Cook County YMCA
Grand Marais, MN

Fire Alarm System
(Addressable)

OPERATIONS & MAINTENANCE
MANUAL

CERTIFICATION

ESC systems

SOUND AND LIFE SAFETY

ENDRESEN SOUND COMPANY

420 Third Ave. · P.O. Box 1095 Proctor, MN 55810 · Phone 218/727-3267

FIRE ALARM INSPECTION REPORT

Install Checkout (✓)   Maintenance Checkout ( )

FACILITY NAME: _YMCA Community Center_

ADDRESS: _____

CITY: _GRAND MARAIS_   STATE: _MN_   ZIP: _____

CONTROL PANEL DESCRIPTION:
Mfgr. _EST_   Model # _EST-2_   Serial # _____

CONTROL PANEL AVAILABILITY:
Currently in production ( )   Discontinued – Limited Availability (✓)   Obsolete–No Availability ( )

SIGNAL TYPE:
Horn (✓)   Chime ( )   Bell ( )   General Alarm (✓)   Coded ( )
Selective by Area ( )   Pre Signal ( )

CIRCUIT BREAKER LOCATION: _N/A_   # _____

BATTERY CONDITION: _N/A_
Good ( )   Need Replacement ( )   Voltage under charge _____V.
                                               Voltage (not connected) _____V.

TROUBLE CONDITIONS: (Check if applicable and operated)
Zone Trouble   (✓)   Lamp Test   (N/A)
Signal Circuits   (✓)   Drill Switch   ( )
Power Loss   (N/A)   City Tie Cutoff   ( )
Ground Detector   ( )   Aux. Function cutoff (✓)
Trouble Silence   (✓)   Zone Bypass   (✓)

SIGNALS AND AUXILIARY FUNCTIONS: (Check if applicable and operated)
Audible signals sounded   (✓)
Visual (strobe) signals operated (✓)
Door Holders   (N/A)
A.H.U. Shutdown   ( )
Type of reporting system _____ (✓)

ANNUNCIATOR:
Incandescent ( )   LED ( )   Graphic ( )   LCD Readout (✓)
Voltage _24_ V.   No. of zones _____ used _____ unused _____
Lamp Test   yes ( )   no (✓)
Comments: _THIS CERTIFICATION IS ONLY FOR NEW DEVICES_
INSTALLED ON THIS DATE !

DATE: _1, 8, 14_

ESC Representative _Rich Aho_

Owners Representative _____

ESC Systems
SOUND AND LIFE SAFETY

FIRE ALARM   TEST / (INSTALL CHECK OUT) / MAINTENANCE CHECK OUT /
INSPECTION   /   REPORT FORM   CONTINUATION   SHEET   #

JOB NAME: YMCA COMMUNITY CENTER   SHEET # 1 OF 1

STREET: DATE 11/8/14

CITY: GRAND MARAIS   STATE: MN   ZIP:

PERIPHERAL DEVICES FUNCTION TEST

Device Type	Device Location	Alarm	Trouble	Alarm Zone	Signal Circuit
SMOKE	YMCA POOL MECHANICAL RM.	✓		0328	
SMOKE	" " "	✓		0326	
SMOKE	" " CHEMICAL STORAGE LRG	✓		0327	
SMOKE	" " " " SM.	✓		0324	
SMOKE	" " POOL STORAGE	✓		0323	
SMOKE	" " MAIN ELECTRICAL RM.	✓		0317	

NOTATIONS: Enter any deviations from NFPA Standards:	Failures and Recommendations Encountered During Test

WARRANTY

ESC System's Service and Warranty Information

For Service:

Endresen Sound Company Inc.
(DBA) ESC Systems Sound and Life Safety
P.O. Box 1095
420 3rd Ave.
Proctor, MN 55810

Phone: (218)-727-3267
Toll Free: (800)-777-8379
Fax: (218)-624-7444

Hours of Business 8:00AM – 4:30PM
Monday through Friday (Excluding Holidays)

After Hours Emergency Service: 1-800-204-7726 (Charges may apply)

Service Manager – Rudy Stabe

Warranty information:

Providing Purchaser notifies ESC Systems promptly within one (1) year from date of shipment from ESC Systems, equipment or parts sold by us fail to function properly under normal use because of defects in material or workmanship demonstrated to our satisfaction to have existed at the time of delivery or because examination proves them not to be operating within the specified limit of calibration, ESC, reserving the right to either inspect them in your hands or request their return to us, will at our option repair or replace at our expense f.o.b. our assigned destination, such equipment or parts determined by us to be defective, if returned transportation prepaid by Purchaser. The foregoing shall not apply to equipment that shall have been altered or repaired after shipment to you by anyone except our authorized employees or agents and ESC will not be liable in any event for alterations or repairs except those made with its written consent. Purchaser shall be solely responsible for determining suitability for use and ESC shall in no event be liable in this respect. The equipment or parts manufactured by others but furnished by us will be repaired or replaced only to the extent of the original manufacturer's guarantee. Our obligations and liabilities hereunder shall not be enforceable until such equipment has been fully paid for. Purchaser agrees that if the products sold hereunder are resold by Purchaser, he will include the contract for resale, provisions which limit recoveries against us in accordance with this section. THE FOREGOING OBLIGATIONS ARE IN LIEU OF ALL OTHER OBLIGATIONS AND LIABILITIES INCLUDING NEGLIGENCE AND ALL WARRANTIES OF MERCHANTIBILITY OR OTHERWISE, EXPRESS OR IMPLIED IN FACT OR BY LAW, AND STATE OUR ENTIRE AND EXCLUSIVE LIABILITY AND BUYER'S EXCLUSIVE REMEDY FOR ANY CLAIM OF DAMAGES IN CONNECTION WITH THE SALE OR FURNISHINGS OF GOODS OR PARTS, THEIR DESIGN, SUITABILITY FOR USE, INSTALLATION OR OPERATION. WE WILL IN NO EVENT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES WHATSOEVER, AND OUR LIABILITY UNDER NO CIRCUMSTANCES WILL EXCEED THE CONTRACT PRICE FOR THE GOODS FOR WHICH LIABILITY IS CLAIMED.

QUICK REFERENCE GUIDE

ESC Systems
SOUND AND LIFE SAFETY

ENDRESEN SOUND COMPANY

Operating Instructions

FIRE ALARM CONTROL PANEL

FOR SERVICE CONTACT:

ESC Systems
420 3rd Ave.
Proctor, MN 55810

PHONE: 218-727- 3267
PHONE: 800-777-8379
FAX: 218-624-7444

NORMAL CONDITION: POWER LED (GREEN) ON, ALL OTHER LED'S OFF

ALARM CONDITION: SYSTEM ALARM LED (RED). ALARM LOCATION AND ZONE SHOWN IN DISPLAY. USE REVIEW ALARM QUEUE SWITCH TO VIEW ADDITIONAL ALARMS. INTERNAL BUZZER PULSING.

1. TO SILENCE AUDIBLE DEVICES: PRESS THE "ALARM SILENCE" SWITCH. AUDIBLE SIGNALS WILL TURN OFF. NEW ALARMS RE-SOUND AUDIBLE SIGNALS. TO RE-SOUND AUDIBLE SIGNALS, PRESS THE "ALARM SILENCE" SWITCH A SECOND TIME.

2. TO RESET SYSTEM: PRESS "RESET" SWITCH (AFTER INVESTIGATING ALARM CONDITION).

SUPERVISORY CONDITION: SUPERVISORY LED (YELLOW). INTERNAL BUZZER ON. SUPERVISORY CONDITION, LOCATION AND ZONE SHOWN IN DISPLAY. USE REVIEW SUPERVISORY QUEUE BUTTON TO VIEW ADDITIONAL LOCATIONS. INTERNAL. INTERNAL BUZZER PULSING.

1. TO SILENCE BUZZER: PRESS "PANEL SILENCE " BUTTON . INVESTIGATE CAUSE.

2. TO CLEAR SYSTEM: PRESS THE "RESET" SWITCH.

MONITOR CONDITION: MONITOR LED (YELLOW) ON IN NON ALARM. MONITOR CONDITION AND LOCATION SHOWN IN DISPLAY ONLY IN ALARM . USE REVIEW MONITOR QUEUE BUTTON TO VIEW ADDITIONAL LOCATIONS,

1. TO CLEAR SYSTEM: SYSTEM CLEARS AUTOMATICALLY ON RESTORATION OF MONITOR CONDITION.

TROUBLE CONDITION: SYSTEM TROUBLE LED (YELLOW) ON, INTERNAL BUZZER PULSING. TROUBLE LOCATION AND ZONE SHOWN IN DISPLAY. USE REVIEW TROUBLE QUEUE BUTTON TO VIEW ADDITIONAL LOCATIONS,

1. TO SILENCE BUZZER: PRESS "PANEL SILENCE" SWITCH. INVESTIGATE CAUSE OF TROUBLE.
2. TO CLEAR SYSTEM: SYSTEM CLEAR AUTOMATICALLY ON CORRECTION OF TROUBLE CONDITION.

FIRE DRILL: NOTIFY CENTRAL MONITORING STATION AND FIRE DEPARTMENT OF TEST.
1. TO DRILL AND SOUND ALL AUDIBLE DEVICES: PRESS DRILL BUTTON, ALL AUDIBLE/VISIBLE SIGNALS OPERATE. PRESS DRILL A SECOND TIME OR ALARM SILENCE TO END DRILL.

OPERATION

EST2
System Operations Manual

P/N 270188 • Rev 5.0 • 16AUG00

DOCUMENT HISTORY

Date	Revision	Reason for change
31MAY95	1.0	Initial Release.
01AUG95	2.0	Revised: Drill and test warning notes; Sensitivity Report Output; misc. editorial corrections Added: Maintenance level info; DL2 info
20SEP95	2.5	Revised: Editorial corrections throughout manual; updated autoprogramming.
DEC95	3.0	Added 2-CMDN, SAN, and APSB Power Supply information. Revised: DL2 information.
MAR97	3.5	Added: CDR-3, 2-SMK, 2-CTM, and 2-PPS/6A information. Revised: DL2 information.
SEP97	4.0	Added: paging and telephone operations
OCT97	4.1	Added: 2-LSRA(-C) information; deleted 2-CMDN(-C) information
AUG00	5.0	Added SIGA-MDM information.

Content

Important information

Limitation of liability

This product has been designed to meet the requirements of NFPA Standard 72, 1996 Edition; Underwriters Laboratories, Inc., Standard 864, 7th Edition; and Underwriters Laboratories of Canada, Inc., Standard ULC S527. Installation in accordance with this manual, applicable codes, and the instructions of the Authority Having Jurisdiction is mandatory. EST shall not under any circumstances be liable for any incidental or consequential damages arising from loss of property or other damages or losses owing to the failure of EST products beyond the cost of repair or replacement of any defective products. EST reserves the right to make product improvements and change product specifications at any time.

While every precaution has been taken during the preparation of this manual to ensure the accuracy of its contents, EST assumes no responsibility for errors or omissions.

FCC warning

This equipment can generate and radiate radio frequency energy. If this equipment is not installed in accordance with this manual, it may cause interference to radio communications. This equipment has been tested and found to comply within the limits for Class A computing devices, pursuant to Subpart B of Part 15 of the FCC Rules. These rules are designed to provide reasonable protection against such interference when this equipment is operated in a commercial environment. Operation of this equipment is likely to cause interference, in which case the user at his own expense, will be required to take whatever measures may be required to correct the interference.

Getting the most out of this manual

Finding EST2 documentation

A library of related documents supports the EST2 product line. Here is a complete list of the EST2 library:

- *EST2 Installation and Service Manual* (P/N 270186)
- *EST2 Network Site Manual* (P/N 270895)
- *EST2 Network Supplement Manual* (P/N 270894)
- *EST2 System Operations Manual* (P/N 270188)
- *EST2 System Programming Manual* (P/N 270187)
- *EST2 Installation Sheets* (P/N 3100060)
- *2-SDU Help* (P/N180902)

Our technical writers constantly update the information in this manual. Your comments during our training classes, technical support phone calls, and field trips improve this document.

Finding related documentation

The *Signature Series Intelligent Smoke and Heat Detectors Applications Bulletin (P/N 270145)* provides instructions and illustrations for various arrays of smoke and heat detectors.

The *Signature Series Component Installation Manual* (P/N 270497) supports the installation of the Signature Series detectors and modules.

The *Serial Number Log Book* (P/N 270267) provides a convenient means for recording the serial number of each Signature device installed in the fire alarm system.

The *SAN Annunciator Installation Guide* (P/N 250084) supports the SAN annunciators mentioned in this manual.

The *EST Speaker Application Guide* (P/N 85000-0033) provides information about the placement and layout of speakers for fire alarm signaling and emergency voice communications.

The *EST Strobe Applications Guide* (P/N 85000-0049) provides information for the placement and layout of strobes for fire alarm signaling.

The *Microline 182 Turbo Printer Handbook*, by Okidata provides all the necessary information for the maintenance and configuration of the PT-1S Form Printer. The Okidata handbook comes with the Form Printer.
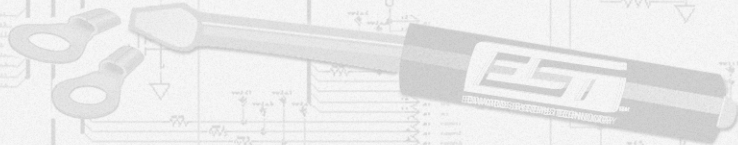
Content

Chapter 1

Introduction

Summary

Chapter 1 explains the layout of the System Operations Manual and provides important references for additional information.

Content

Using this manual

Chapter overview

The *System Operations Manual* divides the operation of the fire alarm system into three categories:

- Panel devices
- Remote devices
- Peripheral devices

Operating panel devices

The panel devices include modules, which mount inside the fire alarm control panel and provide operator interface with the system. All of the following operator interface devices mount in the fire alarm control panel:

- 2-LCD
- LED/switch modules
- 2-MIC
- 2-TEL
- SIGA-MDM

The explanation for each device usually includes a picture and one or two tables, which describe the controls and indicators on it. The 2-LCD, however, provides the detailed messages and an extensive amount of operator control over the system. Therefore, the 2-LCD requires a systematic description of its controls and an explanation of the procedures for using it.

Operating remote devices

Remote devices provide operator interface at locations away from the fire alarm control panel. Remote operator interface devices include:

- 2-CMDN(-C)
- 2-LSRA(-C)
- 2-SANCOM
- 2-SMDN(-C)
- ISP-96-2
- ISP-96-3
- SAN-MICII
- SHO-4
- SLU-16
- SWU-8/3

Again, the explanation for each device usually includes a picture and one or two tables, which describe the controls and indicators on it. The notable exceptions include the SWU-8(/3), the SHO-4, the ISP-96-2, and the ISP-96-3 because of their toggle switch options.

Operating peripheral devices

The discussion of peripheral devices covers the operational features of two printers: the PT-1S and the RSAN-PRT. This manual provides instructions for loading and advancing paper in the printer to print a history report. Take note, however, that the operation of peripheral devices requires an operator interface. Therefore, you will also need to know how to request a history report from the 2-LCD.

Note: See *Generating reports*, in this manual, for more information.

Appendix

The Appendix provides the information and resources you need for posting operator instructions at the fire alarm control panel.

Documentation conventions

Important notices

Notices throughout this manual inform the reader of practices and conditions, which will affect physical safety, occupant safety, equipment performance, and time consumption. Notices appear as warnings, cautions, and notes.

Warnings

Warnings are posted when injury or loss of life may occur through the neglect of safe practices and conditions.

WARNING: Testing the system disables the alarm contact. The system will not notify the fire department in the event of a fire alarm condition during a test. See the system administrator for detailed information.

Cautions

Cautions are posted in the manual to prevent damage to the equipment. A typical caution concerns the prevention of electrostatic discharge (ESD).

Caution: Observe static-sensitive handling practices.

Notes

Notes instruct the reader to avoid practices or conditions, which may result in wasted time and effort. For example, a download will not work unless the programmer disconnects the printer from the RS-232 port on the Main Controller Module (MCM).

Note: Disconnect the printer when downloading to the MCM.

System parameters

2-LCD keypad entries and fault messages require knowledge of the system parameters.

Keypad entry parameters

To understand the parameters for 2-LCD keypad entries, see *Making keypad entries* in *Operating panel devices*.

Fault message parameters

To understand the parameters for reading fault messages, see *System service procedures* in the *Installation and Service Manual*.

Installation and operation procedures

The typical procedure will appear in the following format:

To activate an action:

1. At the 2-LCD, press Activate.

2. Enter a level 1, 2, or 3 password.

3. Press 2 to select Action.

4. Enter the number of the action being activated (nnnn).

The word "Enter," in steps 2 and 4 implies that the operator will press the appropriate numbers and the ENTER key on the 2-LCD keypad. See *Operating panel devices* for more information.

EST2 System Operations Manual

Operating panel devices

Summary

Chapter 2 discusses the procedures for reading and operating devices located at the fire alarm control panel.
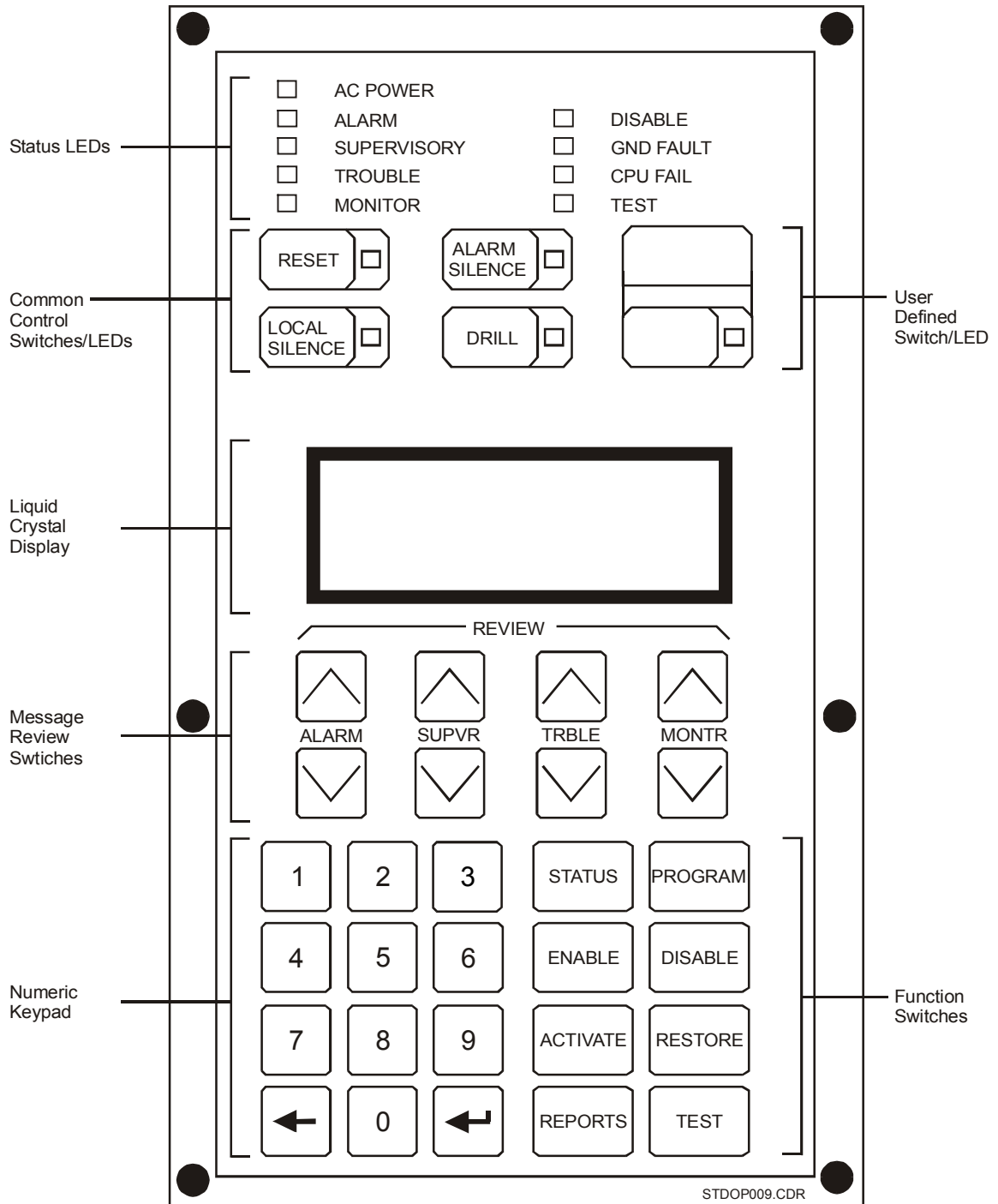
Content

Operating the 2-LCD

Figure 2-1: Panel controls and indicators

Reading status LEDs

The 2-LCD contains nine light emitting diodes (LEDs) which indicate the status of the fire alarm control panel.

Table 2-1: LEDs

LED	Description
AC Power	Indicates mains ac is applied to the panel
Alarm	Indicates an active alarm point in the system
Supervisory	Indicates an active supervisory point
Trouble	Indicates an active trouble condition
Monitor	Indicates an active monitor point
Disable	Indicates one or more zones are disabled
GND Fault	Indicates a ground fault exists
CPU Fail	Indicates a failure in the main controller module
Test	Indicates that the panel is in test mode
User-defined	Site-specific programmed option

Operating control switches

The 2-LCD provides four switches for executing common controls and one user-definable switch.

Table 2-2: Control switches

Control Switch	Description
Reset	When pressed, the Reset switch returns the panel to normal standby operation. The Reset switch also features an integral LED. When lit, the LED indicates that the panel is resetting. When flashing, the LED indicates that the Reset switch is inhibited.
	Note: The cause of any off-normal condition must be identified and restored to normal before the panel will reset. Site-specific programming may prevent the operation of this switch for 1 or 3 minutes after the first alarm is received.
	Reset inhibit (check one): __none __1 minute __3 minutes
Local Silence	When pressed, the Local Silence switch quiets the panel buzzer. The Local Silence switch also features an integral LED. When lit, the LED indicates that the panel is in local silence mode.
	Note: Upon receipt of a new alarm, trouble, or supervisory condition, the controller will exit the local silence mode and resound the panel buzzer.

Table 2-2: Control switches

Control Switch	Description
Alarm Silence	When pressed, the Alarm Silence switch turns off all audibles or visuals as defined in the 2-SDU. The Alarm Silence switch also features an integral LED. When lit, the LED indicates that the notification appliances are off. When flashing, the LED indicates that the Alarm Silence switch is inhibited. **Silence inhibit (check one): __none __1 minute __3 minutes**
Drill	When pressed, the Drill switch activates all audibles or visuals as defined in the 2-SDU. Drill switch also features an integral LED. When lit, the LED indicates that the Drill mode is on.
User Defined	Site-specific programmed option. This switch will activate: **Enter the rule label:** _____ The User-defined switch permits the operator to activate an action by pressing it. The programmer determines the function of the User-defined switch and enters it in the 2-SDU. See the *2-SDU Help* for details on programming user-defined switch.

Scrolling message review switches

Note: The operator must press the Local Silence switch to review messages on the 2-LCD. Messages are listed with the first (most recent) at the top of the queue and the last (oldest) at the bottom.

Table 2-3: Message review switches

Message Switch	Description
ALARM	Press the down arrow to scroll from the first alarm message to the last one. Press the up arrow to scroll from last alarm message to the first one. Press both arrows simultaneously to jump to the first message.
SUPVR	Press the down arrow to scroll from the first supervisory message to the last one. Press the up arrow to scroll from last supervisory message to the first one. Press both arrows simultaneously to jump to the first message.
TRBLE	Press the down arrow to scroll from the first trouble message to the last one. Press the up arrow to scroll from last trouble message to the first one. Press both arrows simultaneously to jump to the first message.
MONTR	Press the down arrow to scroll from the first monitor message to the last one. Press the up arrow to scroll from last monitor message to the first one. Press both arrows simultaneously to jump to the first message.

Making keypad entries

Table 2-4: Keypad entries

Keypad Switch	Description
0 – 9	When pressed, switches 0 – 9 enter the corresponding number or select the corresponding menu item.
←	When pressed, the Delete switch deletes the character to the immediate left of the cursor or cancels the menu selection.
↵	When pressed, the Enter switch causes the panel to process the information shown in the display.

The operator must know the system addresses to make entries on the 2-LCD keypad. System addresses often appear as alphabet characters on the 2-LCD, where:

- pp = panel address (00 through 63)
- zz = zone number

A panel address locates a module or part of a module, either internal or external to the fire alarm control panel. For example, the main controller module (MCM) resides in the control panel and has two panel addresses (01 and 02). The LSRA, however, is a remote annunciator that may have one of several panel addresses (10 through 63).

Note: See *Programming the communications class*.

A zone number locates a device or function, that is either part of a module or wired to it. Zone numbers 01 – 96, on panel addresses 01 and 03, locate Signature series detectors. Zone numbers 03 – 96, on panel addresses 02 and 04 locate Signature series modules. Zone numbers 01 and 02, on panel addresses 02 and 04, locate NACs. Switches, LEDs, and actions may also have zone numbers.

The operator also needs to know parameters for other keypad entries, where:

- yyyy = year
- mm = month
- dd = day
- 01 - 07 = day of week
- hh = hour
- mm = minute
- ss = second
- nnnn = password, action number, sequence number
- tttt = time control
- PP = Priority

Note: Do not confuse a priority (PP) with the panel address (pp).

Selecting system functions on the 2-LCD

Table 2-5: Function switches

Function Switch	Description
Status	When pressed, the Status switch displays menus for viewing the status of the general panel, the Signature Data Circuit (SDC), relays, LEDs, and disabled devices.
Program	When pressed, the Program switch displays menus for setting the time and date, setting user passwords, configuring the RS-485 port, restarting the system, and autoprogramming.
Enable	When pressed, the Enable switch displays menus for enabling the following system components: zones, zone messages, time controls, data line, panels, actions, sequences, laptop, mapping.
Disable	When pressed, the Disable switch displays menus for disabling the following system components: zones, zone messages, time controls, data line, panels, actions, sequences, laptop, mapping.
Activate	When pressed, the Activate switch displays menus for activating the following system components: output devices, actions, sequences, primary smoke sensitivity levels, and alternate smoke sensitivity levels.
Restore	When pressed, the Restore switch displays menus for returning the following system components to the restored state: output devices, actions, and sequences.
Reports	When pressed, the Reports switch displays menus for obtaining system sensitivity and history reports. Reports may be viewed on the main controller display or sent to a printer.
Test	When pressed, the Test switch activates the walk test function for testing individual initiating device circuits.

Reading 2-LCD messages

Each message on the 2-LCD indicates several details about itself. Figure 2-2 illustrates a typical fire alarm message.
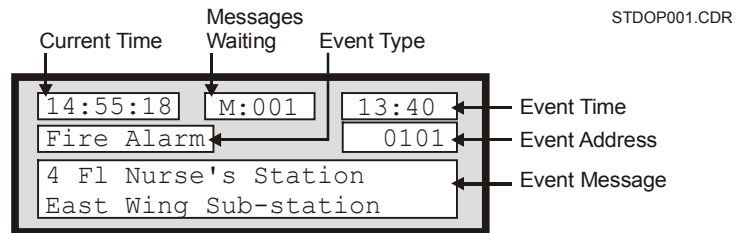

Figure 2-2: Typical fire alarm message

Current time

The current time appears in twenty-four hour format, and constantly changes to indicate the present system time.

Messages waiting

Messages waiting indicates the number of messages presently in the message queue. The message with the highest priority appears on the 2-LCD while the other messages wait in the queue.

Event type

The 2-LCD displays the following types of events:

- 1st Fire Alarm
- Fire Alarm
- Supervisory
- Short Fault
- Open Fault
- Comm. Fault
- Ground Fault
- Dev/Line Fault
- Watchdog Fault
- Monitor Act
- PreAlarm Act
- Verification
- Maintenance
- Event
- Disable Flt

Event time

The event time also appears in a twenty-four hour format, but it only indicates the time the event occurred and does not change.

Event address

Each address in the system consists of the following components:

- Panel addresses (01 or 63)
- Zone numbers (01 - 96)

The event address in Figure 2-2 signifies that the Main Controller Module (MCM) received an alarm condition from a detector at address 01.

Event message

The message below the event address indicates the specific location of the condition and any other relevant information. The programmer customizes the message in the 2-SDU.

See *System service procedures*, in the *Installation and Service Manual*, for a complete table of system fault messages.

Acknowledging prioritized messages

The 2-LCD has separate queues for each message type, and displays them according to the following priority levels:

- Alarm messages (highest priority)
- Supervisory messages
- Trouble messages
- Monitor messages (lowest priority)

Display	Alarm	Supervisory	Trouble	Monitor	Comments

Quiescent State
 	
`13:45:55   AP000   DP000`
 	
`Project Description`
					Display shows current time (13:45:55) and no active points.

Monitor Events Received
 	
`13:47:56   AP001   DP000`
 	
`Project Description`
					An event on Monitor device #234 occured at 13:47. Nothing is displayed, because the event did not occur during an alarm. On the other hand, the AP counter increases by the number of events.

Fire Alarm Received
 	
`13:51:00   M:004   13:51`
`1st Fire Alarm      0126`
`5 floor elevator`
`Lobby smoke detector`
	0126			0235
				0236
				0237
					A fire alarm on device #0126 occured at 13:51, followed by 3 monitor events: 0235, 0236, and 0237. The alarm message is immediately displayed, and the Message Waiting counter increments to 004.

Fire Alarm Acknowleged
 	
`13:54:12   AP004   DP000`
 	
`Project Description`
	0126			0235
				0236
				0237
					The fire alarm on device #0126 was reviewed using the ALARM ☑ switch.

Monitor Event Acknowleged
 	
`13:57:12   M:004   13:51`
`Monitor Alrm        0235`
`High temperature on`
`chiller A27`
	0126			0235
				0236
				0237
					The MONTR ☑ switch displays the first monitor event message.

Trouble Event Received
 	
`14:03:33   M:005   13:57`
`Open fault          0288`
`1 floor Laboratory`
	0126		0288	0235
				0236
				0237
					A trouble on device #0288 occured at 13:57. The trouble message replaces the monitor messages on the display, because it has a higher priority. The Message Waiting counter incremented to 005.

Monitor Events Acknowleged
 	
`14:05:55   AP005   DP000`
 	
`Project Description`
	0126		0288	0235
				0236
				0237
					The monitor events on devices 0236 and 0237 were reviewed in order, using the MONTR ☑ switch.

Trouble Event Acknowleged
 	
`14:05:55   AP005   DP000`
 	
`Project Description`
	0126		0288	0235
				0236
				0237
					The trouble on device #0208 was reviewed using the TRBLE ☑ switch.

STDOP043.CDR

Figure 2-3: Message priorities

Responding to off-normal conditions

During off-normal conditions, the 2-LCD sounds its internal buzzer and displays a message to indicate a problem in the system. You must press the Local Silence switch before you can view messages other than the one displayed during the off-normal condition. Once you press Local Silence, you may view any message in any order by pressing the message review switches.

Fire alarms

Smoke detectors, heat detectors, fire alarm stations, and sprinkler systems may initiate fire alarms. The Alarm LED, when on, indicates a fire alarm.

To respond to a fire alarm:

1. Press the Local Silence switch to silence the buzzer.

2. Read the display to determine the location of the fire alarm condition.

3. Press the Alarm Review switch to view the alarm message(s).

The Alarm Review switch will display any additional alarm locations. Before you can reset the panel, the appropriate personnel must:

- Put out the fire
- Investigate the cause of the fire
- Declare the building safe for re-entry

To reset the panel after a fire alarm:

1. Press the Alarm Silence switch to silence the audible notification appliances.

2. Press the Local Silence switch to silence the buzzer.

3. Press the Reset switch to restore the panel to normal.

If either the Alarm Silence LED or Reset LED flashes, wait until the inhibit period ends, then press the appropriate switch again. The maximum inhibit period is three minutes.

Supervisory points

Active supervisory points indicate that a fire protection system other than the fire alarm panel is off-normal. Conditions like closed sprinkler valves and disabled supplementary fire extinguishing systems may cause supervisory conditions. The Supervisory LED, when lit, indicates a supervisory condition.

To respond to a supervisory condition:

1. Read the display to determine the location of the supervisory condition.

2. Press the Local Silence switch to silence the buzzer.

3. Press the SUPVR switch to review the supervisory condition message(s).

4. Investigate the cause of the supervisory condition.

5. Press the Reset switch to restore the panel to normal.

The supervisory condition must be corrected before the panel will reset. Latching circuits require a manual reset. Non-latching circuits automatically reset. The 2-LCD display will indicate any additional supervisory conditions. The most recent location appears at the top of the list.

Trouble conditions

Active trouble conditions indicate that some portion of the fire alarm panel is in an off-normal condition, and may affect its proper operation. The Trouble LED, when lit, indicates a trouble condition.

To respond to a trouble condition:

1. Read the display to determine the location of the trouble condition.

2. Press the Local Silence switch to silence the buzzer.

3. Press the TRBLE switch to review the supervisory condition message(s).

4. Investigate the cause of the trouble condition.

5. Call for service if you cannot immediately determine the cause of the trouble condition.

6. Press the Reset switch to restore the system to normal.

The panel will not reset until the trouble is repaired. The 2-LCD display will indicate any additional trouble locations. The Trouble LED lights steady when you have acknowledged all the trouble messages.

Monitor points

Active monitor points indicate off-normal conditions in equipment monitored by the fire alarm panel. A typical cause for an active monitor point might be a signal, which indicates the status of the fan systems. The Monitor LED, when on, indicates

an active monitor point. In the alarm mode, the 2-LCD will also display active monitor messages.

To respond to a monitor point:

1. Read the display to determine the location of the monitor condition.

2. Press the Local Silence switch to silence the buzzer.

3. Read the monitor point message by pressing the MONTR switch.

4. Investigate the cause of the monitor point.

5. Call for service if you cannot immediately determine the cause of the monitor point.

6. Press the Reset switch to restore the system to normal.

The panel will not reset until the monitor point condition is corrected. The 2-LCD display will indicate any additional monitor point messages. The Monitor LED will light steady when you have acknowledged all the monitor point messages.

The 2-LCD displays monitor points *only* during alarm conditions.

Maintenance message

The 2-LCD will display a maintenance message and sound the buzzer to indicate a maintenance condition. For example, a dirty detector may cause a maintenance condition. The display will annunciate the device address and any programmed message assigned to that device.

To respond to a maintenance message:

1. Press the Local Silence switch to silence the buzzer.

2. Press the MONTR switch to view the maintenance message.

3. Investigate the device indicating the maintenance message.

4. Clean the device.

You can view the maintenance messages on the 2-LCD sensitivity report or a printout.

Verification message

The 2-LCD will display a verification message and sound the buzzer to indicate a verification condition. The display will indicate the device address and any programmed message(s).

To respond to a verification message:

1. Press the Local Silence switch to silence the internal buzzer.

2. Press the MONTR switch to view the verification message.

3. Investigate the cause of the verification condition.

If the device indicating the verification or any other device detects smoke within the specified period of time, both devices will go into alarm and send a message to the display.

Initiating a drill test

The drill function operates all building fire alarm signals as programmed.

To initiate a fire drill:

1. Inform the building occupants that you will be performing a drill.

2. Press the DRILL switch.

3. Press the DRILL switch again to end the drill.

Checking system status

This section explains the functions of the Status switch. In the Status mode, the 2-LCD displays the following screens:

- General Status
- Loop 1 Status
- Loop 2 Status
- Field Panel Status (if conditions exist)
- Relay/LED Status (if conditions exist)
- Disabled Components/Functions (if conditions exist)

Note: For a detailed explanation about the parameters of keypad entries, see *Making keypad entries*, earlier in this chapter.

To access the system status menu:

1. At the 2-LCD, press Status.

2. Enter a level 1, 2, or 3 password.

3. Make the appropriate selection based on the screen in Figure 2-4.

```
Status Report
[ent] key scrolls.
[del] key terminates
Revision X.XX
```
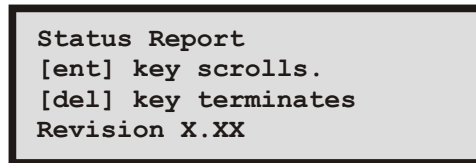
STDOP021.CDR

Figure 2-4: System status menu

Viewing the general status screen

To view the general status screen:

1. At the 2-LCD, press Status.

2. Enter a level 1, 2, or 3 password.

3. Press Enter until you see the general status screen (Figure 2-5).
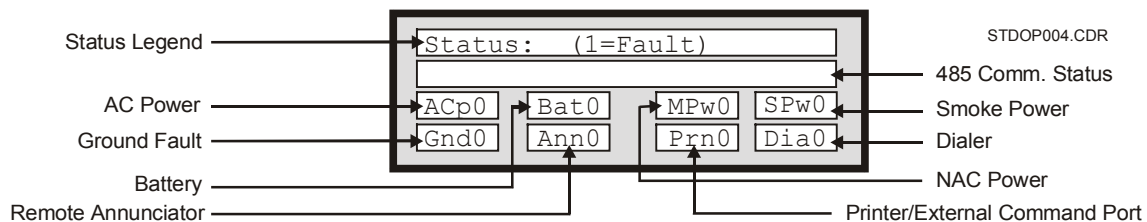
Figure 2-5: General status screen

"0" indicates a normal condition for the associated parameter; "1" indicates a fault.

