Wide Area Card	0				
RPM	Remote Printer Module	1	150 mA			0.150 Amps
ZIC-4A	Zone Indicating Card	3	90 mA			0.282 Amps
	Active Circuits	12		1 mA per circuit		0.012 Amps
	Devices	-				
ZIC-8B	Zone Indicating Card	0				
	Active Circuits	0				
	Devices	0				
ZAC-40	Zone Amplifier Card 40 Watts	0	150 mA			0.000 Amps
	Speaker Load Watts	N/A				
ZAC-40	Backup	0	150 mA			0.000 Amps
ZAM-180	Zone Amplifier Module 180 Watts	2	280 mA			0.560 Amps
	Speaker Load Watts	N/A				
ZMA-180	Backup	0	280 mA			0.000 Amps
ARC	Audio Router Card	0				
AIC	Audio Interface Card (External Input)	0	150 mA			0.000 Amps
DAC-NET	Digital Audio Card with Network	1	140 mA			0.140 Amps
LVM	Live Voice Microphone	1	25 mA			0.025 Amps
LPB	Local Page Board	1	100 mA			0.100 Amps
TRC	Tape Recorder Card	0				
FRC	Firefighter Riser Card	0				
FMT	Firefighter Master Telephone	0	150 mA			0.000 Amps
	Active Handsets	0			30 mA per handset	0.000 Amps
TZC-8	Telephone Zone Card	0	280 mA			0.000 Amps
	Active Zones	0			35 mA per zone	0.000 Amps
FCM-6	Fan Control Module	2	14 mA			0.028 Amps
	Active LEDs	0			1 mA per LED	0.000 Amps
LCM-8	LED Control Module	6	14 mA			0.084 Amps
	Active LEDs	0			1 mA per LED	0.000 Amps
SCM-8	Switch Control Module	2	14 mA			0.028 Amps
	Active LEDs	16			1 mA per LED	0.016 Amps
CSB	CAN Sounder Board	0				
OCM-16	Output Control Module	0	14 mA			0.000 Amps
	Active LEDs	0			10 mA per LED	0.000 Amps
SIM-16	Supervised Input Module	0	20 mA			0.000 Amps
	Active Outputs	0		1.2 mA/supv'd input		0.000 Amps
	Active Relays	0			10 mA per active relay	0.000 Amps
RNI	Remote Network Interface	0	75 mA			0.000 Amps
SSD	System Status Display	0	200 mA			0.000 Amps
HZM	Conventional Zome Module	0				0.004 Amps
					Total Supervisory Current	**2.469 Amps**

