EST3
Installation Sheets

P/N 3100051 • Rev 4.0 • 11DEC01

DEVELOPED BY	Edwards Systems Technology 6411 Parkland Drive Sarasota, FL 34243 (941) 739-4300
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CREDITS	This manual was designed and written by the EST Technical Services - Documentation Department, Sarasota.

DOCUMENT HISTORY

Date	Revision	Reason for change
27APR00	1.0	Initial release
30AUG01	2.0	Add GFD, MODCOM, and 3-NSHM(1) installation sheets.
01NOV01	3.0	Add 24DC12, 3-SAC, ATCK, CRC, CRCRL, CRCSND, KPDISP, SIGA-MD, and SIGA-SEC installation sheets.
11DEC01	4.0	Correct titles in Content to match installation sheet titles

Content

Introduction

About this manual

This manual contains copies of the EST3 installation sheets. The sheets are arranged in alphabetical order by title. The part number listed in *Content* is the installation sheet part number.

The EST3 library

A library of documents and multi-media presentations supports the EST3 life safety system. A brief description of each is provided below.

EST3 Installation and Service Manual (P/N 270380): Provides complete information on how to install and service the EST3 hardware. The manual also includes installation information on selected Signature Series components.

EST3 Installation Sheets (P/N 3100051): Is a convenient package of all EST3 component installation sheets. This manual shows you the jumper settings and terminal connections for each component.

SDU Online Help (P/N 180653): Provides full online support for configuring and programming a system using the EST3 System Definition Utility program.

EST3 System Operation Manual (P/N 270382): Provides detailed information on how to operate the system and system components.

EST3 International Installation Supplement Manual (P/N 270925): Provides information specific to systems installed outside the United States and Canada.

EST3 Smoke Management Application Manual (P/N 270913): Provides information for designing, programming, and testing an EST3 smoke control system.

EST3 Users Self-Study Course (P/N 270684): Contains a self-paced manual and accompanying video. The course is designed for building personal, security guards, firefighters, and other individuals that may be required to operate the system.

Other documents

In addition to documents in the EST3 library, you may find the following documents useful.

Signature Series Intelligent Smoke and Heat Detectors Applications Bulletin (P/N 270145): This manual provides additional applications information on the Signature series smoke and heat detector applications.

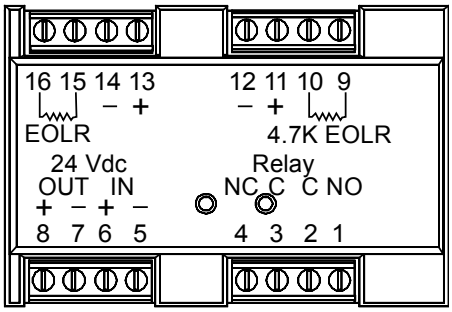
Signature Series Component Installation Manual (P/N 270497): This manual provides detailed mounting and wiring information for all Signature series devices.

Speaker Application Guide (P/N 85000-0033): This manual provides information on the placement and layout of speakers for fire alarm signaling and emergency voice communications.

Strobe Applications Guide (P/N 85000-0049): This manual provides information on the placement and layout of strobes for fire alarm signaling.

24DC12
12 Vdc Voltage Regulator with Security Bell Interface

Product description



The 24DC12 module provides two basic functions. First, it reduces a 24 Vdc input to 12 Vdc for a Grade A local burglar alarm bell or a 12 Vdc security/access device such as dual tech motion detectors or a stacked photoelectric beam. Second, it ground isolates the system initiating device circuit from the outer enclosure of the Grade A local burglar alarm bell, which is usually connected to earth ground.

The 24DC12 is also listed for fire applications such as powering 12 Vdc accessory devices, relays, etc.

The 24DC12 provides up to one amp of 12 Vdc to security devices.

Specifications

Housing: White, high impact polymer
Power input ratings (T6-T5)
- Voltage: 21 to 26 Vdc
- Current: 20 mA

NAC input ratings (T13-T14)
- Voltage: 21 to 26 Vdc
- Current (1.0 A @ 12 Vdc): 0.7 A
- Current (0.5 A @ 12 Vdc): 0.35 A

12 Vdc output rating (T11-T12)
- Voltage: 12 Vdc
- Current: 1.0 A @ 0.6 power factor

Relay (T1-T4)
- Voltage: 24 Vdc
- Current: 1.0 A (resistive)

Wire size: 12 to 22 AWG (2.5 to 0.25 sq mm)
Mounting: Mount in an EST3 control panel enclosure using a SIGA-MP series mounting plate. The enclosure must be equipped with a tamper switch. If you are using it to power a Grade A bell, it must be mounted in the ATCK attack enclosure with the 3-TAMPRCC tamper switch.
Operating environment
- Temperature: 32 °F (0 °C) to 120 °F (49 °C)
- Humidity: 93% RH, noncondensing

Device support
- Bell: 1
- Tamper switches: 1 alarm housing - inner and outer housing
- Access control: Models 339-E1, 681-B1, 875-E1 manufactured by Edwards or equivalent manufacturer

Installation instructions

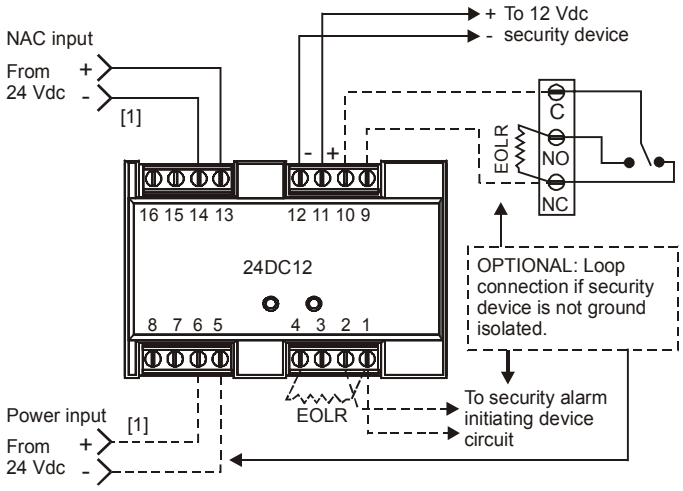
To install the 24DC12:

1. Make wiring connections as shown in the wiring diagrams.
2. Mount the 24DC12 to a SIGA-MP series mounting plate in an EST3 enclosure.
3. Install a tamper switch to the EST3 enclosure.

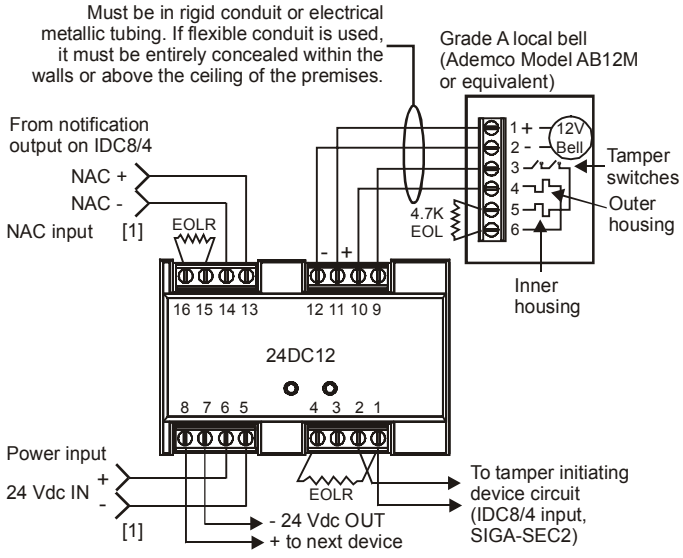
Note: If you are using the 24DC12 to power a Grade A bell, it must be installed in the ATCK attack enclosure. The ATCK must be equipped with the 3-TAMPRCC tamper switch.

Wiring diagrams

Connection to 12 Vdc powered devices



Connection to Grade A local bell



[1] From listed power limited source.

PRODUCT INFORMATION

The 3-AADC Addressable Analog Driver Controller module provides one Class A or Class B loop. The loop may contain up to 99 addressable analog sensors and 99 addressable analog modules.

The 3-AADC requires one connection on the rail chassis and is secured to the rail assembly using snap rivet fasteners. The module features a hinged front panel for mounting displays or a blank protective faceplate.

All field wiring connections to the 3-AADC are made via plug-in connectors that permit termination of field wiring without the module installed in the enclosure. The plug-in connectors and snap rivet mounting also facilitate rapid troubleshooting without the use of tools.

SPECIFICATIONS

Installation:	1 LRM space on rail chassis
Module Configuration:	1 addressable analog circuit
Wire Size:	12 AWG (1.5 mm^2) maximum 18 AWG (0.75 mm^2) minimum
Termination:	Removable plug-in terminal strips on module
Operating Environment	
Temperature:	32 - 120 °F (0 - 49 °C)
Humidity:	93% RH, non-condensing
Circuit Configuration:	Class B (Style 4) Class A (Style 6)
Circuit Capacity:	99 addressable analog sensors and 99 addressable analog modules
Circuit Resistance:	50 Ω, max.
Circuit Capacitance:	0.5 μF, max.
Current Requirements	
Standby:	175 mA
Alarm:	205 mA
Isolators:	6, max. 25 devices between isolators, max.

WARNINGS

This product contains components that are sensitive to static electricity. Failure to follow proper handling procedures may result in equipment damage.

Rail modules may not be plugged into the rail chassis assembly while voltages are present on the rail. Failure to de-energize the panel before plugging in the rail module may result in equipment damage.

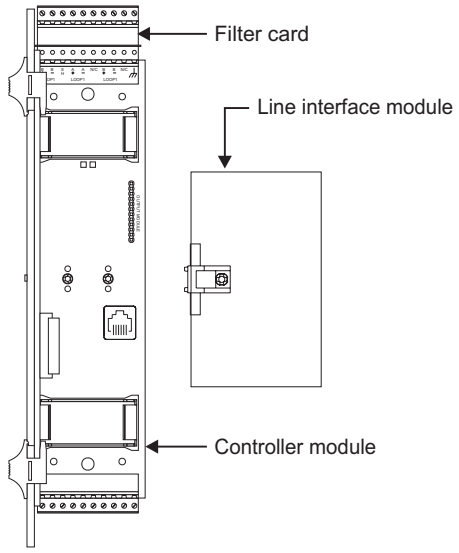
Do not flex the filter card or exert excessive pressure on the field wiring connectors when installing the filter card.

Do not connect field wiring or connect/disconnect the terminal block without supporting the back edge of the filter card to avoid flexing the filter card.

INSTALLATION INSTRUCTIONS

1. Connect the LIM card to CIRCUIT 1 on the back side of the rail module assembly. See Figure-1 on reverse side.
2. If a control/display module is required install it at this time. Refer to the instructions provided with the control/display module.
3. Carefully plug in the filter board into the connector on the rail module and install the module on the rail.
4. Before connecting the field wiring, test the field wiring for opens or shorts. When a circuit checks out properly, connect it to the appropriate terminals as shown in the diagram on the next page.

PRODUCT DIAGRAM



INSTALLATION SHEET

3-AADC Addressable Analog Driver Controller

INSTALLATION SHEET P/N: 387332	FILE NAME: 387332.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Becker
DATE: 08DEC99	CREATED BY: G. Sutton

EDWARDS SYSTEMS TECHNOLOGY, INC.
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CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
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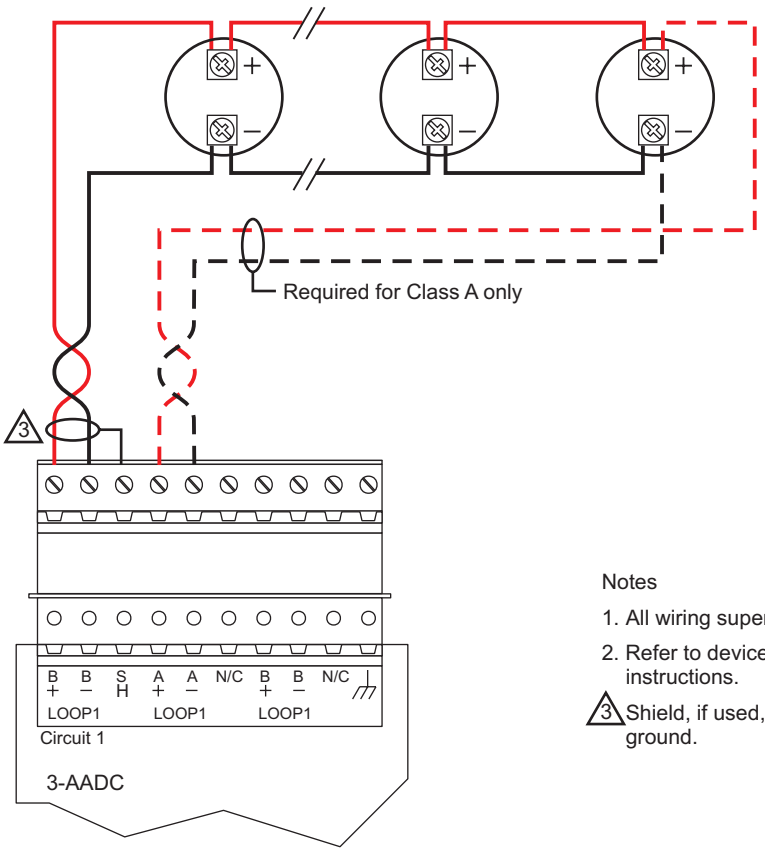
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

WIRING DIAGRAM



Notes

1. All wiring supervised and power-limited.
2. Refer to device installation sheets for specific wiring instructions.

3 Shield, if used, must be continuous and free from earth ground.

INSTALLATION INSTRUCTIONS (CONT.)

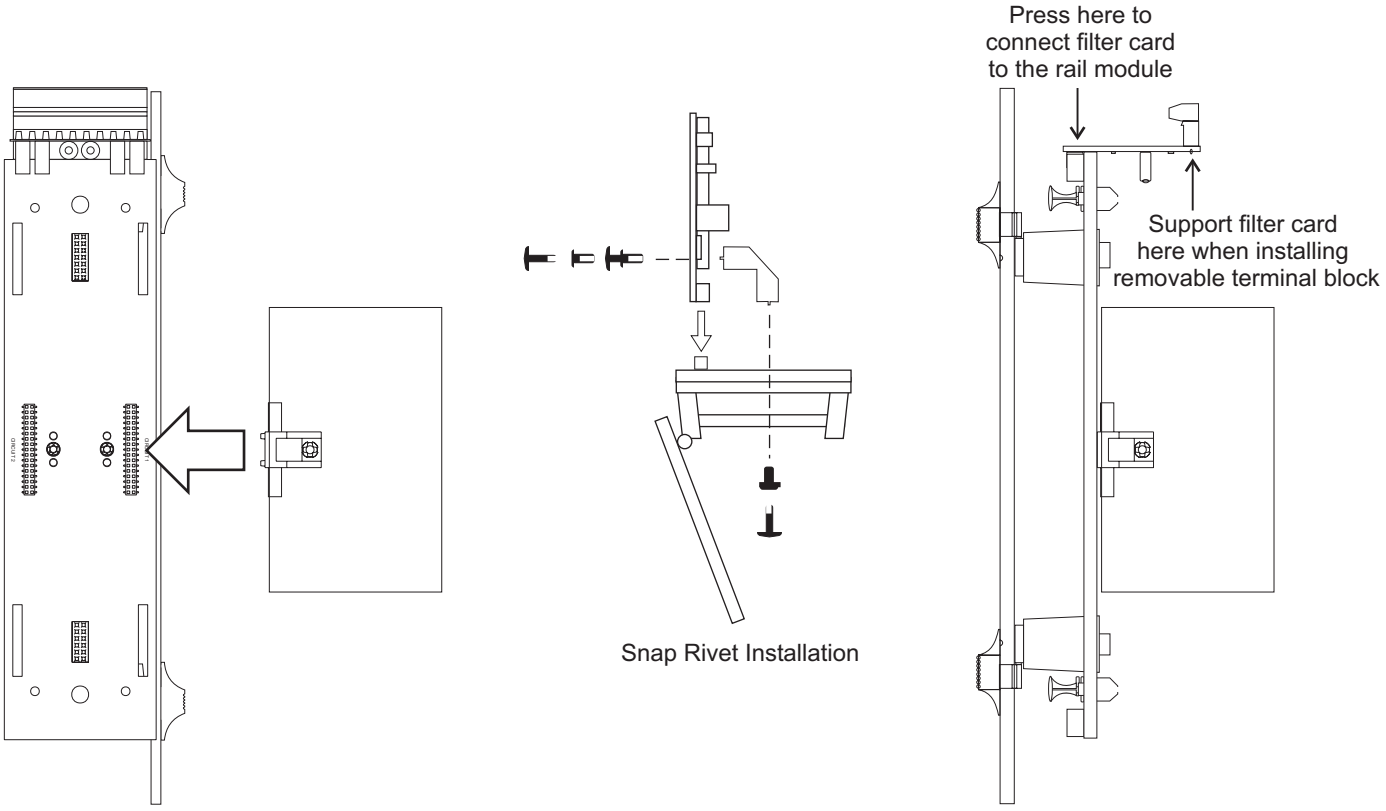


Figure-1: Filter card and LIM card installation

PRODUCT INFORMATION

The 3-ANNCPU1 Annunciator Controller module is the control element for all the LCD and LED/Switch displays in an enclosure. The 3-ANNCPU1 processes all control information from switches on the displays installed within the cabinet as well as processing the data received from the network for display. The 3-ANNCPU1 contains 1MB of RAM.

An internal calendar and clock with leap year function provides date/time event stamping and initiates timed events. The controller automatically identifies and supervises all modules installed in the annunciator, and has an integral watchdog to identify both hardware and software faults.

The 3-ANNCPU1 communicates with other 3-ANNCPU1s and 3-CPU1 Central Processors on the network over a Class A or B RS-485 network data circuit. The controller functions as the local bus master and supervises all bus traffic between modules in the cabinet.

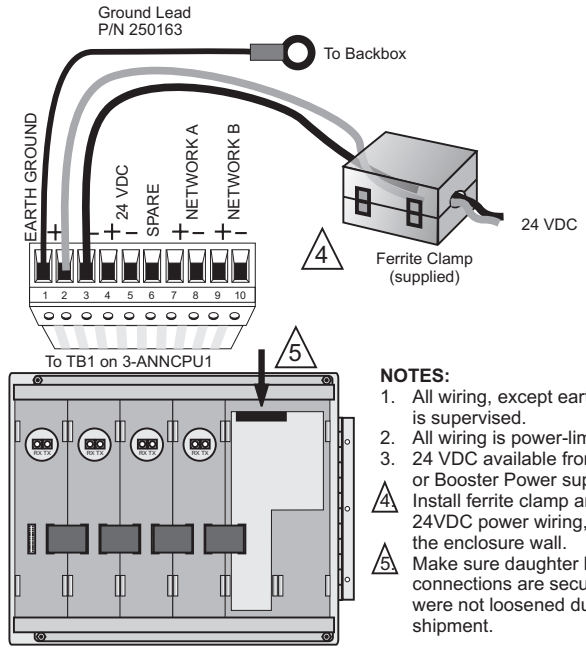
The 3-ANNCPU1 module requires two spaces at the left-most position of the enclosure. The controller is secured to the inner door by two retainer brackets. All field wiring connections to the 3-ANNCPU1 module are made via a plug-in connector, permitting termination of field wiring without the equipment installed in the enclosure. All external connections are power- limited and transient protected. The plug-in connector facilitates rapid remove and replace troubleshooting without the use of tools.

Note: 3-CPU Boot and Application Code must be version 1.33 or greater.

SPECIFICATIONS

Space Required	2 spaces in enclosure
Display (optional)	3-LCD Display mounts on front
Message Capacity	
Message Queue	500 Events per queue
Event History Log	1,000 to 1,700 Events, depending on event type
Network Com Port	
RS-485	Isolated, Class B or Class A Max. length 5,000 ft (1,524 m) between any three panels
Max.Resistance	90 Ω
Max.Capacitance	0.3 μF
Wiring type	1 twisted pair, 18 AWG (0.75 mm^2) min. 12 AWG (2.5 mm^2) max.
Power Requirements	
Voltage	24 Vdc
Standby Current	171 mA @ 24 Vdc
Alarm Current	195 mA @ 24 Vdc
Termination	Plug-in terminal strip
Operating Environment	
Temperature	32 °F to 120 °F (0 °C to 49°C)
Humidity	93% RH, non-condensing

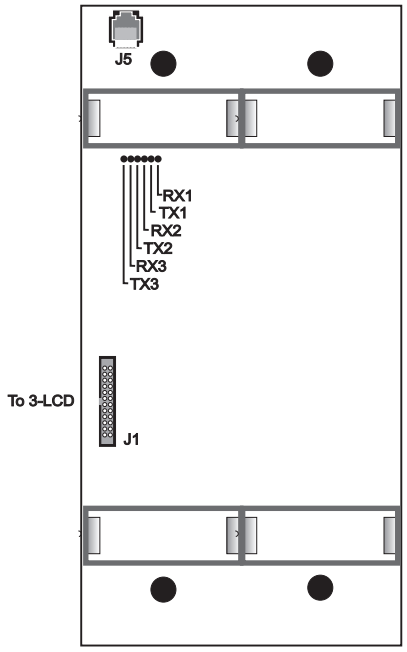
CENTRAL PROCESSOR WIRING



NOTES:

1. All wiring, except earth ground, is supervised.
2. All wiring is power-limited.
3. 24 VDC available from Primary or Booster Power supply.
4. Install ferrite clamp around 24VDC power wiring, close to the enclosure wall.
5. Make sure daughter board connections are secure and were not loosened during shipment.

3-ANNCPU1



INSTALLATION SHEET:

3-ANNCPU1
Annunciator Controller Module

INSTALLATION SHEET P/N: 387464	FILE NAME: 387464.CDR
REVISION LEVEL: 1.0	APPROVED BY: SM
DATE: 05/05/98	CREATED BY: GS

A UNIT OF GENERAL SIGNAL
GS BUILDING SYSTEMS CORPORATION

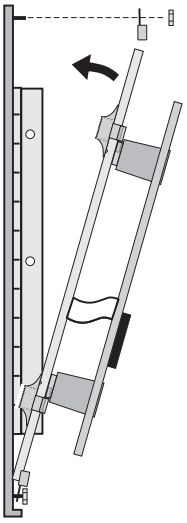
GS BUILDING SYSTEMS CORPORATION
6411 Parkland Drive
Sarasota, FL 34243
625 6th Street East
Owen Sound, ON, Canada

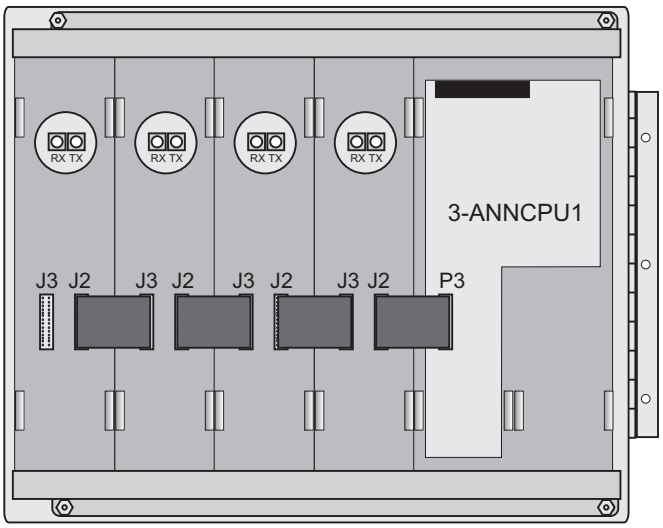
INSTALLATION

To install in remote annunciator cabinet enclosure:

Observe static sensitive material handling practices.

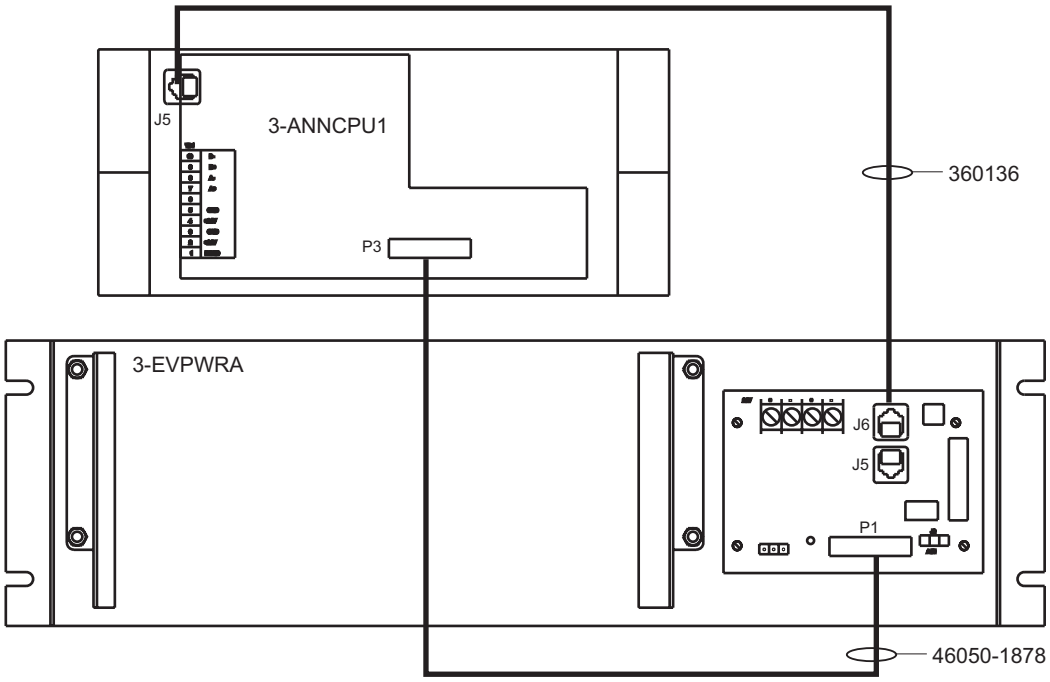
1. Remove the top module retainer bracket (see figure below).
2. Loosen the bottom module retainer bracket.
3. Insert the bottom of the 3-ANNCPU1 into the bottom module retainer bracket.
4. Tilt the 3-ANNCPU1 forward until the top touches the inner door.
5. Tighten the bottom module retainer bracket.
6. Secure the top module retainer bracket to the inner door.
7. Connect cable assembly from P3 on the 3-ANNCPU1 to J2 on the adjacent annunciator strip.





To install in 3-EVPWRA:

1. Remove one module retainer bracket and loosen the other (see figure below).
2. Connect cable assembly 360136 (supplied with 3-EVPWRA) to J5 on the 3-ANNCPU1.
3. Remove the 4 locking tabs on the 3-ANNCPU1.
4. Place the 3-ANNCPU1 between the module retainer brackets.
5. Tighten module retainer brackets on both ends.
6. Connect cable assembly 360136 to 3-EVPWR connector J6.
7. Connect cable assembly 46050-1878 (supplied with 3-EVPWRA) from P3 on the 3-ANNCPU1 to P1 on the 3-EVPWR.



PRODUCT INFORMATION

The 3-ANNSM Annunciator Support Module provides the electronics required to operate the LED/Switch displays. The support modules are connected to the 3-ANNCPU by ribbon cables. The 3-ANNSM supports the following LED/Switch displays:

2-24R	3-24Y	3-24G
3-12SR	3-12SY	3-12SG
3-12/S1RY	3-12/S1GY	3-12/S2Y
3-6/3S1G2Y	3-6/3S1GYR	

SPECIFICATIONS

Installation	1 space
Current Requirements (does NOT include LED/Switch display)	
Standby	10 mA @ 24 VDC
Alarm	10 mA @ 24 VDC
Operating Environment	
Temperature	32°F (0°C) to 120°F (40°C)
Humidity	93%RH, non-condensing

INSTALLATION

1. Fill out and install a label in each LED/Switch display (step 1.)
2. Mount the display on the 3-ANNSM module (step 2.)
3. Connect the display ribbon cable (P/N 250186) from connector J1 on the display to connector J1 on the module (step 3.)
4. Install the module in the inner door of the enclosure (Figure 2.)

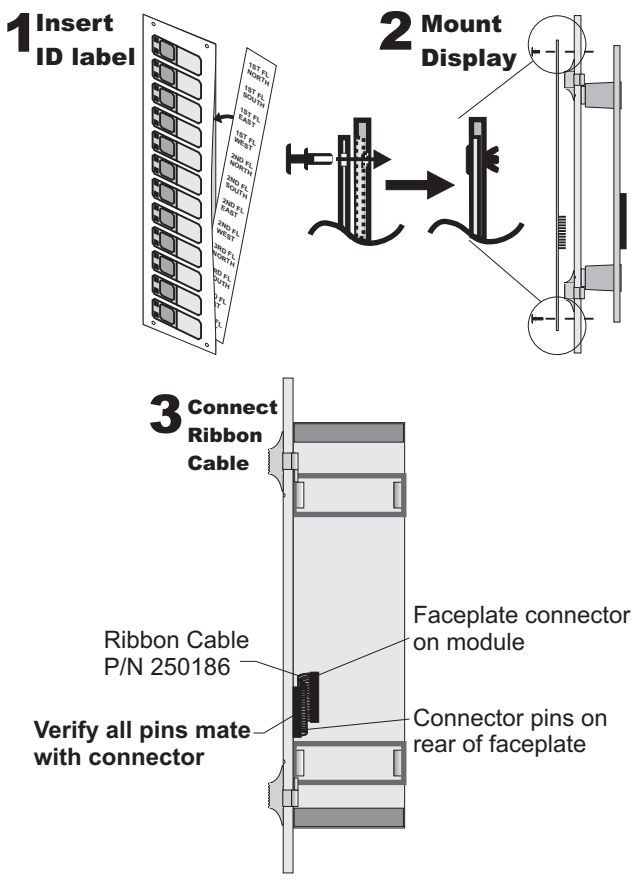


Figure 1
Mounting the LED/Switch Display

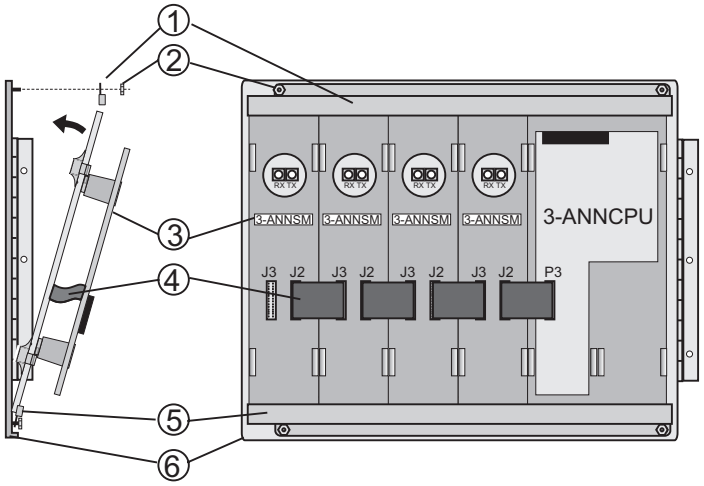


Figure 2
Installing the 3-ANNSM on the Inner Door

1. Install the lower module retainer bracket (5) on the inner door (6) using the nuts (2) provided. Do not tighten the nuts at this time.
2. Place the 3-ANNSM modules in the lower retainer bracket (5) next to the 3-ANNCPU. Install 3-ANNBF blank filler plates in any unused space.
3. Install the top module retainer bracket (1) on the top of the inner door with the nuts (2) provided. Tighten the nuts on both the top and bottom brackets.
4. Install the ribbon cables (4) between modules from P3 on the 3-ANNCPU to J2 on the first 3-ANNSM. Connect the ribbon cables from J3 of the first module to J2 of the next support module until all modules are connected by a ribbon cable.

Observe static sensitive material handling practices.

INSTALLATION SHEET:

3-ANNSM
Annunciator Support Module

INSTALLATION SHEET P/N: 387312	FILE NAME: 387312.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Becker
DATE: 04/06/99	CREATED BY: D. Miner

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OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

PRODUCT INFORMATION

The 3-ASU Audio Source is the primary audio component of the fire command center. The 3-ASU provides the master paging microphone, audio signal database, and the digital message unit. The 3-ASU is the source of all audio signals distributed by the network. Audio sources include local and remote voice paging, firefighter's telephone paging, and an auxiliary audio input for non-emergency paging, etc. The 3-ASU features an integral digital voice message playback unit that can simultaneously provide up to 8 different audio signals. An integral audio signal database is provided for the evacuation, alert and other functions. Onboard memory is adequate for a total of 2 minutes of messages. With the optional memory installed, up to 32 minutes of messages can be stored. The audio source unit is comprised of the audio source electronics package mounted in a chassis assembly and a cover assembly. The 3-ASU has room to install an optional 4-space rail assembly, model 3-CHAS4 or 3-FTCU Firefighter's Telephone Control Unit.

The 3-ASU converts and compresses the real-time audio signals to a digital format. The eight digital signals are then combined together as a single digital multiplex signal and distributed throughout the network. An integral signal database may be configured with a wide selection of tones and messages: steady, 3-3-3, electronic bell, 120 beats-per-minute, and slow whoop. All tones are stored as digital signals within the 3-ASU. The internal digital message/signal unit can simultanously play back up to eight signals, as required by the system designer.

SPECIFICATIONS

Cabinet Installation
One chassis space
19" Rack Installation Dimensions
12.0" x 19.0" x 5.25" (30.48 cm x 48.26 cm x 13.34 cm)
Options
3-ASUMX Expansion Memory
3-FTCU Firefighter's Telephone Control Unit
3-CHAS4 Four LRM rail assembly
Audio Channels
8 simultaneous
Audio Inputs
Local microphone (isolated & supervised)
Remote microphone (isolated & supervised)
Firefighter's telephone (isolated & supervised)
4 aux. signal sources (isolated & supervised)
Prerecorded Message Storage
2 minutes standard, expandable to 32 minutes storage with 3-ASUMX/32 memory card
Auxiliary Input

Input Impedance	1KΩ
Input Level	$0.1V_{RMS}$ to 1.0 V_{RMS}
Frequency Response	100Hz to 4KHz

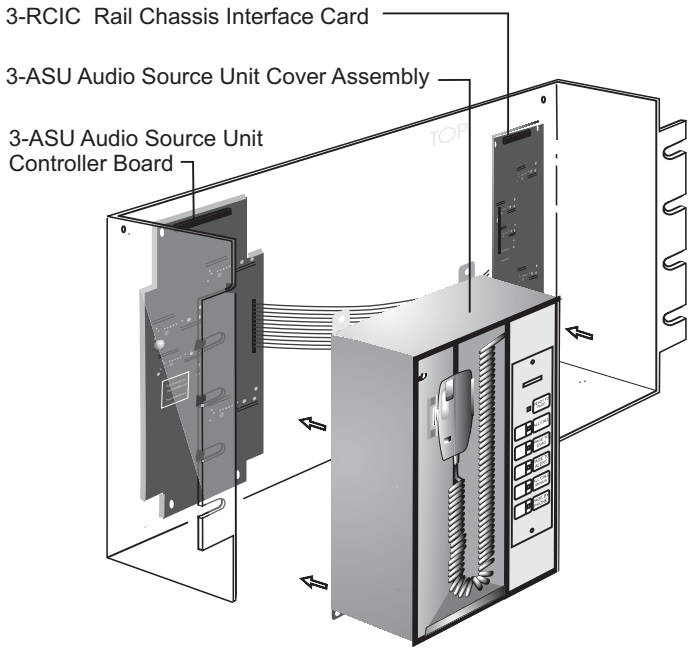
Network Audio Riser

Configuration	Class A/B
Format	RS-485
Circuit Length	5000Ft. (1524 M) max. between any 3 panels
Circuit Resistance	90Ω max.
Circuit Capacitance	.09μF. max.
Wire Type	1-2 pair twisted 18 AWG (0.75 mm^2) min.

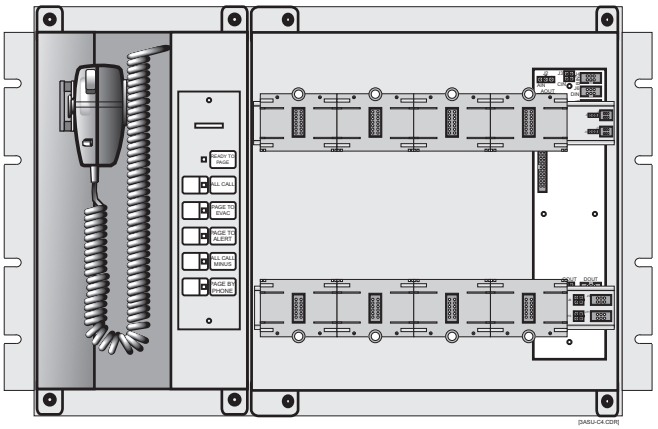
Panel Indicators
All call LED — Page EVAC LED
All call minus LED — Page alert LED
Page by phone LED
Operator Controls
Local microphone push-to-talk (PTT) switch
All call
All call minus
Page by phone
Page to alert
Page to EVAC
Communications Format
RS-485
Termination

Message Download	RJ45 jack
Remote Microphone	Plug-in terminal strip on 3-ASU
Auxiliary Inputs	Plug-in terminal strip on 3-ASU

COVER INSTALLATION



3-ASU



INSTALLATION SHEET

3-ASU
Audio Source Unit

INSTALLATION SHEET P/N: 270482	FILE NAME: 270482.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Becker
DATE: 6/14/99	CREATED BY: D. Miner

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INSTALLATION

1. To install the optional rail assembly, mount the left side bracket of the rail assembly on the #6-32 chassis studs indicated in the drawing. Secure the right ends of rails to the right side of the 3-ASU chassis assembly using the four self-tapping screws provided. Secure the right ends of the rails to the right side of the 3-ASU chassis assembly using the four self-tapping screws provided.

2. Mount the chassis assembly on the six #6-32 studs at rear of the cabinet. Secure the chassis to the cabinet with the washers and nuts provided.

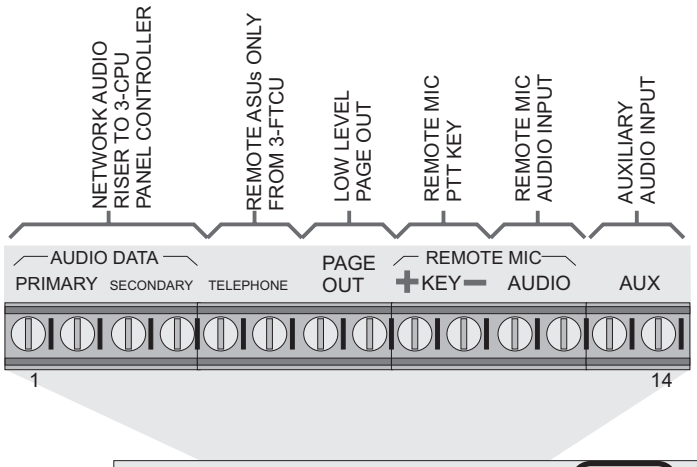
3. Mount the Rail Chassis Interface card on the studs at the right side of the chassis. Connect the power and data cables from the Rail Chassis Interface card to the previous and next chassis.

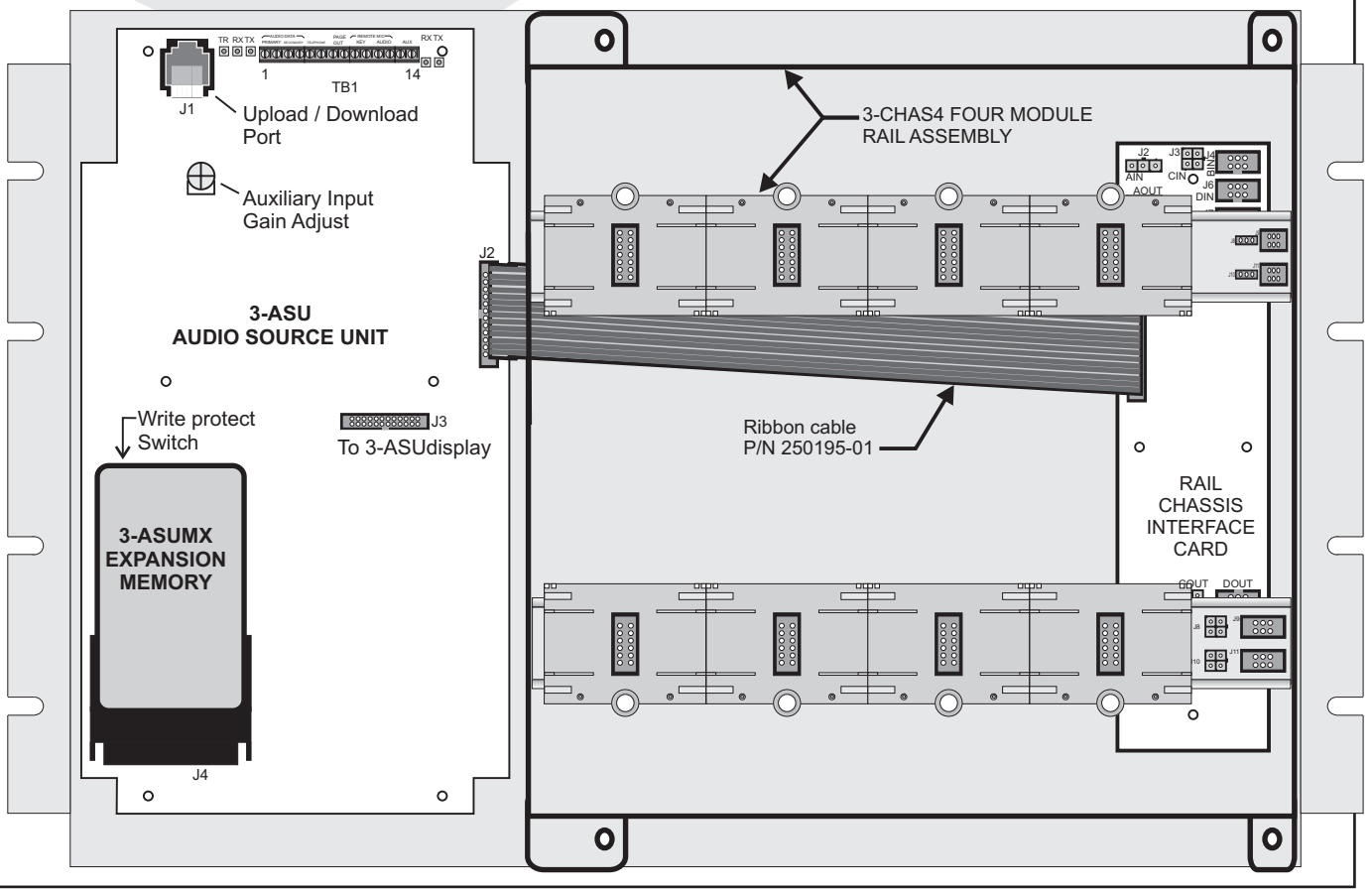
4. Mount the 3-ASU controller board on the six spacers on the left side of the chassis as shown on the figure below. Run ribbon cable (P/N 250195-01) from connector J2 on the 3-ASU controller board to connector J1 on the Rail Chassis Interface card.

5. Terminate the field wiring on TB1. Refer to the Wiring section on the next page.

6. Run ribbon cable (P/N 250194-00) from connector J3 on the 3-ASU controller board to connector J1 on the 3-ASU control board mounted in the Audio Source Unit cover assembly.

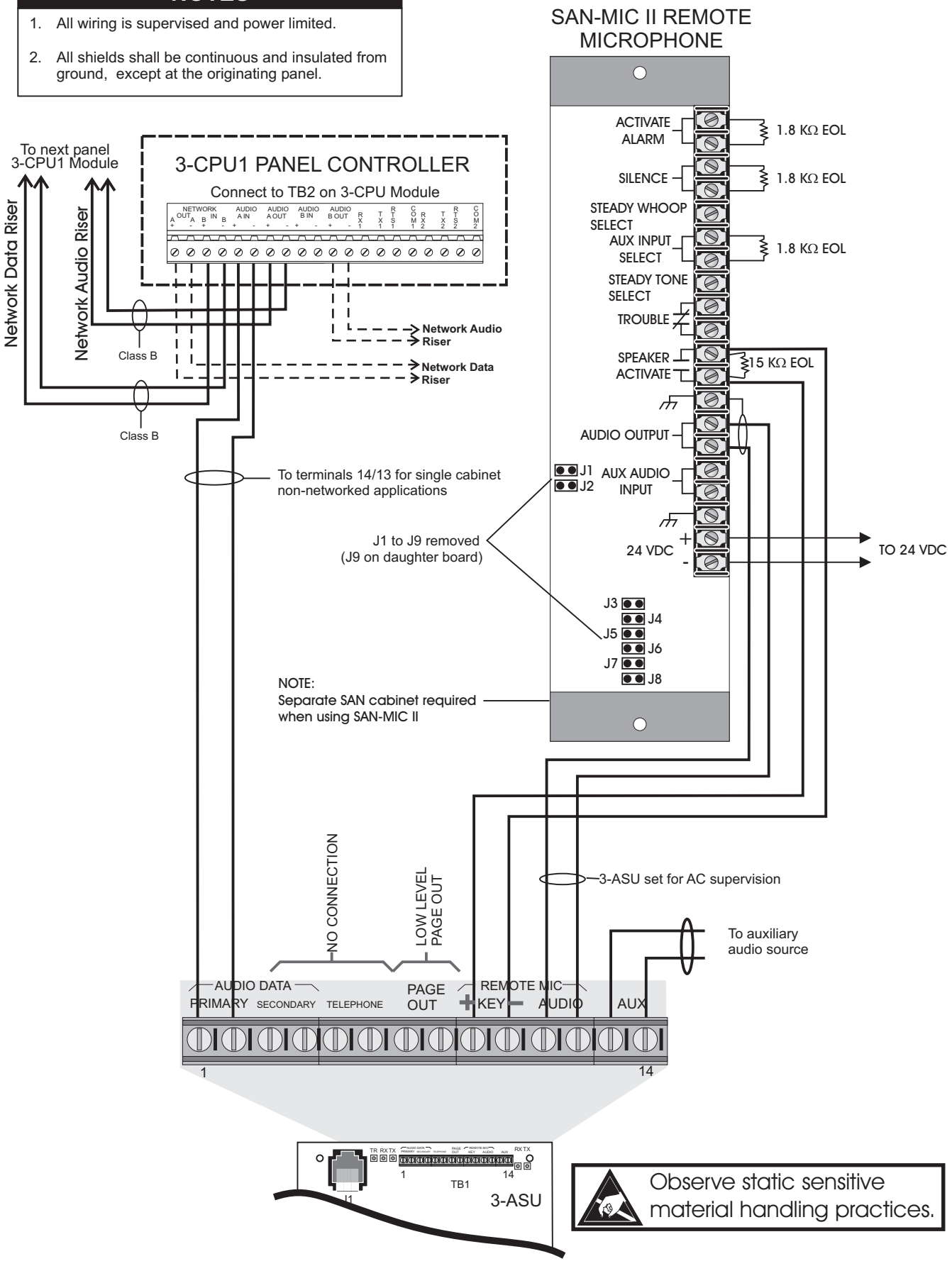
7. Install the 3-ASU cover assembly over the controller board and secure it with 4 nuts and washers.





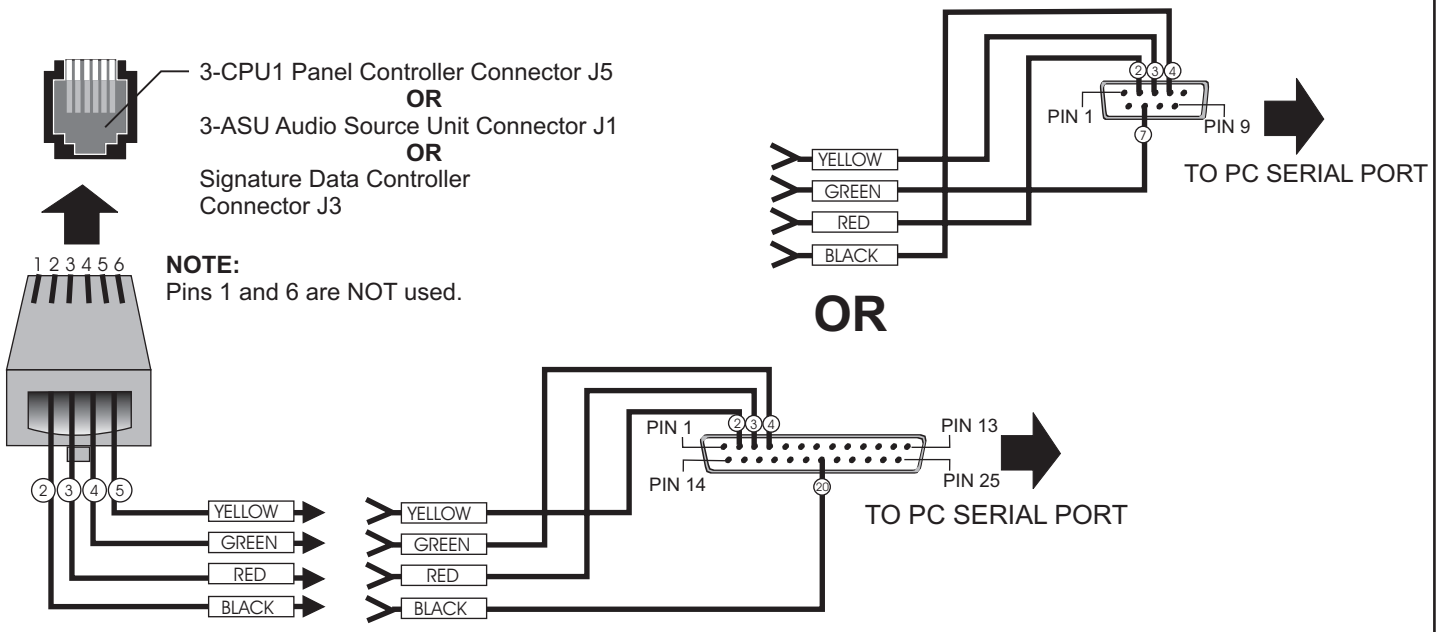
NOTES

1. All wiring is supervised and power limited.
2. All shields shall be continuous and insulated from ground, except at the originating panel.



DOWNLOAD WIRING

The figure below indicates the wiring between the 3-ASU and the PC running the System Definition Utility program. This cable is used whenever downloading information into the 3-ASU. Refer to the Programming Manual for complete downloading information.



SPECIFICATIONS

Cabinet Installation
One chassis space

19" Rack Installation Dimensions
12.0" x 19.0" x 5.25" (30.48 cm x 48.26 cm x 13.34 cm)

Options
3-ASUMX/32 Memory, 32 minutes of messages

Audio Channels
8 simultaneous

Audio Inputs
*Page - Local microphone (isolated & supervised)
*Page - Remote microphone (isolated & supervised)
*Page - Firefighter's telephone (isolated & supervised)
*Auxiliary (unsupervised)
* = Page and Auxiliary inputs are "live" signals.

Prerecorded Message Storage
2 minutes standard, expandable to 32 minutes

Auxiliary Input

Input Impedance	1 KΩ
Input Level	0.1 VRMS to 1.0 VRMS
Frequency Response	100 Hz to 4 KHz

Remote Microphone
3-REMICP or 3-REMICA

Network Audio Riser

Configuration	Class A/B
Format	RS-485
Circuit Length	5,000 Ft. (1524 M) max. between any 3 panels
Circuit Resistance	90 Ω, max.
Circuit Capacitance	.09 μF, max.
Wire Type	1-2 pair twisted 18 AWG (0.75 mm^2) min.

Telephone Riser

EOL Resistor	15 KΩ
Active Telephones	5 max.
Wire Type	1-2 pair twisted-shielded, 18 AWG (0.75 mm^2) min.
Configuration	Class A/B

Panel Indicators
All call LED
All call minus LED
Page by phone LED
Page to EVAC LED
Page to alert LED
Page volume level
8 line LCD display shows calls waiting/connected
Call-in buzzer

Operator Controls
Local microphone push-to-talk (PTT) switch
Master Telephone Handset (supervised)
All call
All call minus
Page by phone
Page to alert
Page to EVAC
Review Pending switch
Connect switch
Review Connected switch
Disconnect switch
Acknowledge (buzzer silence) switch

Termination

Message Download	RJ45 jack
Remote Microphone	Terminal strip on 3-ASU
Firefighter's Telephone	Terminal strip on 3-FTCU
Auxiliary Inputs	Terminal strip on 3-ASU

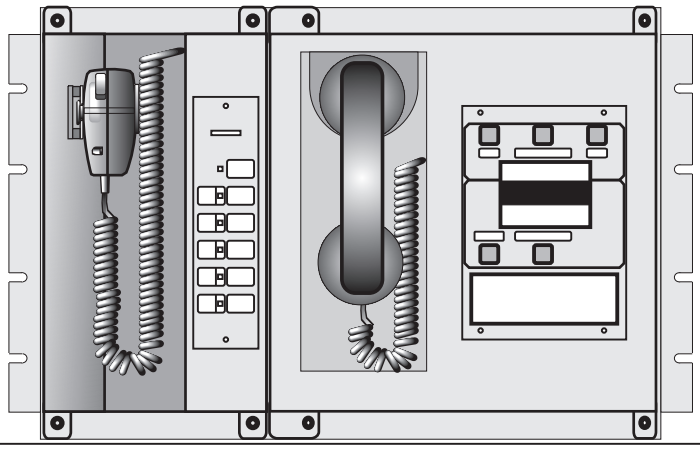
Operating temperature
32°F to 120°F (0°C to 49°C)
93% RH, non-condensing

PRODUCT INFORMATION

The Audio Source Unit with Firefighter's Telephone (3-ASU/FT) is comprised of the 3-ASU Audio Source Unit and the 3-FTCU Firefighter's Telephone Control Unit mounted on a common chassis. The Firefighter's Telephone option in conjunction with the audio source unit provides the main telephone riser. The 3-ASU/FT has provisions to use the telephone circuit as an audio source for paging purposes. The telephone circuit requires a separate hardwired riser and is not multiplexed over the network audio riser. The riser is supervised by the 3-ASU/FT. The 3-ASU/FT requires one chassis space within an enclosure.

The 3-ASU/FT features an 8-line LCD display to show the user the identity of up to 20 waiting calls and connected calls. To answer a call, the operator scrolls the display cursor over the waiting call's ID message and presses the connect switch. This connects the caller and automatically transfers the caller's ID message to the connected list. To end a call, the operator scrolls the display cursor over the connected caller's ID message and presses the disconnect switch. This disconnects the caller and automatically transfers the caller's ID message to the waiting call list, until the caller hangs up, when the ID message is removed.

3-ASU/FT



INSTALLATION SHEET:

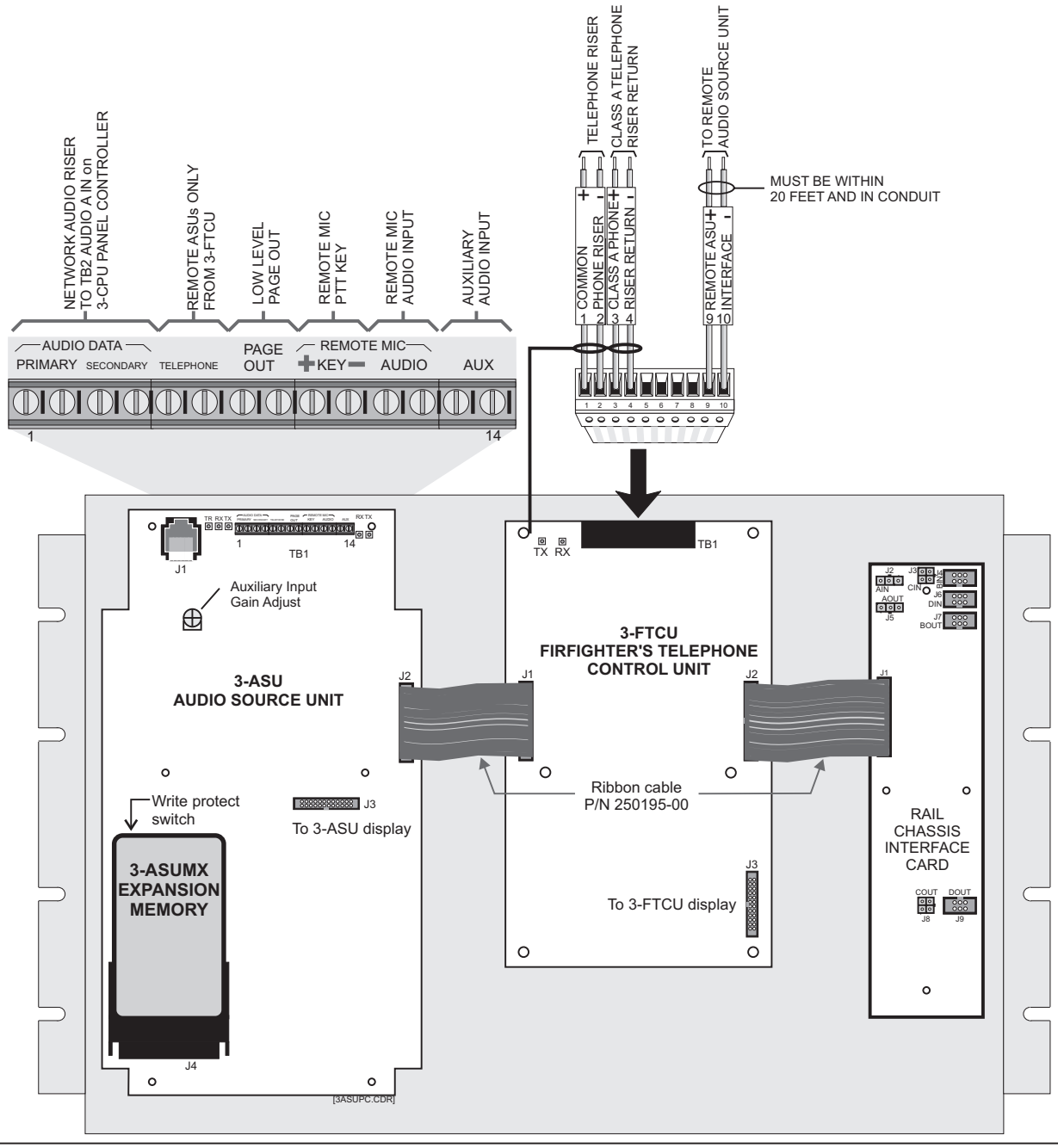
3-ASU/FT
Audio Source Unit with
Firefighter's Telephone (3-FTCU)

INSTALLATION SHEET P/N: 270481	FILE NAME: 270481.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Becker
DATE: 01/10/00	REVISED BY: D. Miner

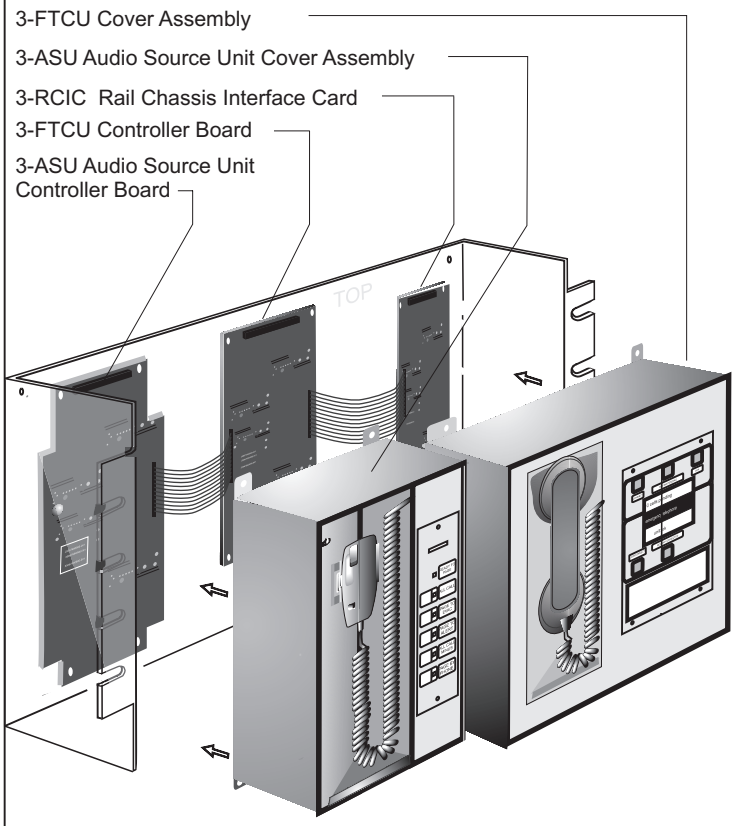
EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

INSTALLATION

1. Mount the chassis assembly on the six #6-32 studs at rear of cabinet. Secure the chassis to cabinet with washers and nuts provided.
2. Mount the Rail Expansion card on the studs at the right side of the chassis. Connect the power and data cables from the Rail Expansion card to the previous and next chassis.
3. Mount the 3-FTCU telephone controller on the six spacers on the right side of the chassis as shown in the figure below. Run ribbon cable (P/N 250195-00) from connector J2 on the 3-FTCU controller board to connector J1 on the Rail Expansion card.
4. Mount the 3-ASU controller board on the six spacers on the left side of the chassis as shown below. Run ribbon cable (P/N 250195-00) from connector J2 on the 3-ASU controller board to connector J1 on the 3-FTCU telephone controller board.
5. Install the 3-ASUMX Expansion Memory board, if used, in connector J4 of the 3-ASU controller board.
6. Terminate the field wiring on TB1 of the 3-ASU and TB1 of the 3-FTCU. Refer to the Wiring section on the next page.
7. Run ribbon cable (P/N 250194-00) from connector J3 on the 3-FTCU controller board to connector J2 on the 3-FTCU display board mounted in the telephone control unit cover assembly.
8. Install the 3-FTCU cover assembly over the telephone controller board and secure it with 4 nuts and washers.
9. Run ribbon cable (P/N 250194-00) from connector J3 on the3-ASU controller board to connector J1 on the 3-ASU control board mounted in the Audio Source Unit cover assembly.
10. Install the 3-ASU cover assembly over the controller board and secure with 4 nuts and washers.

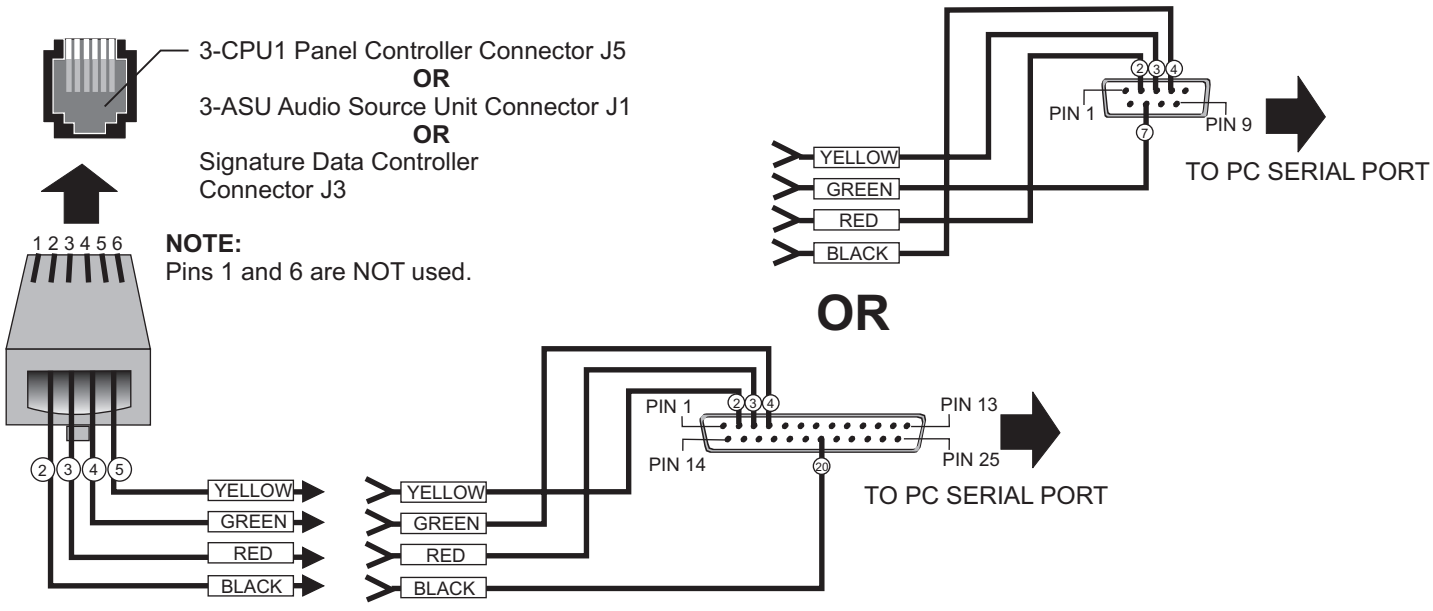


COVER INSTALLATION



DOWNLOAD WIRING

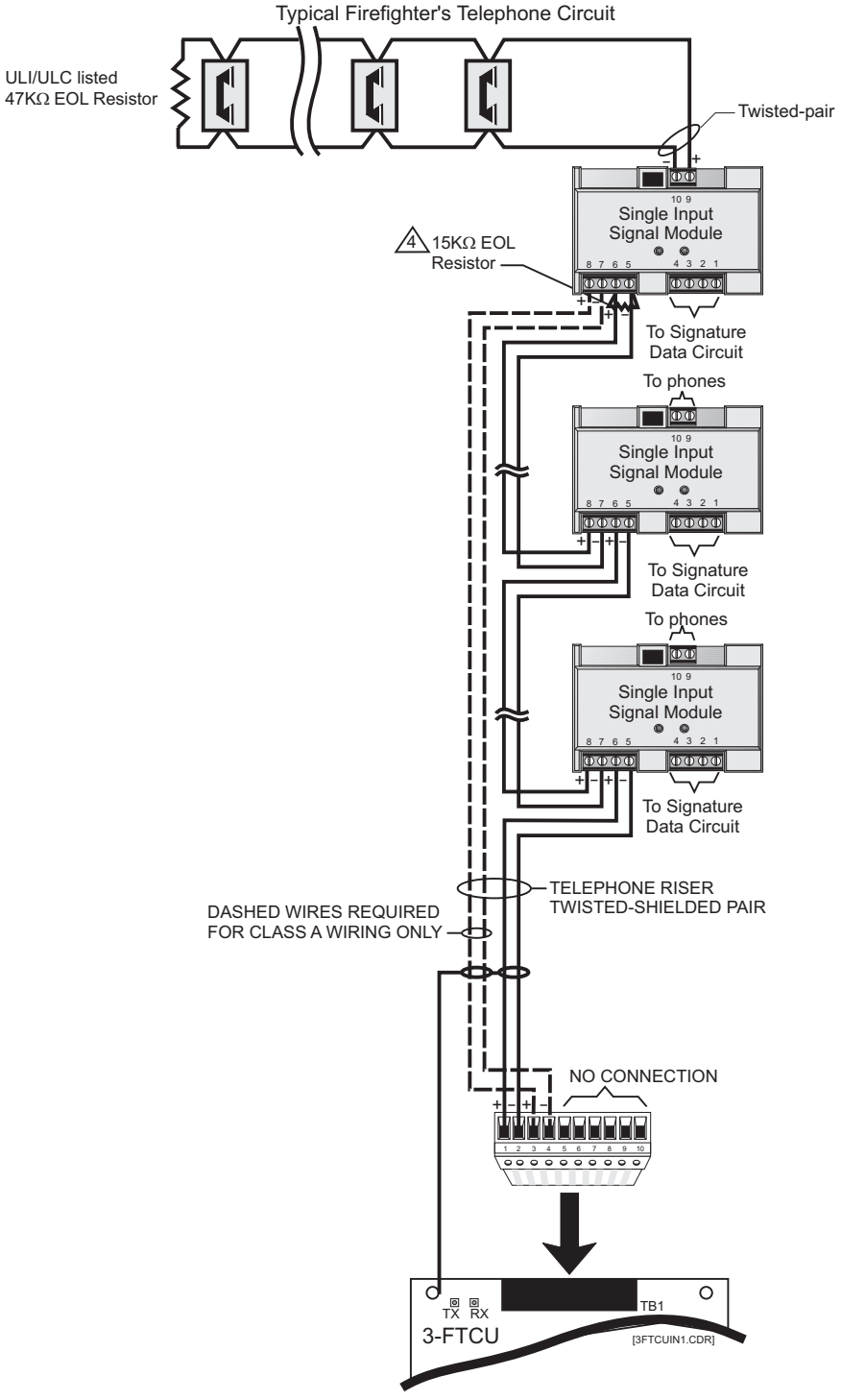
The figure below indicates the wiring between the 3-ASU and the PC running the System Definition Utility program. This cable is used whenever downloading information into the 3-ASU. Refer to the Programming Manual for complete downloading information.