Table 2-6: General status legend

Legend	Cause
ACp	AC Power
Gnd	Ground Fault
Bat	Battery
Ann	Remote Annunciator
MPw	NAC Power
Prn	Printer
Spw	Smoke Power
Dia	Dialer

Viewing the loop status screens

To view the loop status screens:

1. At the 2-LCD, press Status.

2. Enter a level 1, 2, or 3 password.

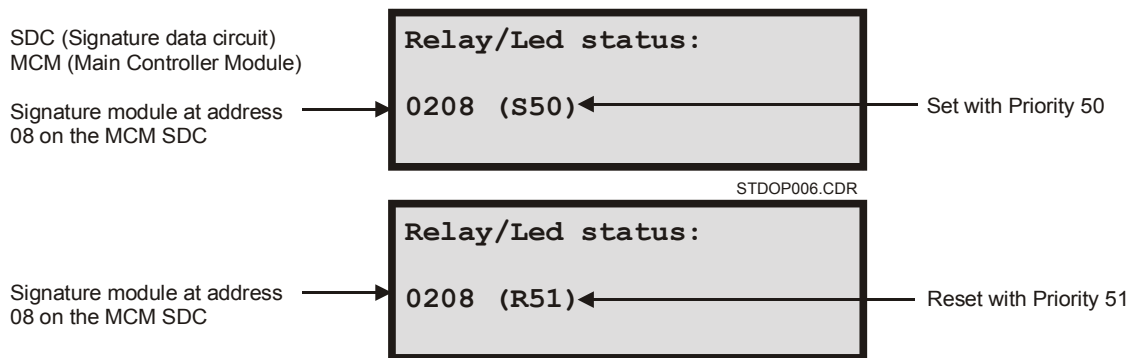3. Press Enter until you see the loop 1 status screen (Figure 2-6).

4. Press Enter one more time to see the loop 2 status screen.

The loop 2 status screen displays the same items as the loop 1 status window.
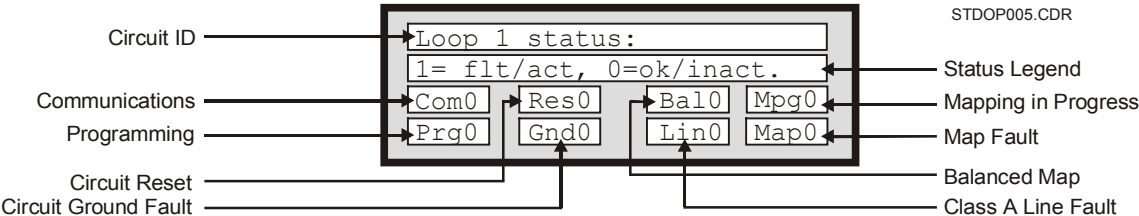
Figure 2-6: Loop status screen

"0" indicates a normal condition for the associated parameter; "1" indicates a fault.

Table 2-7: Loop status legend

Legend	Cause
Com	Communications fault between loop electronics and main controller module (MCM)
Res	Signature Data Circuit (SDC) is resetting
Bal	SDC is balanced
Mpg	SDC is actively mapping
Prg	Writing to Signature memory
Gnd	Ground Fault on SDC
Lin	Class A Fault on SDC
Map	Map Fault on SDC

Viewing the field panel status screen

If a panel has connections to annunciators or audio equipment, the 2-LCD status function will feature the Field Panel status screen. The Field Panel Status screen indicates the condition of a panel's communications to the annunciators or audio equipment connected to it.

To view the field panel status screen:

1. At the 2-LCD, press Status.

2. Enter a level 1, 2, or 3 password.

3. Press Enter until you see the field panel status screen (Figure 2-7).

```
Field panel status.
Address: 10 Power: ok
Com.Prm: ok ComSec:na
Com.Enabled: ok
```

STDOP022.CDR

Figure 2-7: Typical field panel status screen

Table 2-8: Field panel status legend

Legend	Cause
Com.Prm	Primary Communications
ComSec	Secondary Communications
Com.Enabled	Communications Enabled

Viewing the Relay/LED status screen

If the system activates a relay or LED, the 2-LCD status function will feature the Relay/LED status screen.

To view the Relay/LED status screen:

1. At the 2-LCD, press Status.

2. Enter a level 1, 2, or 3 password.

3. Press Enter until you see the Relay/LED status screen (Figure 2-8).

SDC (Signature data circuit)
MCM (Main Controller Module)

Signature module at address
08 on the MCM SDC

```
Relay/Led status:

0208 (S50)◄
```

Set with Priority 50

STDOP006.CDR

Signature module at address
08 on the MCM SDC

```
Relay/Led status:

0208 (R51)◄
```

Reset with Priority 51

Figure 2-8: Typical LED/relay status screens

Viewing disabled device status

If the operator disables a device or function of the system, the 2-LCD status function will generate a status screen to show it. Status screens will show the following disabled components or functions:

• Points
• Messages
• Actions
• Time Controls
• Sequences

To view the disabled status screens:

1. At the 2-LCD, press Status.

2. Enter a level 1, 2, or 3 password.

3. Press Enter until you see the disabled status screen (Figure 2-9 through Figure 2-13).

```
Disabled Points:
0208 0209
```
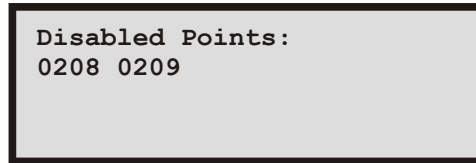
STDOP023.CDR

Figure 2-9: Typical disabled points screen

```
Disabled Message:
0211
```
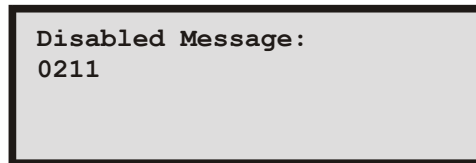
STDOP024.CDR

Figure 2-10: Typical disabled message screen

```
Disabled Actions:
5600
```
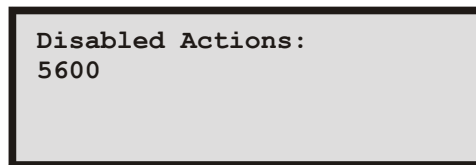
STDOP025.CDR

Figure 2-11: Typical disabled actions screen

```
Disabled Time Control:
1130
```
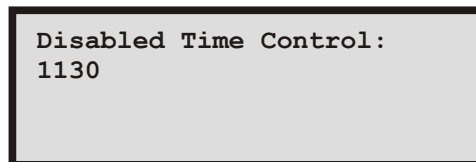
STDOP026.CDR

Figure 2-12: Typical disabled time control screen

```
Disabled Sequence:
4800
```
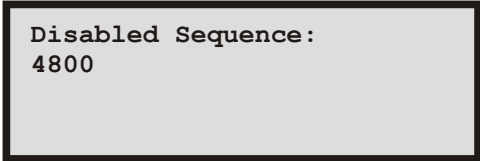
STDOP027.CDR

Figure 2-13: Typical disabled sequence screen

Programming system functions

This section explains the functions of the Program switch. In the Program mode, the 2-LCD offers the following menu options:

- Date
- Time
- Password
- RS-485 Port Communications
- System Restart
- Reconfigure (Autoprogram)

Note: For a detailed explanation about the parameters of keypad entries, see *Making keypad entries,* earlier in this chapter.

Setting the system date

To set the system date:

1. At the 2-LCD, press Program.

2. Press 1 to select Date.

3. Enter a level 3 password.

4. Enter the year (yyyy).

5. Enter the month (mm).

6. Enter the day (dd).

7. Enter the day of the week (Sun=01).

Setting the system time

To set the system time:

1. At the 2-LCD, press Program.

2. Press 2 to select Time.

3. Enter a level 3 password.

4. Enter the time (hhmmss).

Changing system passwords

To change a system password:

1. At the 2-LCD, press Program.

2. Press 3 to select Password.

3. Enter a level 3 password.

4. Change the password level (1, 2, or 3).

5. Enter the new password (nnnn).

Table 2-9: System passwords

Level	Personnel	Default	Access Privileges
1	Operators	1111	All Status, Activate, Restore, and Reports functions
2	Supervisors	2222	All Level 1 privileges and all Enable, Disable, and Test functions
3	Administrators	3333	All Level 1 and 2 privileges and all program functions.

Note: The system installer should change all passwords after the system has been installed.

Programming the communications class

The fire alarm control panel receives the 64 panel addresses listed below:

- 00: Primary power supply
- 01: MCM Signature detectors
- 02: MCM NACs and Signature modules
- 03: LCX Signature detectors
- 04: LCX NACs and Signature modules
- 05: Front panel LED/switch modules
- 06 through 09: Future use
- 10 through 63: Devices and accessories

To program a panel for Class A (Style 7) communications:

1. At the 2-LCD, press Program.

2. Press 4 to select communications class.

3. Enter a level 3 password.

4. Enter the panel address (pp).

5. Enter 1 to program the panel as a Class A (Style 7) circuit.

To program a panel for Class B (Style 4) communications:

1. At the 2-LCD, press Program.

2. Press 4 to select communications class.

3. Enter a level 3 password.

4. Enter the panel address (pp).

5. Enter 2 to program the panel as a Class B (Style 6) circuit.

Restarting system devices/functions

In the Restart menu, you can restart the:

- CPU
- SLCs
- History report

To restart a system device or function:

1. At the 2-LCD, press Program.

2. Press 5 to select Restart.

3. Enter a level 2 or 3 password.

4. Enter the number for the item you want to restart.

Reconfiguring SLC1 and SLC2

To reconfigure the SLCs:

1. At the 2-LCD, press Program.

2. Press 6 to select Reconfig.

3. Enter a level 2 or 3 password.

4. Press Enter to accept the settings and Delete to exit the sequence.

Enabling system functions

This section explains the functions of the Enable switch. In the Enable mode, the 2-LCD offers the following menu options:

- Zones
- Messages
- Time Controls
- RS-485 Channels
- Panels
- Actions
- Sequences
- Laptop Computer Downloading
- Mapping

Note: For a detailed explanation about the parameters of keypad entries, see *Making keypad entries*, earlier in this chapter.

Enabling a zone

To enable a zone:

1. At the 2-LCD, press Enable.

2. Enter a level 2 or 3 password.

3. Enter 1 to select zone.

4. Enter the device address (ppzz).

Enabling a message

To enable a message:

1. At the 2-LCD, press Enable.

2. Enter a level 2 or 3 password.

3. Enter 2 to select message.

4. Enter the device address (ppzz).

Enabling a time control

Note: Do not enable more than 127 time controls at a time.

To enable a time control:

1. At the 2-LCD, press Enable.

2. Enter a level 2 or 3 password.

3. Enter 3 to select time control.

4. Enter the time-control numbers (tttt).

Enabling an RS-485 channel

To enable RS-485 communications on channel 0:

1. At the 2-LCD, press Enable.

2. Enter a level 2 or 3 password.

3. Enter 4 to select RS-485 communications channels.

4. Enter 0 to enable channel 0.

To enable RS-485 communications on channel 1:

1. At the 2-LCD, press Enable.

2. Enter a level 2 or 3 password.

3. Enter 4 to select RS-485 communications channels.

4. Enter 1 to enable channel 1.

Enabling a panel address

To enable a panel:

1. At the 2-LCD, press Enable.

2. Enter a level 2 or 3 password.

3. Enter 5 to select panel.

4. Enter the panel address (pp).

Enabling an action

To enable an action:

1. At the 2-LCD, press Enable.

2. Enter a level 2 or 3 password.

3. Enter 6 to select action.

4. Enter the action number (nnnn).

Enabling a sequence

To enable a sequence:

1. At the 2-LCD, press Enable.

2. Enter a level 2 or 3 password.

3. Enter 7 to select sequence.

4. Enter the sequence number (nnnn).

Enabling a laptop computer

To enable a laptop computer:

1. At the 2-LCD, press Enable.

2. Enter a level 2 or 3 password.

3. Enter 8 to enable the laptop.

Enabling the mapping function

To enable mapping:

1. At the 2-LCD, press Enable.

2. Enter a level 2 or 3 password.

3. Enter 9 to enable mapping.

Disabling system functions

This section explains the functions of the Disable switch. In the Disable mode, the 2-LCD offers the following menu options:

- Zones
- Messages
- Time Controls
- RS-485 Channels
- Panels
- Actions
- Sequences
- Laptop Computer Downloading
- Mapping

Note: For a detailed explanation about the parameters of keypad entries, see *Making keypad entries,* earlier in this chapter.

Disabling a zone

To disable a zone:

1. At the 2-LCD, press Disable.

2. Enter a level 2, or 3 password.

3. Enter 1 to select zone.

4. Enter the device address (ppzz).

Disabling a message

To disable a message:

1. At the 2-LCD, press Disable.

2. Enter a level 2, or 3 password.

3. Enter 2 to select message.

4. Enter the device address (ppzz).

Disabling a time control

To disable a time control:

1. At the 2-LCD, press Disable.

2. Enter a level 2, or 3 password.

3. Enter 3 to select time control.

4. Enter the time control number (tttt).

Disabling an RS-485 Channel

To disable RS-485 communications on channel 0:

1. At the 2-LCD, press Disable.

2. Enter a level 2, or 3 password.

3. Enter 4 to select RS-485 communications channels.

4. Enter 0 to disable the channel 0.

To disable RS-485 communications on channel 1:

1. At the 2-LCD, press Disable.

2. Enter a level 2, or 3 password.

3. Enter 4 to select RS-485 communications channels (data line).

4. Enter 1 to disable the channel 1.

Disabling a panel address

To disable a panel:

1. At the 2-LCD, press Disable.

2. Enter a level 2, or 3 password.

3. Enter 5 to select panel.

4. Enter the panel address (pp).

Disabling an action

To disable an action:

1. At the 2-LCD, press Disable.

2. Enter a level 2, or 3 password.

3. Enter 6 to select action.

4. Enter the action number (nnnn).

Disabling a sequence

To disable a sequence:

1. At the 2-LCD, press Disable.

2. Enter a level 2, or 3 password.

3. Enter 7 to select sequence.

4. Enter the sequence number (nnnn).

Disabling a laptop computer

To disable a laptop computer:

1. At the 2-LCD, press Disable.

2. Enter a level 2, or 3 password.

3. Enter 8 to select laptop.

Disabling the mapping function

To disable mapping:

1. At the 2-LCD, press Disable.

2. Enter a level 2, or 3 password.

3. Enter 9 to select mapping.

Activating system functions

This section explains the functions of the Activate switch. In the Activate mode, the 2-LCD offers the following menu options:

- Outputs
- Actions
- Sequences
- Primary Smoke Sensitivity
- Alternate Smoke Sensitivity

Note: For a detailed explanation about the parameters of keypad entries, see *Making keypad entries*, earlier in this chapter.

Activating an output

To activate an output:

1. At the 2-LCD, press Activate.

2. Enter a level 1, 2, or 3 password.

3. Press 1 to select Output.

4. Enter the priority and address for the output device being activated (PPppzz).

Activating an action

To activate an action:

1. At the 2-LCD, press Activate.

2. Enter a level 1, 2, or 3 password.

3. Press 2 to select Action.

4. Enter the number of the action being activated (nnnn).

Activating a sequence

To activate a sequence:

1. At the 2-LCD, press Activate.

2. Enter a level 1, 2, or 3 password.

3. Press 3 to select Sequence.

4. Enter the number of the sequence being activated (nnnn).

Activating smoke sensitivity levels

To activate the primary smoke sensitivity level:

1. At the 2-LCD, press Activate.

2. Enter a level 1, 2, or 3 password.

3. Press 4 to activate the primary smoke sensitivity level.

To activate the alternate smoke sensitivity level:

1. At the 2-LCD, press Activate.

2. Enter a level 1, 2, or 3 password.

3. Press 5 to activate the alternate smoke sensitivity level.

Restoring system functions

This section explains the functions of the Restore switch. In the Restore mode, the 2-LCD offers the following menu options:

- Outputs
- Actions
- Sequences

Note: For a detailed explanation about the parameters of keypad entries, see *Making keypad entries,* earlier in this chapter.

Restoring an output

To restore an output:

1. At the 2-LCD, press Restore.

2. Enter a level 1, 2, or 3 password.

3. Press 1 to select Output.

4. Enter the priority and address for the output device being restored (PPppzz).

Restoring an action

To restore an action:

1. At the 2-LCD, press Restore.

2. Enter a level 1, 2, or 3 password.

3. Press 2 to select Action.

4. Enter the number of the action being restored (nnnn).

Restoring a sequence

To restore a sequence:

1. At the 2-LCD, press Restore.

2. Enter a level 1, 2, or 3 password.

3. Press 3 to select Sequence.

4. Enter the number of the sequence being restored (nnnn).

Generating reports

This section explains the functions of the Reports switch. In the Reports mode, the 2-LCD offers two report options: sensitivity and history. Both reports may be sent to either the 2-LCD display or a printer.
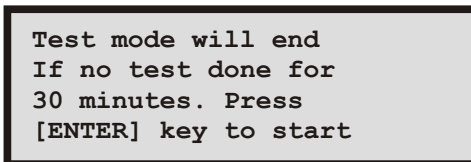
Note: For a detailed explanation about the parameters of keypad entries, see *Making keypad entries*, earlier in this chapter.

Viewing sensitivity reports

To view a sensitivity report:

1. At the 2-LCD, press Reports.

2. Enter a level 1, 2, or 3 password.

3. Enter 1 to choose a sensitivity report.

4. Enter 1 to send the report to the 2-LCD display.

5. Follow the instructions on the screen illustrated in Figure 2-14.

```
For All Press [ENT]
For Range ppaa [ENT]
[DEL] will terminate
Enter Choice
```

STDOP028.CDR

Figure 2-14: Sensitivity report instructions

Note: If the fire alarm control panel has been on for less than 15 minutes, the 2-LCD will display the screen in Figure 2-15.

```
Sensitivity Report
is only valid after
15 minutes of opera-
tion. Press [del].
```

STDOP045.CDR

Figure 2-15: Sensitivity report delay

The parameters "ppaa" stand for the panel and device address. For example, a detector at address 56 on an MCM Signature data circuit would require 0156 for its entry.

Figure 2-16 illustrates a typical sensitivity report on the 2-LCD.

```
Press [ENT] for more
Add: 0101 Type 3D
Alarm Level: 3%
Maint. Level: 00%
```

STDOP029.CDR
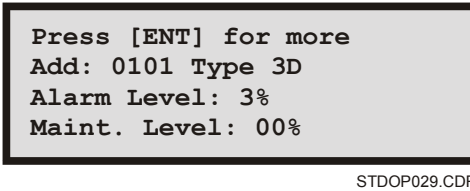
Figure 2-16: Typical sensitivity report on 2-LCD

Printing sensitivity reports

To print a sensitivity report:

1. At the 2-LCD, press Reports.

2. Enter a level 1, 2, or 3 password.

3. Enter 1 to choose a sensitivity report.

4. Enter 2 to send the report to the printer.

5. Enter the device address of the desired report only on local reports.

Figure 2-17 illustrates the typical printed format of a sensitivity report.

```
   ====4D Panel Sensitivity Report====

Facility: Project Name
Date: 03-23-1998
Time: 03:59:08

Sensitivity Report for 4D, 3D, Photo, and Ion Sensors

 Sensor        Sensor        Alarm     Maintenance
 Address       Type          Setting   Indicator
----------------------------------------------------
  0101      3D Detector    2.0%        04
  0102      3D Detector    2.0%        00
```

Percentage of allowed maintenance range, which becomes critical at 80%

STDOP002.CDR
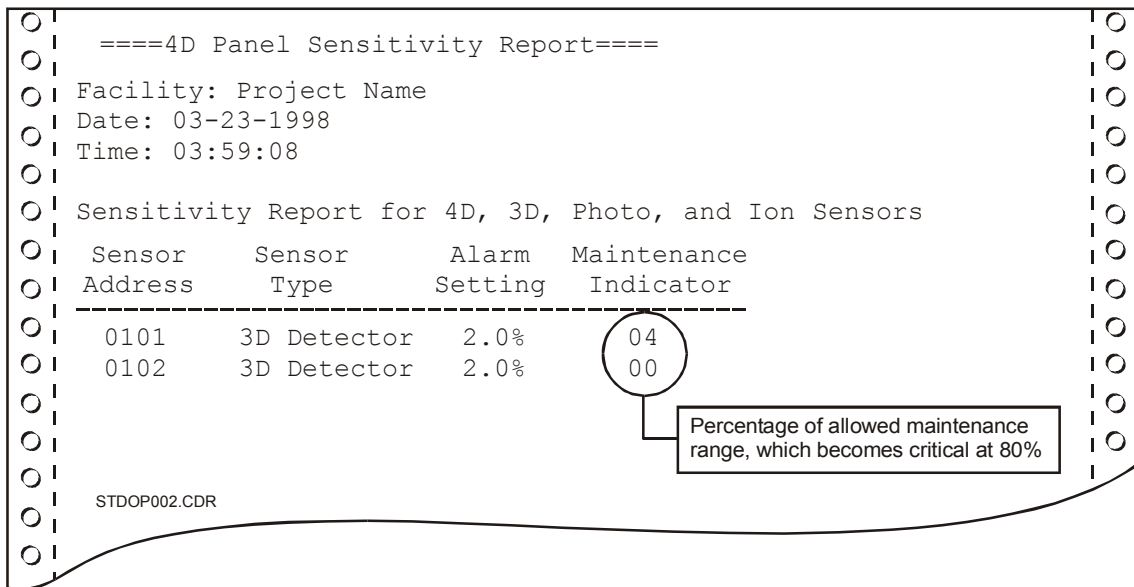
Figure 2-17: Typical sensitivity report print format

Viewing history reports

To view a history report:

1. At the 2-LCD, press Reports.

2. Enter a level 1, 2, or 3 password.

3. Enter 2 to choose a history report.

4. Enter 1 to send the report to the 2-LCD display.

The 2-LCD will display the screens in Figure 2-18 and Figure 2-19.

```
Comp. Rev: X.Y
Proj Rev M.N
Last updated on:
01/03/99 01:01:01
```
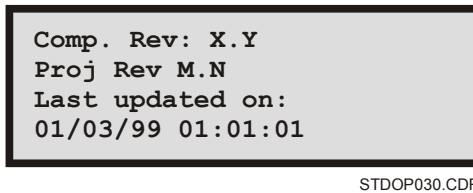
STDOP030.CDR

Figure 2-18: History report revision

```
Press:
[MONTR ∧] for older
[MONTR ∨] for newer
[DEL] to terminate
```
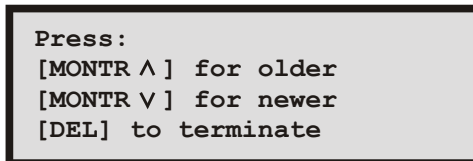
STDOP031.CDR

Figure 2-19: History report instructions

Figure 2-20 illustrates two typical history reports on the 2-LCD.

```
01/03/99            01:01
A    XXXXXXXXXXXXXXX: ppaa        A: Active
Response Msg Line 1
Response Msg Line 2
```

```
01/03/99            01:01
R    XXXXXXXXXXXXXXX: ppaa        R: Restore
Response Msg Line 1
Response Msg Line 2
```
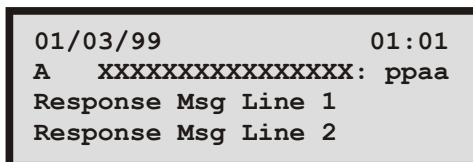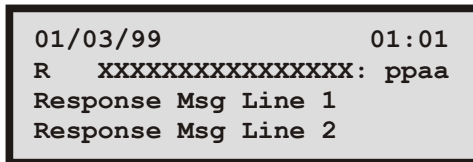
STDOP032.CDR

Figure 2-20: Typical history reports on the 2-LCD

Printing history reports

Note: A History Report will contain the last 650 events.

To print a history report:

1. At the 2-LCD, press Reports.

2. Enter a level 1, 2, or 3 password.

3. Enter 2 to choose a history report.

4. Enter 2 to send the report to the printer.

Figure 2-21 illustrates the typical printed format of a history report.

```
    ==== System History Report ====
   Facility Name: Medical Arts Center

   Licensee: 00114-P. Smith
   Compiled on 10/31/99  22:16:53
   Compiler Rev: 01.03.0
   Project Rev: 14.6
   Report Date: 10-31-1999
      and Time: 23:30:20
ACTIVATION 1st Fire Alarm: 0301 Date: 10/31/99 Time 01:01
                  SMOKE DETECTOR #1
ACTIVATION Fire Alarm: 0302 Date: 10/31/99 Time 01:03
                  SMOKE DETECTOR #2
ACTIVATION Switch: 0535 Date: 10/31/99 Time: 01:09
                  FAN ON
Restoration Switch: 0535 Date: 10/31/99 Time 01:11
ACTIVATION Relay/Output: 0221 Date:)10/31/99 Time: 16:11
                  CC2 LOOP 1                         STDOP003.CDR
```

Figure 2-21: Typical history report print format

Testing system functions

> **WARNING:** Testing the system disables the alarm contact. The system will not notify the fire department in the event of a fire alarm condition during a test. See the system administrator for detailed information.

This section explains the functions of the Test switch. The Test switch temporarily disables normal system responses during the testing of panels, detectors, and modules. The 2-LCD and the printer report all responses from activated devices and devices with trouble conditions.

The system programmer sets the test function for silent or audible operation in the system definition utility (2-SDU). In silent operation, the device under test will not activate Notification Appliance Circuits (NACs). In audible operation, the device under test activates programmed NACs for approximately 2 seconds. The system programmer may also program *test only* functions.

Starting the test function

For a detailed explanation about the parameters of keypad entries, see *Making keypad entries*, earlier in this chapter.

Note: The buzzer will sound when you have successfully entered the test mode. Press Local Silence to silence the buzzer.

To start the Test function:

1. At the 2-LCD, press Test.

2. Enter a level 2 or 3 password.

3. Follow the instructions on the test screen (Figure 2-22).

```
Test mode will end
If no test done for
30 minutes. Press
[ENTER] key to start
```

STDOP033.CDR

Figure 2-22: Test screen

Figure 2-23 illustrates the 2-LCD display during the test mode.

```
13:18:12   M002       @13:27
Open Fault 0030
System in Test Mode
```
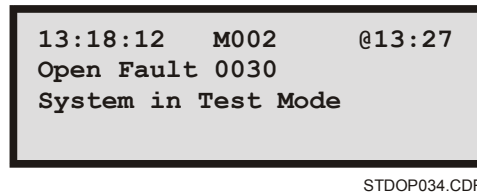
STDOP034.CDR

Figure 2-23: Typical test mode screen

Ending the test function

The Test function ends through operator input or automatic system response and resets the fire alarm control panel.

To end the Test function manually:

1. At the 2-LCD, press Test.

2. Press Delete.

The test function will automatically end if you let 30 minutes pass without testing a device. The 2-LCD provides a reminder of the 30-minute test window, as seen in Figure 2-22.

See the site-specific information, provided with the panel, for customized test functions.

Operating LED/switch modules

The front panel LED/switch modules provide manual control to various portions of the system. The operator may view LEDs to determine the status of a device, or press an associated switch pad to change its state. During any change of state, the LEDs flash through a duty cycle. All commands may be cancelled by pressing the switch pad a second time before the command is executed.

Reading front panel LEDs

Each switch has two LEDs. A flashing sequence on the upper LED indicates the activation or restoration of a device. The lower LED operates independently, but it usually indicates the status of a function related to the switch pad.

STDOP035.CDR
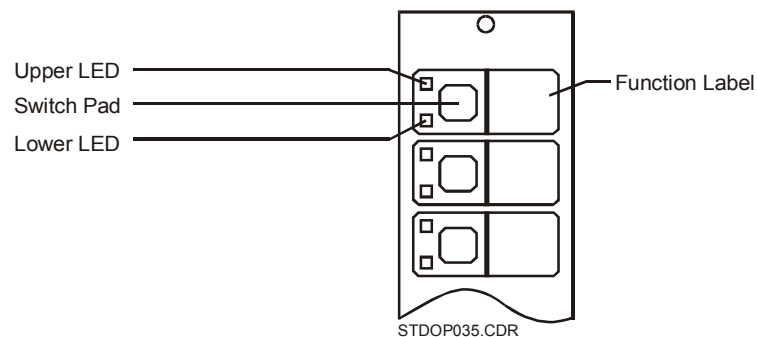
Figure 2-24: Front panel LED/switch module

Activating devices at the front panel

To activate a device, press its corresponding switch. The upper LED will flash with a 10% duty cycle as shown in Figure 2-25 (top). During the 10% duty cycle, the LED is off more than it is on. The LED stops flashing and remains lit when the device is fully activated.

Restoring devices at the front panel

To restore a device, press its corresponding switch. The upper LED will flash with a 90% duty cycle as shown in Figure 2-25 (bottom). During the 90% duty cycle, the LED is on more than it is off. The LED turns off completely when the device is fully restored.
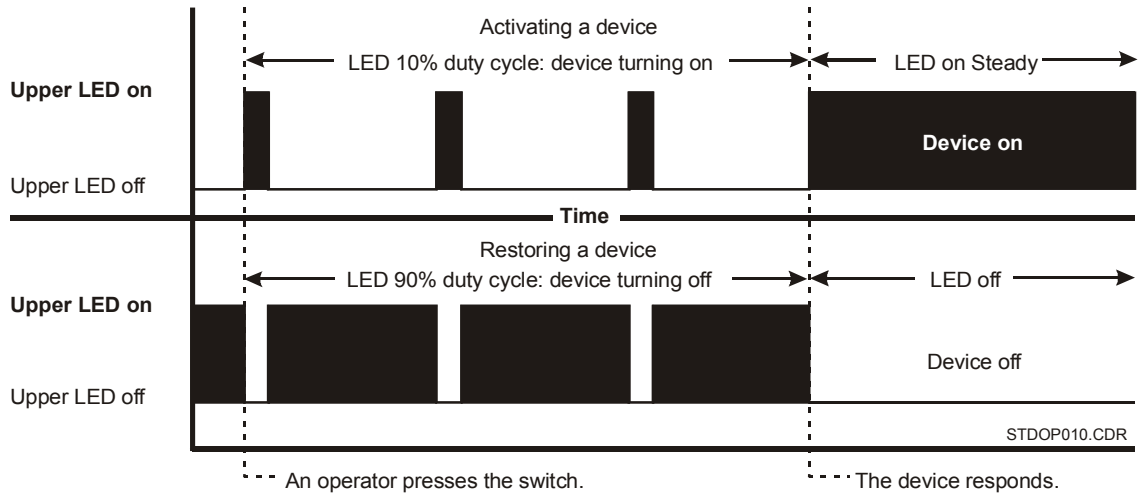
Figure 2-25: LED/switch module activation and restoration duty cycles

Canceling commands at the front panel

If you change your mind while a device is turning on, you can cancel the command to turn it on. Before the command is executed, press the switch a second time. The duty cycle will stop and the LED will return to its previous state. See the upper half of Figure 2-26.
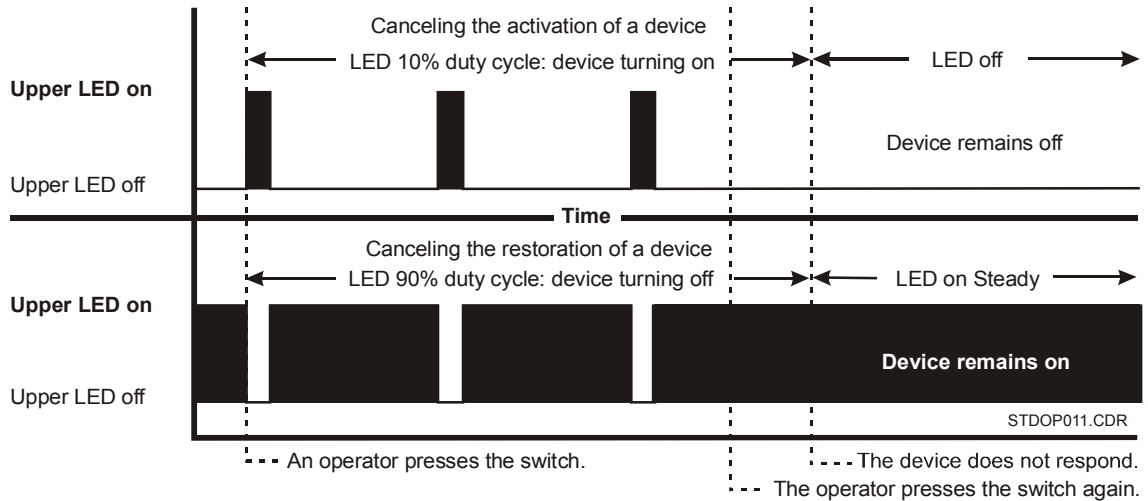
Figure 2-26: LED/switch module cancellation duty cycles

You may also cancel a command if you change your mind while a device is turning off. Before the command is executed, press the switch a second time. The duty cycle will stop and the LED will return to its previous state. See the lower half of Figure 2-26.

Operating the 2-MIC

Microphone handset
PHONE TO EVAC
PHONE TO ALERT
PAGE TO EVAC
PAGE TO ALERT
EVAC
ALERT

Push-to-Talk (PTT) switch

STDOP037.CDR
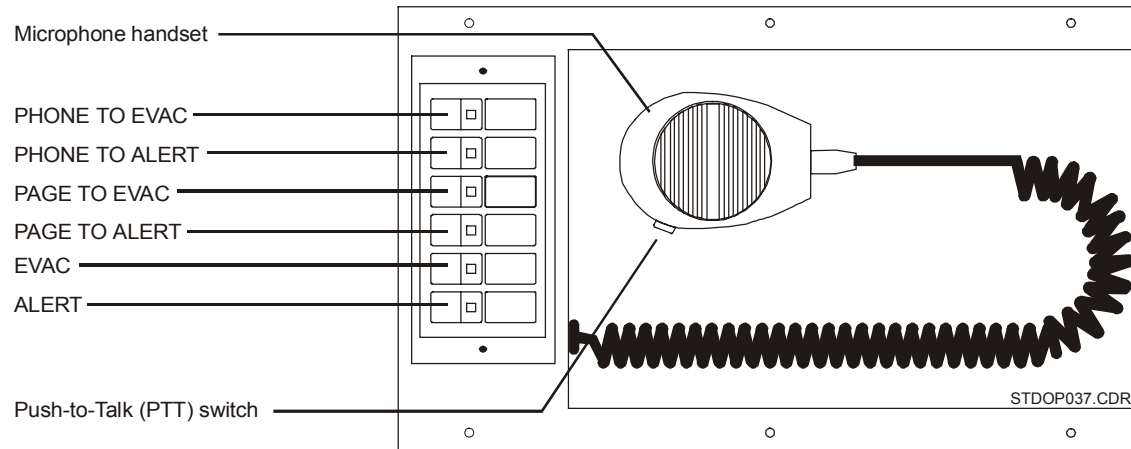
Figure 2-27: 2-MIC microphone module

Table 2-10: 2-MIC controls and indicators

Item	Control	Description
1	Phone to Evac switch	When pressed, the Phone to Evac switch immediately connects the firefighter telephone (2-TEL) to the building's evacuation area through the paging system. The Phone to Evac switch features an integral LED, which lights when it is active. See Table 2-11 (item 4) for the application of this switch to the 2-TEL.
2	Phone to Alert switch	When pressed, the Phone to Alert switch immediately connects the firefighter telephone (2-TEL) to the building's alert area through the paging system. The Phone to Alert switch features an integral LED, which lights when it is active. See Table 2-11 (item 5) for the application of this switch to the 2-TEL.
3	Page to Evac switch	When pressed, the Page to Evac switch enables the microphone and directs its output to the building's evacuation area through the paging system. The Page to Evac switch features an integral LED, which lights when it is active.
4	Page to Alert switch	When pressed, the Page to ALERT switch enables the microphone and directs its output to the building's alert area through the paging system. The Page to ALERT switch features an integral LED, which lights when it is active.
5	Evac switch	When pressed, the Evac switch manually activates the evacuation signal. The Evac switch features an integral LED, which lights when it is active. The Evac switch requires manual activation of the desired evacuation areas on the LED annunciator/switch modules. See the site-specific instructions for information on selecting specific areas within your facility.

Table 2-10: 2-MIC controls and indicators

Item	Control	Description
6	Alert switch	When pressed, the Alert switch manually activates the evacuation signal. The Alert switch features an integral LED, which lights when it is active. The Alert switch requires manual activation of the desired alert areas on the LED annunciator/switch modules. See the site-specific instructions for information on selecting specific areas within your facility.
7	Microphone	Use the microphone to issue a page message. See the paging procedure below.
8	Push-to-Talk [PTT] switch	When pressed, the PTT switch activates the pre-announcement tone and the microphone. The microphone will not transmit any messages until the PTT switch has been operated and the pre-announcement tone has ended.

Note: The mode setting of the 2-AAC will affect the operation of the 2-MIC. See the 2-AAC installation sheet.