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FireFinder XLS

Date 7/23/2007	Project Name: Mercy Hospital -Main Panel **Sales Outlet**

Power Supply - Active Load Current Design Load

Module Part Number & Description		QTY	24 VDC Current					6.2 VDC Current	
			Back Plane Current		Screw Terminal 24V Current		Total 24 VDC Current (Total 1 + Total 2)	Per Card	Total
			Per Card	Total 1	Per Card	Total 2			
PMI	Person Machine Interface	1	230 mA	0.230			0.230		
PMI-REM	Remote Annunciator	0	230 mA	0.000			0.000		
CPC	Central Processor Card	0							
CRC-6	Controllable Relay Card	0	10 mA	0.000			0.000	120 mA	0.000
	Active Relays	0	20.5 mA	0.000			0.000		
DLC	Device Loop Card	2			95 mA	0.190	0.190	200 mA	0.400
	Devices	0			1.8 mA	0.000	0.000		
CDC-4	Conventional Detector Card	0							
NIC-C	Network Interface Card	1	120 mA	0.120			0.120		
WAC	Wide Area Card	0							
RPM	Remote Printer Module	1			150 mA	0.150	0.150		
ZIC-4A	Zone Indicating Card	3	275 mA	0.825			0.825		
	Active Circuits	12			1 mA	0.012	0.012		
	Devices	-			Total NAC	0	0.000		
ZIC-8B	Zone Indicating Card	0							
	Active Circuits	0							
	Devices	0							
ZAC-40	Zone Amplifier Card 40 Watts	0			150 mA	0.000	0.000		
	Speaker Load Watts	0			53 mA/W	0.000	0.000		
ZAC-40	Backup Amplifier	0			150 mA	0.000	0.000		
ZAM-180	Zone Amplifier Module 180 Watts	1			280 mA	0.280	0.280		
	Speaker Load Watts	0			53 mA/W	0.000	0.000		
ZAM-180	Backup Amplifier	1			280 mA	0.280	0.280		
ARC	Audio Router Card	0							
AIC	Audio Interface Card (External Input)	0	30 mA	0.000			0.000	200 mA	0.000
DAC-NET	Digital Audio Card with Network	1	230 mA	0.140			0.140		
LVM	Live Voice Microphone	1			25 mA	0.025	0.025		
LPB	Local Page Board	1	50 mA	0.050			0.050	200 mA	0.020
TRC	Tape Recorder Card	0							
FRC	Firefighter Riser Card	0							
FMT	Firefighter Master Telephone	0			150 mA	0.000	0.000		
	Active Handsets	0			30 mA	0.000	0.000		
TCZ-8	Telephone Zone Card	0			275 mA	0.000	0.000		
	Active Zones	0			35 mA	0.000	0.000		
FCM-6	Fan Control Module	2			14 mA	0.028	0.028		
	Active LEDs	0			1 mA	0.000	0.000		
LCM-8	LED Control Module	6			14 mA	0.084	0.084		
	Active LEDs	0			1 mA	0.000	0.000		
SCM-8	Switch Control Module	2			14 mA	0.028	0.028		
	Active LEDs	16			1 mA	0.016	0.016		
CSB	CAN Sounder Board	0							
OCM-16	Output Control Module	0			14 mA	0.000	0.000		
	Active LEDs	0			10 mA	0.000	0.000		
SIM-16	Supervised Input Module	0			20 mA	0.000	0.000		
	Active Relays	0			10 mA	0.000	0.000		
	Active Inputs	0			1.2 mA	0.000	0.000		
RNI	Remote Network Interface	0	75 mA	0.000			0.000		
SSD	System Status Display	0			200 mA	0.000	0.000		
HZM	Conventional Zome Module	0			100 mA	0.000			
	Totals		1.365	Amps	1.093	Amps	2.458 Amps	0.420	Amps
			2 Amps MAX				12 Amps MAX	2 Amps MAX	