NOTES

1. Single Input Signal Modules set to Personality Code 6.
2. All wiring is supervised and power limited.
3. All shields shall be continouus and insulated from ground, except at the originating panel.
4. 15KΩ EOL resistor for Class B risers only.

Observe static sensitive material handling practices.



PRODUCT INFORMATION

The 3-ATPINT Interface card is a 25 V_{RMS} and 70 V_{RMS} adapter for the ATP Amplifier Terminal Panel. The 3-ATPINT is required when using a distributed (high voltage) output of an audio amplifier as the audio source for the ATP.

The 3-ATPINT is designed for use with audio source amplifiers which use 24 VDC output circuit supervision with EOL resistor. Multiple 3-ATPINT cards can be connected to a common source amplifier using Class B or Class A supervision, as provided by the sourcing amplifier.

JUMPER SETTINGS

Jumper	Position	Input Voltage
P1	1/2	Pre-Amp #1 Input 70 V_{RMS}
	2/3	Pre-Amp #1 Input 25 V_{RMS}
P2	1/2	Pre-Amp #2 Input 70 V_{RMS}
	2/3	Pre-Amp #2 Input 25 V_{RMS}

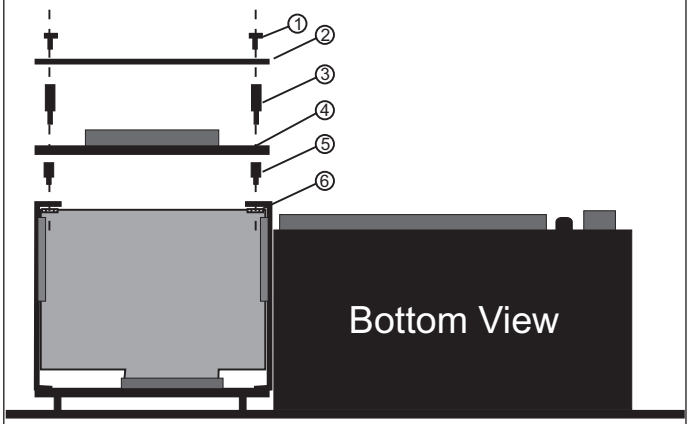
INSTALLATION INSTRUCTIONS

1 Remove the old cover plate and retaining clips on the left side of the ATP (4 screws).

2 Install four spacers (5) in the flanges of the card cage, and secure with nuts (6).

3 Mount the 3-ATPINT board (4) on the four short spacers (5) and secure with four long spacers (3).

4 Install the new cover plate (2) on the long spacers with screws and washers (1) provided.



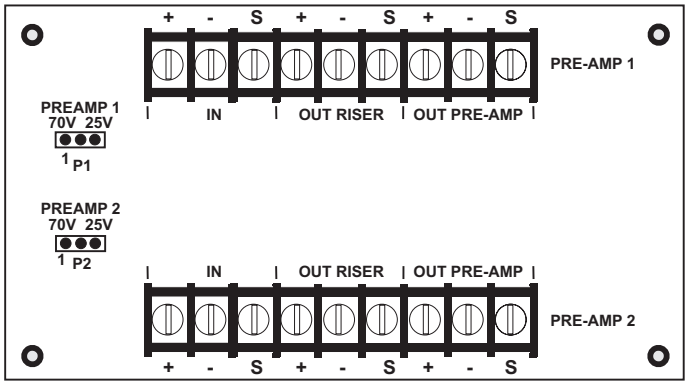
SPECIFICATIONS

Input Voltage	25 V_{RMS} or 70 V_{RMS}
Number of Circuits	2
Supervisory Isolation	DC Blocking Capacitor

NOTES

1. Use a SIGA-CT1 or SIGA-CT2 (P-code 3) to monitor the URSM at the end of the audio risers.
2. Use a SIGA-CT1 or SIGA-CT2 (P-code 3) to monitor ATP trouble contacts.
3. Use a SIGA-CC2 (P-code 7) to select audio from one of two audio riser circuits.
4. Use a SIGA-CC1 (P-code 5) to switch audio from a single audio riser to a branch circuit.
5. Use a SIGA-CR or SIGA-UM (P-code 8) to activate the ATP activity relay.
6. At startup, the 3-ZAxx amplifier must be turned on to the supervisory tone message recorded on the 3-ASU.

3-ATPINT



INSTALLATION SHEET:

3-ATPINT ATP Interface

INSTALLATION SHEET P/N: 387284	FILE NAME: 387284.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Becker
DATE: 04/06/99	CREATED BY: D. Miner

EDWARDS SYSTEMS TECHNOLOGY, INC.
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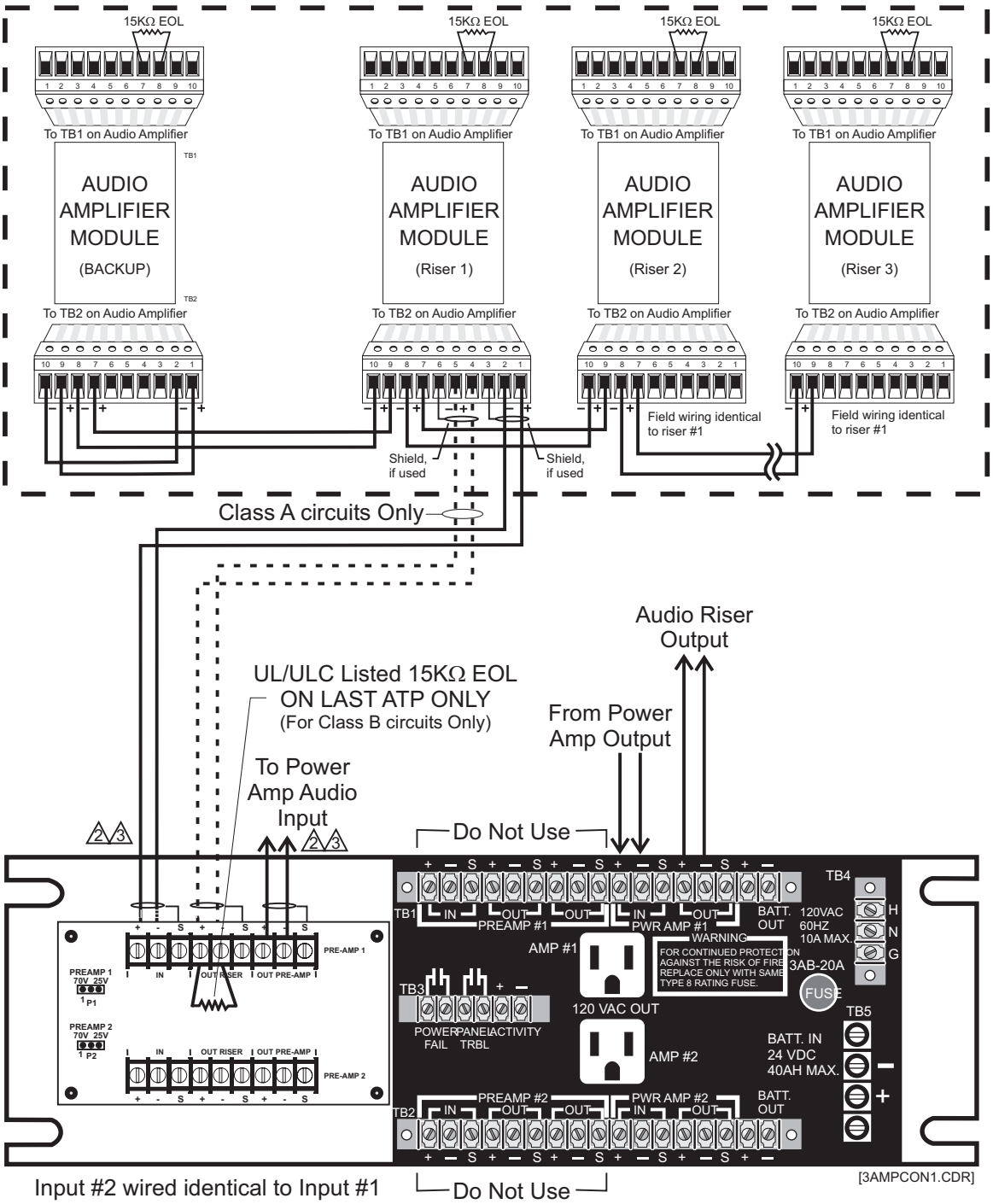
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

WIRING



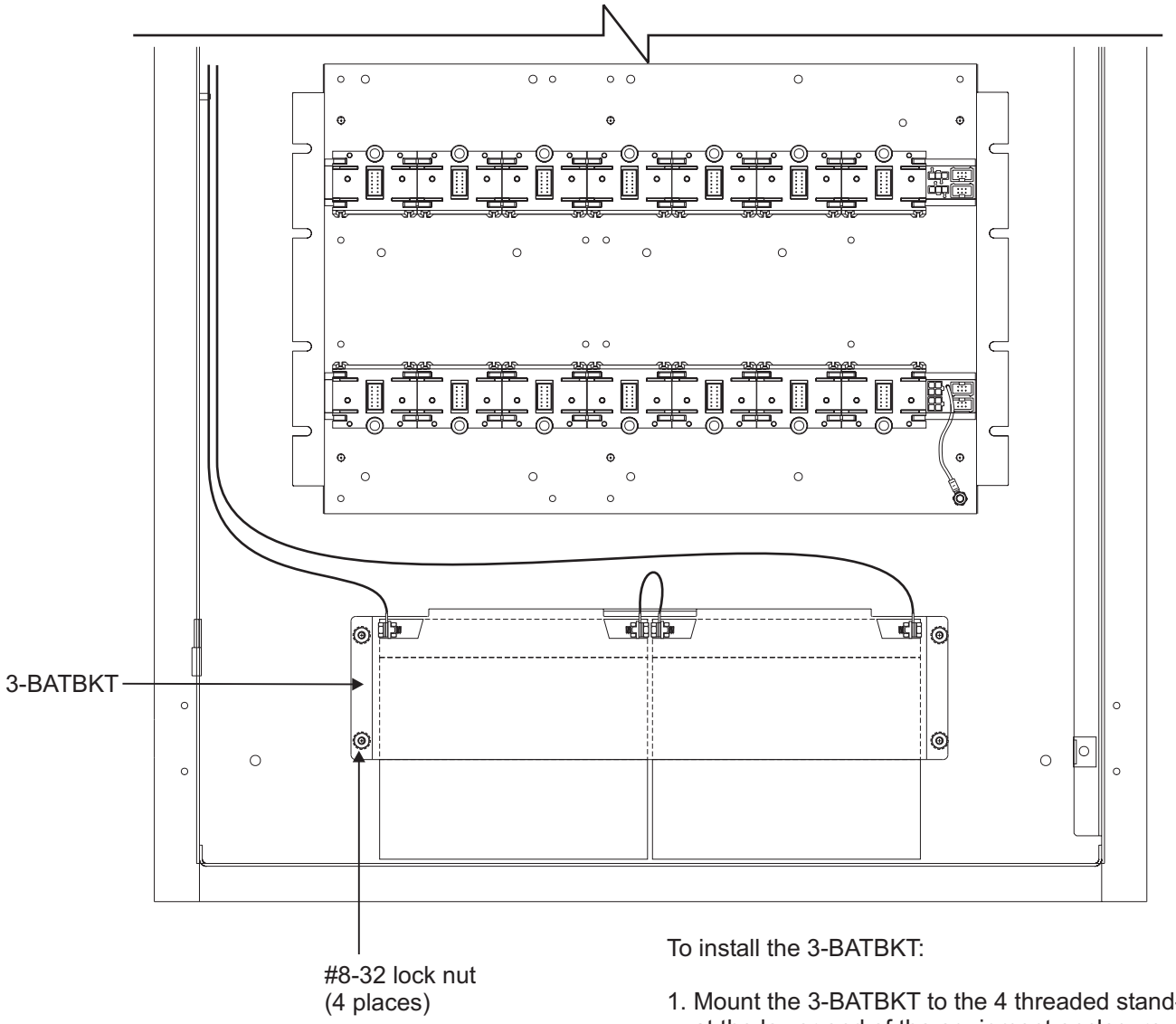
Wiring Notes

1. Circuit polarity shown in supervisory condition.
2. Supervised circuit when URSM is used.
3. Power limited circuit.
4. Back up amplifier size must equal the wattage of the largest amplifier to be backed up.
5. Set J1 & J2 to match source amplifier output voltage.
6. Refer to Audio Manual, P/N 270219 for additional ATP and power amplifier installation information.
7. Additional ATPs may be connected to the same audio source by connecting the ATP pre-amp output to the pre-amp input of the next ATP.

JUMPER SETTINGS

P1 = 1/2, Pre-Amp #1 Input 70 V_{RMS}
P1 = 2/3, Pre-Amp #1 Input 25 V_{RMS}
P2 = 1/2, Pre-Amp #2 Input 70 V_{RMS}
P2 = 2/3, Pre-Amp #2 Input 25 V_{RMS}

INSTALLATION



To install the 3-BATBKT:

1. Mount the 3-BATBKT to the 4 threaded stand-offs at the lower end of the equipment enclosure, over the standby batteries.
2. Secure the 3-BATBKT using the hardware provided.

INSTALLATION SHEET:

3-BATBKT Battery Bracket

INSTALLATION SHEET P/N: 387556	FILE NAME: 387556.CDR
REVISION LEVEL: 1.0	APPROVED BY: D. Munn
DATE: 23APR99	CREATED BY: G. Sutton

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OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

PRODUCT INFORMATION

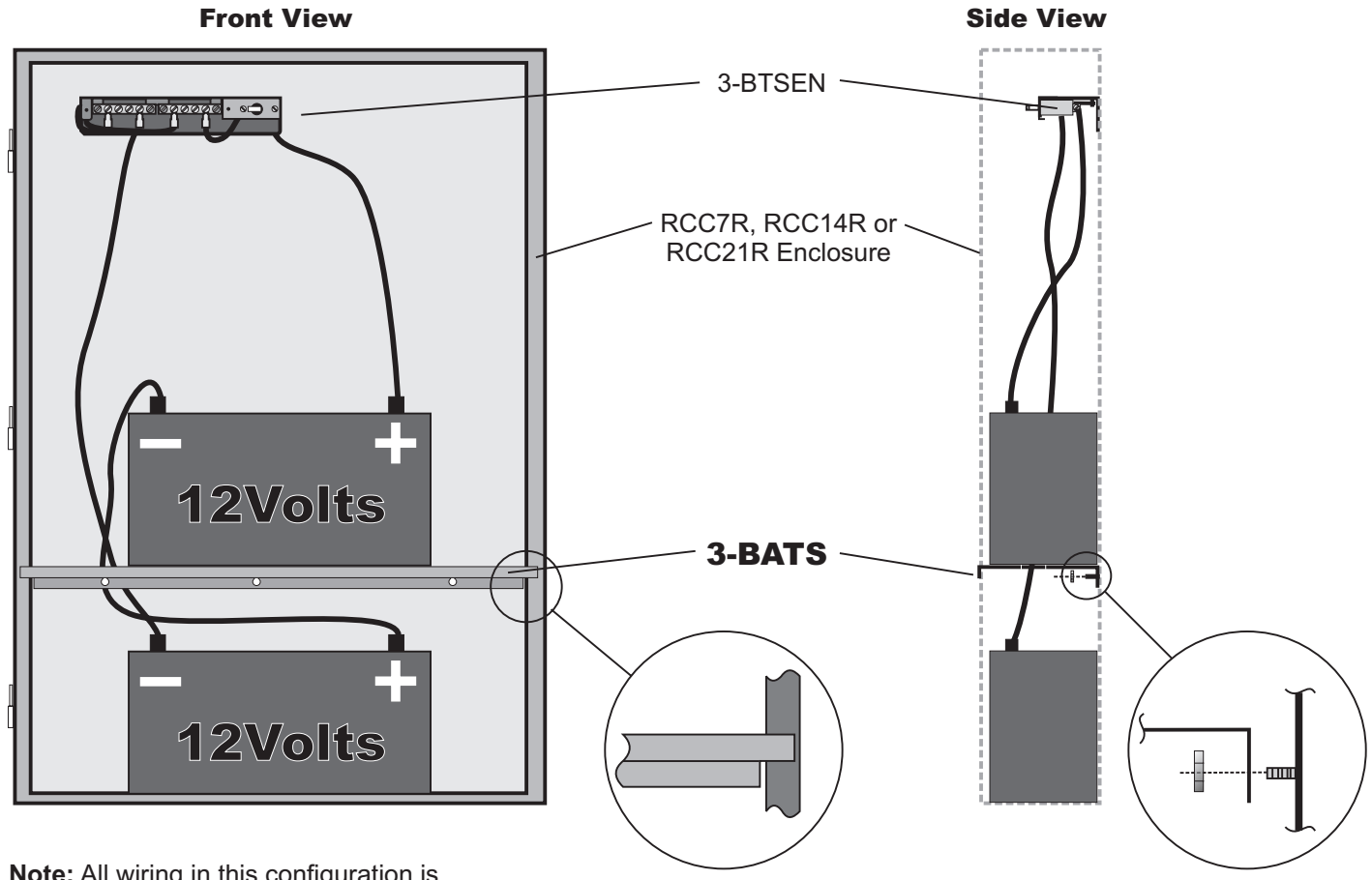
3-BATS Battery Shelf
The 3-BATS is used to convert the RCC7R, RCC14R, and RCC21R Enclosures, to accommodate up to two 65 AH batteries. The 3-BATS has four grommet holes to permit wiring to pass through the shelf.

SPECIFICATIONS

3-BATS

Mounting	RCC7R, RCC14R, or RCC21R Enclosures
Construction	16 Gauge Cold Rolled Steel

INSTALLATION



Note: All wiring in this configuration is non-power limited.

3-BATS

INSTALLATION SHEET:

3-BATS
Battery Shelf

INSTALLATION SHEET P/N: 387338	FILE NAME: 387338.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Munn
DATE: 04/14/99	CREATED BY: D. Miner

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SARASOTA, FL: 941-739-4300 FAX 941-753-1806
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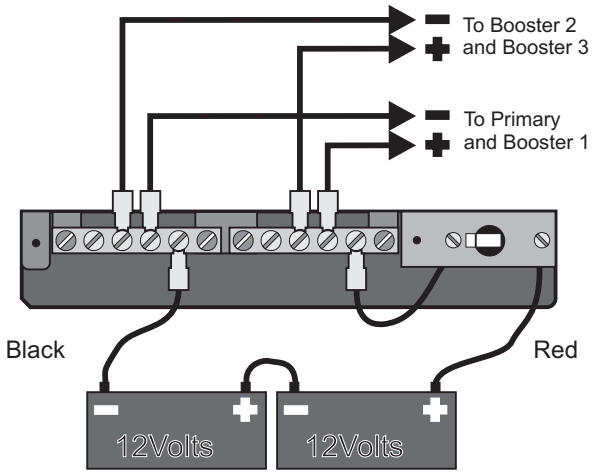
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

PRODUCT INFORMATION

The 3-BTSEN Battery Distribution Bus provides a backup battery bus for supplying backup power to multiple power supplies fed by a common battery. The 3-BTSEN features a 50 amp circuit breaker to protect the backup battery power bus.

The 3-BTSEN mounts in the BC-1 Battery Cabinet or any "RCC Series" enclosure.

WIRING



Notes:

1. Supervised, not power limited.
2. The diagram shows two pairs of wires going to four power supplies. To get twice the distance between the panel and the 3-BTSEN, use one pair of wires for each power supply in the panel. Refer to the following table for wire distances.

Allowable Wire Distance Per Pair of Wires Between Remote Battery Cabinet and Power Supply				
# of supplies fed by one pair of wires	Wire Size			
	#18 AWG (0.75 mm^2)	#16 AWG (1.0 mm^2)	#14 AWG (1.5 mm^2)	#12 AWG (2.5 mm^2)
1	8.84 ft. (2.7 M)	14 ft. (4.27 M)	22.4 ft. (6.83 M)	35.4 ft. (10.79 M)
2	4.42 ft. (1.35 M)	7 ft. (2.13 M)	11.2 ft. (3.41 M)	17.7 ft. (5.4 M)

SPECIFICATIONS

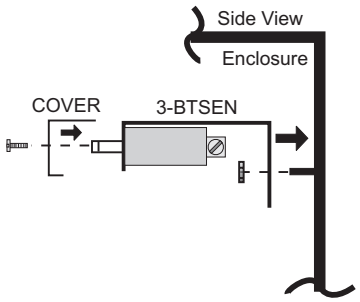
Mounting: BC-1 or RCC Series enclosures
Power Rating: 30 Amps @ 24 VDC
Circuit Breaker: 50 amps
Power Bus: 4 #10-32 machine screws
Operating Temperature Range: 32 to 120° F (0 to 49° C)
Operating Humidity Range: 93% RH non-condensing

WARNINGS

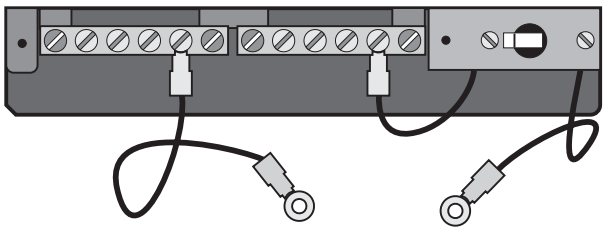
Batteries can deliver high currents. Remove all jewelry before working on these circuits.

INSTALLATION INSTRUCTIONS

The battery cabinet must be installed in the same room as the fire alarm panel and wiring run in conduit.



PRODUCT DIAGRAM



INSTALLATION SHEET

3-BTSEN
Battery Distribution Bus

INSTALLATION SHEET P/N: 387337	FILE NAME: 387337.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Munn
DATE: 10/06/99	CREATED BY: D. Miner

A UNIT OF GENERAL SIGNAL
GS BUILDING SYSTEMS CORPORATION

GS BUILDING SYSTEMS CORPORATION

6411 Parkland Drive
Sarasota, FL 34243
USA

625 6th Street East
Owen Sound, Ontario
Canada N4K 5P8

PRODUCT DESCRIPTION

The 3-CAB series of equipment enclosure backboxes are made of 14-gauge steel and finished with a textured baked grey enamel. The backboxes are designed for semi-flush or surface mounting. Conduit and nail knockouts, keyhole style mounting holes, and wide wiring troughs facilitate quick installation.

Chassis assembly design facilitates separation of power-limited and nonpower-limited circuits inside the backbox by locating power-limited wiring towards the front of the cabinet and nonpower-limited wiring towards the rear.

SPECIFICATIONS

3-CAB7B Dimensions (H x W x D)

Rough-In (See note 1)	23.2 in x 24.0 in x 3.86 in (58.98 cm x 60.9 cm x 9.8 cm)
Finished	
Surface Mounted	25.5 in x 27.34 in x 5.5 in (64.77 cm x 69.4 cm x 14.0 cm)
Semi-Flush Mounted	25.5 in x 27.34 in x1.65 in (64.77 cm x 69.4 cm x 4.19 cm)

3-CAB14B Dimensions (H x W x D)

Rough-In (See note 1)	35.5 in x 24.0 in x 3.86 in (90.17 cm x 60.9 cm x 9.8 cm)
Finished	
Surface Mounted	37.75 in x 27.34 in x 5.5 in (95.89 cm x 69.4 cm x 14.0 cm)
Semi-Flush Mounted	37.75 in x 27.34 in x 1.65 in (95.89 cm x 69.4 cm x 4.19 cm)

3-CAB21B Dimensions (H x W x D)

Rough-In (See note 1)	47.75 in x 24.0 in x 3.86 in (121.29 cm x 60.9 cm x 9.80 cm)
Finished	
Surface Mounted	50.0 in x 27.34 in x 5.5 in (127.0 cm x 69.4 cm x 14.0 cm)
Semi-Flush Mounted	50.0 in x 27.34 in x 1.65 in (127.0 cm x 69.4 cm x 4.19 cm)

Note:

1) Add 1/4" to height and width to allow for knockouts when framing in backbox for semi-flush mounting.

Equipment Capacity

3-CAB7B

Chassis	1 chassis assembly
Batteries	
Model 6V8A	4 max.
Model 12V10A	2 max.
Model 12V17A	2 max.

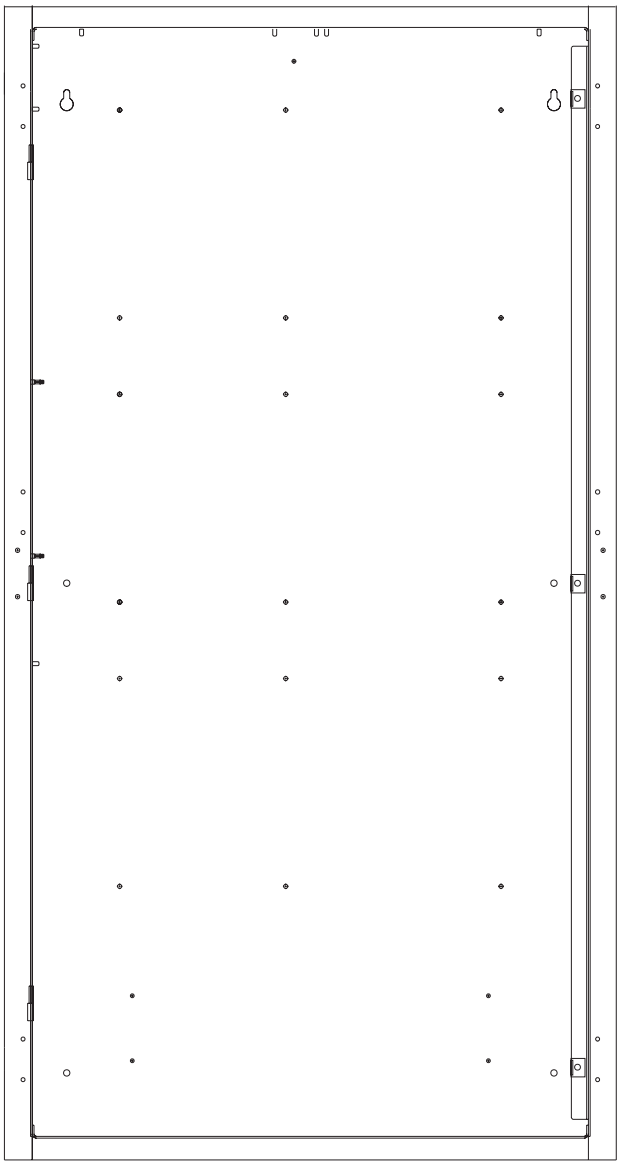
3-CAB14B

Chassis	2 chassis assemblies
Batteries	
Model 6V8A	4 max.
Model 12V10A	2 max.
Model 12V17A	2 max.

3-CAB21B

Chassis	3 chassis assemblies
Batteries	
Model 6V8A	4 max.
Model 12V10A	2 max.
Model 12V17A	2 max.

PRODUCT DIAGRAM



3-CAB21B shown

INSTALLATION SHEET:

3-CAB Series Equipment Enclosure Backboxes

INSTALLATION SHEET P/N: 387557	FILE NAME: 387557.CDR
REVISION LEVEL: 1.0	APPROVED BY: K. Patterson
DATE: 24MAY99	CREATED BY: G. Sutton

A UNIT OF GENERAL SIGNAL

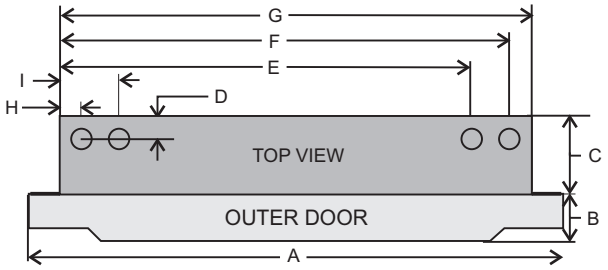
GS BUILDING SYSTEMS CORPORATION

GS BUILDING SYSTEMS CORPORATION

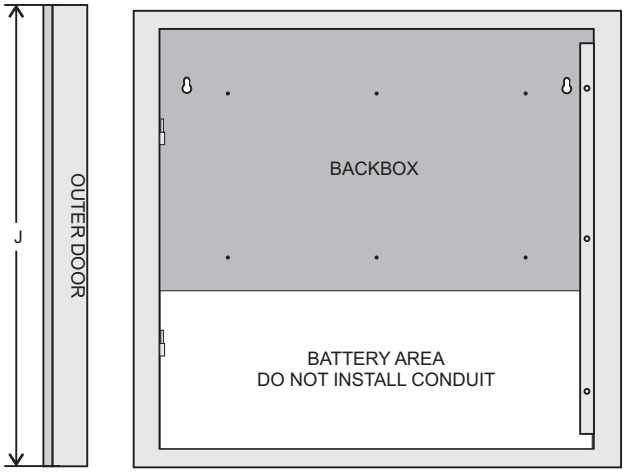
6411 Parkland Drive
Sarasota, FL 34243
USA

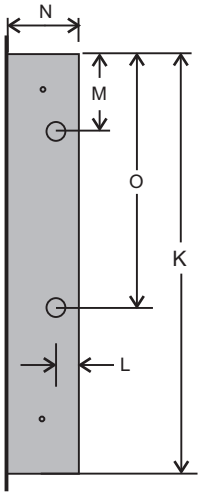
625 6th Street East
Owen Sound, Ontario
Canada N4K 5P8

CABINET INSTALLATION DIMENSIONS



ALL KNOCKOUTS
FOR 3/4-INCH CONDUIT
(1.9 cm)

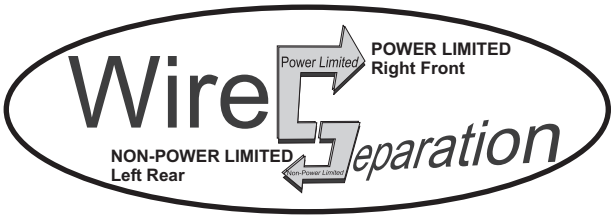


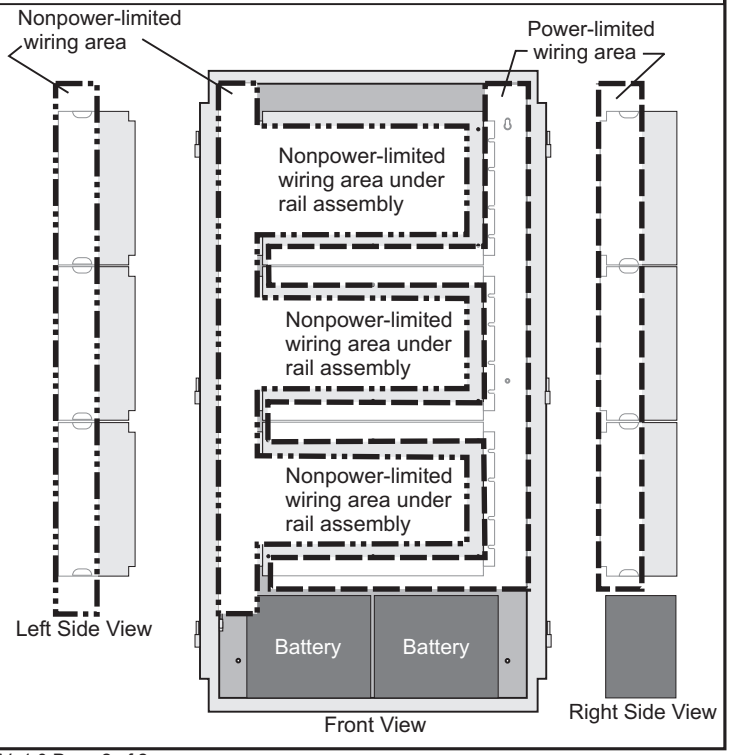


	3-CAB7B	3-CAB14B	3-CAB21B
A	27.34 in (69.40 cm)	27.34 in (69.40 cm)	27.34 in (69.40 cm)
B	1.65 in (4.19 cm)	1.65 in (4.19 cm)	1.65 in (4.19 cm)
C	3.86 in (9.80 cm)	3.86 in (9.80 cm)	3.86 in (9.80 cm)
D	1.25 in (3.18 cm)	1.25 in (3.18 cm)	1.25 in (3.18 cm)
E	21.0 in (53.34 cm)	21.0 in (53.34 cm)	21.0 in (53.34 cm)
F	22.75 in (57.8 cm)	22.75 in (57.8 cm)	22.75 in (57.8 cm)
G	24.0 in (60.9 cm)	24.0 in (60.9 cm)	24.0 in (60.9 cm)
H	1.25 in (3.18 cm)	1.25 in (3.18 cm)	1.25 in (3.18 cm)
I	3.0 in (7.7 cm)	3.0 in (7.7 cm)	3.0 in (7.7 cm)
J	25.5 in (64.77 cm)	37.75 in (95.89 cm)	50.0 in (127.0 cm)
K	23.2 in (58.98 cm)	35.5 in (90.17 cm)	47.75 in (121.3 cm)
L	1.25 in (3.16 cm)	1.25 in (3.16 cm)	1.25 in (3.16 cm)
M	4.37 in (11.1 cm)	4.37 in (11.1 cm)	4.37 in (11.1 cm)
N	3.86 in (9.80 cm)	3.86 in (9.80 cm)	3.86 in (9.80 cm)
O	14.1 in (35.8 cm)	14.1 in (35.8 cm)	14.1 in (35.8 cm)

POWER-LIMITED AND NONPOWER-LIMITED WIRING REQUIREMENTS

Fire Alarm System wiring is classified as either power-limited or nonpower-limited per NEC Article 760. All power-limited wiring must be separated from all nonpower-limited wiring by a minimum distance of 1/4 in (6 mm). The system enclosures and chassis assemblies are designed such that nonpower-limited wiring is at the left rear of the cabinet and the power-limited wiring is at the front of the cabinet. When installing nonpower-limited wiring, use the feed through notches at the left rear of the chassis. When installing power-limited wiring, use the feed through notches at the right front of the chassis.





INSTALLATION INSTRUCTIONS

These instructions are for right-hand swing open operation of the outer door. For left-hand swing open operation, attach the enclosure hardware to the opposite side.

STEP1: Installing the enclosure hardware

1. With the back box securely mounted, attach the outer door hinge pins to the mounting studs on the back box left flange.

2. Attach the door stops to the top and bottom mounting studs on the back box right flange.

3. Attach the lock striker plate to the middle mounting studs on the back box right flange.

STEP 2: Assembling the outer door

1. Place the outer door on a flat surface with the inside facing up.

2. Attach hinges to right mounting studs.

3. Insert the door lock through the opening opposite the hinges and with the latch pointing towards top of the door. See figure on other side.

4. Secure lock with the retaining clip.

5. Insert the plastic hole plug in the door opening closest to the hinges.

STEP 3: Mounting the outer door assembly

1. Set the outer door assembly onto the outer door hinge pins.

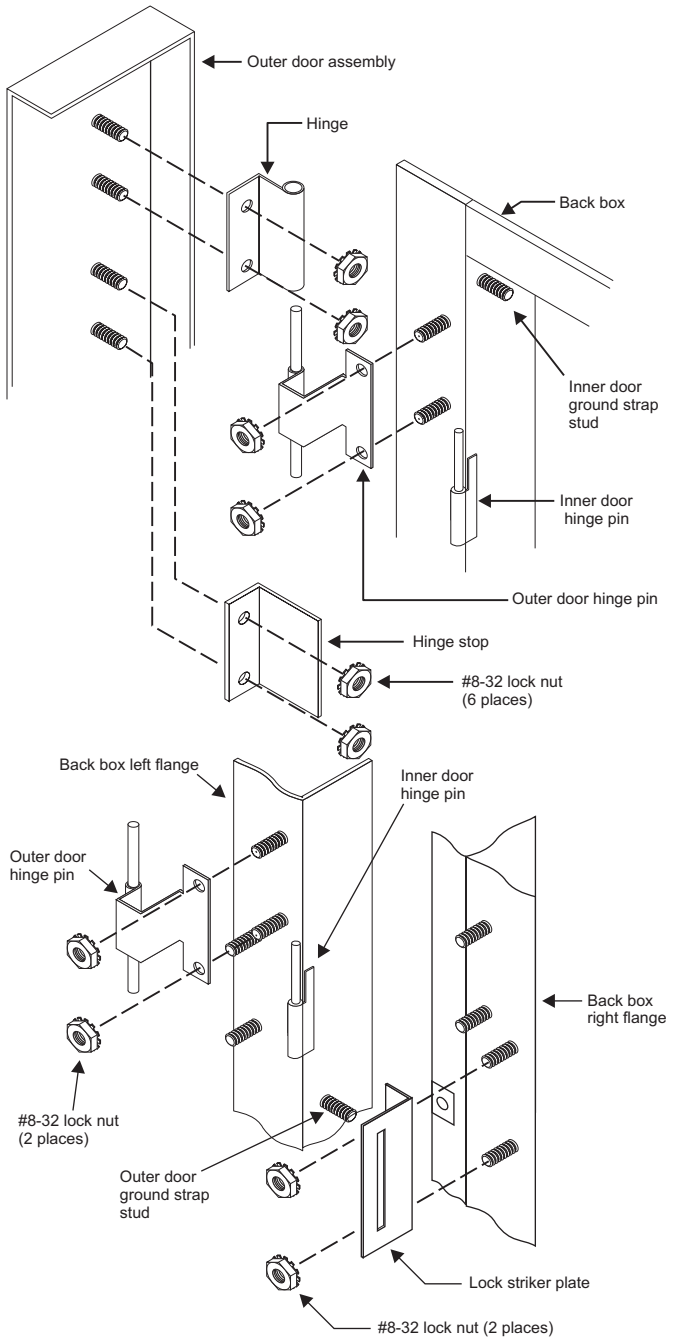
2. Attach the hinge stop to the outer door assembly.

3. Attach a grounding strap from the outer door ground strap stud on the back box to the outer door.

STEP 4: Mounting the inner door

1. Set the inner door onto the inner door hinge pins.

2. Attach a grounding strap from the inner door ground strap stud on the back box to the inner door.



PRODUCT DESCRIPTION

The 3-CAB series of equipment enclosure doors consists of an inner and outer door. The outer door may be mounted to either side of the back box for left-open or right-open operation, has a viewing window, and is secured with a key lock. A hinged interior door panel isolates the operator from the panel electronics and wiring, yet easily opens for maintenance.

The 3-CAB series of equipment enclosure doors include:

3-CAB7D	Grey door w/window for CAB7B back boxes
3-CAB7DR	Red door w/window for CAB7B back boxes
3-CAB14D	Grey door w/window for CAB14B back boxes
3-CAB14DR	Red door w/window for CAB14B back boxes
3-CAB14D	Grey door w/window for CAB21B back boxes
3-CAB14DR	Red door w/window for CAB21B back boxes

INSTALLATION SHEET:

3-CAB Series Equipment Enclosure Doors

INSTALLATION SHEET P/N: 270488	FILE NAME: 270488.CDR
REVISION LEVEL: 2.0	APPROVED BY: K. Patterson
DATE: 29MAR99	CREATED BY: G. Sutton

A UNIT OF GENERAL SIGNAL

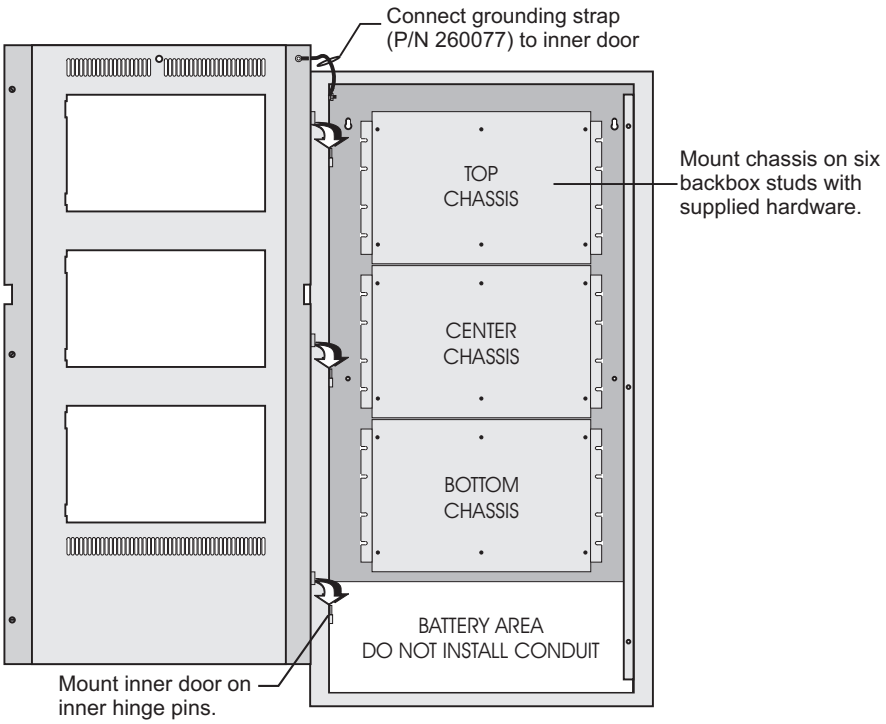
GS BUILDING SYSTEMS CORPORATION

GS BUILDING SYSTEMS CORPORATION

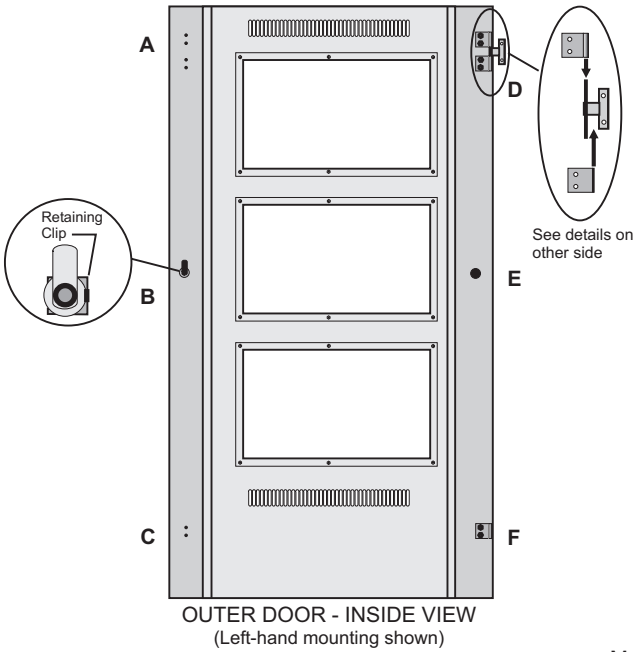
6411 Parkland Drive
Sarasota, FL 34243
USA

625 6th Street East
Owen Sound, Ontario
Canada N4K 5P8

Inner Door Assembly

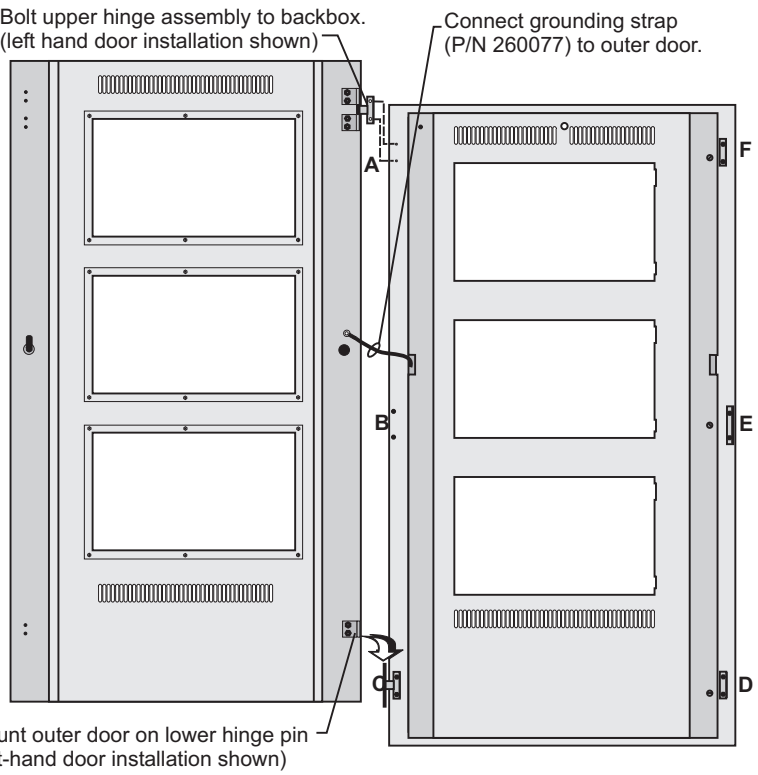


Outer Door Assembly



OUTER DOOR - INSIDE VIEW
(Left-hand mounting shown)

Outer Door Installation



	Female Hinges	Double Male Hinge	Lock	Plug
Left-hand Mounting	D & F	D	B Latch Up	E
Right-hand Mounting	A & C	A	E Latch Down	B

	Bumpers Plates	Lock Strike	Double Male Hinge Pin
Left-hand Mounting	D & F	E	C
Right-hand Mounting	A & C	B	F

INSTALLATION INSTRUCTIONS

These instructions are for right-hand swing open operation of the outer door. For left-hand swing open operation, attach the enclosure hardware to the opposite side.

STEP1: Installing the enclosure hardware

1. With the back box securely mounted, attach the outer door hinge pins to the mounting studs on the back box left flange.
2. Attach the door stops to the top and bottom mounting studs on the back box right flange.
3. Attach the lock striker plate to the middle mounting studs on the back box right flange.

STEP 2: Assembling the outer door

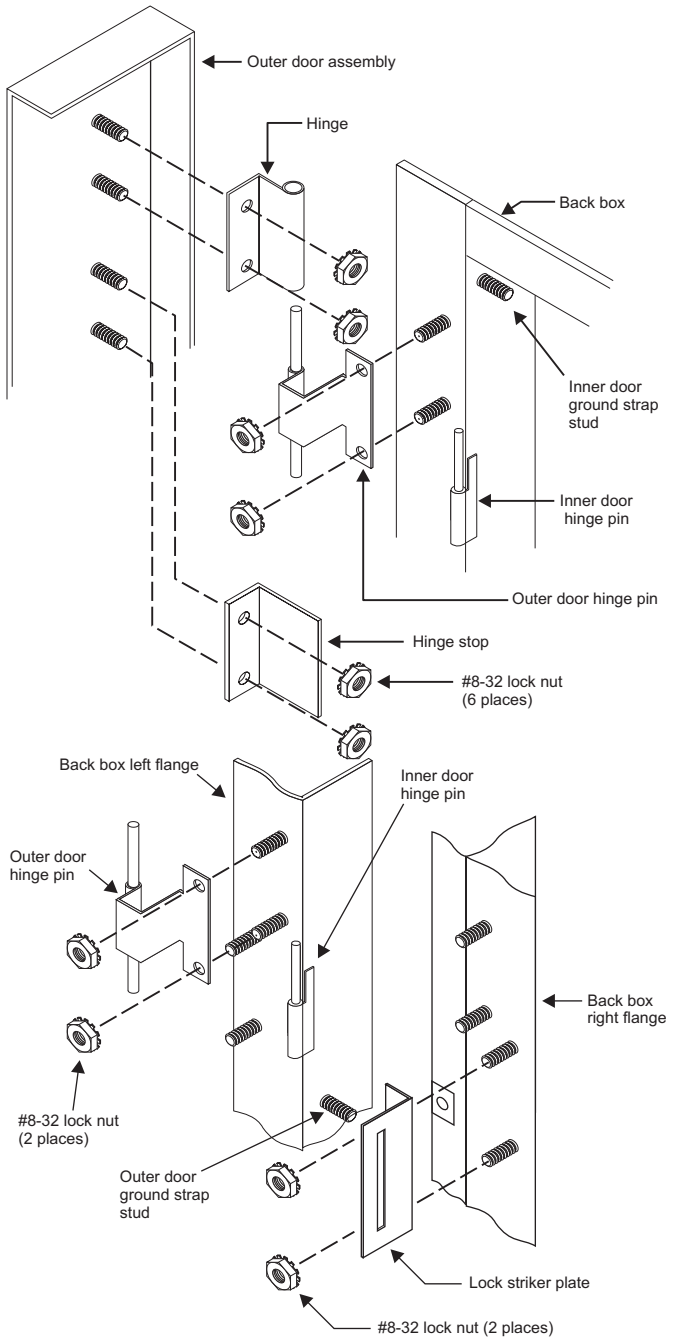
1. Place the outer door on a flat surface with the inside facing up.
2. Attach hinges to right mounting studs.
3. Insert the door lock through the opening opposite the hinges and with the latch pointing towards top of the door. See figure on other side.
4. Secure lock with the retaining clip.
5. Insert the plastic hole plug in the door opening closest to the hinges.

STEP 3: Mounting the outer door assembly

1. Set the outer door assembly onto the outer door hinge pins.
2. Attach the hinge stop to the outer door assembly.
3. Attach a grounding strap from the outer door ground strap stud on the back box to the outer door.

STEP 4: Mounting the inner door

1. Set the inner door onto the inner door hinge pins.
2. Attach a grounding strap from the inner door ground strap stud on the back box to the inner door.



PRODUCT DESCRIPTION

The 3-CAB-E series of equipment enclosure doors consists of an inner and outer door. The outer door may be mounted to either side of the back box for left-open or right-open operation, has a viewing window, and is secured with a key lock. A hinged interior door panel isolates the operator from the panel electronics and wiring, yet easily opens for maintenance.

The 3-CAB-E series of equipment enclosure doors include:

3-CAB7D-E	Grey door w/window for CAB7B back boxes
3-CAB7DR-E	Red door w/window for CAB7B back boxes
3-CAB14D-E	Grey door w/window for CAB14B back boxes
3-CAB14DR-E	Red door w/window for CAB14B back boxes
3-CAB21D-E	Grey door w/window for CAB21B back boxes
3-CAB21DR-E	Red door w/window for CAB21B back boxes

INSTALLATION SHEET:

3-CAB-E Series Equipment Enclosure Doors

INSTALLATION SHEET P/N: 387549	FILE NAME: 387549.CDR
REVISION LEVEL: 1.0	APPROVED BY: K. Patterson
DATE: 23APR99	CREATED BY: G. Sutton

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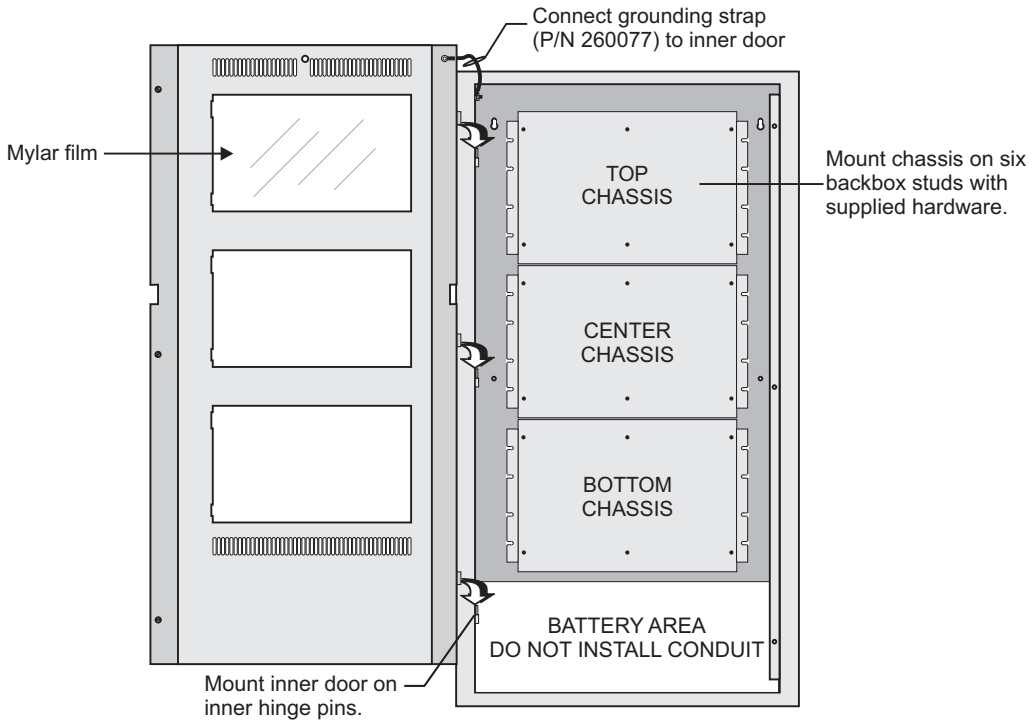
GS BUILDING SYSTEMS CORPORATION

GS BUILDING SYSTEMS CORPORATION

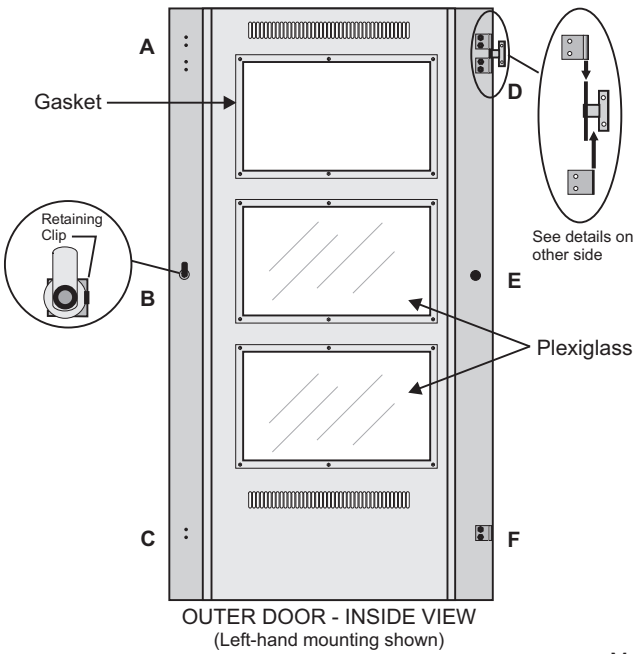
6411 Parkland Drive
Sarasota, FL 34243
USA

625 6th Street East
Owen Sound, Ontario
Canada N4K 5P8

Inner Door Assembly

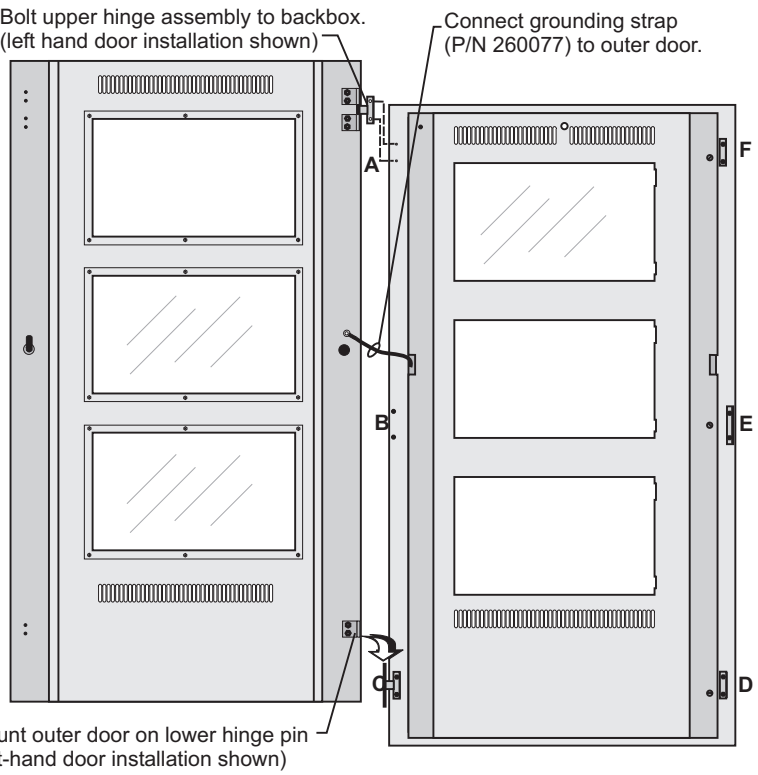


Outer Door Assembly



OUTER DOOR - INSIDE VIEW
(Left-hand mounting shown)

Outer Door Installation



Mount outer door on lower hinge pin
(left-hand door installation shown)

	Female Hinges	Double Male Hinge	Lock	Plug
Left-hand Mounting	D & F	D	B Latch Up	E
Right-hand Mounting	A & C	A	E Latch Down	B

	Bumpers Plates	Lock Strike	Double Male Hinge Pin
Left-hand Mounting	D & F	E	C
Right-hand Mounting	A & C	B	F

PRODUCT INFORMATION

The 3-CAB5(R) cabinet provides 5 local rail module (LRM) spaces and up to 10 amp-hour standby batteries. The 3-CAB5(R) cabinet is made of 14 gauge steel and finished with a textured baked enamel. The enclosure is suitable for semi-flush or surface mounting. Conduit and nail knockout keyhole style mounting holes and wide wiring troughs facilitate quick installation. Cabinet design facilitates separation of power limited and non-power limited circuits by locating power limited circuitry toward the front of the cabinet and non-power limited wiring at the rear of the cabinet. The removable exterior door mounts on the left side of the cabinet, has a Lexan™ viewing window, and is secured with a key lock. A hinged interior door panel isolates the operator from the internal electronics and wiring, yet easily opens to reveal the system components for maintenance.

SPECIFICATIONS

Dimensions (HWD)

3-CAB5B Back Box

Rough-In	22.37 in x 14.0 in x 3.86 in (56.82 cm x 35.56 cm x 9.80 cm) NOTE: Add 1/4" to height and width to allow for knockouts when framing in backbox for semi-flush mounting.
Finished	
Surface Mounted	24.25 in x 16.4 in x 5.5 in (61.60 cm x 16.4 cm x 14.0 cm)
Semi-Flush Mounted	24.25 in x 16.4 in x 1.65 in (61.60 cm x 16.4 cm x 4.19 cm)

Capacity

Modules	Five module spaces
Battery	Two 10 AH @ 12 VDC

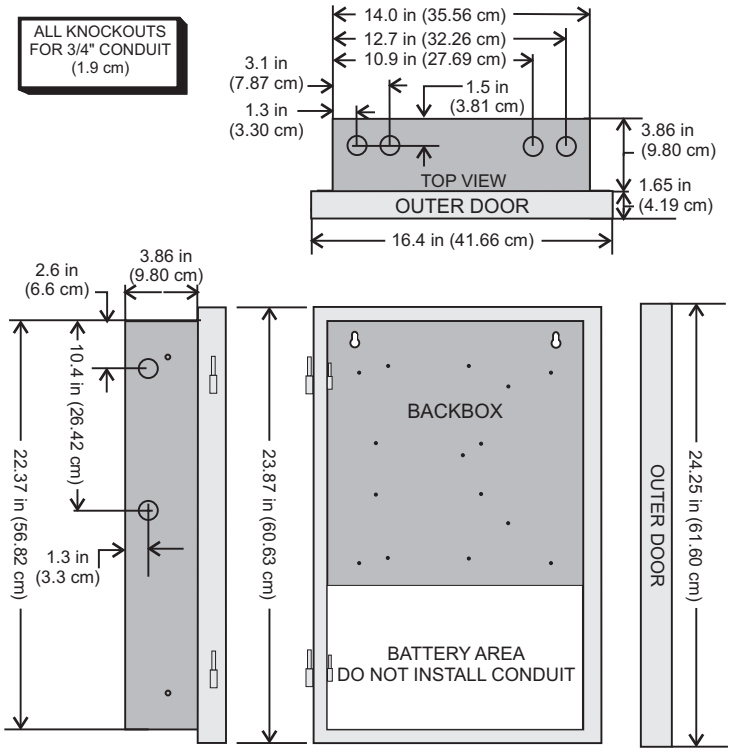
Finish

3-CAB5	Gray textured enamel
3-CAB5R	Red textured enamel

CABINET INSTALLATION

1. Mount the backbox at the required location. A dedicated 120 VAC (for systems using model 3-PPS/M power supplies), or 230 VAC (for systems using model 3-PPS/M-230 power supplies) 50/60 Hz circuit is required for each cabinet. Install all conduit and pull all wiring into the backbox before proceeding to the next step.
2. Install the outer door at this time.
3. Install the 3-TAMP5 Tamper Switch, if used.
4. Install the equipment chassis. After all chassis assemblies have been installed, mount the inner door on the inside hinge pins.
5. Connect the ground strap between the stud on the inner door and the backbox, using the hardware provided.
6. Install the ground strap between the stud on the exterior door and the stud on the backbox.

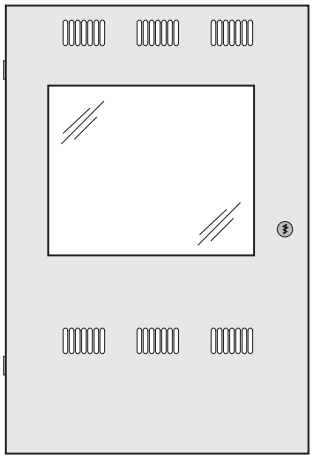
CABINET INSTALLATION DIMENSIONS



MODEL DEFINITIONS

3-CAB5	Cabinet with Door, Gray
3-CAB5R	Cabinet with Door, Red

3-CAB5 / 3-CAB5-R



INSTALLATION SHEET:

3-CAB5
3-CAB5R

INSTALLATION SHEET P/N: 270487	FILE NAME: 270487.CDR
REVISION LEVEL: 2.0	APPROVED BY: K. Patterson
DATE: 12/17/98	REVISED BY: D. Miner

A UNIT OF GENERAL SIGNAL
GS BUILDING SYSTEMS CORPORATION

GS BUILDING SYSTEMS CORPORATION

6411 Parkland Drive
Sarasota, FL 34243

625 6th Street East
Owen Sound, ON, Canada

PRODUCT INFORMATION

The 3-CHAS7 chassis provides the mounting, internal power, and data distribution for up to seven plug-in local rail modules. Mounting studs for two power supplies and one interface module are provided on each chassis. Chassis design facilitates separation of power limited and non-power limited circuits by locating power limited circuitry toward the front of the chassis and non-power limited wiring at the rear of the chassis.

The 3-CHAS7 chassis mounts to the back wall of 3-CAB7, 3-CAB14, 3-CAB21, RCC-7, RCC-14, and RCC-21 cabinets. Multiple 3-CHAS7 chassis are interconnected within a cabinet using the supplied cables. The chassis are suitable for direct mounting in a standard EIA 19" rack.

SPECIFICATIONS

19" Rack Installation Dimensions (HWD)	12.0" x 19.0" x 5.25" (30.48 cm x 48.26 cm x 13.34 cm)
Capacity	7 Local Rail Modules Spaces 2 Power Supplies 1 Interface Module

INSTALLATION

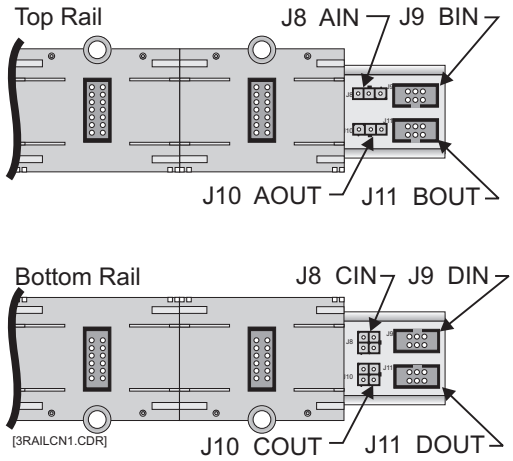
Mount the chassis assembly on the six #6-32 studs at the rear of the cabinet. Secure the chassis to the cabinet with the washers and nuts provided. An 11/32" nut driver simplifies chassis installation.

If a primary or booster power supply is used with this chassis, mount the heat sink on the four threaded stand-offs under the rails, then secure the PC board to the four threaded stand-offs.

Connect the DC power cable (P/N 250187) to connector J2 on the power supply. For the 3-PPS, connect the 16 pin data ribbon cable (P/N 250188) to connector P3 on the power supply. For the 3-BPS, connect a 14 pin data ribbon cable (P/N 250189) to connector P3 on the power supply. Route both cables up through the rails for later connection to the power supply/booster monitor module.

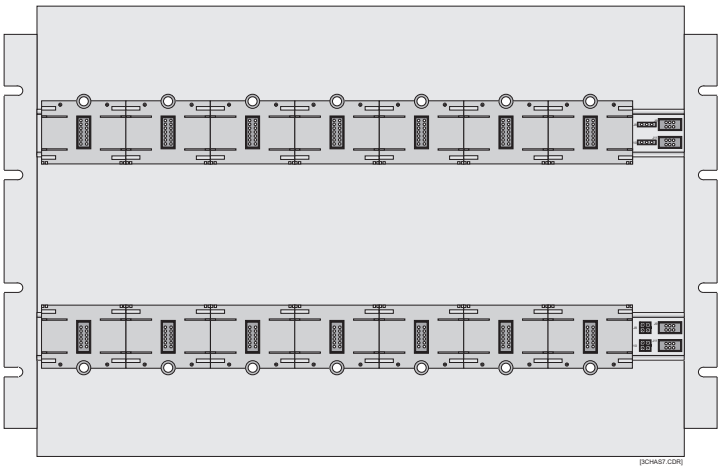
Chassis Power and Data Cables

When more than one chassis is installed within a single cabinet, the chassis power and data circuits must be interconnected. The chassis has four data connectors and four power connectors. The 3-CHAS7 has two power (J8 AIN and J11 AOUT) and two data (J9 BIN and J11 BOUT) connectors on the top rail. Two power (J8 CIN and J10 COUT) and two data (J9 DIN and J11 DOUT) connectors are on the bottom rail, as shown below.



Installation instructions are continued on following two pages.

3-CHAS7

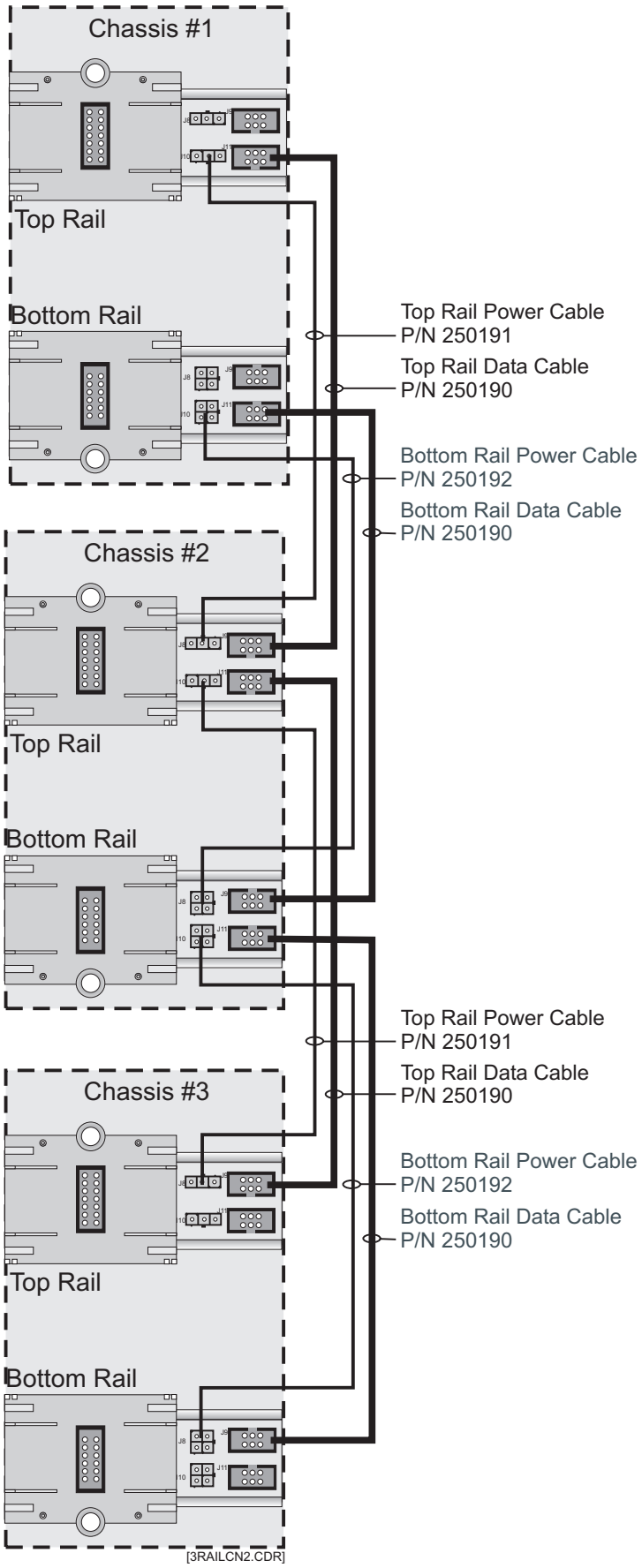


INSTALLATION SHEET:

3-CHAS7
Seven Local Rail Module Chassis

INSTALLATION SHEET P/N: 270484	FILE NAME: 270484.CDR
REVISION LEVEL: 2.0	APPROVED BY: K. Patterson
DATE: 06/14/99	REVISED BY: D. Miner

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553



The figure on the left shows three 3-CHAS7 chassises in a common cabinet. Connect the power and data cables as follows:

1. Connect a top rail power cable (3 pin connector) to connector J10 AOUT on the top rail of chassis #1. Route the cable down to chassis #2, and connect to J8 AIN on the chassis #2 top rail.