To issue a page message:

1. Remove the microphone from its bracket.

2. Hold the microphone near your mouth and press the PTT switch.

3. When the pre-announcement tone ends, speak.

Operating the 2-TEL

Telephone handset

2-MIC controls

PHONE TO EVAC

PHONE TO ALERT

SILENCE CALL IN

PHONE CALL IN

PHONE CALL IN SILENCED

SILENCE CALL IN

STDOP036.CDR
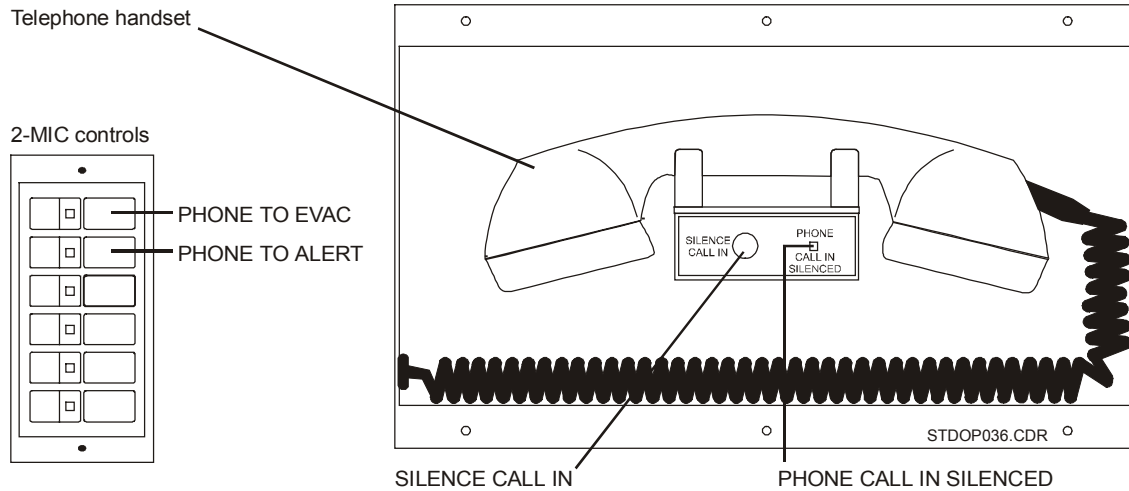
Figure 2-28: 2-TEL telephone module

Table 2-11: 2-TEL controls and indicators

Item	Control/Indicator	Description
1	Master handset	The master handset provides two-way communication for firefighter telephones located throughout the facility. Replace the handset on the hook when not in use.
2	Silence Call-In switch	When pressed, the Silence Call In switch turns off the internal call-in buzzer. Any attempt to call the master handset from a remote firefighter telephone will sound the buzzer.
3	Phone Call-In Silenced LED	When lit, the Phone Call In Silenced LED indicates that someone pressed the Silence Call-in switch to silence the internal call-in buzzer.
4	Phone to Evac switch	The Phone To Evac switch is a part of the 2-MIC. Use this switch with the 2-TEL to page the evacuation area. See the description in Table 2-10 (item 1).
5	Phone to Alert switch	The Phone To Alert switch is a part of the 2-MIC. Use this switch with the 2-TEL to page the alert area. See the description in Table 2-10 (item 2).

Recording voice messages

The SIGA-MDM is a digital message module, which provides up to two voice quality audio messages. Each message lasts for up to 30 seconds. The SIGA-MDM can function as a standalone audio source or in conjunction with the 2-AAC.
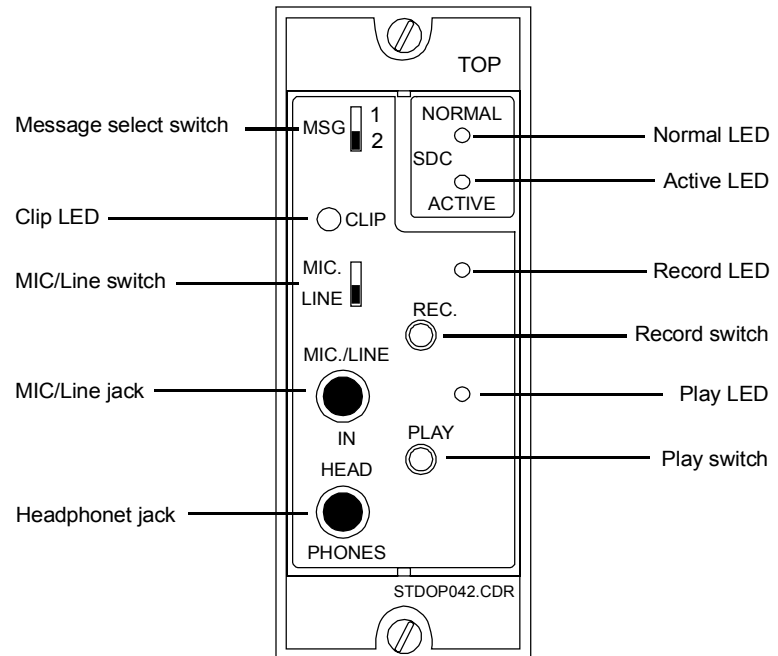
Figure 2-29: SIGA-MDM Digital Message Module

Table 2-12: Indicators

LED	Description
Clip	The Clip LED flashes while you record a message to indicate that its amplitude is exceeding the recording level. The SIGA-MDM is clipping the audio spike to hold the message's amplitude down. The Clip LED should flash only occasionally.
Normal	The Normal LED, when lit, indicates that the SIGA-MDM is communicating with the Signature Loop Controller.
Active	The Active LED, when lit, indicates that the SIGA-MDM is playing a message.
Record	The Record LED, when lit, indicates that the SIGA-MDM is recording and how much time remains.
Play	The Play LED, when lit, indicates that the SIGA-MDM is in the playback mode.

Table 2-13: SIGA-MDM Controls

Switch	Description
Message select	The Message Select switch, when toggled, selects the message for recording and playback.
MIC/Line select	The MIC/Line switch, when toggled, sets the audio input jack signal level.
Record	The Record switch, when pressed, turns the recording function on and off.
Play	The play switch, when pressed, turns the play function on and off.

Table 2-14: SIGA-MDM Jacks

Jacks	Description
MIC/Line in	The MIC/Line jack accepts the microphone or remote source for recording.
Head phones	The Head Phones jack accepts the headphones for playback.

Operating remote devices

Summary

Chapter 3 discusses the indicators and controls of remote annunciators.

Content

Operating remote alphanumeric annunciators

2-SMDN(-C)

Figure 3-1 shows the 2-SMDN and the 2-SMDN-C. The 2-SMDN offers only the ability to acknowledge and review messages. The 2-SMDN-C also features indicators and operator input switches.
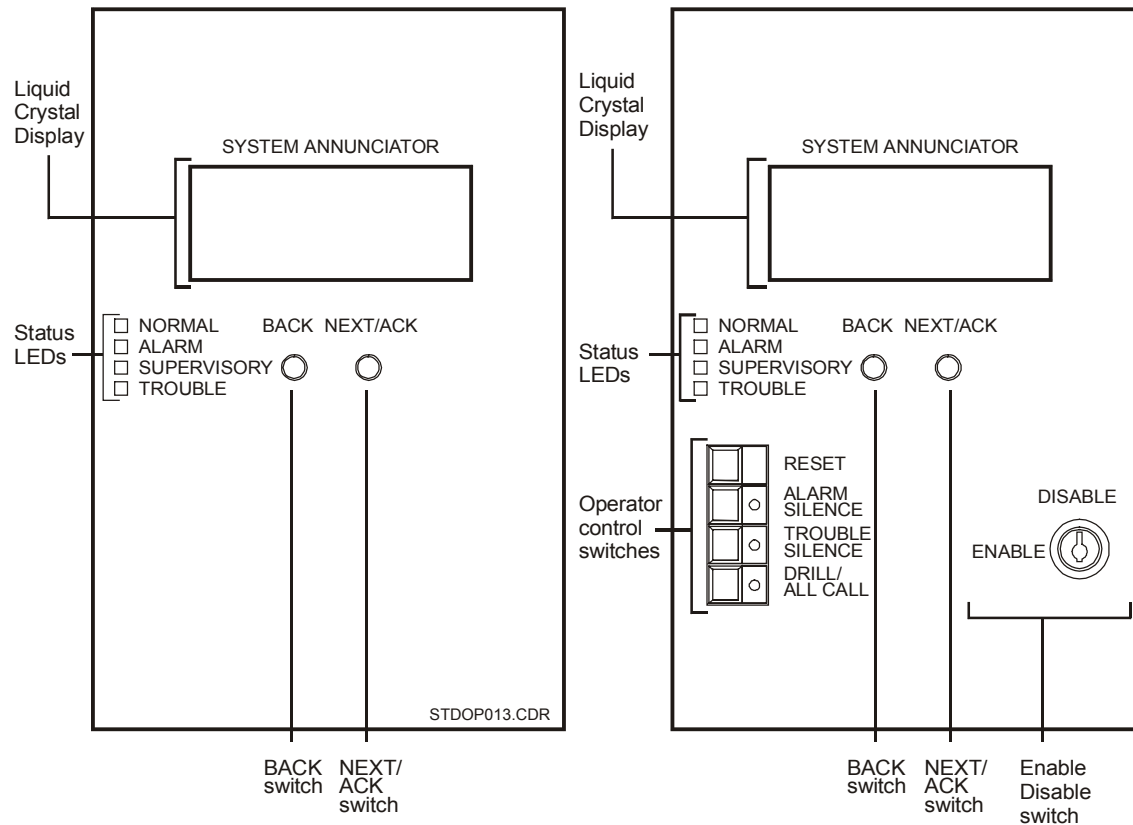
Figure 3-1: 2-SMDN (left), 2-SMDN-C (right)

2-CMDN(-C)

Figure 3-2 shows the 2-CMDN-C and the 2-CMDN. The 2-CMDN offers only the ability to acknowledge and review messages. The 2-CMDN-C also features indicators and operator input switches.
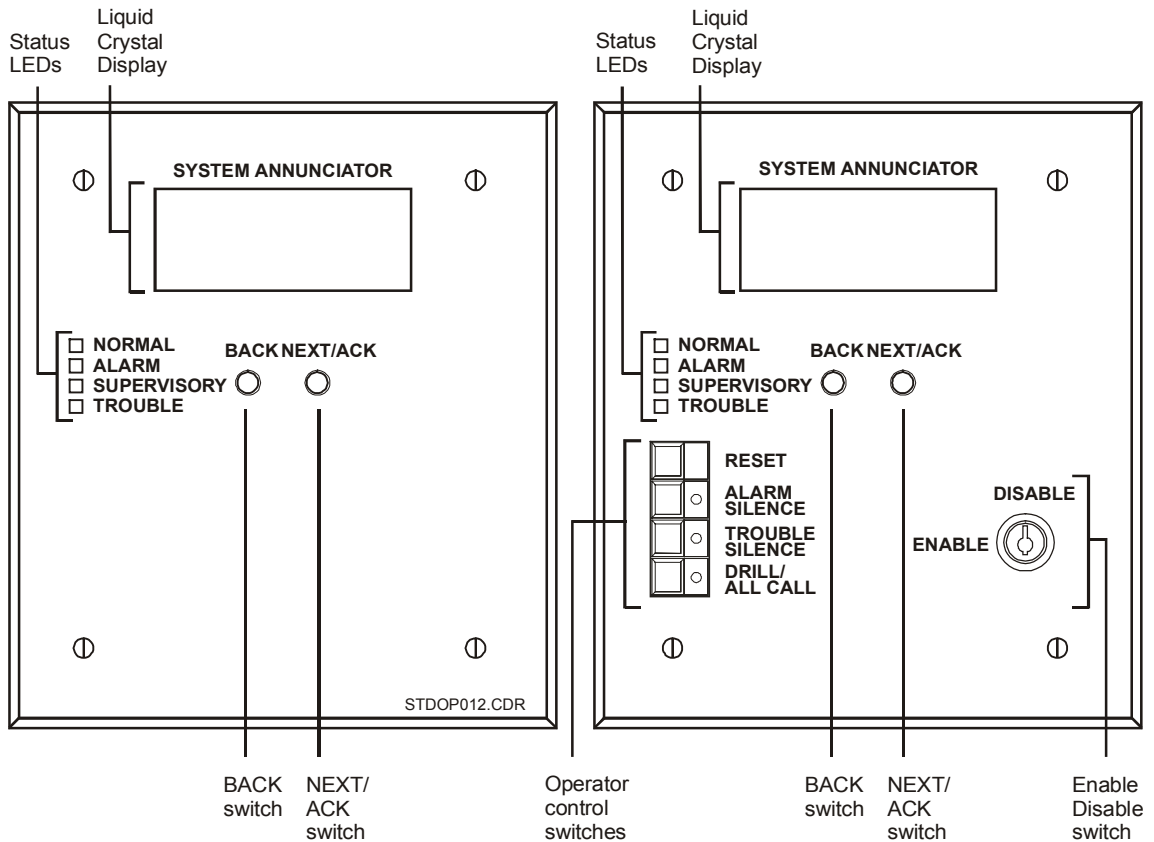
Figure 3-2: 2-CMDN (left), 2-CMDN-C (right)

2-LSRA(-C)

Figure 3-3 shows the 2-LSRA and the 2-LSRA-C. The 2-LSRA offers only the ability to acknowledge and review messages. The 2-LSRA-C also features indicators and operator input switches.

Liquid Crystal Display

Life Safety Remote Annunciator

Status LEDs

NORMAL
ALARM
SUPERVISORY
TROUBLE

BACK   NEXT/ACK

BACK switch   NEXT/ACK switch

Liquid Crystal Display

Life Safety Remote Annunciator

Status LEDs

NORMAL
ALARM
SUPERVISORY
TROUBLE

BACK   NEXT/ACK

1   RESET

2   ALARM SILENCE

3   TROUBLE SILENCE

4   DRILL/ ALL CALL

Operator Control Switches

STDOP014.CDR

BACK switch   NEXT/ACK switch
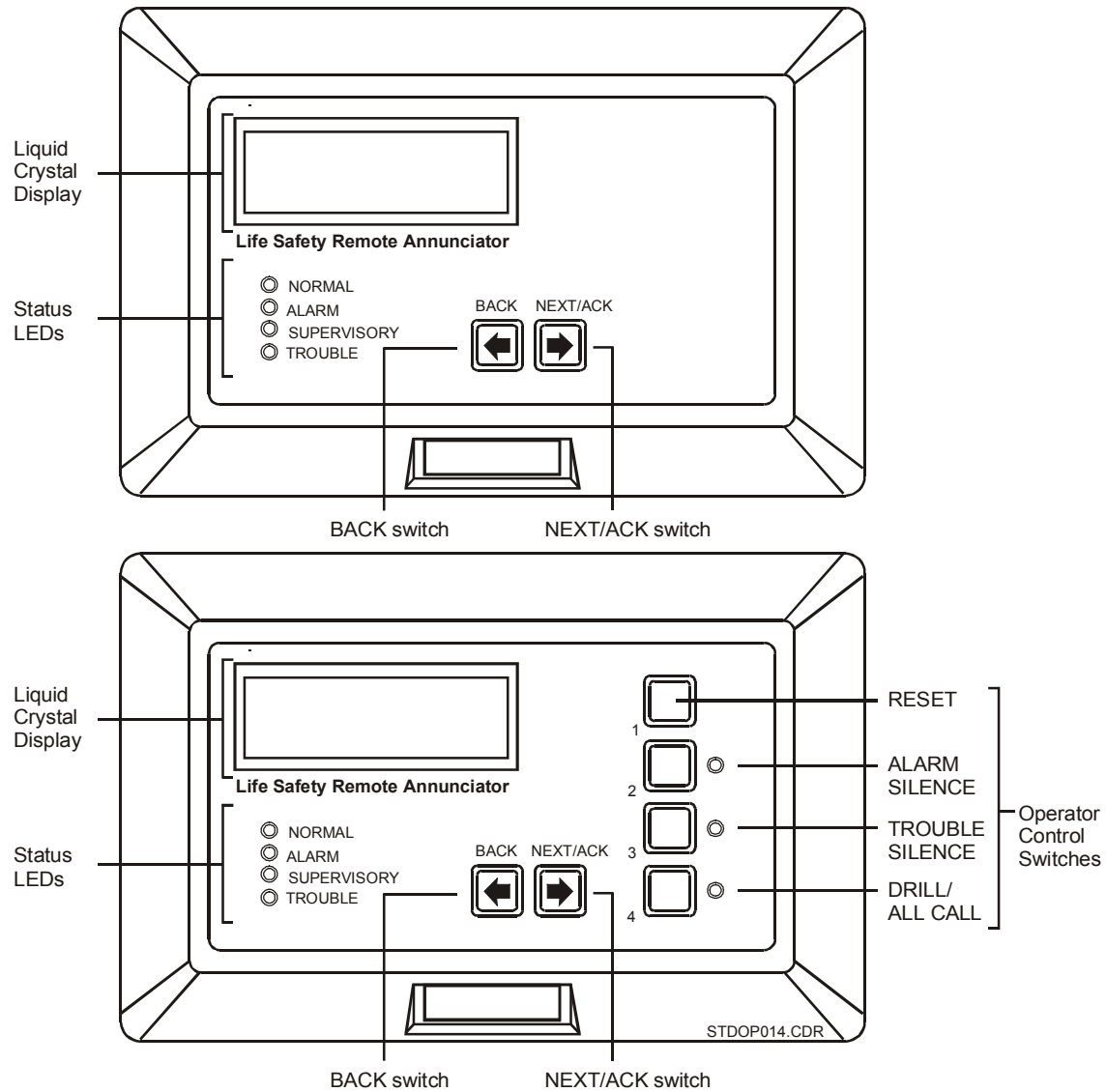
Figure 3-3: 2-LSRA (top), 2-LSRA-C (bottom)

Controls and indicators

Table 3-1: Remote alphanumeric annunciator controls

Control	Availability	Description
Next/Ack switch	2-SMDN-C 2-SMDN 2-CMDN-C 2-CMDN 2-LSRA-C 2-LSRA	The Next/Ack switch, when pressed, acknowledges the receipt of new messages at the remote alphanumeric annunciator and automatically advances to the next unacknowledged message. When there are no unacknowledged messages, the Next/Ack switch may be used to scroll forward through the review buffer. The review buffer only displays active points. A point will not appear in the review buffer if it becomes active and restores.
Back switch	2-SMDN-C 2-SMDN 2-CMDN-C 2-CMDN 2-LSRA-C 2-LSRA	The Back switch, when pressed, scrolls in reverse through the review buffer. Press the Back and Next/Ack switches simultaneously to clear the LCD after the acknowledgement of every message.
Enable/Disable switch	2-SMDN-C 2-CMDN-C	The Enable/Disable switch requires a key. Depending on which position you turn the key to, and the way the switch is configured, it can enable or disable any combination of the front panel Reset, Alarm Silence, Trouble Silence, and Drill switches.
Reset switch	2-SMDN-C 2-CMDN-C 2-LSRA-C	The Reset switch, when pressed, directs the control panel to issue a system-wide reset command after all system wide-status points have been acknowledged.
Alarm Silence switch	2-SMDN-C 2-CMDN-C 2-LSRA-C	The Alarm Silence switch, when pressed, directs the control panel to issue a system-wide alarm silence command. Operating the Alarm Silence switch generates a trouble LED on the display and activates the internal trouble buzzer. Pressing the Alarm Silence and Local Silence switches simultaneously starts a 15 second LED test sequence.
Trouble Silence switch	2-SMDN-C 2-CMDN-C 2-LSRA-C	The Trouble Silence switch, when pressed, silences the local trouble buzzer after all messages have been acknowledged. This is a system-wide function.
Drill/ All Call switch	2-SMDN-C 2-CMDN-C 2-LSRA-C	The Drill/ All Call switch, when pressed, directs the control panel to issue a drill command.

Note: You do *not* have to acknowledge messages at the remote alphanumeric annunciators. You can acknowledge the message at the control panel. The system automatically acknowledges and silences any message through the Local Silence switch. Upon the acknowledgment of the message, the control panel will restore the remote alphanumeric annunciators.

Table 3-2: Remote alphanumeric annunciator indicators

Event	Indication	Regional patterns		Availability	Notes
		USA/Canada	Europe		
Normal operations	Green LED	Steady	Steady	2-SMDN-C 2-SMDN 2-CMDN-C 2-CMDN 2-LSRA-C 2-LSRA	Indicates that the system has no faults or off-normal conditions.
Alarm condition	Red LED	Steady	Steady	2-SMDN-C 2-SMDN 2-CMDN-C 2-CMDN 2-LSRA-C 2-LSRA	Indicates that the system has detected a fire alarm condition.
Trouble condition	Amber LED	Steady	Steady	2-SMDN-C 2-SMDN 2-CMDN-C 2-CMDN 2-LSRA-C 2-LSRA	Indicates that some portion of the system is off-normal, and may degrade the system's operation.
Supervisory condition	Amber LED	Steady	Steady	2-SMDN-C 2-SMDN 2-CMDN-C 2-CMDN 2-LSRA-C 2-LSRA	Indicates that a fire protection system other than the fire alarm panel is off-normal. Closed sprinkler valves and disabled supplementary fire extinguishing systems may cause supervisory conditions.
Unacknowledged message	Internal buzzer	Pulses	Pulses	2-SMDN-C 2-SMDN 2-CMDN-C 2-CMDN 2-LSRA-C 2-LSRA	The operator must acknowledge all messages to silence the buzzer.

Table 3-2: Remote alphanumeric annunciator indicators

Event	Indication	Regional patterns		Availability	Notes
		USA/Canada	Europe		
Trouble	Internal buzzer	Pulses	Steady	2-SMDN-C 2-SMDN 2-CMDN-C 2-CMDN 2-LSRA-C 2-LSRA	In Europe, the buzzer will pulse steadily until an operator silences it. When the buzzer is silenced, it will generate a half-second pulse every 14 seconds as a reminder of the trouble condition.
Alarm silence	Amber LED	Flash	Flash	2-SMDN-C 2-CMDN-C 2-LSRA-C	The Alarm Silence LED lights when the system-wide alarm silence function has been initiated.
Trouble or supervisory condition silence	Amber LED	Flash	Flash	2-SMDN-C 2-CMDN-C 2-LSRA-C	The Trouble Silence LED lights when the system-wide trouble silence function has been initiated. 2-SMDN, 2-CMDN, and 2-LSRA buzzers sound *only* for unacknowledged messages.
Drill/all call test	Amber LED	Flash	Flash	2-SMDN-C 2-CMDN-C 2-LSRA-C	The Drill LED lights when the system-wide drill/all call function has been initiated.

Reading LCD messages

The 2-CMDN(-C), the 2-SMDN(-C), and the 2-LSRA(-C) feature a liquid crystal display (LCD). The LCD turns off after 4 minutes of inactivity to save power. Any change of state, off-normal condition, or front panel switch activation will turn on the LCD's back-lighting. The system's main controller module automatically updates time and date information. The LCD does not display point address information unless the system programmer includes it as part of the message.

Figure 3-4 illustrates an LCD with no messages pending. The fire alarm system has no problems at the moment of the display. In Figure 3-5, however, the LCD indicates a trouble condition for a Signature series device in the Janitor's closet.

Current date   Current time

```
JAN 03      11:15:44
```

STDOP040.CDR

Figure 3-4: LCD during normal conditions

Current date   Current time

Condition

```
JAN 03      11:15:44
TROUBLE
LOWER LOBBY
JANITOR CLOSET
```

Message line 1
Message line 2

STDOP041.CDR
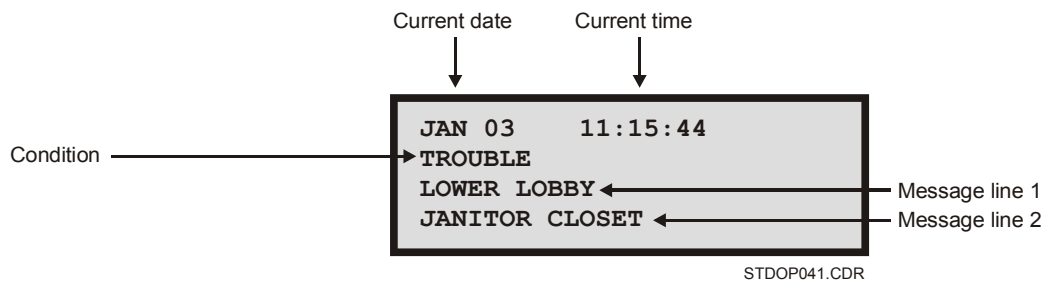
Figure 3-5: Sample alarm message on the LCD

Reading and operating SAN annunciators

SAN annunciators provide point status indication and switching functions at a location remote from the fire alarm control panel. Each SAN annunciator requires a SAN-CPU. This section discusses the indicators and controls of the following SAN annunciators:

*   2-SANCOM
*   SLU-16
*   SWU-8(/3)
*   SHO-4
*   ISP-96(-2 or -3)

2-SANCOM

The 2-SANCOM Remote Network Control module provides basic network indicators and controls in a SAN series package.
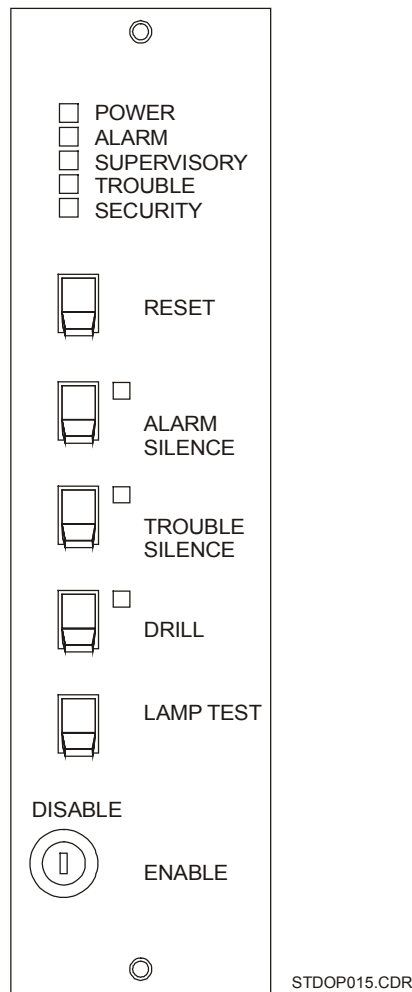
Figure 3-6: 2-SANCOM

Table 3-3: 2-SANCOM indicators

Indicator	Description
Power LED	The Power LED, when lit, indicates that the system has no faults or off-normal conditions.
Alarm LED	The Alarm LED, when lit, indicates that the system has detected a fire alarm condition.
Supervisory LED	The Supervisory LED, when lit, indicates that a fire protection system other than the fire alarm panel is off-normal.
Trouble LED	The trouble LED, when lit, indicates that some portion of the system is off-normal, and may degrade the system's operation.
Alarm Silence LED	The Alarm Silence LED lights when the system-wide alarm silence function has been initiated.
Trouble Silence LED	The Trouble Silence LED lights when the system-wide trouble silence function has been initiated.
Drill LED	The Drill LED lights when the system-wide drill/ all call function has been initiated.
Security LED	The Security LED, when lit, indicates a security condition.
Trouble buzzer	Operates on system trouble, and when the trouble silence is in the off-normal position when no trouble exists on the system

Table 3-4: 2-SANCOM controls

Control	Description
Reset switch	The Reset switch, when toggled, directs the control panel to issue a system-wide reset command after all the system wide-status points have been acknowledged.
Alarm Silence switch	The Alarm Silence switch, when toggled, directs the control panel to issue a system-wide alarm silence command. Operating the Alarm Silence switch lights the Trouble LED on the 2-LCD and activates the internal trouble buzzer. Toggling the Alarm Silence and Local Silence switches simultaneously starts a 15-second LED test sequence.
Trouble Silence switch	The Trouble Silence switch, when toggled, silences the local trouble buzzer after all messages have been acknowledged. This is a system-wide function.
Drill/All Call switch	The Drill/All Call switch, when toggled, directs the control panel to issue a drill command.
Enable/Disable switch	The Enable/Disable switch requires a key. Depending on which position you turn the key to, and the way the switch is configured, it can enable or disable any combination of the front panel Reset, Alarm Silence, Trouble Silence, and Drill switches.
Lamp Test switch	The Lamp Test, when toggled, tests all the 2-SANCOM indicators.

SLU-16

The SLU-16 Remote Annunciator Lamp module has 16 LEDs for remote annunciator applications when using the SAN-CPU. The system software individually controls all LEDs and switches. When a pre-defined input exists on the system, the appropriate LED will illuminate to report the condition.
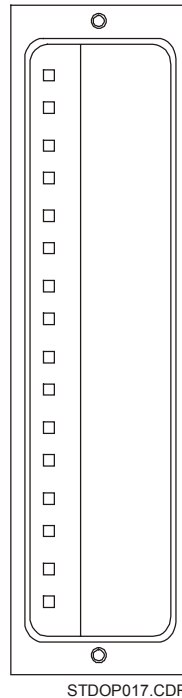
Model	Description
SLU-16R	16 red LEDs
SLU-16Y	16 yellow LEDs
SLU-16R/Y	8 red LEDs/8 yellow LEDs

STDOP017.CDR

Figure 3-7: SLU-16SWU-8(/3)

SWU-8

The SWU-8 consists of 8 two-position toggle switches and 16 red or yellow LEDs. Each switch forms a distinct functional group with two independently programmed LEDs. Placing a switch in the up position generates an active (off normal) condition. The down position is the normal state.

In a typical firefighter telephone application using the SWU-8, the upper switch position selects an incoming call; the lower switch position places the circuit to normal or off-line operation. One of the associated LEDs indicates the circuit calling in; the other LED indicates that the circuit has been connected to the master handset.

Each Switch/LED group consists of a switch and two LEDs

Slip-in label protector

Two-position toggle switches on an SWU-8 or three-position toggle switches on an SWU-8/3

STDOP016.CDR
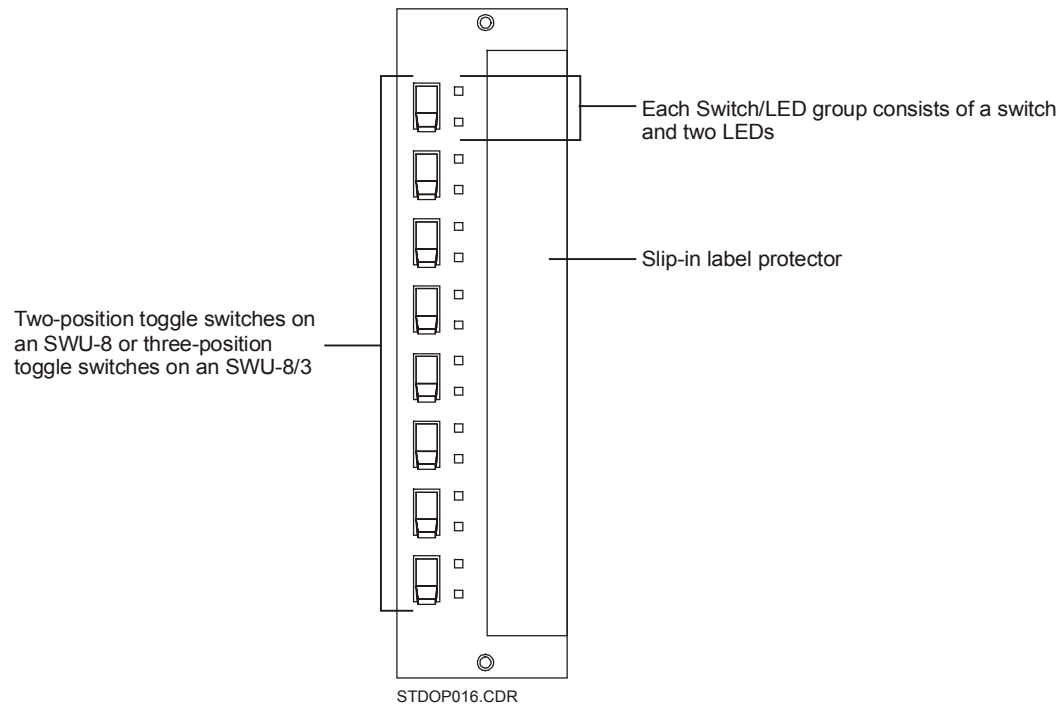
Figure 3-8: SWU-8(/3)

SWU-8/3

The SWU-8/3 consists of 8 three-position toggle switches and 16 red or yellow LEDs. Each switch forms a distinct functional group with two independently programmed LEDs. Placing a switch in the up or down positions generates one of two active (off-normal) conditions. The center position is the normal state.

In a typical HVAC application, the SWU-8/3 switches may be used as hands off automatic (HOA) controls to override the automatic operation of the system. The two associated LEDs may be programmed to indicate the status of Run/Stop contacts, fans or dampers with limit switches, etc.

In typical audio evacuation application using the SWU-8/3, the upper switch position initiates circuit paging. The center switch position allows normal/automatic control mode of the speaker circuit. The LEDs indicate the active condition of the speaker circuit.

SHO-4

The SHO-4 module provides 4 three-position rotary switches and 12 LEDs for remote switching and annunciator applications. Two yellow LEDs and one green LED are positioned next to each switch. The yellow LEDs operate independent of the switches, which the system program controls. The green LED illuminates when the switch is in the center position. Typical applications include Hand-Off-Automatic (HOA) control and the override of automatic systems.

The SHO-4 switches activate control fans, dampers, etc. The center switch position is the automatic operational position. The switch, in the center position, lights the green LED to show that the HVAC system is using its normal control cycle.

In a typical program, the upper switch position forces the device to turn on through a control module or zone. The lower switch position forces the device to turn off again. Status zones connected to vane or limit switches, contractor status switches, etc. activate the upper and lower LEDs to indicate a device's status.

STDOP018.CDR
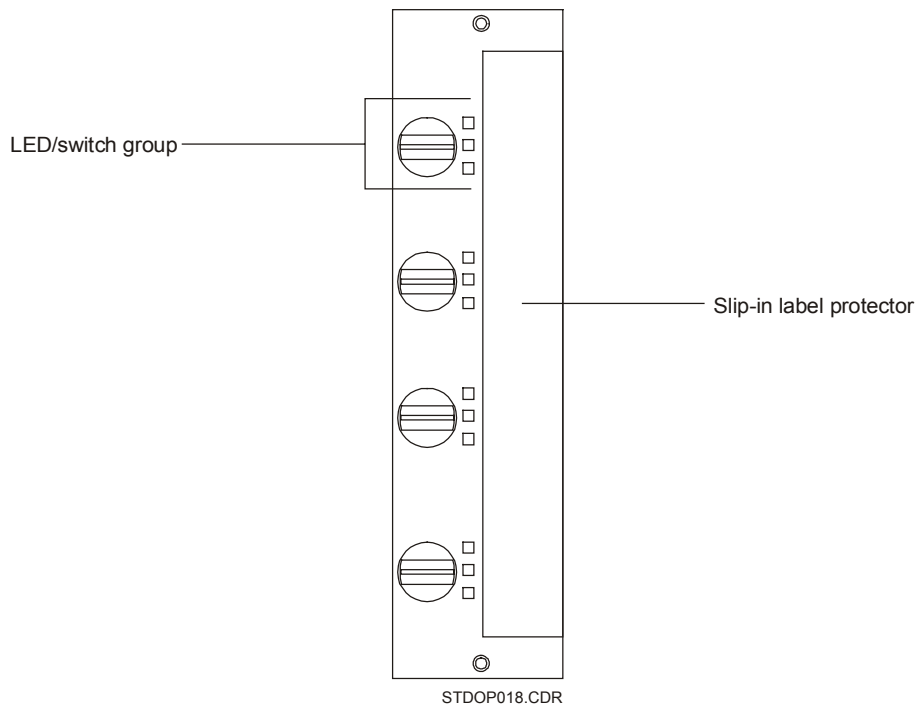
Figure 3-9: SHO-4 Remote annunciator lamp and switch module

ISP-96

The ISP-96 annunciator/switch panels mount to a 19-inch rack. Forty-eight switches provide manual control of system functions. Each switch has two associated LEDs to indicate the status of the function or the system. All LEDs and switches are independently programmed and controlled. Typical uses include HVAC control, firefighter telephone circuits, audio evacuation, and paging systems. Two ISP-96 models are available: the ISP-96-2 and the ISP-96-3.

STDOP019.CDR
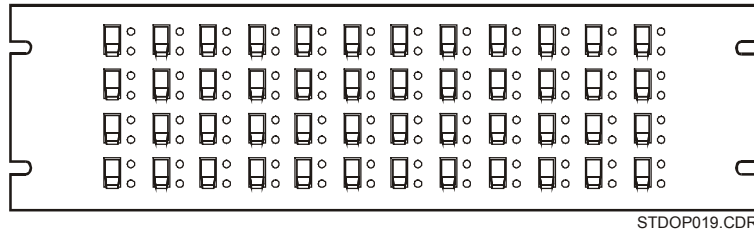
Figure 3-10: ISP-96

ISP-96-2

The ISP-96-2 provides 48 switch/LED groups consisting of a two- position toggle switch and two amber LEDs. Placing a switch in the up position generates an active (off normal) condition. The down position is the normal state.

In a typical firefighter telephone application using the ISP-96, the upper switch position selects an incoming call; the lower switch position places the circuit to normal or off-line operation. One of the associated LEDs indicates the circuit calling in; the other LED indicates that the circuit has been connected to the master handset.