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FireFinder XLS

Date 7/23/2007	Project Name: Mercy Hospital -Remote Panel	**Sales Outlet**

XLS Power Supply & Battery Calculations MAX Load Configuration

Power Supply - Supervisory Load Current

Module Part Number & Description		QTY	Module Current	EOL Current	Device Current	Total 24 VDC Standby Current
PMI	Person Machine Interface		230 mA			0.000 Amps
PMI-REM	Remote Annunciator		230 mA			0.000 Amps
PSC-12	Power Supply/Battery Charger	1	150 mA			0.150 Amps
	Active Relays	4			20 mA per active relay	0.080 Amps
PSX-12	Power Supply Extender	1	170 mA			0.170 Amps
CPC	Central Processor Card					
CRC-6	Controllable Relay Card		51 mA			0.000 Amps
	Active Relays	0			20.5 mA per active relay	0.000 Amps
DLC	Device Loop Card	2	145 mA			0.290 Amps
	Devices	504			1.8 mA per device	0.907 Amps
CDC-4	Conventional Detector Card					
NIC-C	Network Interface Card	1	120 mA			0.120 Amps
WAC	Wide Area Card					
RPM	Remote Printer Module		150 mA			0.000 Amps
ZIC-4A	Zone Indicating Card	2	90 mA			0.188 Amps
	Active Circuits	8		1 mA per circuit		0.008 Amps
	Devices	-				
ZIC-8B	Zone Indicating Card					
	Active Circuits					
	Devices					
ZAC-40	Zone Amplifier Card 40 Watts		150 mA			0.000 Amps
	Speaker Load Watts	N/A				
ZAC-40	Backup		150 mA			0.000 Amps
ZAM-180	Zone Amplifier Module 180 Watts	1	280 mA			0.280 Amps
	Speaker Load Watts	N/A				
ZAM-180	Backup	1	280 mA			0.280 Amps
ARC	Audio Router Card					
AIC	Audio Interface Card (External Input)		150 mA			0.000 Amps
DAC-NET	Digital Audio Card with Network	1	230 mA			0.230 Amps
LVM	Live Voice Microphone		25 mA			0.000 Amps
LPB	Local Page Board		100 mA			0.000 Amps
TRC	Tape Recorder Card					
FRC	Firefighter Riser Card					
FMT	Firefighter Master Telephone		150 mA			0.000 Amps
	Active Handsets	0			30 mA per handset	0.000 Amps
TZC-8	Telephone Zone Card		280 mA			0.000 Amps
	Active Zones	0			35 mA per zone	0.000 Amps
FCM-6	Fan Control Module		14 mA			0.000 Amps
	Active LEDs	0			1 mA per LED	0.000 Amps
LCM-8	LED Control Module		14 mA			0.000 Amps
	Active LEDs	0			1 mA per LED	0.000 Amps
SCM-8	Switch Control Module		14 mA			0.000 Amps
	Active LEDs	0			1 mA per LED	0.000 Amps
CSB	CAN Sounder Board					
OCM-16	Output Control Module		14 mA			0.000 Amps
	Active LEDs	0			10 mA per LED	0.000 Amps
SIM-16	Supervised Input Module		20 mA			0.000 Amps
	Active Outputs	0		1.2 mA/supv'd input		0.000 Amps
	Active Relays	0			10 mA per active relay	0.000 Amps
RNI	Remote Network Interface		75 mA			0.000 Amps
SSD	System Status Display		200 mA			0.000 Amps
HZM	Conventional Zome Module					0.000 Amps
					Total Supervisory Current	**2.703 Amps**