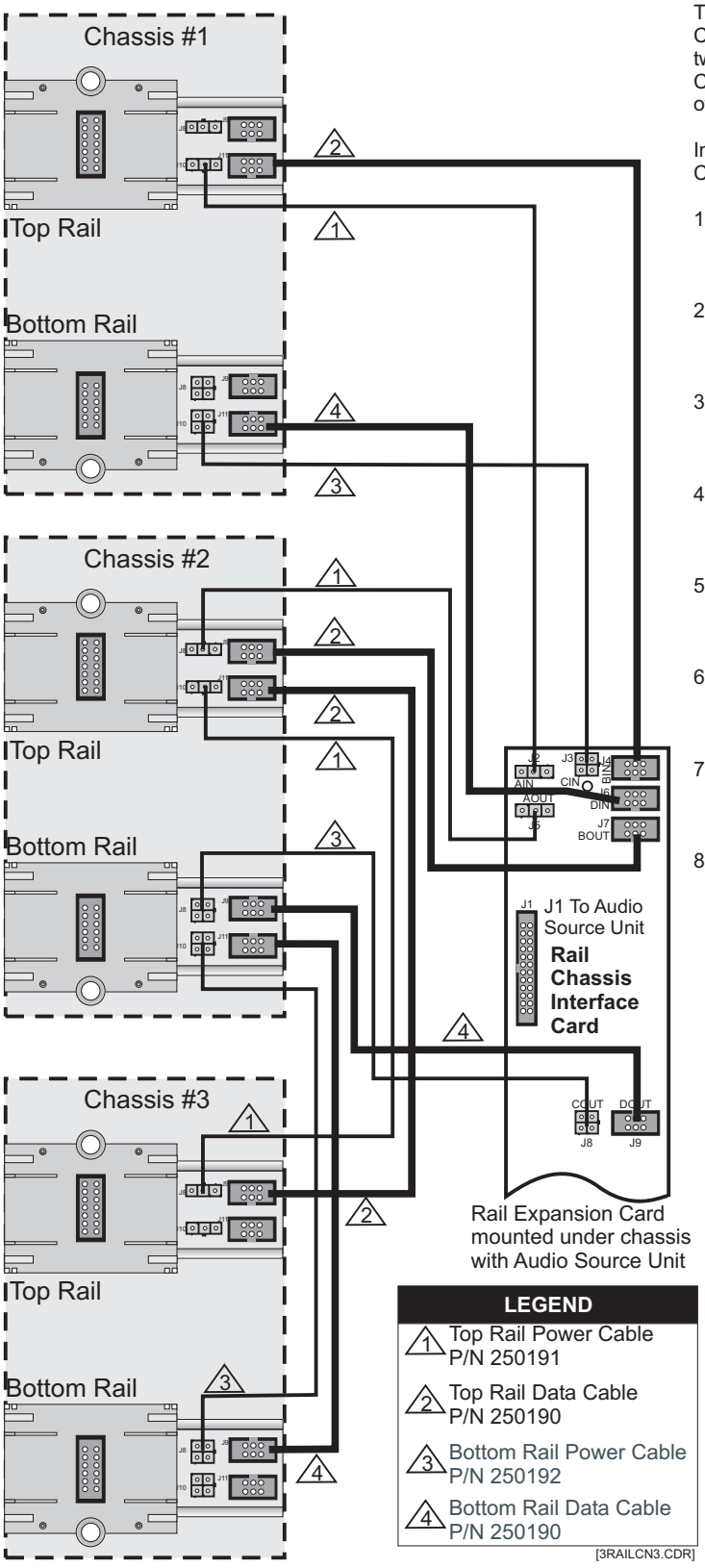
2. Connect a top rail data cable (6 pin ribbon cable connector) to connector J11 BOUT on the top rail of chassis #1. Route the cable down to chassis #2 and connect to J9 BIN on the chassis #2 top rail.

3. Connect a bottom rail power cable (4 pin connector) to connector J10 COUT on the bottom rail of chassis #1. Route the cable down to chassis #2 and connect to J8 CIN on the chassis #2 bottom rail.

4. Connect a bottom rail data cable (6 pin ribbon cable connector) to connector J11 DOUT on the bottom rail of chassis #1. Route the cable down to chassis #2 and connect to J9 DIN on the chassis #2 bottom rail.

5. Repeat this process between chassis #2 and chassis #3.

NOTE: The chassis containing the 3-CPU1 Central Processor can only have chassis power and data connections made to connectors J10 AOUT and J11 BOUT on the top rail and J10 COUT and J11 DOUT on the bottom rail. The chassis containing the 3-CPU can never have connections coming into connectors J8 AIN, J9 BIN, J8 CIN or J9 DIN.



The figure to the left shows an Audio Source Unit (ASU) and two 3-CHAS7 chassis in a common cabinet. The ASU unit is connected to the two rails using a Rail Chassis Interface Card. The Rail Chassis Interface Card is mounted below the rails in the 1/2 footprint IRC-3 module space of the ASU unit chassis.

In this example, the ASU can be either the top or middle chassis. Connect the power and data cables as follows:

1. Connect the top rail power cable (3 pin connector) to connector J10 AOUT on the top rail of chassis #1. Route the cable down to the Rail Chassis Interface Card and connect to J28 AIN.
2. Connect the top rail data cable (4 pin connector) to connector J11 COUT on the top on bottom rail of chassis #1. Route the cable down to the Rail Chassis Interface Card and connect to J4 BIN.
3. Connect the bottom rail power cable (4 pin connector) to connector J10 COUT on the bottom rail of chassis #1. Route the cable down to the Rail Chassis Interface Card and connect to J3 CIN.
4. Connect the bottom rail data cable (6 pin ribbon cable connector) to connector J11 DOUT on the bottom rail of chassis #1. Route the cable down to the Rail Chassis Interface Card and connect to J6 DIN.
5. Connect a top rail power data cable to connector J5 AOUT on upper left side of the Rail Chassis Interface Card. Route the cable up to connector J8 AIN on the top rail of chassis #2.
6. Connect a top rail data cable to connector J7 BOUT on the upper right side of the Rail Chassis Interface Card. Route the cable up to connector J9 BIN on the top rail of chassis #2.
7. Connect a bottom rail power cable to connector J8 COUT on the left center of the Rail Chassis Interface Card. Route the cable up to connector J8 CIN on the bottom rail of chassis #2.
8. Connect a bottom rail data cable to connector J9 DOUT on the right center of the Rail Chassis Interface Card. Route the cable up to connector J9 DIN on the bottom rail of chassis #2.

PRODUCT INFORMATION

3-CPU1 Central Processor Module

The 3-CPU1 Central Processor module is the control element for all other rail modules and contro/display modules installed within an enclosure. The 3-CPU1 processes all information from modules installed within the cabinet as well as data received from other panels over the network data riser.

The 3-CPU1 has a 16-bit microprocessor and 1 MB of RAM and 1 MB of non-volatile memory. An internal calendar/clock with leap year function provides date/time event stamping and initiates timed events. The 3-CPU1 automatically identifies and supervises all modules installed on the rail chassis and has an integral watchdog to identify both hardware and software faults. The module has Form-C common alarm, trouble and supervisory relay contacts that operate whenever any alarm, supervisory, or fault condition is detected on the network.

The 3-CPU1 communicates with other CPU1 modules on the network over an RS-485 or fiber optic network data circuit. Class A or B wiring configuration may be used for the network data circuit and digital audio circuits. An optically isolated RS-232 port is provided for data upload/download and system maintenance. An optional optically isolated RS-232 port card is available to support a printer or an external command system. The 3-CPU1 also provides the command and control functions for the 8-channel audio subsystem installed on the rail chassis.

The 3-CPU1 occupies the two left-most positions on the rail chassis assembly (logical address 0). In this position it functions as the local bus master and supervises all traffic on the rail bus and implements ground fault detection.

The controller is secured to the rail chassis using snap rivet fasteners. All field wiring connections to the 3-CPU1 module are made via plug-in connectors that permit termination of field wiring without removing the module from the enclosure. All external connections are power-limited and transient protected. The plug-in connectors and snap rivet mounting also facilitate rapid remove and replace troubleshooting. The 3-CPU1 module panel provides support brackets for mounting the 3-LCD displayor a protective cover plate.

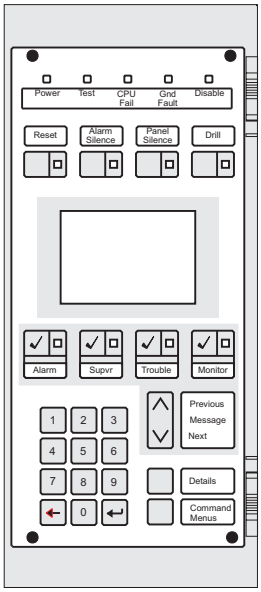
3-LCD Main LCD Display for the 3-CPU1

The 3-LCD Display provides the operator interface for the network. The 3-LCD mounts on the 3-CPU1 panel support brackets and is connected to the module with a ribbon cable. Only one 3-LCD Display is required to provide point of control for the entire network. Additional displays may be added to any3-CPU1 module located throughout the network, providing an additional point of control and/or annunciation.

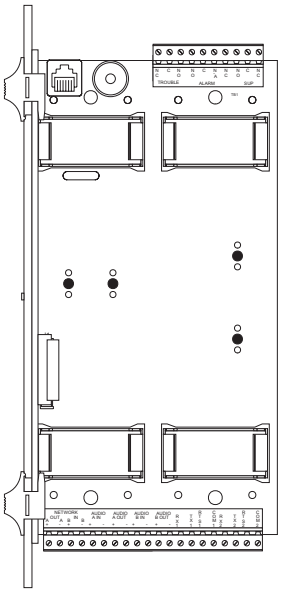
The display provides a 64 by 128-pixel back-lit liquid crystal display for displaying text. LEDs are provided for: power, test, CPU fail, ground fault and disable functions. Switches with integral LED feedback are provided for reset, trouble silence, alarm silence, and drill functions. Message queue select switches with integral LEDs are provided for the alarm, supervisory, trouble, and monitor message queues. Next and Previous message queue switches scroll through the selected message queue. The display is also equipped with a 10-digit numeric key pad with enter and delete keys.

Note: 3-CPU1 Boot and Application code must be version 1.33 or greater

3-LCD



3-CPU1



INSTALLATION SHEET:

3-CPU1 Central Processor Module &
3-LCD Main LCD Display for 3-CPU1

INSTALLATION SHEET P/N: 387465	FILE NAME: 387465.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Becker
DATE: 26OCT99	CREATED BY: G. Sutton

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GS BUILDING SYSTEMS CORPORATION

6411 Parkland Drive
Sarasota, FL 34243

625 6th Street East
Owen Sound, ON, Canada

SPECIFICATIONS

3-CPU1 Central Processor Module

Processor: 16-bit, RISC

Memory: 1 MB RAM - volatile static
1 MB Flash - non-volatile
32K EEPROM

Installation: Occupies first 2 spaces on rail chassis

Internal RS-232 Serial Port: Isolated, Class B
Connector, RJ-11

Common Control Relays: 3 Form C relays rated at 24 Vdc @ 1A for alarm, supervisory, and trouble

Operating Environment
- Temperature: 32 to 120 °F (0 to 49 °C)
- Humidity: 93% RH, non-condensing

Power Requirements
- Standby Current: 100 mA
- Alarm Current: 110 mA

3-LCD Display for 3-CPU1:

Installation: Plugs into connector J1 on 3-CPU1 module. Mounts on the front of the 3-CPU1 module.

LCD Display: 64 x 128 pixels, back-lit liquid crystal

Indicators:

Power	Green LED
CPU Failure	Yellow LED
Test	Yellow LED
Ground Fault	Yellow LED
Disable	Yellow LED
Reset	Yellow LED, integrated with Reset switch
Trouble Silence	Yellow LED, integrated with Trouble Silence switch
Alarm Silence	Yellow LED, integrated with Alarm Silence switch
Drill	Yellow LED, integrated with Drill switch
Alarm	Red LED
Supervisory	Yellow LED
Trouble	Yellow LED
Monitor	Yellow LED

Operator Controls:

Reset Switch	10-digit keypad w/ Enter and Delete keys
Alarm Silence Switch	Message queue scroll switches
Trouble Silence Switch	Custom function switch
Drill Switch	

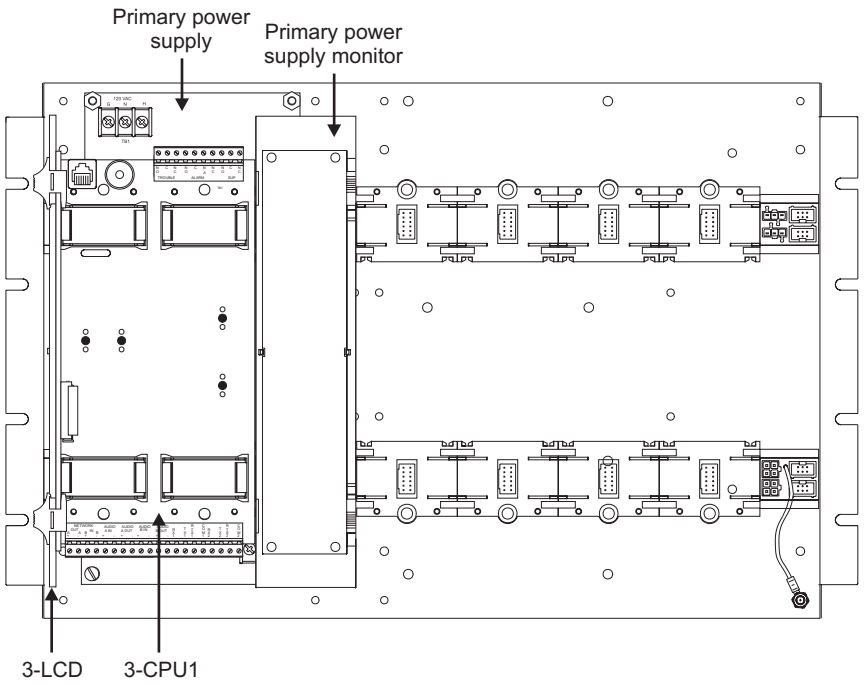
Operating Environment
- Temperature: 32 to 120 °F (0 to 49 °C)
- Humidity: 93% RH, non-condensing

Power Requirements

Standby Current	53 mA
Alarm Current	53 mA

INSTALLATION

1. Install the 3-LCD display module (if required).
   - Remove the blank front panels from the support brackets on the 3-CPU1.
   - Connect the ribbon cable on the 3-LCD to J1 on the 3-CPU1. The colored edge is pin 1.
   - Connect the ground cable on the 3-LCD to the 2-pin header on the 3-CPU1. The 2-pin header is located just above the Network B terminals on TB2.
   - Snap the 3-LCD onto the left mounting brackets provided on the 3-LCD.
2. Install any 3-CPU1 option cards, if required. Refer to the respective installation sheets for the option card being installed.
3. Slide the 3-CPU1 into the first two rail slots on the rail chassis assembly. Be careful to line the option cards into the card guides.
4. Gently push the 3-CPU1 until it is firmly seated into the rail connectors.
5. Secure the module to the rail by pushing the top and bottom snap rivet fasteners until they lock in place.
6. Connect the field wiring.



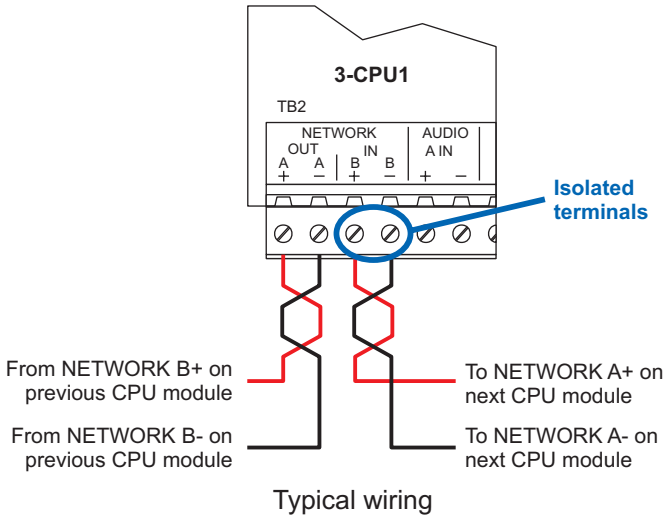
Network data riser connections

A 3-CPU1 equipped with a 3-RS485A or 3-RS485B card can communicate with other similarly equipped CPU modules by way of the network data riser. TB2 on the 3-CPU1 provides the terminal connections for connecting to the network data riser.

Connect the network data riser to the 3-CPU1 as shown. The NETWORK B terminals provide an isolated connection. The NETWORK A terminals are not isolated.

Notes

- All network data riser wiring is supervised and power-limited.
- When connecting the network wiring, always wire the isolated terminals on one CPU module to the non-isolated terminals of another.
- On Class B network data risers, the panel that does not have wires connected to the Network A terminals should be designated as the service panel and located accordingly.



Typical wiring

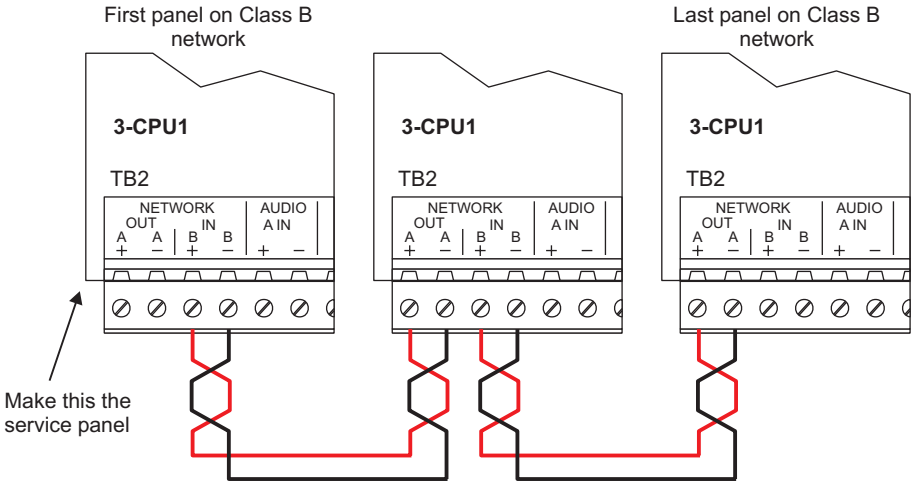


Figure-1: Class B network data riser wiring (requires 3-RS485A or 3-RS485B)

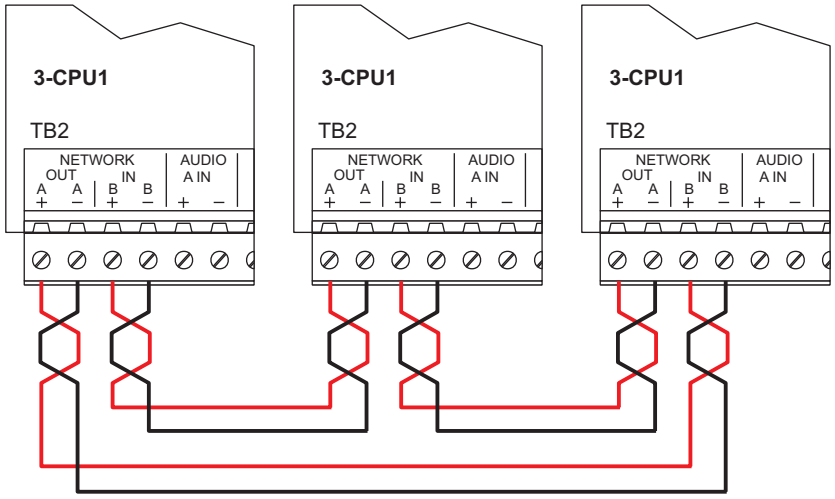


Figure-2: Class A network data riser wiring (requires 3-RS485A or 3-RS485B)

Network audio riser connections

A 3-CPU1 equipped with a 3-RS485A or 3-RS485B card can distribute audio messages to other similarly equipped 3-CPU1 modules by way of the network audio riser. TB2 on the 3-CPU1 provides the terminal connections for connecting to the network audio riser.

Connect the network audio riser to the 3-CPU1 as shown. The AUDIO IN terminals provide an isolated connection. The AUDIO OUT terminals are not isolated.

Notes

- All network audio riser wiring is supervised and power-limited.
- When connecting the network wiring, always wire the isolated terminals on one CPU module to the non-isolated terminals of another.

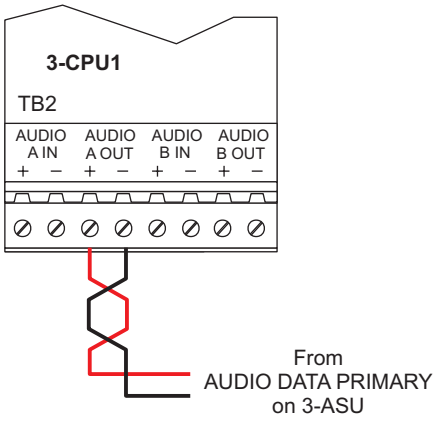


Figure-3: 3-CPU1 to 3-ASU wiring for single panel audio applications (no RS-485 card required)

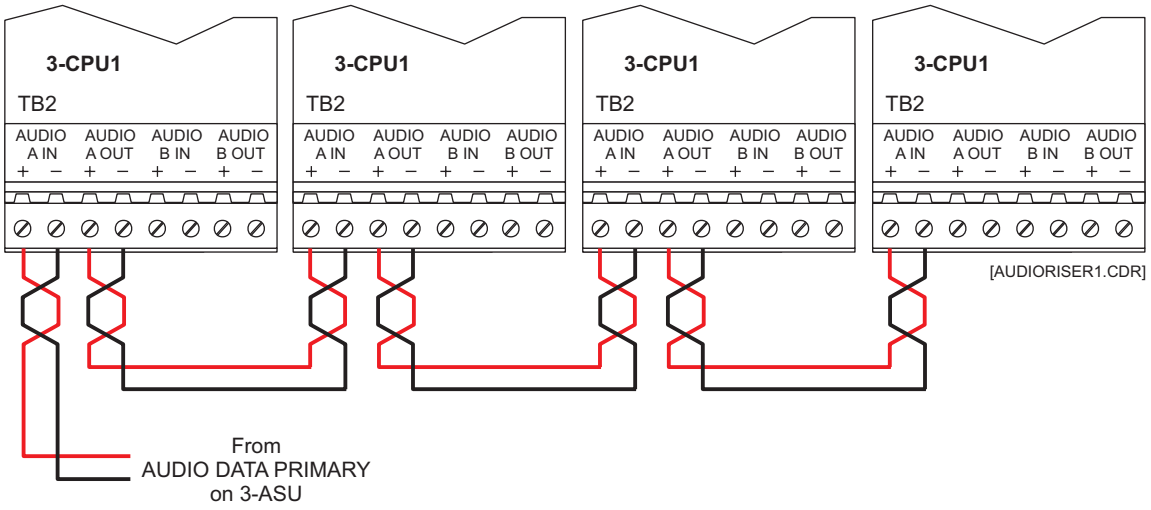


Figure-4: Typical Class B network audio riser wiring (requires a 3-RS485A or 3-RS485B card)

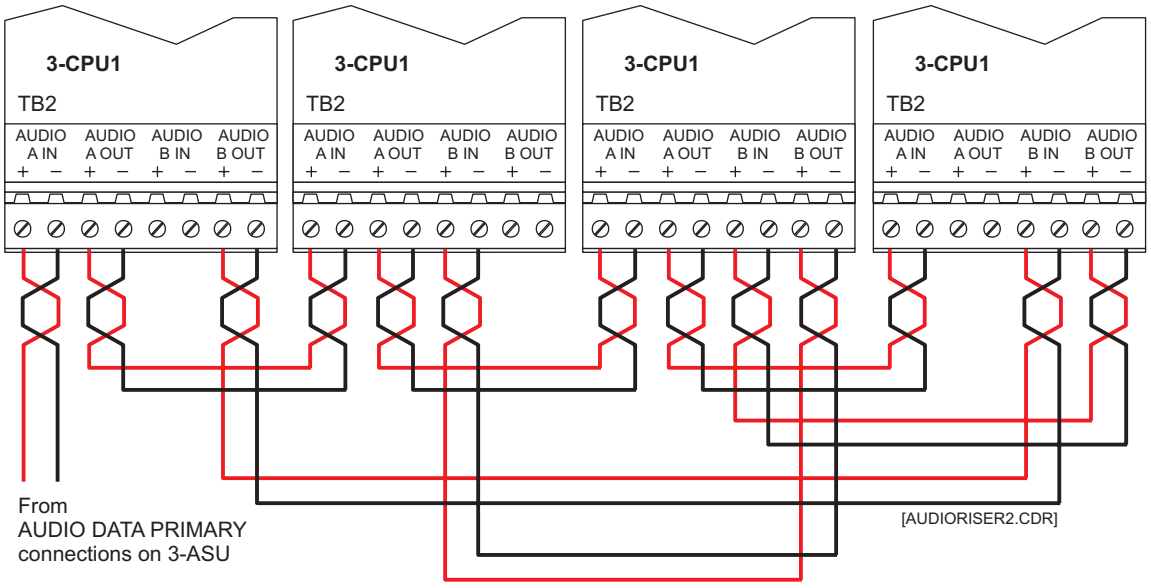


Figure-5: Typical Class A network audio riser wiring (requires a 3-RS485A card)

Common relay connections

The 3-CPU1 provides three Form C relays that can be used to activate a circuit when any alarm, trouble, or supervisory point in the system activates. The connector pin designations reflect the state of the relay contacts while the panel is operating in its standy mode (all conditions normal). The trouble relay contacts also switch on loss of power.

Note: All common relay wiring is power-limited when connected to a power-limited source.

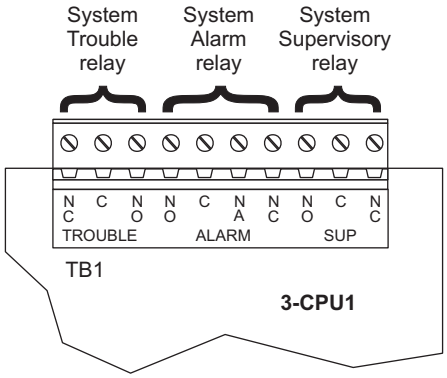


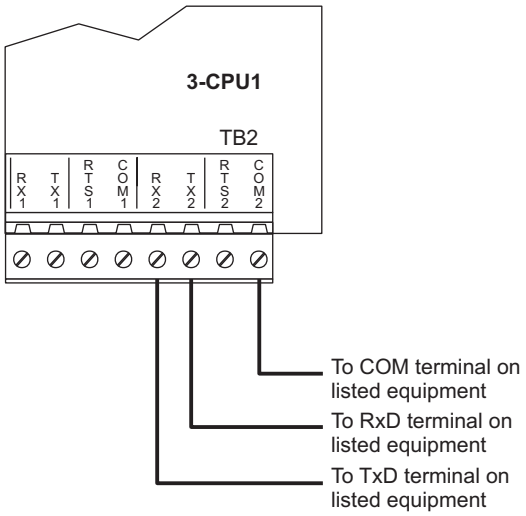
Figure-6: Common relay wiring

RS-232 serial port connections

A 3-CPU1 equipped with a 3-RS232 card can connect to ancillary devices that use RS-232 data communication. TB2 on the 3-CPU1 provides the terminal connections for connecting to the 3-RS232 devices.

The 3-RS232 card provides two independent ports for connecting serial devices.

Note: All serial port wiring is power-limited and not supervised.



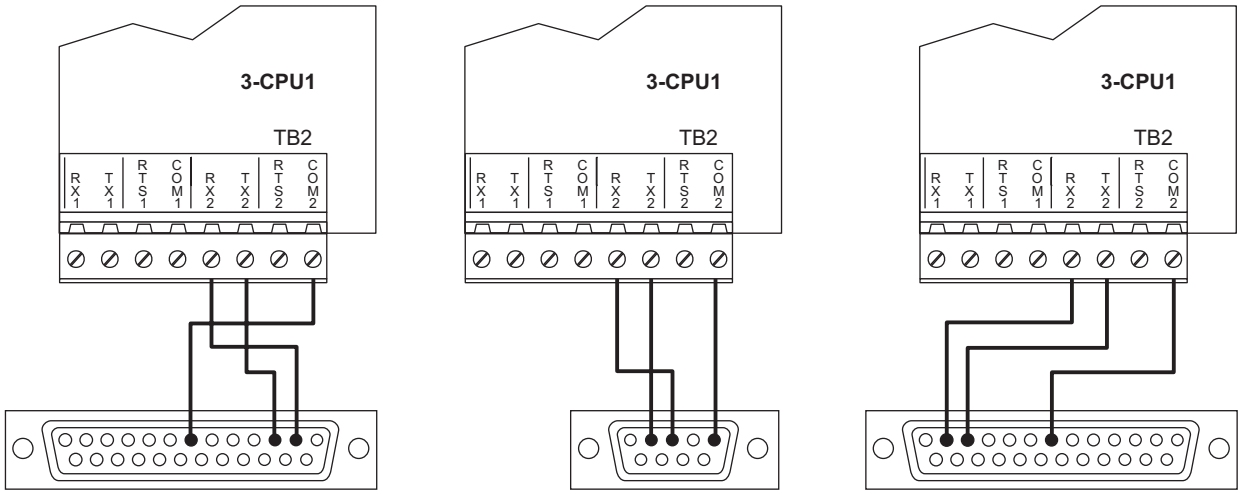


Figure-7: Serial port wiring (requires a 3-RS232 card)

PRODUCT DESCRIPTION

The 3-FIB and 3-FIBA fiber optic communications interface modules are used to connect two 3-CPU1 panel controllers together.

The 3-FIB module provides two supervised Class B (Style 4) fiber optic circuits; one for network data communications and the other for network audio. The 3-FIBA module provides two fiber optic circuits for Class B (Style 4) or Class A (Style 7) network data communications and two fiber optic circuits for Class B (Style 4) or Class A (Style 7) network audio communications.

Note: The 3-FIBA does not provide Class A audio when used with a 3-CPU panel controller module. The 3-FIBA only provides Class A audio when used with a 3-CPU1.

Each fiber optic circuit consists of two 62.5/125 or 100/140 multimode fiber optic cables. The 3-FIB/3-FIBA also supports copper wire connections so the network data and audio communications format can easily be changed to and from copper and optical fiber, as job conditions require.

The fiber optic interface module consists of two cards. The electronics card plugs into the rear of the 3-CPU1 panel controller. The electronics card is connected to the fiber card by a ribbon cable. The fiber card mounts below the 3-CHAS7 chassis. The fiber card provides type ST fiber optic connectors and a secondary power option, permitting communications to flow through the module, even with panel power disconnected. The interface receives and re-transmits network and audio data information. This permits a fiber optic budget of 14dB between any two interfaces. In the event a panel needs to be powered down for service, a 24V battery can be connected to the module to maintain network and audio communications during servicing.

SPECIFICATIONS

Installation
Connector J2 of 3-CPU1. Fiber card mounts on bracket under 3-CHAS7 chassis or on a 3-MPFIB bracket in the 3-CAB5 enclosure.

Fiber Optics (network and audio)

Budget	14dB between 2 interfaces
Cable Type	62.5/125 or 100/140 multimode
Connectors	Type ST

Network Data Circuit

Circuit Configuration	Class B (Style 4) or Class A (Style 7)
Data Rate	9600, 19.2K, 38.4K
Isolation	From "previous" 3-CPU1 using copper, total isolation using fiber optics.

Digitized Audio Data Circuit

Circuit Configuration	Class B (Style 4) Class A (Style 7) only available on 3-FIBA.
Data Rate	327 KB
Isolation	From "previous" 3-CPU1 using copper, total isolation using fiber optics.

Copper Wired Network Data Circuit Segment

Circuit Length	5,000 ft (1,524 m) max. between any three panels
Circuit Resistance	90 Ω, max.
Circuit Capacitance	0.3 μF, max.
Wire Type	Twisted Pair, 18 AWG (0.75 mm^2) min.

Copper Wired Audio Data Circuit

Circuit Length	5,000 ft (1,524 m) max. between any three panels
Circuit Resistance	90 Ω, max.
Circuit Capacitance	0.09 μF, max (includes shield capacitance, if required)
Wire Type	Twisted pair, 18 AWG (0.75 mm^2) min.

Current Rating

Standby	105 mA (both models)
Alarm	105 mA (3-FIB) 110 mA (3-FIBA)

WARNINGS

This product contains components which are sensitive to static electricity. Failure to follow proper handling procedures to prevent damage from electrostatic discharge may result in equipment failure.

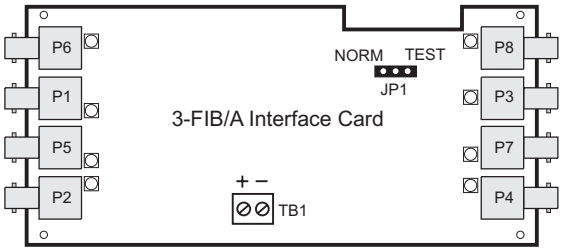
NOTES

1. All wiring and fiber optic cable are supervised.
2. All wiring is power limited.

FIBER TESTING

To test the fiber optic connection, place JP1 in the TEST position. The 3-FIB/3-FIBA will transmit a constant signal which can be used for fiber optic budget measurements and troubleshooting. Return JP1 to the NORM position when testing is finished.

3-FIB/3-FIBA



Note: P7 and P4 on 3-FIBA only

INSTALLATION SHEET:

3-FIB/3-FIBA
Fiber Optic Communications Interface Module

INSTALLATION SHEET P/N: 387333	FILE NAME: 387333.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Munn
DATE: 29JAN99	CREATED BY: G. Sutton

A UNIT OF GENERAL SIGNAL
GS BUILDING SYSTEMS CORPORATION

GS BUILDING SYSTEMS CORPORATION

6411 Parkland Drive
Sarasota, FL 34243
USA

625 6th Street East
Owen Sound, Ontario
Canada N4K 5P8

INSTALLATION INSTRUCTIONS

Refer to Figure 2. Connect one end of the ribbon cable (4) to connector J2 on the 3-FIB/A electronics card (2) using the end of the ribbon cable which allows the cable to exit at a right angle to the board as shown in the inset in Figure 1. Install the 3-FIB/A electronics card in J2 of the 3CPU1 (1). The card should be firmly seated in its connector, then secured to the 3-CPU1 controller board by pressing the snap rivet (3) on the front side of the controller. Route the ribbon cable to the bottom of the chassis.

To install the 3-FIB/A in a 3-CHAS7, mount the 3-FIB/A interface card (5) on its mounting bracket (6), on the four standoffs (7) provided. Connect the free end of the ribbon cable from J2 of the 3-CPU1 to J1 on the 3-FIB/A interface card. Place jumper JP1 in the NORM (normal) position.

Refer to Figure 3. Mount the bracket (2) on the two board mounting studs (1) located at the bottom of the chassis. The top of the bracket fits in the slot at the bottom of the lower rail extrusion (3), as detailed in the inset.

To install the 3-FIB/A in a CAB5 enclosure, snap the 3-FIB/A interface card (5) on the 3-MPFIB mounting bracket (8) studs. Connect the free end of the ribbon cable from J2 of the 3-CPU1 to J1 on the 3-FIB/A interface card. Place jumper JP1 in the NORM (normal) position. Mount the bracket (8) on the two interface mount studs located on the right side of the CAB5 enclosure, under the rails.

Figure 1

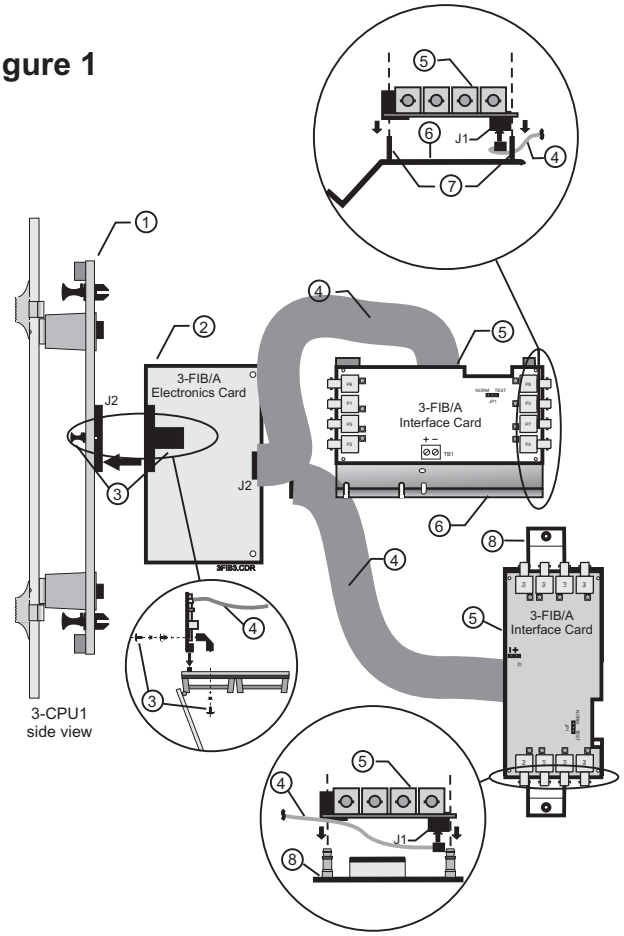


Figure 2

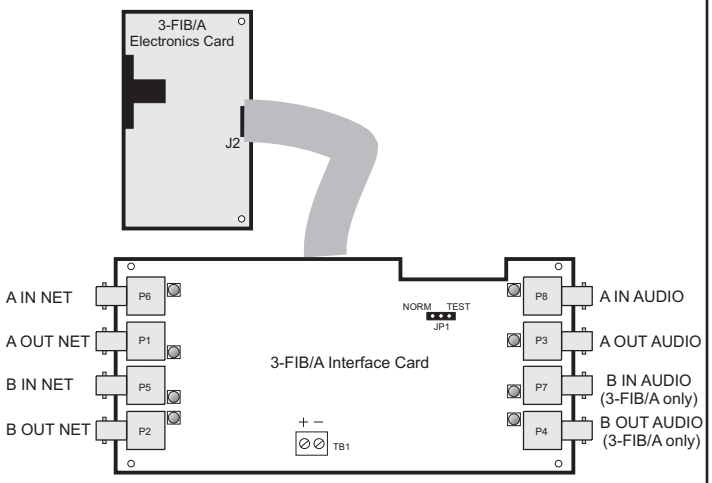
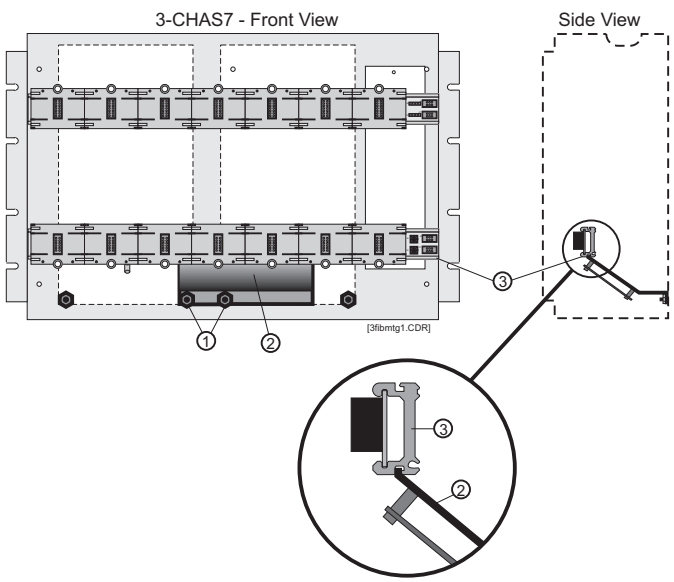
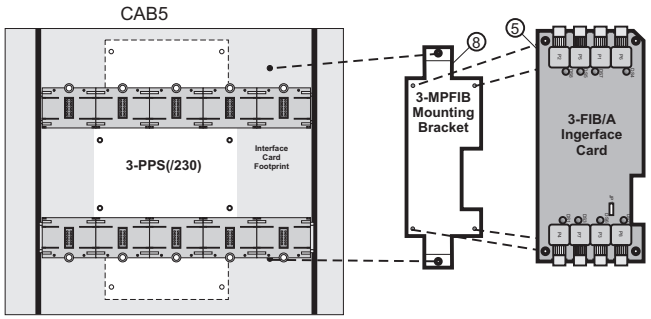


Figure 3





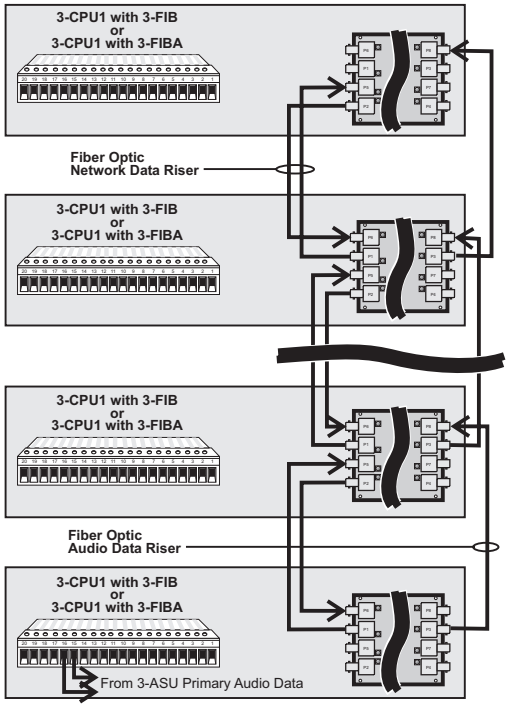


Figure-4A: 3-FIB(/A) Class B Network and Audio Fiber Optic Connections

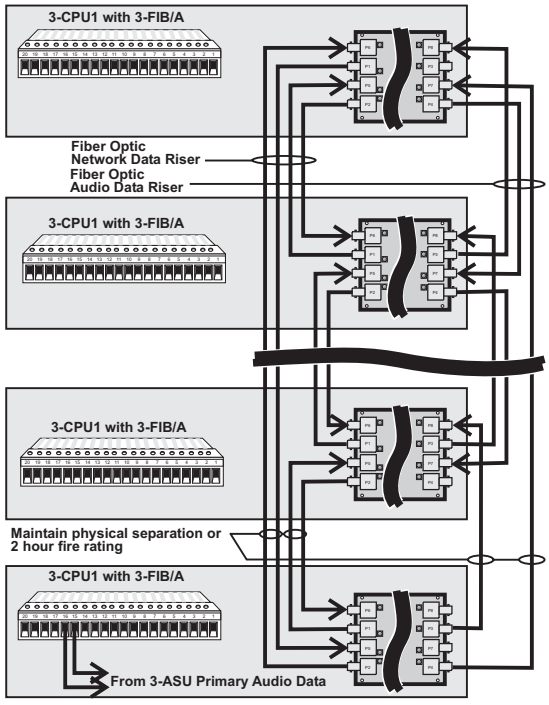


Figure-4B: 3-CPU1 Class A Network and Audio Fiber Optic Connections

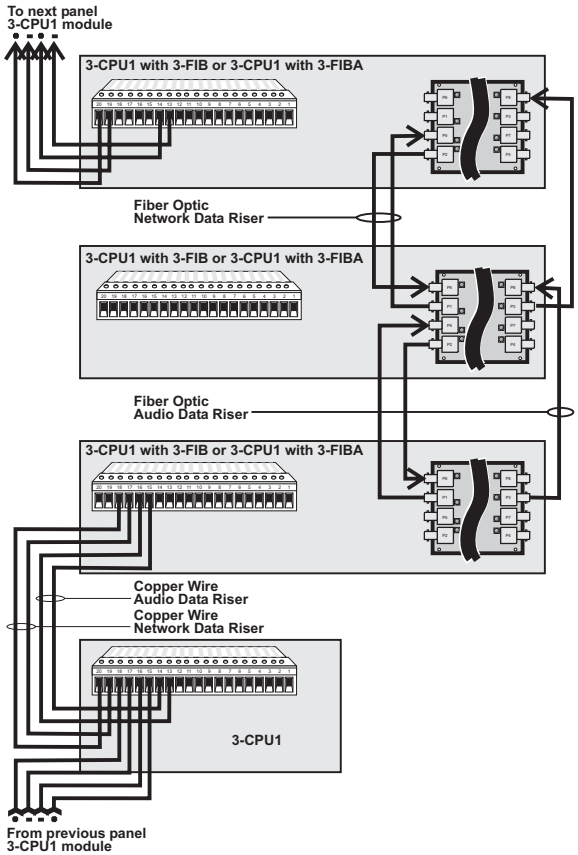


Figure-4C: Class B Hybrid Fiber Optic/Copper Wire Network and Audio Connections

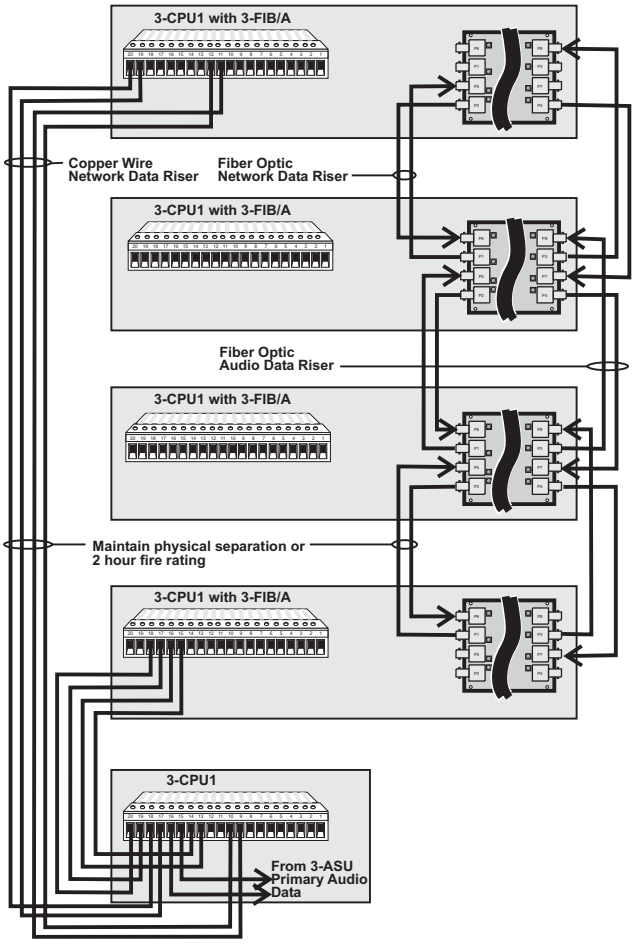


Figure-4D: 3-CPU1 Hybrid Fiber Optic/Copper Wire Network and Class A Fiber Optic/Copper Wire Audio Connections

PRODUCT INFORMATION

The Traditional Zone module provides eight Class B (Style B) traditional direct connect Initiating Device Circuits (IDC) for compatible 2-wire smoke detectors and dry contact initiating devices. Four of the eight IDCs may be converted to Class B (Style Y) Notification Appliance Circuits (NAC). Each pair of NAC circuits may be configured to provide a 24 VDC or signals from an external source for audio and telephone applications.

Each IDC may be set for latching/non-latching operation and verified/non-verified operation. Each IDC can support up to 30 model 6270B photoelectric smoke detectors or 50 model 6250B ionization detectors. Each NAC is rated at 24 VDC @ 3.5 A or 70 Vrms @ 100 W. 24 VDC power for the notification appliances is available directly from the rail chassis. NOTE: Each NAC pair is limited to a total of 3.5 A per two circuits. When the rail chassis is used as the 24 VDC source, the module is limited to a 7 A total current draw. Input terminals are provided to supply the external signal source.

The Traditional Zone module requires one connection on the rail chassis and is secured to the assembly using snap rivet fasteners. All field wiring connections to the Traditional Zone module are made via plug-in connectors, permitting termination of field wiring without the module installed in the enclosure. The plug-in connectors and snap rivet mounting also facilitate rapid remove and replace troubleshooting without the use of tools. The module features a hinged front panel for mounting displays or a blank protective faceplate.

SPECIFICATIONS

Installation	1LRM space on the rail chassis
Module Configuration	8 Initiating Device Circuits, 4 of which are convertible to Notification Appliance Circuits
Initiating Device Circuit (IDC)	
Wiring Configuration	Class B (Style B)
Detector Voltage	16.23 to 25.4 Vdc, Max. ripple 400 mV
Short Circuit Current	75.9mA Max.
Circuit Resistance	50Ω Max.
Capacitance	100 μF Max.
EOL Resistor	4.7KΩ
Detector Load	Refer to compatibility listings in the EST3 Installation and Service Manual (P/N 270380)
Notification Appliance Circuit (NAC)	
Wiring Configuration	Class B (Style Y)
Voltage	24 Vdc Nominal, 70 Vrms Max.
Current	3.5A @ 24 Vdc
Power	60 W @ 25 Vrms 100 W @ 70 Vrms
EOL Resistor	15 KΩ
Maximum Wire Size	12 AWG (2.5 mm^2)
Termination	Removable plug-in terminal strips on module
Current Requirements (does not include LED/Switch module on NAC)	
Standby	50 mA @ 24 Vdc
Alarm	330 mA @ 24 Vdc
Operating Environment	
Temperature	32°F (0°C) to 120°F (49°C)
Humidity	93% RH, non-condensing

INSTALLATION

If a Control/LED Display is required on this module, mount it in the recess on the front of the module. Secure the display to the module with the four supplied plastic rivets. Connect the display ribbon cable (P/N 250186) from connector J1 on the display to connector P1 on the module.

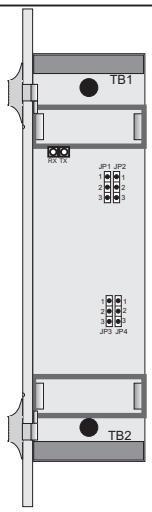
The 3-IDC8/4 has four dedicated Class B Initiating Device Circuits (IDCs) labeled IDC3 & IDC4, and IDC7& IDC8. The module also has two pairs of configurable Class B circuits. IDC/NAC1/2 and IDC/NAC5/6 are configurable as either two Initiating Device Circuits or two Notification Appliance circuits (NACs). When configured as NACs, circuits IDC/NAC1 and IDC/NAC2 share a common signal source. When configured as NACs, circuits IDC/NAC5 and IDC/NAC6 share a common signal source. Two jumpers on the module select the signal source for each pair of NACs. Set jumpers JP1, JP2, JP3, & JP4, then install the module on the rail. The jumpers have no effect when IDC/NAC circuits are used as input circuits.

Before connecting the Traditional I/O Zone Module to the field wiring, test the field wiring. When a circuit checks out properly, connect it to the appropriate terminals. Polarity for NAC circuits is indicated for normal monitoring of the circuit's electrical integrity.

TB1 and TB2 are removable for ease of wiring. All wiring is power limited and should be routed through the notches at the right front of the chassis.

Close the module display door. Latch the door by sliding the upper latch up and the lower latch down.

3-IDC8/4



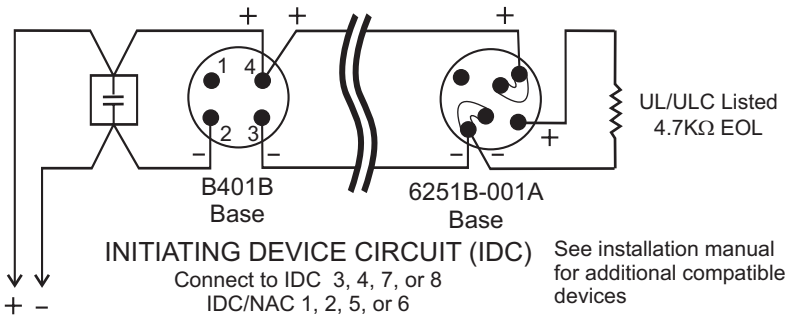
INSTALLATION SHEET:

3-IDC8/4
Traditional Zone I/O Module

INSTALLATION SHEET P/N: 270492	FILE NAME: 270492.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Becker
DATE: 12/17/98	CREATED BY: D. Miner

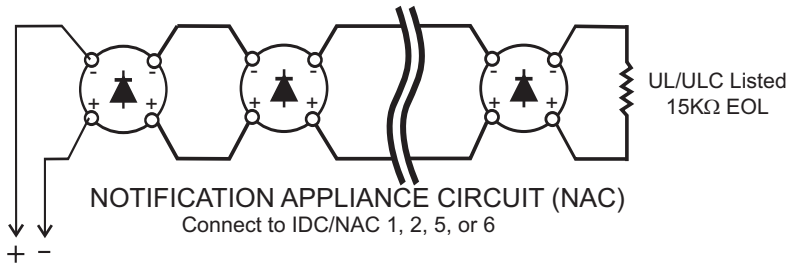
EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

WIRING

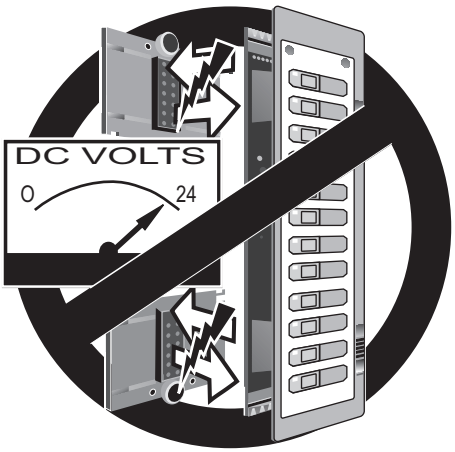


INITIATING DEVICE CIRCUIT (IDC)
Connect to IDC 3, 4, 7, or 8
IDC/NAC 1, 2, 5, or 6

See installation manual for additional compatible devices

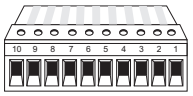


NOTIFICATION APPLIANCE CIRCUIT (NAC)
Connect to IDC/NAC 1, 2, 5, or 6

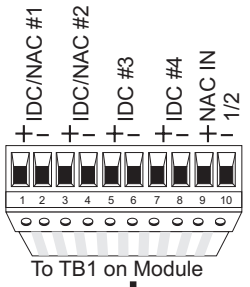


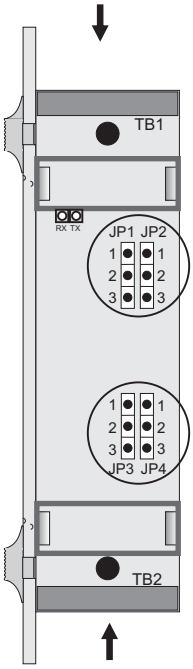
NOTE

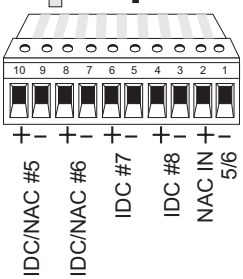
WHEN WIRING MODULE FIELD WIRING PLUG, SCALLOPED EDGE MUST FACE DOWN AND TERMINAL CLAMP SCREWS FACE UP. PINS ARE NUMBERED RIGHT T0 LEFT.



Observe static sensitive material handling practices.







JUMPER SETUP

Circuits	Signal Source	
	External via Terminals	Internal 24 VDC (3.5A max. per NAC pair)
IDC/NAC 1/2	JP1 to 1 & 2 JP2 to 1 & 2	JP1 to 2 & 3 JP2 to 2 & 3
IDC/NAC 5/6	JP3 to 2 & 3 JP4 to 2 & 3	JP3 to 1 & 2 JP4 to 1 & 2

Wiring Notes

1. For maximum wire resistance, refer to the appendix.
2. Maximum #12 AWG (2.5 mm^2) wire; minimum #18 AWG (0.75 mm^2).
3. Shields (if used) must be continuous and free from Earth Ground.
4. IDC/NACs 1 & 2 share the same input source. Set both JP1 & JP2 to 1/2 for the external source (TB1-9 & 10). Set JP1 & JP2 to 2/3 for the internal 24 VDC source. NOTE: There is a 3.5 amp total limit for both NAC1 and NAC2. External sources must be power limited.
5. IDC/NACs 5 & 6 share the same input source. Set both JP3 & JP4 to 2/3 for the external source (TB2-1 & 2). Set JP3 & JP4 to 1/2 for the internal 24 VDC source. NOTE: There is a 3.5 amp total limit for both NAC5 and NAC6. External sources must be power limited.
6. All wiring is supervised and power limited.
7. Polarity shown in supervisory mode.

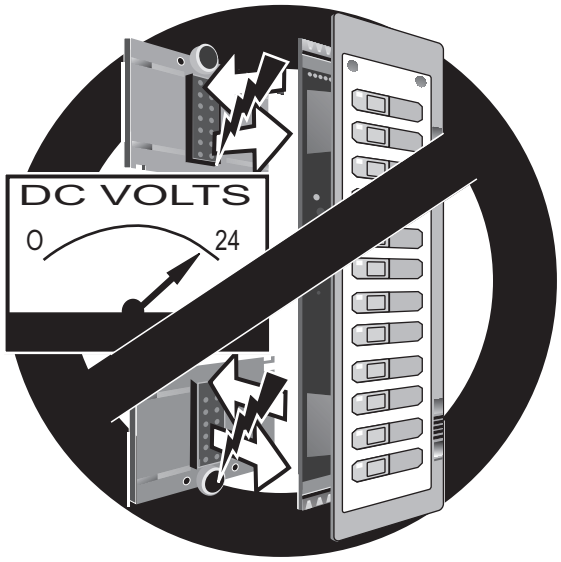
PRODUCT INFORMATION

The 3-LDSM LED Display Support Local Rail Module provides the circuitry required to operate a Control/LED display when the cabinet does not have enough modules installed on a rail chassis to support the number of displays required.

INSTALLATION

1. Mount the Control/LED Display in the recess on the front of the module.
2. Secure the display to the module with the four supplied plastic rivets.
3. Connect the display ribbon cable (P/N 250186) from connector J1 on the display to connector J1 on the module.
4. Install the module on the rail.
5. Close the module display door. Latch the door by sliding the upper latch down, and the lower latch up.

Observe static sensitive material handling practices.

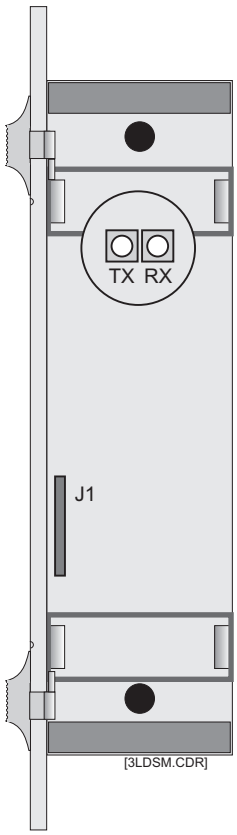


SPECIFICATIONS

Installation
1 LRM space

Operating Environment
32°F to 120°F (0°C to 49°C)
93% RH, non-condensing

3-LDSM



INSTALLATION SHEET:

3-LDSM
LED Display Support Local Rail Module

INSTALLATION SHEET P/N: 270485	FILE NAME: 270485.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Becker
DATE: 06/14/99	REVISED BY: D. Miner

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

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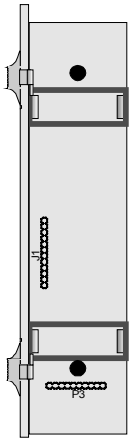
3-MODCOM, 3-MODCOMP Modem Communicator

Product description



The Modem Communicator (MODCOM) is designed with modem and dialer capabilities. The MODCOM is used for downloading information from remote sites.

The MODCOM is designed with dialer communication capabilities. It sends alarm, supervisory, and trouble information to a remote site using one or two telephone lines (two per NFPA 72). This information can be reported in dual or split format for sending to any desired receiver.

The MODCOMP is designed with pager interface communication capabilities. Information is sent to remote sites like the MODCOM, but can also be sent to individual predefined pagers.

Multiple MODCOMs can be used in a cabinet and in a network environment. Every 24 hours, the MODCOM performs an automatic test call to verify communications between the fire alarm panel and the Central Monitoring Station (CMS).

Specifications

All MODCOMs
Input power: 60 mA (supervisory), 95 mA (active)
Mounting: One expansion slot
Phone line: One/two loop start line on public switched telephone network, pulse, or DTMF dialing. (Party, ground start, and PBX lines are not acceptable.)
Wall connector: Standard RJ31X or RJ38X phone jack
Line supervision
- Trouble when: On-hook line voltage < 10 V
- Off-hook current < 10 mA

Telco compliance: Communications Canada CS-03, FCC/CFR 47 Part 68
Operating environment
- Temperature: 32 to 120 °F (0 to 49 °C)
- Humidity: 0 to 93% RH (Non-condensing)

FCC registration number: EDWUSA-47115-AL-E

3-MODCOM
Modem: V.32 bis 14.4 K baud
Dialer communication protocols
- 3/1, 4/2 format: 20 pulse/round 3/1 and 4/2 double round
- Contact ID: DTMF format
- SIA DCS: 300 baud
- Dialing retries: Programmable
- CMS telephone numbers: 80, 25-digit numbers

3-MODCOMP
All 3-MODCOM specifications apply, plus the following.
Pager interface communication protocol
- TAP: Telelocator Alphanumeric Protocol for pagers

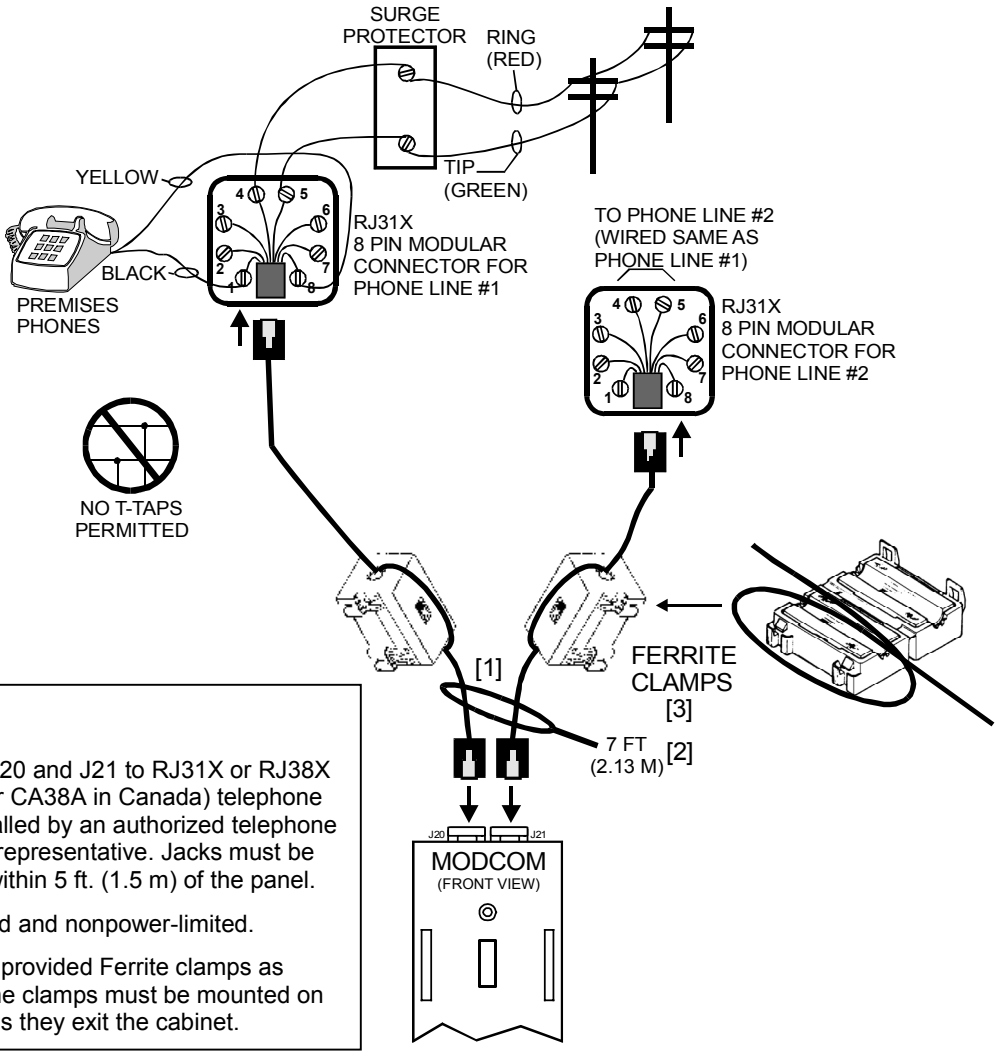
Installation instructions

1. Install a display faceplate in the recess on the front of the module if needed. Refer to the Control/LED Displays installation sheet P/N 270493 for more information.
2. Mount the MODCOM in one space on the rail chassis.
3. Connect phone lines to Line 1 and Line 2 as indicated on the wiring diagram on this sheet.

WARNINGS

1. Remove AC and battery power before installing or removing option modules.
2. Components in this system are static sensitive. Discharge static buildup on your body before handling.
3. The MODCOM does not place calls or monitor the panel or phone line during the programming process.
4. When programming emergency numbers and/or making test calls to emergency numbers:
   a. Remain on the line and briefly explain to the dispatcher the reason for the call.
   b. Perform such activities in the off-peak hours, such as early morning or late evenings.
5. It is up to the installer to verify DACT/receiver compatibility at least once per year.

Wiring diagram



Notes

[1] Connect J20 and J21 to RJ31X or RJ38X (CA31A or CA38A in Canada) telephone jacks installed by an authorized telephone company representative. Jacks must be installed within 5 ft. (1.5 m) of the panel.

[2] Supervised and nonpower-limited.

[3] Install the provided Ferrite clamps as shown. The clamps must be mounted on the lines as they exit the cabinet.

FCC Information

1. The dialer complies with Part 68 of the FCC rules. The dialer's FCC certification number and Ringer Equivalence Number (REN) must be seen from the front. This information must be provided to the telephone company if requested.
2. An FCC compliant telephone cord and modular plug cord is supplied with the dialer. The dialer is designed to be connected to the telephone network using the supplied cord and an RJ31X or RJ38X jack, which must also comply with FCC Part 68 rules.
3. The REN is used to determine the quantity of devices, which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed five (5). To be certain of the number of devices that may be connected to a line as determined by the total RENs, contact the local telephone company.
4. If the dialer causes harm to the telephone network, the telephone company will notify you an advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify you as soon as possible. You will also be advised of your right to file a complaint with the FCC, if you believe it is necessary.
5. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the dialer. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.
6. If trouble is experienced with the dialer, for repair or warranty information, contact GS Building Systems Corp., 6411 Parkland Drive, Sarasota, Florida 34243 USA. If the dialer is causing harm to the telephone network, the telephone company may request you disconnect the dialer until the problem is resolved.
7. No repairs may be performed on the dialer by the user.
8. The dialer can not be used on public coin phones or party line service provided by the telephone company.

Industry Canada Information

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Industry Canada does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: The Load Number (LN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Load Numbers of all devices does not exceed 5.

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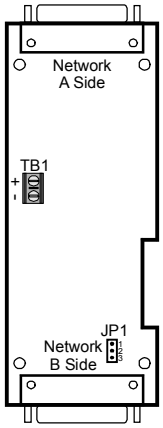
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

3-NSHM1(2)
Network Short Haul Modem

Product description



The NSHM short haul modems provide long distance network communication between nodes, typically using existing telephone conductors.