ISP-96-3

The ISP-96-3 provides 48 switch/LED groups consisting of a three-position toggle switch and two amber LEDs. Placing a switch in the up or down positions generates one of two active (off-normal) conditions. The center position is the normal state.

In a typical HVAC application, the ISP-96-3 switches may be used as HOA controls to override the automatic operation of the system. The two associated LEDs may be programmed to indicate the status of Run/Stop contacts, fans or dampers with limit switches, etc.

In typical audio evacuation system application using the ISP-96-3, the upper switch position initiates circuit paging. The center switch position allows normal/automatic control mode of

the speaker circuit. The LEDs indicate the active condition of the speaker circuit.

Selecting system functions on SAN annunciators

The SWU-8 and the ISP-96 series annunciators provide two-position and three-position toggle switch options. The SHO-4 provides three-position rotary switches. Apart from operator intervention the SAN annunciators will allow the system to function automatically. During off-normal conditions, however, the operator has the option of toggling or turning switches to activate programmed functions or override normal system functions.

Each three-position toggle switch has two LEDs. When the switch is in the center position, the system will function automatically and keep both LEDs off. When an operator toggles the switch up or down, it will activate a programmed function, and turn on the appropriate LED.

The three-position rotary switch is like the three-position toggle switch, but it has a third LED. When the switch is in the center position the system will function automatically and turn on the center LED. The upper and lower LEDs operate independent of the switch.

The two-position toggle switch has two LEDs. When the switch is down the system will function automatically. When an operator toggles the switch up, it will activate a programmed function and turn on the upper LED.

Three-position toggle switch: SWU-8/3 and ISP-96-3

Programmed function

Automatic system function

Programmed function

Three-position rotary switch: SHO-4

Programmed function

Automatic system function

Programmed function
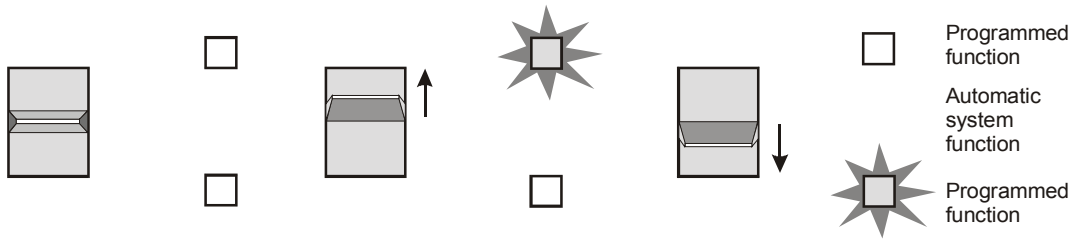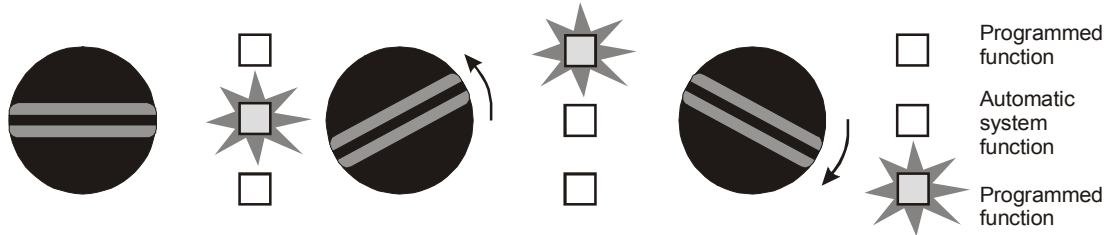
Two-position toggle switch: SWU-8 and ISP-96-2

Programmed function

LED indications

LED is off:

LED is on:

STDOP020.CDR

Automatic system function
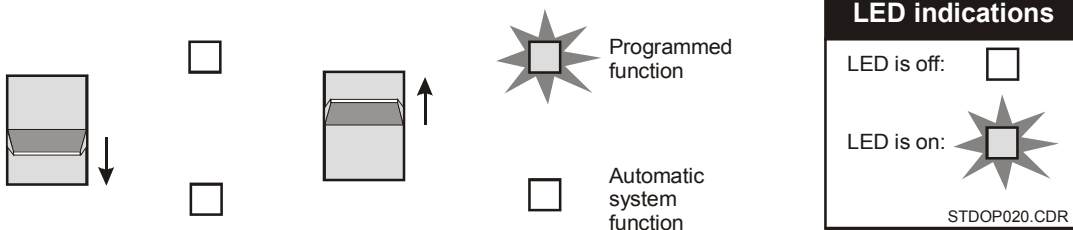
Figure 3-11: SAN annunciator switch positions

SAN-MIC II

The SAN-MIC II module is a supervised microphone and tone generator capable of operation remotely from the audio power amplifier. The SAN-MIC II provides a pre-amp level signal, which may be transmitted over 2,000 feet of shielded cable. In addition, the SAN-MIC II provides a PTT Dynamic Microphone, three tone generators, auxiliary audio input, solid state VU meter, and a supervisory pulse generator.
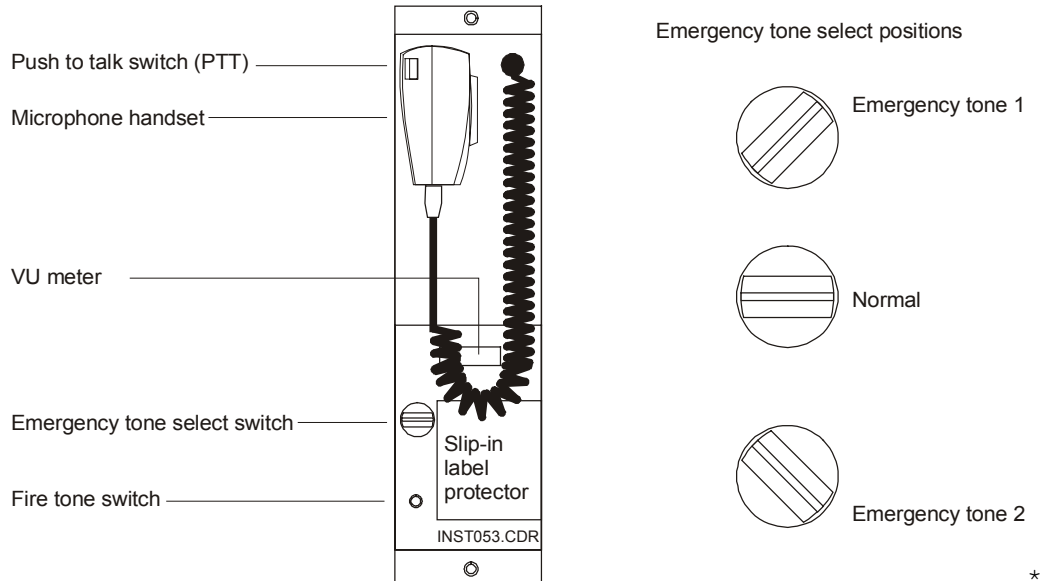
Figure 3-12: SAN-MIC II and emergency tone select positions

In the normal state, the SAN-MIC II generates a supervisory pulse tone for supervision of the audio wiring and circuitry.

Switches

The *Fire Tone* switch sends the jumper-defined alarm tone to the module output terminals as long as the Emergency Tone Select switch is in the normal position. The Auxiliary Input overrides the Fire Tone. The Speaker Select relay closes upon the activation of the Fire Tone switch.

The *Emergency Tone Select* switch sends the jumper-defined emergency tone 1 or emergency tone 2 to the module output terminals as long as the microphone is not in active operation. The auxiliary input overrides the emergency tones. The activation of the Emergency Tone switch also closes the speaker select relay.

The *Microphone PTT* sends the microphone output to the module output terminals, and overrides all tone generators. The auxiliary input overrides the all microphone tones. The activation of the microphone PTT closes the speaker select relay.

VU meter

The VU meter is a row of LEDs that form a bar graph to indicate the input level from the microphone. The amplitude of your voice determines the microphone's input level. If the bar graph does not light up when you talk, you may not be talking loud enough. If the bar graph runs all the way to the left, you are talking too loud. The ideal indication on the VU meter is a bar graph that runs to the middle.

VU Meter

Low input level

VU Meter

Optimal input level

VU Meter

High input level

STDOP044.CDR
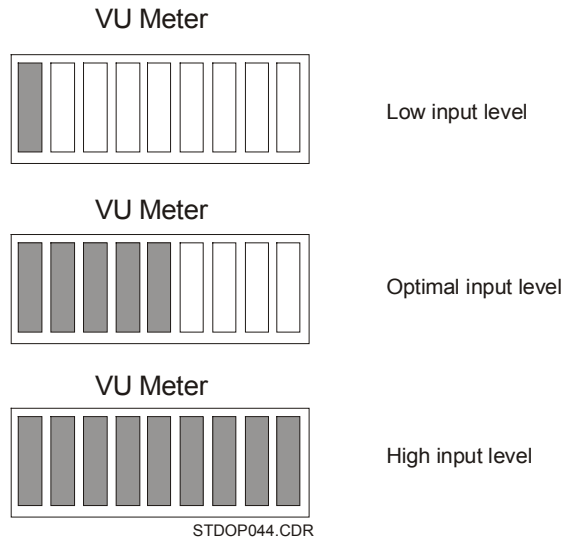
Figure 3-13: SAN-MIC II VU meter

Chapter 4

Operating peripheral devices

Summary

Chapter 4 discusses the operation controls and the reading of indicators on peripheral devices including the PT-1S printer and the RSAN-PRT printer.

Content
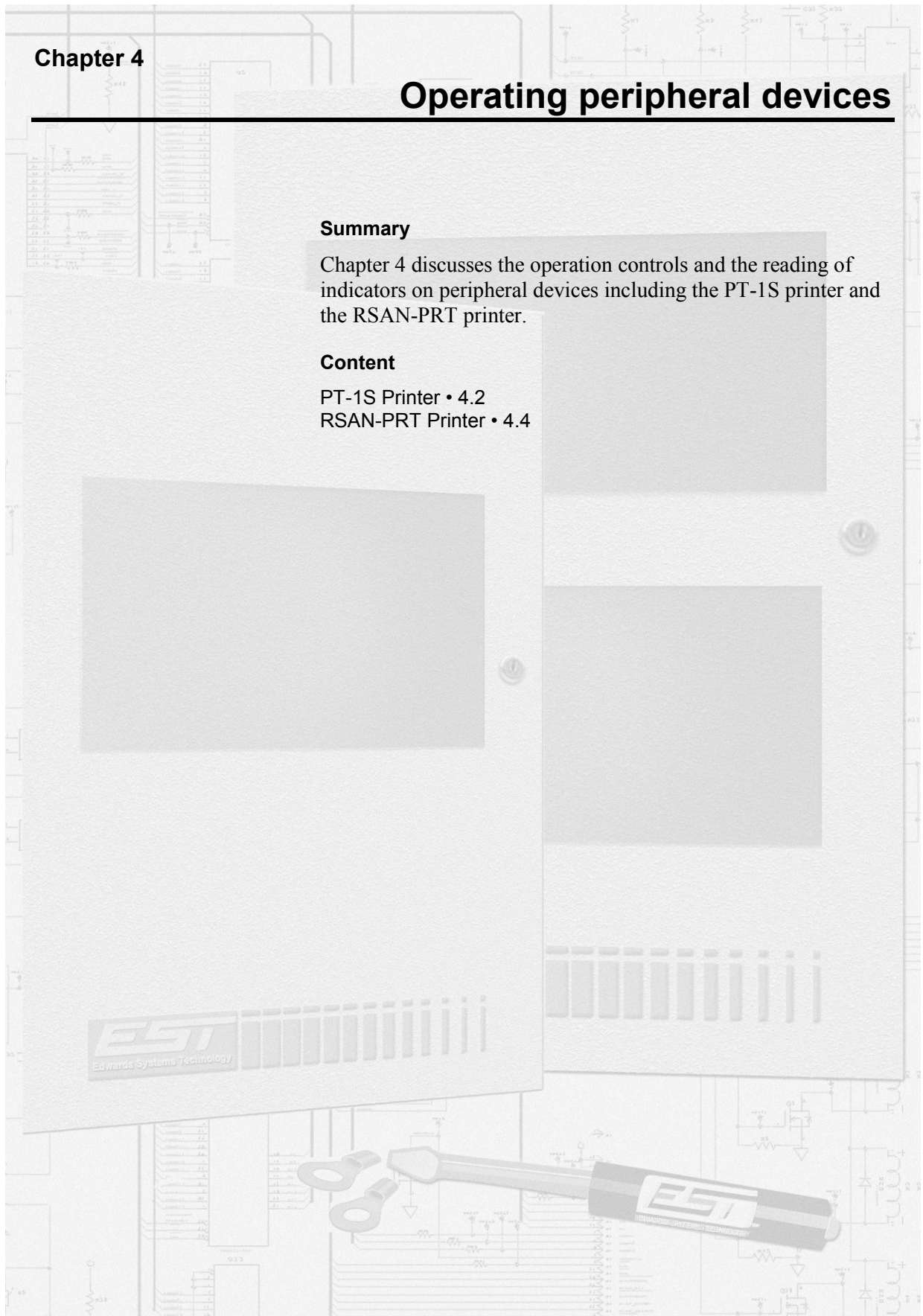
PT-1S Printer

The PT-1S printer provides permanent records of all system activities, including sensitivity and history reports. The PT-1S remains continuously active unless someone uses the printer connection for maintenance purposes. The printer operates in combination with the 2-LCD. See *Generating reports* in *Operating panel devices*. The printer will generate a trouble condition at the control panel if it has an internal problem or runs out of paper.
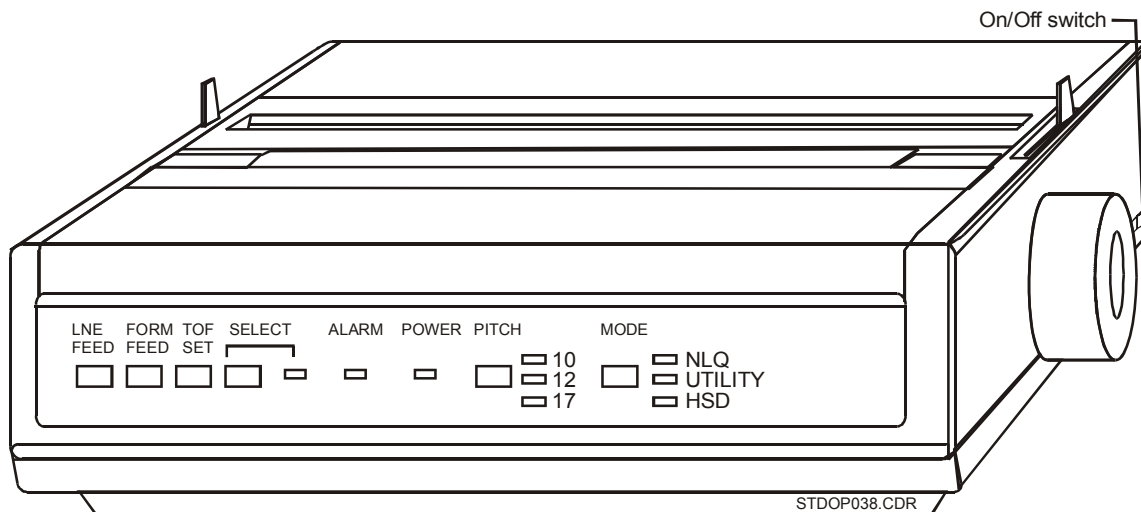
Figure 4-1: PT-1S form printer

Table 4-1: Indicators

LED	Color	Description
Select	Green	The Select LED turns on when the printer is online.
Alarm	Red	The Alarm LED lights turns on when the printer has an internal problem or needs more paper. Do not confuse this LED with a fire alarm.
Power	Green	The Power LED turns on when the printer has power.
Pitch	Green	The Pitch LEDs turn on to indicate the selected character size.
Mode	Green	The Mode LEDs turn on to indicate the selected printer speed.

Table 4-2: Controls

Switch	Description
Line feed	Advances the paper one line.
Form feed	Advances the paper to the next page.

Table 4-2: Controls

Switch	Description
TOF set (Top of Form)	Sets the top margin at the current location of the printhead. Make sure the printer is offline if you manually set the paper at the page break.
Select	Turns the printer online or offline. The Select switch also features an LED to indicate whether the printer is online or offline.
Pitch 10 12 17	Sets the print character size. 10 characters per inch (recommended setting) 12 characters per inch 17 characters per inch
Mode NLQ Utility HSD	Sets the print speed. Near letter quality: slowest (not recommended) Draft quality: medium (recommended setting) High speed draft: fastest
On/Off	Applies power to the printer in the On position. Removes power from the printer in the Off position.

RSAN-PRT Printer

The RSAN-PRT printer provides permanent records of all system activities, including sensitivity and history reports. The RSAN-PRT remains continuously active unless someone uses the printer connection for maintenance purposes. The printer operates in combination with the 2-LCD. See *Generating reports* in *Operating panel devices*. The printer will generate a trouble condition at the control panel if it has an internal problem or runs out of paper.
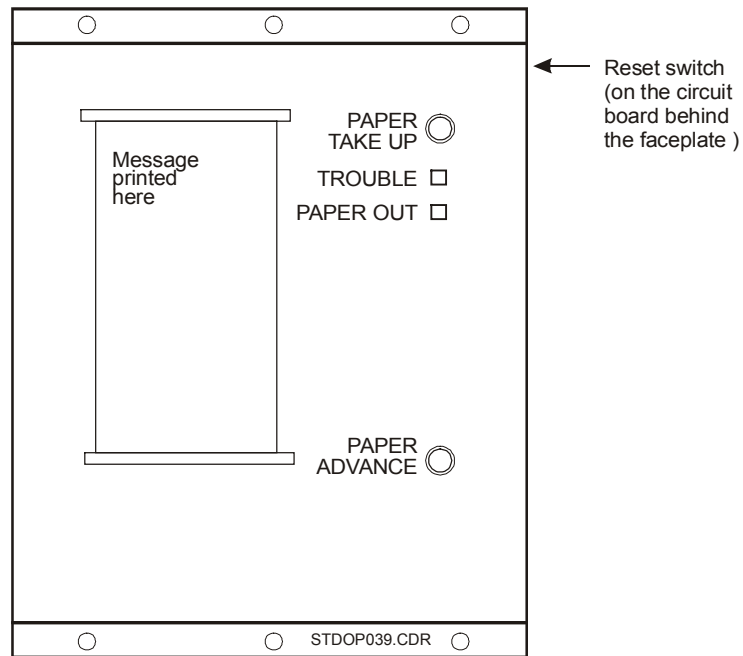
Figure 4-2: RSAN-PRT strip printer

Table 4-3: Indicators

LED	Color	Description
Trouble	Yellow	The Paper out LED turns on when the printer requires paper.
Paper out	Yellow	The Trouble LED turns on when the printer has an internal trouble or a printer down line is not responding to supervision requests.

Table 4-4: Controls

Control	Description
Reset	Restarts and reinitializes the printer.

Table 4-4: Controls

Control	Description
Paper take up	Winds the paper on the take-up spool.
Paper advance	Winds the paper one line at a time.

Operator instructions

Summary

Appendix A presents the procedure for filling out and posting operator instructions for fire alarm control panels.

Content
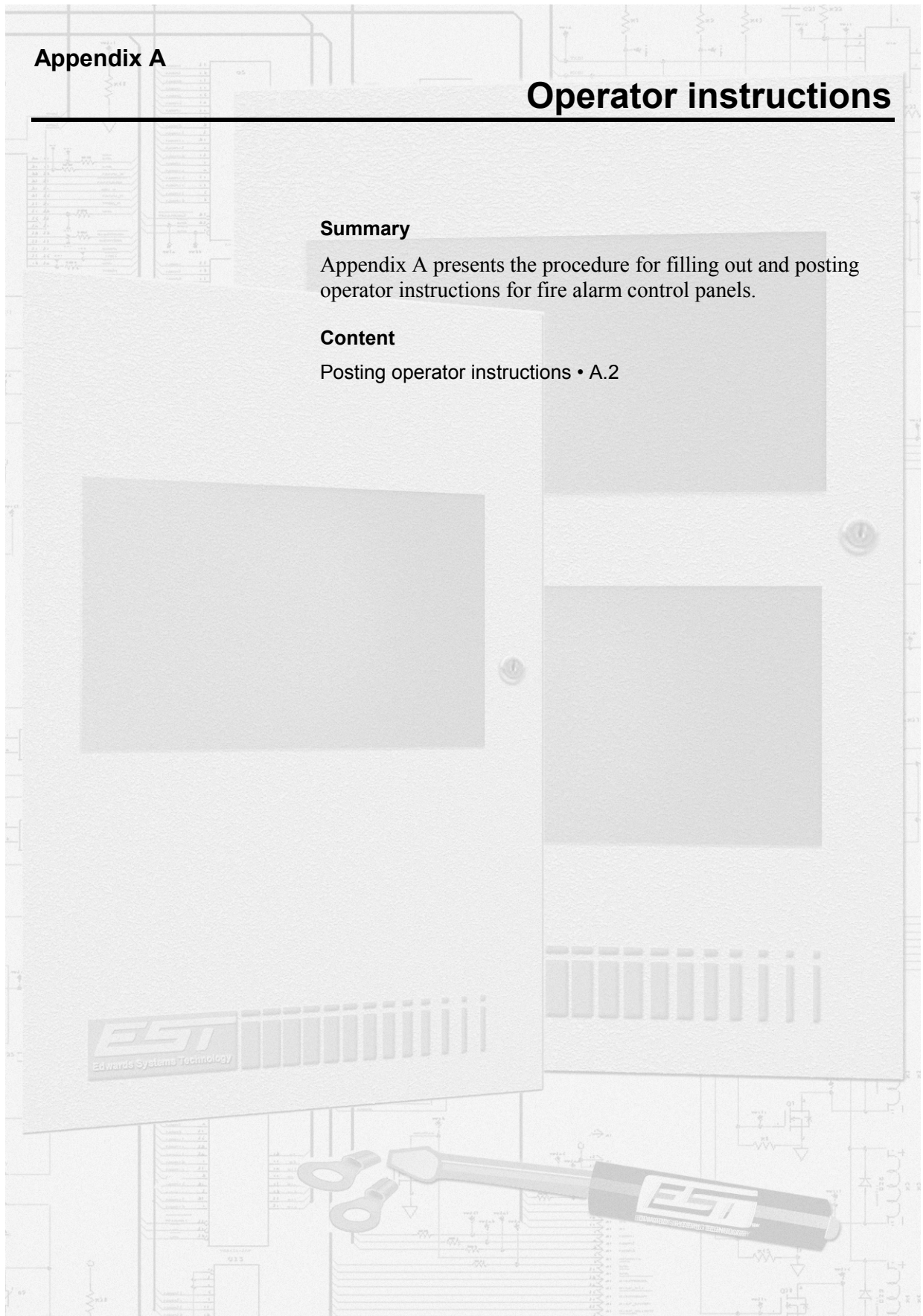
Posting operator instructions

The following pages feature two sets of operator instructions. The first set of instructions (Figure A-1) outlines the procedures for operating the fire alarm panel without emergency communications equipment.

The second set of instructions (Figure A-2) provides the procedures for operating the fire alarm control panel with emergency communications equipment.

To post operator instructions:

1. Photocopy the master set of operator instructions.

2. Write down the location of control panel in the space provided at the top of the form.

3. Frame the operator instructions.

4. Mount the operator instructions next to the control panel.

Fire Alarm Control Panel Operating Instructions

Installed By:
_____
_____
_____

Per NFPA Standard:

☐ 72, Ch 3 - Local

☐ 72, Ch 4 - Auxiliary

☐ 72, Ch 4 - Remote Sta.

☐ 72, Ch 4 - Proprietary

☐ 72, Ch 4 - Central Sta.

Dated: _____

For Service Contact:
_____
_____
_____
_____

Inspected By:
_____
_____
_____

Date: _____

Power Supply:

Primary _____
Location _____
Fuses _____
Secondary _____
Type _____
Specs. _____

Location: _____

Normal Condition: The Power LED (green) is on. All other LEDs are off.

Alarm Condition: The Alarm LED (red) turns on, the display shows the alarm location and zone, and the internal buzzer pulses.

> To view other alarm messages: Press the ALARM review switch (down arrow).
> To silence audible devices: Press the Alarm Silence switch.
> To reset the system: Find the cause of the alarm condition, correct it, and press the Reset switch.
>
> **Note:** Each new alarm will resound the audible devices, but you cannot resound them by pressing the Alarm Silence switch a second time.

Supervisory Condition: The Supervisory LED (yellow) turns on, the display shows the supervisory condition, location, and zone, and the internal buzzer pulses.

> To view other supervisory messages: Press the SUPVR review switch (down arrow).
> To silence buzzer: Press Local Silence switch.
> To clear the system: Find the cause of supervisory condition, correct it, and press the Reset switch.

Trouble Condition: The system Trouble LED (yellow) turns on, the display shows the trouble location and zone, and the internal buzzer pulses.

> To view other trouble messages: Press the TRBLE review switch (down arrow).
> To silence the buzzer: Press the Local Silence switch.
> To clear the system: Find the cause of the trouble and correct it. The system automatically clears itself upon correction of trouble condition.

Monitor Condition: The Monitor LED (yellow) turns on, the display shows monitor conditions, and the internal buzzer pulses during a non-fire alarm condition.

> To view other monitor conditions: Press the MONTR review switch (down arrow).
> To clear system: The system automatically clears itself upon restoration of monitor condition.

Fire Drill: Notify the fire department before you run the test. All audible and visual notification appliances will operate during a drill.

> To drill all notification appliances: Press the Drill switch.
> To end the drill: Press the Drill switch a second time, or press Alarm Silence.

Frame these instructions and mount them next to the fire alarm control panel. For additional information, See the *System Operations Manual*.

STDOP007.CDR

Figure A-1: Fire alarm control panel operating instructions

Emergency Communications Operating Instructions

Installed By:	Location:

Normal Condition: The Power LED (green) is on. All other LEDs are off.

Alarm Condition: The Alarm LED (red) turns on, the display shows the alarm location and zone, and the internal buzzer pulses.

To view other alarm messages: Press the ALARM review switch (down arrow).
To silence audible devices: Press the Alarm Silence switch.
To reset the system: Find the cause of alarm condition correct it, and press the Reset switch.

Note: Each new alarm will resound the audible devices, but you cannot resound them by pressing the Alarm Silence switch a second time.

Supervisory Condition: The Supervisory LED (yellow) turns on, the display shows the supervisory condition, location, and zone, and the internal buzzer pulses.

To view other supervisory messages: Press the SUPVR review switch (down arrow).
To silence buzzer: Press Local Silence switch. Investigate the cause.
To clear the system: Find the cause of the supervisory condition, correct it, and press the Reset switch.

Trouble Condition: The system Trouble LED (yellow) turns on, the display shows the trouble location and zone, and the internal buzzer pulses.

To view other trouble messages: Press the TRBLE review switch (down arrow).
To silence the buzzer: Press the Local Silence switch.
To clear the system: Find the cause of the trouble and correct it. The system automatically clears itself upon correction of trouble condition.

Monitor Condition: The Monitor LED (yellow) turns on, the display shows monitor conditions, and the internal buzzer pulses during a non-fire alarm condition.

To view other monitor conditions: Press the MONTR review switch (down arrow).
To clear system: The system automatically clears itself upon restoration of monitor condition.

Fire Drill: Notify the fire department before you run the test. All audible and visual notification appliances will operate during a drill.

To drill all notification appliances: Press the Drill switch.
To end the drill: Press the Drill switch a second time, or press Alarm Silence.

Microphone Operation:

To page the fire area:

1 Pick up the microphone handset.
2 Press the Page-to-Evac switch.
3 Press the Push-to-Talk (PTT) switch on the microphone.
4 When the pre-announcement tone ends, speak into the microphone.

To page the alert area:

1 Pick up the microphone handset.
2 Press Page-to-Alert switch.
3 Press the PTT switch on the microphone.
4 When the pre-announcement tone ends, speak.

Telephone Operation: The buzzer indicates an incoming call.

To respond to an incoming call:
1 Pick up the telephone handset.
2 Press the Silence Call-In switch.
3 Select the incoming phone circuit on the LED/Switch module.
4 Communicate with the calling party.

To page by phone:

1 Pick up the telephone handset.
2 Press the Phone-to-Evac (or Alert) switch.
3 When the pre-announcement tone ends, speak.

Frame these instructions and mount them next to the emergency communications panel. For additional information, see the *System Operations Manual*.

STDOP008.CDR

Per NFPA Standard:

☐ 72, Ch 3 - Local
☐ 72, Ch 4 - Auxiliary
☐ 72, Ch 4 - Remote Sta.
☐ 72, Ch 4 - Proprietary
☐ 72, Ch 4 - Central Sta.

Dated: _____

For Service Contact:

_____
_____
_____

Inspected By:

_____
_____
_____

Date: _____

Power Supply:

Primary _____
Location _____
Fuses _____
Secondary _____
Type _____
Specs. _____

Figure A-2: Emergency communications operating instructions

Index

POWER BOOSTER

Remote Booster Power
Supply Manual

P/N 3100485 • Rev 1.0 • 09JUN04

DOCUMENT HISTORY

Date	Revision	Reason for change
JUN04	1.0	Initial release

Content

Introduction

This installation manual is intended for use by installers and field technicians. It provides installation procedures, wiring diagrams, DIP switch setting options, etc. required to install and set up the Remote Booster Power Supply (BPS).

Models covered

The following table lists the booster power supply models that are covered in this manual.

Catalog number	Description
BPS6A	6.5 A booster power supply
BPS6A/230	6.5 A booster power supply
BPS6CAA	6.5 A booster power supply
MIRBPS6A	6.5 A booster power supply
MIRBPS6A/230	6.5 A booster power supply
XLS-BPS6A	6.5 A booster power supply
XLS-BPS6A/230	6.5 A booster power supply
EBPS6A	6.5 A booster power supply
EBPS6A/230	6.5 A booster power supply
APS624	6.5 A booster power supply
ZBPS6A	6.5 A booster power supply
ZBPS6A/230	6.5 A booster power supply
BPS10A	10 A booster power supply
BPS10A/230	10 A booster power supply
BPS10CAA	10 A booster power supply
MIRBPS10A	10 A booster power supply
MIRBPS10A/230	10 A booster power supply
XLS-BPS10A	10 A booster power supply
XLS-BPS10A/230	10 A booster power supply
EBPS10A	10 A booster power supply
EBPS10A/230	10 A booster power supply
APS1024	10 A booster power supply
ZBPS10A	10 A booster power supply
ZBPS10A/230	10 A booster power supply

Compatibility

The input circuits of the booster power supply can be connected to 12 V or 24 V systems.

For details about device compatibility, refer to the *Remote Booster Power Supply ULI and ULC Compatibility List* (P/N 3100656).

Installation procedure checklist

Follow these steps to install and set up the booster power supply.

☐ **Unpack the equipment**

☐ **Review the "Getting started" section**

☐ **Review the applications:** Review the applications to determine how you want to use the booster power supply. See "Applications."

☐ **Prepare the site:** Make sure the installation location is free from construction dust and debris and extreme temperature ranges and humidity.

☐ **Install the enclosure:** See "Installing the enclosure" for enclosure dimensions.

☐ **Install Signature Series modules if required:** See "Installing Signature Series modules."

☐ **Set the jumpers:** See "Setting the jumpers."

☐ **Set the DIP switch options:** See "Setting the DIP switches."

☐ **Review wire routing:** See "Wire routing."

☐ **Connect the field wiring:** See "Connecting the field wiring."

Caution: Turn on AC power before connecting the batteries.

WARNING: Make sure that the AC power circuit breaker is off before connecting wires to the terminal block.

☐ **Install the 3-TAMP tamper switch (if being used):** See "Installing the 3-TAMP tamper switch."

☐ **Test for proper operation**

Getting started

Description

The 10 amp and 6.5 amp Remote Booster Power Supplies (BPS) are designed to extend the signaling capacity of a fire alarm, security, or access control system. The BPS can be connected to existing Class A or Class B notification appliance circuits (NACs) or activated via Signature Series modules. The BPS can either pass or generate synchronization signals for Genesis sync strobes. The BPS has four independent NAC/AUX circuits that are supervised when configured for NAC, plus a trouble relay.

Component descriptions
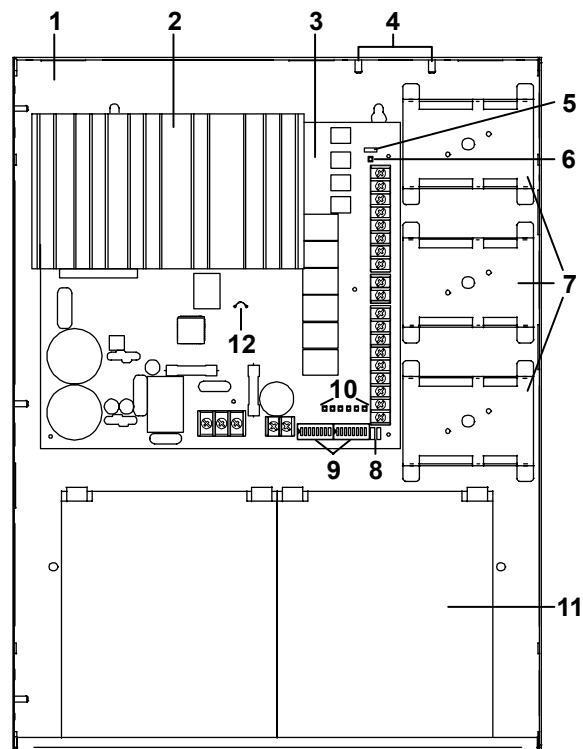
Component	Description
1	Enclosure: Houses the BPS electronics and two standby batteries up to 10 Ah each
2	Heat sink: Distributes heat away from the circuit board
3	Circuit board: Provides connections for all circuits
4	Tamper switch standoffs: 3-TAMP mounting standoffs

Component	Description
5	Jumper JP3: Ground fault enable or disable option
6	AC LED: AC power on
7	Mounting brackets: Signature Series module mounting brackets
8	Jumpers JP1 and JP2: Class A or Class B NAC option
9	DIP switches: Two eight-position DIP switches used for BPS configuration
10	Circuit LEDs: NAC, battery, and ground fault trouble LEDs
11	Batteries: Up to two 10 Ah batteries fit in the enclosure. For larger batteries, use an external battery cabinet (BC-1 or BC-2).
12	Jumper JP4: Battery charging jumper

Specifications

The following specifications apply to all booster power supply models.

AC line voltage	
6.5 amp BPS	120 Vac / 230 Vac (50/60 Hz) 250 watts
10 amp BPS	120 Vac / 230 Vac (50/60 Hz) 375 watts
Sense voltage (input)	6 to 45 Vdc 11 to 33 Vrms (FWR and unfiltered DC)
Sense current (input)	6 mA @ 24 Vdc, 3 mA @ 12 Vdc, 12 mA @ 45 Vdc 11 to 33 Vrms (FWR)
NAC/AUX output voltage	19.1 to 26.85 Vdc
NAC/AUX output current	3.0 A max. per circuit (10 A or 6.5 A max. total for all NACs) (8 A or 6.5 A max. total for all AUXs)
Wire size	18 to 12 AWG (0.75 to 2.5 sq mm)

NAC EOL	UL: 15 kΩ (P/N EOL-15)
	ULC: Use P/N EOL-P1 and select the 15 KΩ resistor
Auxiliary output (continuous)	1 dedicated 200 mA auxiliary output, not supervised by BPS, included in total current
Trouble relay	Form C, 1 A, 30 Vdc (resistive)
Battery requirements **Note:** The maximum battery size the panel can charge is 24 Ah (Portalac PE12-23 or equivalent) for fire and security applications.	6.5 to 24 Ah for fire and security applications (10 Ah max. in enclosure) -Under 10 Ah, cut JP4 -10 Ah or above, do not cut JP4
Battery charger current limit	1.2 A when the battery jumper wire is cut
	2.1 A when the battery jumper wire is *not* cut

Operating environment
    Operating temperature
    Operating humidity
	
	32 to 120 °F (0 to 49 °C)
	0 to 93% RH, noncondensing

LED indicators

The booster power supply has seven LED indicators. See "Component descriptions" for the location of the LEDs.

LED	Color	Description
AC	Green	AC power on
NAC1	Yellow	NAC1/AUX1 trouble
NAC2	Yellow	NAC2/AUX2 trouble
NAC3	Yellow	NAC3/AUX3 trouble
NAC4	Yellow	NAC4/AUX4 trouble
BAT	Yellow	Battery trouble
GND	Yellow	Ground fault

Installing the enclosure

When installing this system, be sure to follow all applicable national and local fire alarm codes and standards.

The enclosure can be surface mounted or semi-flush mounted. See "Enclosure dimensions" below for details.