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FireFinder XLS

Date	7/23/2007	Project Name:	Mercy Hospital -Remote Panel	**Sales Outlet**

Power Supply - Active Load Current MAX Load Configuration

Module Part Number & Description		QTY	24 VDC Current					6.2 VDC Current	
			Back Plane Current		Screw Terminal 24V Current		Total 24 VDC Current (Total 1 + Total 2)	Per Card	Total
			Per Card	Total 1	Per Card	Total 2			
PMI	Person Machine Interface	0	230 mA	0.000			0.000		
PMI-REM	Remote Annunciator	0	230 mA	0.000			0.000		
CPC	Central Processor Card	0							
CRC-6	Controllable Relay Card	0	10 mA	0.000			0.000	120 mA	0.000
	Active Relays	0	20.5 mA	0.000			0.000		
DLC	Device Loop Card	2			95 mA	0.190	0.190	200 mA	0.400
	Devices	504			1.8 mA	0.907	0.907		
CDC-4	Conventional Detector Card	0							
NIC-C	Network Interface Card	1	120 mA	0.120			0.120		
WAC	Wide Area Card	0							
RPM	Remote Printer Module	0			150 mA	0.000	0.000		
ZIC-4A	Zone Indicating Card	2	275 mA	0.550			0.550		
	Active Circuits	8			1 mA	0.008	0.008		
	Devices	-			Total NAC		0.000		
ZIC-8B	Zone Indicating Card								
	Active Circuits								
	Devices								
ZAC-40	Zone Amplifier Card 40 Watts	0			150 mA	0.000	0.000		
	Speaker Load Watts	0			53 mA/W	0.000	0.000		
ZAC-40	Backup Amplifier	0			150 mA	0.000	0.000		
ZAM-180	Zone Amplifier Module 180 Watts	1			280 mA	0.280	0.280		
	Speaker Load Watts	180			53 mA/W	9.540	9.540		
ZAM-180	Backup Amplifier	1			280 mA	0.280	0.280		
ARC	Audio Router Card	0							
AIC	Audio Interface Card (External Input)	0	30 mA	0.000			0.000	200 mA	0.000
DAC-NET	Digital Audio Card with Network	1	140 mA	0.140			0.140		
LVM	Live Voice Microphone	0			25 mA	0.000	0.000		
LPB	Local Page Board	0	50 mA	0.000			0.000	200 mA	0.000
TRC	Tape Recorder Card	0							
FRC	Firefighter Riser Card	0							
FMT	Firefighter Master Telephone	0			150 mA	0.000	0.000		
	Active Handsets	0			30 mA	0.000	0.000		
TCZ-8	Telephone Zone Card	0			275 mA	0.000	0.000		
	Active Zones	0			35 mA	0.000	0.000		
FCM-6	Fan Control Module	0			14 mA	0.000	0.000		
	Active LEDs	0			1 mA	0.000	0.000		
LCM-8	LED Control Module	0			14 mA	0.000	0.000		
	Active LEDs	0			1 mA	0.000	0.000		
SCM-8	Switch Control Module	0			14 mA	0.000	0.000		
	Active LEDs	0			1 mA	0.000	0.000		
CSB	CAN Sounder Board	0							
OCM-16	Output Control Module	0			14 mA	0.000	0.000		
	Active LEDs	0			10 mA	0.000	0.000		
SIM-16	Supervised Input Module	0			20 mA	0.000	0.000		
	Active Relays	0			10 mA	0.000	0.000		
	Active Inputs	0			1.2 mA	0.000	0.000		
RNI	Remote Network Interface	0	75 mA	0.000			0.000		
SSD	System Status Display	0			200 mA	0.000	0.000		
HZM	Conventional Zome Module	0			100 mA	0.000			
	Totals		**0.81**	**Amps**	**11.205**	**Amps**	**12.015 Amps**	**0.400**	**Amps**
			2 Amps MAX				**12 Amps MAX**	**2 Amps MAX**	

Minimum Number of Power Supplies = 2

SIEMENS

FireFinder XLS

Date	7/23/2007	Project Name:	Mercy Hospital -Remote Panel	**Sales Outlet**

MAX LOAD CONDITION

Backup Battery Calculations

Total Supervisory Current	2.70 Amps	Standby Battery Model Supplied	75 AH
Standby Time Required	4 Hours	Standby Battery Size	75.000 AH
AMP/Hour Required	10.81 AH		
Standby Battery With Reserve	14.06 AH	Reserve Battery Power	60.943 AH

DESIGN LOAD CONDITION

CRC-6	Controllable Relay Card	0	51 mA			0.000 Amps
	Active Relays				20.5 mA per active relay	0.000 Amps
DLC	Device Loop Card	2	145 mA			0.290 Amps
	Devices				1.8 mA per device	0.000 Amps
TZC-8	Telephone Zone Card	0	280 mA			0.000 Amps
	Active Zones				35 mA per zone	0.000 Amps
FCM-6	Fan Control Module	0	14 mA			0.000 Amps
	Active LEDs				1 mA per LED	0.000 Amps
LCM-8	LED Control Module	0	14 mA			0.000 Amps
	Active LEDs				1 mA per LED	0.000 Amps
OCM-16	Output Control Module	0	14 mA			0.000 Amps
	Active LEDs				10 mA per LED	0.000 Amps
SIM-16	Supervised Input Module	0	20 mA			0.000 Amps
	Active Outputs			1.2 mA/supv'd input		0.000 Amps
	Active Relays				10 mA per active relay	0.000 Amps
ZAC-40	Zone Amplifier Card 40 Watts	0			150 mA	0.000 Amps
	Speaker Load Watts				53 mA/W	0.000 Amps
ZAM-180	Zone Amplifier Module 180 Watts	1			280 mA	0.280 Amps
	Speaker Load Watts				53 mA/W	0.000 Amps