The NSHM1 provides a single short haul modem and converts the signal to RS-485 format for network connections to additional network nodes. The NSHM2 provides two short haul modems for use when two short haul modems are required for connections to additional network nodes.

Notes

1. Because short haul modems are not compatible with RS-485 connections, two modems must be used; one connected to each panel.
2. A Ground Fault Detector (model GFD) must be used with this product.

Each short haul modem circuit consists of one or two pairs of twisted pair cable. Network wiring can be installed as Class A or Class B, depending on the installation.

The NSHM1 also supports RS-485 connections. This permits network data communications format changes from short haul modem connection to RS-485 and from RS-485 to a short haul modem connection.

The short haul modems provide a network connection test, making the use of a separate signal source unnecessary. This reduces setup and troubleshooting time.

Note: The short haul modems do not transmit digitized audio signals between nodes, and they do not support annunciator panels. The NSHM does support network audio over RS-485 connections at the CPU1.

Parts list

- 3-NSHM1(2)
- Ribbon cable
- Modem(s)
- Battery connection wire
- 3-MPFIB

Specifications

Agency listings: UL
Installation: Interface Adapter connects to J2 on the CPU1, Modem card mounts on MPFIB on CHAS7 or CAB5 enclosure
Network data circuit
  Configuration: Class B or Class A
  Data rate: 19.2 Kb, or 38.4 Kb
  Isolation: Isolated from “previous” CPU1
RS-485 circuit
  Circuit length: 5,000 ft (1,524 m) max. between any three panels
  Circuit resistance: 90 Ω maximum
  Circuit capacitance: 0.3 μF maximum
  Wire type: Twisted pair, 18 AWG (0.75 sq mm) minimum
Test functions: Remote digital loopback (refer to the Installation and Service manual)
Power consumption Supervisory or Alarm
  NSHM1: 90 mA @ 24 Vdc,
  NSHM2: 100 mA @ 24 Vdc
Operating environment
  Temperature: 32 °F (0 °C) to 120 °F (49 °C)
  Humidity: 93% RH, non-condensing

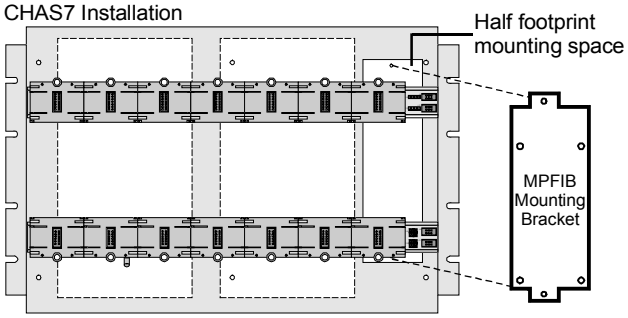
Short haul modem circuit maximums			
	19 AWG	**24 AWG**	**26 AWG**
Resistance	16.3 Ω/1000 ft (53.5 Ω/km)	51.64 Ω/1000 ft (169.5 Ω/km)	82.35 Ω/1000 ft (270.2 Ω/km)
Capacitance	83 nF/mi [15.72 pF/ft] (151.6 nF/km)	83 nF/mi [15.72 pF/ft] (151.6 nF/km)	83 nF/mi [15.72 pF/ft] (151.6 nF/km)
Distance @ 38.4 Kb @ 19.5 Kb	 6 mi (9.7 km) 9 mi (14.5 km)	 3.5 mi (5.6 km) 5 mi (8 km)	 2 mi (3.2 km) 3 mi (4.8 km)

Installation instructions

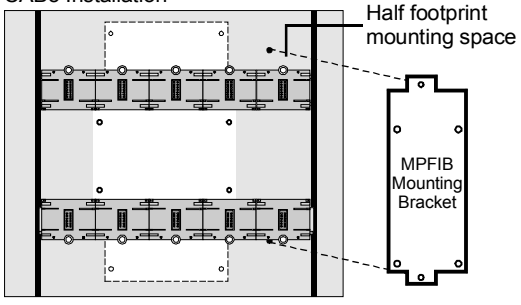
WARNING: Power down the panel before proceeding with the installation and wiring instructions.

Step 1: Mount the MPFIB bracket

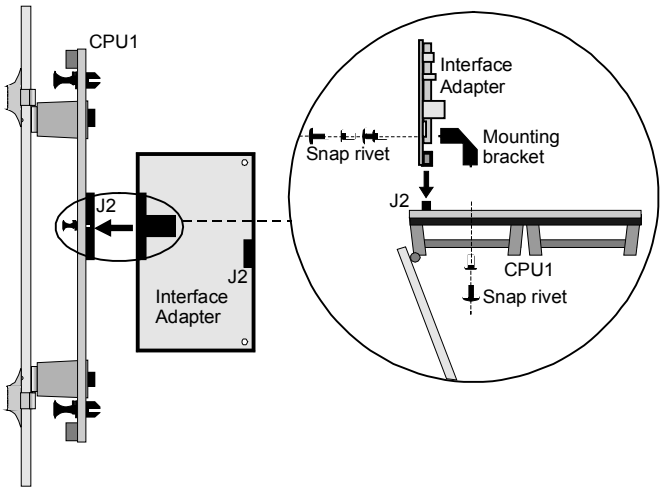
CHAS7 Installation



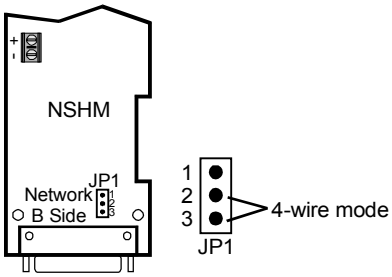
CAB5 Installation



Step 2: Mount the Interface Adapter to the CPU1

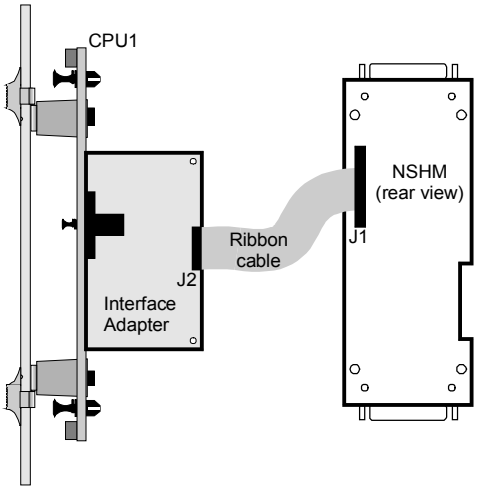


Step 3: Set the jumper on the NSHM



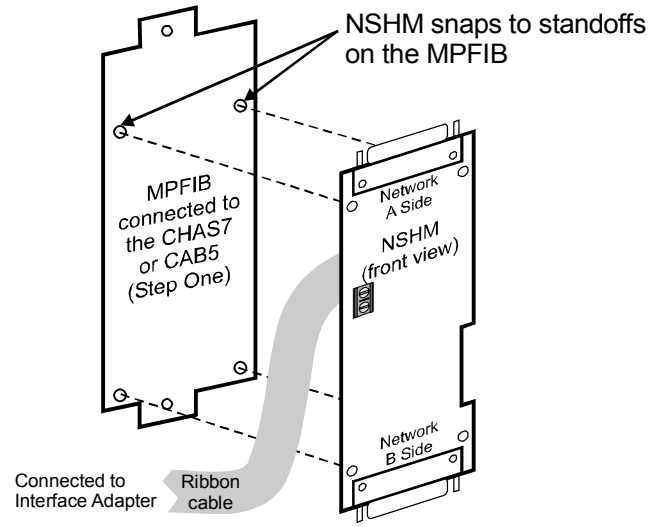
Note: This setup configures the wiring of the modem. The jumper configures BOTH modem (DB25) connections on the NSHM.

Step 4: Connect the ribbon cable from J2 on the Interface Adapter to J1 on the NSHM



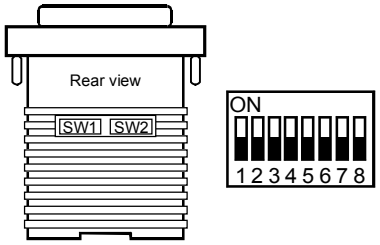
Step 5: Mount (snap) the NSHM to the MPFIB mounting bracket

Note: The ribbon cable must be connected before completing this step.



Step 6: Set up the modem

DIP switch SW1 and SW2 must be set up prior to installation. The following tables show the proper switch positions.



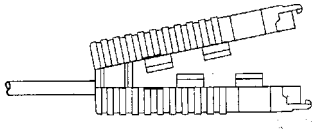
SW1								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Data rate 19.2 Kbps 38.4 KBps	 On On	 On On	 On Off	 Off Off	 On On	 On On	 On On	
Carrier 4-wire constantly ON								Off

SW2								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Operation 4-wire full-duplex	Off	Off	Off	On	On	On	Off	Off

Step 7: Wire the modem(s)

1. Open the unit with a screwdriver. Do not insert the screwdriver more than 1/4 in (0.6 cm) into the enclosure.

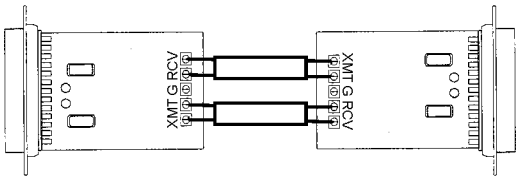
   The terminal block is located at the back of the unit.



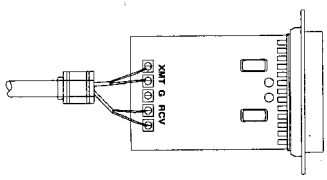
2. Strip and prepare wire for installation.
3. 4-Wire installation:

   Note: Observe wiring polarity between modems. The G (shield) connection is optional.

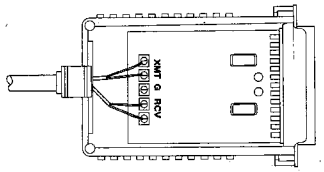
Modem 1 wiring		Modem 2 wiring	
XMT (transmit)	→	RCV (receive)	} One pair
XMT (transmit)	→	RCV (receive)	
RCV (receive)	→	XMT (transmit)	} One pair
RCV (receive)	→	XMT (transmit)	



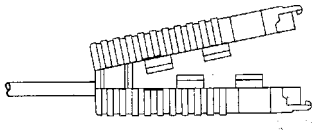
4. Place the two halves of the strain-relief assembly on both sides of the cable and press together lightly. Slide the assembly to about 2 in. (5.1 cm) from the terminal posts and press together firmly.



5. Place the modem in the bottom half of the modem case, and insert the strain-relief assembly into the slot in the bottom of the case.



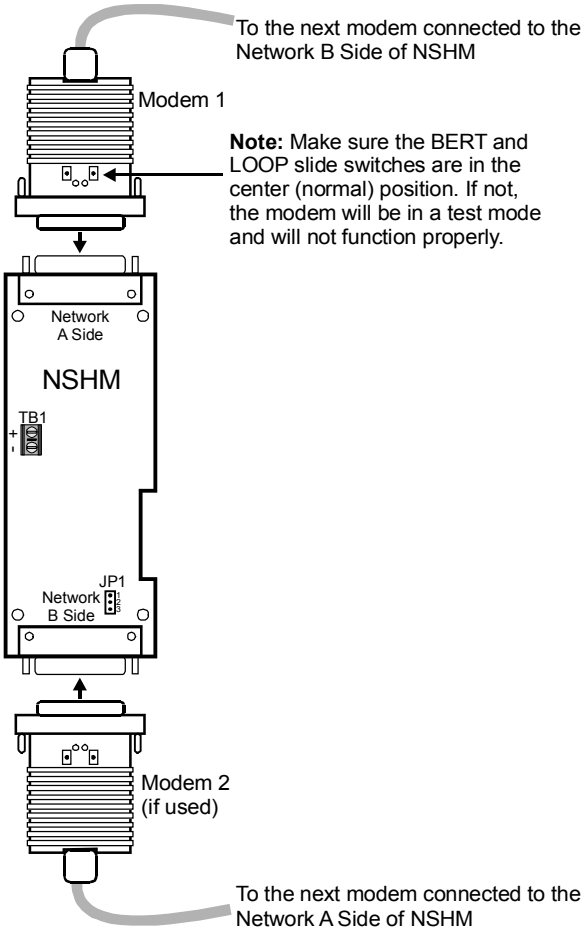
6. Insert the captive screws through the saddle washer, then insert the screw and washer through the holes in the DB25 end of the case.
7. Attach the top of the case.



Step 8: Connect the modem(s)

Important

1. When connecting the NSHM to a CPUx using the Class A Network connection on TB2, you must connect the modem to the Network B side on the NSHM.
2. When connecting the NSHM to a CPUx using the Class B Network connection on TB2, you must connect the modem to the Network A side on the NSHM.



Wiring diagrams

Notes

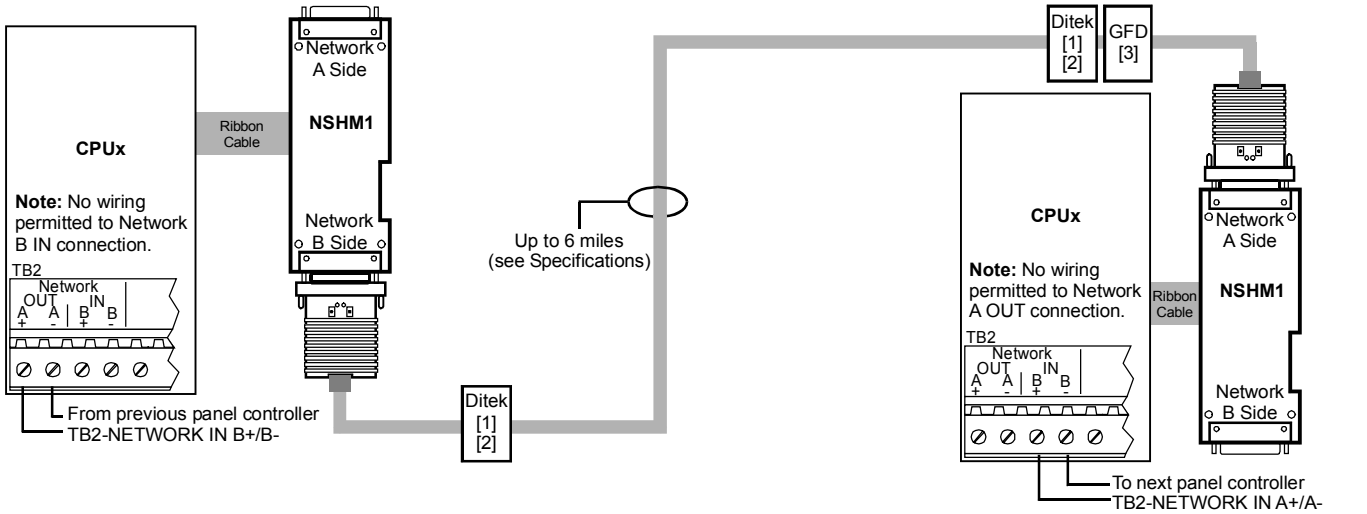
The following notes apply to all wiring diagrams in this topic.

[1] Ditek Module (#DTKD2LVLP) must be used if wiring is between buildings.

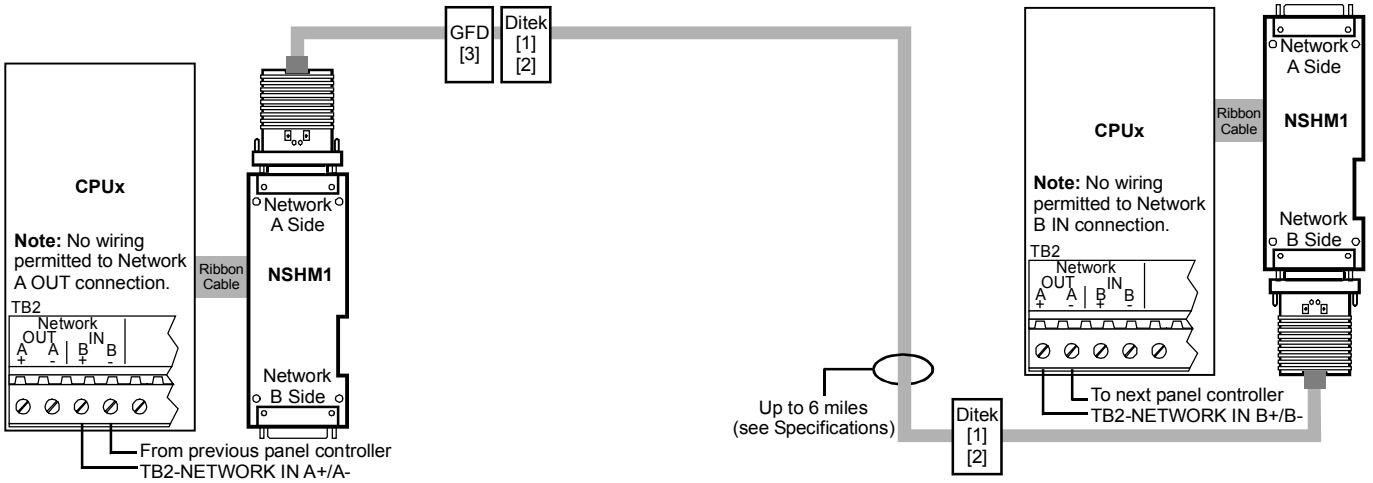
[2] Each Ditek module adds 8 ohms of resistance to the line.

[3] Ground Fault Detector (model GFD) must be used, refer to installation sheet P/N 387630.

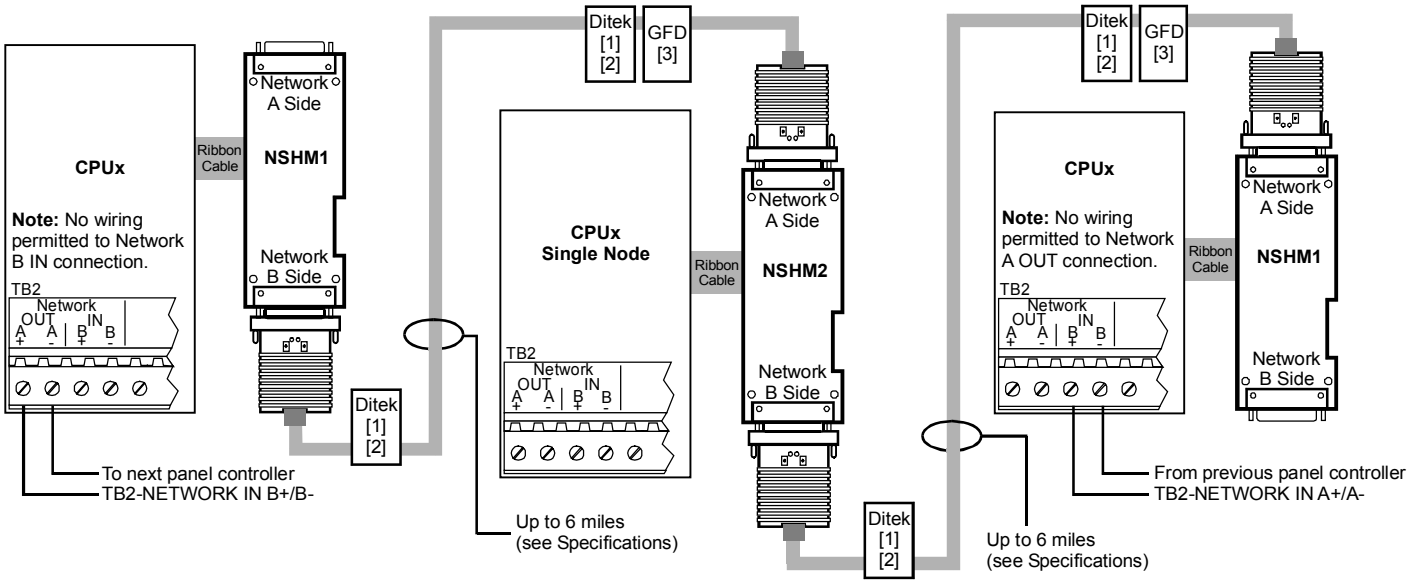
Network B to A wiring using the NSHM1



Network A to B wiring using the NSHM1



Network wiring using the NSHM2



PRODUCT INFORMATION

The Off Premise Signaling module provides three independent reverse polarity circuits for transmitting alarm, supervisory, and trouble signals to compatible receivers. Reversing a circuit's polarity indicates an active alarm condition; loss of circuit continuity indicates circuit trouble. As an alternate to three independent circuits, the reverse polarity alarm circuit may be configured to transmit panel trouble by removing circuit continuity, when using a compatible single circuit reverse polarity receiver. A supervised local energy master box trip circuit is also provided to activate a 14.5-ohm master box trip coil. A configurable NO/NC trouble contact is provided on the module.

The 3-OPS module requires one connection on the rail chassis and is secured to the assembly using snap rivet fasteners. All field wiring connections to the 3-OPS module are made via plug-in connectors, permitting termination of field wiring without the module installed in the enclosure. The plug-in connectors and snap rivet mounting also facilitate rapid remove and replace trouble shooting without the use of tools. The module features a hinged front panel for mounting displays or a blank protective faceplate.

TROUBLE RELAY/JUMPER SETUP

Contact Configuration (system normal)	Jumper JP1 Setting
Closed	2/3
Open	1/2

Trouble Relay Operation:

3 circuit and local energy configurations: independant of alarm

1 circuit configuration: remains closed during alarm

INSTALLATION

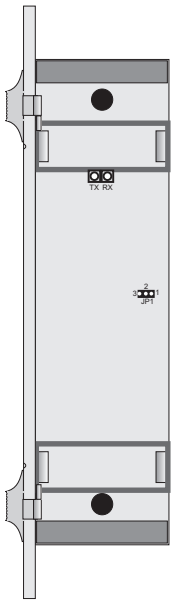
1. Set jumpers as required.
2. Install a display or blank faceplate on the front of the module.
3. Mount the 3-OPS module to one connection on the rail chassis.
4. Install the provided snap rivet fasteners.
5. Install all wiring using the wiring diagram on this sheet.

SPECIFICATIONS

Installation	1 space on the rail chassis
Circuit Configuration:	
Reverse Polarity	3 independent reverse polarity circuits for alarm, supervisory, and trouble notification
Local Energy	14.5-ohm coil
Maximum Wire Size	12 AWG (2.5 mm^2)
Trouble Relay	NO or NC configuration rated 24 Vdc @ 1 A
Termination	Removable plug-in termination strips on module
Open Circuit Voltage	24 Vdc, nominal
Short Circuit Current	7 mA Max.
Current Requirements (does not include LED/Switch module):	
Standby current	53 mA @ 24 Vdc
Alarm current	147 mA @ 24 Vdc
Operating Environment:	
Temperature	32°F (0°C) to 120°F (49°C)
Humidity	93% RH, non-condensing

Observe static sensitive material handling practices.

3-OPS



INSTALLATION SHEET:

3-OPS
Off Premise Signal Module

INSTALLATION SHEET P/N: 270494	FILE NAME: 270494.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Becker
DATE: 12/17/98	CREATED BY: D. Miner

A UNIT OF GENERAL SIGNAL
GS BUILDING SYSTEMS CORPORATION

GS BUILDING SYSTEMS CORPORATION

6411 Parkland Drive
Sarasota, FL 34243

625 6th Street East
Owen Sound, ON, Canada

WIRING

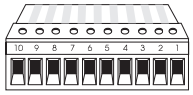
A. Three Reverse Polarity Circuit Configuration

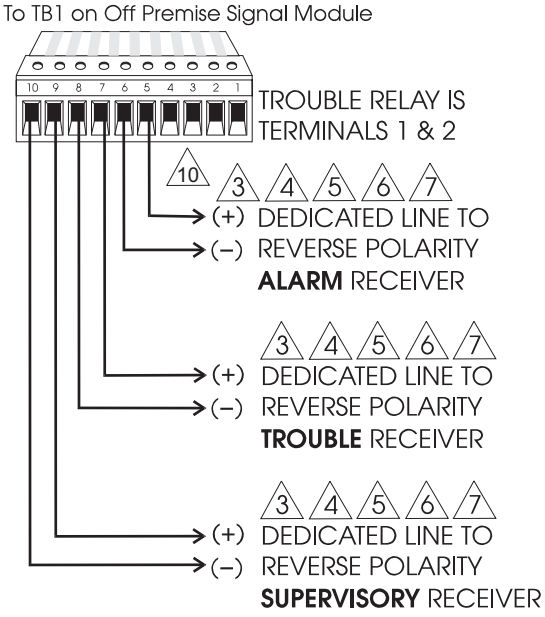
OFF PREMISE SIGNAL MODULE

Observe static sensitive material handling practices.

NOTE

WHEN WIRING MODULE FIELD WIRING PLUG, SCALLOPED EDGE MUST FACE DOWN AND TERMINAL CLAMP SCREWS FACE UP. PINS ARE NUMBERED RIGHT TO LEFT.

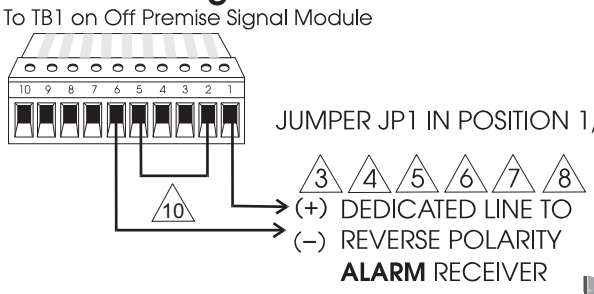




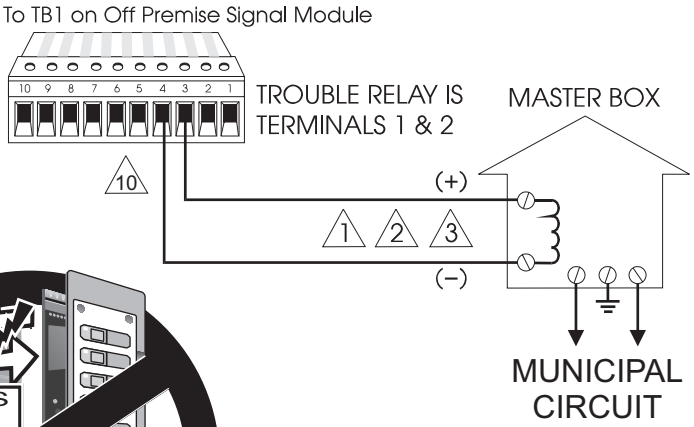
Wiring Notes

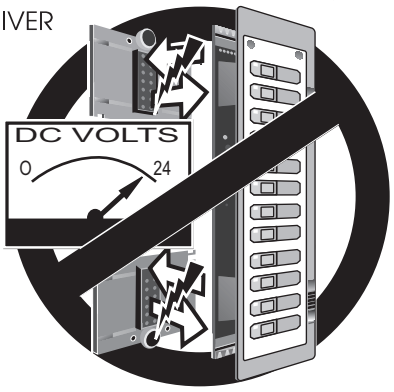
1. 250 mA INTO A 14.5 OHM TRIP COIL. MAX. LOOP RESISTANCE= 25 OHMS.
2. NON POWER LIMITED CIRCUIT IS SUPERVISED FOR OPENS
3. POLARITY SHOWN IN NORMAL STATE.
4. MAXIMUM LINE RESISTANCE 1500 OHMS.
5. CURRENT RANGE IS 2.6 - 9.5 mA.
6. COMPLIES WITH NEMA SB3-1969.
7. POWER LIMITED.
8. USE THE ALARM CIRCUIT WHEN SET IN THE "OLD STYLE" SINGLE CIRCUIT CONFIGURATION.
9. INSTALL UL LISTED SECONDARY PROTECTOR, DITECK MODEL DTK-36VLPSCP ACROSS ALL OUTSIDE WIRING.
10. 15 kohm EOL resistor required across TB1-3 & TB1-4 when 3-OPS is configured as Local Energy Municipal Box AND NOT wired to Municipal Circuit. Remove for all other applications.

B. Single Reverse Polarity Circuit Configuration



C. Local Energy Municipal Box Configuration





PRODUCT DESCRIPTION

3-PPS/M and 3-PPS/M-230 primary power supply

The 3-PPS/M(-230) primary power supply provides the required power and related supervision functions for the panel. The supply is comprised of two major components: the power supply monitor module, model 3-PSMON, which mounts on the rail chassis, and the heat sink assembly, model 3-PPS, which mounts on the rear of the rail chassis. The primary power supply provides filtered, regulated power to power all modules connected to the rail chassis as well as 24 Vdc for auxiliary applications. The primary power supply is rated at 24 Vdc @ 7.0A for all outputs. Two independent, power limited, supervised 24 Vdc, 3.5 A auxiliary power outputs are provided on the primary supply. 24 Vdc auxiliary output is available on plug-in terminals on the primary power supply module. AC power and battery connections are made to fixed terminals on the heat sink assembly, remote from the panel's power limited wiring.

The primary power supply supervises the standby batteries and provides a dual rate constant current battery charger featuring automatic temperature compensation. The charger is capable of charging batteries up to 65 Ah. A battery monitor circuit disconnects the batteries from the system when battery voltage drops below acceptable limits, which prevents memory problems and a total discharge of the batteries.

The power supply checks the ac input source and initiates the automatic transfer to batteries in the event of a brownout or loss of ac power. In the event of a failure of one or more booster power supplies, the primary power supply determines its ability, along with the surviving booster supplies, to supply the load. Should the load ever exceed the ability of the primary and surviving booster supplies to meet the demand, the standby batteries are automatically switched in. The supply will transfer to battery should an overload cause its heat sink temperature to reach a high level.

The 3-PPS/M (-230) offers a comprehensive level of supervision. Dynamic battery load testing periodically disables the battery charger, loads the battery, then monitors the battery voltage over a predetermined time period. Battery failure is annunciated if the battery fails to maintain an acceptable voltage level. Load testing continues periodically, until the battery capacity is sufficient to meet the load test criteria.

The primary power supply monitor module provides the interface between the power supply and the panel making the required data and power connections to and from the rail chassis. The monitor module requires one connection on the rail chassis and is secured to the assembly using snap rivet fasteners. The module features a hinged front panel for mounting displays or a blank protective faceplate.

3-BPS/M and 3-BPS/M-230 Power Supply Booster

The 3-BPS/M(-230) power supply booster module is used to provide additional power over and above the primary power supply. Up to three additional 24 Vdc, 7.0 A power boosters may be added in each enclosure, making a total of 28A available for both internal and external applications. The power supply booster is comprised of two major components: the booster monitor module which mounts on the rail chassis, and the heat sink assembly, which mounts on the rear of the rail chassis. Each booster provides filtered, regulated power to power all modules connected to the rail chassis as well as 24 Vdc for auxiliary applications. Each booster is rated at 24 Vdc @ 7.0 A for all outputs. Two independent, power limited, supervised 24 Vdc, 3.5 A auxiliary power outputs are provided on the booster. The power boosters share a common standby battery with the primary power supply. Each booster supervises its own connection to the battery, however, all battery charging and monitoring is done by the primary power supply. The power supply boosters share the panel's 24 Vdc electrical load with the primary power supply. In the event of a failure of a booster power supply, a trouble is annunciated, and the panel load is distributed among the operational power sources. Should the load ever exceed the ability of the operable power sources to supply the power, as in the event of an alarm, the system will automatically transfer to standby batteries.

The power supply booster monitor module provides the interface between a power supply booster and the panel, making the required data and power connections to and from the rail chassis. The booster monitor module requires one connection on the rail chassis and is secured to the assembly using snap rivet fasteners. The module features a hinged front panel for mounting displays or a blank protective faceplate.

SPECIFICATIONS

3-PPS/M (-230) and 3-BPS/M (-230)

Installation	Heat sink assembly mounts behind chassis rails Monitor module requires one module space
Power Input	120 Vac, -10%, +15%, 3.0 A, 50 - 60 Hz 230 Vac, -10%, +15%, 1.5 A, 50 - 60 Hz (-230 only)
Brownout Level	≤ 102 Vac ≤ 195 Vac (-230 only)
Outputs	
Total	24 Vdc @ 7.0 A, internal and auxiliary outputs
Internal DC	24 Vdc @ 7.0 A max.
Auxiliary DC	Two 24 Vdc @ 3.5 A max. ground fault and short supervised, power limited outputs
Termination	
AC Input	Terminals on heat sink assembly
Batteries	Terminals on heat sink assembly
Internal DC Output	LRM chassis rails via monitor module
Auxilary DC Output	Removable plug-in terminal strips on monitor module
Operating Environment	
Temperature	32 °F to 120 °F (0 °C to 49 °C)
Rel. Humidity	93% RH non-condensing

3-PPS/M and 3-PPS/M-230 only

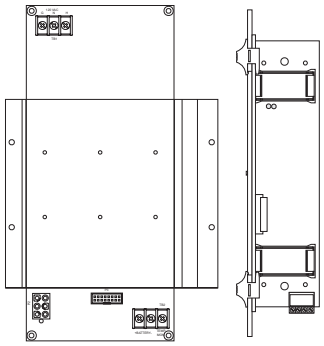
Battery Charging	
Capacity	10 - 65 Amp-hours
Type	Temperature compensated dual rate

Supervision
- Low AC
- Low Battery (≤ 22.5 Vdc)
- High Battery
- Discharged Battery (≤ 18 Vdc)
- Ground Fault (≤ 10 kΩ)

3-BPS/M and 3-BPS/M-230 only

Supervision
- Low AC
- Low Battery (≤ 22.5 Vdc)
- Ground Fault (≤ 10 kΩ)

3-PPS/M (-230) and 3-BPS/M (-230)



INSTALLATION SHEET:

3-PPS/M (3-PPS/M-230) Primary power supplies
3-BPS/M (3-BPS/M-230) Booster power supplies

INSTALLATION SHEET P/N: 270495	FILE NAME: 270495.CDR
REVISION LEVEL: 2.0	APPROVED BY: J.W.
DATE: 25OCT99	CREATED BY: G. Sutton

A UNIT OF GENERAL SIGNAL

GS BUILDING SYSTEMS CORPORATION

GS BUILDING SYSTEMS CORPORATION

6411 Parkland Drive
Sarasota, FL 34243
USA

625 6th Street East
Owen Sound, Ontario
Canada N4K 5P8

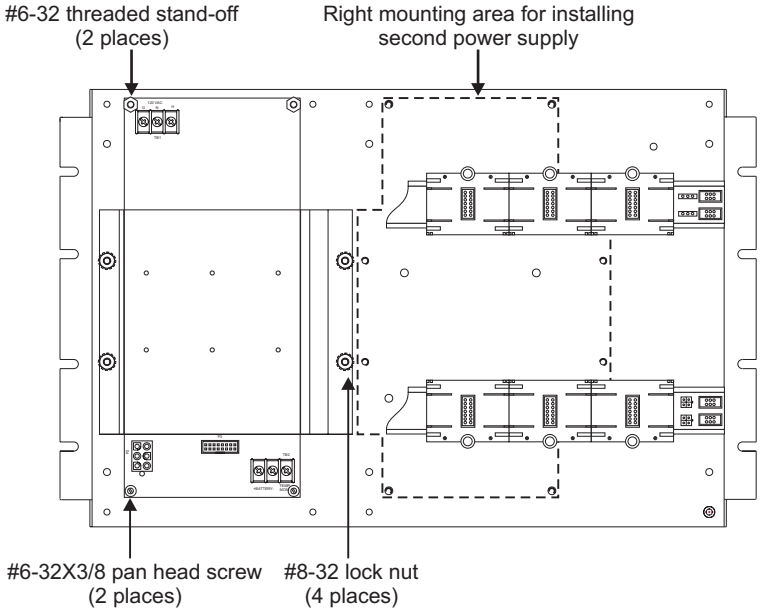
INSTALLATION INSTRUCTIONS

Step I. Mounting the power supply assembly:

1. Position the power supply assembly behind the rails on the rail chassis assembly.
2. Attach the power supply assembly to the 4 threaded mounting studs.
3. Screw the bottom edge of the power supply assembly to the threaded stand-offs on the rail chassis assembly.
4. Secure the top edge of the power supply assembly to the rail chassis assembly using the stand-offs provided in the hardware kit.
5. Screw the power supply cover (not shown) to the stand-offs on the top edge of the power supply assembly.

Notes:

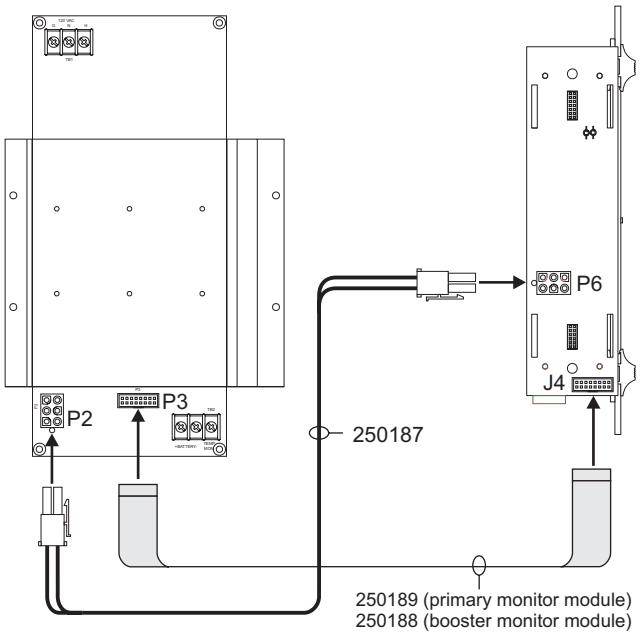
1. The primary power supply must always be mounted in the left mounting position of the chassis containing the panel controller.
2. Monitor modules for power supplies mounted in the left mounting position may only be installed in rail slot position 3. Monitor modules for power supplies mounted in the right mounting position may be installed in rail slot positions 4, 5, or 6.



Caution: This product contains components that are sensitive to static electricity. Failure to follow proper handling procedures to prevent damage from electro-static discharge may result in equipment damage.

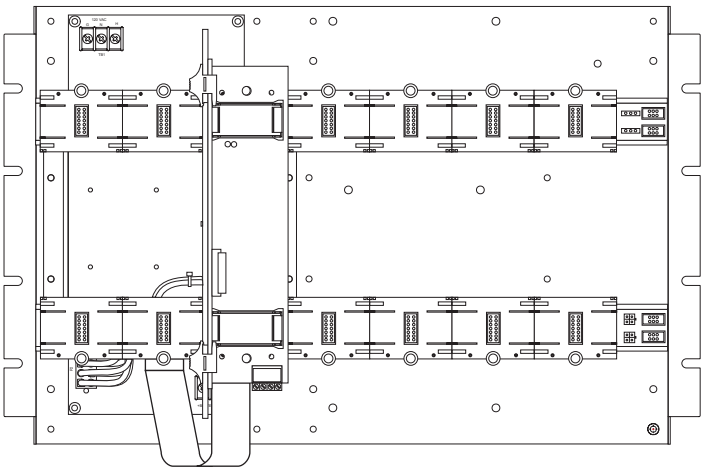
Step 2. Installing the power supply monitor module:

1. Connect the 6-wire cable harness to P6 on the power supply monitor. Push in until the connector clicks.
2. Connect the ribbon cable to J4 on the power supply monitor.
3. Align the power supply monitor to the slot 3 guide posts on the rail chassis assembly.
4. Route the 6-wire cable harness over and behind the bottom rail and connect to P2 on the primary power supply. Push in until the connector clicks.
5. Route the ribbon cable under the bottom rail and connect to P3 on the primary power supply.
6. Slide the module into the slot 3 rail connectors and lock into place using the snap rivet fasteners.



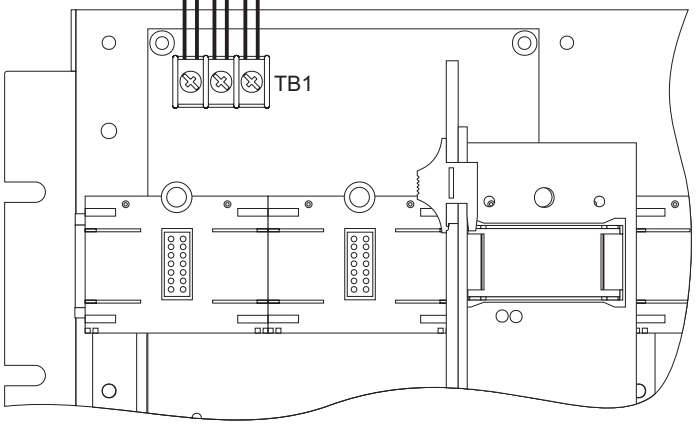
Step 3. Wiring the power supply:

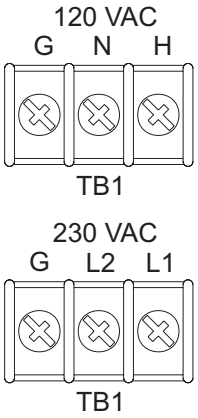
1. Ensure that the mains ac circuit is deenergized. Connect the mains ac conductors to TB1 on the power supply assembly. Refer to Figure-1 on page 3.
2. Connect the standby battery conductors to TB2 on the power supply assembly. Refer to Figure-2 on page 3.
3. If a remote battery cabinet is used, connect the temperature sensor conductor to TB2 on the primary power supply assembly. Refer to Figure-2 on page 3.
4. Connect the 24 Vdc auxiliary power riser conductors to TB1 on the power supply monitor module. Refer to Figure-3 on page 4.



From dedicated mains ac power distribution (if primary power supply) or from previous power supply in same cabinet (if booster power supply)

To next booster power supply in same cabinet





Power supply assembly TB1 terminal designations

WARNING: High voltage levels capable of causing injury or death may be present. Precautionary measures must be taken to ensure that the mains ac circuit is deenergized and prevented from being switched on inadvertently.

Notes:

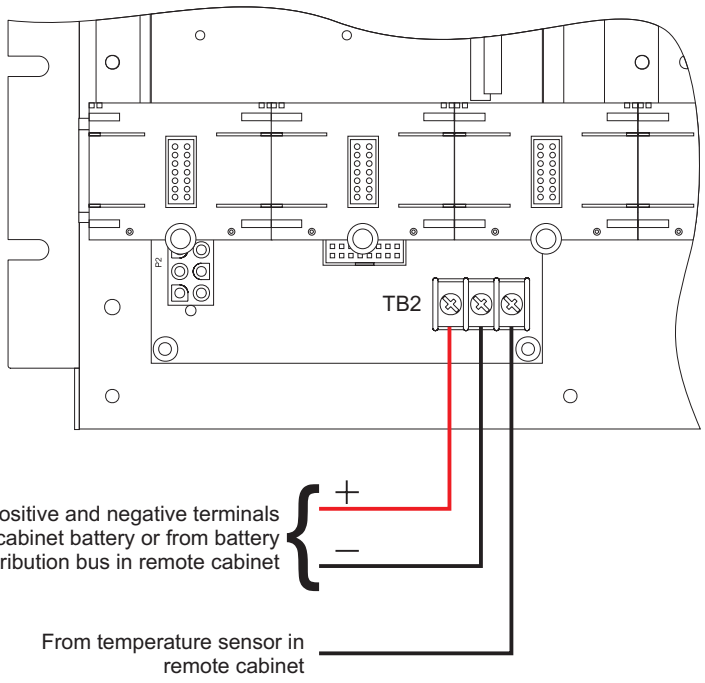
1. Install wiring in accordance with the National Electrical Code and all other local requirements.
2. Up to 4 primary or booster supplies may be connected to a single ac source circuit.

Figure-1: Mains ac wire connections

Caution: Disconnecting the battery from the power supply while the cabinet is deenergized may damage the battery.

Notes:

1. Each power supply shall have its own separate pair of conductors going to the battery.
2. The batteries must already be connected to the primary power supply when the cabinet is energized in order to activate the battery charging circuit.



Power supply assembly TB2 terminal designations

Figure-2: Standby battery wire connections

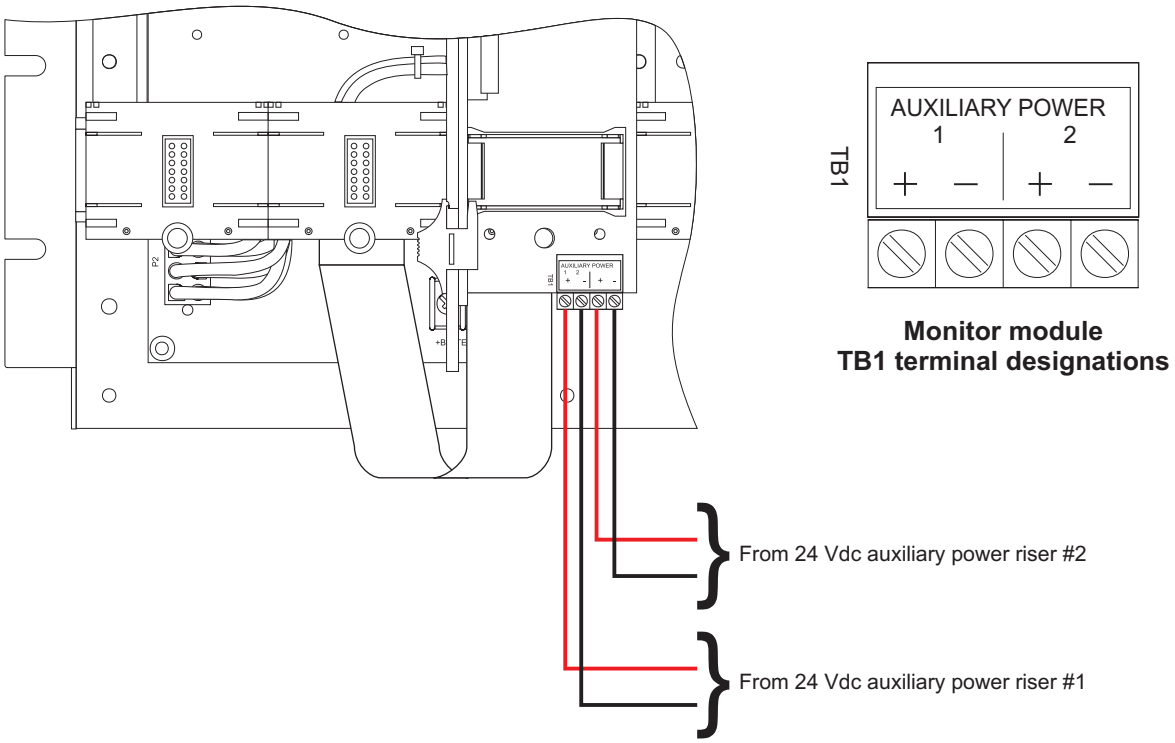


Figure-3: 24 Vdc auxiliary power riser wire connections

PRODUCT DESCRIPTION

3-PPS/M-230-E Primary power supply

The 3-PPS/M-230-E primary power supply provides the required power and related supervision functions for the panel. The supply is comprised of three major components: the power supply monitor module, model 3-PSMON, which mounts on the rail chassis, and the heat sink assembly, model 3-PPS, which mounts on the rear of the rail chassis, and the ac power distribution assembly. The primary power supply provides filtered, regulated power to power all modules connected to the rail chassis as well as 24 Vdc for auxiliary applications. The primary power supply is rated at 24 Vdc @ 7.0A for all outputs. Two independent, power-limited, supervised 24 Vdc, 3.5 A auxiliary power outputs are provided on the power supply monitor module. AC power and battery connections are made to fixed terminals on the heat sink assembly, remote from the panel's power limited wiring.

The primary power supply supervises the standby batteries and provides a dual rate constant current battery charger featuring automatic temperature compensation. The charger is capable of charging batteries up to 17 Ah. A battery monitor circuit disconnects the batteries from the system when battery voltage drops below acceptable limits, which prevents memory problems and a total discharge of the batteries.

The power supply checks the ac input source and initiates the automatic transfer to batteries in the event of a brownout or loss of ac power. In the event of a failure of one or more booster power supplies, the primary power supply determines its ability, along with the surviving booster supplies, to supply the load. Should the load ever exceed the ability of the primary and surviving booster supplies to meet the demand, the standby batteries are automatically switched in. The supply will transfer to battery should an overload cause its heat sink temperature to reach a high level.

The primary power supply monitor module provides the interface between the power supply and the panel making the required data and power connections to and from the rail chassis. The monitor module requires one connection on the rail chassis and is secured to the assembly using snap rivet fasteners. The module features a hinged front panel for mounting displays or a blank protective faceplate.

3-BPS/M-230-E Booster power supply

The 3-BPS/M-230-E booster power supply is used to provide additional power over and above the primary power supply. Up to three additional 24 Vdc, 7.0 A power boosters may be added in each enclosure, making a total of 28A available for both internal and external applications. The power supply booster is comprised of two major components: the booster monitor module which mounts on the rail chassis, and the heat sink assembly, which mounts on the rear of the rail chassis. Each booster provides filtered, regulated power to power all modules connected to the rail chassis as well as 24 Vdc for auxiliary applications. Each booster is rated at 24 Vdc @ 7.0 A for all outputs. Two independent, power limited, supervised 24 Vdc, 3.5 A auxiliary power outputs are provided on the booster. The power boosters share a common standby battery with the primary power supply. Each booster supervises its own connection to the battery, however, all battery charging and monitoring is done by the primary power supply. The power supply boosters share the panel's 24 Vdc electrical load with the primary power supply. In the event of a failure of a booster power supply, a trouble is annunciated, and the panel load is distributed among the operational power sources. Should the load ever exceed the ability of the operable power sources to supply the power, as in the event of an alarm, the system will automatically transfer to standby batteries.

The power supply booster monitor module provides the interface between a power supply booster and the panel, making the required data and power connections to and from the rail chassis. The booster monitor module requires one connection on the rail chassis and is secured to the assembly using snap rivet fasteners. The module features a hinged front panel for mounting displays or a blank protective faceplate.

SPECIFICATIONS

3-PPS/M-230-E and 3-BPS/M-230-E

Installation	Power distribution assembly mounts behind chassis rail (3-PPS/M-230-E only) Heat sink assembly mounts behind chassis rail Monitor module requires one module space
Power Input	230 Vac, +10%, -15%, 2.0 A, 50 Hz
Brownout Level	≤ 188 Vac
Outputs	
Total	24 Vdc @ 7.0 A, internal and auxiliary outputs
Internal DC	24 Vdc @ 7.0 A max.
Auxiliary DC	Two 24 Vdc @ 3.5 A max. ground fault and short supervised, power limited outputs
Termination	
AC Input	Terminals on heat sink assembly
Batteries	Terminals on heat sink assembly
Internal DC Output	LRM chassis rails via monitor module
Auxilary DC Output	Removable plug-in terminal strips on monitor module
Operating Environment	
Temperature	23 to 104 °F (-5 to 40 °C)
Rel. Humidity	93% RH non-condensing

3-PPS/M-230-E only

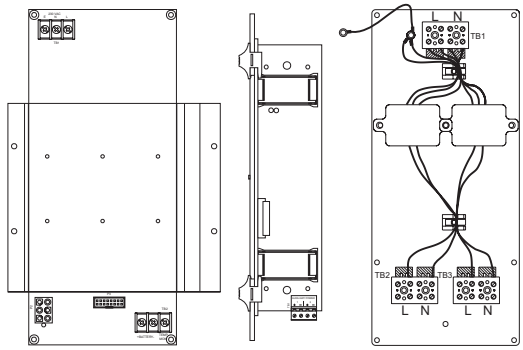
Battery Charging	
Capacity	10 - 17 Ah
Type	Temperature compensated dual rate, 1.5 A/3.0 A

Supervision
- Low AC
- Low Battery (≤ 22.5 Vdc)
- High Battery
- Discharged Battery (≤ 18 Vdc)
- Ground Fault (≤ 10 kΩ)

3-BPS/M-230-E only

Supervision
- Low AC
- Low Battery (≤ 22.5 Vdc)
- Ground Fault (≤ 10 kΩ)

3-PPS/M-230-E and 3-BPS/M-230-E



INSTALLATION SHEET:

3-PPS/M-230-E Primary power supplies
3-BPS/M-230-E Booster power supplies

INSTALLATION SHEET P/N: 387555	FILE NAME: 387555.CDR
REVISION LEVEL: 1.0	APPROVED BY: D. Munn
DATE: 30JUN99	CREATED BY: G. Sutton

A UNIT OF GENERAL SIGNAL

GS BUILDING SYSTEMS CORPORATION

GS BUILDING SYSTEMS CORPORATION

6411 Parkland Drive
Sarasota, FL 34243
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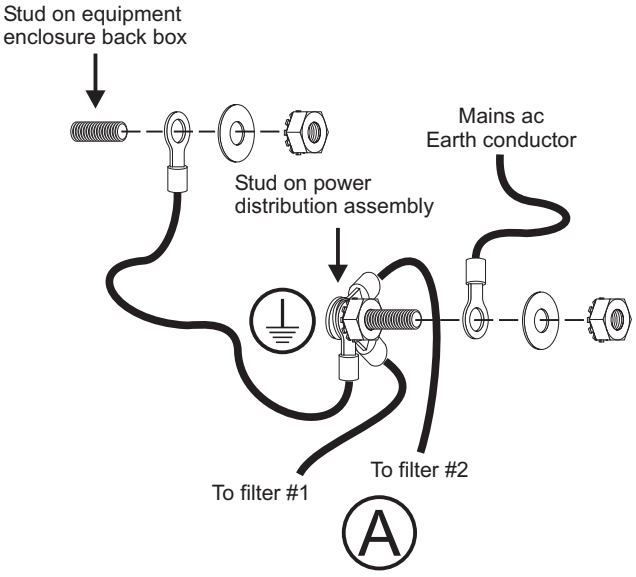
625 6th Street East
Owen Sound, Ontario
Canada N4K 5P8

Step I. Mount the power distribution assembly.

1. Screw the power distribution assembly to the threaded stand-offs on the rail chassis assembly (see Figure-1).
2. Attach the Earth ground braid to the back box ground stud located just above the power distribution assembly (see detail A).

Note: The power distribution assembly must always be mounted in the rail chassis at the top of the equipment enclosure in the location shown.



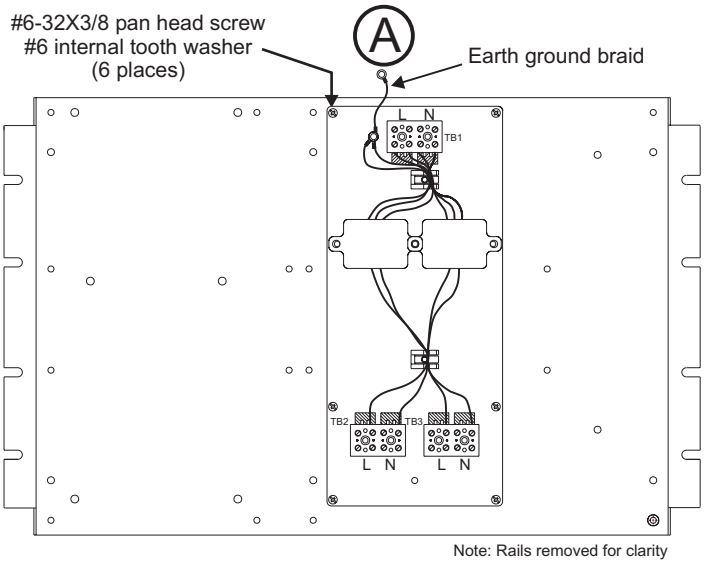


Figure-1: Power distribution assembly mounting

Step 2. Mount the power supply assembly.

1. Attach the power supply assembly to the 4 threaded mounting studs on the rail chassis assembly (see Figure-2).
2. Screw the bottom edge of the power supply assembly to the threaded standoffs on the rail chassis assembly.
3. Secure the top edge of the power supply assembly to the rail chassis assembly using the threaded studs and standoffs provided in the hardware kit.

Notes:

1. The primary power supply must always be mounted in the left mounting position of the chassis containing the panel controller.
2. Booster supplies, if required, may be mounted in any rail chassis, but no more than three booster supplies may exist in any one cabinet.

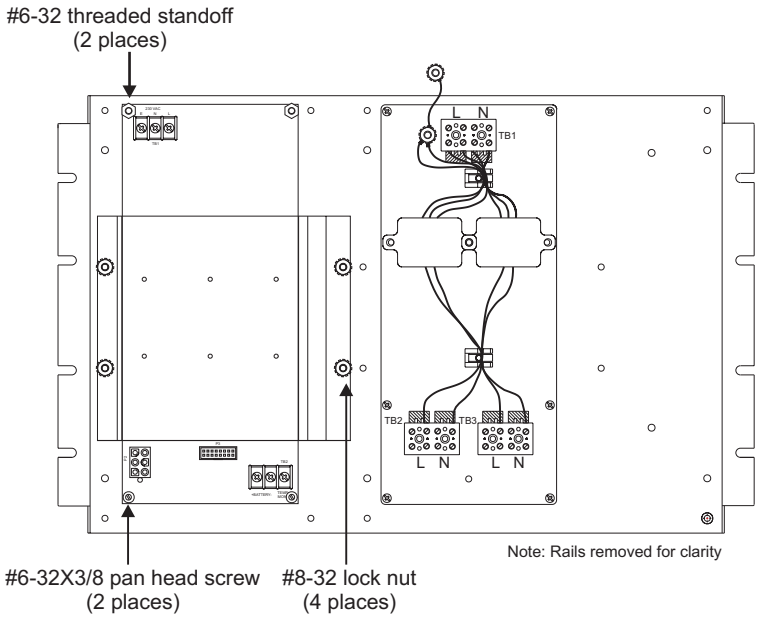


Figure-2: Power supply assembly mounting

Step 3. Connect filtered ac power to the supplies.

1. Using double-insulated wire, connect the filtered ac Line and Neutral conductors to the power supplies as follows (see Figure-3):

From Power distribution assembly	To Power supply assemblies 1 and 2
TB2-L	TB1-L
TB2-N	TB1-N

From Power distribution assembly	To Power supply assemblies 3 and 4
TB3-L	TB1-L
TB3-N	TB1-N

2. Using double-insulated wire, connect a separate earth conductor from the Earth ground lug on the power distribution assembly to TB1-E on each of the power supplies installed in the cabinet (see detail B).
3. Place flat washer on conductors then tighten with lock nut to ensure a secure mechanical connection to earth ground.
4. Secure the power supply cover to the standoffs on the top edge of the power supply.

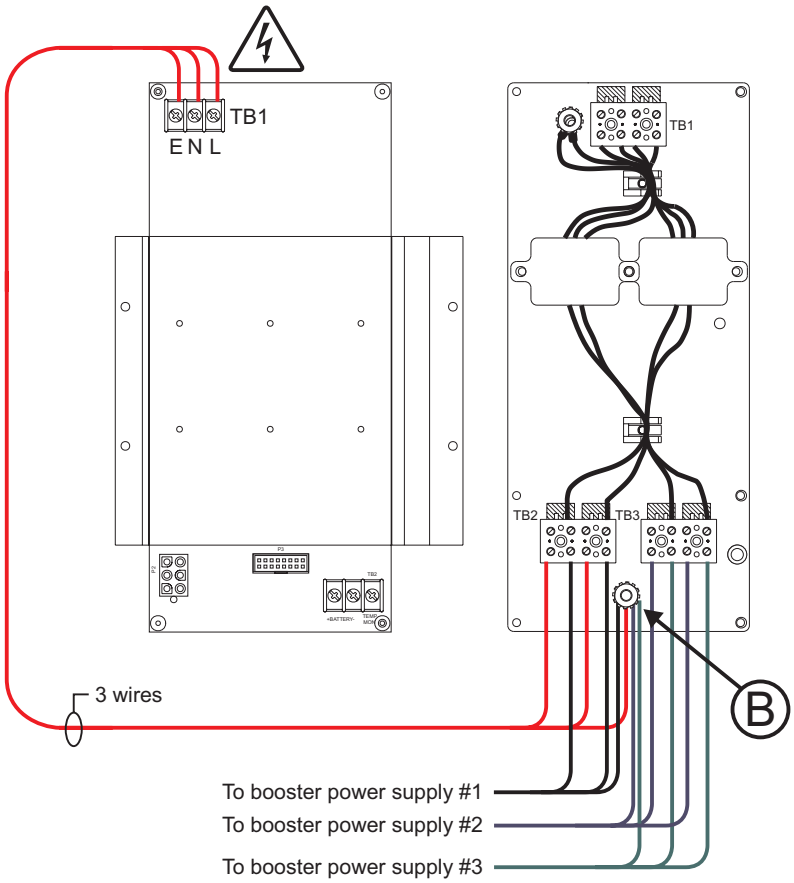
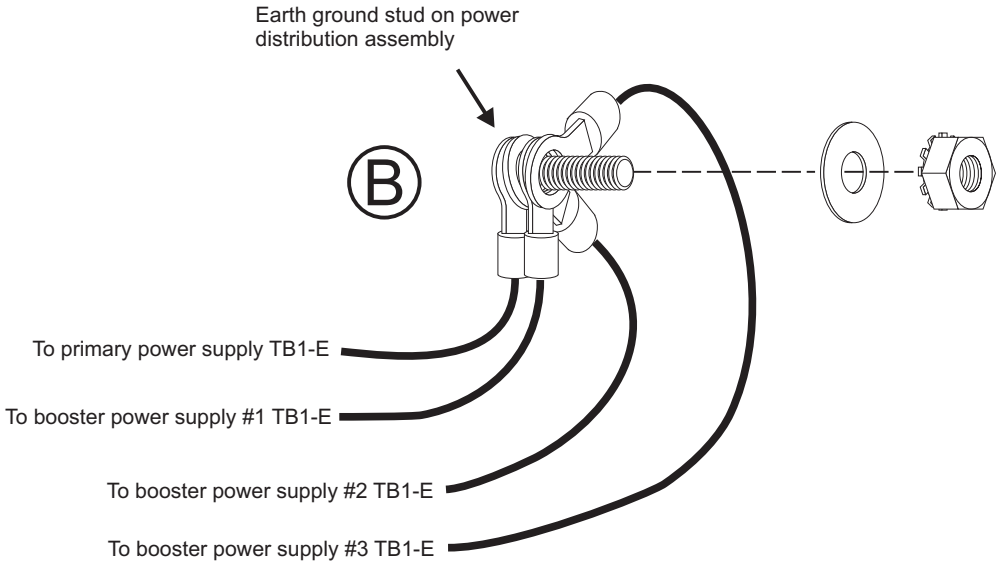


Figure-3: Filtered ac power distribution



Step 4. Install the power supply monitor module.

Caution: This product contains components that are sensitive to static electricity. Failure to follow proper handling procedures will result in equipment damage.

1. Connect the 6-wire cable harness to P6 on the power supply monitor (see Figure-6). Push in until the connector clicks.
2. Connect the ribbon cable to J4 on the power supply monitor.
3. Align the power supply monitor to the guide posts on slot 3 of the rail chassis assembly.
4. Route the 6-wire cable harness over and behind the bottom rail and connect to P2 on the primary power supply. Push in until the connector clicks.
5. Route the ribbon cable under the bottom rail and connect to P3 on the primary power supply.
6. Slide the module into the slot 3 rail connectors and lock into place using the snap rivet fasteners.
7. Apply a Kapton label over the rail communication LEDs.

Note: Kapton labels are included in the hardware kit and are required for every rail module installed in the cabinet. Save labels for future use.

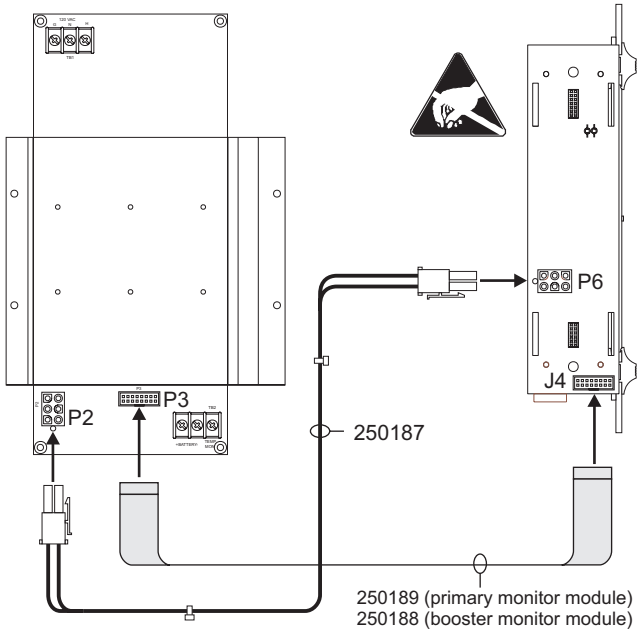
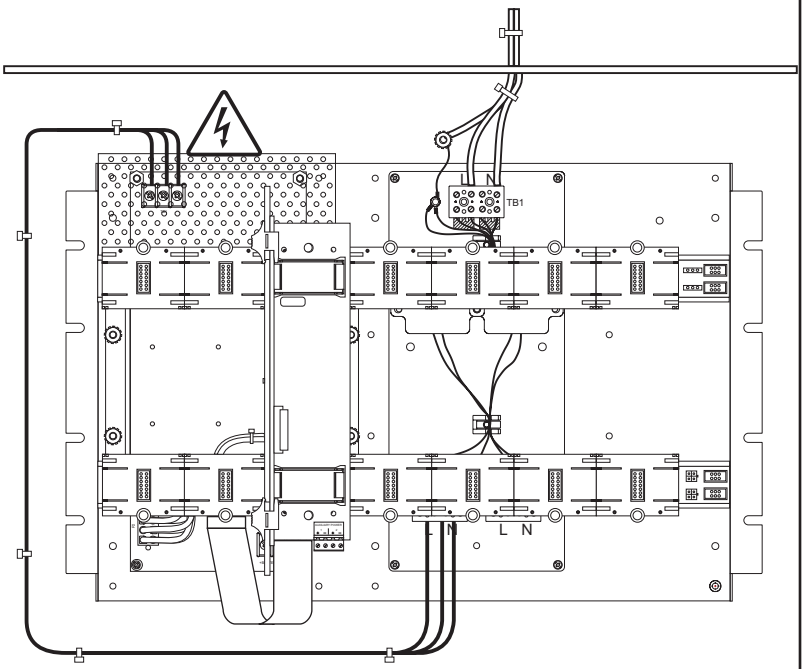
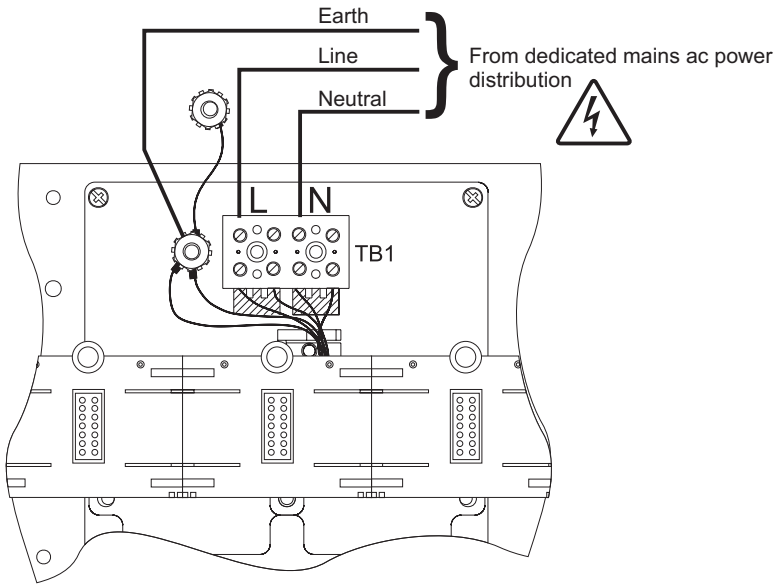


Figure-6: Cable connections

Step 5. Wire the power supply.

1. Ensure that the mains ac circuit is deenergized. Connect the mains ac conductors to TB1 on the power distribution assembly. Refer to Figure-7 on page 5.
2. Connect the standby battery conductors to TB2 on the power supply assembly. Refer to Figure-8 on page 5.
3. If a remote battery cabinet is used, connect the temperature sensor conductor to TB2 on the primary power supply assembly. Refer to Figure-8 on page 5.
4. Connect the 24 Vdc auxiliary power riser conductors to TB1 on the power supply monitor module. Refer to Figure-9 on page 6.





WARNING: High voltage levels capable of causing injury or death may be present. Precautionary measures must be taken to ensure that the mains ac circuit is deenergized and prevented from being switched on inadvertently.