To surface mount the enclosure:

1. Position the enclosure on the finished wall surface.

2. Fasten the enclosure to the wall surface where indicated.

3. Install all conduit and pull all wiring into the enclosure before proceeding.

To semi-flush mount the enclosure:

1. Frame the interior wall as required to support the full weight of the enclosure and standby batteries.

2. Fasten the enclosure to the framing studs where indicated.

3. Install all conduit and pull all wiring into the enclosure before proceeding.

Enclosure dimensions
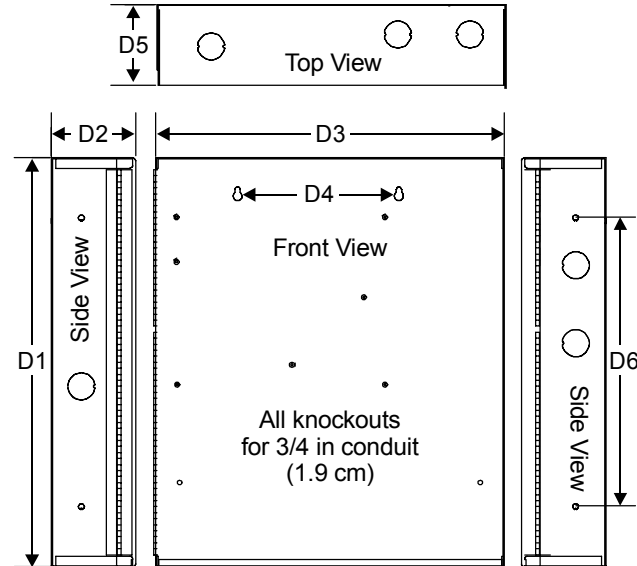
D1	D2	D3	D4	D5	D6
17.0 in (43.2 cm)	3.5 in (8.9 cm)	13.0 in (33.0 cm)	6.5 in (16.5 cm)	3.375 in (8.6 cm)	12.0 in (30.4 cm)

Installing Signature Series modules

Up to three Signature Series modules can be installed on mounting brackets in the enclosure. Depending on the Signature model, the device must be either screwed or snapped to the bracket.

To snap-mount Signature Series modules to a bracket:

Note: The first module you install must be installed in the top mounting bracket. The second module must be installed in the middle mounting bracket and the third module in the bottom bracket.

Note: Route the wiring around the perimeter of the enclosure, not across the circuit board.

1. Snap the module into a mounting bracket.

2. Connect all wiring. Refer to the module's installation sheet for wiring information or the *Signature Series Component Installation Manual* P/N 270497.
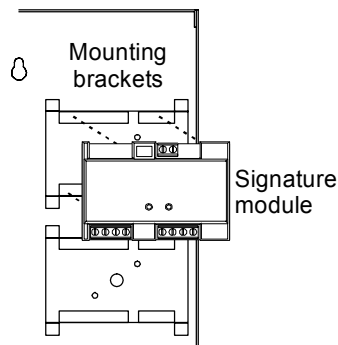
To screw-mount Signature Series modules to a bracket:

1. Remove the module's plastic cover.

2. Remove the circuit board from the plastic backing.

3. Screw the plastic backing to the mounting bracket using two #6, 1/4-inch, flat head sheet metal screws.
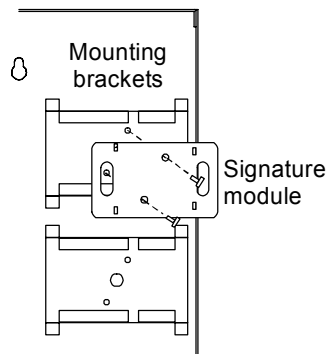
4. Insert the circuit board into the plastic backing.

5. Snap the module's plastic cover into place.

Note: Route the wiring around the perimeter of the enclosure, not across the circuit board.

6. Connect all wiring. Refer to the module's installation sheet for wiring information or the *Signature Series Component Installation Manual* P/N 270497.

Setting the jumpers

There are four jumpers on the booster power supply. See "Component descriptions" for the location of the jumpers.

NAC Class A or Class B (JP1 and JP2)

JP1 and JP2 are used to select a Class A, Style Z or Class B, Style Y NAC wiring configuration for all NACs. The default is Class B.

Note: JP1 and JP2 must be positioned to match the SW2-8 DIP switch selection (Class A or Class B).
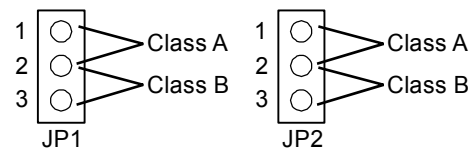
Ground fault enable (JP3)

JP3 is used to set the NAC/AUX circuits for ground fault enabled or disabled operation. The sense inputs are always isolated from local power.

Enabled: Allows the BPS to perform its own ground fault checking. This is the default position.

Disabled: Removes the ability of the BPS to detect ground faults. It also isolates the BPS from earth ground, which allows the control panel to do the ground fault checking.

Notes

- NAC circuit ground fault detection is required for all fire and security applications. It is recommended that systems, which are set with ground fault disabled, be tested after installation.

- Only disable the BPS's ground fault detection if the host panel is detecting BPS ground faults.
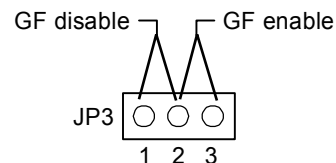
Battery charging (JP4)

The battery charging jumper is a small wire that controls how the batteries are charged. Battery size determines whether you must cut the jumper wire or leave it intact.

Cut the jumper wire when using batteries *under 10 Ah*.

Do not cut the jumper wire when using batteries *10 Ah or over*.

Setting the DIP switches

Two eight-position DIP switches are used to configure the booster power supply. The following sections show the positions for each DIP switch for the various input and output configurations.

Note: From the factory, all switches are in the "off" position.
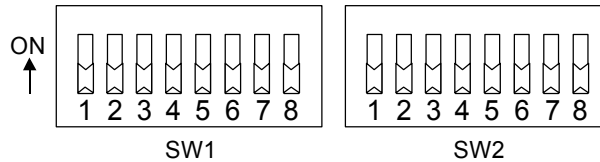
Sense 1 and 2 operation (SW1-1 to 3)

Switches SW1-1, -2, and -3 control Sense 1 and 2 operation.

	Switch setting		
Operating mode	**SW1-1**	**SW1-2**	**SW1-3**
Correlate mode [1]	OFF	–	–
Genesis Master mode [1]	ON	OFF	ON
[1] See the descriptions below for operation details			

Correlate mode

In correlate mode, switches SW1-2 and SW1-3 control which NACs activate when the sense circuits activate. The correlations do not affect output circuits that are operating as AUX circuits.

The following table details which NACs activate when the sense circuits activate.

Switch settings		Sense circuit to NAC correlations			
		Class B		Class A	
SW1-2	SW1-3	Sense 1	Sense 2	Sense 1	Sense 2
OFF	OFF	1, 2, 3, 4	1, 2, 3, 4	1/2, 3/4	1/2, 3/4
OFF	ON	1	2, 3, 4	1/2	3/4
ON	OFF	1, 2	3, 4	–	–
ON	ON	1, 2, 3	4	–	–

Genesis Master mode

In Genesis Master mode, Sense 1 is connected to a visible zone and Sense 2 is connected to an audible zone. All NACs are activated when Sense 1 activates. Continuous NACs generate Genesis audible on/off signals based on the Sense 2 input circuit.

Audible synchronization control (SW1-4)

Switch SW1-4 controls the synchronization of the audible signals with either one- or four-second delay times.

Switch setting	Operation description
ON	NACs turn on 4 seconds after the sense input is activated (e.g. Genesis NACs sync with the second round of the temporal signal)
OFF	NACs turn on 1 second after the sense input is activated (e.g. the Genesis NACs sync with the second flash of the Genesis strobes)

NAC circuit operation (SW1-5 to 8 and SW2-1 to 4)

Switch SW1-5 to 8 and SW2-1 to 4 control NAC operation.

	NAC1		NAC2		NAC3		NAC4	
Operating mode	**SW1-5**	**SW1-6**	**SW1-7**	**SW1-8**	**SW2-1**	**SW2-2**	**SW2-3**	**SW2-4**
Sense Follow [1]	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Continuous [1]	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Temporal or California [1] [2]	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Auxiliary [1]	ON	ON	ON	ON	ON	ON	ON	ON

[1] See the descriptions below for operation details
[2] California operation is *only* available in BPS models BPS6CAA and BPS10CAA

Sense follow mode

In sense follow mode, NACs are activated following the sense circuits that are defined to turn on the NACs. The NACs turn on with a one- or four-second delay to allow Genesis strobes to synchronize on the NAC side and sense side. In this mode, a continuous input, 120 ppm, temporal, or coded input can be used.

Note: Sense follow must be used when the sense circuit is connected to a SIGA-CC1S, Genesis G1M-RM, FireShield panel, or a booster power supply generating Genesis sync pulses.

Continuous mode

In continuous mode, NACs are activated following the sense circuits in continuous mode. They activate one or four seconds after the sense input activates and restore seven seconds after the sense input restores.

Temporal mode

In temporal mode, NACs are activated following the sense circuits in continuous mode. They activate one or four seconds after the sense input activates and restore seven seconds after the sense input restores. NACs generate temporal output as defined by NFPA.

California mode

In california mode, NACs generate the California output: 10 seconds of 120 ppm followed by five seconds off.

Auxiliary

In auxiliary mode, NACs turn on during power up. Sync pulses are not generated. Aux circuits can be configured to stay active during a power fail or load shed on a power fail (after a 30 second delay). Aux circuits are load shed when the system reaches low battery to prevent deep discharge of the batteries.

Genesis mode for continuous NACs (SW2-5)

Switch SW2-5 controls NAC operation for Genesis synchronization in continuous mode.

Switch setting	Operation description
ON	Continuous NACs are Genesis strobe or horn/strobe circuits. Continuous NACs generate a Genesis sync pulse. In Genesis Master mode, continuous NACs generate Genesis audible on/off signals based on the Sense 2 input circuit.
OFF	Continuous NACs do not generate Genesis signaling pulses

AC power loss reporting (SW2-6)

Switch SW2-6 controls when a report is sent to the system for an AC power loss.

Switch setting	Operation description
ON	AC power loss reporting delay is six hours
OFF	AC power loss is reported within 20 seconds

Auxiliary control during AC power loss (SW2-7)

Switch SW2-7 controls auxiliary outputs during AC loss.

Note: The 200 mA continuous AUX circuit is not affected by AC power loss.

Switch setting	Operation description
ON	Auxiliary outputs turn off 30 seconds after power fail
OFF	Auxiliary outputs stay on after AC power fail until the battery is less than 18.4 Vdc

Class A or B NAC configuration (SW2-8)

Switch SW2-8 controls NAC Class A or B operation for all NACs.

Note: Jumpers JP1 and JP2 must be set to match the operation of this switch.

Switch setting	Operation description
ON	Class A NACs
OFF	Class B NACs

Wire routing

To avoid noise, separate high current input or output wiring from low current wiring. Separate power-limited from nonpower-limited wiring.

Wiring within the enclosure should be routed around the perimeter of the enclosure, not across the circuit board.
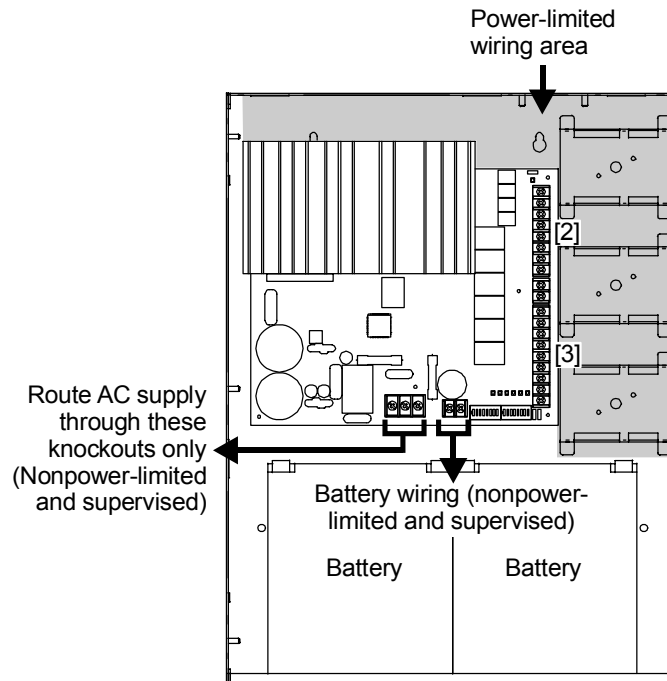
Notes

1. Maintain 1/4-inch (6 mm) spacing between power-limited and nonpower-limited wiring or use type FPL, FPLR, or FPLP cable per NEC.

[2] Power-limited and supervised when not configured as auxiliary power. Non-supervised when configured as auxiliary power.

[3] Source must be power-limited. Source determines supervision.

4. When using larger batteries, make sure to position the battery terminals towards the door.

Connecting the field wiring

AC power wiring

To 120 Vac 50/60 Hz
branch circuit
or
230 Vac 50/60 Hz
branch circuit
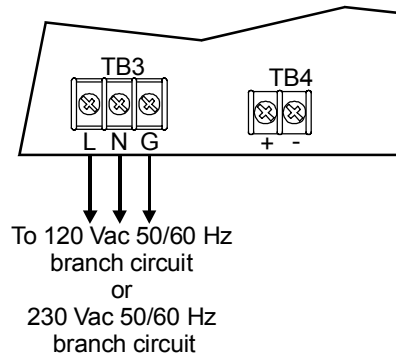
Battery wiring

Two backup batteries are required with the booster power supply. The largest batteries that fit in the BPS's enclosure are 10 Ah. Batteries larger than 10 Ah must be installed in a BC-1 or BC-2 battery cabinet.

Caution: For proper battery charging, the battery charging jumper wire (JP4) must be set according to the battery size you are using. Refer to "Setting the jumpers" for details about jumper JP4.

Notes

- Batteries should be replaced every five years

- Refer to local and national codes for battery maintenance requirements
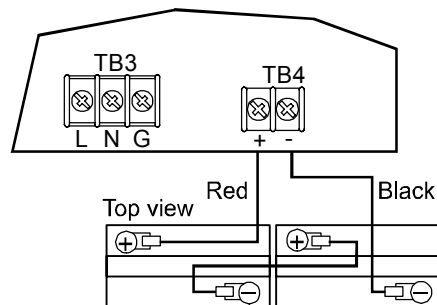
NAC Class B wiring

Connect a single NAC circuit to one NAC output. Terminate the circuit with a 15 kΩ EOL resistor.

NAC wiring notes:

1. A trouble on the BPS is sensed on the existing control panel's NAC circuit causing a NAC trouble on that panel. This removes the need to separately monitor the trouble contact.

   In an alarm condition, the BPS allows NAC current to move downstream to devices connected to the existing control panel's NAC circuit.

2. Refer to the connected control panel's documentation for more details on NAC wiring.
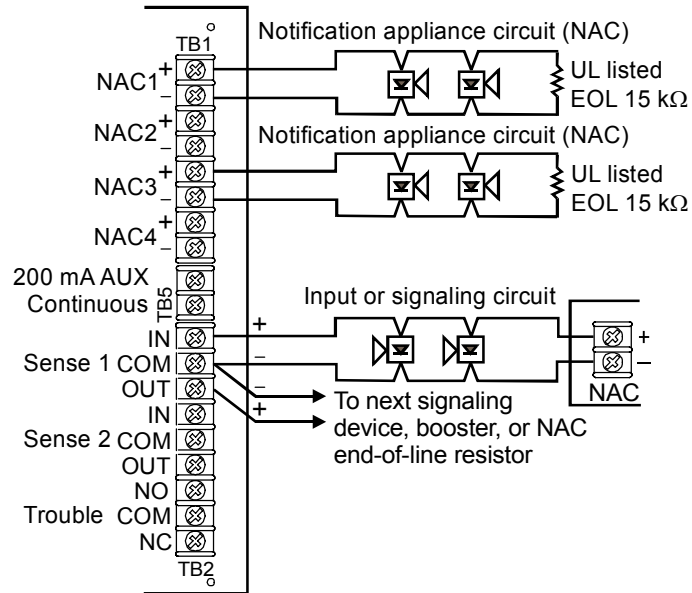
NAC Class A wiring

Connect one NAC circuit to one NAC output, either NAC1 or NAC3. Terminate the circuit at the NAC2 or NAC4 terminal screw, respectively.
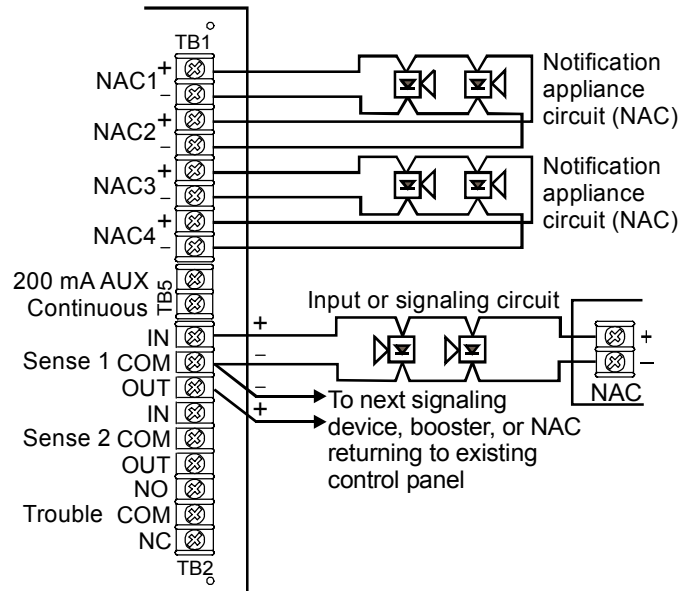
AUX power wiring

Dedicated AUX power

TB5 + —— AUX power
    − —— 200 mA continuous
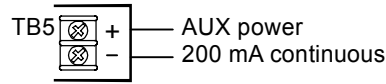
NAC configured as AUX power

Each NAC can be configured through a DIP switch for use as AUX power. A DIP switch also controls AUX operation in AC power loss. See "Setting the DIP switches" for details.

This auxiliary configuration is compatible with fire alarm, security, and access control applications, which can be combined in a single system, if all of the devices are listed.

Note: When a NAC is configured as an AUX power circuit, a UL listed EOL relay (P/N RELA-EOL) is recommended for supervision of the circuit.

TB1
NAC1/ +
AUX1 − → To auxiliary device
NAC2/ +
AUX2 −
NAC3/ +
AUX3 −
NAC4/ +
AUX4 −
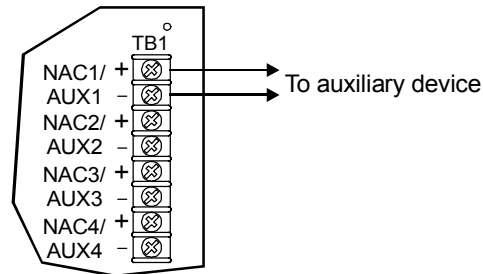
Trouble relay wiring

The booster power supply has a Form C trouble relay that provides a normally open and normally closed contact. The trouble relay deactivates under any trouble condition. A delay (controlled by DIP switch SW2-6) is used on the trouble relay for AC fail and brownout troubles.

NC COM NO OUTCOM SEN
TROUBLE → To booster trouble
              monitoring device
TB2
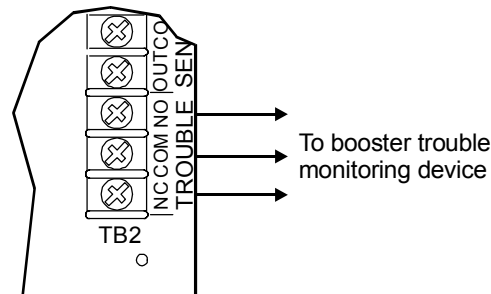
Sense circuit wiring

The booster power supply has two sense circuits Class B, Style A (Sense 1 and Sense 2). The sense circuits are used to wire signaling devices from existing NAC circuits, such as a NAC circuit from a control panel. Sense circuit operation is controlled by the BPS's DIP switches.

Note: Any BPS trouble opens the sense circuit, which sends a trouble event message to the control panel, indicating that a trouble exists on that circuit.
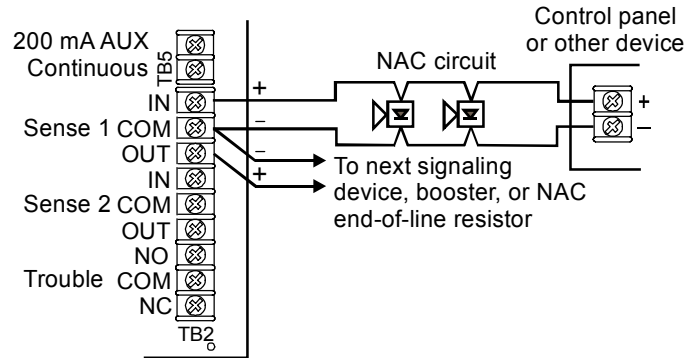
Tests for grounds, opens, and shorts

The following are testing procedures for ground fault, open circuit, and short circuit indications.

Ground fault test: Directly short one leg of the circuit to chassis ground. The ground fault and trouble fault LEDs must light.

NAC open circuit test: Remove the EOL resistor from the last device on the circuit. The trouble LED must light.

NAC short circuit test: Place a short across each NAC output individually. The individual NAC LED must light.

AUX power short circuit test: Place a short across each of the +24 V and -24 V circuits at the panel. The individual AUX LED must light.

NAC wiring using CC1(S) modules

The following wiring diagrams show Signature Series CC1(S) module connections. However, other Signature Series signal modules can be used.

Single CC1(S) using the BPS's 200 mA AUX Continuous circuit
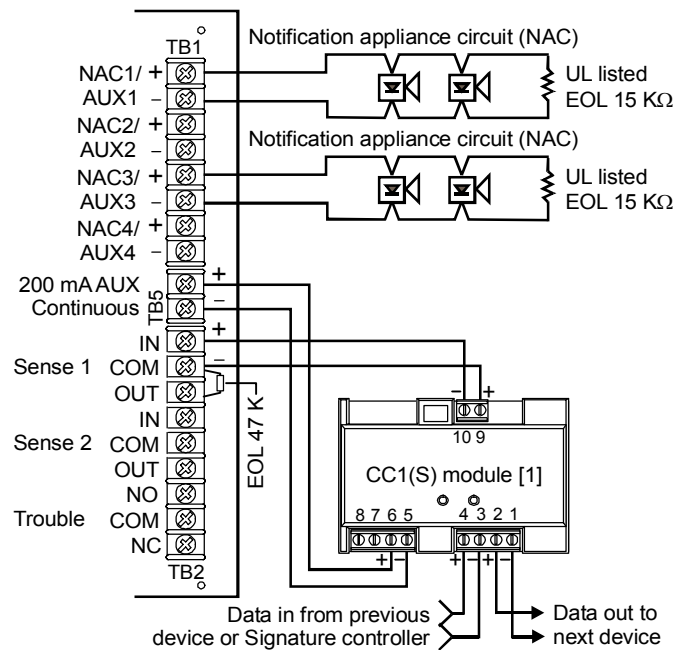
Notes

[1] CC1(S) wiring must be within three feet of the BPS enclosure and in conduit or mounted within the BPS's enclosure. If CC1(S) wiring is more than three feet from a BPS enclosure, then a separate listed EOL relay (P/N RELA-EOL) or equivalent must be used to supervise the 200 mA AUX circuit wiring.

2. Any BPS trouble causes the CC1(S) supervision to report a trouble to the main control panel

Multiple CC1(S) modules using the BPS's sense inputs
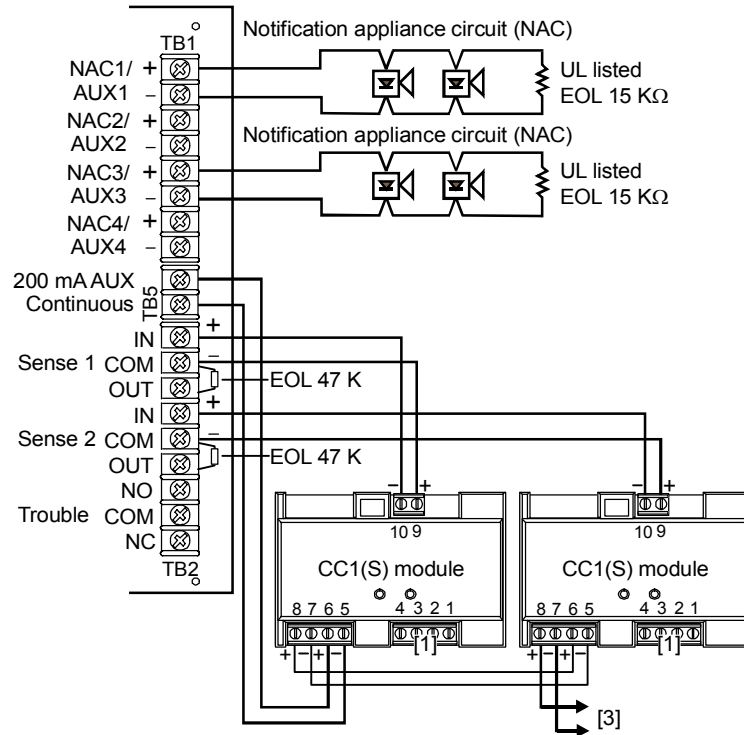
Notes

[1] Modules must be wired and programmed on the Signature controller for proper operation

2. Any BPS trouble causes the CC1(S) supervision to report a trouble to the main control panel

[3] CC1(S) wiring must be within three feet of the BPS enclosure and in conduit or mounted within the BPS's enclosure. If CC1(S) wiring is more than three feet from a BPS enclosure, then a separate listed EOL relay (P/N RELA-EOL) or equivalent must be used to supervise the 200 mA AUX circuit wiring.

Multiple CC1(S) modules using one of the BPS's NAC/AUX circuits

Notes

[1] When a BPS output is programmed as an AUX output, a listed EOL relay (P/N RELA-EOL) or equivalent must be used to supervise the AUX output

[2] When a BPS output is programmed as an NAC output, a 15 kΩ EOL resistor must be used for supervision
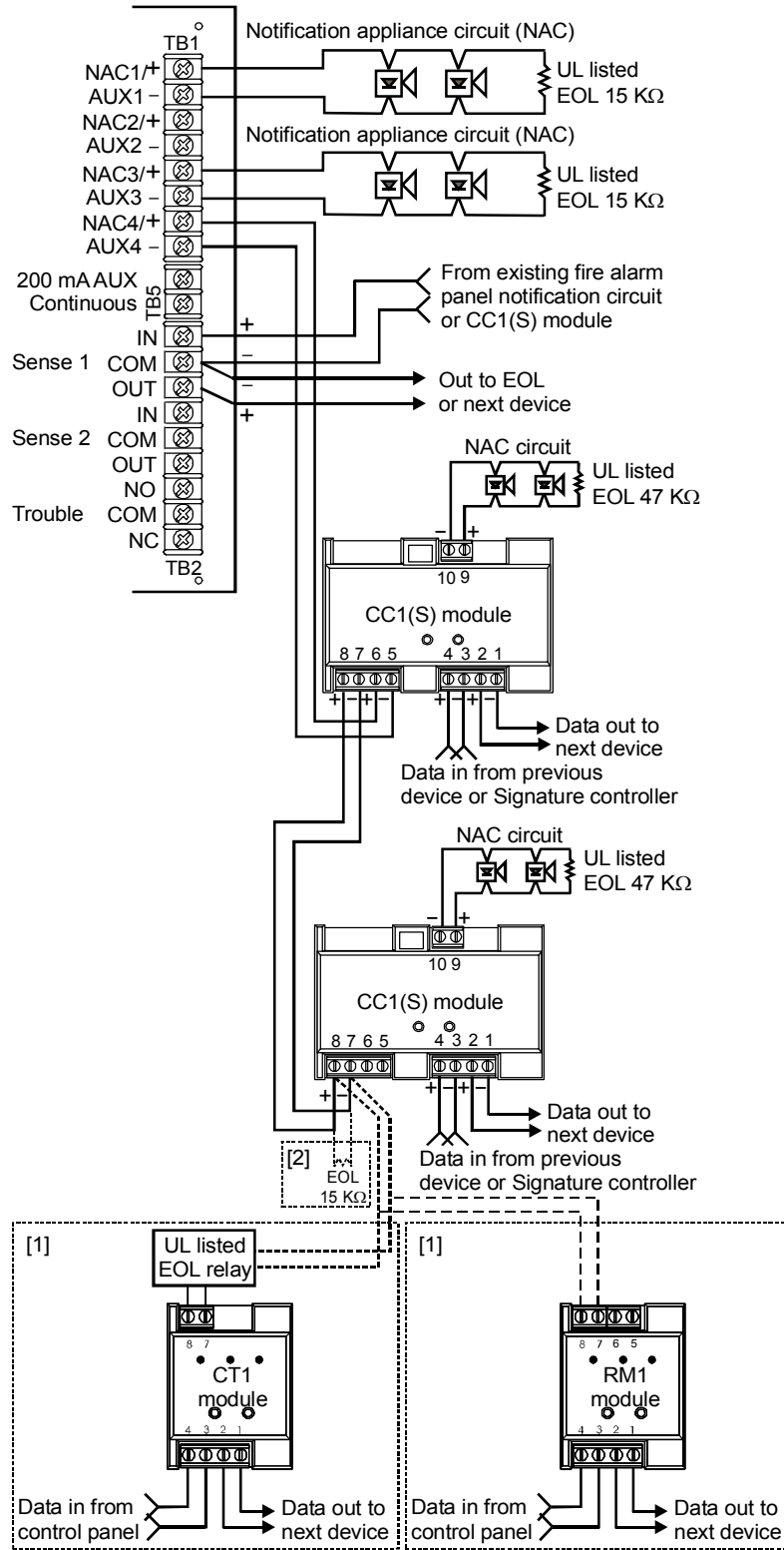
Installing the 3-TAMP tamper switch

The 3-TAMP tamper switch is used to detect an open enclosure door for security purposes.

Note: The 3-TAMP tamper switch *must* be used for security applications and connected to a SIGA-SEC2 module mounted in the enclosure.

To install the tamper switch:

1. Install an EOL resistor on the 3-TAMP. Refer to the *3-TAMP Installation Sheet* (P/N 387422) for more information.

2. Position the tamper switch over the mounting standoffs. See the diagram below.

3. Use the two locking nuts provided to secure the tamper switch. See the diagram below.

4. Connect all wiring to the tamper switch. Refer to the *3-TAMP Installation Sheet* (P/N 387422) for details on wiring the tamper switch.
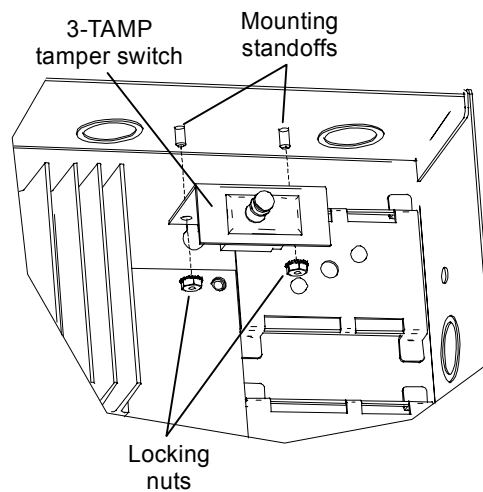
Battery calculation worksheet

Supervisory (AUX1, AUX2, AUX3, AUX4)
Note: Only add auxiliary current if SW2-7 is OFF. Auxiliary output stays on after AC power failure.

Device type	Quantity	Current (mA)	Total/device	
Number of circuits set to AUX		35 mA (per AUX circuit)		
Total AUX current (0 if switch SW2-7 is off):				mA (A)
Total supervisory current is limited to 8 amps.				

200 mA AUX

Device type	Quantity	Current (mA)	Total/device	
Total 200 mA AUX current:				mA (B)

Rated base BPS supervisory current:	70 mA (C)
Total supervisory current (A + B + C):	mA (D)
Hours of supervisory:	Hrs (E)
Supervisory mAh required (D x E):	mAh (F)

Alarm (NAC1, NAC2, NAC3, NAC4)

Device type	Quantity	Current (mA)	Total/device	
Total NAC current:				mA (G)

Rated base BPS alarm current:	270 mA (H)
Total alarm current (D + G + H):	mA (J)
Minutes of alarm:	Min (K)
Hours of alarm (K/60):	Hr (L)
Alarm mAh required (J x L):	mAh (M)

Total battery mAh required (M + F):	mAh (N)
Total battery Ah required (N/1000):	Ah (O)
Supervisory battery current (D/1000):	A (P)

To use the load current table below: First, select the column where the load is greater than or equal to (P). Second, select the row from that column where the capacity is greater than or equal to (O). Third, select the corresponding battery size.

Battery size	Load current (amps)													
	0.2	0.4	0.6	0.8	1	2	3	4	5	6	7	8	9	10
6.5 Ahr	5.4	5.3	5.2	5	4.8	4.3	3.9	3.6	3.3	3	2.8	2.6	2.5	2.3
10 Ahr	8.3	8.3	8.1	7.9	7.7	7.1	6.6	6.2	5.8	5.5	5.2	5	4.7	4.5
17 Ahr	14.1	14.1	14.1	14.1	13.5	12.8	12.3	11.8	11.3	10.9	10.5	10.1	9.8	9.5
24 Ahr	20	20	20	20	20	18.7	18.1	17.5	17	16.5	16	15.6	15.2	14.8
40 Ahr [1]	33	33	33	33	33	33	32	31	30	29	28.5	28	27.5	27
50 Ahr [1]	42	42	42	42	42	42	41	40	39	38	37	36.5	36	35.5
55 Ahr [1]	46	46	46	46	46	46	45	44	43	42	41	40.5	40	39.5
65 Ahr [1]	54	54	54	54	54	54	54	53	52	51	50	49	48.5	48

[1] Not for use on fire and security applications.

24 Vdc notification appliance circuit specifications

Note: T-tapping is not permitted.

The NAC cable must be a minimum 18 AWG. Distance limits are determined using the maximum allowable circuit resistance and cable manufacturer's specifications. Restrictions apply when calculating the wire size for the NACs:

- Minimum supply voltage available is 18.6 V
- Minimum required circuit voltage at any NAC is 16 Vdc
- Maximum alarm current required for all NACs

Using Ohm's law, the NAC current requirement, and a voltage drop of 2.6 volts (18.6 - 16), the maximum allowable NAC resistance is determined as follows:

Typical cable pair resistances

Wire size	Resistance per 1,000 feet
12 AWG	3.5 Ω
14 AWG	5.2 Ω
16 AWG	8.0 Ω
18 AWG	13.0 Ω

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

R_{max} = Maximum allowable NAC resistance
I_{max} = Maximum NAC current requirement
V_{drop} = Maximum allowable voltage drop from power supply to NAC

Using this formula, the maximum permissible circuit resistance for a loaded (2.5 A) circuit is 1.16 Ω as follows:

$$1.16\ \Omega = \frac{2.6\ V}{2.5\ A}$$

Using the load vs. distance table below, the maximum allowable length (D) of any listed wire gauge pair is determined as follows:

$$D = \frac{R_{max}}{R_{/1000'PAIR}} \times 1000$$

D = Distance in feet
R_{max} = Maximum allowable wire resistance
$R_{/1000'\ PAIR}$ = wire resistance per 1000 ft pair

Using this formula, the maximum length of a loaded (2.5 A) NAC using a pair of 14 AWG wires is:

$$223\ ft = \frac{1.16}{5.2} \times 1000$$

223 feet is the maximum length of a loaded (2.5 A) NAC branch circuit using a pair of 14 AWG wires.

Quick reference table (load vs. distance NAC circuit (2.6 volt drop))

	Maximum distance to last appliance in feet and meters							
Load current	12 AWG		14 AWG		16 AWG		18 AWG	
	Feet	Meters	Feet	Meters	Feet	Meters	Feet	Meters
0.10	7429	2265	5000	1524	3250	991	2000	610
0.25	2971	906	2000	610	1300	396	800	244
0.50	1486	453	1000	305	650	198	400	122
0.75	990	302	667	203	433	132	267	81
1.00	743	226	500	152	325	99	200	61
1.50	495	151	333	102	217	66	133	41
2.00	371	113	250	76	163	50	100	30
2.50	297	91	200	61	130	40	80	24
3.00	248	75	167	51	108	33	67	20

Understanding BPS synchronization

When using Genesis devices, the activation of the visible and audible output circuits on the BPS are determined by how the BPSs are connected. No matter how BPSs are connected, their outputs are "in sync" but there is an output activation delay of either one or four seconds. This section details how BPS outputs work based on how they are connected.

Connection of booster power supplies

There are two ways to consecutively connect booster power supplies, series and parallel. How you connect your BPSs, affects the synchronization of your system's outputs.

Series connection: BPSs are connected using their NAC circuits. When connected via the NAC circuits, there is an output activation delay of either one or four seconds for each BPS. The activation of BPS 1's output is delayed by one second, BPS 2's output by two seconds, etc.

Notes (series connection)

- For ULI applications, a maximum of ten BPSs can be connected in series
- For ULC applications, a maximum of nine BPSs can be connected in series when SW1-4 is in the "off" position. A maximum of two BPSs can be connected in series when SW1-4 is in the "on" position.
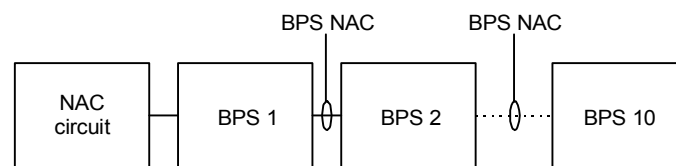
BPSs connected in series using the NAC circuits

Parallel connection: BPSs are connected using their sense circuits. When connected via the sense circuits, all BPS outputs have either a one or four second delay from the time the driver NAC turns on to the time the BPS NACs turn on.