150 mA	0.000
53 mA/W	0.000

Backup Battery Calculations

Total Supervisory Current	1.71 Amps	Standby Battery Model Supplied	75 AH
Standby Time Required	4 Hours	Standby Battery Size	75.000 AH
AMP/Hour Required	6.84 AH		
Standby Battery With Reserve	8.89 AH	Reserve Battery Power	66.108 AH

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FireFinder XLS

Date 7/23/2007	Project Name: Mercy Hospital -Remote Panel	**Sales Outlet**

XLS Power Supply & Battery Calculations Design Load

Power Supply - Supervisory Load Current

Module Part Number & Description		QTY	Module Current	EOL Current	Device Current	Total 24 VDC Standby Current
PMI	Person Machine Interface	0	230 mA			0.000 Amps
PMI-REM	Remote Annunciator	0	230 mA			0.000 Amps
PSC-12	Power Supply/Battery Charger	1	150 mA			0.150 Amps
	Active Relays	4			20 mA per active relay	0.080 Amps
PSX-12	Power Supply Extender	1	170 mA			0.170 Amps
CPC	Central Processor Card	0				
CRC-6	Controllable Relay Card	0	51 mA			0.000 Amps
	Active Relays	0			20.5 mA per active relay	0.000 Amps
DLC	Device Loop Card	2	145 mA			0.290 Amps
	Devices	0			1.8 mA per device	0.000 Amps
CDC-4	Conventional Detector Card	0				
NIC-C	Network Interface Card	1	120 mA			0.120 Amps
WAC	Wide Area Card	0				
RPM	Remote Printer Module	0	150 mA			0.000 Amps
ZIC-4A	Zone Indicating Card	2	90 mA			0.188 Amps
	Active Circuits	8		1 mA per circuit		0.008 Amps
	Devices	-				
ZIC-8B	Zone Indicating Card	0				
	Active Circuits	0				
	Devices	0				
ZAC-40	Zone Amplifier Card 40 Watts	0	150 mA			0.000 Amps
	Speaker Load Watts	N/A				
ZAC-40	Backup	0	150 mA			0.000 Amps
ZAM-180	Zone Amplifier Module 180 Watts	1	280 mA			0.280 Amps
	Speaker Load Watts	N/A				
ZMA-180	Backup	1	280 mA			0.280 Amps
ARC	Audio Router Card	0				
AIC	Audio Interface Card (External Input)	0	150 mA			0.000 Amps
DAC-NET	Digital Audio Card with Network	1	140 mA			0.140 Amps
LVM	Live Voice Microphone	0	25 mA			0.000 Amps
LPB	Local Page Board	0	100 mA			0.000 Amps
TRC	Tape Recorder Card	0				
FRC	Firefighter Riser Card	0				
FMT	Firefighter Master Telephone	0	150 mA			0.000 Amps
	Active Handsets	0			30 mA per handset	0.000 Amps
TZC-8	Telephone Zone Card	0	280 mA			0.000 Amps
	Active Zones	0			35 mA per zone	0.000 Amps
FCM-6	Fan Control Module	0	14 mA			0.000 Amps
	Active LEDs	0			1 mA per LED	0.000 Amps
LCM-8	LED Control Module	0	14 mA			0.000 Amps
	Active LEDs	0			1 mA per LED	0.000 Amps
SCM-8	Switch Control Module	0	14 mA			0.000 Amps
	Active LEDs	0			1 mA per LED	0.000 Amps
CSB	CAN Sounder Board	0				
OCM-16	Output Control Module	0	14 mA			0.000 Amps
	Active LEDs	0			10 mA per LED	0.000 Amps
SIM-16	Supervised Input Module	0	20 mA			0.000 Amps
	Active Outputs	0		1.2 mA/supv'd input		0.000 Amps
	Active Relays	0			10 mA per active relay	0.000 Amps
RNI	Remote Network Interface	0	75 mA			0.000 Amps
SSD	System Status Display	0	200 mA			0.000 Amps
HZM	Conventional Zome Module	0				0.004 Amps
					Total Supervisory Current	**1.710 Amps**