Notes:

1. Install wiring in accordance with the Electrical Code and all other local requirements.
2. Up to 4 primary or booster supplies may be connected to a single mains ac source circuit.

Figure-7: Mains ac wire connections

Caution: Disconnecting the battery from the power supply while the mains ac is deenergized may damage the battery.

Notes:

1. Each power supply shall have its own separate pair of conductors going to the battery.
2. The batteries must already be connected to the primary power supply when the cabinet is energized in order to activate the battery charging circuit.

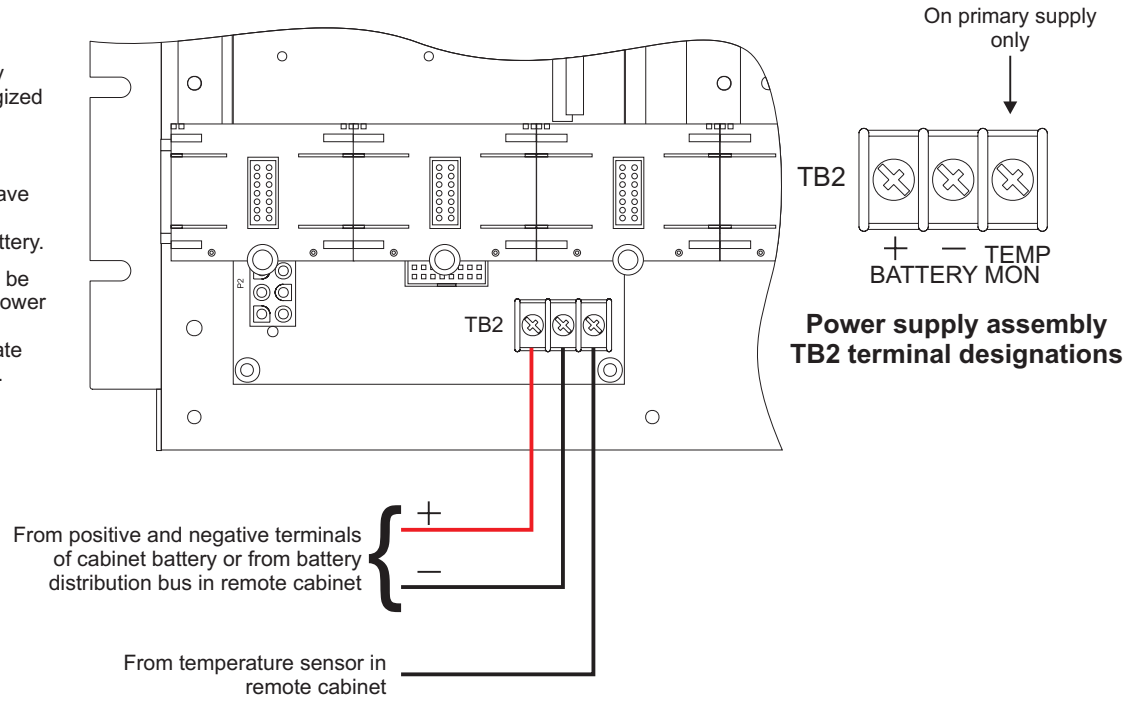
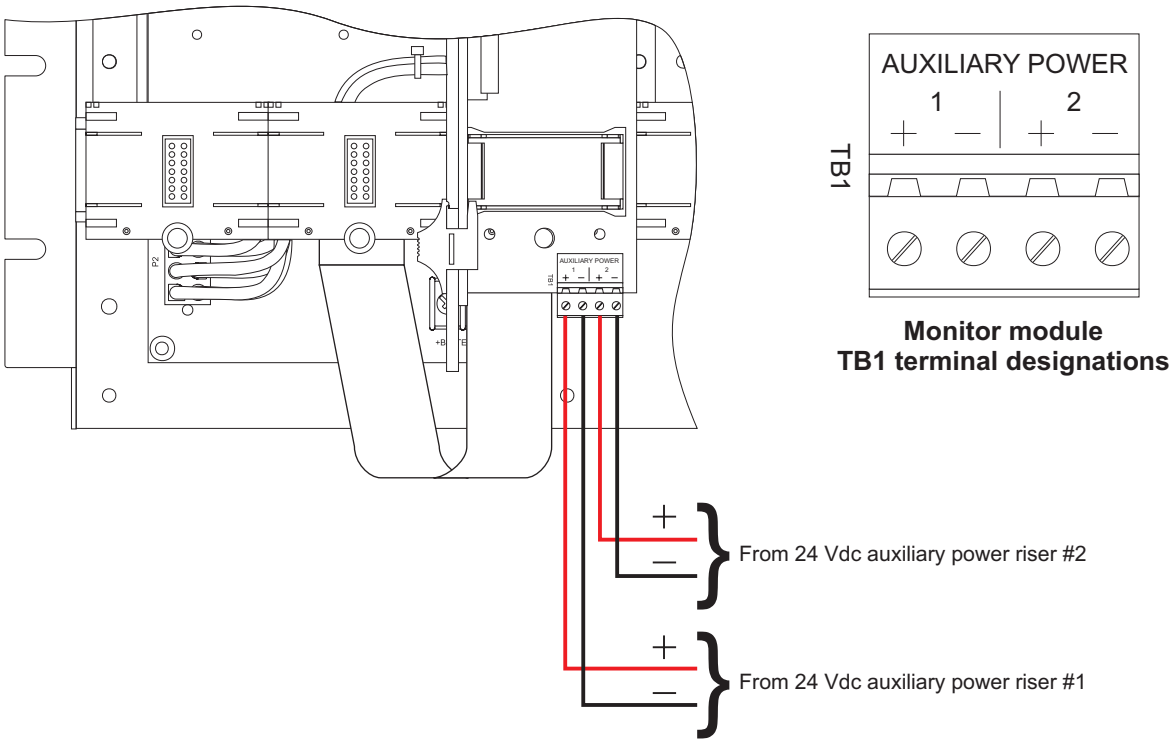


Figure-8: Standby battery wire connections



Monitor module
TB1 terminal designations

Figure-9: 24 Vdc auxiliary power riser wire connections

PRODUCT INFORMATION

The Remote Closet Cabinets, RCC Series, are designed for applications where viewing windows are not required, such as remote equipment closets. The RCC7R cabinet provides space for a single chassis, the RCC14R cabinet provides space for two chassis, and the RCC21R provides space for three chassis. All cabinets provide space for up to 50 amp-hour standby batteries. The backboxes are fabricated of 14 gauge steel and finished with a red textured enamel. The enclosures are designed for surface mounting. Conduit and nail knockouts, keyhole style mounting holes, and wide wiring troughs facilitate quick installation. Cabinet design facilitates separation of power limited and non-power limited circuits by locating power limited wiring toward the front of the cabinet and non-power limited wiring at the rear of the cabinet. The removable hinged doors mount on the left side of the backboxes and are secured with key locks.

SPECIFICATIONS

RCC7R Cabinet

Backbox and Door - Dimensions (HWD)
23.25" x 25.0" x 6.75"
(59.1 cm x 63.5 cm x 17.15 cm)
Capacity
Chassis One chassis
Battery Two 50 AH @ 12 Vdc
Door Finish
Red textured enamel

RCC14R Cabinet

Backbox and Door - Dimensions (HWD)
35.47" x 25.0" x 6.75"
(90.1 cm x 63.5 cm x 17.15 cm)
Capacity
Normal Configuration
Two chassis and and two 50 AH @ 12 Vdc
Battery Cabinet Configuration
Two 3-BTS battery shelves with one 65AH @ 12 Vdc battery per shelf
Door Finish
Red textured enamel

RCC21R Cabinet

Backbox and Door - Dimensions (HWD)
47.72" x 25.0" x 6.75"
(121.2 cm x 63.5 cm x 17.15 cm)
Capacity
Normal Configuration
Three chassis and and two 50 AH @ 12 Vdc
Battery Cabinet Configuration
One chassis and two 3-BTS battery shelves with one 65AH @ 12 Vdc battery per shelf
Door Finish
Red textured enamel

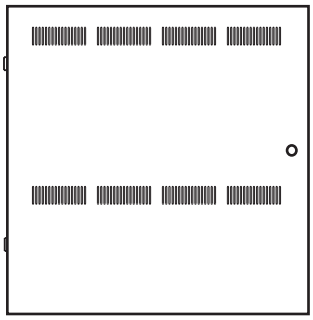
CABINET INSTALLATION

1. Mount the backbox at the required location. Cabinet installation dimensions are on the back page. A dedicated 120 VAC (for systems using model 3-PPS/M power supplies), or 230 VAC (for system using model 3-PPS/M-230 power supplies) 50/60 Hz circuit is required for each cabinet. Install all conduit and pull all wiring into the backbox before proceeding to the next step.

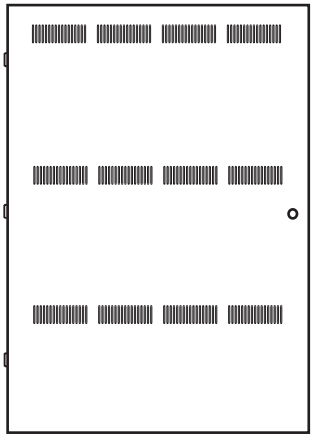
2. Install the equipment chassis. Refer to chassis installation sheet for details.

3. Connect the door ground strap between the stud on the door and the backbox using the hardware provided.

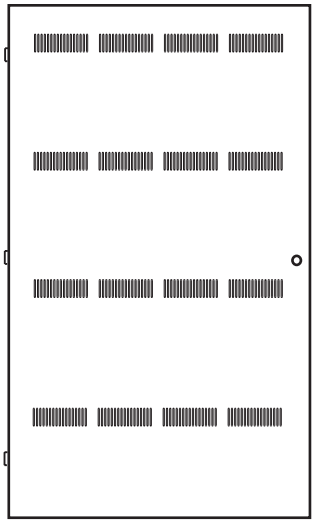
PRODUCT DIAGRAM



3-RCC7R



3-RCC14R



3-RCC21R

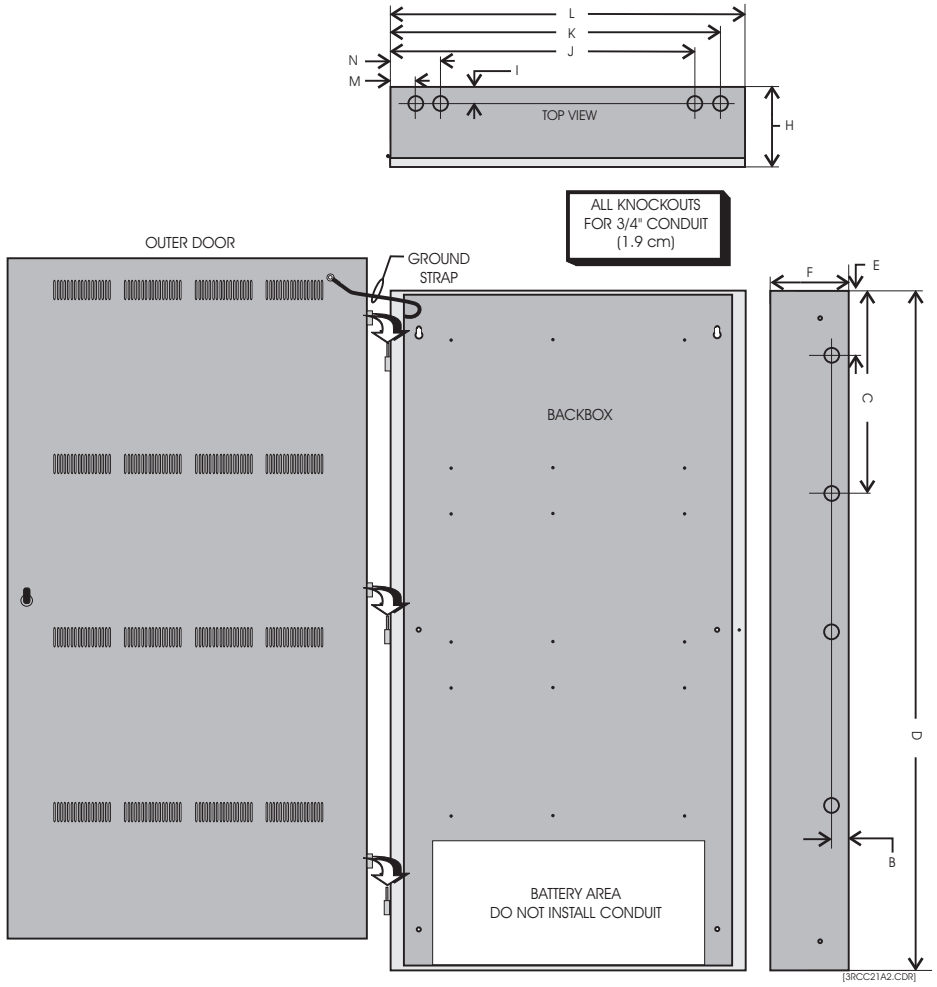
INSTALLATION SHEET

3-RCC Series
Remote Closet Cabinets

INSTALLATION SHEET P/N: 270486	FILE NAME: 270486.CDR
REVISION LEVEL: 2.0	APPROVED BY: K. Patterson
DATE: 28MAY99	CREATED BY: M. Rimes

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

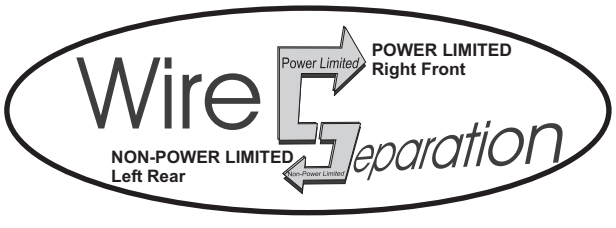
CABINET INSTALLATION DIMENSIONS

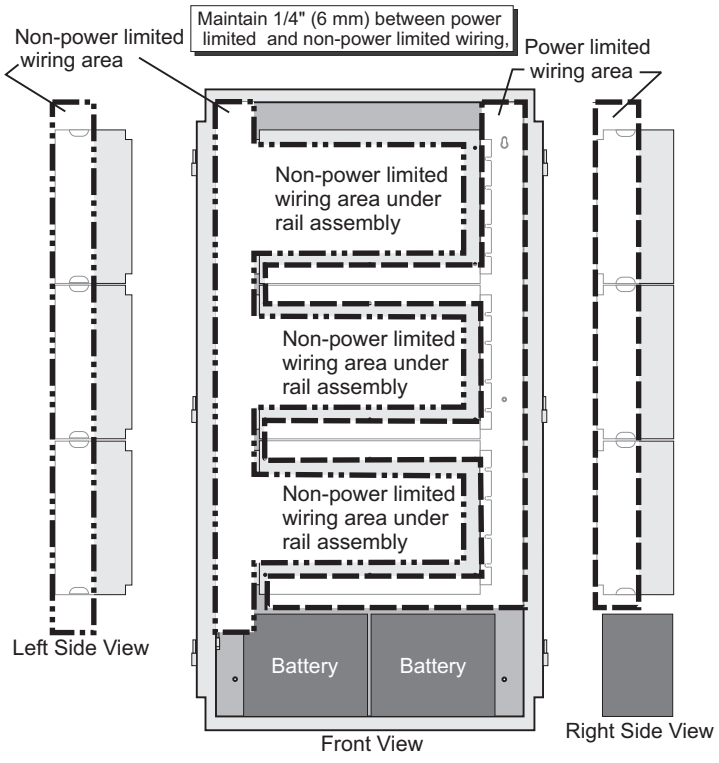


	RCC7R	RCC14R	RCC21R
A	23.36 in (59.3 cm)	35.61 in (90.4 cm)	47.75 in (121.29 cm)
B	1.25 in (3.18 cm)	1.25 in (3.18 cm)	1.25 in (3.18 cm)
C	14.1 in (35.8 cm)	14.1 in (35.8 cm)	14.1 in (35.8 cm)
D	23.25 in (59.1 cm)	35.47 in (90.1 cm)	47.72 in (121.21 cm)
E	4.37 in (11.1 cm)	4.37 in (11.1 cm)	4.37 in (11.1 cm)
F	5.5 in (13.97 cm)	5.5 in (13.97 cm)	5.5 in (13.97 cm)
G	1.25 in (3.18 cm)	1.25 in (3.18 cm)	1.25 in (3.18 cm)
H	5.5 in (13.97 cm)	5.5 in (13.97 cm)	5.5 in (13.97 cm)
I	1.25 in (3.18 cm)	1.25 in (3.18 cm)	1.25 in (3.18 cm)
J	21.44 in (54.46 cm)	21.44 in (54.46 cm)	21.44 in (54.46 cm)
K	23.25 in (59.03 cm)	23.25 in (59.03 cm)	23.25 in (59.03 cm)
L	25.0 in (63.5 cm)	25.0 in (63.5 cm)	25.0 in (63.5 cm)
M	1.75 in (4.45 cm)	1.75 in (4.45 cm)	1.75 in (4.45 cm)
N	3.55 in (9.01 cm)	3.55 in (9.01 cm)	3.55 in (9.01 cm)

POWER LIMITED AND NON-POWER LIMITED WIRING REQUIREMENTS

Fire Alarm System wiring is classified as either Power Limited or Non-Power Limited per NEC Article 760. All power limited wiring must be separated from all non-power limited wiring by a minimum distance of 1/4 in (6 mm). The system enclosures and chassis assemblies are designed such that non-power limited wiring is at the left rear of the cabinet and the power limited wiring is at the front of the cabinet. When installing non-power limited wiring, use the feed through notches at the left rear of the chassis. When installing power limited wiring, use the feed through notches at the right front of the chassis.





PRODUCT INFORMATION

The Remote Closet Cabinets, RCC-E Series, are designed for applications where viewing windows are not required, such as remote equipment closets. The RCC7R-E cabinet provides space for a single chassis, the RCC14R-E cabinet provides space for two chassis, and the RCC21R-E provides space for three chassis. All cabinets provide space for up to 50 amp-hour standby batteries. The backboxes are fabricated of 14 gauge steel and finished with a red textured enamel. The enclosures are designed for surface mounting. Conduit and nail knockouts, keyhole style mounting holes, and wide wiring troughs facilitate quick installation. The removable hinged doors mount on the left side of the backboxes and are secured with key locks.

SPECIFICATIONS

RCC7R-E Cabinet

Backbox and Door - Dimensions (HWD)
23.25" x 25.0" x 6.75"
(59.1 cm x 63.5 cm x 17.15 cm)
Capacity
Chassis One chassis
Battery Two 50 AH @ 12 Vdc
Door Finish
Red textured enamel

RCC14R-E Cabinet

Backbox and Door - Dimensions (HWD)
35.47" x 25.0" x 6.75"
(90.1 cm x 63.5 cm x 17.15 cm)
Capacity
Normal Configuration
Two chassis and and two 50 AH @ 12 Vdc
Battery Cabinet Configuration
Two 3-BTS battery shelves with one 65AH @ 12 Vdc battery per shelf
Door Finish
Red textured enamel

RCC21R-E Cabinet

Backbox and Door - Dimensions (HWD)
47.72" x 25.0" x 6.75"
(121.2 cm x 63.5 cm x 17.15 cm)
Capacity
Normal Configuration
Three chassis and and two 50 AH @ 12 Vdc
Battery Cabinet Configuration
One chassis and two 3-BTS battery shelves with one 65AH @ 12 Vdc battery per shelf
Door Finish
Red textured enamel

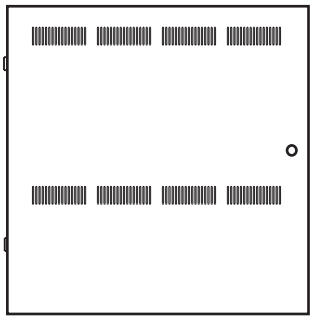
CABINET INSTALLATION

1. Mount the backbox at the required location. Cabinet installation dimensions are on the back page. A dedicated 230 VAC 50/60 Hz circuit is required for each cabinet. Install all conduit and pull all wiring into the backbox before proceeding to the next step.

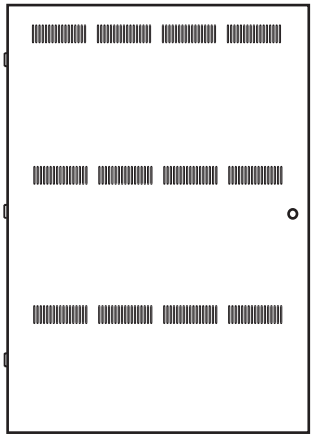
2. Install the equipment chassis. Refer to chassis installation sheet for details.

3. Connect the door ground strap between the stud on the door and the backbox using the hardware provided.

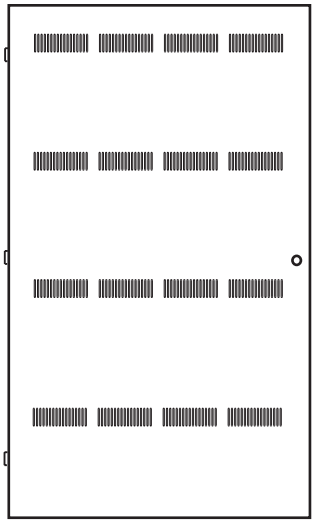
PRODUCT DIAGRAM



3-RCC7R-E



3-RCC14R-E



3-RCC21R-E

INSTALLATION SHEET

3-RCC-E Series
Remote Closet Cabinets

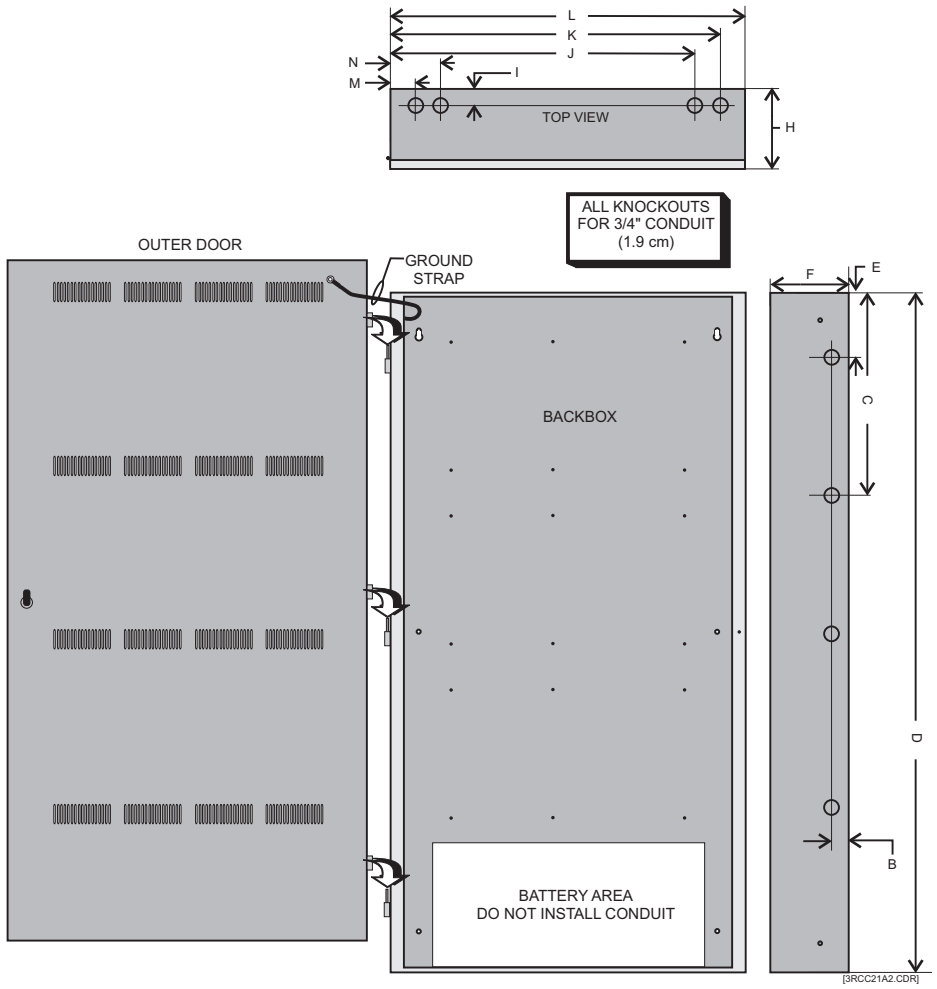
INSTALLATION SHEET P/N: 387551	FILE NAME: 387551.CDR
REVISION LEVEL: 1.0	APPROVED BY: K. Patterson
DATE: 28MAY99	CREATED BY: M. Rimes

EDWARDS SYSTEMS TECHNOLOGY

6411 Parkland Drive
Sarasota, FL 34243
USA

625 6th Street East
Owen Sound, Ontario
Canada N4K 5P8

CABINET INSTALLATION DIMENSIONS



	RCC7R-E	RCC14R-E	RCC21R-E
A	23.36 in (59.3 cm)	35.61 in (90.4 cm)	47.75 in (121.29 cm)
B	1.25 in (3.18 cm)	1.25 in (3.18 cm)	1.25 in (3.18 cm)
C	14.1 in (35.8 cm)	14.1 in (35.8 cm)	14.1 in (35.8 cm)
D	23.25 in (59.1 cm)	35.47 in (90.1 cm)	47.72 in (121.21 cm)
E	4.37 in (11.1 cm)	4.37 in (11.1 cm)	4.37 in (11.1 cm)
F	5.5 in (13.97 cm)	5.5 in (13.97 cm)	5.5 in (13.97 cm)
G	1.25 in (3.18 cm)	1.25 in (3.18 cm)	1.25 in (3.18 cm)
H	5.5 in (13.97 cm)	5.5 in (13.97 cm)	5.5 in (13.97 cm)
I	1.25 in (3.18 cm)	1.25 in (3.18 cm)	1.25 in (3.18 cm)
J	21.44 in (54.46 cm)	21.44 in (54.46 cm)	21.44 in (54.46 cm)
K	23.25 in (59.03 cm)	23.25 in (59.03 cm)	23.25 in (59.03 cm)
L	25.0 in (63.5 cm)	25.0 in (63.5 cm)	25.0 in (63.5 cm)
M	1.75 in (4.45 cm)	1.75 in (4.45 cm)	1.75 in (4.45 cm)
N	3.55 in (9.01 cm)	3.55 in (9.01 cm)	3.55 in (9.01 cm)

PRODUCT DESCRIPTION

The 3-REMICA provides remote paging capability at stations located throughout a building or campus. The 3-REMICA can be connected to other remote microphone units to provide up to 63 stations on the paging circuit.

The 3-REMICA occupies 2 slot positions in a 2-space, 6-space or 10-space remote annunciator cabinet. When installed in a cabinet with an annunciator controller, the 3-REMICA must occupy the slot positions next to the controller.

The 3-REMICA housing assembly provides standoffs for mounting a Signature single input module when the system application requires electrical supervision. The 3-REMICA trouble relay contacts change state whenever an electrical short or open is detected on either the microphone or audio inputs, or whenever power is interrupted to the unit.

SPECIFICATIONS

Power Requirements
- Voltage: 21 - 27 Vdc
- Current: 52 mA

Space Requirements: 2 spaces in annunciator enclosure

Audio Output: 1 Vrms @ 400 Hz - 4 kHz

Trouble Relay Contacts
- Current: 1 A @ 30 Vdc resistive

Wiring
- Termination: All wiring connects to terminal block
- Size: 14 AWG (1.5 mm^2) max.
- Resistance: 210 Ω max
- Capacitance: 0.1 μF

Operating Environment
- Temperature 32 - 120 °F (0 - 49 °C)
- Humidity 93% non-condensing

WARNINGS

1. This product contains components which are sensitive to static electricity. Failure to follow proper handling procedures to prevent damage from electrostatic discharge may result in equipment failure.
2. Ensure the 24VDC riser is deenergized before making cable connections.

JUMPER SETTINGS

Jumper JP1 and JP2:

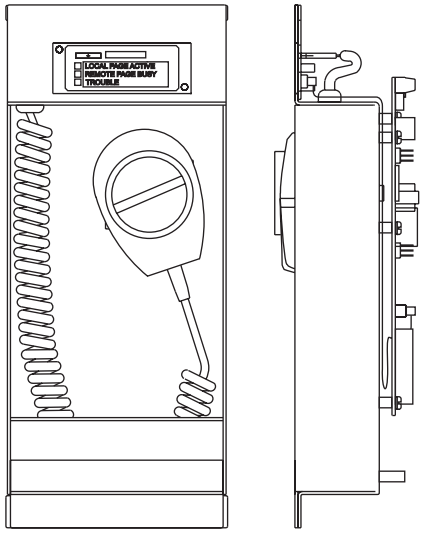
Position A: Selects ac supervision when connecting the audio output to 3-ASU.

Position B: Selects dc supervision when connecting the audio output to 3-REMICA.

INSTALLATION INSTRUCTIONS

1. Remove the top module retainer bracket on the inner door of the remote annunciator enclosure.
2. Loosen the bottom module retainer bracket.
3. Insert the bottom of the 3-REMICA into the bottom module retainer bracket next to the annunciator panel controller.
4. Tilt the 3-REMICA forward until the top touches the inner door.
5. Tighten the bottom module retainer bracket.
6. Secure the top module retainer bracket to the inner door.
7. Connect the cable assembly from P3 on the annunciator panel controller to P4 on the 3-REMICA.

3-REMICA



FRONT SIDE

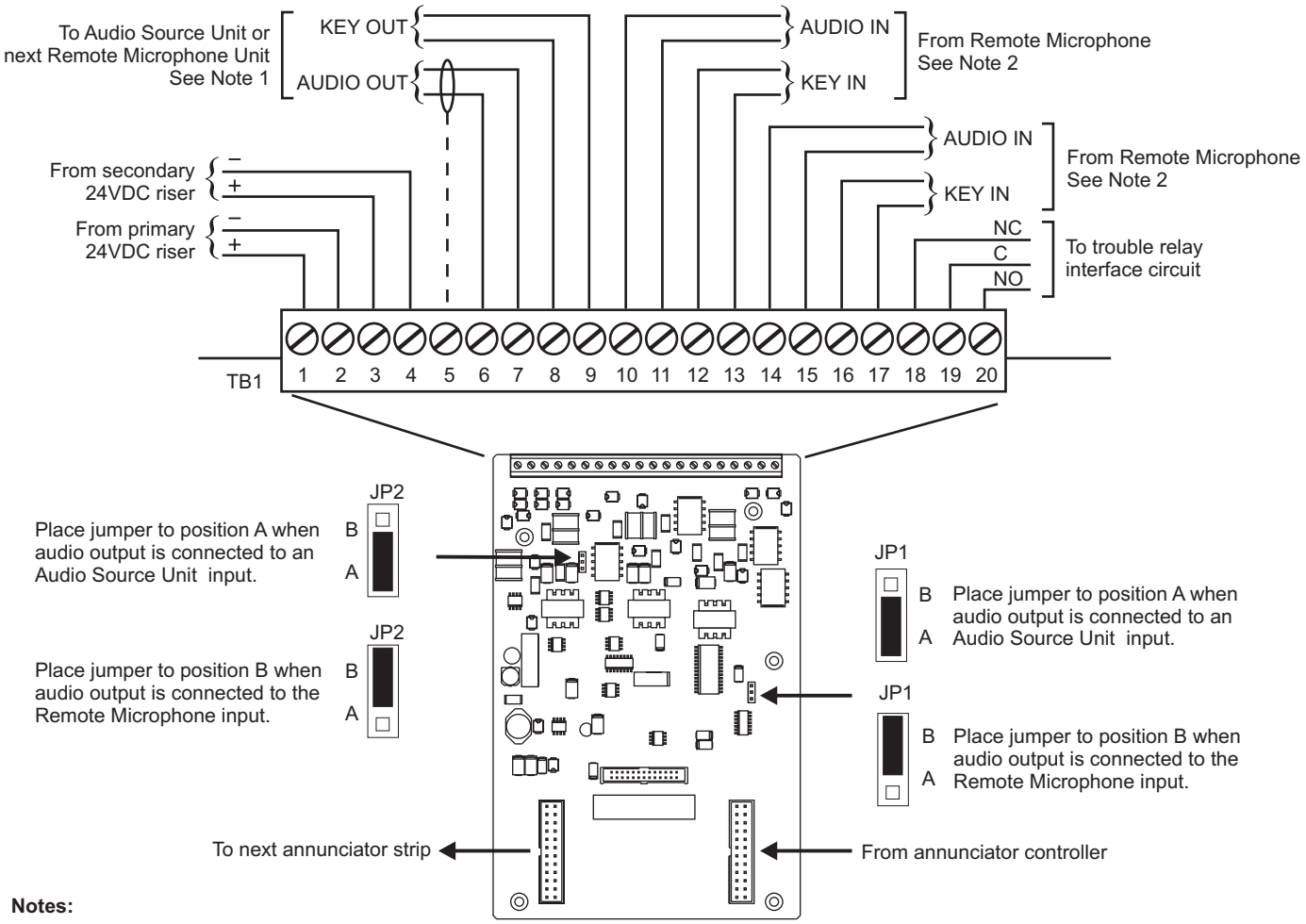
INSTALLATION SHEET:

3-REMICA Remote Microphone

INSTALLATION SHEET P/N: 387466	FILE NAME: 387466.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Munn
DATE: 19JAN00	CREATED BY: M. Rimes

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

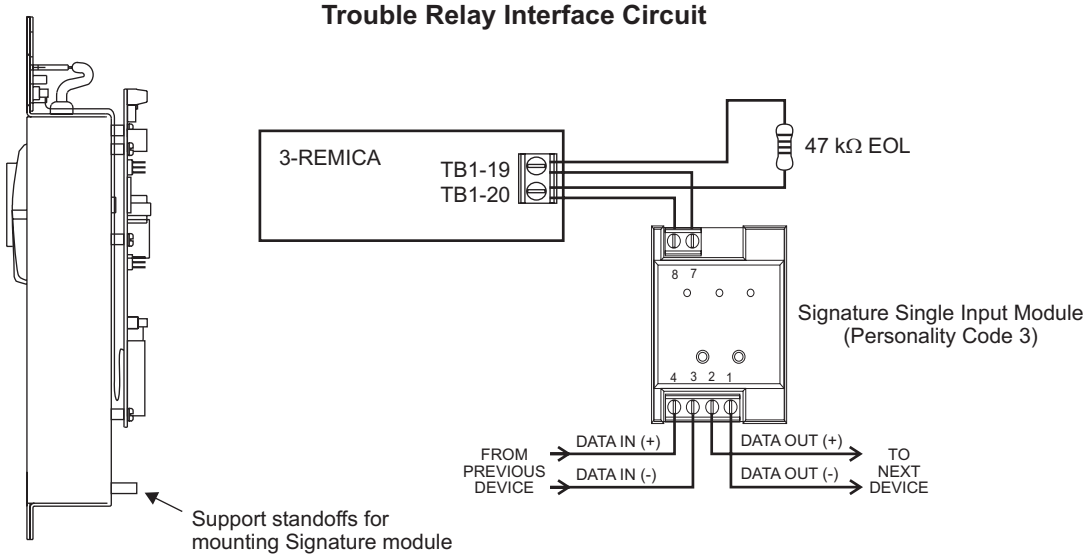
FIELD WIRING



Notes:

1. Power-limited and supervised.
2. Terminate KEY IN input with 1.8 kΩ EOL resistor when not used.

Trouble Relay Interface Circuit



PRODUCT DESCRIPTION

The 3-REMICP provides remote paging capability throughout a building or campus. Each 3-REMICP has two inputs for cascading other remote microphone units. Connecting remote microphones in this manner provides up to 63 stations on the paging circuit.

Note: Remote microphone units may not be cascaded more than 6 deep (more than 6 units in a single circuit path).

The 3-REMICP consists of a page control housing assembly and separate circuit card. The 3-REMICP installs onto a 3-CHASS4 chassis assembly (ordered separately).

Trouble relay contacts provided on the 3-REMICP change state whenever an electrical short or open is detected on either the microphone or audio inputs, or whenever power is interrupted to the unit.

JUMPER SETTINGS

Jumper JP1 and JP2:

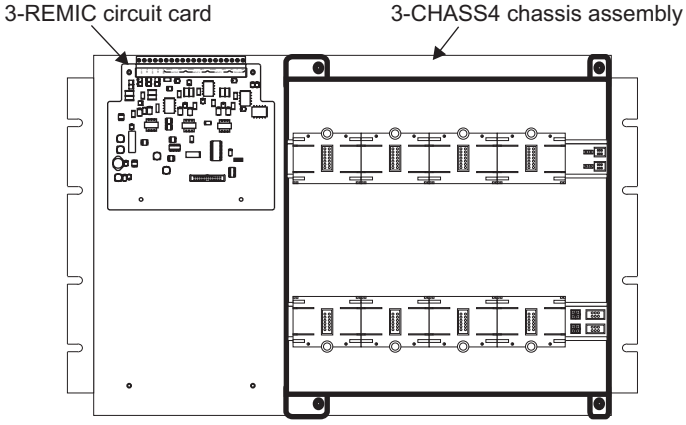
Position A:	Selects ac supervision when connecting the audio output to 3-ASU.
Position B:	Selects dc supervision when connecting the audio output to another remote microphone module.

WARNINGS

1. This product contains components which are sensitive to static electricity. Failure to follow proper handling procedures to prevent damage from electrostatic discharge may result in equipment failure.
2. Ensure the 24VDC riser is deenergized before making cable connections.

INSTALLATION INSTRUCTIONS

1. On the 3-REMIC circuit card assembly, configure JP1 and JP2 for the type of supervision required.
2. Screw the 3-REMIC circuit card to the 3-CHASS4 chassis assembly using four #6-32 X 1/2 pan head screws. See below.
3. Connect field wiring to 3-REMIC circuit card.
4. Connect the ribbon cable on the page control housing assembly to J1 on the 3-REMIC circuit card.
5. Position the page control housing on the threaded studs and secure using the four washers and nuts provided.



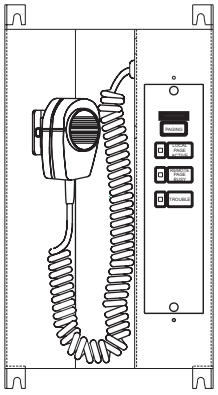
SPECIFICATIONS

Power Requirements	
Voltage:	21 - 27 Vdc
Current:	52 mA
Audio Output:	1 Vrms @ 400 Hz - 4 kHz
Trouble Relay Contacts	
Current:	1 A @ 30 Vdc resistive
Wiring	
Termination:	All wiring connects to terminal block
Size:	14 AWG (1.5 mm^2) max.
Resistance:	210 Ω max from output of last cascaded remote microphone to input of audio source unit
Capacitance:	0.1 μf
Operating Environment	
Temperature:	32 - 120 °F (0 - 49 °C)
Humidity:	93% non-condensing

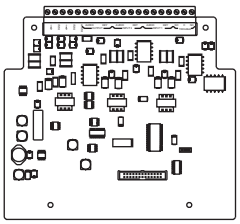
LED INDICATORS

Local page active:	lights when paging microphone is keyed and no other remote microphones are keyed.
Remote page busy:	lights when another remote microphone unit has control of the paging circuit.
Paging:	lights when speaking into the microphone while the key is pressed.
Trouble:	lights when trouble detected with paging circuit.

3-REMICP



Page Control Housing Assembly



3-REMIC Assembly

INSTALLATION SHEET:

3-REMICP Remote Microphone

INSTALLATION SHEET P/N: 387519	FILE NAME: 387519.CDR
REVISION LEVEL: 1.0	APPROVED BY: D. Munn
DATE: 15FEB99	CREATED BY: G. Sutton

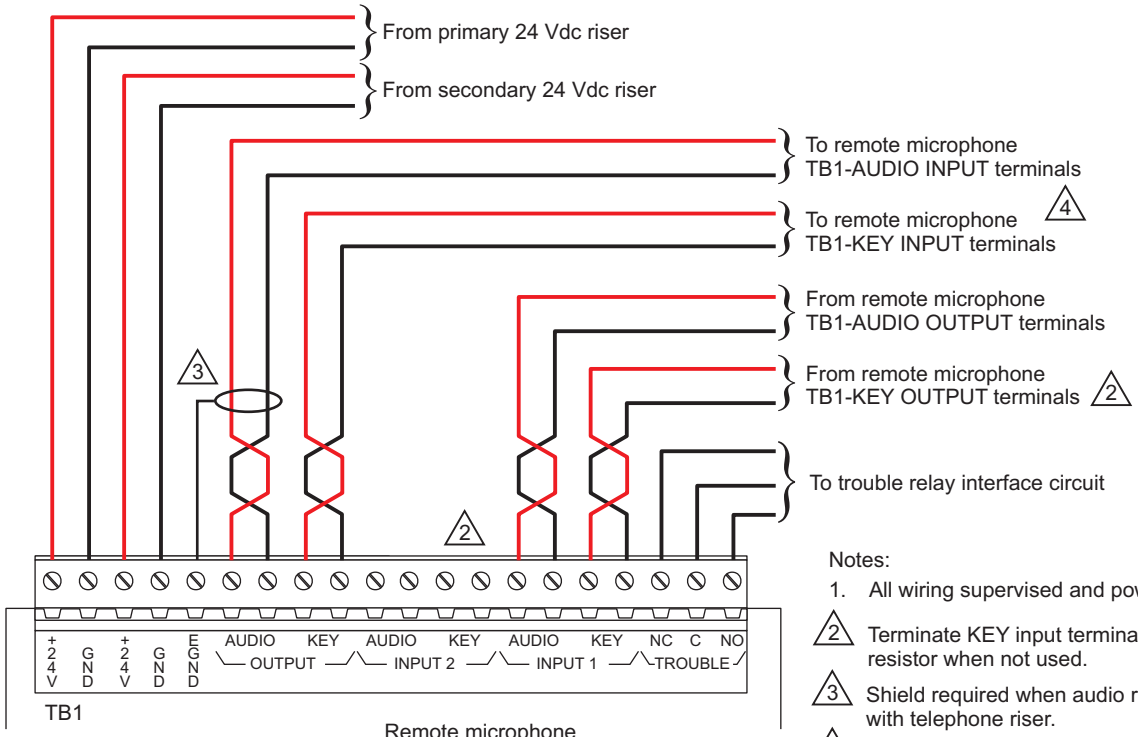
A UNIT OF GENERAL SIGNAL
GS BUILDING SYSTEMS CORPORATION

GS BUILDING SYSTEMS CORPORATION

6411 Parkland Drive
Sarasota, FL 34243
USA

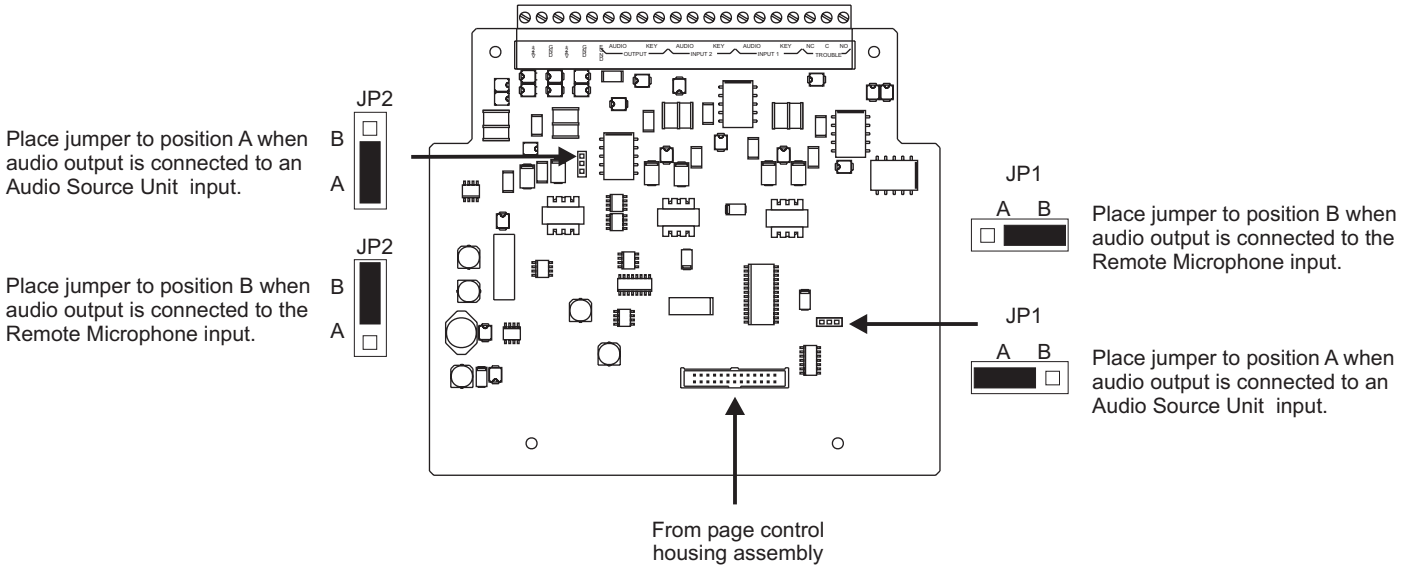
625 6th Street East
Owen Sound, Ontario
Canada N4K 5P8

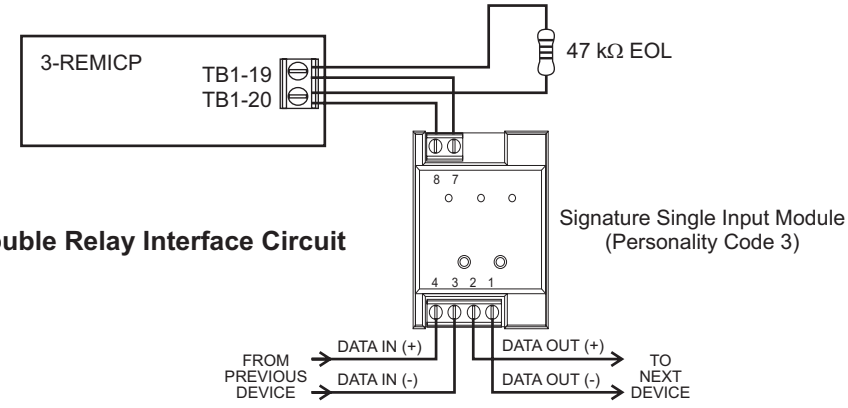
FIELD WIRING



Notes:

1. All wiring supervised and power-limited.
2. Terminate KEY input terminals with 1.8 kΩ EOL resistor when not used.
3. Shield required when audio riser shares conduit with telephone riser.
4. Connect to audio source unit TB1-REMOTE MIC AUDIO and -REMOTE MIC KEY input terminals when last remote microphone unit in chain.





Trouble Relay Interface Circuit

INSTALLATION INSTRUCTIONS

1. With the wallbox securely mounted, attach the outer door to the outer door mounting studs as shown in Figure-1.

2. Attach a grounding strap from the ground strap stud on the wallbox to the outer door.

3. On semi-flush mounted wallboxes attach the inner door to the inner door mounting studs. See Figure-2. On surface mounted wallboxes screw the inner door to the mounting holes.

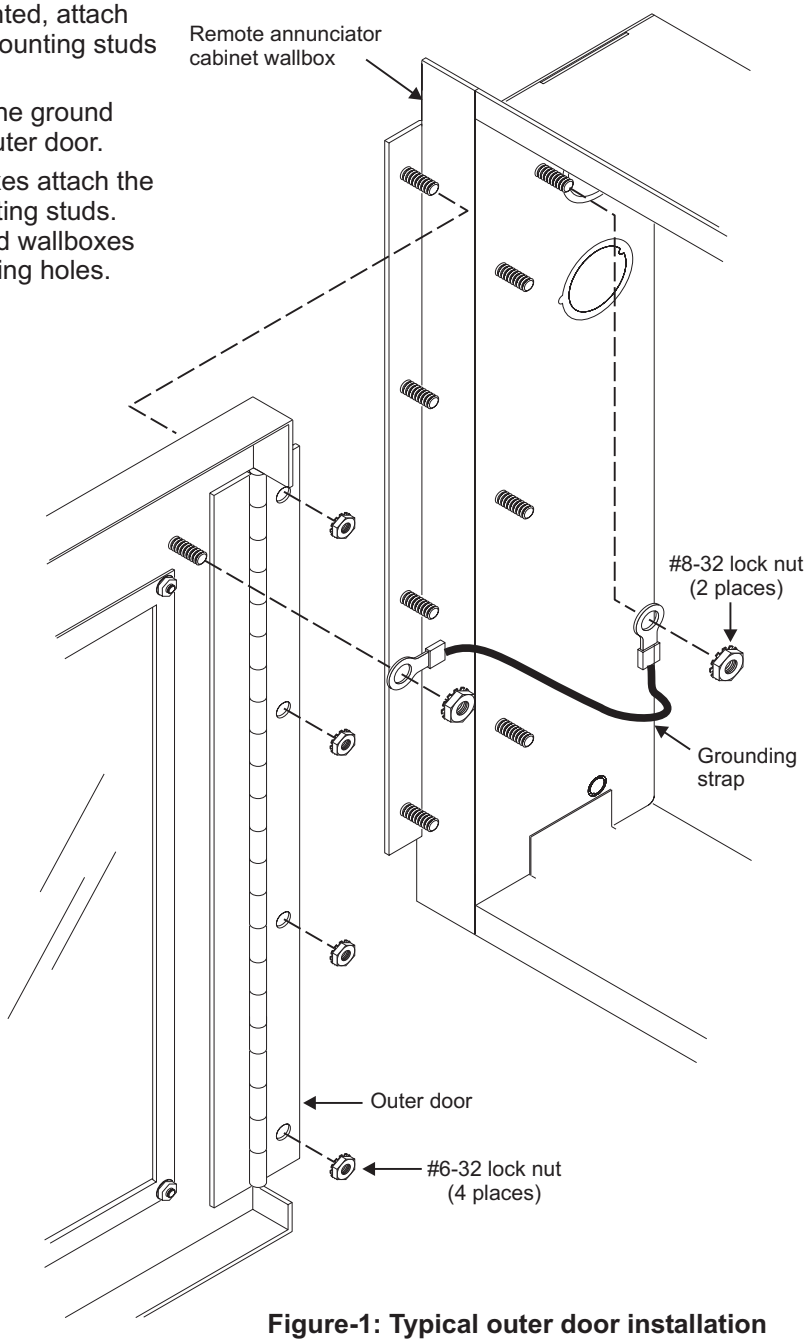


Figure-1: Typical outer door installation

PRODUCT DESCRIPTION

The remote annunciator cabinet door assembly consists of an inner door and an outer door. The outer door has a viewing window and is secured in the closed position with a key lock. The inner door provides mounting space for the panel electronics and is secured in the closed position with a captive screw.

The line of remote annunciator cabinet door assemblies include:

Model	Description
3-RLCM/D	Grey door with window for the 3-LCDANN semi-flush and surface mount cabinets
3-6ANN/D	Grey door with window for the 6-ANN semi-flush and surface mount cabinets
3-10ANN/D	Grey door with window for the 10-ANN semi-flush and surface mount cabinets

INSTALLATION SHEET:

3-RLCM/D, 3-6ANN/D, and 3-10ANN/D Remote Annunciator Cabinet Doors

INSTALLATION SHEET P/N: 387310	FILE NAME: 387310.CDR
REVISION LEVEL: 2.0	APPROVED BY: K. Patterson
DATE: 06DEC99	CREATED BY: G. Sutton

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

Note: Figure-2 shows how the inner door attaches to a wallbox designed for semi-flush mount applications. Surface mount wallboxes use self-tapping screws and pre-drilled holes to attach the inner door to the wallbox.

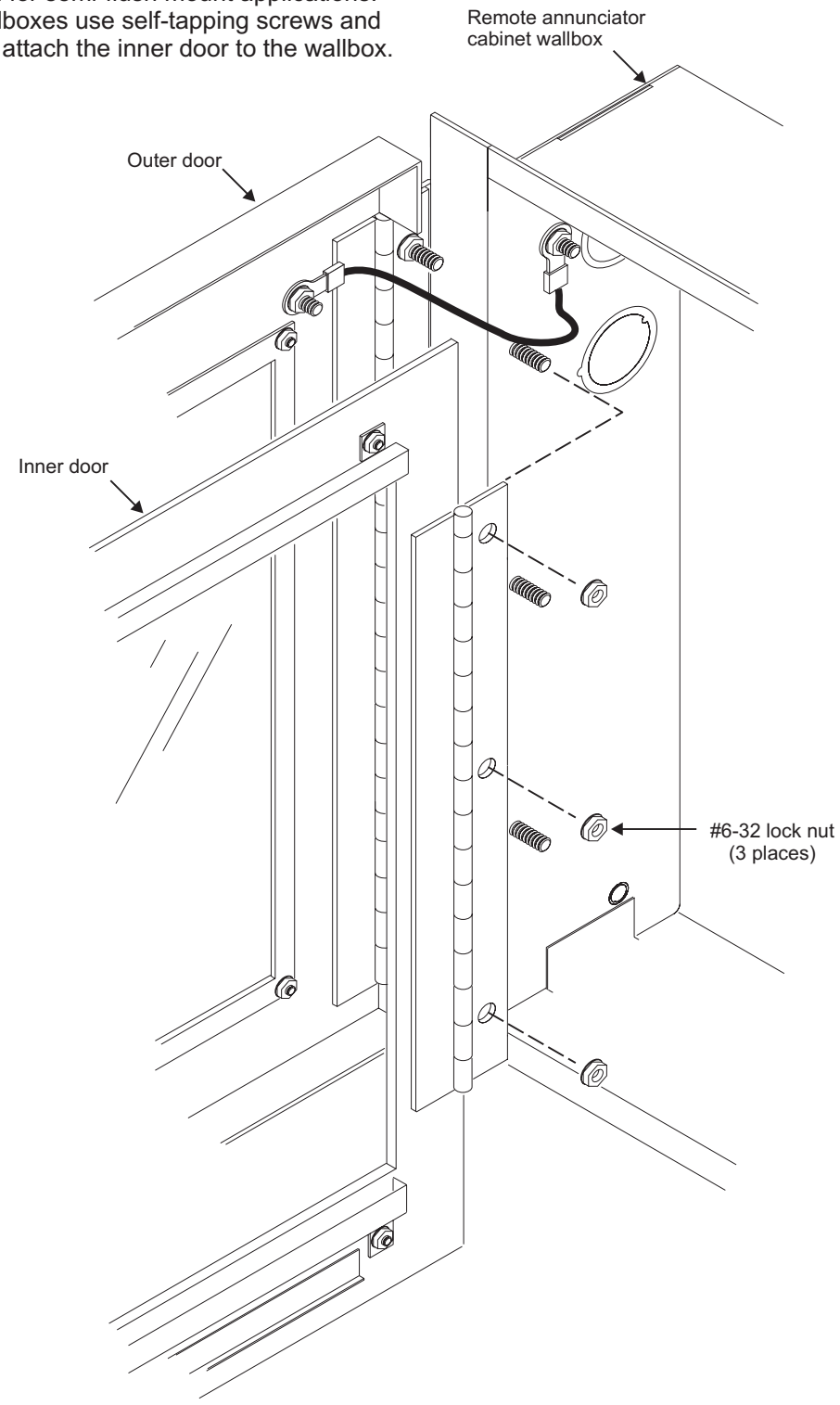


Figure-2: Typical inner door installation (semi-flush mount wallbox shown)

INSTALLATION INSTRUCTIONS

1. With the wallbox securely mounted, attach the outer door to the outer door mounting studs as shown in Figure-1.

2. Attach a grounding strap from the ground strap stud on the wallbox to the outer door.

3. On semi-flush mounted wallboxes attach the inner door to the inner door mounting studs. See Figure-2. On surface mounted wallboxes screw the inner door to the mounting holes.

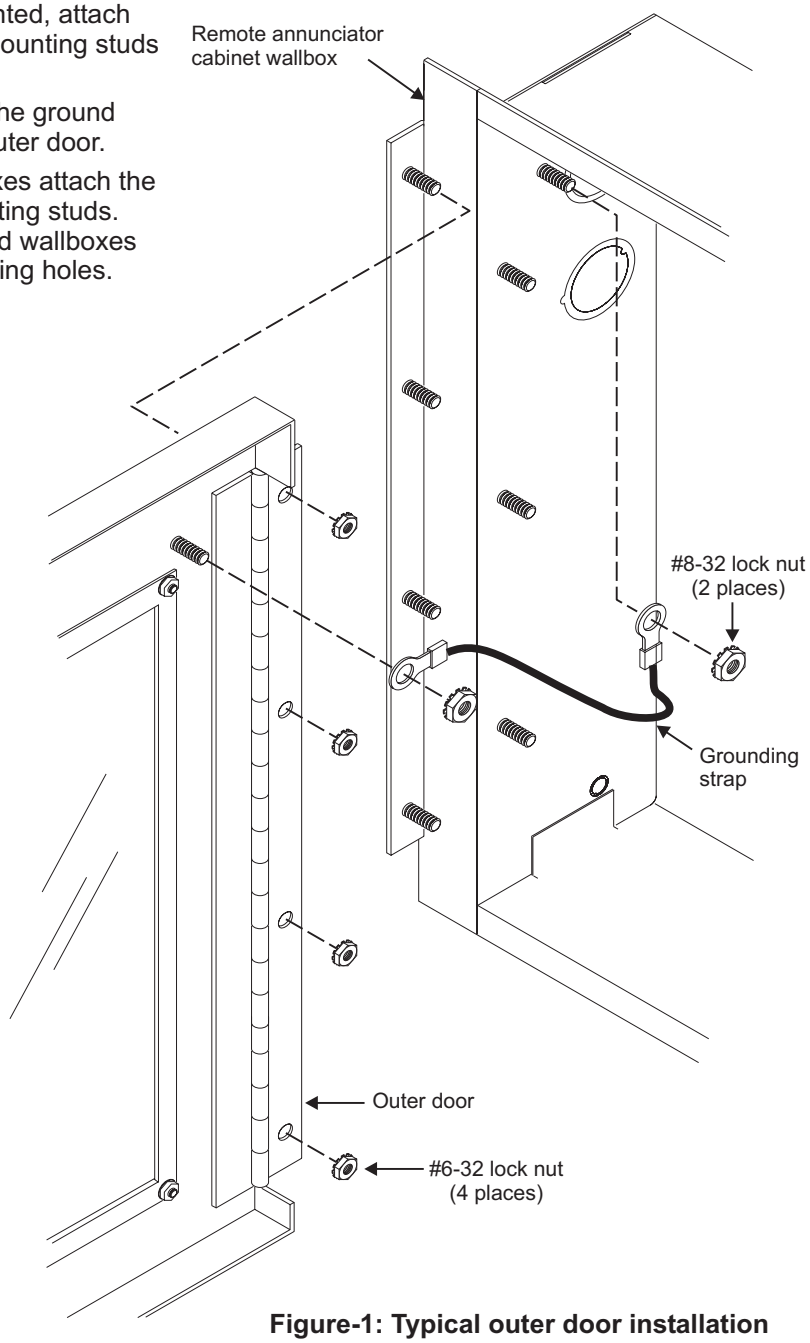


Figure-1: Typical outer door installation

PRODUCT DESCRIPTION

The remote annunciator cabinet door assembly consists of an inner door and an outer door. The outer door has a viewing window and is secured in the closed position with a turn knob lock. The inner door provides mounting space for the panel electronics and is secured in the closed position with a captive screw.

The line of remote annunciator cabinet door assemblies include:

Model	Description
3-RLCM/D-E	Grey door with window for the 3-LCDANN-E semi-flush and surface mount cabinets
3-6ANN/D-E	Grey door with window for the 3-6ANN-E semi-flush and surface mount cabinets
3-10ANN/D-E	Grey door with window for the 3-10ANN-E semi-flush and surface mount cabinets

INSTALLATION SHEET:

3-RLCM/D-E, 3-6ANN/D-E, and 3-10ANN/D-E Remote Annunciator Cabinet Doors

INSTALLATION SHEET P/N: 387553	FILE NAME: 387553.CDR
REVISION LEVEL: 1.0	APPROVED BY: K. Patterson
DATE: 06DEC99	CREATED BY: G. Sutton

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Note: Figure-2 shows how the inner door attaches to a wallbox designed for semi-flush mount applications. Surface mount wallboxes use self-tapping screws and pre-drilled holes to attach the inner door to the wallbox.

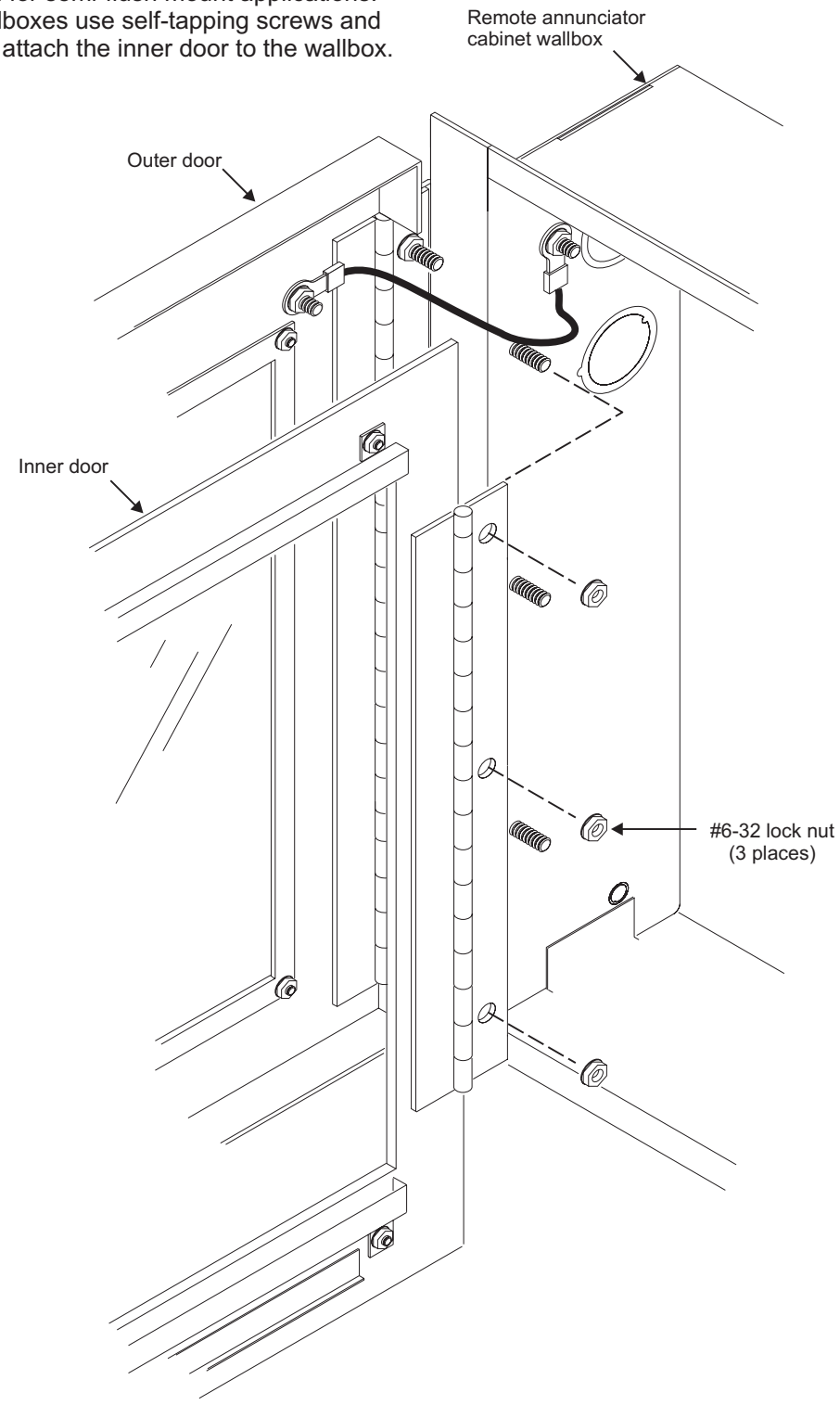


Figure-2: Typical inner door installation (semi-flush mount wallbox shown)

SPECIFICATIONS

3-RS485B, 3-RS485A, 3-RS485R Network Communications Card

Installation:	Plugs into connector J2 on the 3-CPU1
Network Data Circuit:	
Circuit Configuration:	Class A (3-RS485A and 3-RS485B) Class B (3-RS485A and 3-RS485B)
Isolation:	Network A port not isolated Network B port isolated
Wire Type:	Twisted pair,18 AWG (0.75 mm^2) min.
Circuit Length:	5,000 ft (1,524 m) between any 3 panels
Circuit Resistance:	90 Ω, max
Circuit Capacitance:	0.3 µF, max.
Network Audio Circuit:	
Circuit Configuration:	Class A (3-RS485A only) Class B (3-RS485A and 3-RS485B)
Isolation:	Audio AIN and Audio BIN isolated Audio AOUT and Audio BOUT not isolated
Wire Type:	Twisted pair,18 AWG (0.75 mm^2) min.
Circuit Length:	5,000 ft (1,524 m) between any 3 panels
Circuit Resistance:	90 Ω, max
Circuit Capacitance:	0.09 µF, max.
Operating Environment	
Temperature:	32 - 120 °F (0 - 49 °C)
Humidity:	93% RH, non-condensing
Current Requirements	
Standby:	55 mA
Alarm:	55 mA

3-RS232 Ancillary Communications Card

Installation:	Plugs into connector J3 of the 3-CPU1
Circuit Configuration:	Class B
Circuit Type:	Two optically-isolated RS-232 serial
Baud Rate:	300, 1200, 2400, 4800, 9600, 19200, 38400
Max. Circuit Length:	50 ft (15.2 m)
Minimum Wire Size:	18 AWG (0.75 mm^2)
Operating Environment	
Temperature:	32 - 120 °F (0 - 49 °C)
Humidity:	93% RH, non-condensing
Current Requirements	
Standby:	48 mA
Alarm:	48 mA

INSTALLATION INSTRUCTIONS

1. Plug the option card into the appropriate connector on the back side of the 3-CPU1 (see figure on page 2 of this installation sheet). The card should be firmly seated in its connector.
2. Secure the card to the 3-CPU1 with the provided #6-32 screw and nut.
3. Plug the 3-CPU1 into the rail chassis assembly.
4. Connect the field wiring. Refer to installation sheet P/N 387465.

PRODUCT DESCRIPTION

3-RS485B, 3-RS485A, 3-RS485R Network Communications Card

The 3-RS485B, 3-RS485A, and 3-RS485R gives a panel the ability to to network to other panels. Each card provides two independent RS-485 circuits; one for network data communications, and one for digital audio communications. See Specifications.

Do not use a 3-RS485A card with a 3-CPU module. This will cause network system troubles. Use the 3-RS485A card only with a 3-CPU1 module.

The 3-RS485R is a direct service replacement for older 3-RS485 assemblies (P/N 240626 and P/N 240971). Failure to replace these assemblies with the 3-RS485R may result in system audio troubles.

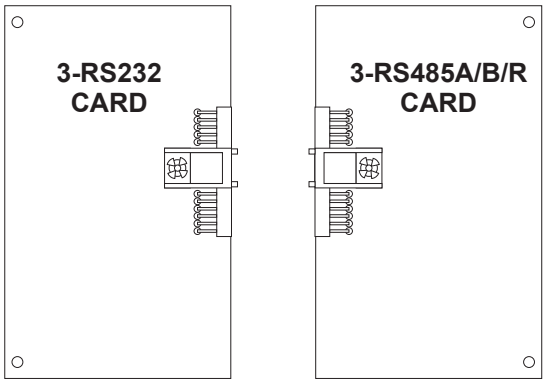
3-RS232 Ancillary Communications Card

The 3-RS232 Ancillary Communications card gives a panel the ability to connect to serial devices such as printers, modems, and external command and control equipment. The 3-RS232 card provides two RS-232 serial ports.

WARNINGS

1. This product contains components that are sensitive to static electricity. Failure to follow proper handling procedures may cause equipment damage.
2. Rail modules may not be plugged into the rail chassis assembly while voltages are present on the rail. Failure to de-energize the panel before plugging in the rail module may result in equipment damage.