Notes (parallel connection)

- To ensure all BPSs are synchronized in a Genesis application, the driving NAC must provide the Genesis synchronization pulse. Therefore, the BPSs must not be set to Genesis mode.
- The quantity of BPSs that can be connected is limited by wire run length and available current
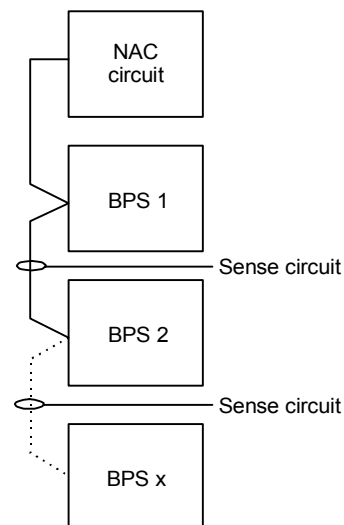
BPSs connected in parallel through the sense

Synchronization of visible outputs

Note: Due to the one-second delay, it is recommended that no more than nine BPSs be connected in series for ULC applications. Make sure you follow all local codes before using the one-second delay.

Sync diagrams key

● = Strobe flash

⎍⎍ = Audible tone

In Figure Sync1 below, each BPS's visible outputs activate with a one-second delay. As each BPS activates its visible output, it is delayed by one-second from the previous BPS's visible output activation (e.g. BPS 10's visible output turns on nine seconds after BPS 1's sense input turns on).

1 2 3 4 5 6 7 8 9 10 11 12 13

On
Sense
Off

Output booster 1

Output booster 2

Output booster 3

●
●
●

Output booster 9

Output booster 10
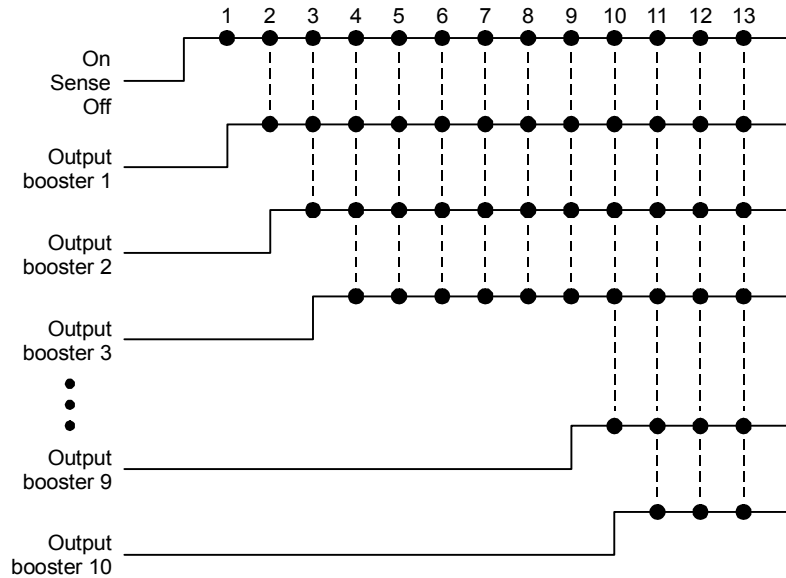
Sync1: Visible output synchronization with a one-second output activation delay when BPSs are connected in series through the BPS NACs

In Figure Sync2 below, all visible output circuits on each BPS activate with a one-second delay. This requires that the BPSs be connected in parallel through their sense circuits.

1 2 3 4 5 6 7 8 9 10 11 12 13

On
Sense
Off

Output booster 1

Output booster 2

Output booster 3

●
●
●

Up to output booster x
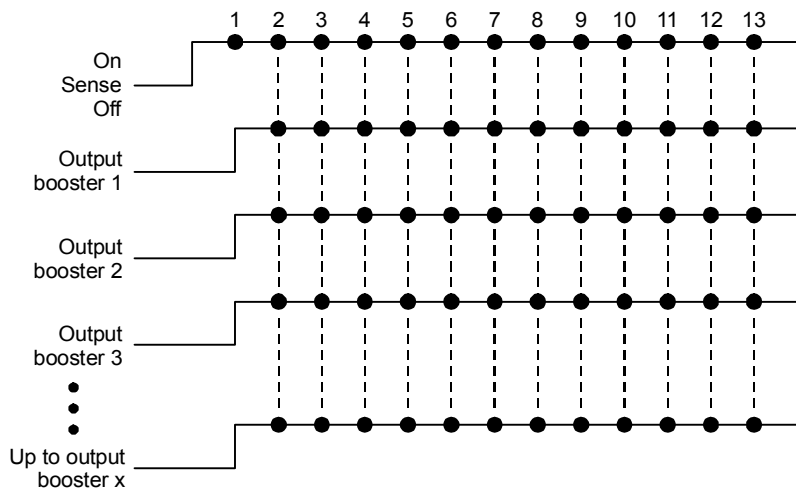
Sync2: Visible output synchronization with a one-second output activation delay when BPSs are connected in parallel through the BPS sense circuits

Synchronization of visible and audible outputs

One-second delay of outputs

Note: Due to the one-second delay, it is recommended that no more than nine BPSs be connected in series for ULC applications. Make sure you follow all local codes before using the one-second delay.

Note: Delay time is controlled by DIP switch SW1-4. See "Setting the DIP switches" for more information.

In Figure Sync3 below, all audibles and visibles turn on, but are delayed by one second from the previous BPS to ensure synchronization of strobes. When connected in series, BPS 10's outputs activate nine seconds after BPS 1's sense inputs activate.
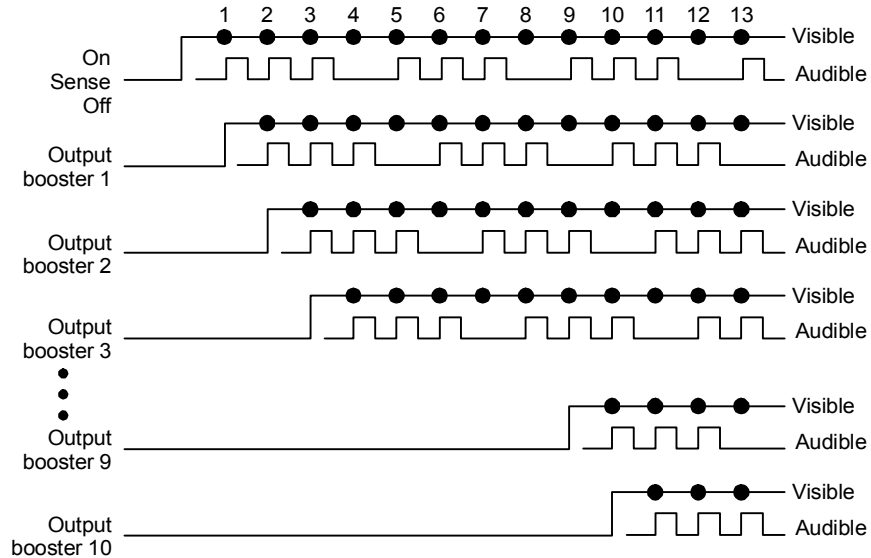
Sync3: Visible and audible output synchronization with a one-second output activation delay when BPSs are connected in series through the BPS NACs

In Figure Sync4 below, all visible and audible circuits are synchronized with a one-second output activation delay when the BPSs are connected in parallel through their sense circuits.

Sync4: Visible and audible output synchronization with a one-second output activation delay when BPSs are connected in parallel through the BPS sense circuits

Four-second delay of outputs (temporal setting)

In Figure Sync5 below, all audibles and visibles turn on with a four-second delay between activations. When connected in series, BPS 3's outputs turn on eight seconds after BPS 1's sense inputs turn on.

Note: A four-second delay must be used when using temporal horns to ensure proper synchronization.

Note: Due to the four-second delay, it is recommended that no more than two BPSs be connected in series for ULC applications. Be sure to follow all local codes before using the four-second delay.
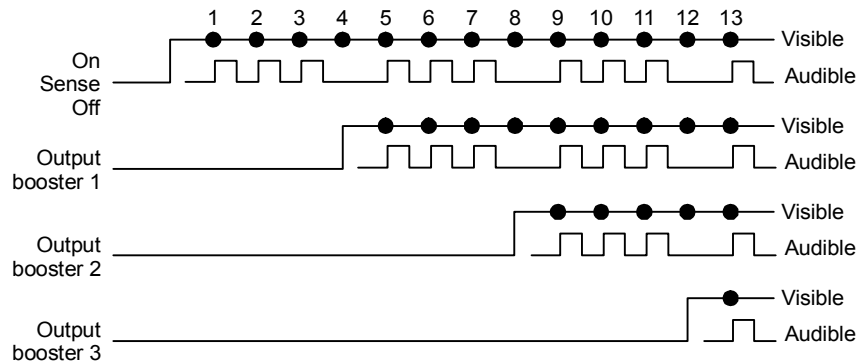
Sync5: Visible and audible output synchronization with a four-second output activation delay when three BPSs are connected in series through the BPS NACs

In Figure Sync6 below, all visible and audible circuits are synchronized with a four-second output activation delay when the BPSs are connected in parallel through their sense circuits.
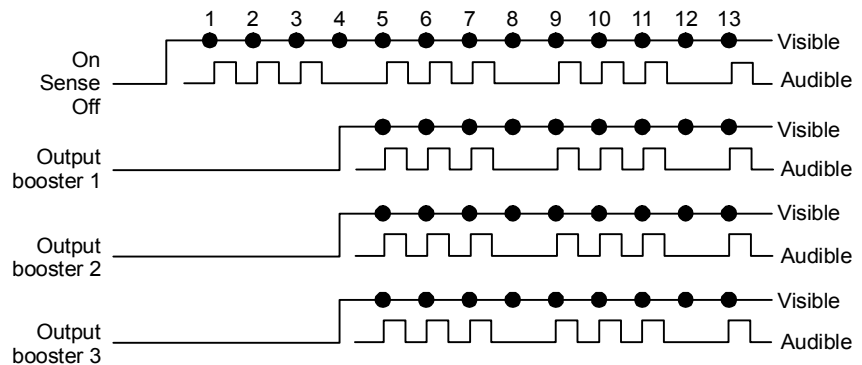
Sync6: Visible and audible output synchronization with a four-second output activation delay when three BPSs are connected in parallel through the BPS sense circuits

Applications

Disclaimer: The applications in this section are shown in general terms. It is the responsibility of the installer and designer to adhere to the local and national codes when applying and installing the booster power supply.

Key

The following symbols and notations are found on the application diagrams in this section.

Device labels

Symbol	Description
$\boxed{V}$	Visible device
$\boxed{A}$	Audible device
$\boxed{G}$	Genesis visible/audible device
$\boxed{V\!/\!A}$	Visible or audible device
G	Device generating the Genesis sync pulse **Note:** When this symbol appears on a booster power supply, the Genesis sync pulse is controlled by BPS DIP switch SW2-5.

Booster power supply modes (controlled by DIP switch)

Notation	Description
COR	Correlate mode
GM	Genesis Master mode

NAC settings (controlled by DIP switch)

Notation	Description
SF	Sense follow
CONT	Continuous
Temp/Cal	Temporal/California
AUX	Auxiliary

Genesis circuit notification

Notes

[1] Any BPS NAC circuit can be used to connect a booster power supply in series.

[2] The maximum number of booster power supplies that can be connected on a single NAC from sense circuit to sense circuit is limited by available current and wire run length

[3] To next device, booster power supply, or EOL resistor

[4] The activation of the output devices on this BPS will be delayed by one or four seconds from the previous BPS's output devices. This is controlled by a DIP switch. For more information, refer to "Understanding BPS synchronization" and "Setting the DIP switches."

DIP switch settings for this application

Each BPS DIP switch can be set this way for the application to work correctly. If other BPS options are required, refer to "Setting the DIP switches" for more information.

Conventional visible and audible circuit notification

[1] →

NAC visible circuit
NAC audible circuit

BPS
Sense1
Sense2
NAC1
NAC2
NAC3
NAC4
Mode: COR
NACs: SF

[3]

BPS
Sense1
Sense2
NAC1
NAC2
NAC3
NAC4
Mode: COR
NACs: SF

[3]

BPS
Sense1
Sense2
NAC1
NAC2
NAC3
NAC4
Mode: COR
NACs: SF

[3]

BPS
Sense1
Sense2
NAC1
NAC2
NAC3
NAC4
Mode: COR
NACs: SF

[3]

[2] [3]   [2] [3]

Notes

[1] Any BPS NAC circuit can be used to connect a booster power supply in series.

[2] The maximum number of booster power supplies that can be connected on a single NAC from sense circuit to sense circuit is limited by available current and wire run length

[3] To next device, booster power supply, or EOL resistor

DIP switch settings for this application

Each BPS DIP switch can be set this way for the application to work correctly. If other BPS options are required, refer to "Setting the DIP switches" for more information.

ON
1 2 3 4 5 6 7 8
SW1

1 2 3 4 5 6 7 8
SW2

Conventional visible and audible circuit to Genesis notification

Notes

[1] Any BPS NAC circuit can be used to connect a booster power supply in series.

[2] The maximum number of booster power supplies that can be connected on a single NAC from sense circuit to sense circuit is limited by available current and wire run length

[3] To next device, booster power supply, or EOL resistor

[4] The activation of the output devices on this BPS will be delayed by one or four seconds from the previous BPS's output devices. This is controlled by a DIP switch. For more information, refer to "Understanding BPS synchronization" and "Setting the DIP switches."

DIP switch settings for this application

BPS DIP switches can be set this way for the application to work correctly. If other BPS options are required, refer to "Setting the DIP switches" for more information.

BPS*

BPS**

Conventional audible or visible circuit to Genesis notification

Notes

[1] Any BPS NAC circuit can be used to connect booster power supplies in series.

[2] The maximum number of booster power supplies that can be connected on a single NAC from sense circuit to sense circuit is limited by available current and wire run length

[3] To next device, booster power supply, or EOL resistor

[4] The activation of the output devices on this BPS will be delayed by one or four seconds from the previous BPS's output devices. This is controlled by a DIP switch. For more information, refer to "Understanding BPS synchronization" and "Setting the DIP switches."

DIP switch settings for this application

BPS DIP switches can be set this way for the application to work correctly. If other BPS options are required, refer to "Setting the DIP switches" for more information.

BPS*

BPS**

Genesis visible circuit and conventional audible circuit to Genesis notification

Notes

[1] Any BPS NAC circuit can be used to connect booster power supplies in series.

[2] The maximum number of booster power supplies that can be connected on a single NAC from sense circuit to sense circuit is limited by available current and wire run length

[3] To next device, booster power supply, or EOL resistor
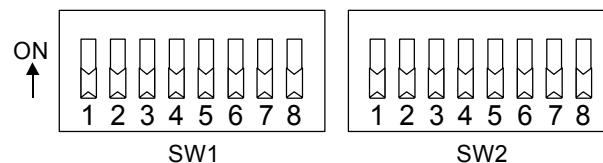
[4] The activation of the output devices on this BPS will be delayed by one or four seconds from the previous BPS's output devices. This is controlled by a DIP switch. For more information, refer to "Understanding BPS synchronization" and "Setting the DIP switches."

DIP switch settings for this application

BPS DIP switches can be set this way for the application to work correctly. If other BPS options are required, refer to "Setting the DIP switches" for more information.

BPS*

BPS**

Conventional split mode circuit with fault tolerance notification

Primary visible or audible circuit

[2] [3]

BPS
Sense1
Sense2
Mode: COR
NACs: SF

NAC1
NAC2
NAC3
NAC4

[3]

[1]

EOL

BPS
Sense1
Sense2
Mode: COR
NACs: SF
[4]

NAC1
NAC2
NAC3
NAC4

[3]

[2] [3]

Secondary visible or audible circuit

BPS
Sense1
Sense2
Mode: COR
NACs: SF

NAC1
NAC2
NAC3
NAC4

[3]

EOL

BPS
Sense1
Sense2
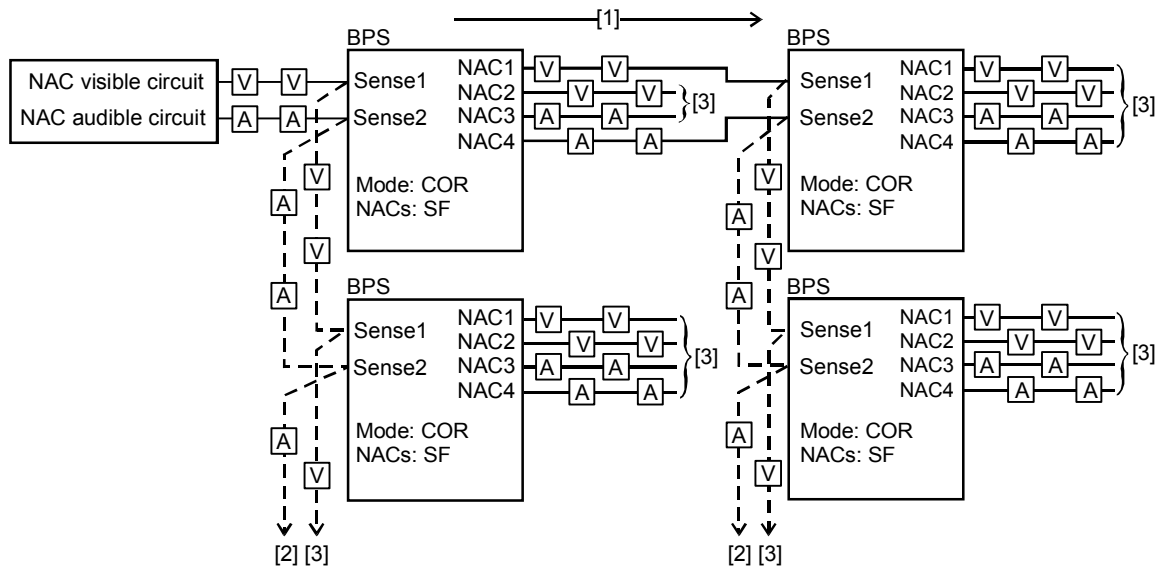Mode: COR
NACs: SF
[4]

NAC1
NAC2
NAC3
NAC4

[3]

Notes

[1] Any BPS NAC circuit can be used to connect booster power supplies in series.

[2] The maximum number of booster power supplies that can be connected on a single NAC from sense circuit to sense circuit is limited by available current and wire run length

[3] To next device, booster power supply, or EOL resistor

[4] The activation of the output devices on this BPS will be delayed by one or four seconds from the previous BPS's output devices. This is controlled by a DIP switch. For more information, refer to "Understanding BPS synchronization" and "Setting the DIP switches."

5. Fault tolerance can be increased by using Class A wiring

DIP switch settings for this application

Each BPS DIP switch can be set this way for the application to work correctly. If other BPS options are required, refer to "Setting the DIP switches" for more information.

ON

1 2 3 4 5 6 7 8   1 2 3 4 5 6 7 8

SW1   SW2

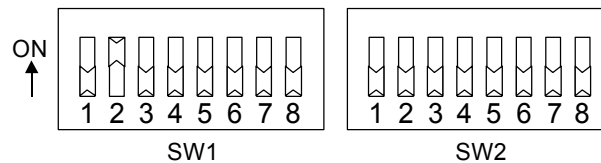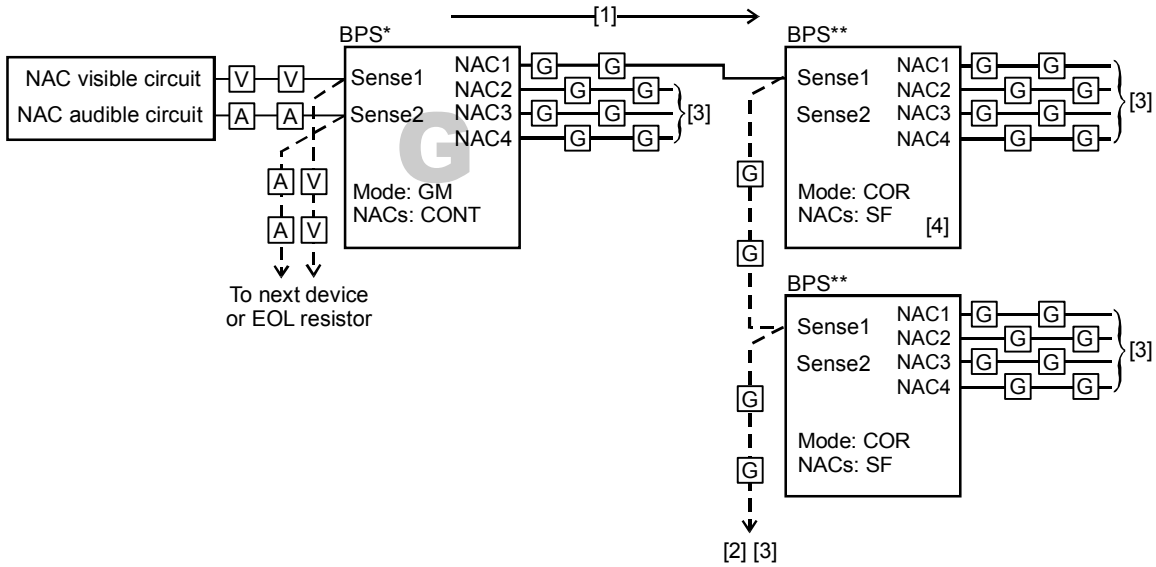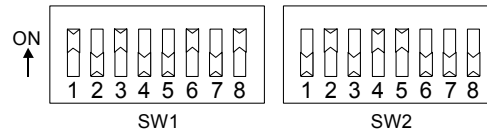## Genesis split mode circuit with fault tolerance notification

Notes

[1] Any BPS NAC circuit can be used to connect booster power supplies in series.

[2] The maximum number of booster power supplies that can be connected on a single NAC from sense circuit to sense circuit is limited by available current and wire run length

[3] To next device, booster power supply, or EOL resistor

[4] The activation of the output devices on this BPS will be delayed by one or four seconds from the previous BPS's output devices. This is controlled by a DIP switch. For more information, refer to "Understanding BPS synchronization" and "Setting the DIP switches."

5. Fault tolerance can be increased by using Class A wiring

DIP switch settings for this application

Each BPS DIP switch can be set this way for the application to work correctly. If other BPS options are required, refer to "Setting the DIP switches" for more information.

Security

In this application, 24 Vdc is converted to 12 Vdc for use with security devices.
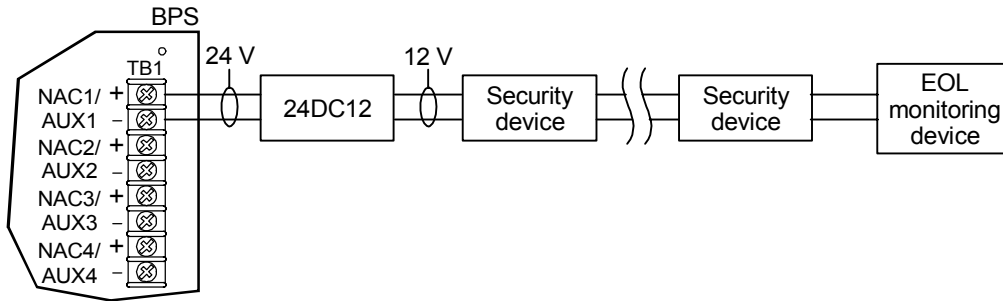
Note: NAC1 must be set for auxiliary. Any of the BPS NACs can be used in auxiliary mode for 12-volt security applications.
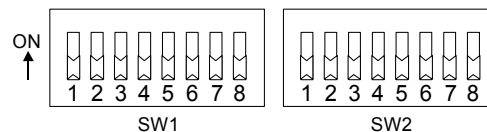
DIP switch settings for this application

The BPS DIP switch can be set this way for the application to work correctly. If other BPS options are required, refer to "Setting the DIP switches" for more information.
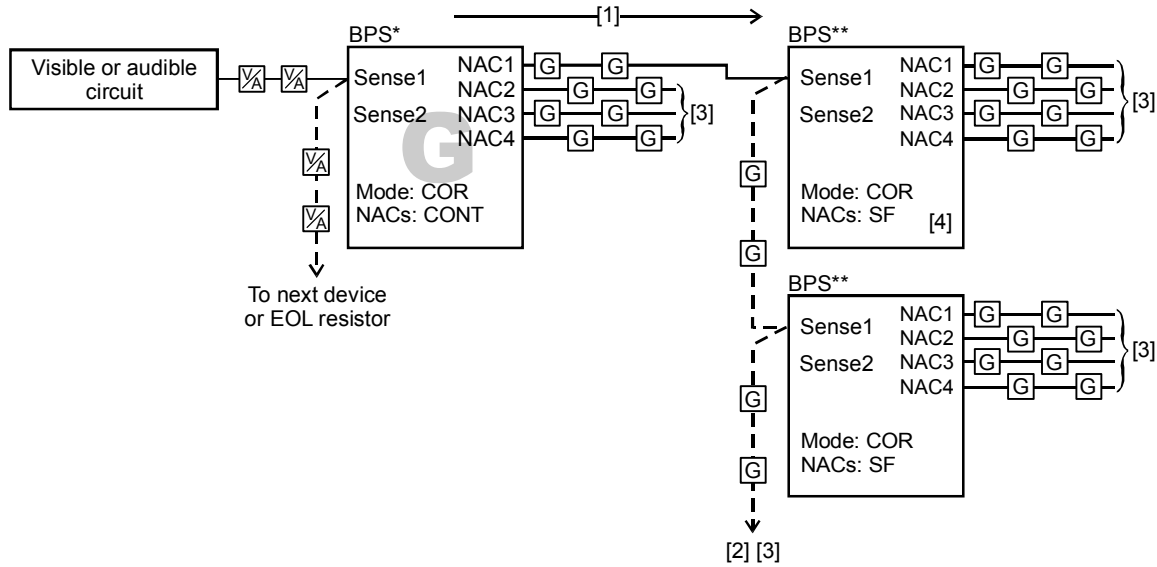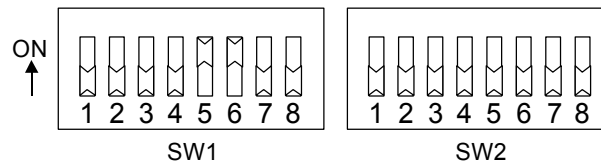

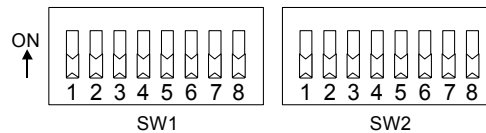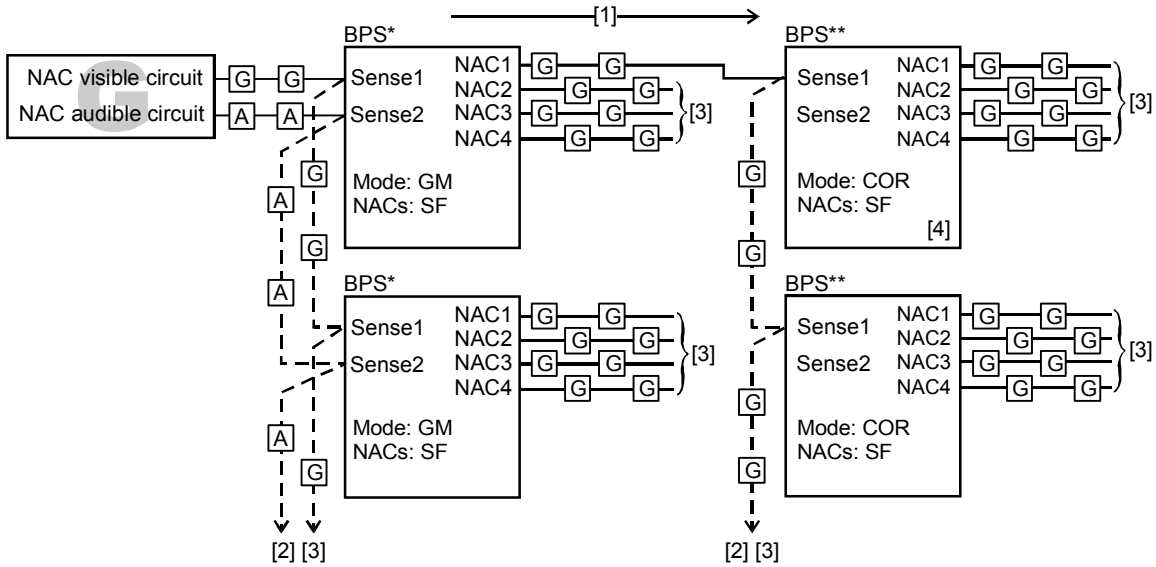## Access control power supply
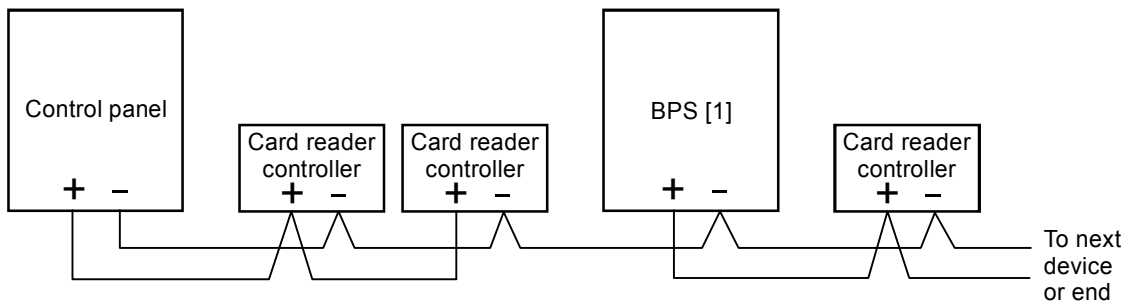
[1] Disable the BPS's ground fault jumper (JP3)

INITIATING DEVICES

SIGA2-PS Intelligent Photoelectric Smoke Detector Installation Sheet

Description

The Signature Series model SIGA2-PS Intelligent Photoelectric Smoke Detector is an intelligent device that uses an optical sensing chamber to detect smoke. The detector analyzes the sensor data to determine whether to initiate an alarm.

LED indicator: The LED indicator displays the following status:

- Normal: LED indicator flashes green
- Alarm/active: LED indicator flashes red
- Standalone alarm: LED indicator turns on

Figure 1: SIGA2-PS
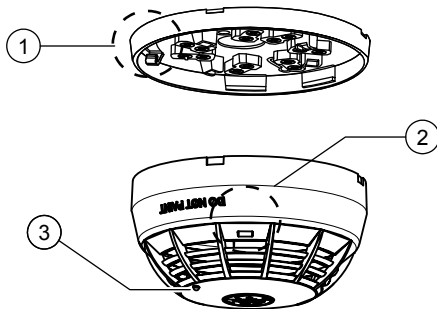
1. Tamper-resist lever arm on base (break off to disable)
2. Access slot for tamper-resist mechanism
3. LED indicator

Installation

WARNINGS

- This detector does not operate without electrical power. As fires frequently cause power interruption, discuss further safeguards with the local fire protection specialist.

- This detector does not sense fires in areas where smoke cannot reach the detector. Smoke from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector.

Notes

- Photoelectric detectors have a wide range of fire-sensing capabilities and are best suited for detecting slow, smoldering fires.

- To ensure proper operation, store the detector within the recommended ranges. Allow the detector to stabilize to room temperature before applying power.

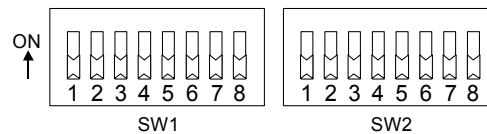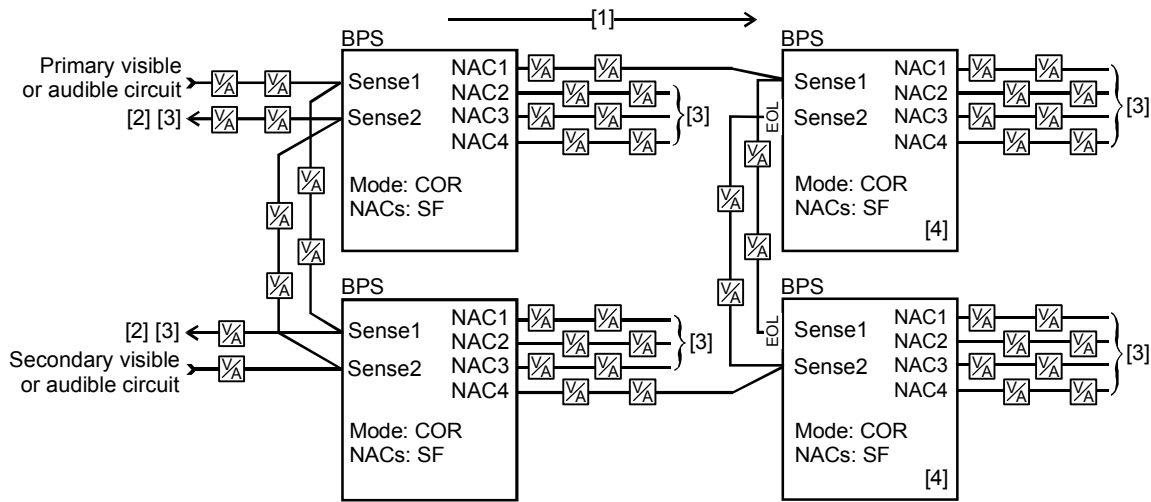- The dust cover (supplied) must remain on the detector during installation and be removed prior to commissioning and service. The dust cover is not a substitute for removing the detector during new construction or heavy remodeling.

- In Canada, install according to CAN/ULC-S524 *Standard for the Installation of Fire Alarm Systems,* and the local authority having jurisdiction.

- Upon completion of the original installation and following any modifications or additions to the system, perform a calibrated sensitivity test per NFPA code. The Signature Series devices can perform this test and the panel can generate a system sensitivity report.

- Where required, to permanently disable the tamper-resist mechanism prior to placing the detector in difficult to reach locations, break and remove the plastic lever arm from the base. See Figure 1, item 1.

To install the detector:

1. Install and wire the base, as described on the installation sheet supplied with the base.

2. Peel off the removable serial number label from the detector and apply it to the appropriate location in a serial number logbook.

3. Connect the detector to the base by rotating the detector clockwise until it snaps into the locked position.

Testing

Before testing, notify the proper authorities that the fire alarm system is undergoing maintenance and will be temporarily out of service.

To do an initial installation test:

1. Remove the detector from its base and verify that the proper detector address, trouble signals, and messages are reported.

2. For SIGA2-PS detectors placed in the air ducts, verify that the airflow is within specifications. See "Specifications" below.

3. If wired for Class A operation, verify that the detector continues to operate first with SLC_IN disconnected, and then with SLC_OUT disconnected. (Refer to the installation sheet for the base.)

4. Place a momentary ground fault on the SLC circuit to verify operation of ground fault detection circuitry.

5. Run a system detector sensitivity report on all detectors and verify that the readings fall within acceptable limits.

6. Perform a sensor function test.

To perform a sensor function test:

1. Activate the smoke sensor using No Climb Products model CHEK02-xxx [1] smoke aerosol spray, smoke generator, or the Testifire Multi-Stimulus Detector Tester per manufacturer's instructions. [2]

   [1] xxx indicates a variable related only to marketplace.
   [2] For more Testifire information, visit www.testifire.com.

Maintenance

To ensure proper operation, plan maintenance (regular or selected) in accordance with the requirements of the authority having jurisdiction. Refer to NFPA *72 National Fire Alarm and Signaling Code* and CAN/ULC-S536 *Standard for the Inspection and Testing of Fire Alarm Systems*.

Refer to Application Bulletin P/N 270145 for additional information and cleaning instructions.

Smoke chamber replacement

Replace the smoke chamber whenever cleaning the detector does not restore the panel to normal conditions. Replace with model number 2-SPRC1 using installation sheet P/N 3101860.

Specifications

Operating voltage	15.20 to 19.95 VDC
Current	
Normal operating	45 µA
Alarm	45 µA
Standalone alarm	18.6 mA
Air velocity	0 to 4,000 ft./min (0 to 20.32 m/s)
Construction	High impact engineering polymer
Wall mounting: distance from ceiling	12 in. (305 mm) max.
Shipping weight	0.44 lbs. (164 g)
Compatible bases	
Standard	SIGA-SB, SIGA-SBLP, SIGA-SB4
Relay	SIGA-RB, SIGA-RB4
Isolator	SIGA-IB, SIGA-IB4
Audible	SIGA-AB4, SIGA-AB4G
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Relative humidity	0 to 93% noncondensing
Storage temperature	−4 to 140°F (−20 to 60°C)
Environmental compensation	Automatic

Regulatory Information

Manufacturer	Edwards, A Division of UTC Fire & Security Americas Corporation, Inc. 8985 Town Center Parkway, Bradenton, FL 34202, USA
Year of manufacture	The first two digits of the date code (located on the product identification label) are the year of manufacture.
North American standards	UL 268, ULC S529
UL/ULC smoke sensitivity range	0.85 to 4.00%ft. obscuration
FCC compliance	This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Contact information

For contact information, see www.utcfireandsecurity.com.