SIEMENS

FireFinder XLS

Date	7/23/2007	Project Name:	Mercy Hospital -Remote Panel	**Sales Outlet**

Power Supply - Active Load Current Design Load

Module Part Number & Description		QTY	24 VDC Current					6.2 VDC Current	
			Back Plane Current		Screw Terminal 24V Current		Total 24 VDC Current (Total 1 + Total 2)	Per Card	Total
			Per Card	Total 1	Per Card	Total 2			
PMI	Person Machine Interface	0	230 mA	0.000			0.000		
PMI-REM	Remote Annunciator	0	230 mA	0.000			0.000		
CPC	Central Processor Card	0							
CRC-6	Controllable Relay Card	0	10 mA	0.000			0.000	120 mA	0.000
	Active Relays	0	20.5 mA	0.000			0.000		
DLC	Device Loop Card	2			95 mA	0.190	0.190	200 mA	0.400
	Devices	0			1.8 mA	0.000	0.000		
CDC-4	Conventional Detector Card	0							
NIC-C	Network Interface Card	1	120 mA	0.120			0.120		
WAC	Wide Area Card	0							
RPM	Remote Printer Module	0			150 mA	0.000	0.000		
ZIC-4A	Zone Indicating Card	2	275 mA	0.550			0.550		
	Active Circuits	8			1 mA	0.008	0.008		
	Devices	-			Total NAC	0	0.000		
ZIC-8B	Zone Indicating Card	0							
	Active Circuits	0							
	Devices	0							
ZAC-40	Zone Amplifier Card 40 Watts	0			150 mA	0.000	0.000		
	Speaker Load Watts	0			53 mA/W	0.000	0.000		
ZAC-40	Backup Amplifier	0			150 mA	0.000	0.000		
ZAM-180	Zone Amplifier Module 180 Watts	1			280 mA	0.280	0.280		
	Speaker Load Watts	0			53 mA/W	0.000	0.000		
ZAM-180	Backup Amplifier	1			280 mA	0.280	0.280		
ARC	Audio Router Card	0							
AIC	Audio Interface Card (External Input)	0	30 mA	0.000			0.000	200 mA	0.000
DAC-NET	Digital Audio Card with Network	1	230 mA	0.140			0.140		
LVM	Live Voice Microphone	0			25 mA	0.000	0.000		
LPB	Local Page Board	0	50 mA	0.000			0.000	200 mA	0.000
TRC	Tape Recorder Card	0							
FRC	Firefighter Riser Card	0							
FMT	Firefighter Master Telephone	0			150 mA	0.000	0.000		
	Active Handsets	0			30 mA	0.000	0.000		
TCZ-8	Telephone Zone Card	0			275 mA	0.000	0.000		
	Active Zones	0			35 mA	0.000	0.000		
FCM-6	Fan Control Module	0			14 mA	0.000	0.000		
	Active LEDs	0			1 mA	0.000	0.000		
LCM-8	LED Control Module	0			14 mA	0.000	0.000		
	Active LEDs	0			1 mA	0.000	0.000		
SCM-8	Switch Control Module	0			14 mA	0.000	0.000		
	Active LEDs	0			1 mA	0.000	0.000		
CSB	CAN Sounder Board	0							
OCM-16	Output Control Module	0			14 mA	0.000	0.000		
	Active LEDs	0			10 mA	0.000	0.000		
SIM-16	Supervised Input Module	0			20 mA	0.000	0.000		
	Active Relays	0			10 mA	0.000	0.000		
	Active Inputs	0			1.2 mA	0.000	0.000		
RNI	Remote Network Interface	0	75 mA	0.000			0.000		
SSD	System Status Display	0			200 mA	0.000	0.000		
HZM	Conventional Zome Module	0			100 mA	0.000			
	Totals		**0.81**	**Amps**	**0.758**	**Amps**	**1.568 Amps**	**0.400**	**Amps**
			2 Amps MAX				**12 Amps MAX**	**2 Amps MAX**	