OPTION CARDS



INSTALLATION SHEET:

Option cards

3-RS485(A/B/R) Network communications card
3-RS232 Ancillary communications card

INSTALLATION SHEET P/N: 270489	FILE NAME: 270489.CDR
REVISION LEVEL: 5.0	APPROVED BY: D. Munn
DATE: 22JAN01	CREATED BY: D. Miner

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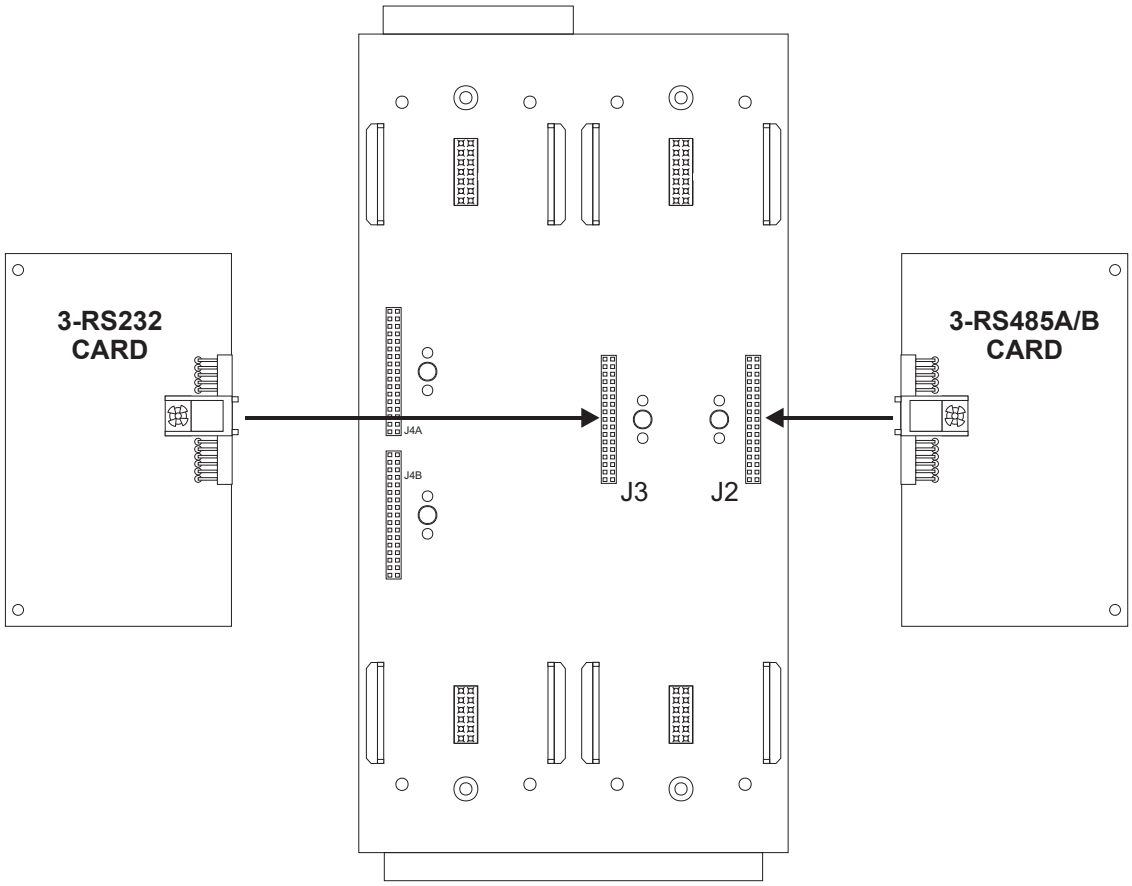
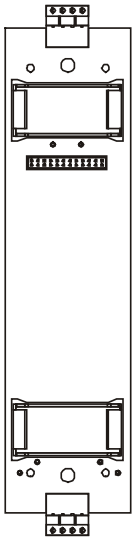


3-CPU1
Rear view

3-SAC
Security Access Control Module

Product description



The 3-SAC is a high-speed module used to support Card Reader Controller modules and Keypad Display modules. The 3-SAC is capable of Class A and Class B configuration and occupies one rail module space.

The 3-SAC module can support a maximum of 62 CRCs or KPDISPs. Events are passed to the 3-SAC module, then passed to the 3-CPU1 for alarm processing.

Specifications

Mounting: One expansion slot
Device support
- Class A: 30 devices
- Class B: 62 devices (31 per loop)

Wire size: 14 to 22 AWG (1.5 to 0.25 sq mm)
SAC bus wiring
- Type: unshielded, twisted pair, > 6 twists per foot
- Maximum run from 3-SAC: 4,000 ft (1,220 m) @ 25 pF/ft
- Maximum total capacitance: 0.1 μF
- Maximum total resistance: 52 Ω
- Maximum voltage: 10 Vdc
- Maximum current: 250 mA

Current requirements (does not include LED/Switch module)
- Standby/Alarm: 40 mA @ 24 Vdc

Operating environment
- Temperature: 32 °F (0 °C) to 120 °F (49 °C)
- Humidity: 93% RH, noncondensing

WARNINGS

1. Remove AC and battery power before installing or removing option modules.
2. Components in this system are static sensitive. Discharge static buildup on your body before handling.

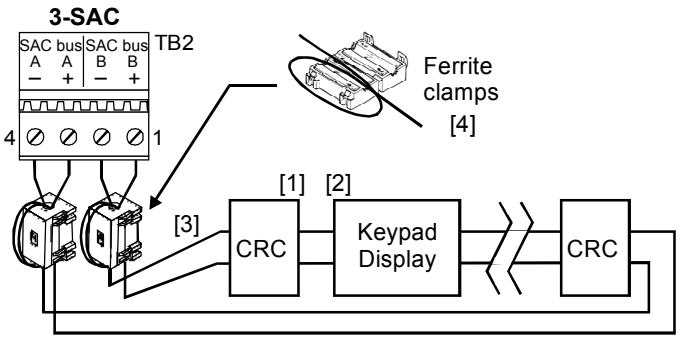
Installation instructions

1. Install a display faceplate in the recess on the front of the module if needed. Refer to the Control/LED Displays installation sheet P/N 270493 for more information.
2. Mount the 3-SAC in one space on the rail chassis.
3. Connect all SAC Bus wiring to TB2. TB2 is removable for ease of wiring. All wiring is power-limited and should be routed through the notches at the right front of the chassis.
4. Close the module display door. Latch the door by sliding the upper latch up and the lower latch down.

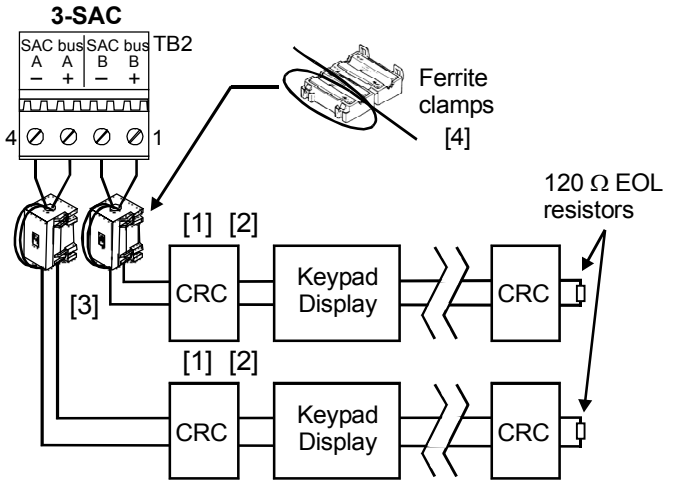
Note: TB1 is not used.

Wiring diagrams

Class A wiring



Class B wiring



Notes

[1] Refer to device installation sheets for proper wiring.
[2] Maximum of 30 devices for Class A, 62 devices (31 per loop) for Class B.
[3] Security Access Control Bus.
[4] Install the provided ferrite clamps as shown. The clamps must be mounted on the lines as they exit the cabinet.
5. Up to 4,000 ft @ 25 pF/ft (1,220 m). All wiring is power-limited and supervised.

PRODUCT INFORMATION

The 3-SSDC module provides one Class A or Class B Signature data circuit for Signature Series detectors and modules. The module also provides a connection for powering conventional 2-wire smoke detector circuits on Signature Series modules.

Note: Adding a second 3-SDC card to a 3-SSDC converts the 3-SSDC into a 3-SDDC and requires that you redefine it as such in the project database.

The 3-SSDC module supports the full complement of Signature diagnostic features including mapping. The module features a hinged front panel for mounting displays or a blank protective faceplate.

The 3-SDDC module provides all the features of the 3-SSDC plus support for a second Signature data circuit.

All field wiring connections are made via plug-in connectors that permit termination of field wiring without the module installed in the enclosure. The plug-in connectors and snap rivet mounting also facilitate rapid troubleshooting without the use of tools.

WARNINGS

This product contains components that are sensitive to static electricity. Failure to follow proper handling procedures may result in equipment damage.

Rail modules may not be plugged into the rail chassis assembly while voltages are present on the rail. Failure to de-energize the panel before plugging in the rail module may result in equipment damage.

Do not flex the filter card or exert excessive pressure on the field wiring connectors when installing the filter card.

Do not connect field wiring or connect/disconnect the terminal block without supporting the back edge of the filter card to avoid flexing the filter card.

SPECIFICATIONS

Installation:	1 LRM space on rail chassis
Module Configuration:	3-SSDC:1 Signature Data Circuit 3-SDDC: 2 Signature Data Circuits
Smoke Power:	24 Vdc @ 85 mA
Maximum Wire Size:	12 AWG (1.5 mm^2)
Termination:	Removable plug-in terminal strips on module
Operating Environment:	82 - 120 °F (0 - 49 °C) 93% RH, non-condensing
Circuit Configuration:	Class B (Style 4) or Class A(Style 6)
Circuit Capacity:	125 Signature Series detectors and 125 Signature Series modules per circuit.
Circuit Resistance:	79 Ω, max.
Circuit Capacitance:	0.33 µF, max

Current Requirements

Standby:	**3-SSDC:**	158 mA	**3-SDDC:**	242 mA
Alarm:	**3-SSDC:**	177 mA	**3-SDDC:**	261 mA

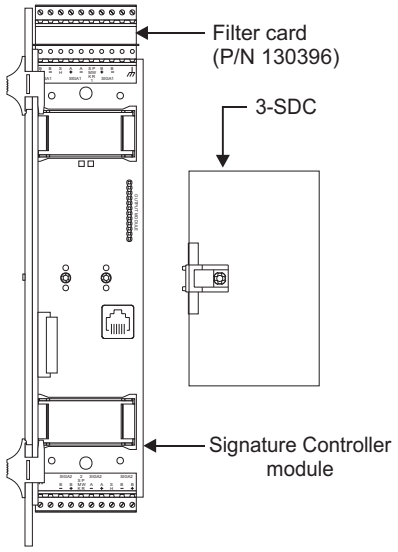
INSTALLATION INSTRUCTIONS

1. Connect the 3-SDC card(s) to the appropriate connectors on the back side of the rail module assembly. See Figure-1.

   Note: If the height of the DC to DC convertor on a 3-SDC card prevents you from adding it to Circuit 2 on a 3-SSDC module then move the 3-SDC in Circuit 1 to Circuit 2 and install the new 3-SDC in Circuit 1.
2. If a control/display module is required, install it at this time. Refer to the instructions provided with the control/display module.
3. Carefully plug the filter board(s) into the connector(s) on the rail module and install the module on the rail.
4. Before connecting the field wiring, test the field wiring for opens or shorts.

   When a circuit checks out properly, connect it to the appropriate terminals as shown in the diagram on the next page. Polarity is indicated for normal monitoring of the circuit's electrical integrity.

PRODUCT DIAGRAM



INSTALLATION SHEET

3-SSDC, 3-SDDC Signature Controller modules and 3-SDC Signature Data Circuit card

INSTALLATION SHEET P/N: 270491	FILE NAME: 270491.CDR
REVISION LEVEL: 3.0	APPROVED BY: D. Munn
DATE: 28SEP00	CREATED BY: G Sutton

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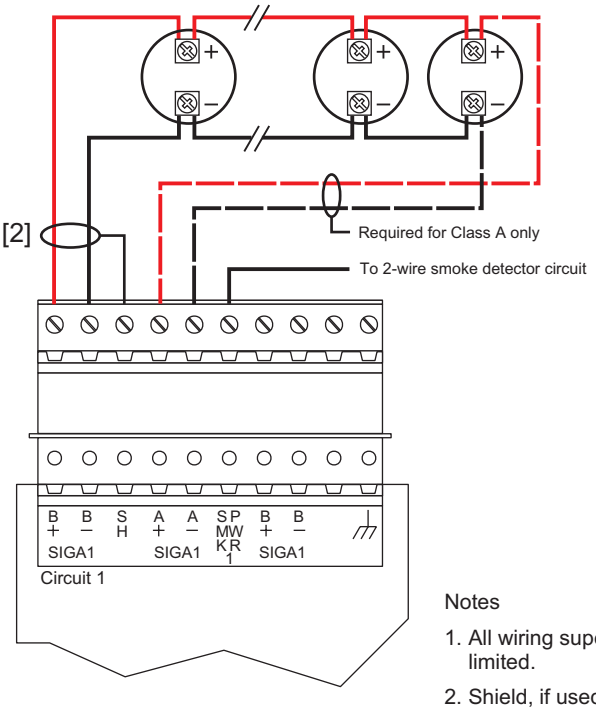
WIRING DIAGRAM

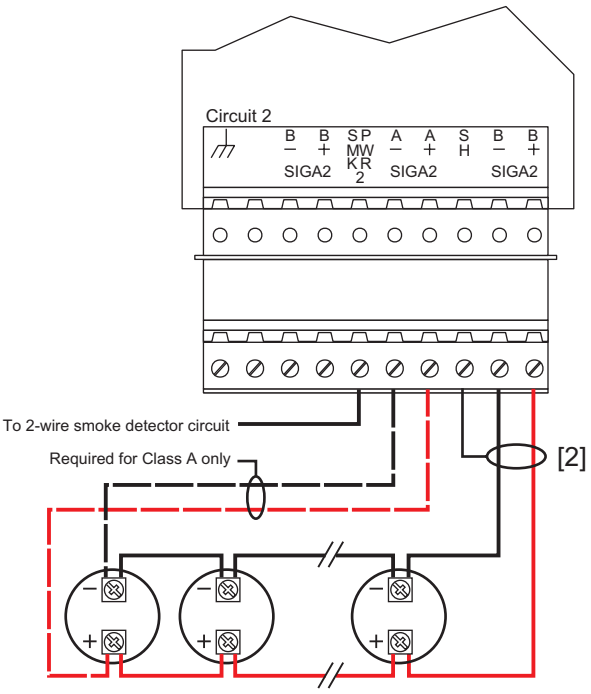


3-SSDC and 3-SDDC

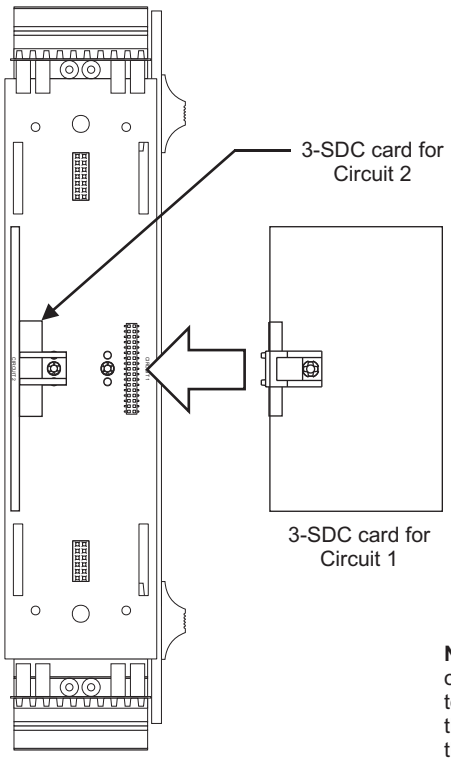
Notes

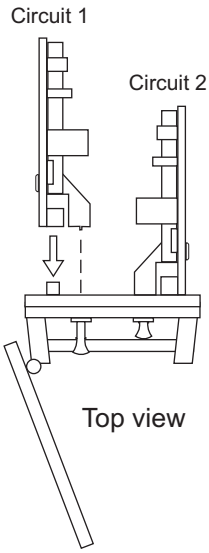
1. All wiring supervised and power-limited.
2. Shield, if used, must be continuous and free from earth ground.

3-SDDC only

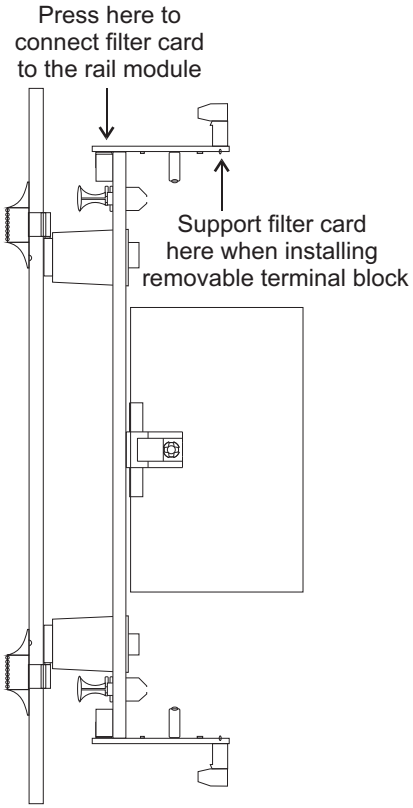


INSTALLATION INSTRUCTIONS (CONT.)





3-SDC card installation



Note: If the height of the DC to DC convertor on a 3-SDC card prevents you from adding it to Circuit 2 on a 3-SSDC module then move the 3-SDC in Circuit 1 to Circuit 2 and install the new 3-SDC in Circuit 1.

Figure-1: Filter card and 3-SDC card installation

PRODUCT DESCRIPTION

Tamper switches are used to detect an open cabinet door. Three models are available:

- the 3-TAMP5 for the CAB5
- the 3-TAMP for the CAB series of equipment enclosures
- the 3-TAMPRCC for the RCC series of equipment enclosures

Two end-of-line resistors are soldered to the switch terminal connections. Use the 4.7 kΩ resistor when connecting to a IDC8/4 initiating device circuit module. Use the 47 kΩ end-of-line resistor when connecting to a Signature input signal module.

The tamper switch plunger can be extended to place the switch in its bypass position and make it appear that the cabinet door is closed.

INSTALLATION INSTRUCTIONS

1. Mount the tamper switch to the cabinet (see below).
2. Do one of the following:
   - If the tamper switch is being connected to a IDC8/4 initiating device circuit module, cut out the 47 kΩ end-of-line resistor.
   - If the tamper switch is being connected to a Signature input signal module, cut out the 4.7 kΩ resistor.
3. Wire the tamper switch to the initiating device circuit.

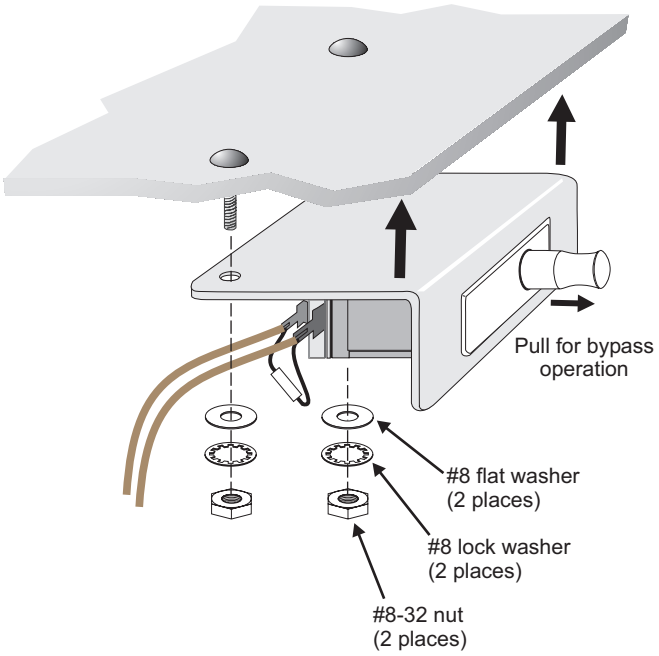
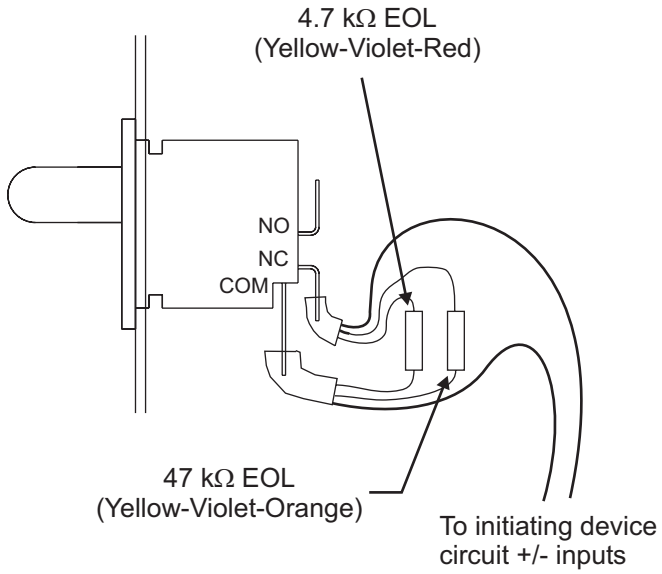
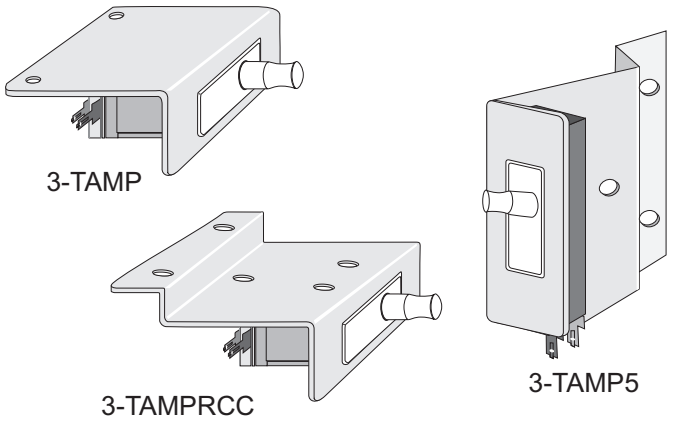


Figure-1: Tamper switches mount to the top or side of their respective cabinets and are secured using hardware provided in the hardware kit. This figure shows the installation of a 3-TAMP.

FIELD WIRING



PRODUCT DIAGRAM



INSTALLATION SHEET

3-TAMP, 3-TAMP5, 3-TAMPRCC Cabinet Tamper Switches

INSTALLATION SHEET P/N: 387422	FILE NAME: 387422.CDR
REVISION LEVEL: 2.0	APPROVED BY: B. Shivers
DATE: 17NOV99	CREATED BY: G. Sutton

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PRODUCT DESCRIPTION

The model 3-ZA20A/B and 3-ZA40A/B audio amplifiers demultiplex the 8 multiplexed audio signals on the network audio riser. Under command of the network, 1 of the 8 available signals is distributed over the speaker circuit. Command and control signals for the amplifier are sent and received via the network data riser in response to network programming.

Amplifers are in 20- and 40-Watt, Class A and Class B versions. Supervised, power-limited 25 Vrms or 70 Vrms outputs are available on both versions. Amplifiers use a Class D switch mode design to provide better than 80% efficiency. Each amplifier's output is directly wired to a single speaker zone.

Each amplifier has a 1 kHz temporal (3-3-3) tone generator for use as an evacuation signal in the event of a fault with the network audio circuit. A standby amplifier may be configured for automatic replacement of any online amplifier configuration, in the event of an online amplifier failure. The standby amplifier must be the same wattage as the largest amplifier within the enclosure. The amplifiers draw power from the primary and booster power supplies which must be sized according to the enclosure electrical load.

Each amplifier is also provided with an independently controlled supervised, power limited 24 VDC Notification Appliance Circuit (NAC) rated at 3.5 A. This facilitates the addition of visual notification appliances to audio notification circuits.

Each amplifier requires one LRM space on the rail chassis and is secured to the assembly using snap rivet fasteners. All field wiring connections to the amplifier module are made via plug-in connectors, permitting termination of field wiring without the module installed in the enclosure.

WARNINGS

1. This product contains components that are sensitive to static electricity. Failure to follow proper handling procedures may cause equipment failure.
2. Rail modules should not be plugged into the rail chassis assembly while 24 Vdc is present on the rail. Failure to remove 24 Vdc may damage the equipment.
3. Operating the amplifier at an output greater than that required by the speaker may overdrive the speaker circuit and result in damage to the equipment.

INSTALLATION INSTRUCTIONS

1. If the panel is already in service, disconnect the storage battery then deenergize the mains ac circuit supplying power to the panel.
2. Set jumpers JP1 and JP2 on the audio power module subassembly for 25 or 70 Vrms, depending on the input required by the audio circuit speakers.

	JP1	JP2
25 Vrms	2 to 3	2 to 3
70 Vrms	1 to 2	1 to 2

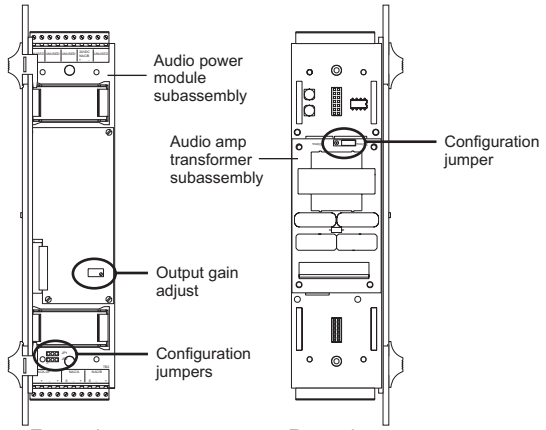
3. Set the jumper on the audio amp transformer subassembly for 25 or 70 Vrms, depending on the input required by the audio circuit speakers.
4. Slide the amplifier module into the required rail chassis slot position.
5. Gently push the zone amplifier module into the connectors to ensure good contact.
6. Secure the zone amplifier module to the rail by pushing in the top and bottom snap rivet fasteners.
7. Connect the field wiring.

Note: The gain control pot may be adjusted later for desired output level. Fully CCW is maximum gain and fully CW is minimum gain.

SPECIFICATIONS

Installation:	1 rail chassis slot position
Frequency Response:	400 Hz to 4 kHz at -3 dB
Harmonic Distortion:	< 7%
Audio Circuit:	
Wiring Configuration	
3-ZA20B/40B	Class B (Style Y)
3-ZA20A/40A	Class A (Style Z) or Class B (Style Y)
EOL Resistor	15 kΩ (internal on 3-ZA20A/40A)
Outputs:	
3-ZA20A/20B	20 watts @ 25 Vrms or 70 Vrms
3-ZA40A/40B	40 watts @ 25 Vrms or 70 Vrms
Current Rating	
Standby	35 mA (all models)
Alarm	1.25 A (3-ZA20A/20B) 2.30 A (3-ZA40A/40B)
24 Vdc NAC Circuit:	
Wiring Configuration	
3-ZA20B/40B	Class B (Style Y)
3-ZA20A/40A	Class A (Style Z) or Class B (Style Y)
Voltage	24 Vdc nominal
Current	3.5 A
EOL Resistor	15 kΩ (internal on 3-ZA20A/40A)
Termination	Removable plug-in terminal strips
Maximum Wire Size	12 AWG (2.5 mm^2)
Backup Tone	1 kHz temporal (3-3-3)
Operating Environment	
Temperature	32 - 120 °F (0 - 49 °C)
Humidity	93% RH, non-condensing

3-ZA20A/B, 3-ZA40A/B



INSTALLATION SHEET:

3-ZA20A, 3-ZA20B, 3-ZA40A, 3-ZA40B Zoned Audio Amplifiers

INSTALLATION SHEET P/N: 387463	FILE NAME: 387463.CDR
REVISION LEVEL: 2.0	APPROVED BY: E. Onstine
DATE: 05FEB00	CREATED BY: G. Sutton

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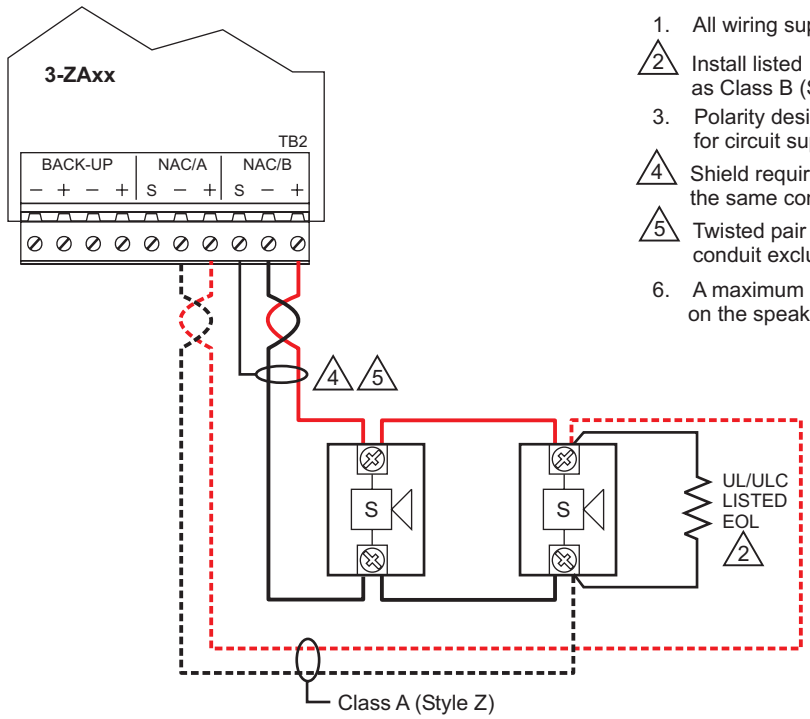


Notes:

1. All wiring supervised and power-limited.
2. Install listed 15k ohm EOL resistor on last device only when wired as Class B (Style Y) riser.
3. Polarity designations on connector indicate output signal polarity for circuit supervision. The polarity reverses in an alarm condition.
4. Shield required when audio riser and telephone riser share the same conduit.
5. Twisted pair not required only when audio circuit riser shares conduit exclusively with 24 Vdc riser or in conduit by itself.
6. A maximum of 10 SIGA-CC1s or SIGA-CC2s may be installed on the speaker circuit.

Figure-1: Typical 25 or 70 Vrms notification appliance circuit wiring

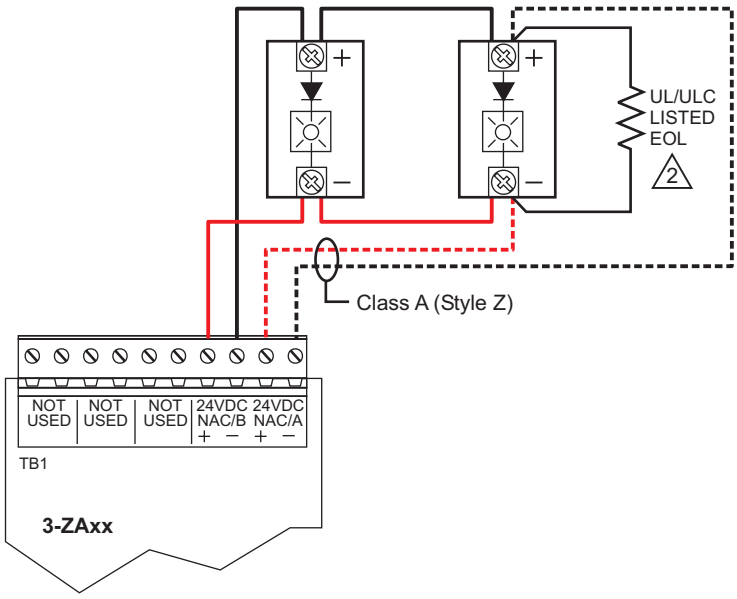
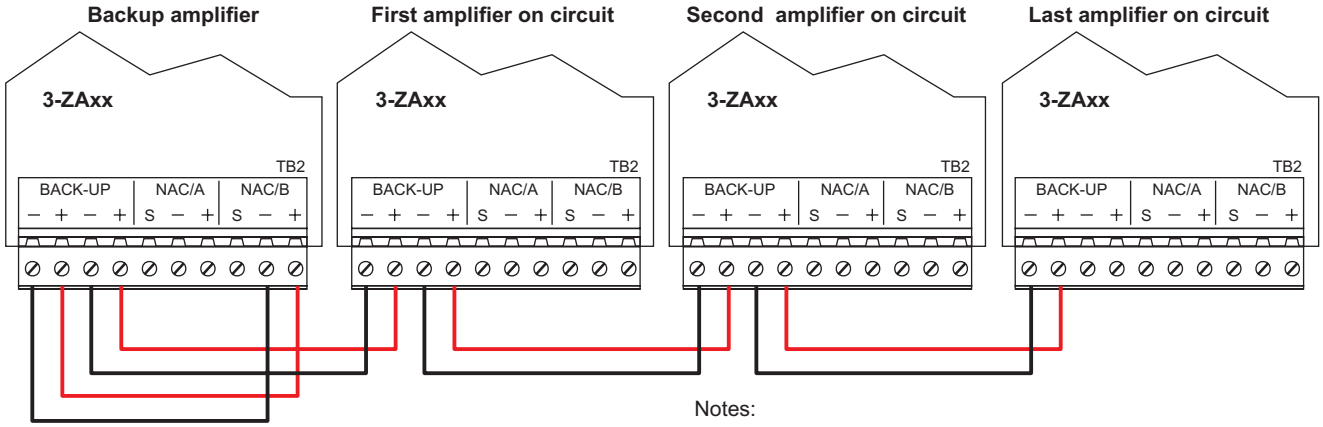


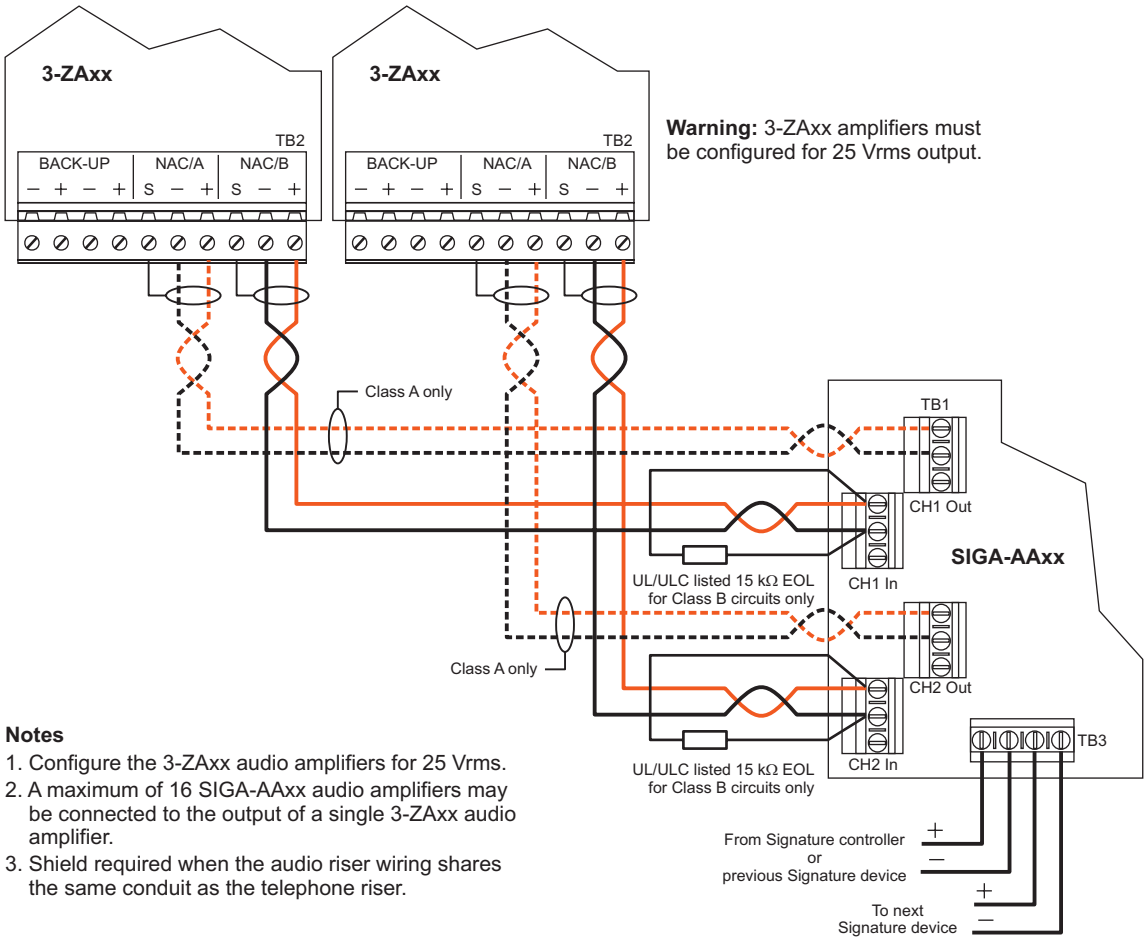
Figure-2: Typical 24 Vdc notification appliance circuit wiring



Notes:

1. All wiring supervised and power-limited.
2. Backup amplifier must be rated greater than or equal to the other amplifiers to which it is connected and be installed in the same enclosure.
3. Backup amplifier wiring must be rated greater than or equal to field wiring used on amplifiers connected to the backup amplifier.

Figure-3: Typical backup amplifier wiring



Warning: 3-ZAxx amplifiers must be configured for 25 Vrms output.

Notes

1. Configure the 3-ZAxx audio amplifiers for 25 Vrms.
2. A maximum of 16 SIGA-AAxx audio amplifiers may be connected to the output of a single 3-ZAxx audio amplifier.
3. Shield required when the audio riser wiring shares the same conduit as the telephone riser.

Figure-4: Typical wiring connecting to SIGA-AAxx audio amplifier

PRODUCT DESCRIPTION

The 3-ZA90 zoned audio amplifier module is a key component in an emergency communication system that consists of audible notification appliances (speakers only). The 3-ZA90 provides the following:

- 90 watts of power
- standard output line levels of 25 Vrms or 70 Vrms
- a 1 kHz temporal (3-3-3) tone to use as an evacuation signal in the event of a fault in the audible notification appliance circuit

In addition, the 3-ZA90 provides connections and mounting brackets for two control/display modules.

The 3-ZA90 zoned audio amplifier module requires two

JUMPER SETTINGS

JP1: Selects the amplifier signal output voltage.

JP2: Selects the amplifier output voltage configuration to report to the panel controller.

Note: JP1 and JP2 must be set for the same output voltage.

INSTALLATION INSTRUCTIONS

Installing the amplifier

1. Remove all power from the panel.
2. Set configuration jumpers as required.
3. Slide the module into the required rail/slot position.
4. Gently push the module into the connectors to ensure good contacts.
5. Secure the module to the chassis by pushing in all four fasteners.
6. Connect field wiring.

Adjusting the amplifier output levels

You must adjust the output level of all zoned amplifier modules in the cabinet using a specific input signal. Failure to do so can result in damage to the amplifiers.

Refer to the *Installation and Service Manual* and use the procedure described in the topic *Adjusting amplifier output levels.*

Notes

1. This product should only be installed in a CHAS7 containing a primary or booster power supply.
2. Do not use the gain control pot to adjust output level except when calibrating the amplifier as described in the *Installation and Service Manual*. Doing so can damage the amplifier.
3. When using Signature Series CC1 or CC2 modules to switch amplifier output branch circuits, a maximum of 10 modules may be connected to the output of an amplifier.

SPECIFICATIONS

Space Requirements: 2 rail spaces
Frequency Response: 400 Hz - 4 kHz at -3 dB
Harmonic Distortion: < 7%
Audio Circuit
- Input: 8-channel, multiplexed digitized audio
- Wiring: Class B (Style Y) or Class A (Style Z)
- Output: 90 W at 25 or 70 Vrms
- EOL resistor: 15 kΩ

Wiring
- Termination: Wiring connects to removable terminal block
- Max wire size: 12 AWG (2.5 mm sq)
- **Note:** Refer to the *Installation and Service Manual* for maximum allowable wire lengths.

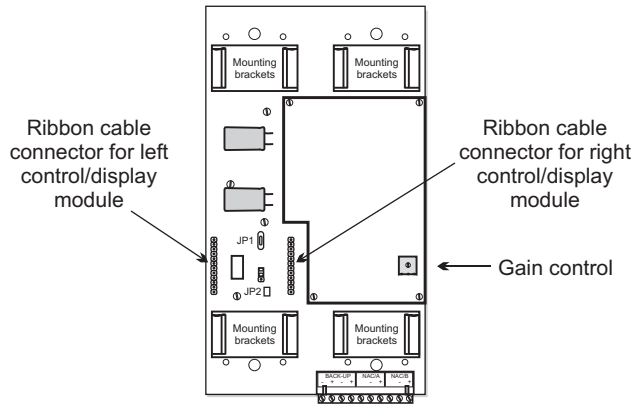
Operating Environment
- Temperature: 32 - 120 °F (0 - 49 °C)
- Humidity: 93% RH, non-condensing

Current ratings
- Standby: 35 mA
- Alarm: 4.6 A

WARNINGS

1. This product contains components which are sensitive to static electricity. Failure to follow proper handling procedures to prevent damage from electrostatic discharge may result in equipment failure.
2. Ensure that all power is removed from the panel before plugging unit into rail chassis assembly.

PRODUCT DIAGRAM

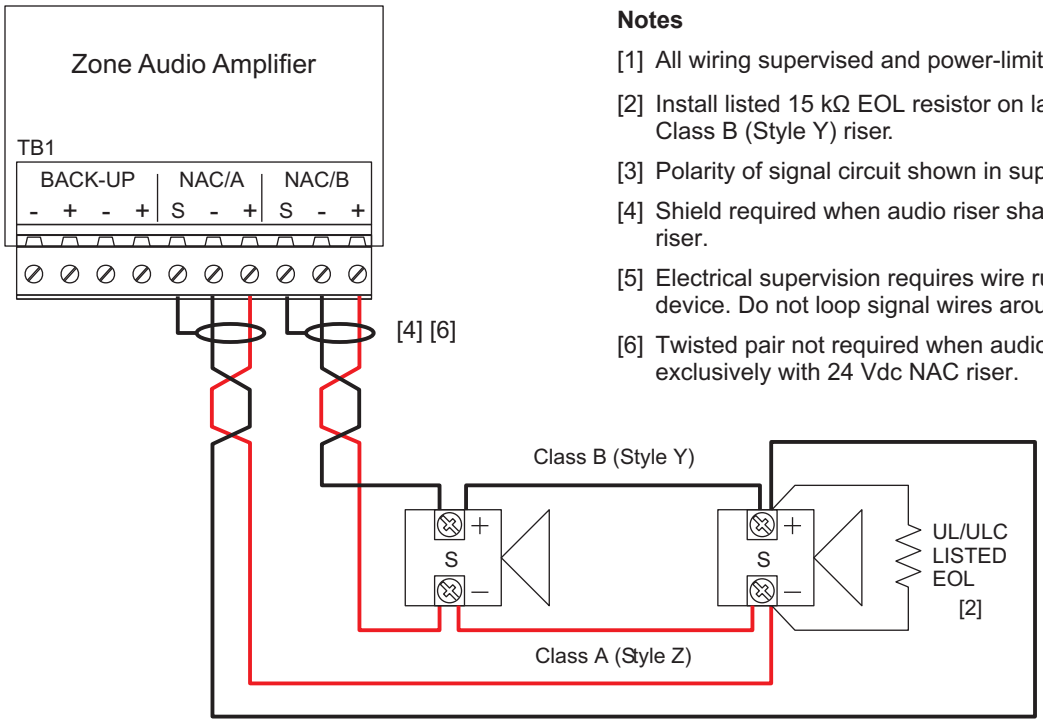


INSTALLATION SHEET:

3-ZA90 Zoned Audio Amplifier

INSTALLATION SHEET P/N: 387516	FILE NAME: 387516.CDR
REVISION LEVEL: 4.0	APPROVED BY: S. Moiseev
DATE: 31JAN01	CREATED BY: D.Chinell

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553



Notes

[1] All wiring supervised and power-limited.

[2] Install listed 15 kΩ EOL resistor on last device only when wired as Class B (Style Y) riser.

[3] Polarity of signal circuit shown in supervisory state.

[4] Shield required when audio riser shares same conduit as telephone riser.

[5] Electrical supervision requires wire runs to be broken at each device. Do not loop signal wires around device terminals.

[6] Twisted pair not required when audio circuit riser shares conduit exclusively with 24 Vdc NAC riser.

Figure 1: Typical notification appliance circuit wiring

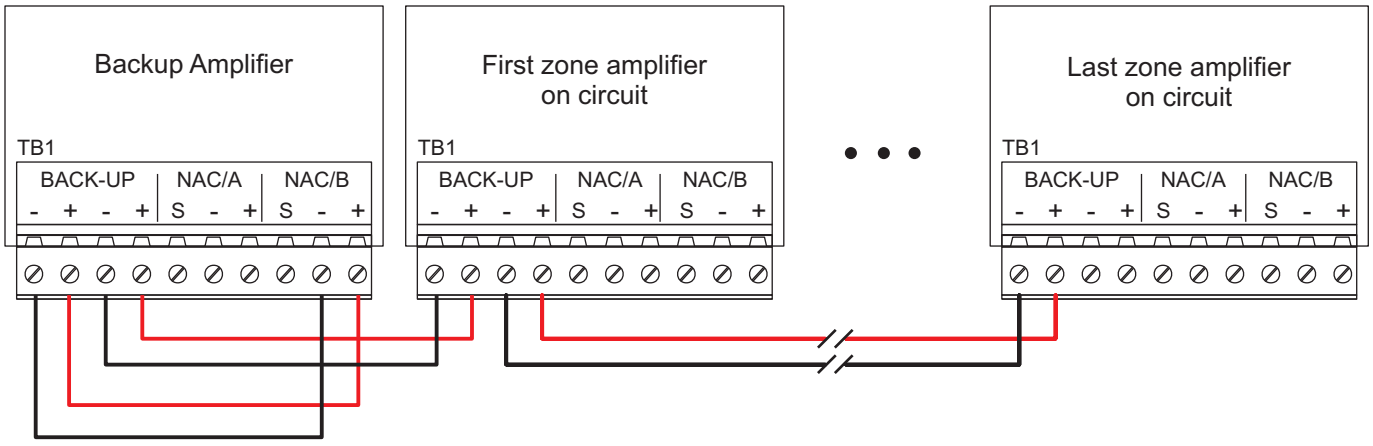


Figure 2: Backup amplifier wiring

Notes

[1] All wiring supervised and power-limited.

[2] Backup amplifier must be rated greater than or equal to the other amplifiers to which it is connected and be installed in the same enclosure.

[3] Backup amplifier wiring must be rated greater than or equal to field wiring used on amplifiers connected to the backup amplifier.

PRODUCT DESCRIPTION

The 6ANN/B(-S) and the 10ANN/B(-S) are wallboxes constructed of 16 guage steel with a textured, gray enamel finish. The wallboxes house remote annunciator CPUs and optional modules that interface with other network components.

6ANN/B(-S)

The following models identify the same wallbox:

Model	Mounting
6ANN/B	Surface
6ANN/B-S	Semi-flush

10ANN/B(-S)

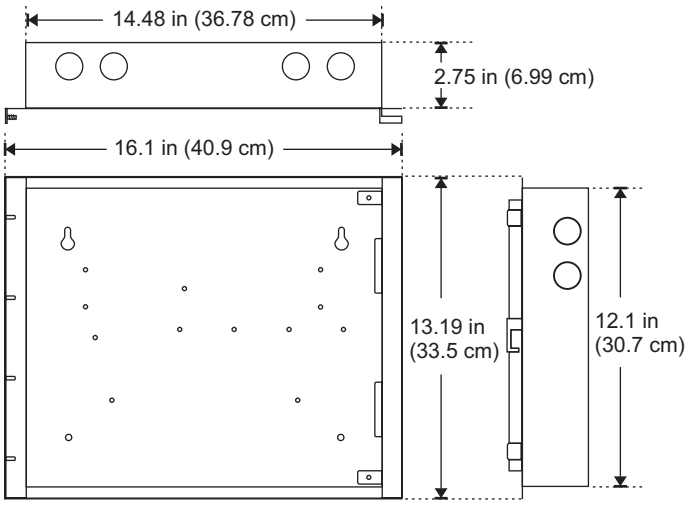
The following models identify the same wallbox:

Model	Mounting
10ANN/B	Surface
10ANN/B-S	Semi-flush

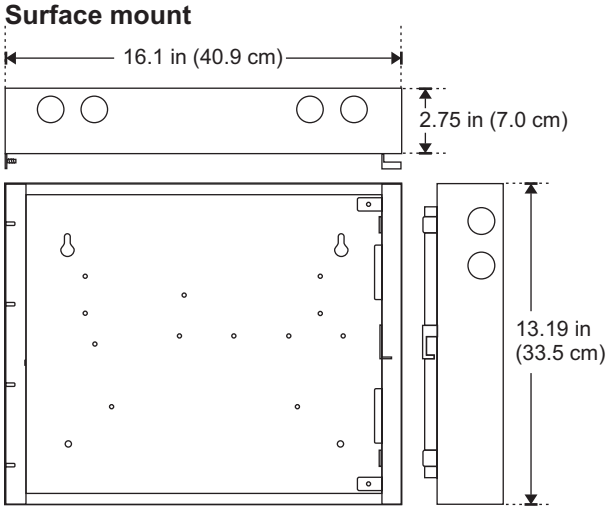
DIMENSIONS

6ANN/B(-S)

Semi-flush

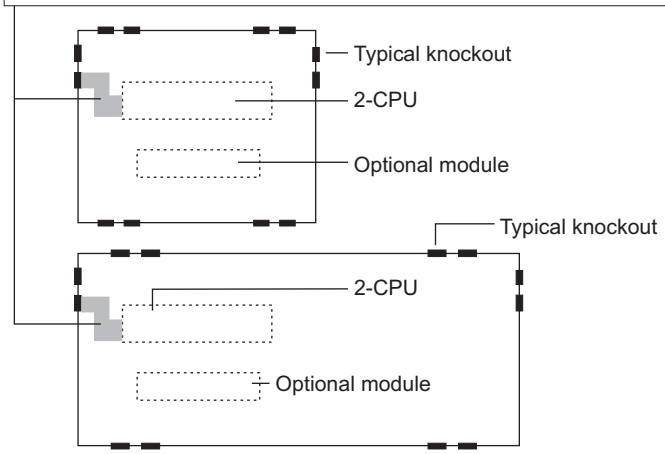


Surface mount

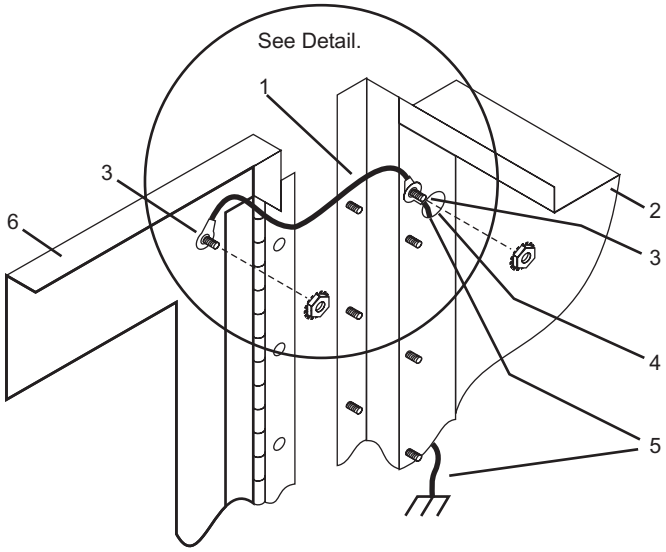


WIRE ROUTING

If a nonpower-limited source feeds the 2-CPU relay contacts, the wiring must remain within this area. All other wiring shall be power-limited.

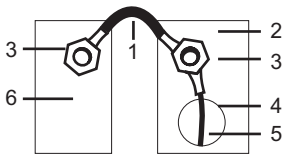


Earth ground connection



Detail

1 Ground Strap
2 Wallbox
3 Ground Lug
4 Typical Knockout
5 Earth Ground Wire
6 Outer Door



INSTALLATION SHEET:

6ANN/B(-S) and 10ANN/B(-S)
Remote Annunciator Cabinet Wallboxes

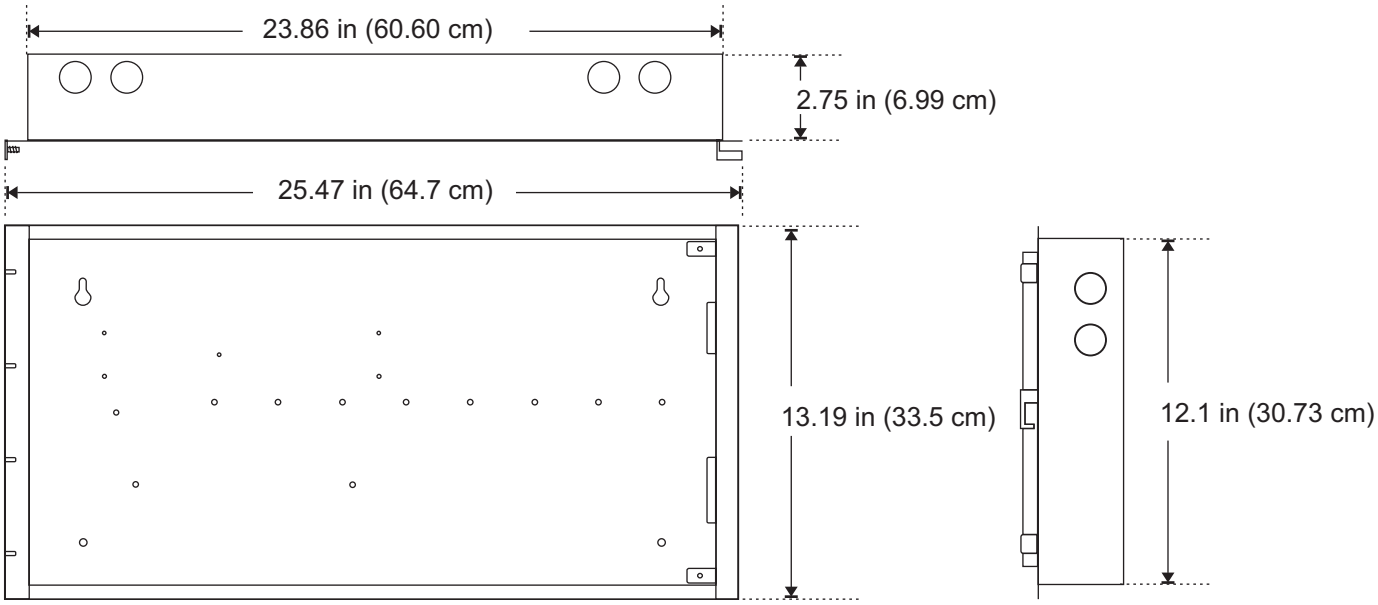
INSTALLATION SHEET P/N: 387586	FILE NAME: 387586.CDR
REVISION LEVEL: 1.0	APPROVED BY: K. Patterson
DATE: 07DEC99	CREATED BY: B. Graham

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

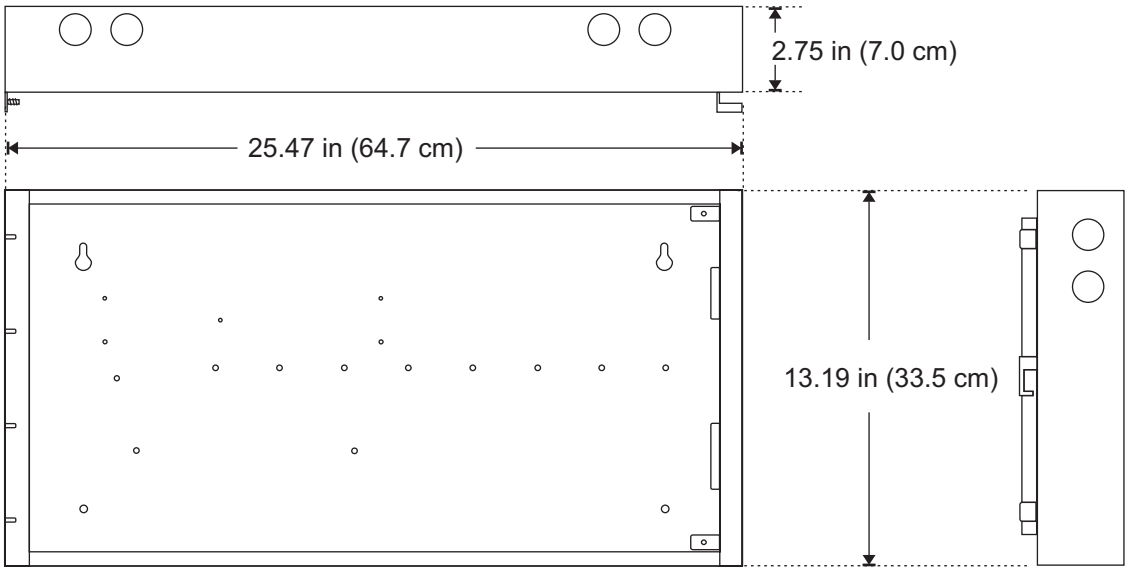
DIMENSIONS

10ANN/B(-S)

Semi-flush



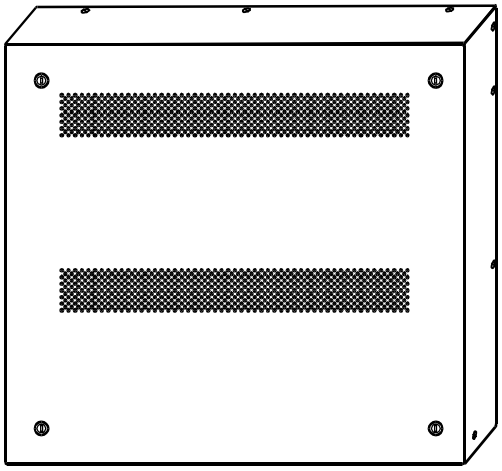
Surface mount



All conduit knockouts support 3/4 inch (1.9 cm) conduit.

ATCK
Attack Kit for RCC7R Cabinet

Product description



For some security applications, the RCC7R cabinet requires an attack-proof kit. The ATCK provides a two-minute attack delay time.

The ATCK lets you replace the standard, hinged outer door with a steel cover that has no window. The cover attaches to the RCC7R with hardened steel screws and front corner locks.

The ATCK also includes special knockout plugs that secure unused knockouts.

Specifications

Size: 23.65 x 25.85 x 3.86 in (60.07 x 65.66 x 9.80 cm)
Material: 14 gauge steel
Finish: Red textured enamel
Key locks: 4
Screws:
- 10-32 x 1 in machine screws: 4
- 10-32 x 2 in machine screws: 10

Compatible with 3-RCC7R cabinet only

Installation instructions

1. Disconnect all power before installing.
2. Remove the existing door from the cabinet.
3. Place the ATCK cover over the cabinet and lock the four key locks. The key locks hold the cover in place.
4. Use the ATCK cover as a template to mark screw holes on all sides of the cabinet (fourteen holes). (Newer cabinets include the screw holes.)
5. Remove the cover and drill all marked holes with a 1/4-inch drill bit.
6. Remove any unused knockouts and insert knockout plugs. (See Figure 2.)
7. Place the ATCK cover onto the cabinet and lock the four key locks.
8. Using the fourteen 10-32 screws provided, attach the cover. Make sure to observe proper placement of the one-inch and two-inch screws. (See Figure 1.)

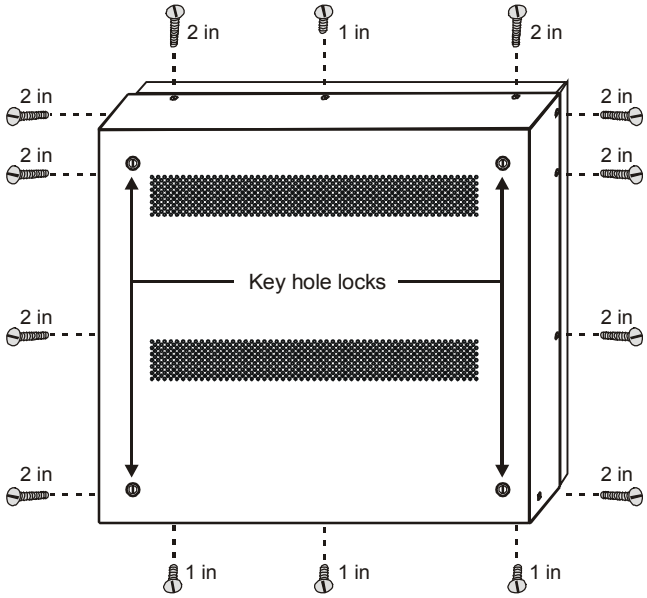


Figure 1: Screw locations

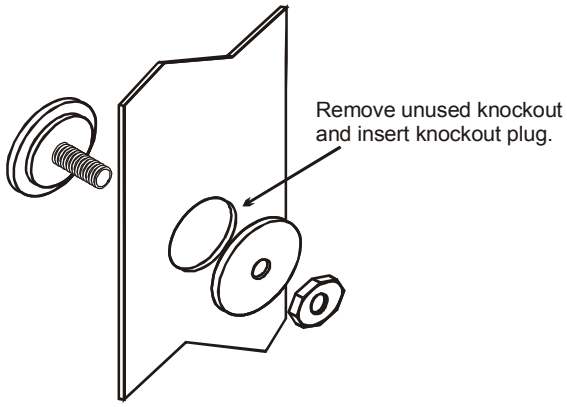


Figure 2: Knockout plug

Warnings

Disconnect all power before installing or drilling holes.

When drilling holes into the cabinet, make sure not to drill into any existing wires or hardware.

PRODUCT INFORMATION

The Control/LED Displays provide additional operator interface capability for the EST3 network as individual, designer assignable LEDs and touch-pad switches. Control/LED displays mount any module's hinged front panel, except for the 3-CPU module. All Control/LED displays are compatible with the lamp test function.

LED Display, model 3-24x LED, provides 24 LEDs. Adjacent to each LED is a slip-in label for LED function identification. A typical application is zone annunciation.

Control/LED Display, models 3-12/SG, 3-12/SR, and 3-12/SY provide 12 LEDs, each grouped with one switch. Adjacent to each LED/Switch is a slip-in label for LED/Switch function identification. A typical application is monitoring and control of auxiliary systems.

Control/LED Display, models 3-12/S1GY, 3-12/S1RY, 3-12/S2Y provide 24 LEDs. Each pair of LEDs is grouped with one switch. Adjacent to each LED/Switch group is a slip-in label for LED/Switch function identification. A typical application is monitoring and control of auxiliary systems.

Control/LED Display, model 3-6/3S1G2Y and 3-6/3S1GYR provide 18 LEDs. Each triad of LEDs is grouped with three software interlocked switches. Adjacent to each LED/Switch group is a slip-in label for LED/Switch function identification. A typical application is "Hand-Off-Auto" HVAC control.

A blank faceplate is supplied with each module when no display is used.

SPECIFICATIONS

Model	LED Configuration	Switch Config.
3-24R	24 Red	None
3-24Y	24 Yellow	None
3-24G	24 Green	None
3-12RY	12 Red-over-Yellow pairs	None
3-12SG	12 Green	12
3-12SR	12 Red	12
3-12SY	12 Yellow	12
3-12/S1GY	12 Green-over-Yellow pairs	12
3-12/S1RY	12 Red-over-Yellow pairs	12
3-12/S2Y	24 Yellow	12
3-6/3S1G2Y	6 Green-over-Yellow-over-Yellow triads	6 triads
3-6/3S1GYR	6 Green-over-Yellow-over-Red triads	6 triads

Current Requirements:

Standby current	2.0 mA (base) + 1.5 mA/LED ON @ 24 Vdc
Alarm current	2.0 mA (base) + 1.5 mA/LED ON @ 24 Vdc

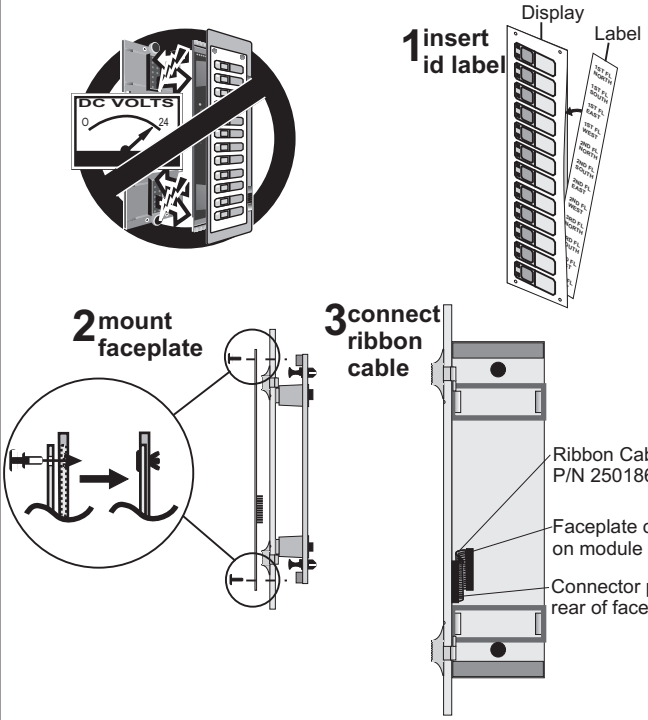
Operating Environment:

Temperature	32°F (0°C) to 120°F (49°C)
Humidity	93% RH, non-condensing
Mounting	Front of any LRM module except the 3-CPU Panel Controller.

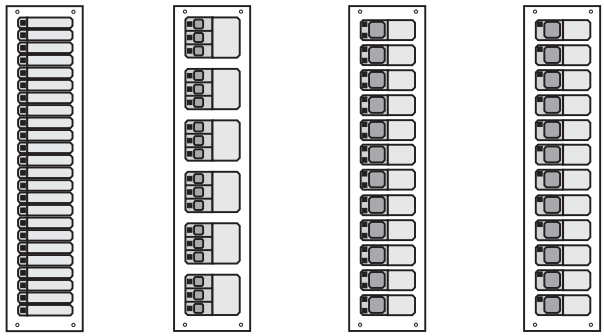
INSTALLATION

Fill out identification label and insert it between the front membrane and the circuit board. Mount the display in the recess on the front of the module. Secure the display to the module with the four supplied plastic rivets. Connect the display ribbon cable (P/N 250186) between connector P1 on the display and connector P1 on the module. No other wiring is required.

Observe static sensitive material handling practices.



CONTROL/LED DISPLAYS



3-24R
3-24Y
3-24G

3-6/3S1G2Y
3-6/3S1GYR

3-12SG
3-12SR
3-12SY
3-12RY

3-12S1GY
3-12/S1RY
3-12/S2Y

INSTALLATION SHEET:

Control/LED Displays

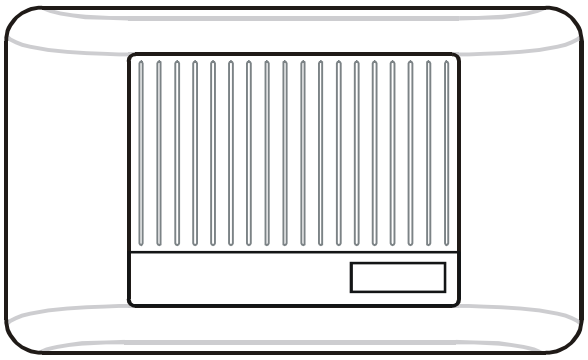
INSTALLATION SHEET P/N: 270493	FILE NAME: 270493.CDR
REVISION LEVEL: 2.0	APPROVED BY: D. Becker
DATE: 04/06/99	CREATED BY: D. Miner

A UNIT OF GENERAL SIGNAL
GS BUILDING SYSTEMS CORPORATION

GS BUILDING SYSTEMS CORPORATION
6411 Parkland Drive
Sarasota, FL 34243
625 6th Street East
Owen Sound, ON, Canada

CRC and CRCXM
Card Reader Controller

Product description



The Card Reader Controller (CRC) module performs access control processing. Each CRC stores a complete database and can grant or deny entry without external communication. If access is granted, the CRC applies or removes power for the door strike or maglock. The CRC is also capable of unlocking the connected door by activating a manual push button.

Each CRC can store 8,000 (CRC) or 36,000 (CRCXM) users for any door and can save 5,000 (CRC) or 20,000 (CRCXM) events in a history log. The CRC supports two readers, one strike, and one door opener. The CRC can connect two input devices such as request-to-exit detectors or door contacts.