WIRING DIAGRAMS

Standard Detector Base, SIGA-SB

Remote LED
(SIGA-LED)

Maximum
Resistance
per Wire
Must NOT
Exceed 10

−   +

DATA IN (-)

DATA IN (+)
From Signature Controller
or Previous Device

DATA OUT (-)

DATA OUT (+)
To Next Device
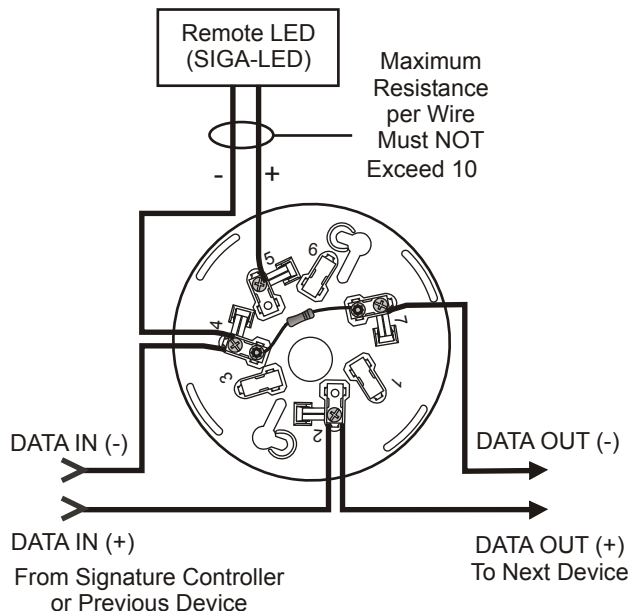
Term	Description
1	Not Used
2	DATA IN/OUT (+)
3	Not Used
4	DATA IN (-)
4	Remote LED
5	Remote LED
6	Not Used
7	DATA OUT (-)

SPECIFICATIONS

Operating Temperature Range	32 to 120°F (0 to 49°C)
Operating Humidity Range	0 to 93% RH
Storage Temperature Range	-4 to 140°F (-20 to 60°C)
Construction & Finish	High Impact Engineering Polymer, White
Compatible Detectors	Signature Series Detectors

Shipping Weight

SIGA-SB	2.9 oz (82 g)

Max. Distance From Ceiling   12 in (305 mm)
(for wall mounting)

Compatible Electrical Boxes
North American 1-Gang Box
3-1/2 in by 1-1/2 in (38 mm) Deep Octagon Box
4 in by 1-1/2 in (38 mm) Deep Octagon Box
European 1-Gang (75 mm) Box w/60.3 mm Fixing Centers
BESA Box

NOTES:

1) The SIGA-SB provides wiring terminals for connection to Remote LED, Model SIGA-LED.

2) These bases will accept 12, 14, 16, and 18 AWG (2.05 sq mm, 1.5 sq mm, 1.0 sq mm, and 0.75 sq mm) wire. Sizes 16 and 18 are preferred.

3) Write the address assigned to the detector on the label provided and apply the label to the inside rim of the base.

4) Break wire run at each terminal. Do not loop signaling circuit field wires around terminals.

SIGA-SB
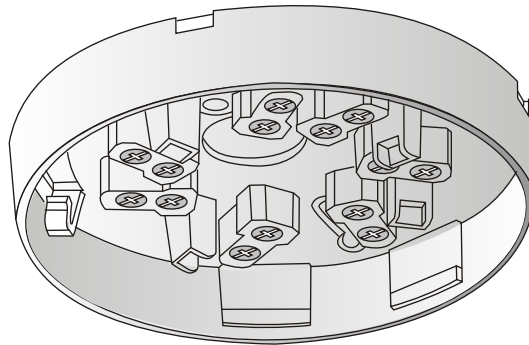
INSTALLATION SHEET

SIGA-SB
Detector Base

INSTALLATION SHEET P/N: 387019P	FILE NAME: 387019P.CDR
DATE: 01/18/99	
REVISION LEVEL: 8.0	
APPROVED BY: B. Right	
CREATED BY: C. Hanrahan	

7 93016 01977 6

GENERAL WIRING PRACTICES

Refer to compatible panel installation sheet for terminal assignments.

Standard Detector Base

Relay Detector Base

Isolator Detector Base

Insulate Shield/Drain with tape

Shield/Drain
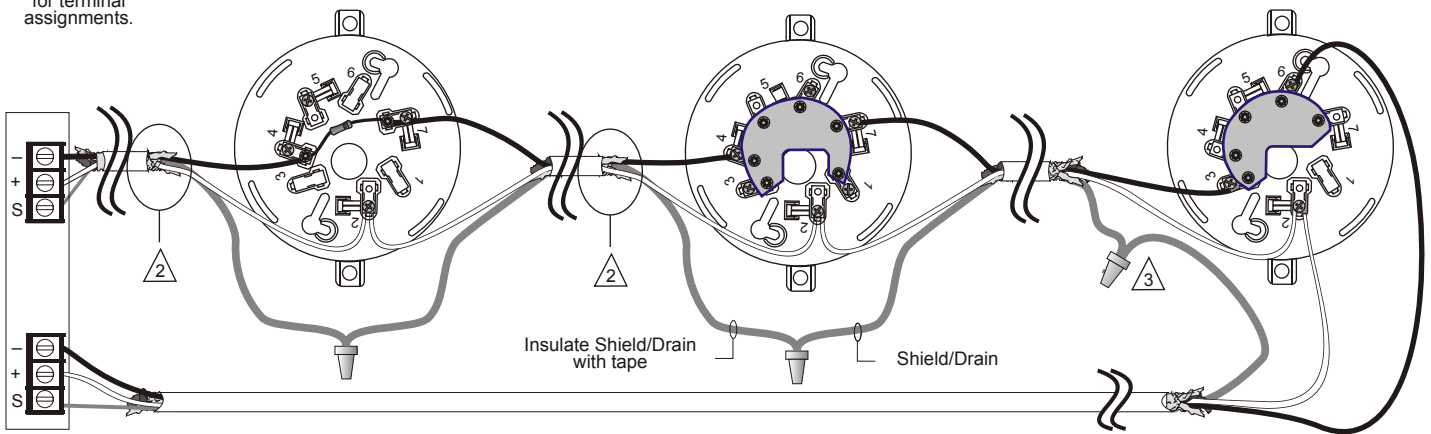
Control Panel

1. Shielded wire is required ONLY in environments with very high electrical noise.

2. Shields must be continuous and insulated from ground.

3. **For Class B wiring**, there is no shield connection to ground at the last device.

MOUNTING DIAGRAMS

BESA Box

1.1" (27 mm)
0.8" (20 mm)
2.0" (51 mm)
4.4" (112 mm)

North American 1-Gang Box

1.5" (38 mm)
0.8" (20 mm)
2.0" (51 mm)
4.4" (112 mm)
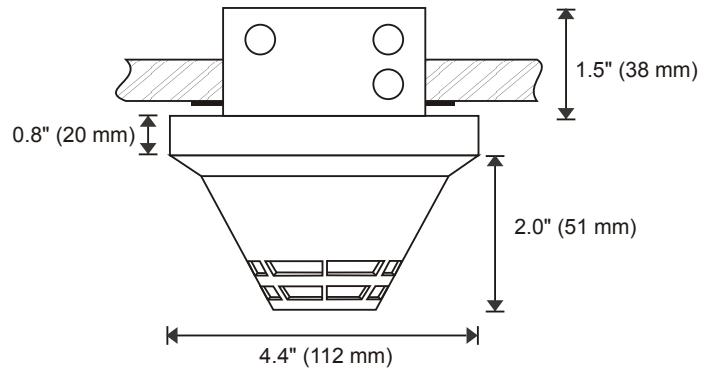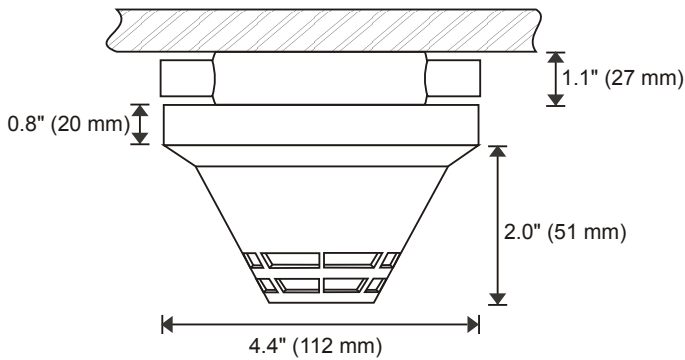
3-1/2" or 4" by 1-1/2" (38 mm) Deep Octagon Box

1.5" (38 mm)
0.8" (20 mm)
2.0" (51 mm)
4.4" (112 mm)

European 1-Gang (75 mm) Box 60.3 mm Fixing Centers

1.75" (45 mm)
0.8" (20 mm)
2.0" (51 mm)
4.4" (112 mm)
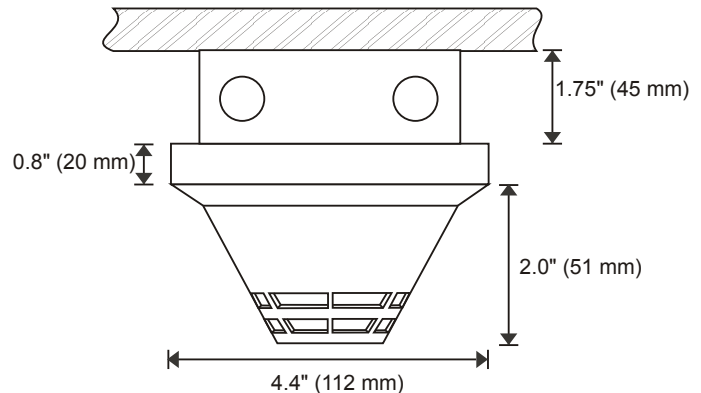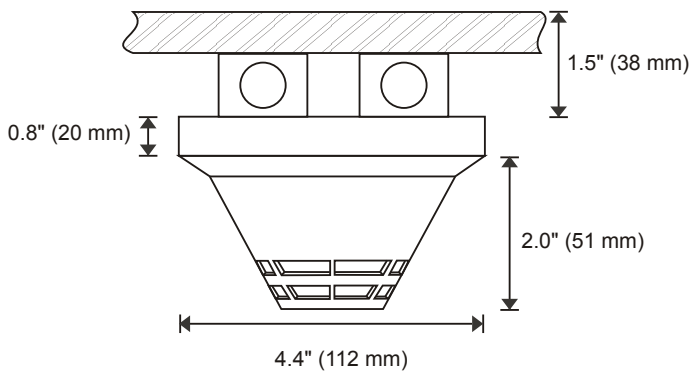
Base de détecteur standard, SIGA-SB

DEL à distance
(SIGA-LED)

La résistance maximum par fil NE doit PAS dépasser 10

- +

6 5
4
3 2 1 7

Entrée des
données (-)

Entrée des
données (+)

Du contrôleur de boucle Signature
ou du dispositif précédent

Sortie des
données (-)

Sortie des
données (+)

Vers le dispositif suivant
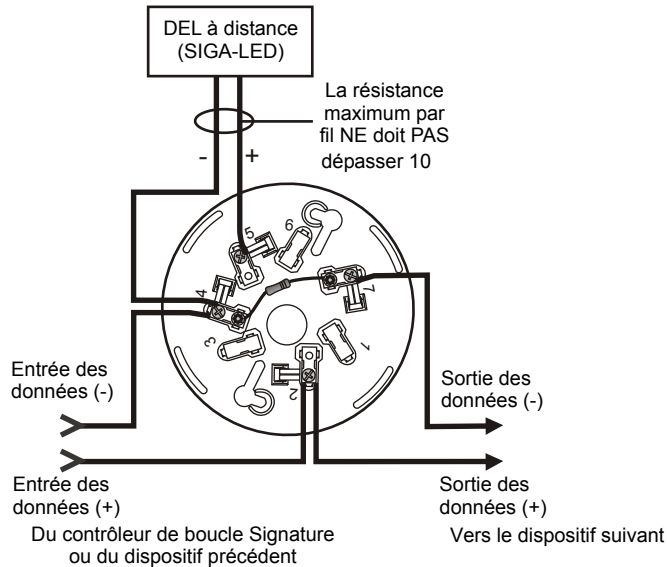
Borne	Description
1	Inutilisée
2	Entrée/Sortie des données (+)
3	Inutilisée
4	Entrée des données (-)
4	DEL à distance
5	DEL à distance
6	Inutilisée
7	Sortie des données (-)

✓ CARACTÉRISTIQUES TECHNIQUES

Gamme de températures de fonctionnement	0 à 49 ºC (32 à 120 ºF)
Gamme d'humidités de fonctionnement	0 à 93 % HR
Gamme de températures de stockage	-20 à 60 ºC (-4 à 140 ºF)
Construction et fini	Polymère technique avec résistance élevée aux impacts, blanc
Détecteurs compatibles	Détecteurs de la série Signature
Poids à la livraison	
SIGA-SB	82 g (2,9 oz)
Distance maximale du plafond (montage mural)	305 mm (12 po)

Boîtes électriques compatibles
Boîte simple standard Amérique du Nord
Boîte octogonale de 8,89 cm (3,5 po) de côté et 38 mm (1,5 po) de profondeur
Boîte octogonale de 10,16 cm (4 po) de côté et 38 mm (1,5 po) de profondeur
Boîte européenne simple standard de 75 mm, centres de fixation de 60,3 mm
Boîte BESA

NOTES:
1) Le SIGA-SB dispose de bornes de câblage pour connexion à un témoin à DEL à distance, modèle SIGA-LED.
2) Ces bases acceptent des fils de 2,05 mm² , 1,5 mm² , 1 mm² et 0,75 mm² (AWG nº 12, 14, 16 ou 18). Des fils de 16 ou 18 sont préférables.
3) Écrire l'adresse assignée au détecteur sur l'étiquette fournie et coller cette dernière sur le bord intérieur de la base.
4) Interrompre le câblage au niveau de chaque borne. Ne pas enrouler les fils du circuit de signalisation autour de bornes.

SIGA-SB
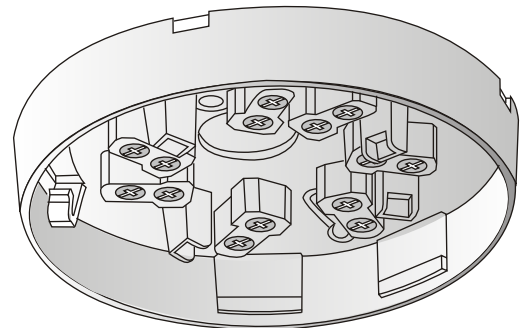
FICHE D'INSTALLATION :

Bases De Détecteur
SIGA-SB

FICHE D'INSTALLATION RÉF.: 387019P	NOM DU FICHIER: 387019P.CDR
NIVEAU DE RÉVISION: 8.0	APPROUVÉ PAR: B. Right
DATE: 01/18/99	CRÉÉ PAR: C. Hanrahan

CONSEILS GÉNÉRAUX DE CÂBLAGE

Référez-vous aux feuilles d'installation du panneau compatible pour le câblage des bornes.

Base de détecteur standard

Base de détecteur à relais

Base de détecteur à isolateur
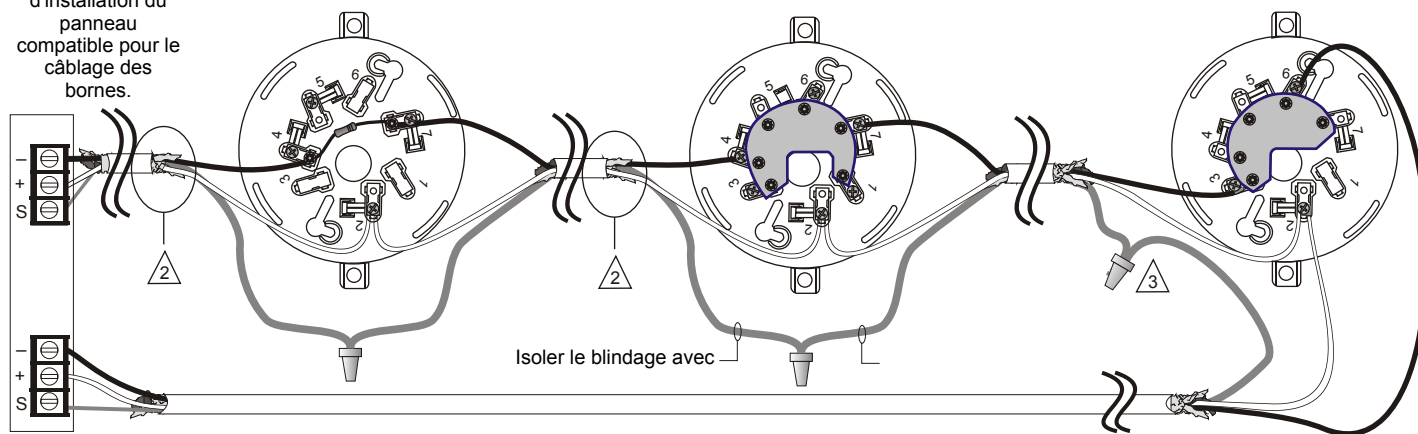
Isoler le blindage avec

Panneau de commande

1. Un fil blindé est requis UNIQUEMENT dans les environnements à interférences électriques élevées.

2. Le blindage doit être continu et isolé de la terre.

3. **Câblage de classe B :** aucune connexion n'est effectuée entre le blindage et la terre au niveau du dernier dispositif du circuit.

SCHÉMAS DE MONTAGE

Boîte BESA

27 mm (1,1 po)

20 mm (0,8 po)

51 mm (2,0 po)

112 mm (4,4 po)

Boîte simple standard Amérique du Nord

38 mm (1,5 po)

20 mm (0,8 po)

51 mm (2,0 po)

112 mm (4,4 po)
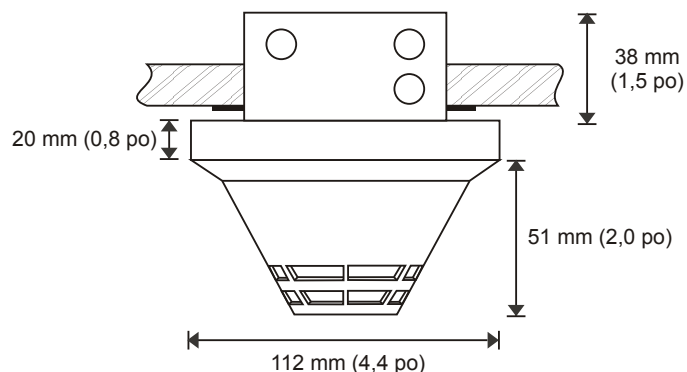
Boîte octogonale de 8,89 cm (3,5 po) ou de 10,16 cm (4 po) de côté et de 38 mm (1,5 po) de profondeur

38 mm (1,5 po)

20 mm (0,8 po)

51 mm (2,0 po)

112 mm (4,4 po)

Boîte européenne simple standard de 75 mm, centres de fixation de 60,3 mm

45 mm (1,75 po)

20 mm (0,8 po)

51 mm (2,0 po)

112 mm (4,4 po)
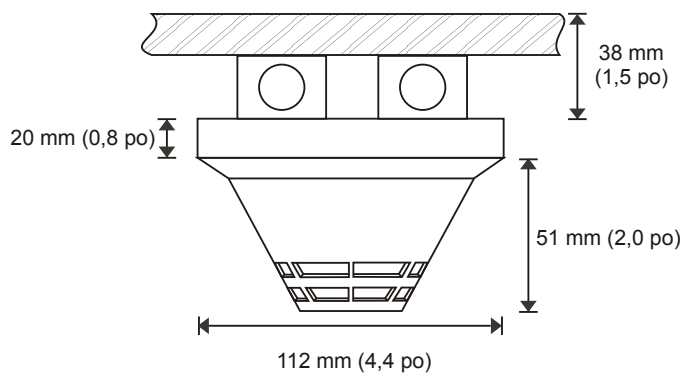
Overview

The GE Security *SuperDuct* Signature Series smoke detector is the most advanced and most reliable device in its class. Designed for easy installation and superb reliability, *SuperDuct* represents the perfect balance of practical design and advanced technology.

SuperDuct detectors feature a unique design that speeds installation and simplifies maintenance. Removable dust filters, conformally coated circuit boards, and optional water-resistant gaskets keep contaminants away from components, ensuring years of trouble-free service. When cleaning is required, the assemblies come apart easily and snap back together in seconds.

A Signature Series photoelectric sensor is incorporated into the design of each SIGA-SD duct smoke detector. This sensor inherits the power and benefits of this exceptional line of intelligent devices.

Signature Series sensors gather analog information from their smoke sensing elements and convert it into digital signals. The sensor measures and analyses these signals and compares the information to historical readings and time patterns to make an alarm decision. Digital filters remove signal patterns that are not typical of fires, which virtually eliminates unwanted alarms.

WARNING: Duct detectors have specific limitations. Duct detectors are not a substitute for an open area smoke detector. Duct detectors are not a substitute for early warning detection or a replacement for a building's regular fire detection system. Smoke detectors are not designed to detect toxic gases which can build up to hazardous levels in some fires. These devices will not operate without electrical power. As fires frequently cause power interruptions, GE Security suggests you discuss further safeguards with your local fire protection specialist.

Standard Features

- Less than 2" deep for easy installation and applications where space is tight
- -20 to 158 °F (-29 to 70 °C) operating range with 100 ft/min. to 4,000 ft/min air velocity rating assures reliability under harsh environmental conditions
- Status LEDs remain visible through clear assembly cover
- Cover monitor switch for added security
- Standard sampling tube spacing for easy drop-in migration from other detectors
- Sampling tube can be installed with or without the cover in place and can be rotated in 45-degree increments to ensure proper alignment with duct airflow
- 15.2 to 19.95 Vdc operation
- Magnet-activated test switch
- One Form C auxiliary alarm relay for controlling ancillary equipment (e.g., HVAC controls)
- No special tools required for easy access to field connections
- Signature Series intelligence
- Environmental compensation with differential sensing for reliable, stable, and drift-free sensitivity
- Wide 0.79% to 2.46% obscuration/ft. smoke sensitivity
- Identification of dirty or defective detectors

Intelligent Duct Smoke Detector
SIGA-SD

MEA Ⓤ Ⓤ ⟨FM⟩

Application

SuperDuct detectors are ideally suited to duct smoke detection applications where early indication of combustion is required within the confined space of ventilation ductwork. Its primary purpose is to provide early warning of an impending fire and to prevent smoke from circulating throughout the building. It is typically used to detect smoke in the supply side of the HVAC system but can provide supervision of the return side as well.
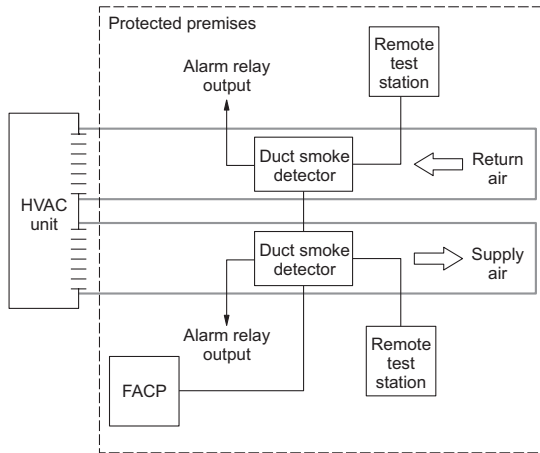
SuperDuct detectors continually sample air flow in the HVAC duct and initiate an alarm condition whenever smoke is detected. An alarm is activated when the quantity (percent obscuration) of combustion products in that air sample exceeds the detector's sensitivity setting.

Signature Series Intelligence

Like all Signature detectors, the SIGA-SD features electronic addressing and issues a dirty sensor warning when it reaches its preset limit. The dirty sensor warning indicates the sensor is operating within its specified limits but is in need of servicing. When the detector's ability to compensate for environmental changes has reached its limit, the duct smoke detector signals a trouble condition.

The SIGA-SD also uses differential sensing to prevent gradual environmental changes from triggering unwanted alarms. A rapid change in environmental conditions, such as smoke from a fire, causes the detector to signal an alarm state, but dust and debris accumulated over time does not change alarm sensitivity.

Each Signature Series SuperDuct detector contains a microprocessor that performs comprehensive self-diagnostics and stores the results in nonvolatile memory. Stored results include details such as hours of operation, last maintenance date, and number of alarms and troubles. This information can be retrieved and reviewed when desired.

Detector Configuration

The detector assembly cover provides easy access to the smoke sensor, its wiring connections, sample and exhaust tubes, and the smoke chamber itself.

Air enters the detector's sensing chamber through a sampling tube (ordered separately) that extends into the duct and is directed back into the ventilation system through an exhaust tube (included). The difference in air pressure between the two tubes pulls the sampled air through the sensing chamber. When a sufficient amount of smoke is detected in the sensing chamber, the detector initiates an alarm.

The sampling tube may be installed from either the duct side of the

assembly or from inside the sensor compartment, as preferred by the installer. (The exhaust tube must be installed from the duct side.) Sampling tubes may be rotated in 45-degree increments so that air-holes can be aligned to allow the unit to be mounted at virtually any angle relative to the air flow.

In installations where the duct smoke detector's controls and indicators are hidden from view, a remote test station or an LED indicator can be connected to the detector to provide these functions.

Remote Test Stations

Labor-saving Remote Test/Reset stations provide alarm testing from the convenience of a remote location. Tests can be performed quickly and safely – without having to climb to the roof. Magnetically-operated and key-operated one-gang models are available. Signature SuperDuct detectors are also compatible with SIGA-LED remote alarm LED.

Air velocity in the duct as low as 100 ft/min. maintains adequate air flow into the sensor smoke chamber through air holes in the air sampling tube and discharges through the exhaust tube. *SuperDuct* air sampling tubes must be installed with the inlet holes facing the airstream. Sampling tubes may be rotated in 45-degree increments so that air-holes can be aligned to allow the unit to be mounted in virtually any angle relative to the airflow.

SuperDuct sensors are engineered to operate optimally under the harsh environmental conditions frequently found in HVAC ductwork. Nonetheless, before installing the detector, test the duct air velocity, temperature, and humidity to verify that it is within the operating range of the *SuperDuct* detector. Consult the *SuperDuct* installation sheet for details.

Dimensions

Assembly

Sampling tube socket

Detector

Exhaust tube socket

Exhaust tube

Thin gasket

Thick gasket

Coupling

Sampling tube (ordered separately)

Plug

Mounting

Airflow

HVAC duct

Detector

Sampling tube

#10 sheet metal screw (2X)

Wiring

Auxiliary equipment

17 16 15

Power indicator

Alarm indicator

SIGA-LED [1]

Alarm

or

Alarm

Test

SD-TRK
or
SD-TRM [1]

Data Out (−)

Data Out (+)

Data In (+)

Data In (−)

14 13 12 11 10 9 8 7
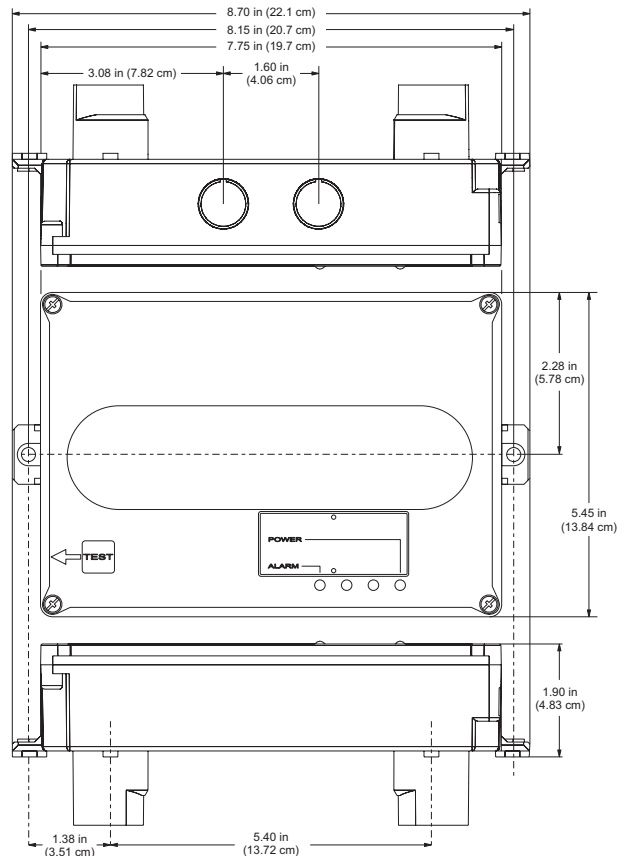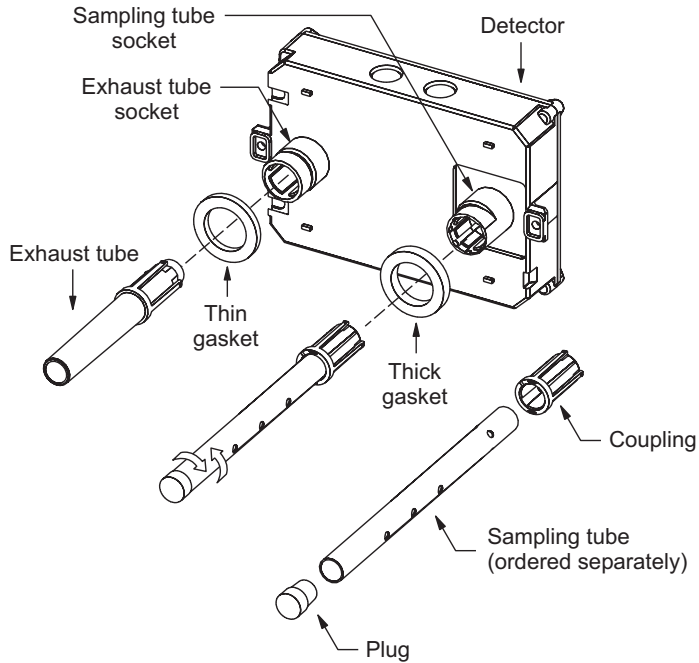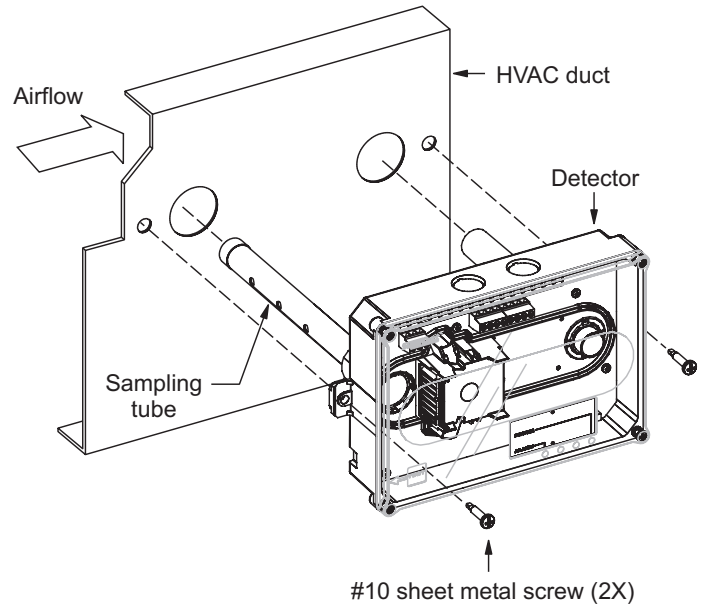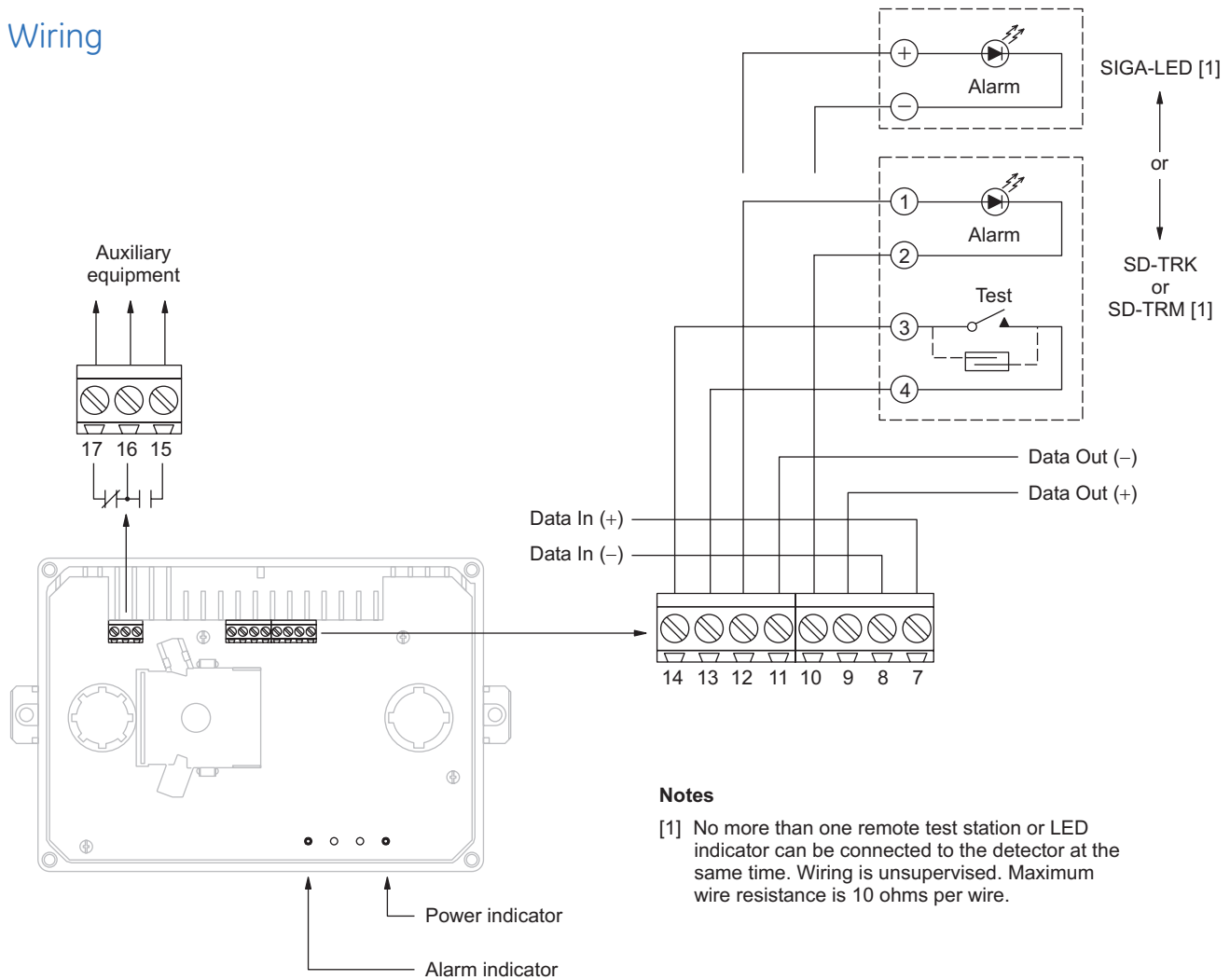
Notes

[1] No more than one remote test station or LED indicator can be connected to the detector at the same time. Wiring is unsupervised. Maximum wire resistance is 10 ohms per wire.

GE
Security

Specifications, detector

Dimensions	8.70 x 5.45 x 1.90 inches (221 x 138 x 48 mm)
Wire size	14 to 22 AWG
Smoke detection method	Photoelectric (light scattering principle)
Air velocity rating	100 to 4,000 ft/min
Air pressure differential	0.005 to 1.00 inches of water
Sensitivity	0.79 to 2.46 %/ft obscuration
Alarm test response time	5 seconds
LED indicators	Alarm (red), Power (green)
Common alarm relay	Unsupervised and power-limited Quantity: 1 Type: Form C Ratings: 2.0 A at 30 Vdc (resistive)
Operating voltage	15.2 to 19.95 Vdc
Operating current	Standby: 45 µA Alarm: 45 µA Inrush: 1 mA Standalone alarm: 18 mA
Operating environment	Temperature: -20 to 158 °F (-29 to 70 °C) Humidity 93% RH, noncondensing
Agency listings	UL, ULC, CSFM, FM, MEA

Specifications, test stations

Remote Test/Reset Stations provide alarm test, trouble indication, and reset capability from a remote location. They include a one-gang plate, momentary SPST switch, red alarm LED, and terminal block. Magnetically-operated models (TRM) or key-operated models (TRK) are available.