CRCs continue to process access events even if there is a loss of communications or power. An internal 1.2 Ah sealed lead acid battery (purchased separately) provides up to 4 hours of local standby power. The CRC includes a system-controllable Form C relay that can be used for fire applications.

Note: For more information on the CRC, refer to the *EST3 Installation and Service Manual,* P/N 270380.

Specifications

Maximum cable distance to reader: See reader documentation
Dimensions
- Width: 8.0 in (20.5 cm)
- Height: 4.75 in (12.0 cm)
- Depth: 2.5 in (6.4 cm)
- Cover removal clearance: ~1 in on either side

Housing: White 94-VO thermoplastic
Power
- Voltage range: 19 to 27 Vdc
- Input: 24 Vdc or 16.5 Vac, 40 VA transformer (P/N CRCXF, not included)
- Reader output: 12 Vdc at 0.5 A
- Lock output: 12 Vdc at 0.5 A (see wiring note 5 below)
- Battery: 12 Vdc, 1.2 Ah sealed lead acid (P/N 12V1A2, not included)

Current using 24 V riser
- Standby: 940 mA max.
- Active: 950 mA max.

Current using CRCXF (Class II transformer)
- Standby: 135 mA at 120 Vac
- Active: 135 mA at 120 Vac

Commandable Form C relay: 28 Vac/dc at 2 A (power-limited and resistive load only)
Loop 1 and 2: 12 Vdc, 0.5 mA
Compatible electrical boxes
- North American 2-1/2 in (64 mm) deep 2-gang box
- Standard 4 in square x 1-1/2 in (38 mm) deep box
- European 100 mm square box

Wire size: 14 to 22 AWG (1.5 to 0.25 sq mm)
Device support (inputs and outputs)
- Readers: 2
- Strikes or maglocks: 1 (This product is compatible with UL/ULC listed 12 Vdc strikes and maglocks.)
- Door opener: 1 (Form C dry contact)
- Input devices: 2

Communication: Security Access Control Bus (RS-485)

Capacities	CRC	CRCXM
Card holders:	8,000	36,000
Schedules [1]:	1,200	1,200
Holidays [1]:	1,200	1,200
Access levels [1]:	1,200	1,200
History records:	5,000	20,000

[1] Maximum capacity is 255 per company.

Operating environment
- Temperature: 32 to 120 °F (0 to 49 °C)
- Humidity: 93% RH, noncondensing

Installation instructions

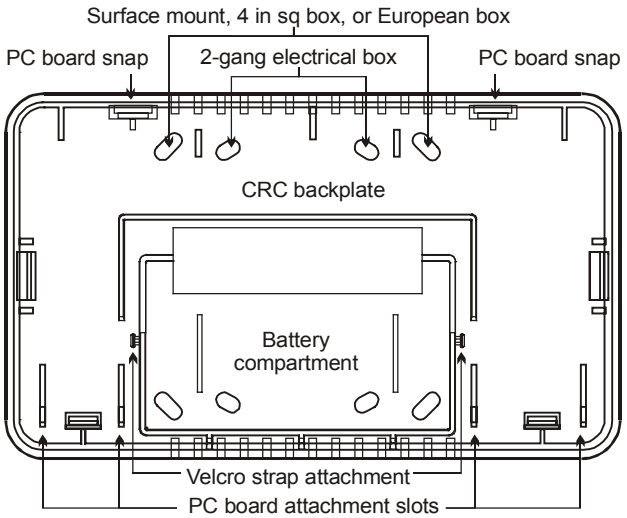
You'll need the LRM removal tool (P/N 210415) to remove the cover, a small screwdriver for terminal screws, and a standard screwdriver to mount the back plate to the electrical box.

Note: Leave about 1 inch of clearance at either side of the CRC to insert the LRM removal tool when removing the cover.

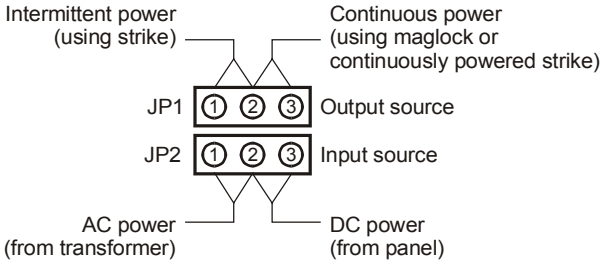
To install the CRC:

1. Remove the cover.
2. Remove the PC board from the backplate using the snaps at the top of the backplate.

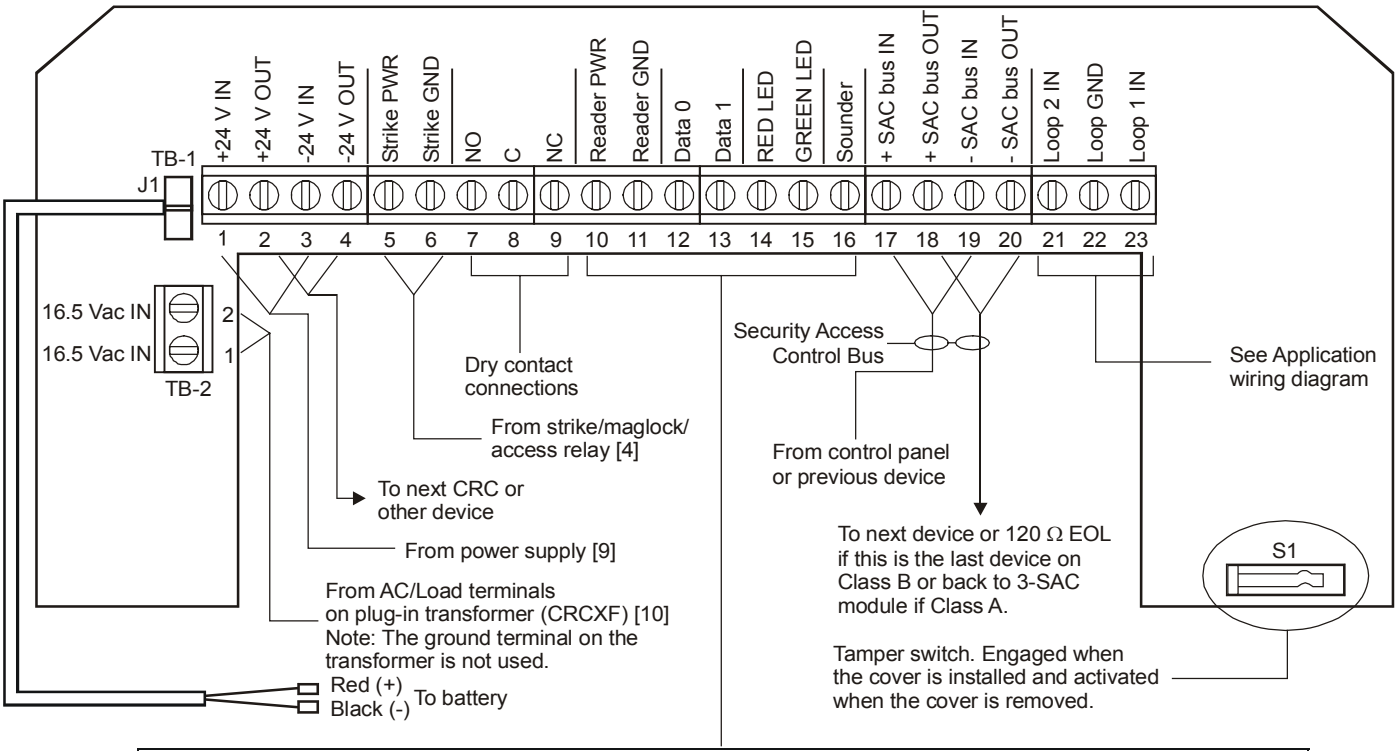
   Caution: Observe static-sensitive handling procedures.
3. Determine the mounting location. Remember to leave clearance for cover removal.
4. Mount the CRC backplate to a compatible electrical box.
5. Install the PC board to the backplate. Position the board in the slots at the bottom of the backplate, then snap it into place with the snaps at the top of the backplate.
6. Attach the velcro straps.
7. Install the battery in the battery compartment.
8. Mount the battery insulator (provided) over the battery. Make sure the battery leads are covered and the battery wires are located to the left side of the battery.
9. Secure the battery and insulator using the velcro straps.
10. Connect all wiring.
11. Attach the cover with a right-to-left or left-to-right motion. This will properly engage the tamper switch.



Jumper setup

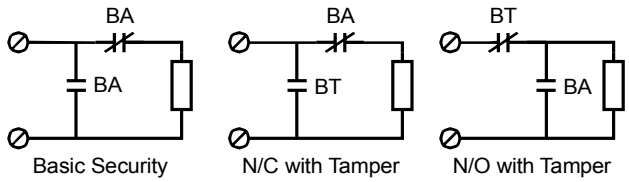


Wiring diagram



Reader wire connections							
	CRC terminal block numbers (designators)						
Reader Manufacturer	**10 (Reader power)** [7]	**11 (Reader GND)**	**12 (Data 0)** [1] [7]	**13 (Data 1)** [1] [7]	**14 (RED LED)**	**15 (GREEN LED)**	**16 (Sounder)** [2]
HID [3]	Red	Black	Green	White	Brown	Orange	Yellow
Motorola Indala	Red	Black	Green	White	Brown	---	Blue
Dorado	Red	Black	Green	White	Brown	---	Yellow
Sensor Eng.	Red	Black	Green	White	Violet	Brown	Blue
Keri	Red	Black	Green	White	Brown	Orange	Blue
Radio Key	Red	Black	Green	White	Brown	Orange	Blue

Application wiring diagram



Wiring diagram notes

[1] If used as an inside reader, connect the green wire to TB1-13 and the white wire to TB1-12.

[2] Connect the reader's sounder wire only when the CRCSND is not used and control of the reader's sounder is required.

[3] Program for dual-LED control.

[4] Use a 4.7 KΩ, 1/4 watt resistor if no strike is being used to maintain supervision.

5. When maglock or door strike voltage or current is outside CRC(XM) operational parameters, use an accessory relay (catalog number CRCRL) and a listed external power supply to power the lock. Refer to the accessory relay's installation sheet (P/N 3100294) for more information.

6. When wiring between CRCs goes outside a building, a surge protector is required for the wires leaving the building and for the wires entering another building. Use Ditek's surge protector model 2LVLP. The surge protector adds 8 ohms of resistance to the line it is connected to.

[7] If you are not connecting a reader, you must use two (2) 47 K resistors between TB1-10 and TB1-12, and TB1-10 and TB1-13.

[8] For connection to UL/ULC listed devices.

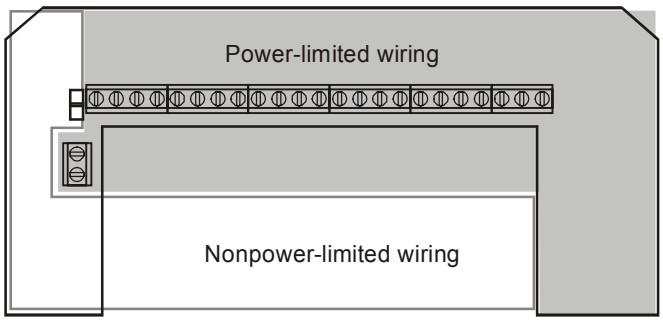
[9] **WARNING:** -24 V in must be connected to the PS/MON -24 V even if the CRCXF is used.

[10] **WARNING:** The CRCXF with a battery will provide 30 minutes of access and four hours of security standby power. The CRCXF cannot be used in a CRC designed for the following applications: fire alarm, Grade A local mercantile, Grade A, B, or C central station, Grade A or AA proprietary, or hold-up alarm.

11. When using a CRC as a muster station, the reader must be wired as an outside reader.

Wire routing

- All connections, except the battery leads, are power limited. Terminals TB1-1–4 and 17–23 are supervised.
- Battery leads must be routed under the provided insulator, and must be a minimum of 1/4 inch from any other wiring including TB2 connections or you must use FPL, FPLR, or FPLP wiring.
- Route 16.5 Vac (TB2-1 and 2) and +24 V in/out (TB1-1 and 2) out of the CRC. Leave no excess wire in the CRC. This ensures proper power limited spacing.



Compatibility lists

Table 1: Compatible card readers

Manufacturer	Model number	Description
Dorado Systems	200-B (3110-2001)	Mullion proximity card reader
Dorado Systems	200-G (3110-2000)	Mullion proximity card reader
Dorado Systems	220-B (3310-2201)	Mullion proximity/magnetic stripe card reader
Dorado Systems	220-W (3310-2200)	Mullion proximity/magnetic stripe card reader
Dorado Systems	250-B (3110-2501)	Wall mount proximity card reader
Dorado Systems	250-W (3110-2500)	Wall mount proximity card reader
Dorado Systems	251-B (3110-2511)	Wall mount proximity keypad card reader
Dorado Systems	251-W (3110-2510)	Wall mount proximity keypad card reader
Dorado Systems	278 (3110-2781)	Ruggedized proximity/magnetic stripe/keypad card reader
HID Corporation	5355ABK0009	ProxPro™ proximity card reader with Wiegand output
HID Corporation	5355AG00	ProxPro™ proximity card reader with Wiegand output
HID Corporation	5355AGK0009	ProxPro™ proximity card reader with Wiegand output
HID Corporation	5355ABK0009	ProxPro™ proximity card reader with Wiegand output
HID Corporation	5365CBP02	MiniProx™ proximity card reader with Wiegand output

Table 1: Compatible card readers

Manufacturer	Model number	Description
HID Corporation	5375NT	MaxiProx™ extended range card reader
HID Corporation	5395CG100	ThinLine II proximity card reader with Wiegand output
HID Corporation	6005ABS00	ProxPoint™ proximity card reader with Wiegand output
HID Corporation	6005AKS00	ProxPoint™ proximity card reader with Wiegand output
HID Corporation	6005AWS00	ProxPoint™ proximity card reader with Wiegand output
HID Corporation	6005BBS00	ProxPoint™ proximity card reader with Wiegand output
HID Corporation	6005BWS00	ProxPoint™ proximity card reader with Wiegand output
HID Corporation	6005BKS00	ProxPoint™ proximity card reader with Wiegand output
HID Corporation	6030AGR00	ProxPro Plus™ proximity card reader
HID Corporation	6030AGS00	ProxPro Plus™ proximity card reader
KeriSystems	P-300BL	Cascade proximity card reader
KeriSystems	P-300W	Cascade proximity card reader
KeriSystems	P-500BL	Alps proximity card reader
KeriSystems	P-500W	Alps proximity card reader
Motorola	ARK-501+	PinProx™ proximity card reader with keypad
Motorola	ASR-603	SecureProx™ I proximity card reader
Motorola	ASR-605	SecureProx™ II proximity card reader
Position Technology	CR-R880	Posi-Prox Proximity Card Reader

Table 2: Compatible access cards

Manufacturer	Model Number	Description
Wiegand access cards		
HID Corporation	HID Sensorcard Wiegand Card	Wiegand card with HID logo
HID Corporation	HID PhotoId Wiegand Card with Photo [1]	A Wiegand card with HID logo that has space for including a person's photo.
Magnetic stripe access cards		
HID Corporation	1336	DuoProx II Multiple Technology Proximity Card
Proximity access cards		
EST	PC-1326	Proximity access control card
EST	PC-1386	ISO proximity access control card with unique EST bit format and EST logo on back
EST	PC-1386B	ISO proximity access control card with unique EST bit format and no logo on front or back
EST	EST-PC	Construction Card. Proximity access control card with EST logo and unique construction code bit format
EST	PK-1346	Proximity Key Fob with unique EST format
Motorola	AVC-131	Multi-tech proximity access control card
Motorola	APC-161 [1]	Multi-tech photo ID proximity access control card
Motorola	ASK-116	Proximity key tag
HID Corporation	PK-1346 Proximity Key Fob	Proximity key fob with HID logo for use with EST or HID proximity card readers

Table 2: Compatible access cards

LED control cards		
Motorola	07260-001	Single and dual line LED control option card
Keri Systems	05528-702	LED mode control card

[1] A separately ordered LAM-1 Laminator is required for laminating a photo to the access card. Use a Polaroid ID3 or ID4 Camera for taking the photo.

System power calculations

Form A: SAC active and standby currents

Device	Q	C1 (mA)	C2 (A)	C3 (A)	DC (%)	SH (Hr)	BC (Ah)
Strike							
Maglock							
Reader							
CRC		60					
CRCSND		8					
KPDISP		100					
		Active load				**Battery size**	
						Derated battery size	

Use Form A to determine the load created by SAC bus devices. Add this load to the load created by fire alarm devices to determine the total load presented to the panel power supply.

If the load exceeds the panel supply capacity, you need an additional power supply for the SAC bus devices.

Note that the SAC current load consists of the current drawn by the CRC or KPDISP devices *plus* any readers, strikes, and maglocks.

To determine the need for additional power (Form A):

1. Fill in the Q column.

   Q = Quantity of each device

2. Fill in the C1 column for each type of device used.

   C1 = Rated current draw at 12 Vdc

3. Calculate the C2 column as follows.

   C2 = Total current

   For locks
   C2 = ((Q x C1 x 0.98) - 5) / 1000

   For card readers with C1 = 99 mA or less:
   C2 = ((Q x C1 x 0.98) - (55 x C1 / 100)) / 1000

   For card readers with C1 over 99 mA
   C2 = ((C1 x 0.98) -55) / 1000

   For CRC, CRCSND, KPDISP
   C2 = Q x C1 / 1000

4. Calculate the C3 column as follows.

   C3 = Standby current

   For locks, readers, and CRCSNDs
   C3 = C2

   For CRCs and KPDISPs
   C3 = Q x 50 / 1000

5. Fill in the DC column.

   DC = Duty cycle

   Example: A duty cycle of 30 seconds in every 5 minutes (300 seconds) is a 10% duty cycle.

6. Fill in the SH column.

   SH = Standby hours

   Standby hours is the number of hours after which lock and reader loads should be shed when operating on battery power.

   Note that load shedding of locks and readers requires 3-SDU programming.

   When used for fire alarm applications, CRCs and KPDISPs require at least 24 hours of standby power.

7. Calculate the BC column as follows.

   BC = Battery capacity

   BC = (C3 x DC x SH) / 100

8. Calculate the Active load by totaling column C2.

9. Calculate the Battery size by totaling column BC.

10. Calculate the Derated battery size as follows.

    Derated battery size = Battery size x 1.2

11. Add the Active load figure to the corresponding totals calculated for the remainder of the system.

12. If the Active load is greater than the panel supply capacity, you must add an additional power supply.
13. Use the system-wide Derated battery size to determine the battery required for the panel.

Providing adequate voltage for devices

To determine whether each CRC and KPDISP will have adequate input voltage, the voltage drops along the SAC bus can be estimated or calculated.

Estimated voltage drop

To estimate the voltage drop use Table 3 and Table 4 which show the maximum length of a SAC bus for a given number of devices and a total load current. (One table is for 16 AWG wire, the other for 14 AWG wire.)

These tables were calculated based on even spacing between doors and an equal load at each door.

To check for adequate device voltage:

1. Determine the total active current for a typical door. To do this, add the active current of the CRC, the active current of the door lock, the active current of the card reader, and the active current of the sounder (if used).
2. Determine the number of doors you need to secure.
3. In Table 3 find the intersection of the number of doors and the load current you determined in steps 1 and 2.

   This is the maximum length (in feet) of the SAC bus using 16 AWG wire.
4. If the distance from the control panel to the last device on the SAC bus is less than this distance, no further calculations are needed.
5. If the distance to the last device in you installation is greater than this distance, repeat steps 1 through 4 using Table 4.
6. If changing the gauge of the wire does not result in a sufficient length for a single SAC, you will need to design the system with an additional power supply, then repeat the steps.

Calculated voltage drop

You can use the EST3 System Builder program to calculate the actual voltage drop along the SAC bus, based on the actual load of each device and the actual distance between devices.

To calculate the voltage drop:

1. Start the EST3 System Builder program and select the 16 AWG check box.
2. For the first device on the SAC bus, enter the actual active load and the distance from the control panel.

   The system calculates the voltage drop and indicates whether it is OK to continue.
3. Continue adding the actual active loads and distances from the previous device for all subsequent devices on the SAC bus.

   Remember to include any attached door locks, card readers, and sounders. For these, add their current draw to the CRC you're currently entering.
4. If you add all devices without encountering an error message, your design will provide adequate device voltage. If you encounter an error message you must either:
   - Repeat the process but select 14 AWG wire
   - Use a second SAC bus
   - Add an additional power supply

Table 3: Length of SAC bus using 16 AWG wire

	Load current (mA)												
Doors	**70**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**	**650**
1	4000	4000	2650	2000	1600	1300	1140	1000	885	800	720	665	616
2	3800	2660	1776	1300	1060	880	760	666	594	532	484	444	410
3	2850	1950	1320	990	780	660	570	498	444	399	363	333	306
4	2240	1600	1040	800	624	520	452	400	355	320	288	266	244
5	1875	1350	885	650	525	435	375	333	296	266	242	222	205
6	1620	1140	756	558	450	378	324	286	254	228	207	190	X
7	1400	980	665	497	392	329	285	250	222	199	X	X	X
8	1240	880	584	440	352	288	253	222	197	X	X	X	X
9	1125	810	522	396	315	261	228	200	X	X	X	X	X
10	1030	730	480	360	290	240	207	X	X	X	X	X	X
11	946	660	440	330	264	220	X	X	X	X	X	X	X
12	876	600	408	300	240	X	X	X	X	X	X	X	X
13	806	559	377	273	X	X	X	X	X	X	X	X	X
14	756	518	350	X	X	X	X	X	X	X	X	X	X

Table 3: Length of SAC bus using 16 AWG wire

	Load current (mA)												
Doors	**70**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**	**650**
15	705	495	330	X	X	X	X	X	X	X	X	X	X
16	672	464	304	X	X	X	X	X	X	X	X	X	X
17	629	442	X	X	X	X	X	X	X	X	X	X	X
18	576	414	X	X	X	X	X	X	X	X	X	X	X
19	570	399	X	X	X	X	X	X	X	X	X	X	X
20	540	380	X	X	X	X	X	X	X	X	X	X	X

Notes: All distance measurements are given in feet. X means that the 3-PPS/M will not support these devices at any distance.

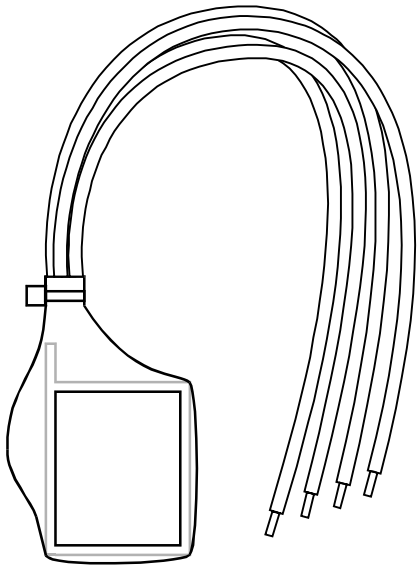
Table 4: Length of SAC bus using 14 AWG wire

	Load current (mA)												
Doors	**70**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**	**650**
1	4000	4000	4000	3000	2400	2000	1750	1500	1360	1200	1100	1000	940
2	4000	4000	2700	2000	1600	1360	1160	1000	900	800	740	680	620
3	4000	3000	2040	1500	1200	1020	870	750	660	600	555	510	471
4	3480	2400	1600	1200	960	800	700	600	544	480	436	400	376
5	2900	2000	1365	1000	800	675	575	500	455	405	365	335	315
6	2460	1710	1140	870	690	582	492	438	390	348	312	X	X
7	2170	1505	1015	756	602	511	434	378	336	301	X	X	X
8	1920	1360	904	680	544	448	384	336	X	X	X	X	X
9	1710	1215	810	612	477	405	351	X	X	X	X	X	X
10	1550	1100	740	550	440	370	310	X	X	X	X	X	X
11	1430	1012	682	506	407	341	X	X	X	X	X	X	X
12	1344	936	624	468	372	X	X	X	X	X	X	X	X
13	1248	858	585	429	351	X	X	X	X	X	X	X	X
14	1162	812	532	406	322	X	X	X	X	X	X	X	X
15	1095	750	510	375	X	X	X	X	X	X	X	X	X
16	1024	720	480	352	X	X	X	X	X	X	X	X	X
17	969	680	442	340	X	X	X	X	X	X	X	X	X
18	918	630	414	X	X	X	X	X	X	X	X	X	X
19	874	608	399	X	X	X	X	X	X	X	X	X	X
20	820	580	380	X	X	X	X	X	X	X	X	X	X

Notes: All distance measurements are given in feet. X means that the 3-PPS/M will not support these devices at any distance.

CRCRL
CRC Accessory Relay

Product description



The CRCRL is a fire, security, and access control accessory. Use the CRCRL in conjunction with an external power supply to control a device which requires voltage or current outside the control unit's operating range.

Specifications

Operating voltage: 12 Vdc
Operating current: 34 mA at 12 Vdc
Contact rating
- 2 A at 28 Vdc at 0.6 PF
- 2 A at 120/250 Vac at 0.6 PF

Dimensions
- Width: 0.8 in (2.0 cm)
- Height: 1.8 in (4.6 cm)
- Depth: 1.2 in (3.1 cm)

Operating environment
- Temperature: 32–120 °F (0–49 °C)
- Humidity: 93% RH, non-condensing

Leads
- Free length: 6.0 inches (15.25 cm)
- Wire: 18 AWG stranded, tinned
- Insulation: 0.03 in (0.76 cm) minimum

Installation instructions

CRC applications

When used with power-limited wiring, the CRCRL can be mounted inside the CRC housing. When used with nonpower-limited wiring the CRCRL must be mounted in an electrical box. You can use the electrical box the CRC is mounted on.

To install the CRCRL in the CRC housing:

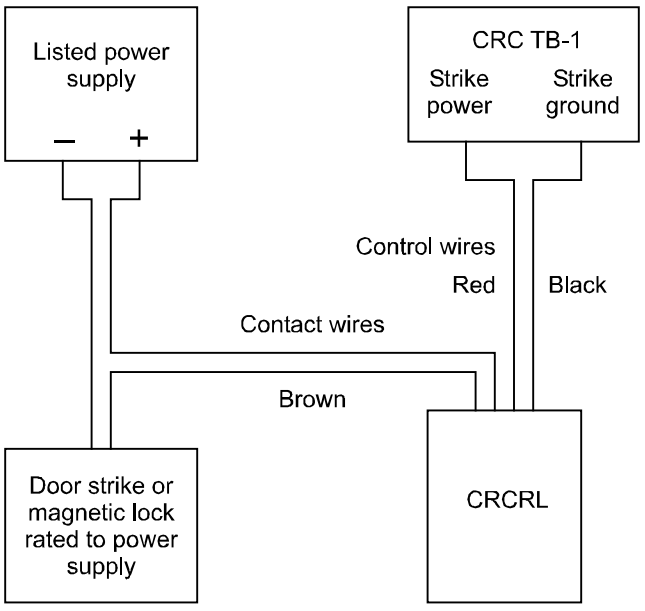
1. Remove the CRC cover.
2. Position the CRCRL on the left side of the battery with the leads pointing up and the hook-and-loop patch facing the battery, pressing the CRCRL firmly into the battery strap.
3. Connect all wiring as shown in the wiring diagram, using power-limited wiring.
4. Attach the CRC cover.

To install the CRCRL in an electrical box:

1. Remove the CRC cover.
2. Remove the CRC backplate from the electrical box.
3. Position the CRCRL inside the electrical box.
4. Connect the CRCRL contact wires to the power supply and door lock, as shown in the wiring diagram.
5. Pull the CRCRL control wires through the CRC backplate hole.
6. Mount the CRC backplate on the electrical box.
7. Connect the CRCRL control wiring as shown in the wiring diagram.
8. Attach the CRC cover.

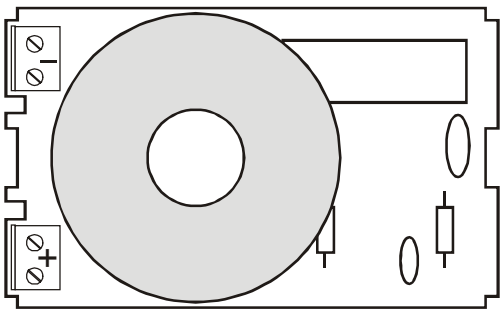
Wiring diagram

CRC applications



CRCSND
CRC Sounder

Product description



The sounder is a small horn that mounts inside the card reader controller module. The sounder operates if an emergency exit door is opened without an exit request and locally indicates that a door has been left open.

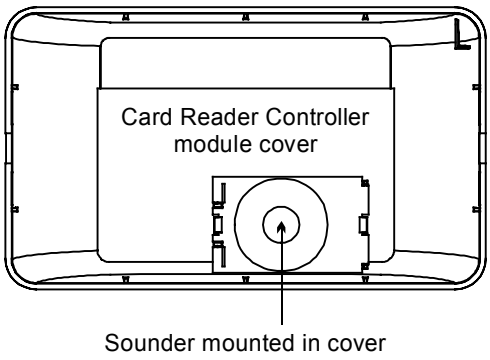
Note: This device is for supplementary use only.

Specifications

Operating voltage: 12 Vdc
Operating current: 7 mA
Operating environment
Relative humidity: 93% @ 104 °F (40 °C)
Temperature: 32 - 120 °F (0 - 49 °C)

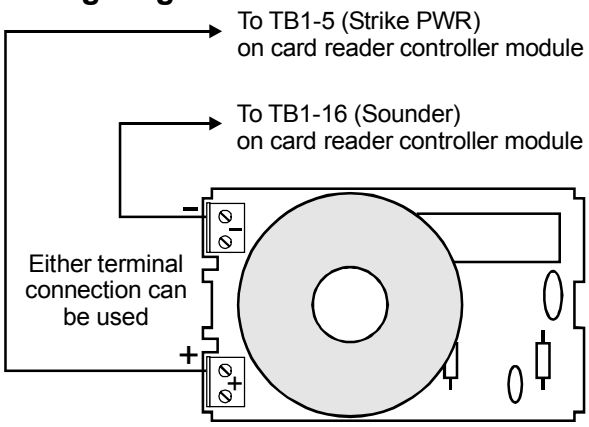
Installation instructions

1. Remove power from the card reader controller module.
2. Remove the card reader controller cover.
3. Snap the sounder into the molded brackets in the card reader controller cover.



4. Connect all wiring from the sounder to the card reader controller. Refer to the wiring diagram below.
5. Install the card reader controller cover.
6. Apply power to the card reader controller module.

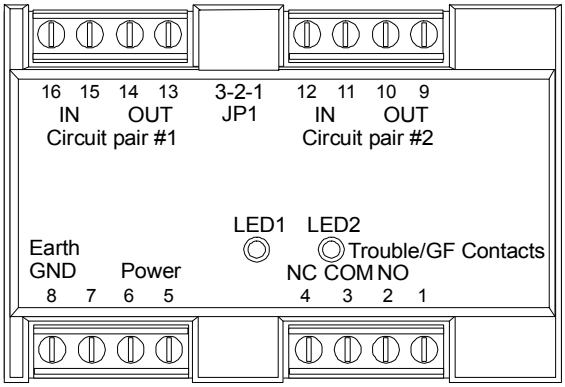
Wiring diagram



EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

GFD
Ground Fault Detector

Product description



The Ground Fault Detector (GFD) is used to detect ground faults on power-limited isolated circuits. The GFD provides ground fault monitoring for up to two isolated signals. A ground fault on any wire is detected within 20 seconds. Built-in relay contacts are available for indicating trouble and ground fault conditions, or the GFD can be configured to put a ground fault on the monitoring circuit.

The GFD is a stand-alone unit. Its dry contacts can be monitored by other system input devices. The GFD also has a watchdog circuit, which keeps the relay energized.

Specifications

Operating voltage range: 10 to 28 Vdc
Current draw: 110 mA
Trouble contact rating: 1 A @ 30 Vdc (resistive)
Ground fault detection: < 20 seconds (up to 10 KΩ)
Ground fault monitoring: 2 circuits, 2 wires (every 16 seconds)
Operating environment
- Temperature: 32 to 120 °F (0 to 49 °C)
- Humidity: 0 to 93% RH (non-condensing)

Construction: High impact engineering polymer
Compatible electrical boxes
- North American 2-1/2 in (64 mm) deep 1-gang box
- Standard 4 in square box 1-1/2 in (38 mm) deep with 1-gang cover

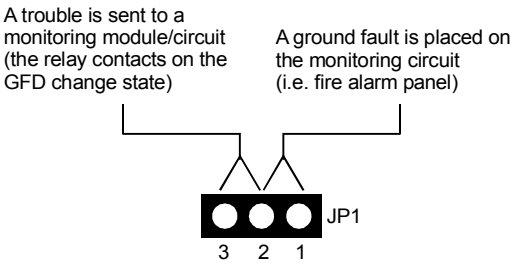
LED outputs

The GFD has two yellow LEDs. The LEDs indicate which circuit pair and which conductor pair has a ground fault. The LEDs light to indicate which conductors have a ground fault. Refer below:

Ground fault on conductor 1: LED 1 ON steady
Ground fault on conductor 3: LED 2 ON steady

Note: When a 3-NSHM is used, the following takes place:
Ground fault on conductor 1 or 2: LED 1 ON steady
Ground fault on conductor 3 or 4: LED 2 ON steady

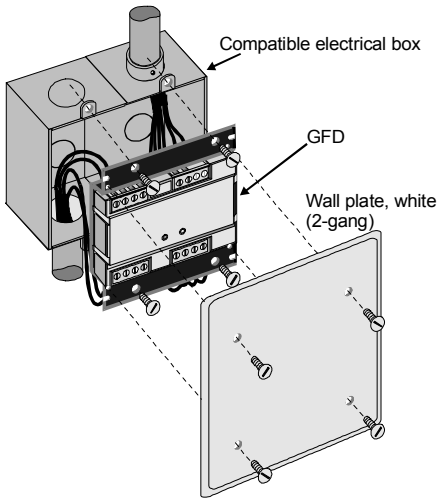
Jumper setup



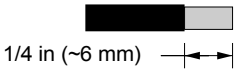
Installation instructions

1. The GFD is shipped from the factory as an assembled unit; it contains no user-serviceable parts and should NOT be disassembled.
2. Verify that all field wiring is free of opens, shorts, and ground faults.
3. Connect all wiring as shown in the wiring diagram.
4. Using the two 6-32 x 3/8 in (9.5 mm) machine screws provided, mount the module to the electrical box.
5. Using the four 4-24 x 5/16 in (7.9 mm) self-tapping screws provided, mount the wall plate to the module.

Note: Wire in accordance with the current NFPA 70 *National Electrical Code.*



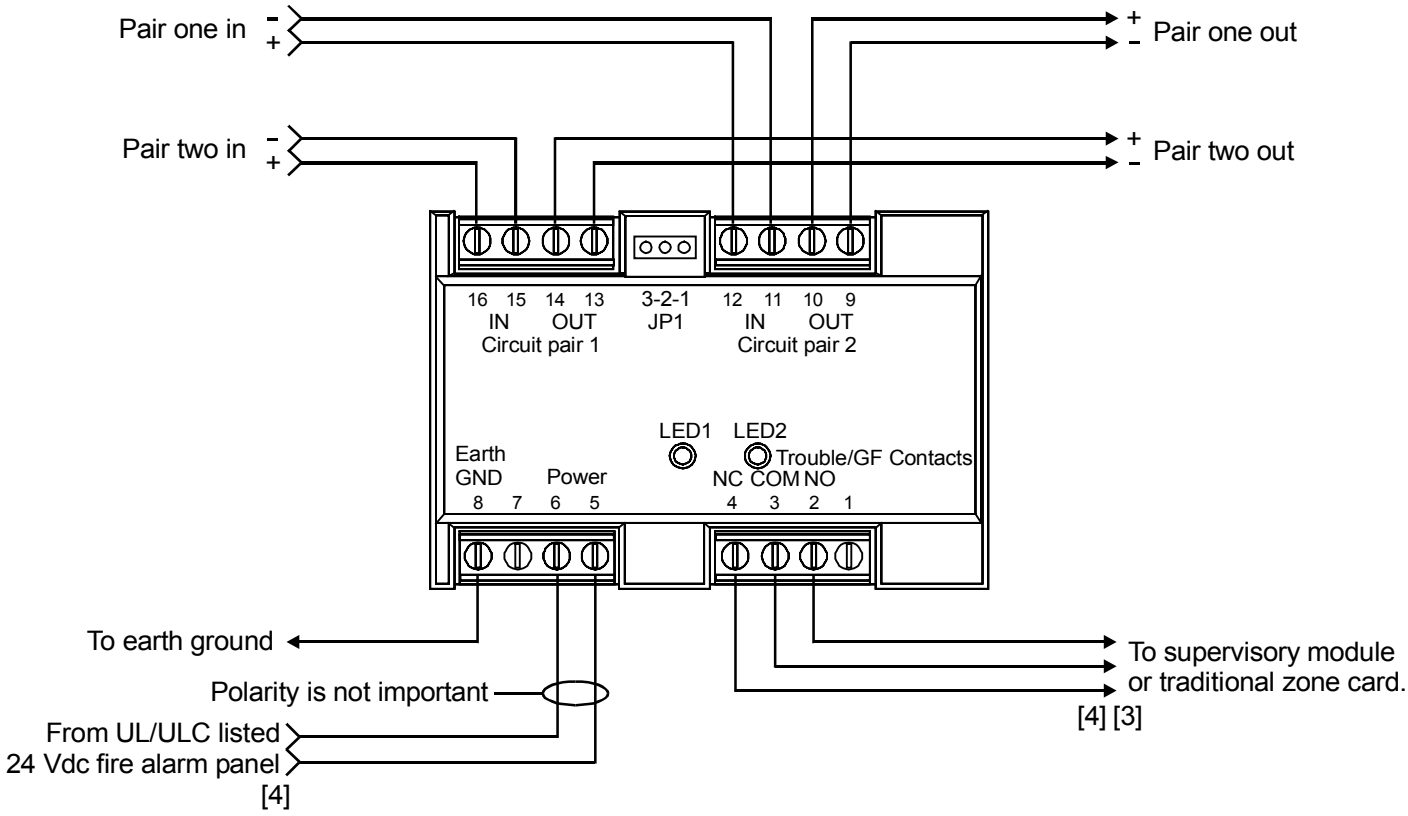
Wire stripping guide



Strip 1/4 in (about 6 mm) from the ends of ALL wires that connect to the terminal block of the module.

Caution: Exposing more wire may cause a ground fault. Exposing less wire may result in a faulty connection

Wiring diagram



Notes

1. All circuits are power-limited and supervised. (See Note 4 below.)
2. Contacts 1 and 7 are not used.

[3] The functionality of the Trouble/ GF circuit is dependent on the position of JP1.

[4] Use UL/ULC listed end-of-line device for complete supervision. Contacts cannot be used for nonpower-limited applications unless all wiring is type FPL, FPLR, or FPLP.

PRODUCT INFORMATION

The IOP3A isolator card is designed to electrically isolate a fire alarm control panel's RS-232 ports from peripheral devices. The IOP3A provides two isolated RS232 connections, as well as a DB9 and RJ12 connector for downloading. A select mode allows both a printer and modem to be connected when used on EST2 systems.

The IOP3A should be used in ALL applications which require the connection of external devices (CCA, CGP, VDU, and external modems) to properly isolate the fire alarm control panel from earth ground connections.

INSTALLATION

The IOP3A module requires 1/2 standard module footprint.

FIELD WIRING:

To Control Module:

TB1-1	(+) 24VDC
TB1-2	(-) 24VDC
TB1-3	Port Selection/Supervision
TB1-4	Common
TB1-5	RXD IN
TB1-6	TXD OUT

To Peripheral Device:

TB2/3-1	Supervision / (+) 12VDC
TB2/3-2	Common
TB2/3-3	TXD OUT
TB2/3-4	RXD IN

Notes:

1. When in RDU mode, TB2 must be used for the modem and TB3 must be used for a printer.
2. All RS-232 connections should be within the same room or within 50 feet of the fire panel they are connected to.

SWITCH SETUP

SW1	UP	Outputs 1 and 2 enabled. RJ12 and DB9 connectors disabled.
	DOWN	Download setting. RJ12 and DB9 connectors enabled. Outputs 1 and 2 disabled.

Note diagram below for UP and DOWN switch positions.

SPECIFICATIONS

Current Requirement	60mA

JUMPER SETUP

JB1	1-2	Select Mode
	2-3	Supervision Mode
JB2	IN	Output #1 supervision disable / (+) 12VDC on TB2-1
	OUT	Output #1 supervision enable (TB2)
JB3	IN	Output #2 supervision disable / (+) 12VDC on TB3-1
	OUT	Output #2 supervision enable (TB3)
JB4	IN	Supervision Mode
	OUT	Select Mode

NOTE: JB1 and JB4 settings must agree.

IRC-3 Printer Mode:

JB1	2-3	IN
JB2		IN
JB3		IN
JB4		IN

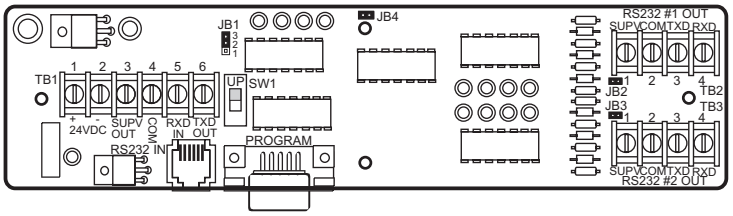
FireWorks Mode:

JB1	2-3	IN
JB2		IN
JB3		IN
JB4		IN
P1 on 2-MCM		OUT

RDU Mode:

JB1	1-2	IN
JB2		OUT
JB3		OUT
JB4		OUT
P1 on 2-MCM		IN

IOP3A



INSTALLATION SHEET:

IOP3A
Isolator RS-232 Card

INSTALLATION SHEET P/N: 270758	FILE NAME: 270758.CDR
REVISION LEVEL: 1.0	APPROVED BY: D.P.
DATE: 10/04/99	CREATED BY: DRM

A UNIT OF GENERAL SIGNAL

GS BUILDING SYSTEMS CORPORATION

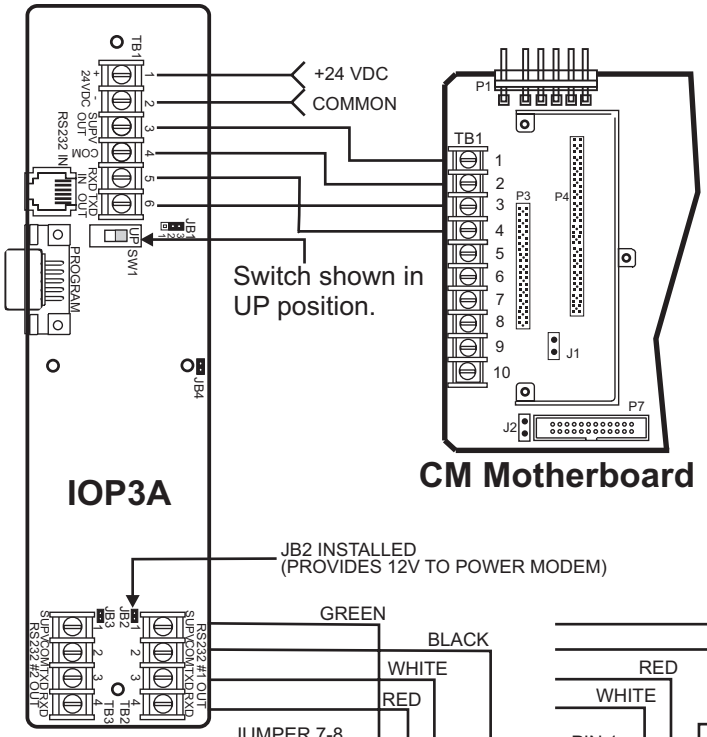
GS BUILDING SYSTEMS CORPORATION

6411 Parkland Drive
Sarasota, FL 34243
USA

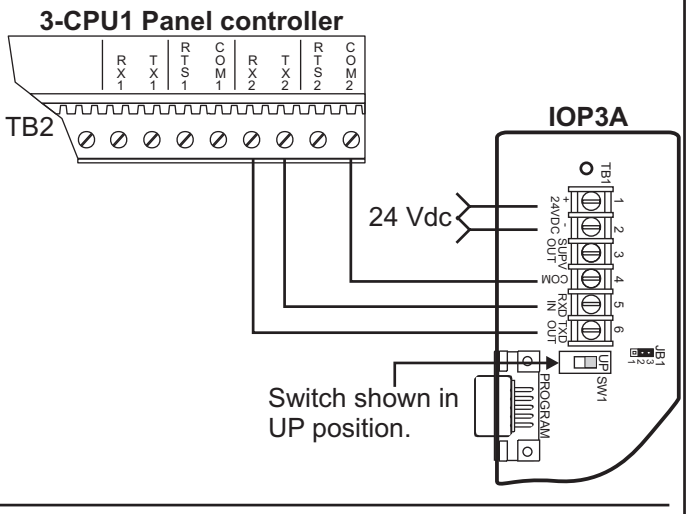
625 6th Street East
Owen Sound, Ontario
Canada N4K 5P8

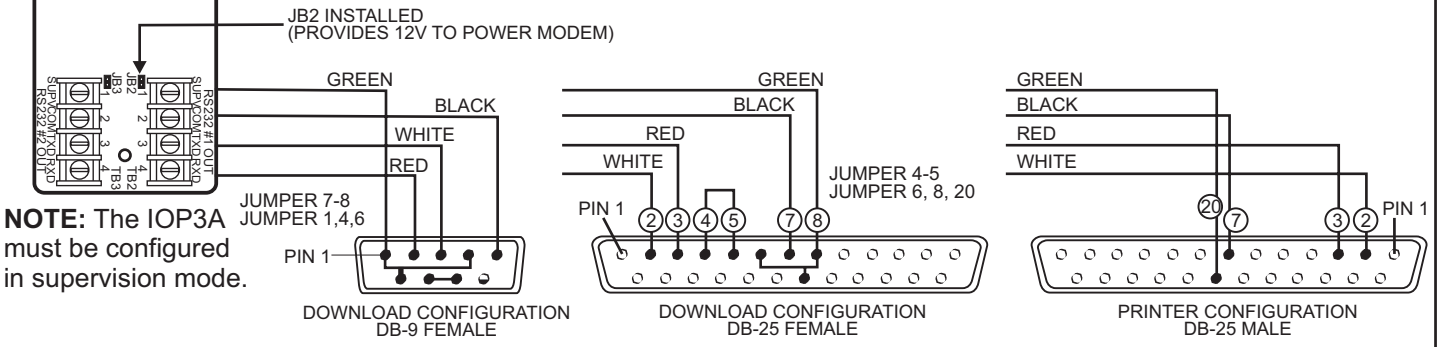
APPLICATION DRAWINGS

IOP3A to CM motherboard wiring



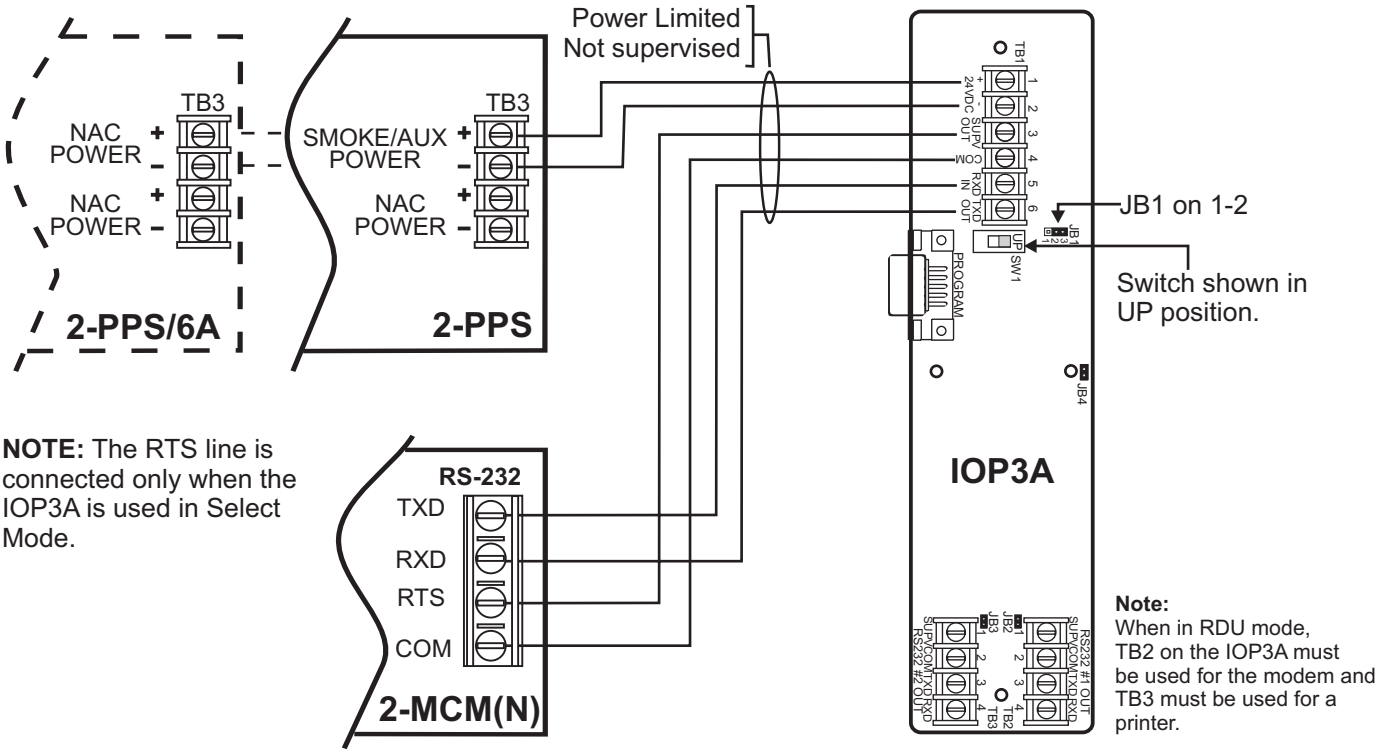
IOP3A to 3-CPU1 wiring





NOTE: The IOP3A must be configured in supervision mode.

IOP3A to 2-MCM(N) wirng

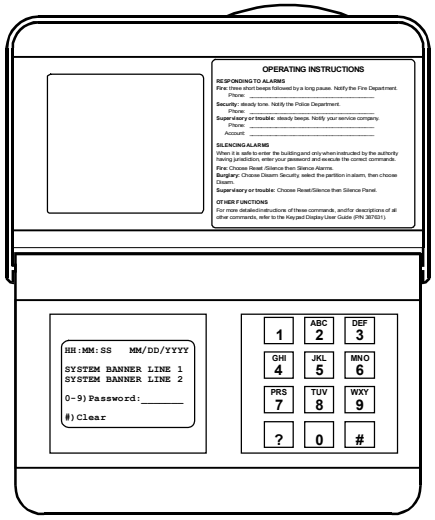


NOTE: The RTS line is connected only when the IOP3A is used in Select Mode.

Note:
When in RDU mode, TB2 on the IOP3A must be used for the modem and TB3 must be used for a printer.

KPDISP
Keypad Display

Product description



Description

The Keypad Display (model KPDISP) is a control and display module used in security and life safety applications. After entering a password, the user can:

- Arm and disarm partitions
- Review off-normal points
- Bypass or include points
- Perform various life safety functions

The KPDISP has a compact, covered enclosure which houses:

- An LCD display
- A telephone-style keypad
- A variable-tone sounder
- An internal processor

The module is compact enough to mount near exit doors or behind counters. Mounting holes in the back cover fit standard electrical boxes.

Features

A removable, hinged front cover protects the keys and provides space for basic operating instructions. Grooves in the cover transmit light from the illuminated keypad.

The display is a backlit LCD which lights when in use. It can display 8 lines of 21 characters. Each KPDISP supports two user-selectable languages and can display text in most languages.

The telephone-style keypad is continuously backlit. The keys are wear-resistant silicone rubber. They have a perceptible range of travel, and provide positive tactile and audible feedback.

A variable-tone sounder is part of the KPDISP module. This can be programmed to emit tones of a specific frequency and duration, so as to provide audible feedback to the user.

Internal processing

An internal processor drives the LCD display in response to system messages and user input. Menu screens let the user view information or choose commands. In addition, the processor shows context-sensitive help screens to support the user.

The system programmer defines which menu commands are available on a user-by-user basis. Users are granted or denied access to any partition controlled by a KPDISP.

The module can annunciate and report tampering or loss of communication with the main system panel.

System requirements

The KPDISP must be connected to a 3-SAC module. The KPDISP communicates with the system control panel via the 3-SAC. The 3-SAC supports the SAC bus (an RS-485 line) which can be configured as Class A or Class B, depending on application requirements.

In addition to security messaging, the SAC bus transmits database updates and life safety event messages to the KPDISP.

The KPDISP is shipped with a service password of 0000000 to allow initial testing. When any password is downloaded to the keypad, the service password is removed.

Specifications

Dimensions
- Closed size: (W x H x D): 7.22 x 4.70 x 1.13 in (18.34 x 11.94 x 2.86 cm)
- Open height: 8.72 in (22.15 cm)
- Cover swing (from wall): 5.2 in (13.21 cm)
- Cover removal clearance: ~1 in on right side

Material: High impact polymer, white
Operating temperature range: 32 to 120 °F (0 to 49 °C)
Operating humidity range: 0 to 93 % RH, non-condensing
Storage temperature range: –4 to 140 °F (–20 to 60 °C)
Compatible electrical boxes
- North American 2-1/2 in (64 mm) deep 2-gang box
- Standard 4 in square box 1-1/2 in (38 mm) deep box
- European 100 mm square box

Wire size: 14 to 22 AWG (1.50 to 0.25 sq mm)
Power: 18.4 to 26.4 Vdc
Current: 95 mA
Partitions: 255 maximum
Users: 200 maximum
Languages: 2 (user-selectable)

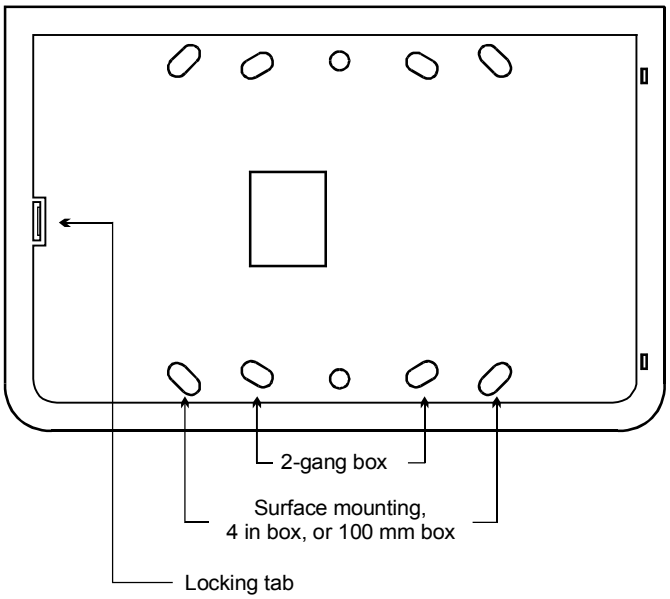
Installation instructions

You may find it easier to install the KPDISP if you remove the hinged cover. You'll need the LRM removal tool (P/N 210415) to remove the back plate, a small screwdriver to tighten the terminal screws, and a standard screwdriver to mount the back plate to the electrical box.

Note: Leave about 1 inch of clearance between the right side of the KPDISP and the door (or other obstructions) to insert the LRM removal tool when removing the cover.

To install the KPDISP:

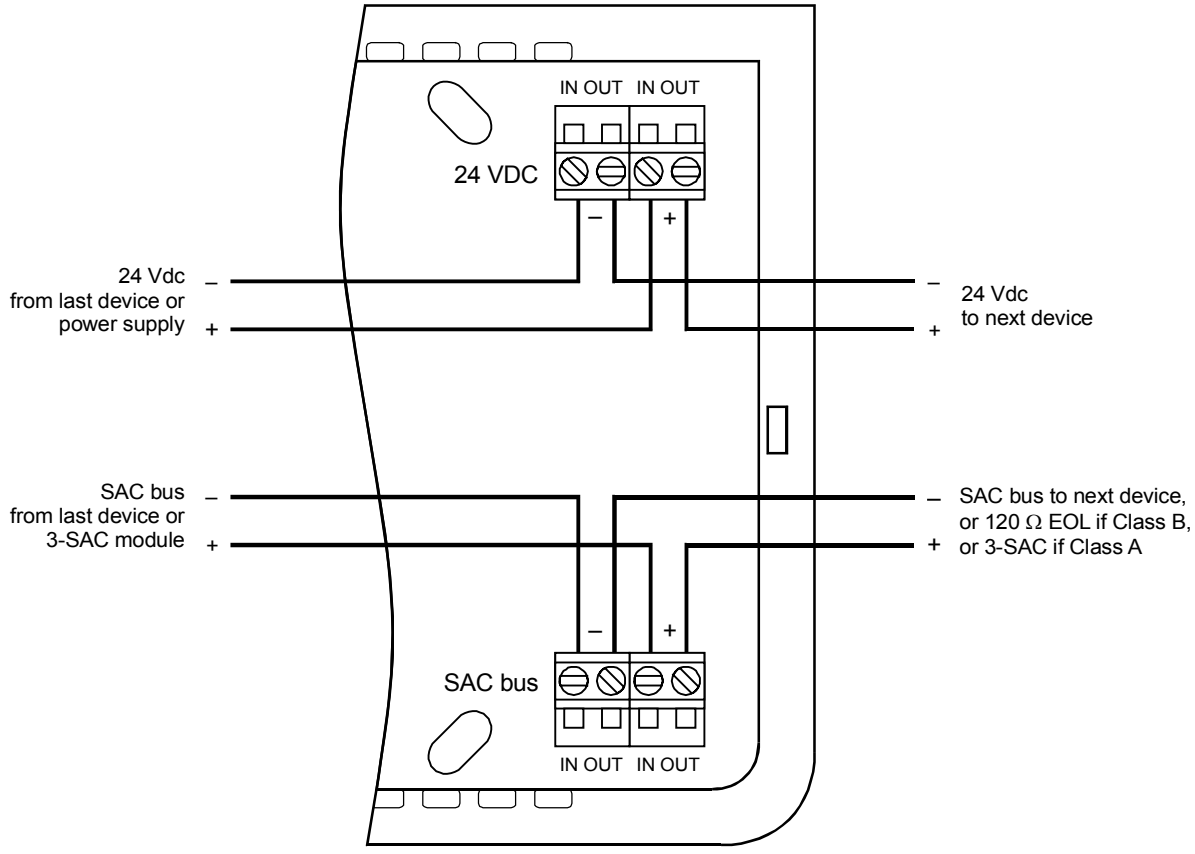
1. Use the LRM removal tool to press the locking tab inward (toward the wire hole) and remove the back.
2. Mount the back to the electrical box, pulling the wires through the hole in the back.
3. Strip the wires to the correct length, approximately 1/4 inch (~6 mm).
4. Attach the power cable wires to the top terminal block. Observe the correct polarity.
5. Attach the communication cable wires to the bottom terminal block.
6. Insert the hinge tabs on the left side of the body into the slots in the back, then press the right side of the body onto the back to engage the locking tab.
7. Attach the front cover if you removed it for installation.



Rear view of the KPDISP, showing the locking tab and mounting holes

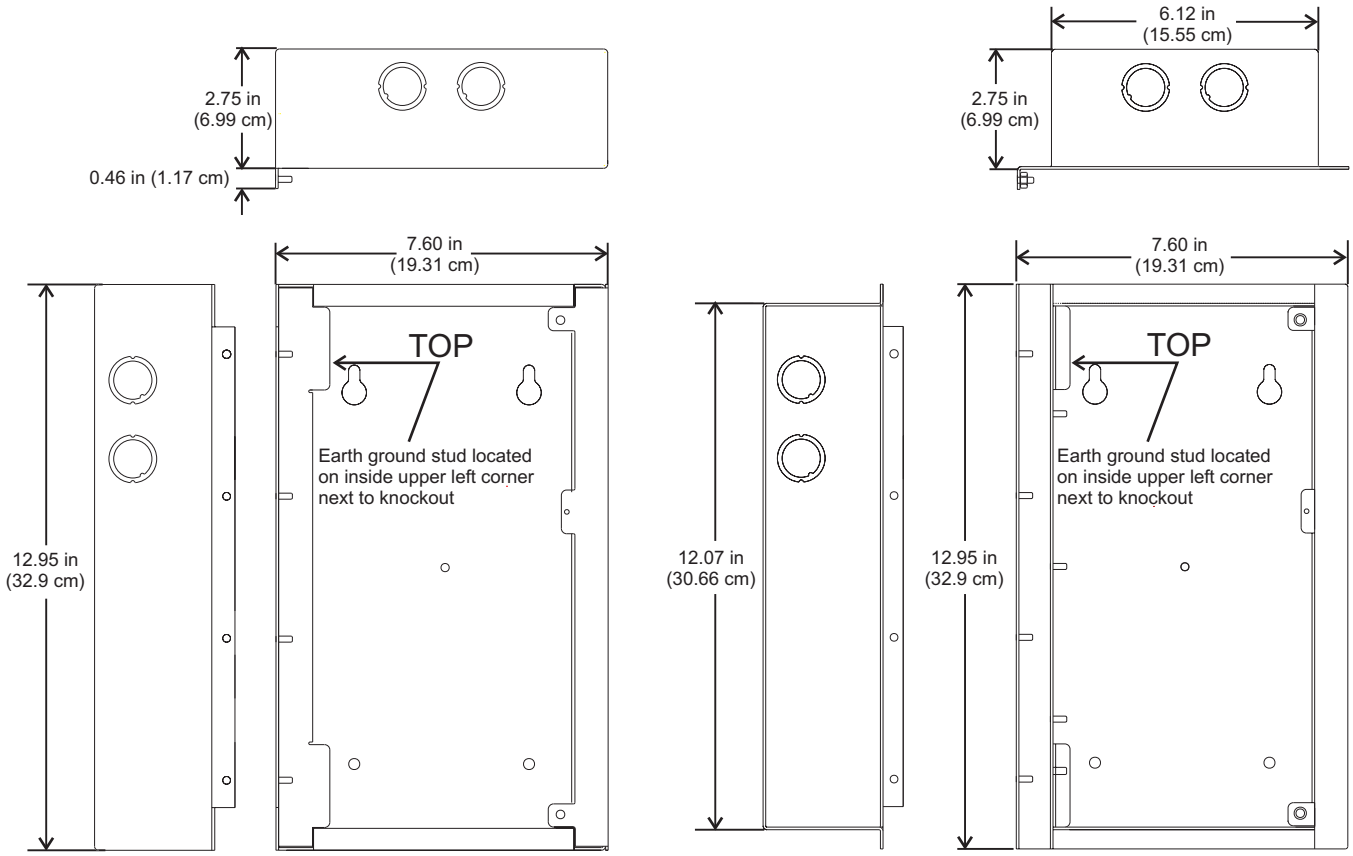
Wiring diagram

Note: All wiring is supervised and power-limited.



Front view of the backplate as mounted on the electrical box, showing terminal connections

CABINET DIMENSIONS



RCLM/B-S **RCLM/B**

Notes

1. Make sure that the wallbox is level and at the proper height and location before securing. Use fasteners of acceptable size and type.
2. All wiring shall be power-limited.

PRODUCT INFORMATION

The RLCM/B(-S) Remote Annunciator Cabinet wallbox houses the electronics for the 3-LCDANN(-E) Remote LCD Command Module Annunciator. The RLCM/B is used in semi-flush mount applications. The RLCM/B-S is used for surface mountings.

INSTALLATION SHEET

RLCM/B(-S)
Remote Annunciator Cabinet Wallbox

INSTALLATION SHEET P/N: 387559	FILE NAME: 387559.CDR
REVISION LEVEL: 1.0	APPROVED BY: K. Patterson
DATE: 08DEC99	CREATED BY: G. Sutton

EDWARDS SYSTEMS TECHNOLOGY, INC.
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OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

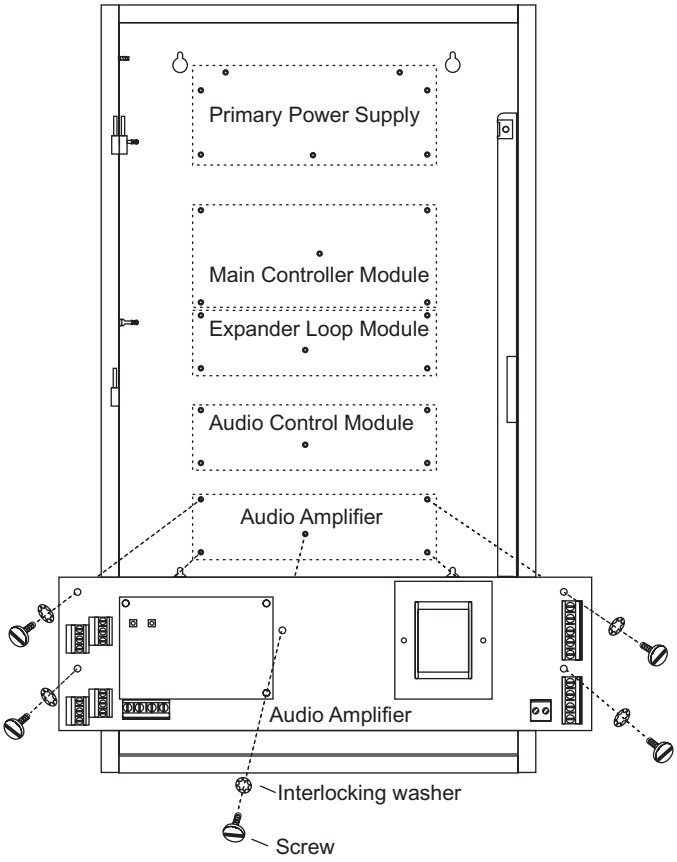
PRODUCT DESCRIPTION

The SIGA-AAXX is a high-efficiency, dual-input, switch-mode audio amplifier. The amplifier comes in two versions: 30 watt (SIGA-AA30) and 50 watt (SIGA-AA50), and has both 1 V and 25 V input levels. The output is supervised, power-limited, and user-selectable for 25 Vrms or 70 Vrms output voltage.

An integral Signature module under software control selects the amplifier input channel. The amplifier reports its status to the Main Controller Module to reduce the need for additional field wiring. The amplifier also features a backup amplifier connection, which supports one-to-one or banked backup amplifiers.

INSTALLATION

1 Mount the amplifier with the screws and washers provided.



Note: See the installation sheets listed in the title box for other places to mount the Audio Amplifier.

2 Configure the amplifier

a. Set JP2 (output voltage) to 25 Vrms or 70 Vrms as required.

b. Set JP3 on the back of the daughter board for the backup mode.

Jumper Settings

JP2	Pins 1 and 2: 70 Vrms Pins 2 and 3: 25 Vrms
JP3	In: TB5 signal before 1 kHz backup tone Out: 1 kHz backup tone before TB5 signal

SPECIFICATIONS

Power requirements	
Standby	1 mA @ 24 Vdc
Active SIGA-AA30	1.7 A @ 24 Vdc
Active SIGA-AA50	3.2 A @ 24 Vdc
Frequency response	400 Hz to 4 kHz at -3 dB (ULC) 800 Hz to 2.8 kHz (ULI)
Harmonic distortion	< 5%
Input	
Channel 1 dual input	1 Vrms or 25 Vrms maximum
Channel 2 dual input	1 Vrms or 25 Vrms maximum
Output	
SIGA-AA30	30 watts @ 25 Vrms or 70 Vrms
SIGA-AA50	50 watts @ 25 Vrms or 70 Vrms
Configuration	Class B (Style Y) or Class A (Style Z)
EOL resistor	47 kΩ
Signature Data Circuit	
Addresses	2 module addresses
Emulation	Signature series CC2 module
Maximum wire size	12 AWG (2.5 mm^2)
Backup tone	1 kHz
Operating temperature	32 to 120 °F (0 to 49 °C)
Humidity	0 to 93%, noncondensing

Warning!

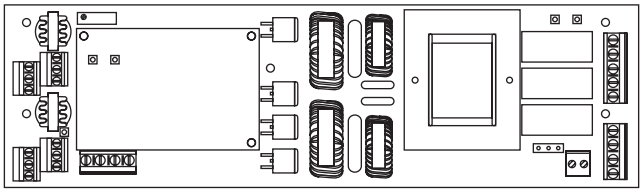
Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!

Observe static-sensitive material handling practices.

LED indicators

LED	Color	Pattern	Description
DS1	Green	Steady	Power amp disabled
DS2	Yellow	Steady	Backup mode
DS3	Green	Steady	Amplifier active
DS4	Green	Flashing	Normal communications (daughterboard)
DS5	Red	Flashing	Active condition (daughterboard)



INSTALLATION SHEET:

SIGA-AA30/SIGA-AA50 Audio Amplifiers

INSTALLATION SHEET P/N: 387343	FILE NAME: 387343.CDR
REVISION LEVEL: 2.0	APPROVED BY: J. Massing
DATE: 30MAR00	CREATED BY: B. Graham

Related documentation: WB3(R) Wallbox installation sheet, WB7(R) Wallbox installation sheet, RACCR Remote Audio Closet Cabinet installation sheet

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WIRING

3 Wire the amplifier

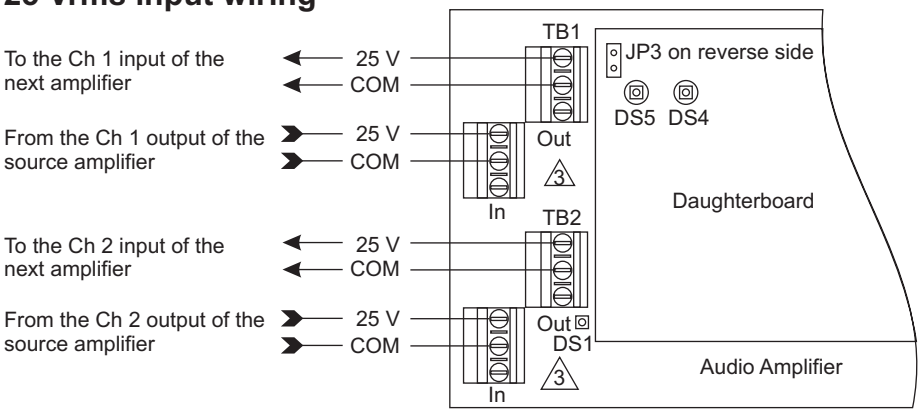
a. Connect the power, the Signature Data Circuit (SDC) , the input risers, and the backup risers as required.

b. Test the circuit before you connect the amplifier to the output wiring.

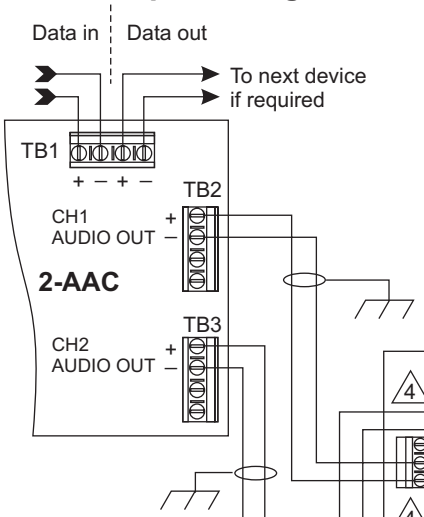
c. Connect the circuits that check out good to the appropriate amplifier terminals.

Note: The terminal blocks indicate the polarity for normal monitoring of the circuit's electrical integrity.

25 Vrms input wiring



1 Vrms input wiring

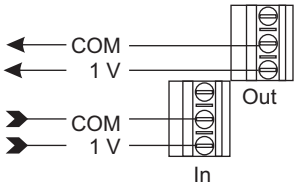


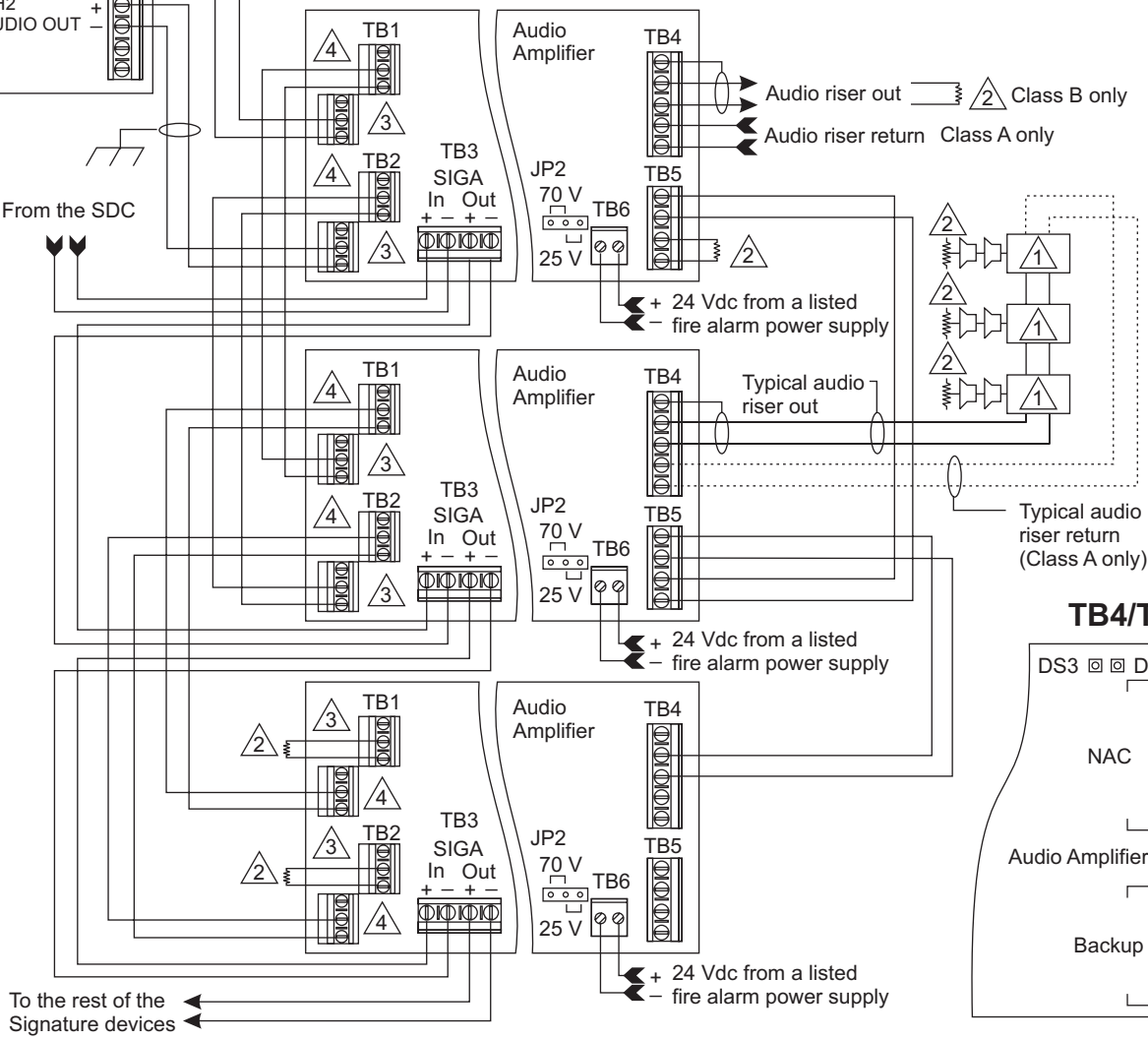
Notes

1. Signature series module: CC1, CC2, or UM
2. UL/ULC Listed 47 kΩ EOL
3. The actual placement of the TB1 and TB2 output terminals is almost directly behind the input terminals. Note also that the output terminals are taller than the input terminals.
4. See the detail for 1 volt connections.
5. All wiring is supervised and power-limited.

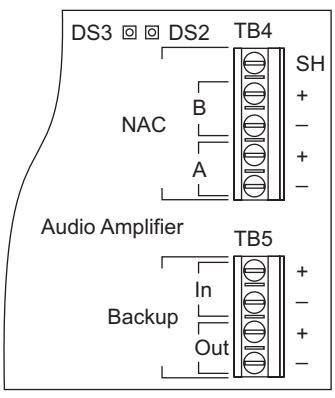
Detail

1 volt connections





TB4/TB5 wiring



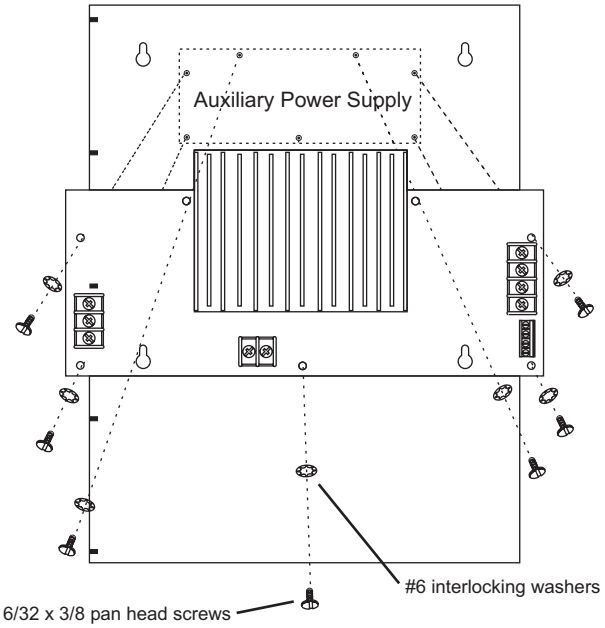
PRODUCT DESCRIPTION

The SIGA-APS is a switch-mode auxiliary power supply designed to provide additional power for audio components and external Notification Appliance Circuits (NACs). The power supply monitors the AC line, performs ground fault testing, and charges batteries (up to 10 Ah). The SIGA-APS also provides a smooth and uninterrupted transition to batteries in the event of an AC power loss.

All trouble conditions detected by the SIGA-APS are transmitted to the fire alarm control panel through its connection to the Signature Data Circuit (SDC), eliminating the need for additional devices. All connections intended to leave the cabinet are fully protected against direct and induced transient voltage conditions.

INSTALLATION

Mount the SIGA-APS with the screws and washers provided.



SPECIFICATIONS

AC Input voltage

SIGA-APS	120 Vac @ 300 W maximum, 50/60 Hz
SIGA-APS-220	220 Vac @ 300 W maximum, 50/60 Hz
Maximum wire size	12 AWG (2.5 mm^2)

Output voltage

Nominal rating	24 Vdc @ 6.75 A total
Output circuits	Two power-limited circuits rated at 24 Vdc @ 3.2 A each
Maximum wire size	12 AWG (2.5 mm^2)

Battery charging

Charge current	1.0 A
Charge capacity	10 Ah

Signature

Addressing	Two module addresses
Personality Code	03 (Emulates SIGA-CT2)
Maximum wire size	14 AWG (1.5 mm^2)

Environmental Conditions

Temperature range	32 to 120 °F (0 to 49 °C)
Humidity	93%, Non-condensing

Warning!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

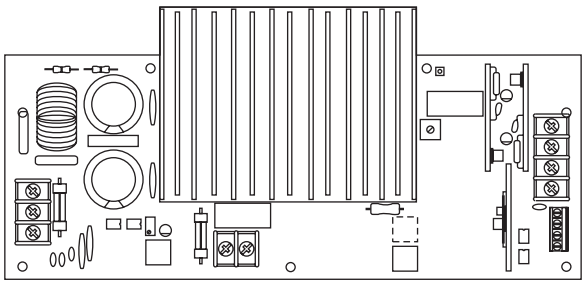
Caution!

Observe static-sensitive material handling practices.

WIRE ROUTING

The routing of power-limited and nonpower-limited wiring differs with each cabinet. For more information on the routing of power-limited and nonpower-limited wiring, see the cabinet's installation sheet.

PRODUCT DIAGRAM



INSTALLATION SHEET:

SIGA-APS (-220)
Auxiliary Power Supply Module

INSTALLATION SHEET P/N: 387342	FILE NAME: 387342.CDR
REVISION LEVEL: 2.0	APPROVED BY: J. Massing
DATE: 30MAR00	CREATED BY: B. Graham

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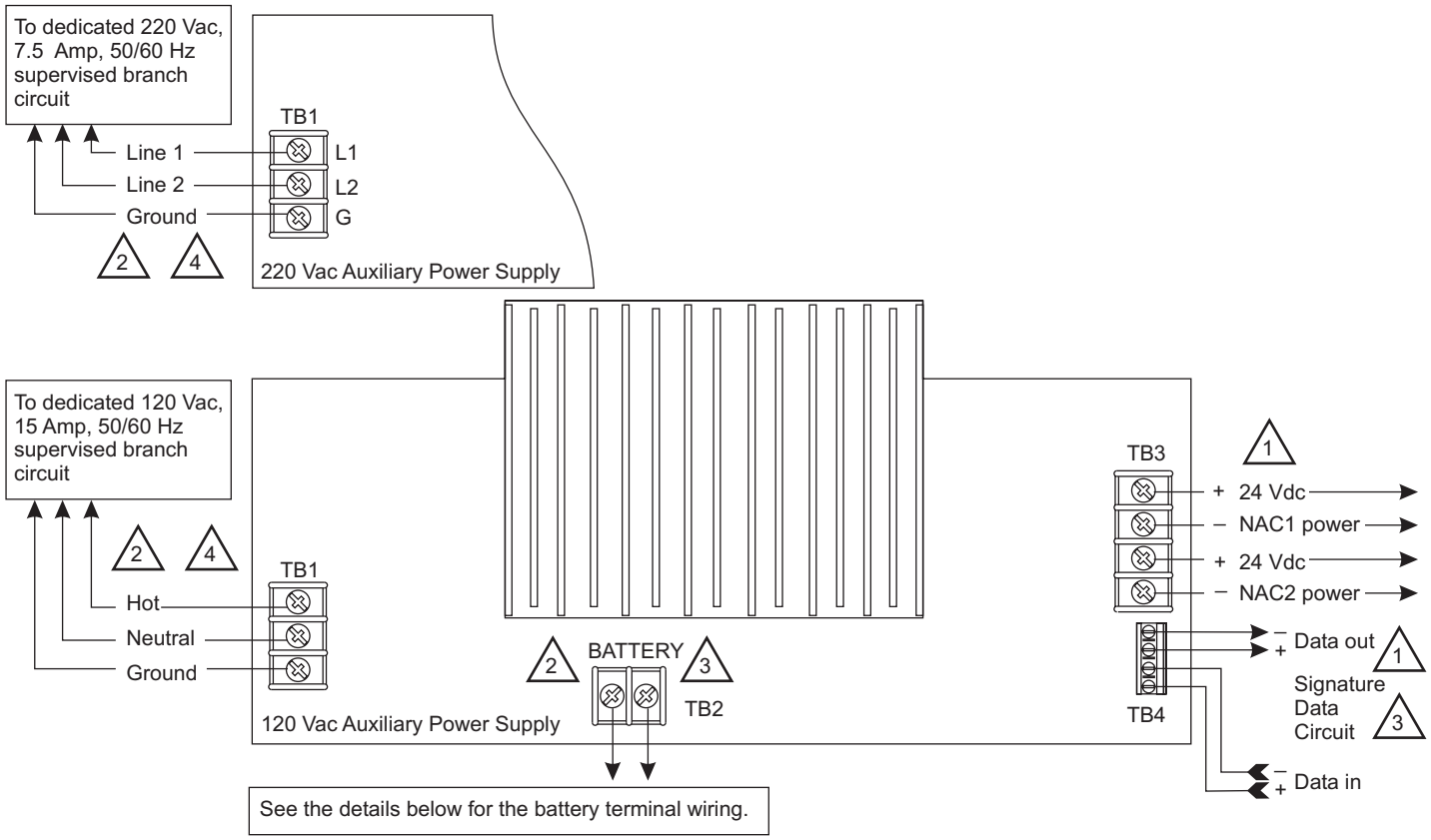
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

WIRING

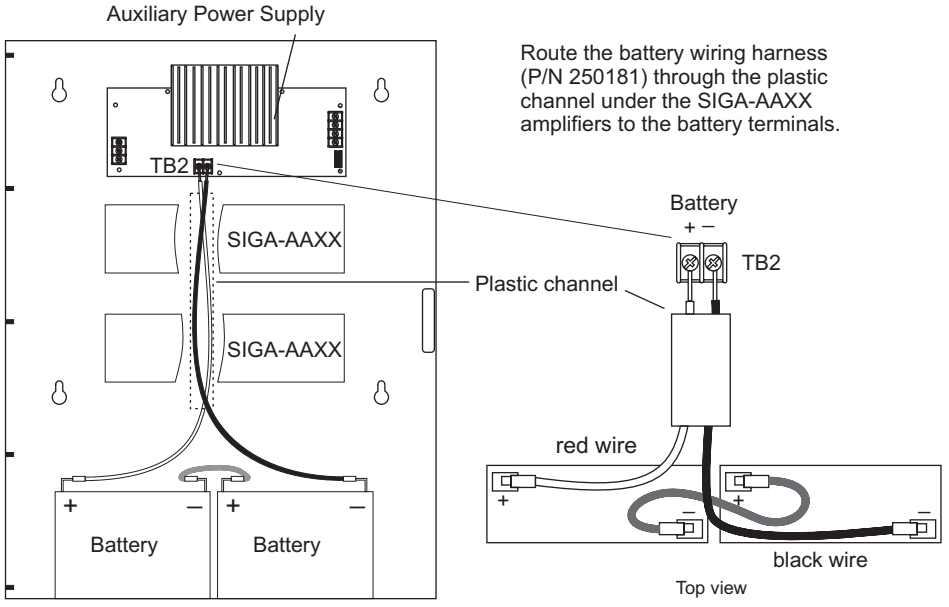
Wire Stripping Guide

Strip 1/4 inch from the ends of ALL wires that connect to the terminal blocks of the module.

Caution:
Exposing than 1/4 inch of wire may cause a ground fault.
Exposing than 1/4 inch of wire may result in a faulty connection.



See the details below for the battery terminal wiring.

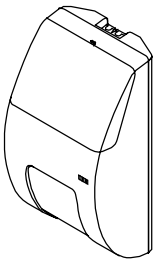


Notes

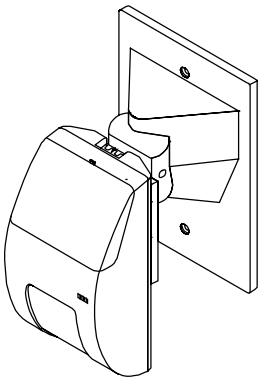
1. Power-limited
2. Nonpower-limited
3. Supervised
4. Nonsupervised

SIGA-MD(S)
Motion Detector

Product description



SIGA-MD



SIGA-MDS

The Motion Detector module is an intelligent, analog-addressable device that interfaces a motion detector and a security or guard tour input to a Signature loop controller. The SIGA-MDS contains the same circuitry as the SIGA-MD, but its mounting and wiring require different procedures. See the mounting and wiring topics in this installation sheet for complete instructions.

The Motion Detector requires two module addresses. One channel monitors the PIR (passive infrared) and the tamper switch in the detector. The second channel provides a security input, which can be configured for security or guard tour applications (per NFPA 72). A single Signature loop can accommodate up to 62 units.

The Motion Detector provides seven separate coverage patterns known as curtains. The curtains are actually infrared reflections that extend to 34 ft (10.36 m) and cover a width 4.8 ft (1.46 m) each. The coverage patterns, however, are configurable to specification. See “Configuring the reflector and window” and “Mounting the detector” for more detail.

A coverage test function provides verification for the extent of coverage within specific zones covered by the infrared curtains. A red LED flashes to indicate active motion within a covered zone.

Specifications

Input voltage: 15.20 to 19.95 Vdc
Current draw
- Standby: 600 μA
- Active: 700 μA

Input circuit
- EOL resistor: UL/ULC listed 47 kΩ
- Max. resistance: 50 Ω (25 Ω per wire)
- Max. capacitance: 0.1 μF
- Max. voltage: 18 Vdc
- Max. current: 0.32 mA

Coverage
- Patterns: Full, right, left, and center
- Curtains: Up to 7
- Range: 34 ft (10.36 m) x 90°

Mounting
- Surface: Flat wall or corner
- Height: Up to 10 ft (3 m)

Address requirement: 2
Operating temperature range: 32 to 120 °F (0 to 49 °C)
Storage temperature range: -4 to 140 °F (-20 to 60 °C)
Humidity: 10 to 93% noncondensing
Shipping weight
- SIGA-MD: 7.3 oz (207 g)
- SIGA-MDS: 9.6 oz (272 g)

Construction: High impact polymer
Color: White

Note: This unit complies with FCC and DOC requirements.

Personality codes

System controller compatibility

The Motion Detector requires a Signature loop controller to download the personality codes that determine how it will operate. The first channel is user-definable to eight different personalities. The second channel is automatically configured for motion detection. The user-definable personality codes for external security loops are described below.

Personality code 3: N.O. active, nonlatching relay (guard tour)

Personality code 3 configures the channel 1 input for use with Class B, normally-open (N.O.) contact guard tour devices. When the N.O. contact of the device is closed, an active signal is sent to the loop controller. The active status is nonlatching and clears when the N.O. input is returned to the open condition. The panel will report an open circuit as a trouble condition.

Personality code 41: security open with tamper

Personality code 41 configures the channel 1 input for devices that use a Class B, N.O. contact for security conditions and a Class B, normally-closed (N.C.) contact for tamper conditions. When the N.O. contact is closed, an active signal is sent to the loop controller; similarly, when the N.C. contact is opened, a tamper signal is sent to the loop controller.

Personality code 42: security closed with tamper

Personality code 42 configures the channel 1 input for devices that use a Class B, N.C. contact for security conditions and a Class B, N.O. contact for tamper conditions. When the N.C. contact is opened, an active signal is sent to the loop controller; similarly, when the N.O. contact is closed, a tamper signal is sent to the loop controller.

Personality code 43: basic security (factory default)

The factory assigns personality code 43 to the channel 1 input. Personality code 43 configures the channel 1 input for devices that use a Class B, N.C. contact and/or a Class B, N.O. contact for security conditions. When the N.C. contact is opened or the N.O. contact of the device is closed, an active signal is sent to the loop controller.

Personality code 44: tamper

Personality code 44 configures the channel 1 input for devices that use a Class B, N.C. contact and/or a Class B, N.O. contact for tamper conditions. When the N.C. contact is opened or the N.O. contact is closed, a tamper signal is sent to the loop controller.

Personality code 45: security open

Personality code 45 configures the channel 1 input for use with a Class B, N.O. contact. When the N.O. contact is closed, an active signal is sent to the loop controller. The panel will report an open circuit as a SecurityFault condition.

Personality code 46: security closed

Personality code 46 configures the channel 1 input for use with a Class B, N.C. contact. When the N.C. contact is opened, an active signal is sent to the loop controller. The panel will report a short circuit as a SecurityFault condition.

Personality code 48: security - maintenance

Personality code 48 configures the channel 1 input for devices that use a Class B, N.C. contact or a Class B, N.O. contact for maintenance conditions (e.g. a motion detector with a separate maintenance contact). When the N.C. contact is opened or the N.O. contact is closed, a maintenance signal is sent to the loop controller.

Note: See the *SDU Online Help* (P/N 180653) for additional programming instructions.

Installation instructions

Here are the general steps you'll follow to mount, wire, and test the Motion Detector. The details of each step are given in the remaining topics of this installation sheet.

1. Disassemble the detector for mounting and wiring. (Remove the access plate, cover, and circuit board.)
2. Mount the base to a flat wall or a corner. (See Figure 1 and “Mounting the detector.”)
3. Configure the reflector and window as required for the coverage you want.
4. Wire the detector and replace the circuit board.
5. Set the jumpers for the required sensitivity and range.
6. Test the detector.
7. Remove the keeper screw and reassemble the cover and access plate.

Installation notes

1. For NFPA 72 guard tour applications, mount the Motion Detector to an outlet box.
2. This product is compatible with the EST3 system. The system must provide a minimum of 4 hours standby for security applications and 24 hours standby for fire alarm applications.

Disassembling the detector

To disassemble the detector:

1. Use the tab to pull the access plate off of the cover (Figure 2).
2. Insert a small, flat-bladed screwdriver in the slot and push the handle down to lift the cover off of the base (as shown in Figure 3).
3. Remove the circuit board assembly (Figure 4).

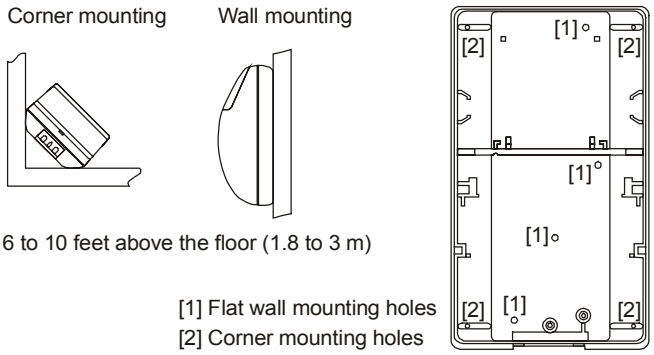


Figure 1: Mounting locations

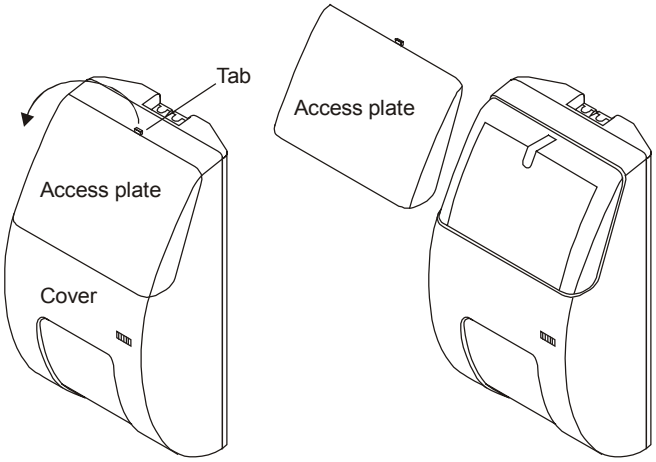


Figure 2: Removing the access plate

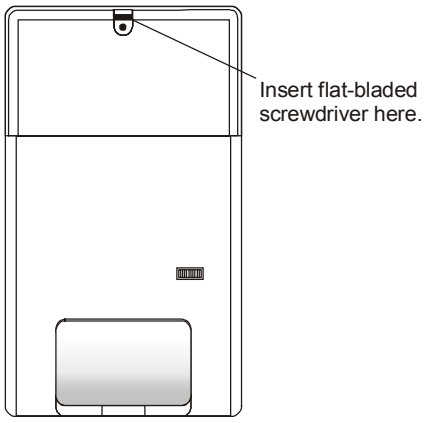


Figure 3: Removing the cover

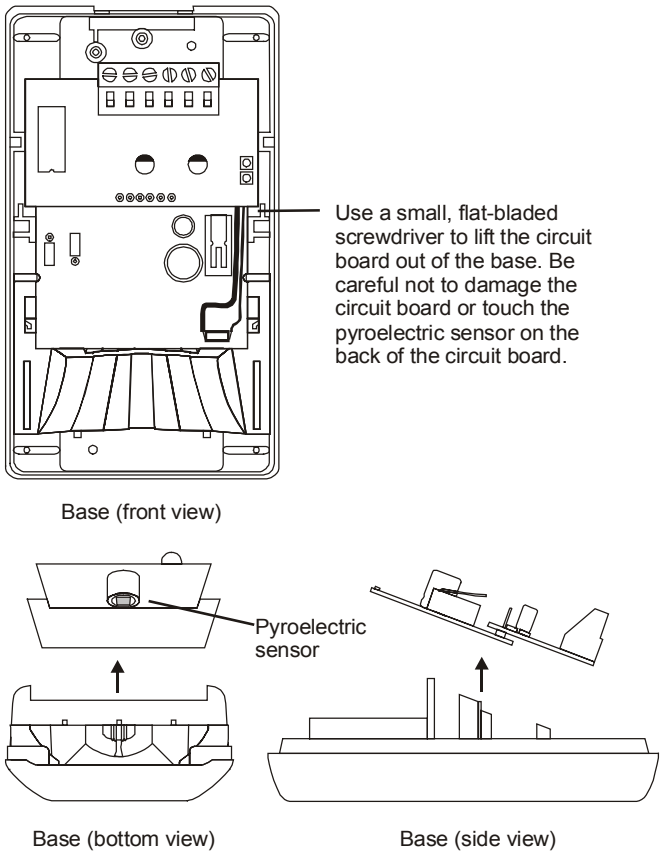


Figure 4: Removing the circuit board assembly

Caution: Observe static-sensitive material handling practices.

Mounting the detector

General guidelines

Mount the detector so the expected movement of an intruder will cross the fields of detection. (See “Configuring the reflector and window.”) Remove any object in front of the detector that may prevent a clear line of sight. Keep metallic objects at least two feet away from the detector. Avoid locations that expose the detector to:

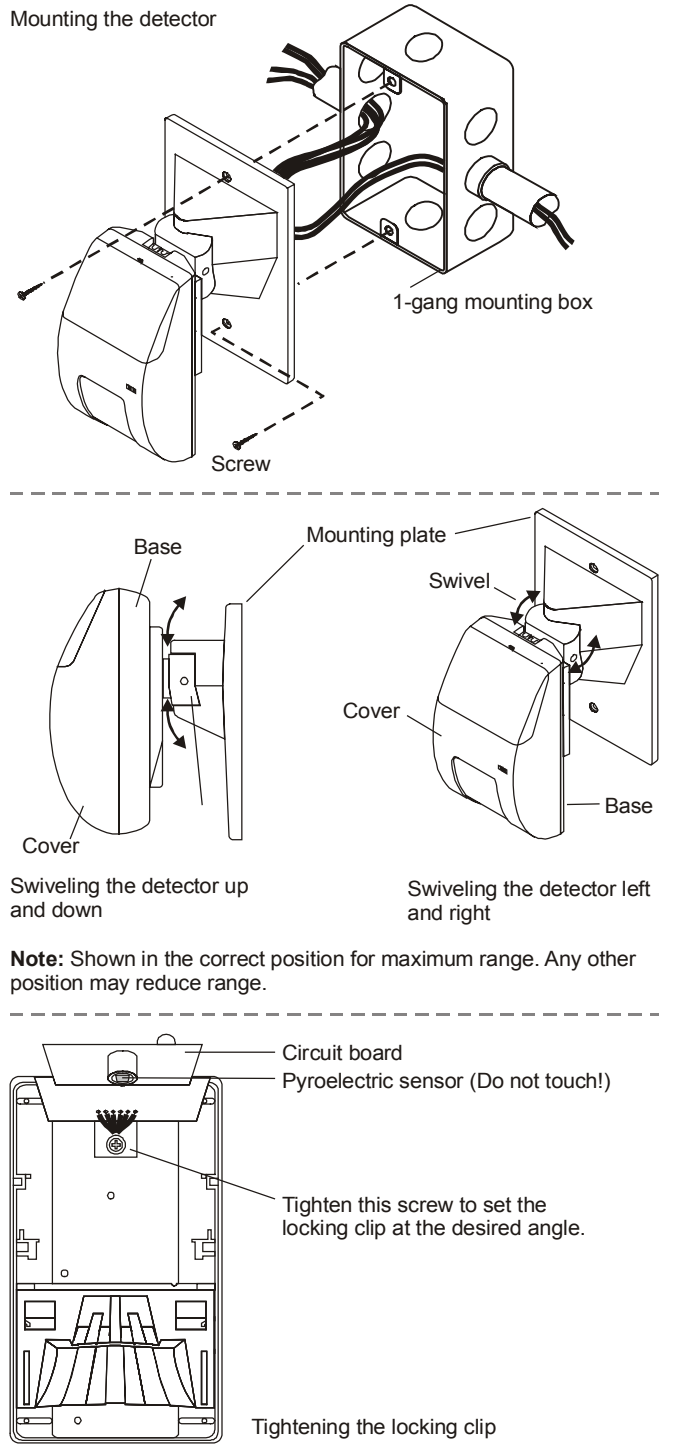
- Moving or vibrating objects (fans, pulleys, conveyer belts)
- Water spray or corrosive environments
- Heat sources in the field of view (heaters, radiators)
- Windows in the field of view
- Strong air drafts on the detector (fans, air conditioners)
- Animals larger than 20 pounds
- Blinds, curtains, or drapes
- Electronic fields (electric motors, high-voltage equipment)

Mounting the SIGA-MDS

The SIGA-MDS requires a few additional mounting steps.

To mount the SIGA-MDS:

1. Secure the detector to the 1-gang box with two screws (Figure 5).
2. Swivel the detector to the desired angle.
3. Remove the cover from the base.
4. Remove the circuit board to expose the swivel screw. (See Figure 4.)
5. Tighten the swivel screw to set the locking clip at the desired angle.
6. Replace the circuit board. (See Figure 9 and Figure 10.)
7. Snap the cover back onto the base. (See “Reassembling the detector.”)



Note: Shown in the correct position for maximum range. Any other position may reduce range.

Figure 5: SIGA-MDS mounting illustrations

Configuring the reflector and window

You can remove the infrared reflector to configure the detector for the specifications of your job.

To configure the reflector and window:

1. Remove the infrared reflector from the base.
2. If needed, place the undercrawl window mask in the cover. (See Figure 7.)
3. If needed, apply the plastic masks or curtain block stickers to the infrared reflector. (See Figure 8.)
4. Put the infrared reflector back into the base.

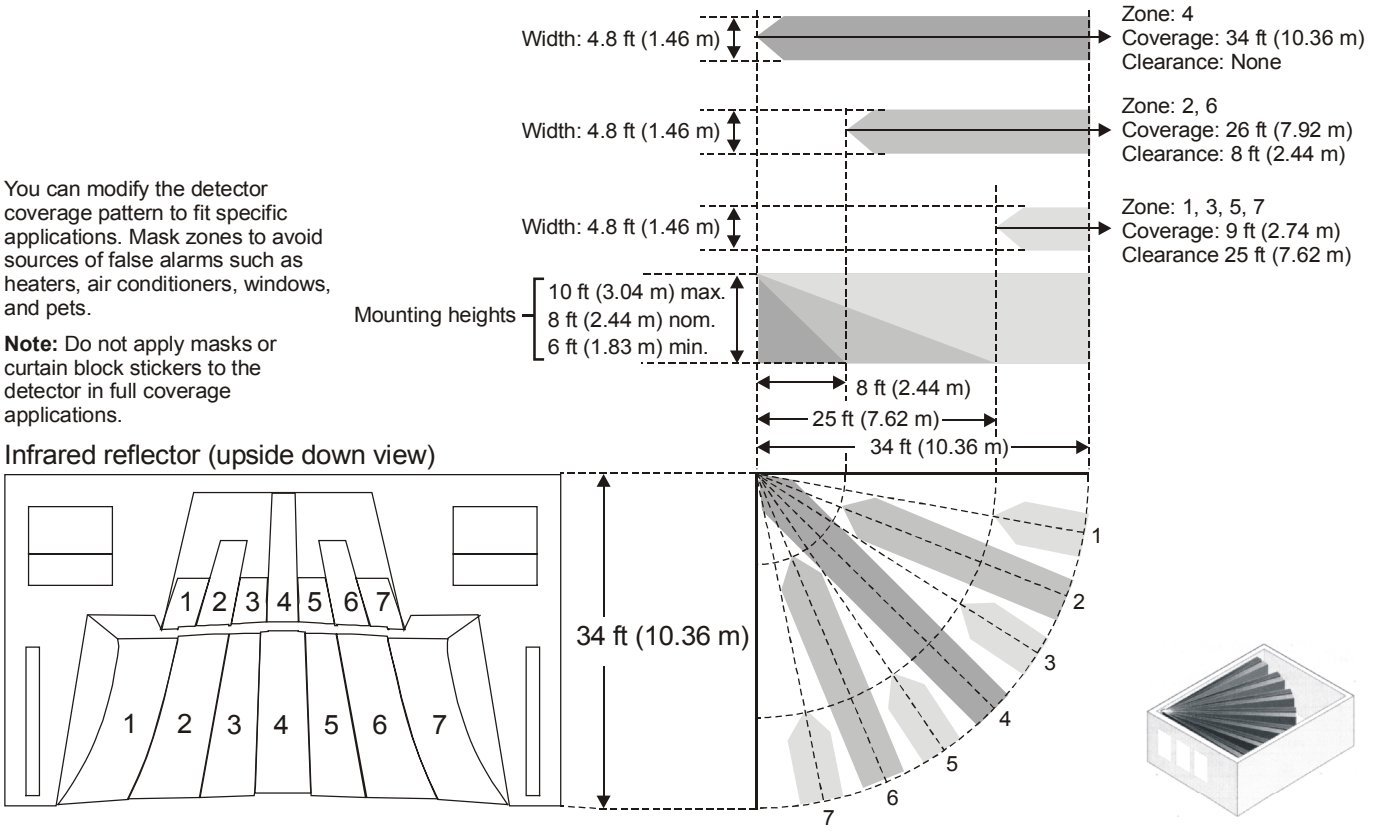


Figure 6: Full coverage

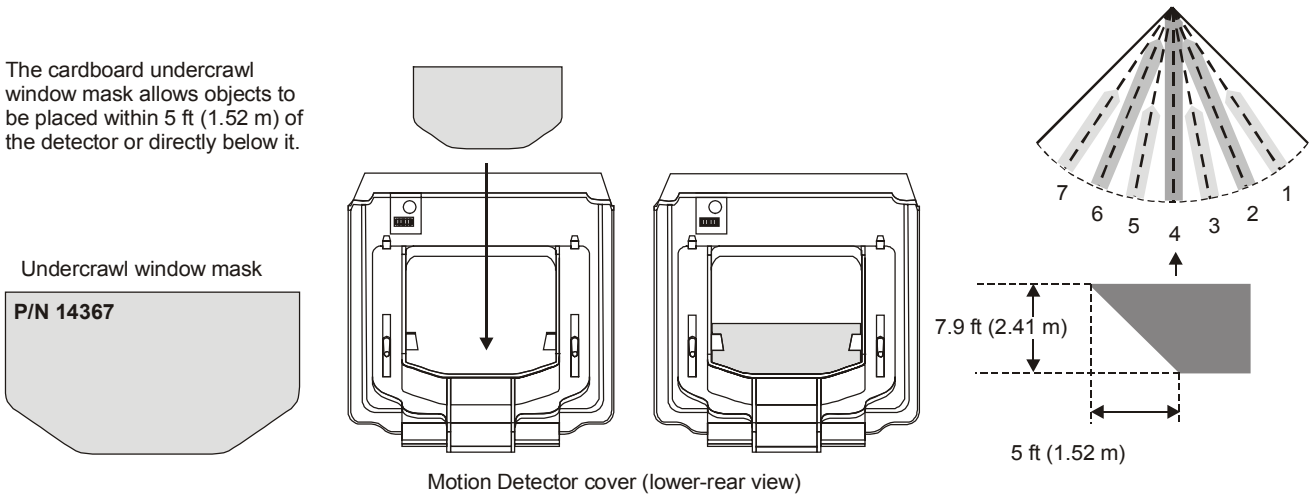
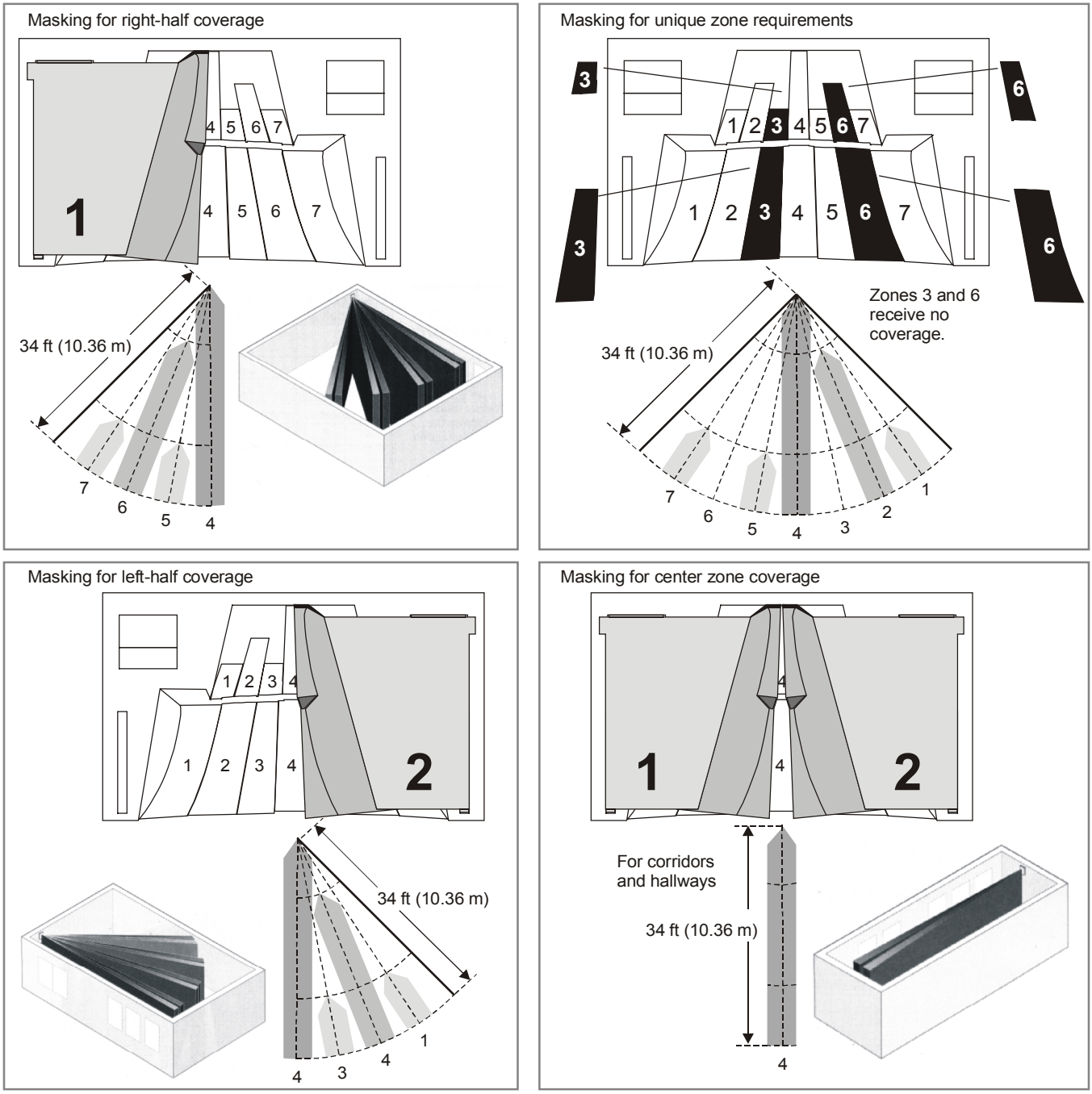
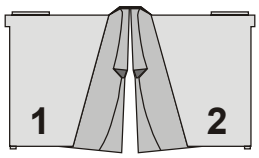


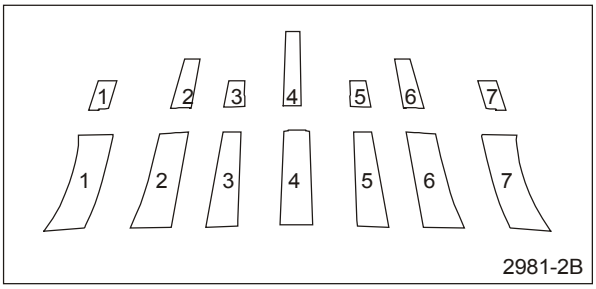
Figure 7: Undercrawl coverage



Plastic masks



Use the plastic masks to mask off wide areas of coverage.



Adhesive curtain stickers

Each zone of coverage requires both numbered (small and large) curtain block stickers.

Caution: Do not use sharp objects to remove unwanted stickers from the infrared detector. Carefully peel off the sticker if it becomes necessary to use the blocked curtain (zone).

Figure 8: Masked coverage patterns

Wiring the detector

To wire the SIGA-MD(S):

1. If necessary, remove the circuit board as instructed in Figure 4. Remember to observe electro-static precautions.
2. Remove the wiring knockouts (see Figure 9) on the base for the wiring.
3. Run the wiring through the wiring knockouts.
4. Connect the wiring to the appropriate terminals at TB1. (See Figure 11 for SIGA-MDS wire runs.)
5. If necessary, lower the circuit board into the base and snap it securely into place at the locations marked [S] in Figure 9 and Figure 10.

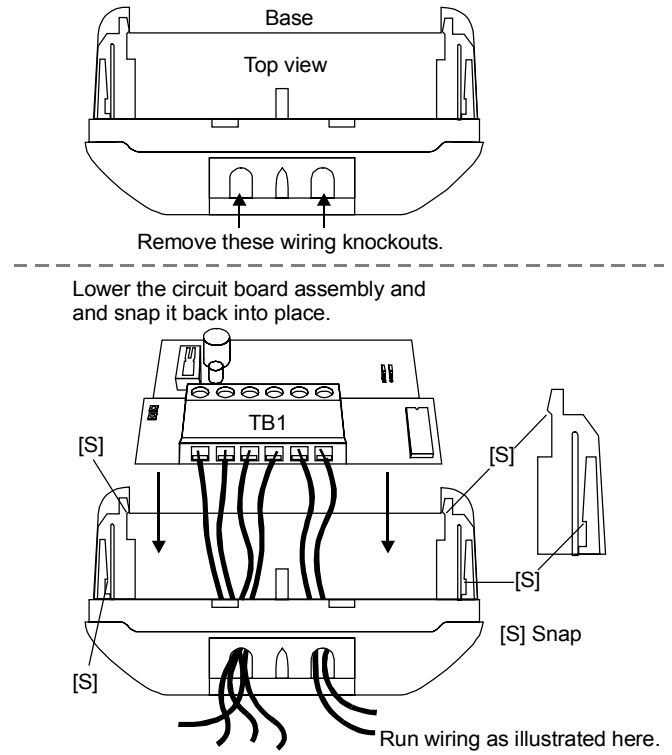


Figure 9: Running wires through the knockouts

Notes for Figure 10 and Figure 11

[1] The Channel 1 input circuit does not require a personality code, but it is configurable to personality codes 3, 41, 42, 43, 44, 45, 46, or 48.

[2] Class B (Style 4)

[3] 25 Ω resistance per wire, max.

[4] 16 AWG (1.0 sq mm) max. 22 AWG (0.25 sq mm) min.

[5] Listed 47 kΩ EOL resistor

6. All wiring is supervised and power-limited

7. This module will not support 2-wire smoke detectors.

[8] From Signature loop controller or previous device

[9] To next device

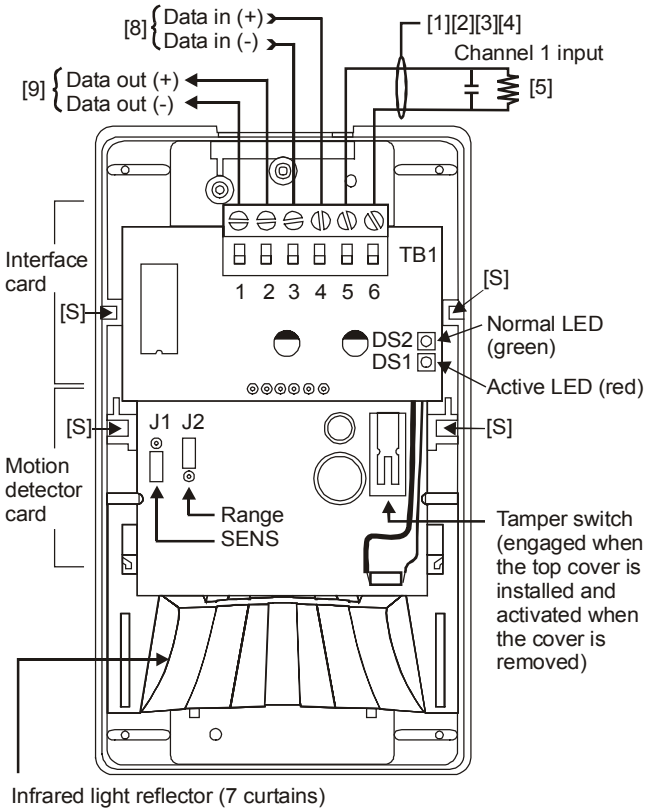


Figure 10: SIGA-MD wiring

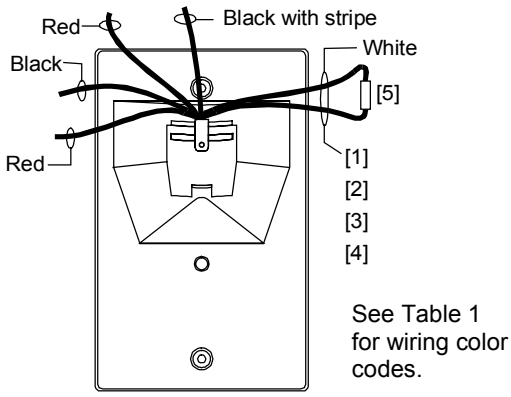
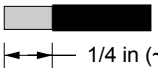


Figure 11: SIGA-MDS wiring

Table 1: SIGA-MDS wire color codes

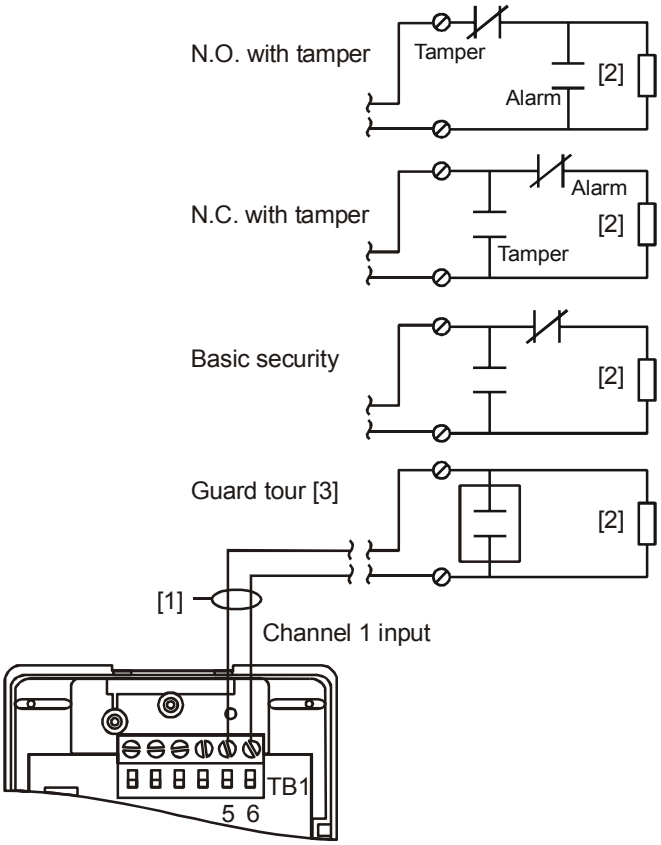
Color	Wire path
White	Channel [1] in
White	Channel [1] out
Red	Data in (+)
Black	Data in (-)
Red	Data out (+)
Black with stripe	Data out (-)

Wire stripping guide



Strip 1/4 inch (about 6 mm) from the ends of ALL wires that connect to the terminal block of the module.

Caution: Exposing more wire may cause a ground fault. Exposing less wire may result in a faulty connection



Notes

[1] See the previous page for notes that apply to the Channel 1 input.

[2] Listed 47 kΩ EOL resistor

[3] UL/ULC listed guard tour station

Figure 12: Security circuits

WARNINGS

• Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

• This module will not operate without electrical power. As fires frequently cause power interruptions, we suggest you discuss further safeguards with your local fire protection specialist.

• This module does not support conventional smoke detectors.

Setting the jumpers

Jumper	Settings
J1 SENS	Determines the detector sensitivity BI: Bicurtain mode (not UL listed) increases false alarm immunity by requiring the intruder to pass through two curtains to trigger an alarm. Do not use BI for single-curtain applications or ranges under 5 ft (1.52 m). STD: Standard mode handles wide-angle or single-curtain applications. The intruder only needs to pass through one curtain to trigger an alarm.
J2 Range	Determines the detector range. Make sure the jumper is in the 34 ft (10.36 m) position before operation.

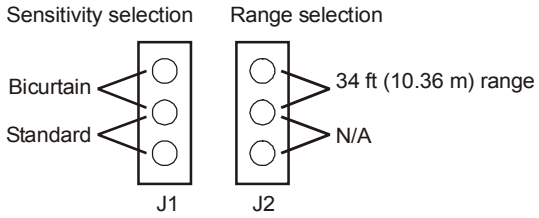


Figure 13: Jumper settings

Testing the detector

Conducting a coverage test

The coverage test allows for verification of the extent of coverage within a space.

The detector remains in the coverage test mode while the cover is removed and for approximately 2 minutes after you replace it. If the detector returns to normal before you make all the adjustments, return to step 2 for additional time.

The Motion Detector will stay in alarm for approximately three seconds after each alarm.

To conduct a coverage test:

1. Disable the device if you do not want a tamper or active indication at the fire alarm panel.
2. Remove the cover (Figure 3). This activates the tamper switch, which puts the detector in the coverage test mode.
3. Reinstall the cover.
4. Test each curtain for proper operation by walking through each section in the space. The red coverage test LED (Figure 14) flashes on each alarm.
5. Make adjustments to the curtain coverage as necessary.
6. Re-enable the detector at the fire alarm panel if you disabled it before testing.

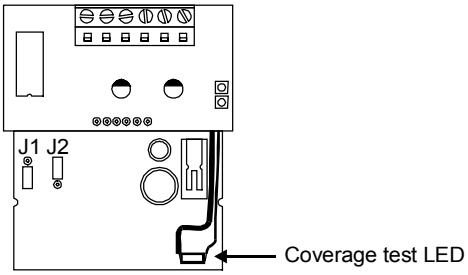


Figure 14: Coverage test LED

Maintaining the detector

The Motion Detector, if properly installed and used, will provide years of service with minimal maintenance. Conduct a coverage test annually as described here to verify proper operation.

Clean the cover with a water-dampened cloth as needed to keep the detector free of dust and dirt. Always test the detector after you clean it.

Reassembling the detector

To assemble the detector:

1 Remove the keeper screw from the base (Figure 15).

2 Join the cover and the base at bottom as shown below (Figure 16).

3 Snap the cover shut at the top of the base.

4 Remove the access plate from the cover (Figure 17).

5 Secure the cover to the base with the keeper screw you removed in step 1.

6 Replace the access plate.

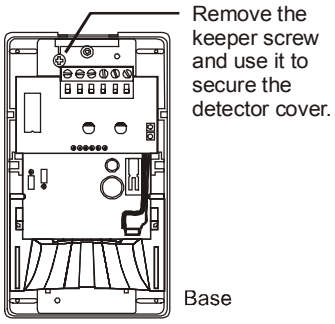


Figure 15: Finding the keeper screw

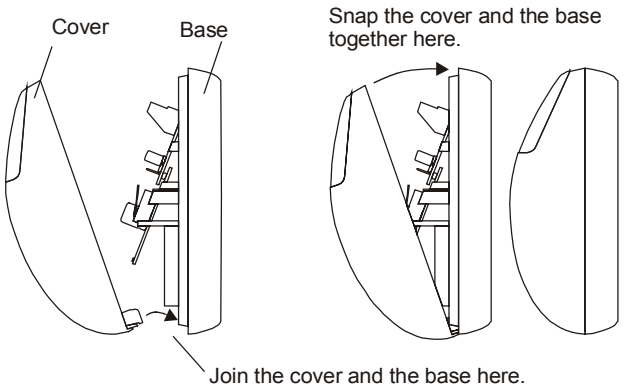


Figure 16: Snapping the cover onto the base

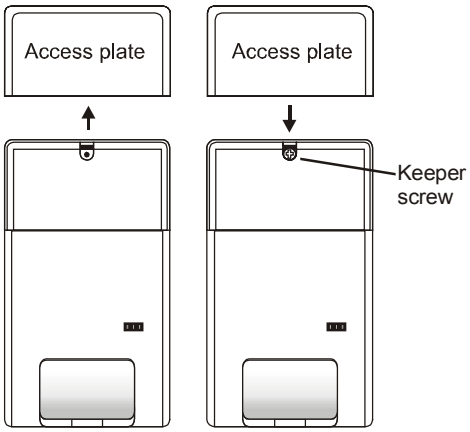
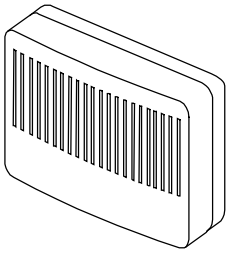


Figure 17: Securing the cover to the base

SIGA-SEC2
Security Loop Module

Product description



The Security Loop Module is an intelligent, analog-addressable device that interfaces one or two security loops to a Signature loop controller. Personality codes downloaded to the module during system configuration allow the user to configure each channel for almost any security application. This module also supports guard tour, per NFPA 72. The loop controller automatically assigns two addresses to the Security Loop Module, but it will accept custom address assignments from a laptop computer.

Personality codes

System controller compatibility

The Security Loop Module requires a Signature loop controller to download the personality codes that determine how it will operate. The personality codes described below are compatible with the security loop module.

Personality code 3: N.O. active, nonlatching (guard tour)

Personality code 3 configures the channel 1 input for use with Class B, normally-open (N.O.) contact guard tour devices. When the N.O. contact of the device is closed, an active signal is sent to the loop controller. The active status is nonlatching and clears when the N.O. input is returned to the open condition. The panel will report an open circuit as a trouble condition.

Note: Configure both zones the same for personality code 3. The security loop module requires connection to a listed guard tour station.

Personality code 41: security open with tamper

Personality code 41 configures the channel 1 input for devices that use a Class B, N.O. contact for security conditions and a Class B, normally-closed (N.C.) contact for tamper conditions. When the N.O. contact is closed, an active signal is sent to the loop controller; similarly, when the N.C. contact is opened, a tamper signal is sent to the loop controller.

Personality code 42: security closed with tamper

Personality code 42 configures the channel 1 input for devices that use a Class B, N.C. contact for security conditions and a Class B, N.O. contact for tamper conditions. When the N.C. contact is opened, an active signal is sent to the loop controller; similarly, when the N.O. contact is closed, a tamper signal is sent to the loop controller.

Personality code 43: basic security (factory default)

The factory assigns personality code 43 to the channel 1 input. Personality code 43 configures the channel 1 input for devices that use a Class B, N.C. contact and/or a Class B, N.O. contact for security conditions. When the N.C. contact is opened or the N.O. contact of the device is closed, an active signal is sent to the loop controller.

Personality code 44: security tamper

Personality code 44 configures the channel 1 input for devices that use a Class B, N.C. contact and/or a Class B, N.O. contact for tamper conditions. When the N.C. contact is opened or the N.O. contact is closed, a tamper signal is sent to the loop controller.

Personality code 45: security open

Personality code 45 configures the channel 1 input for use with a Class B, N.O. contact. When the N.O. contact is closed, an active signal is sent to the loop controller. The panel will report an open circuit as a SecurityFault condition.

Personality code 46: security closed

Personality code 46 configures the channel 1 input for use with a Class B, N.C. contact. When the N.C. contact is opened, an active signal is sent to the loop controller. The panel will report a short circuit as a SecurityFault condition.

Personality code 48: security - maintenance

Personality code 48 configures the channel 1 input for devices that use a Class B, N.C. contact or a Class B, N.O. contact for maintenance conditions (e.g. a motion detector with a separate maintenance contact). When the N.C. contact is opened or the N.O. contact is closed, a maintenance signal is sent to the loop controller.

Note: See the *SDU Online Help* (P/N 180653) for additional programming instructions.

Specifications

Data input voltage: 15.20 to 19.95 Vdc
Current draw
- Standby current: 720 μA
- Tamper/active current: 850 μA

Security circuit
- EOL resistor: UL/ULC listed 47 kΩ
- Max. resistance/channel: 50 Ω (25 Ω per wire)
- Max. capacitance/channel: 0.1 μF
- Max. voltage/channel: 18 Vdc
- Max. current/channel: 0.32 mA

Address requirement: 2
Operating temperature range: 32 to 120 °F (0 to 49 °C)
Storage temperature range: -4 to 140 °F (-20 to 60 °C)
Humidity: 0 to 93% noncondensing
Construction: High impact engineering polymer
Compatible electrical boxes
- North American 1-gang box: 2.5 in (64 mm) deep
- Standard 4-inch square box: 1.5 in (38 mm) deep with 1-gang cover

LEDs

Diagnostic LEDs provide visible indication of the status of the module when the front cover is removed.

Status	LED indicator
Normal	Green LED flashes
Active/Tamper	Red LED flashes

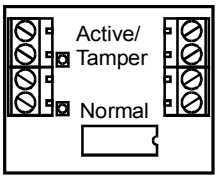


Figure 1: LED locations and indications

WARNINGS

• Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

• This module will not operate without electrical power. As fires frequently cause power interruptions, we suggest you discuss further safeguards with your local fire protection specialist.

• This module does not support conventional smoke detectors.

Caution: Observe static-sensitive material handling practices.

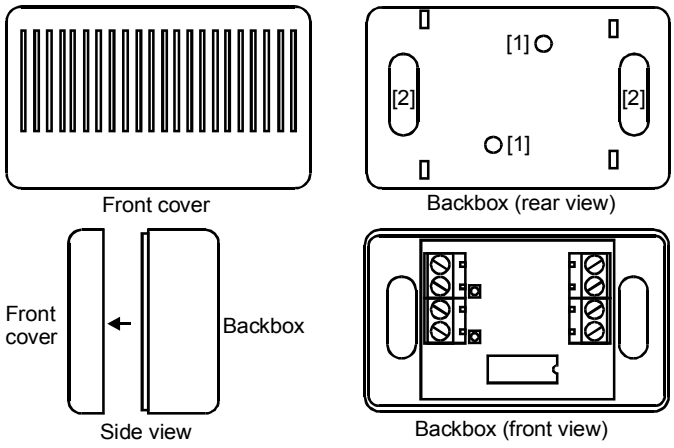
Installation instructions

To wire and label the module:

1. Open the front cover of the module to expose the circuit board and the backbox.
2. Remove the circuit board in accordance with static-sensitive handling practices.
3. Verify that all field wiring is free of opens, shorts, and ground faults.
4. Run the wiring through the wiring entrances of the backbox. (See Figure 2.)
5. Make the appropriate wiring connections to TB1 and TB2. (See Figure 4.)
6. Write the module address assignment on the label provided and apply it to the module.
7. Peel off the serial number label from the module and apply it to the appropriate location in the *Serial Number Log Book*.

To surface mount the module:

1. Prepare the mounting knockouts in the backbox. (See Figure 2.)
2. Mount the backbox on a smooth, flat surface.
3. Reinstall the circuit board.
4. Replace the front cover.



[1] Mounting knockout
[2] Wiring entrance

Figure 2: Surface mounting the module

To mount the module in an electrical box:

1. Reinstall the circuit board.
2. Replace the front cover.
3. Place the security loop module inside the electrical box.
4. Secure the appropriate cover to the electrical box.

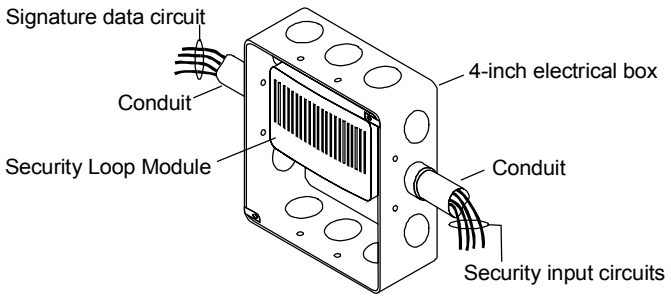
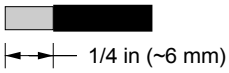


Figure 3: Mounting the module in an electrical box

Wire stripping guide



Strip 1/4 inch (about 6 mm) from the ends of ALL wires that connect to the terminal block of the module.

Caution: Exposing more wire may cause a ground fault. Exposing less wire may result in a faulty connection

Wiring diagram

Notes

[1] The circuits connected to TB2 are configurable to personality codes 3, 41, 42, 43, 44, 45, 46, or 48. The personality code assigned to the circuits determines the types of devices on them.

[2] Class B (Style 4)

[3] 25 Ω resistance per wire, max.

[4] 16 AWG (1.0 sq mm) max. 22 AWG (0.25 sq mm) min.

[5] Listed 47 kΩ EOL

[6] UL/ULC listed guard tour station

7. All wiring is supervised and power-limited

8. This module will not support 2-wire smoke detectors

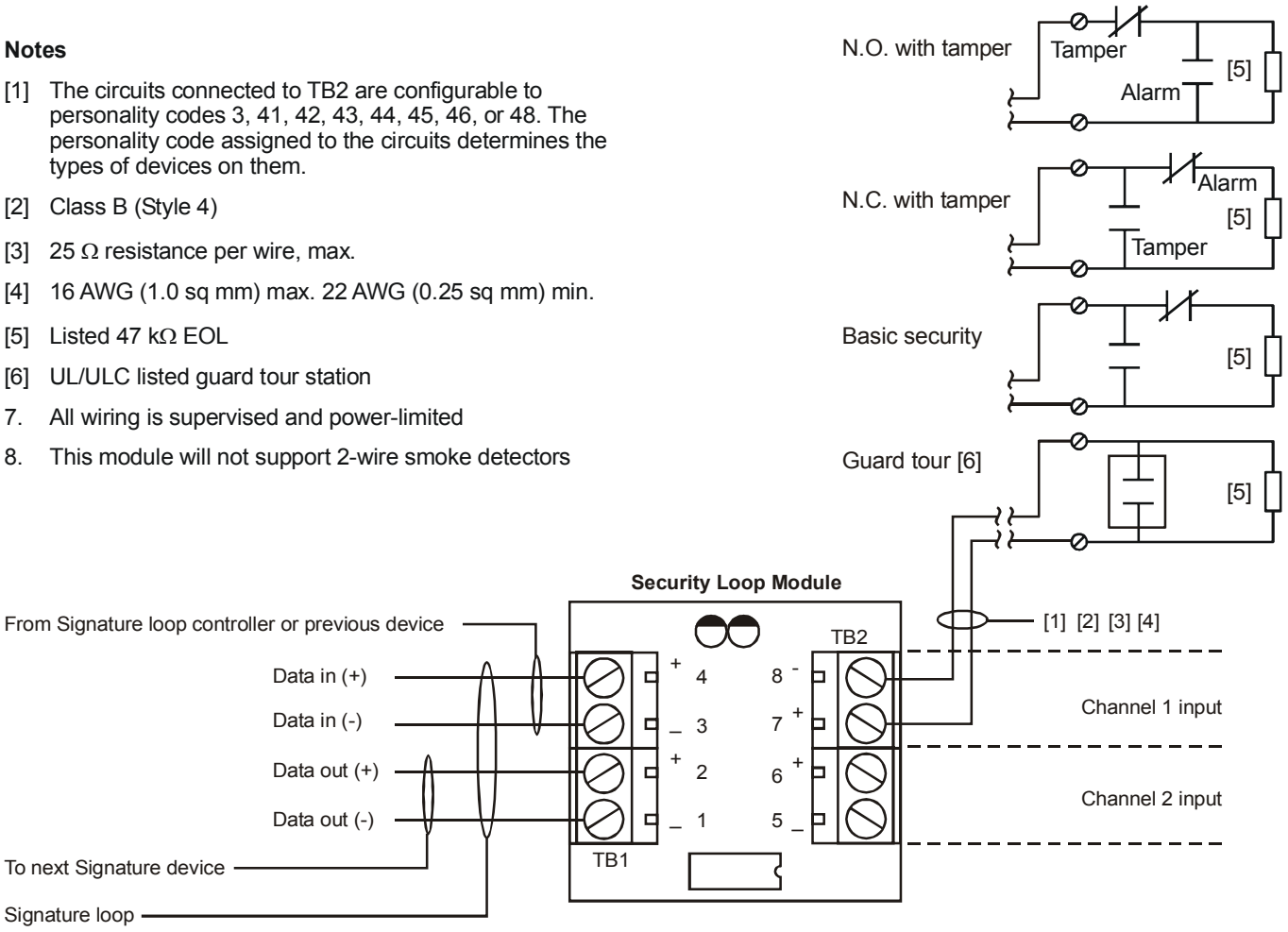


Figure 4: Wiring diagram