Compatible electrical boxes	North American 1-gang box Standard 4-in square box, 1-1/2 inches deep, with 1-gang cover
LED indicators	Alarm (red)
LED type	Clear lens
Wire size	14 to 22 AWG
Resistance per wire	10 Ohms, max.
Current requirements	See controller specifications
LED circuit ratings	Voltage: 3 Vdc, max. Current: 30 mA, max.
Switch ratings (SD-TRK)	Voltage: 125 Vdc, max. Current: 4 A, max.
Switch ratings (SD-TRM)	Voltage: 200 Vdc, max. Current: 0.5 A, max.
Compatible detectors	SuperDuct conventional two-wire and Signature duct smoke detectors
Operating environment	Temperature: 32 to 131 °F (0 to 55 °C) Humidity: 93% RH, noncondensing
Storage temperature	-4 to 140 °F (-20 to 60 °C)
Agency listings	UL, ULC, CSFM

Ordering Information

Catalog Number	Description	Ship Wt., lb. (kg)
SIGA-SD	Intelligent SuperDuct Detector	2.4 (1.1)
Accessories		
SD-T8	8-inch sampling tube	0.5 (0.2)
SD-T18	18-inch sampling tube	1.5 (0.7)
SD-T24	24-inch sampling tube	2.7 (1.2)
SD-T36	36-inch sampling tube	3.0 (1.4)
SD-T42	42-inch sampling tube	3.5 (1.6)
SD-T60	60-inch sampling tube	5.8 (2.6)
SD-T78	78-inch sampling tube	7.5 (3.4)
SD-T120	120-inch sampling tube	11.5 (5.2)
SIGA-LED	Remote alarm LED	1.0 (0.5)
SD-TRM	Remote test station, magnetic	1.0 (0.5)
SD-TRK	Remote test station, keyed	1.0 (0.5)
SD-VTK	Air velocity test kit (stoppers only, etc)	1.0 (0.5)
SD-GSK	Cover gasket kit	0.5 (0.2)
SD-MAG	Test magnet kit	0.5 (0.2)
SIGA-SDPCB	Replacement PCB/Signature sensor kit	1.0 (0.5)

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Overview

The SIGA-CT1 Single Input Module and SIGA-CT2/SIGA-MCT2 Dual Input Modules are intelligent analog addressable devices used to connect one or two Class B normally-open Alarm, Supervisory, or Monitor type dry contact Initiating Device Circuits (IDC).

The actual function of these modules is determined by the "personality code" selected by the installer. This code is downloaded to the module from the Signature loop controller during system configuration.

The input modules gather analog information from the initiating devices connected to them and convert it into digital signals. The module's on-board microprocessor analyzes the signal and decides whether or not to input an alarm.

The SIGA-CT1 and SIGA-CT2 mount to standard North American 1-gang electrical boxes, making them ideal for locations where only one module is required. Separate I/O and data loop connections are made to each module.

The SIGA-MCT2 is part of the UIO family of plug-in Signature Series modules. It functions identically to the SIGA-CT2, but takes advantage of the modular flexibility and easy installation that characterizes all UIO modules. Two- and six-module UIO motherboards are available. All wiring connections are made to terminal blocks on the motherboard. UIO assemblies may be mounted in GE Security enclosures.

Standard Features

- **Multiple applications**
  Including Alarm, Alarm with delayed latching (retard) for water-flow applications, Supervisory, and Monitor. The installer selects one of four "personality codes" to be downloaded to the module through the loop controller.

- **SIGA-CT1 rated for high temperature environments**
  Suitable for attic installation and monitoring high temperature heat detectors.

- **Plug-in (UIO) or standard 1-gang mount**
  UIO versions allow quick installation where multiple modules are required. The 1-gang mount version is ideal for remote locations that require a single module.

- **Automatic device mapping**
  Signature modules transmit information to the loop controller regarding their circuit locations with respect to other Signature devices on the wire loop.

- **Electronic addressing**
  Programmable addresses are downloaded from the loop controller, a PC, or the SIGA-PRO Signature Program/Service Tool. There are no switches or dials to set.

- **Stand-alone operation**
  The module makes decisions and inputs an alarm from initiating devices connected to it even if the loop controller's polling interrogation stops. (Function availability dependent upon control panel.)

- **Ground fault detection by address**
  Detects ground faults right down to the device level.

Input Modules
SIGA-CT1, SIGA-CT2 & SIGA-MCT2
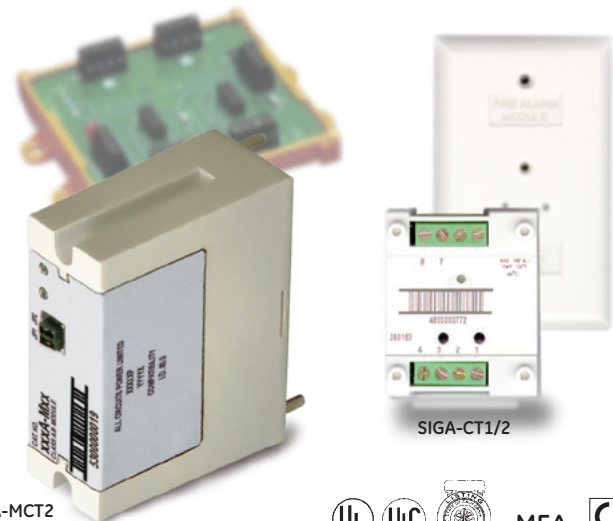
SIGA-MCT2

SIGA-CT1/2

MEA

Application Notes Available

Signature Series Overview

The Signature Series intelligent analog-addressable system from GE Security is an entire family of multi-sensor detectors and mounting bases, multiple-function input and output modules, network and non-network control panels, and user-friendly maintenance and service tools. Analog information from equipment connected to Signature devices is gathered and converted into digital signals. An onboard microprocessor in each Signature device measures and analyzes the signal and decides whether or not to input an alarm. The microprocessor in each Signature device provides four additional benefits – Self-diagnostics and History Log, Automatic Device Mapping, Stand-alone Operation and Fast, Stable Communication.

Self-diagnostics and History Log – Each Signature Series device constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in its non-volatile memory. This information is accessible for review any time at the control panel, PC, or using the SIGA-PRO Signature Program/Service Tool.

Automatic Device Mapping –The Signature Data Controller (SDC) learns where each device's serial number address is installed relative to other devices on the circuit. The SDC keeps a map of all Signature Series devices connected to it. The Signature Series Data Entry Program also uses the mapping feature. With interactive menus and graphic support, the wired circuits between each device can be examined. Layout or "as-built" drawing information showing branch wiring (T-taps), device types and their address are stored on disk for printing hard copy.

Installation

SIGA-CT1 and SIGA-CT2: modules mount to North American 2½ inch(64 mm) deep 1-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 1-gang covers and SIGA-MP mounting plates. The terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.

SIGA-MCT2: mount the UIO motherboard inside a suitable GE Security enclosure with screws and washers provided. Plug the SIGA-MCT2 into any available p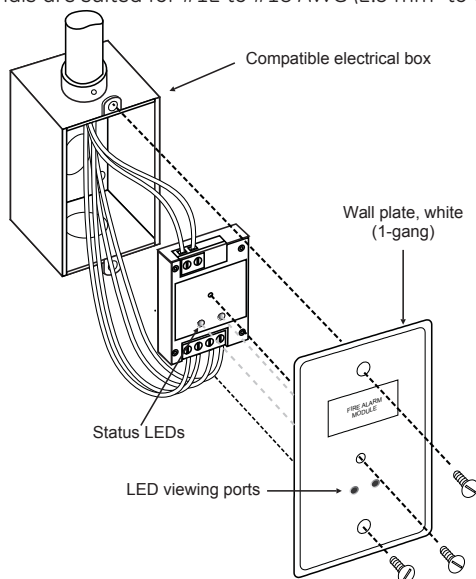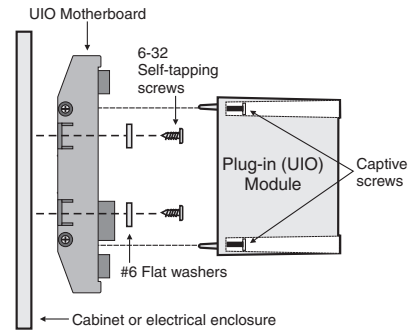osition on the motherboard and secure the module to the motherboard with the captive screws. Wiring connections are made to the terminals on the motherboard (see wiring diagram). UIO motherboard terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.

Electronic Addressing - The loop controller electronically addresses each module, saving valuable time during system commissioning. Setting complicated switches or dials is not required. Each module has its own unique serial number stored in its on-board memory. The loop controller identifies each device on the loop and assigns a "soft" address to each serial number. If desired, the modules can be addressed using the SIGA-PRO Signature Program/Service Tool.

GE Security recommends that this module be installed according to latest recognized edition of national and local fire alarm codes.

Application

The duty performed by the SIGA-CT1 and SIGA-CT2/MCT2 is determined by their sub-type code or "Personality Code". The code is selected by the installer depending upon the desired application and is downloaded from the loop controller.

One personality code can be assigned to the SIGA-CT1. Two personality codes can be assigned to the SIGA-CT2/MCT2. Codes 1, 2, 3 and 4 can be mixed on SIGA-CT2/MCT2 modules only. For example, personality code 1 can be assigned to the first address (circuit A) and code 4 can be assigned to the second address (circuit B).

NORMALLY-OPEN ALARM - LATCHING (Personality Code 1) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally open dry contact initiating devices such as Pull Stations, Heat Detectors, etc. An ALARM signal is sent to the loop controller when the input contact is closed. The alarm condition is latched at the module.

NORMALLY-OPEN ALARM - DELAYED LATCHING (Personality Code 2) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally-open dry contact initiating devices such as Waterflow Alarm Switches. An ALARM signal is sent to the loop controller when the input contact is closed for approximately 16 seconds. The alarm condition is latched at the module.

NORMALLY-OPEN ACTIVE - NON-LATCHING (Personality Code 3) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally-open dry contact monitoring input such as from Fans, Dampers, Doors, etc. An ACTIVE signal is sent to the loop controller when the input contact is closed. The active condition is not latched at the module.

NORMALLY-OPEN ACTIVE - LATCHING (Personality Code 4) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally open dry contact monitoring input such as from Supervisory and Tamper Switches. An ACTIVE signal is sent to the loop controller when the input contact is closed. The active condition is latched at the module.

Typical Wiring

Modules will accept #18 AWG (0.75mm²), #16 (1.0mm²), and #14AWG (1.50mm²), and #12 AWG (2.50mm²) wire sizes.

 Note: Sizes #16 AWG (1.0mm²) and #18 AWG (0.75mm²) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.

Initiating (Slave) Device Circuit Wire Specifications		
Maximum Allowable Wire Resistance	50 ohms (25 ohms per wire) per Circuit	
Maximum Allowable Wire Capacitance	0.1µF per Circuit	
For Design Reference:	Wire Size	Maximum Distance to EOLR
	#18 AWG (0.75 mm²)	4,000 ft (1,219 m)
	#16 AWG (1.00 mm²)	
	#14 AWG (1.50 mm²)	
	#12 AWG (1.50 mm²)	

SIGA-CT1

SIGA-CT2
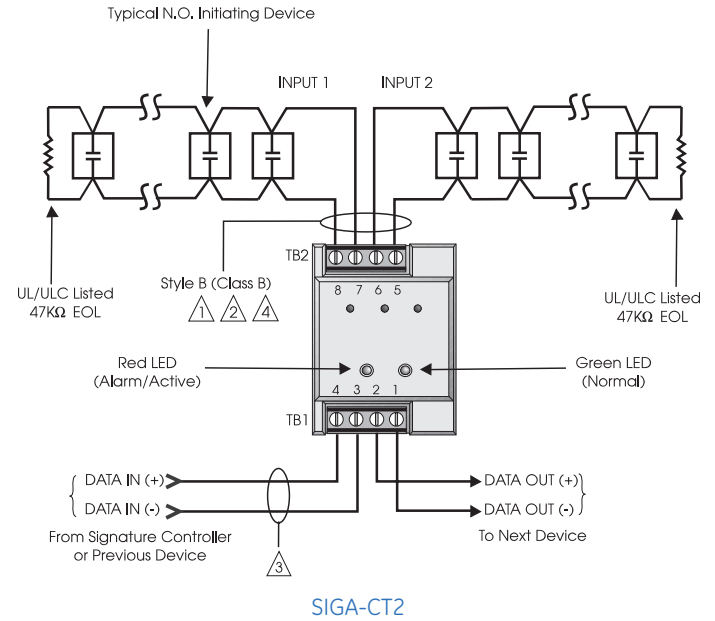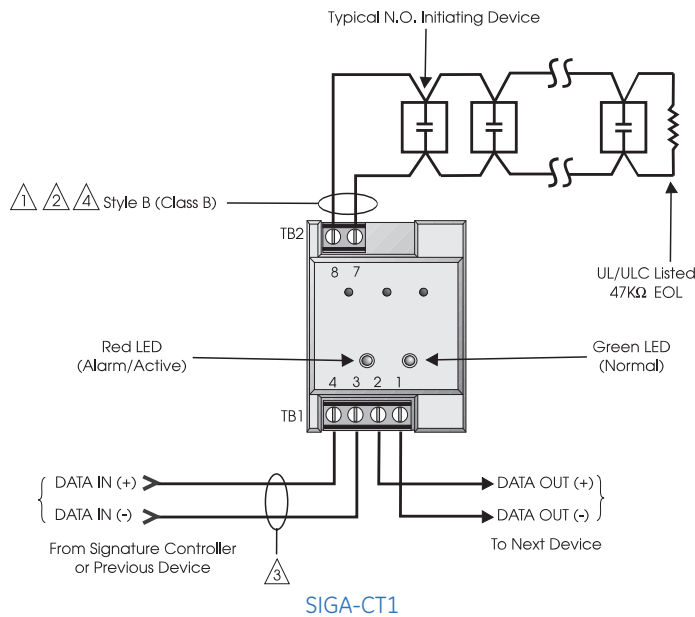
NOTES

1. Maximum 25 Ohm resistance per wire.

2. Maximum #12 AWG (2.5 mm²) wire; Minimum #18 AWG (0.75 mm2).

3. Refer to Signature controller installation sheet for wiring specifications.

4. Maximum 10 Vdc @ 350 µA

5. The SIGA-UIO6R and the SIGA-UIO2R do not come with TB14.

6. All wiring is supervised and power-limited.

7. These modules will not support 2-wire smoke detectors.

SIGA-MCT2

Warnings & Cautions

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

Compatibility

The Signature Series modules are compatible only with GE Security's Signature Loop Controller.

Specifications

Catalog Number	SIGA-CT1	SIGA-CT2	SIGA-MCT2
Description	Single Input Module	Dual Input Module	
Type Code	48 (factory set) Four sub-types (personality codes) are available	49 (factory set) Four sub-types (personality codes) are available	
Address Requirements	Uses One Module Address	Uses Two Module Addresses	
Operating Current	Standby = 250µA; Activated = 400µA	Standby = 396µA; Activated = 680µA	
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)		
Construction	High Impact Engineering Polymer		
Mounting	North American 2½ inch (64 mm) deep one-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with one-gang covers and SIGA-MP mounting plates		UIO2R/6R/6 Motherboard
Storage and Operating Environment	Operating Temperature: 32°F to 158°F (0°C to 70°C) Storage Temperature: -4°F to 140°F (-20°C to 60°C); Humidity: 0 to 93% RH	Operating Temperature: 32°F to 120°F (0°C to 49°C) Storage Temperature: -4°F to 140°F (-20°C to 60°C) Humidity: 0 to 93% RH	
LED Operation	On-board Green LED - Flashes when polled; On-board Red LED - Flashes when in alarm/active Both LEDs - Glow steady when in alarm (stand-alone)		
Compatibility	Use with Signature Loop Controller		
Agency Listings	UL, ULC, MEA, CSFM		

Ordering Information

Catalog Number	Description	Ship Wt. lbs (kg)
SIGA-CT1	Single Input Module — UL/ULC Listed	0.4 (0.15)
SIGA-CT2	Dual Input Module — UL/ULC Listed	0.4 (0.15)
SIGA-MCT2	Dual Input Plug-in (UIO) Module — UL, ULC Listed	0.1 (0.05)

Related Equipment		
27193-11	Surface Mount Box - Red, 1-gang	1.0 (0.6)
27193-16	Surface Mount Box - White, 1-gang	1.0 (0.6)
SIGA-UIO2R	Universal Input-Output Module Board w/Riser Inputs — Two Module Positions	0.32 (0.15)
SIGA-UIO6R	Universal Input-Output Module Board w/Riser Inputs — Six Module Positions	0.62 (0.28)
SIGA-UIO6	Universal Input-Output Module Board — Six Module Positions	0.56 (0.25)
MFC-A	Multifunction Fire Cabinet — Red, supports Signature Module Mounting Plates	7.0 (3.1)
SIGA-MB4	Transponder Mounting Bracket (allows for mounting two 1-gang modules in a 2-gang box)	0.4 (0.15)
SIGA-MP1	Signature Module Mounting Plate, 1 footprint	1.5 (0.70)
SIGA-MP2	Signature Module Mounting Plate, 1/2 footprint	0.5 (0.23)
SIGA-MP2L	Signature Module Mounting Plate, 1/2 extended footprint	1.02 (0.46)

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NOTIFICATION DEVICES

Product description
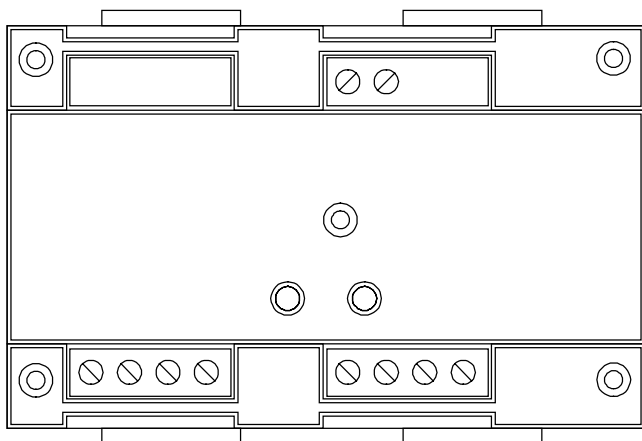
The SIGA-CC1S Auto-Sync Output Module is a component of the Signature Series. The SIGA-CC1S is an intelligent, analog-addressable device used to connect a supervised output circuit to a signal riser. Upon command from the Signature loop controller, SIGA-CC1S connects the output circuit to the riser input. The output circuit energizes a riser to operate:

• 24 Vdc polarized audible and visual notification appliances (Note 1)
• 25 Vac audible evacuation circuits
• 70 Vac audible evacuation circuits
• Telephone audio

Notes

• The output circuit uses a resynchronizing feature to operate polarized notification appliances if they are compatible with Genesis series products. See the compatibility section below.

• The SIGA-CC1S does not supervise the 24 Vdc riser; the fire alarm control panel provides this function.

One device address is required. The loop controller assigns an address to the SIGA-CC1S automatically. A custom address can also be assigned to the module via laptop computer. No addressing switches are used.

Diagnostic LEDs provide visible indication of the status of the module when the cover plate is removed:

• Normal: green LED flashes
• Alarm/active: red LED flashes

Mounting

The SIGA-CC1S can be mounted in a North American 2-1/2 in (64 mm) deep 2-gang box or a standard 4 in square box 1-1/2 in (38 mm) deep with 2-gang cover. The terminal blocks accept 12, 14, 16, or 18 AWG wire (2.5, 1.5, 1.0, or 0.75 sq mm). Sizes 16 and 18 are preferred.

System controller compatibility

The SIGA-CC1S requires the Signature loop controller. The loop controller downloads the personality code which determines how the module operates. The following personality codes can be downloaded to the SIGA-CC1S.

Personality code 5: Single-input riser selector: Personality code 5 configures the module as a signal power (24 Vdc) riser selector. The output wiring is monitored for open and short circuits. A short circuit causes the fire alarm control panel to inhibit the activation of the audible/visual signal circuit so the riser is not connected to the wiring fault.

Personality code 6: Riser selector (single-input) ring-tone: Personality code 6 configures the module as a telephone riser selector. When a telephone handset is plugged into its jack or lifted from its hook, the module generates its own ring-tone signal. A separate ring-tone riser is unnecessary. The module sends this signal to the control panel to indicate the presence of an off-hook condition, and waits for the system operator to respond to the call. When the system operator responds, the ring-tone signal is disabled.

Personality code 25: Auto sync output (default): Personality code 25 configures the module to provide synchronization of compatible fire alarm signals across multiple zones. The output wiring is monitored for open circuits and short circuits. A short circuit causes the fire alarm control panel to inhibit the activation of the audible/visual signal circuit so the riser is not connected to the wiring fault. Personality code 25 is only compatible with EST3, ADT3000, and XLS1000 panels.

Note: You may use nonsynchronous fire alarm signals with or instead of compatible synchronized fire alarm signals, but the operation of these devices will not comply with UL 1971.

Warnings

1. Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life. Dangerous voltages may be present at the terminals even when power is shut off!

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

3. This module does *not* support conventional smoke detectors.

Specifications

Operating voltage range: 15.2 to 19.95 Vdc
Standby current 223 μA
Activated current: 100 μA
Output ratings
    24 Vdc (telephone riser also): 2 A
    25 Vac audio: 50 W
    70 Vac audio: 35 W
    EOL resistor value: 47 kΩ
Operating temperature: 32 to 120 °F (0 to 49 °C)
Operating humidity: 0 to 93% RH
Storage temperature: -4 to 140 °F (-20 to 60 °F)
Construction: High impact engineering polymer

Shipping weight: 0.48 lb (0.21 kg)
Compatible electrical boxes
    North American 2.5 in (64 mm) deep 2-gang box
    Standard 4 in (101.6 mm) x 1.5 in (38 mm) deep square
    box with 2-gang cover
Synchronization: Meets UL1971 synchronization requirement.
    All signaling devices signal within 0.01 seconds of each
    other for a period of at least two hours while maintaining a
    one hertz signal rate. (For list of compatible devices, see
    Compatible device table.)
Note: For synchronization, the maximum resistance between
    any two devices is 20 Ω. See the voltage specifications for
    the SIGA-CC1S, the signaling device, and the control
    panel to determine the maximum allowable wire
    resistance.

Number of devices

Strobe candela rating	Maximum strobes
15, 15PS, 5A	29
30, 15/75, 3A, 7A	16
60, 75PS, 6A	11
75	10
110, 8A	8

Installation instructions

Note: The SIGA-CC1S is shipped from the factory as an
assembled unit; it contains no user-serviceable parts and
should *not* be disassembled.

To install the module:

1. Verify that all field wiring is free of opens, shorts, and
   ground faults.

2. Make all wiring connections as shown in the wiring
   diagram.

3. Write the address assigned to the module on the label
   provided and apply the label to the module. Peel off the
   removable serial number label from the module and apply
   it to the appropriate location in the serial number logbook.

4. Using the 4-24 x 5/16 in (8 mm) self-tapping screw
   provided, mount the wall plate to the module.

5. Using the four 6-32 x 1/2 in (13 mm) machine screws
   provided, mount the module to the electrical box.

Note

Install in accordance with applicable requirements of the latest
editions of the NFPA codes and standards, the Canadian
Electrical code (Part 1, Section 32), and the authority having
jurisdiction.

Wire stripping guide
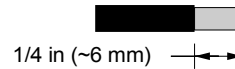
1/4 in (~6 mm)

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.
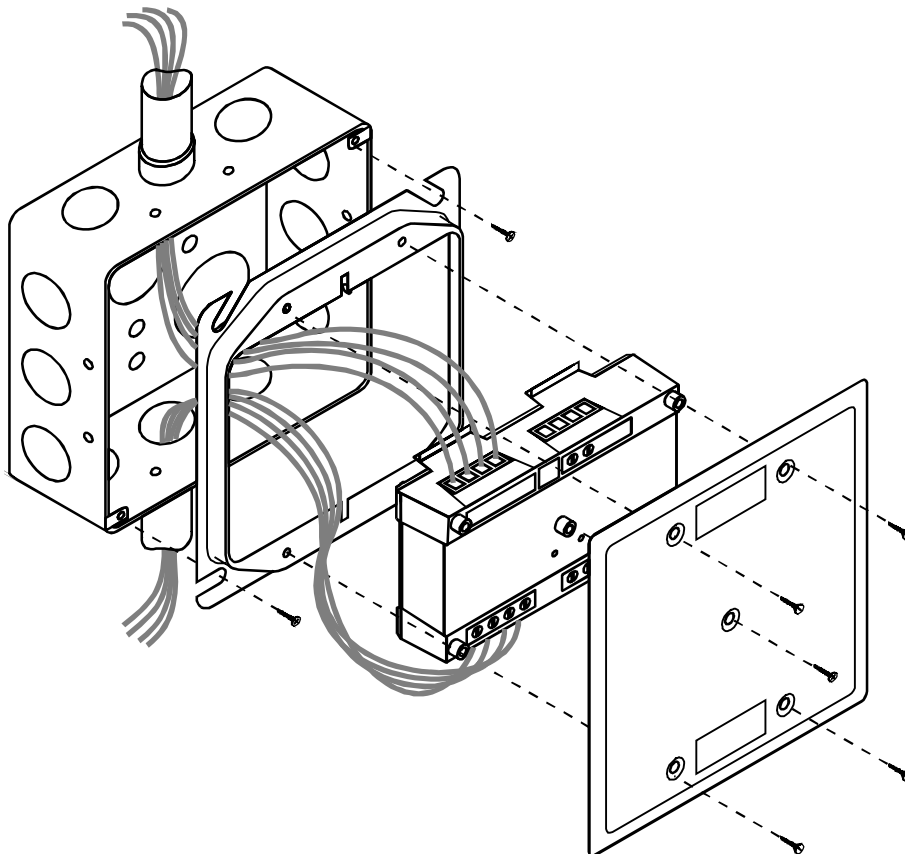
Wiring diagram

Personality code 5: typical speaker circuit
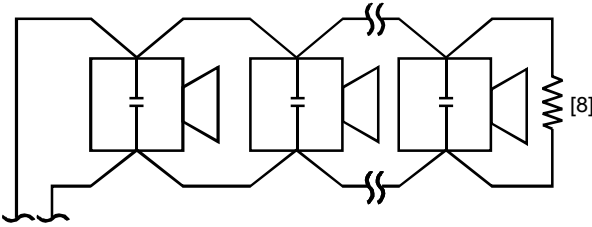
Personality code 6: typical telephone circuit
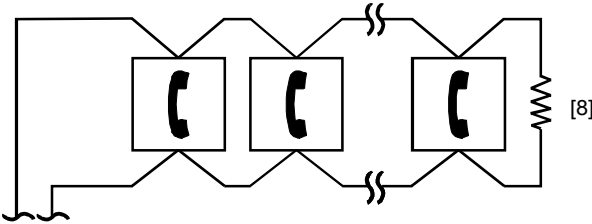
Personality codes 5 and 25: typical notification appliance circuit

[1] [2] [4] [6] [7]

10 9

Auto-Sync Output Module

Red LED
(active/short)

Green LED
(normal/trouble)

8 7 6 5   4 3 2 1

[2] [4]   [2] [3] [5]

Riser out (+) — Data out (-)
Riser out (-) — Data out (+)
Riser in (+) — Data in (-)
Riser in (-) — Data in (+)
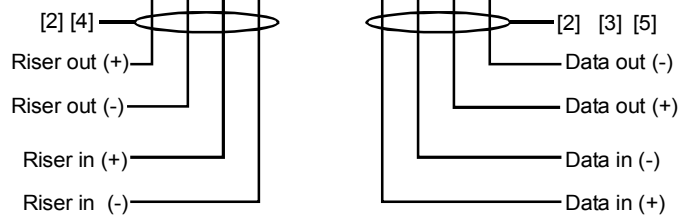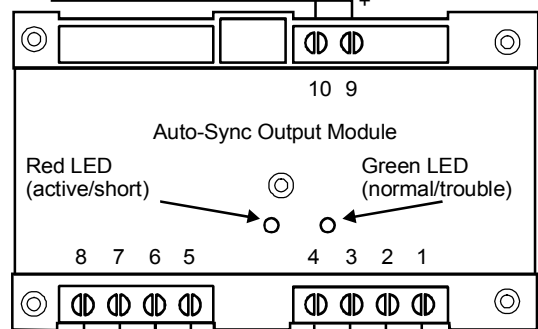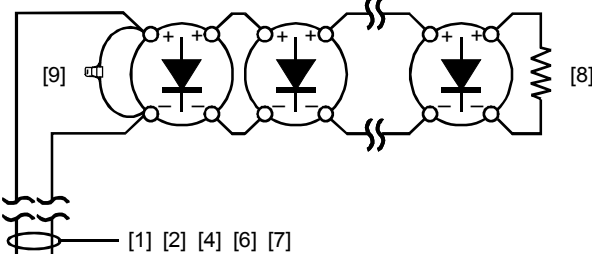
Notes

[1] Maximum 25 Ω resistance per wire. Maximum circuit capacitance of 0.1 μF

[2] Maximum 12 AWG (2.5 sq mm) wire; minimum 18 AWG (0.75 sq mm) wire

[3] See the Signature loop controller installation sheet for wiring specifications

[4] Power-limited unless connected to a nonpower-limited source. If the source is nonpower-limited, eliminate the power-limited mark and:

- Maintain a 1/4 in (6.4 mm) space from power-limited wiring. (For other mounting methods, see enclosure and bracket installation sheets to maintain separation of power-limited and nonpower-limited wiring.)

  or

- Use FPL, FPLR, FPLP, or an equivalent cable in accordance with the National Electric Code (required for electrical box installations).

[5] Supervised and power-limited

[6] Supervised

[7] Polarity shown in supervisory condition. Polarity changes on alarm.

[8] UL/ULC listed 47 kΩ EOL

[9] Transient protection (see "Transient protection caution" below)

Transient protection caution

The SIGA-CC1S requires transient protection for installations that connect electromechanical bells or horns to output circuits. The module's circuitry requires a bipolar transient protector (P/N 235196P) for protection against transient spikes caused by the inductive load of bells or horns.

Connect the bipolar transient protector assembly across the terminals of the bell or horn electrically closest to the module. The bipolar transient protector is not polarity-sensitive.

Locate bells and horns at least 6 ft (1.83 m) from the module.

Bipolar Transient Protector (P/N 235196P)

Compatibility

The SIGA-CC1S is compatible with Genesis, Enhanced Integrity (synchronized), and Enhanced Integrity Power Saver (synchronized) models.

Compatible device table

Description	Model number
Genesis strobes	*G1-V15, *G1R-V15, *G1-V30, *G1R-V30, *G1-V60, *G1R-V60, *G1-V75, *G1R-V75, *G1-V110, *G1R-V110
Genesis horn strobes, high output	*G1-HOV15, *G1R-HOV15, *G1-HOV30, *G1R-HOV30, *G1-HOV60, *G1R-HOV60, *G1-HOV75, *G1R-HOV75, *G1-HOV110, *G1R-HOV110
Genesis horn strobes, low output	*G1-HV15, *G1R-HV15, *G1-HV30, *G1R-HV30, *G1-HV60, *G1R-HV60, *G1-HV75, *G1R-HV75
Genesis wall speakers strobe	*G4-S2VM, *G4R-S2VM, *G4-S7VM, *G4R-S7VM
	Substitute XLS or ADT for *

Compatible device table

Description	Model number
Integrity mini strobes, synchronized	*202-15PS, *202-15PSW, *202-75PS, *202-75PSW, *202-3A-T, *202-3A-TW, *202-5A-T, *202-5A-TW, *202-7A-T, *202-7A-TW, *202-8A-T, *202-8A-TW
Integrity strobes, four inch square box	405-15PS, 405-15PSW, *405-3A-T, *405-3A-TW, *405-5A-T, *405-5A-TW, 405-6A-T, 405-6A-TW, 405-75PS, 405-75PSW, *405-7A-T, *405-7A-TW, *405-8A-T, *405-8A-TW, CS405-7A-T, CS405-8A-T
Integrity chime strobes	*757-3A-CS, *757-3A-CSW, *757-5A-CS, *757-5A-CSW, *757-7A-CS, *757-7A-CSW, *757-8A-CS, *757-8A-CSW
Integrity horn strobes, temporal	757-7A-T, 757-7A-TW, 757-8A-T, 757-8A-TW
Integrity speaker strobes	*757-3A-SS25, *757-3A-SS25W, *757-3A-SS70, *757-3A-SS70W, *757-5A-SS25, *757-5A-SS25W, *757-5A-SS70, *757-5A-SS70W, *757-7A-SS25, *757-7A-SS25W, *757-7A-SS70, *757-7A-SS70W, *757-8A-SS25, *757-8A-SS25W, *757-8A-SS70, *757-8A-SS70W
Integrity speaker strobes, re-entrant wall mount	*757-3A-RS25, *757-3A-RS25W, *757-3A-RS70, *757-3A-RS70W, *757-7A-RS25, *757-7A-RS25W, *757-7A-RS70, *757-7A-RS70W, *757-8A-RS25, *757-8A-RS25W, *757-8A-RS70, *757-8A-RS70W
Integrity speaker strobes, ceiling mount 25V	*964-3A-4RR, *964-3A-4RW, *964-3A-8RW, 964-3A-8SW, *964-5A-4RR, *964-5A-4RW, *964-5A-8RW, 964-5A-8SW, *964-7A-4RR, *964-7A-4RW, *964-7A-8RW, 964-7A-8SW, *964-8A-4RR, *964-8A-4RW, *964-8A-8RW, 964-8A-8SW
Integrity speaker strobes, ceiling mount 70V	*965-3A-4RR, *965-3A-4RW, *965-3A-8RW, 965-3A-8SW, *965-5A-4RR, *965-5A-4RW, *965-5A-8RW, 965-5A-8SW, *965-7A-4RR, *965-7A-4RW, *965-7A-8RW, 965-7A-8SW, *965-8A-4RR, *965-8A-4RW, *965-8A-8RW, 965-8A-8SW
Bell strobes adapter plate	*403-3A-R, *403-5A-R, *403-7A-R, *403-8A-R
Power-saver speaker strobes	*757S2-15PS, *757S2-15PSW, *757S7-15PS, *757S7-15PSW, *757S2-75PS, *757S2-75PSW, *757S7-75PS, *757S7-75PSW
	Substitute XLS for *

Product description
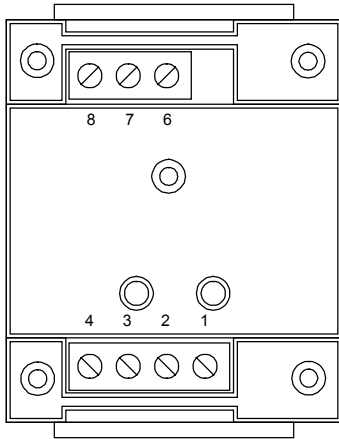
The SIGA-CR Control Relay Module is a component of the Signature Series. The SIGA-CR is an addressable device used to provide one Form C dry relay contact to control external appliances (door closers, fans, dampers, etc.) or equipment shutdown. The system firmware ensures that the relay is in the proper ON/OFF state. Upon command from the loop controller, the SIGA-CR relay energizes. TB2-6 and TB2-7 provide a normally closed relay connection; TB2-7 and TB2-8 provide a normally open relay connection. One device address is required.

The loop controller assigns an address to the SIGA-CR automatically. A custom address can also be assigned to the module via laptop computer. No addressing switches are used.

Diagnostic LEDs provide visible indication of the status of the module when the cover plate is removed:

• Normal: green LED flashes
• Alarm/active: red LED flashes

Mounting

The SIGA-CR can be mounted in a North American 2-1/2 in (64 mm) deep 1-gang box or a standard 4 in square box 1-1/2 in (38 mm) deep with 1-gang cover. The terminal blocks accept 12, 14, 16, or 18 AWG wire (2.5, 1.5, 1.0, or 0.75 sq mm). Sizes 16 and 18 are preferred.

System controller compatibility

The SIGA-CR requires the Signature loop controller.

Personality Code 8: dry contact output: The SIGA-CR is factory assigned personality code 8 which configures the SIGA-CR as an output dry relay contact.

Warnings

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

2. This module does *not* support conventional smoke detectors.

Specifications

Operating voltage range: 15.2 to 19.95 Vdc
Standby current: 100 µA
Activated current: 100 µA
Contact ratings (pilot duty)
    24 Vdc @ 2A
    120 Vac @ 0.5 A
Relay type: Form C
Operating temperature range: 32 to 120 °F (0 to 49 °C)
Operating humidity range: 0 to 93% RH
Storage temperature range: -4 to 140 °F (-20 to 60 °C)
Construction: High impact engineering polymer
Shipping weight: 5.1 oz (145 g)
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

Installation instructions

Note: The SIGA-CR is shipped from the factory as an assembled unit; it contains no user-serviceable parts and should *not* be disassembled.

To install the module:

1. Verify that all field wiring is free of opens, shorts, and ground faults.

2. Make all wiring connections as shown in the wiring diagram.

3. Write the address assigned to the module on the label provided and apply the label to the module. Peel off the removable serial number label from the module and apply it to the appropriate location in the serial number logbook.

4. Using the 4-24 x 1/2 in (13 mm) self-tapping screw provided, mount the wall plate to the module.

5. Using the two 6-32 x 1/2 in (13 mm) machine screws provided, mount the module to the electrical box.

Notes

1. If a 2 in (51 mm) 1-gang box is used, conduit can enter the electrical box through *only one* knock-out hole.

2. If a 2-1/2 in (64 mm) 1-gang box is used, conduit can enter the electrical box through *one* or *both* knock-out holes.

3. Wire in accordance with NFPA 70, *National Electrical Code.*

Wire stripping guide
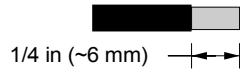
1/4 in (~6 mm)

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.

Compatible electrical box

Wall plate, white (1-gang)

FIRE ALARM MODULE

Wiring diagram

Normally Open

Common

Normally Closed

[2] [5]

TB2

8 7 6

Red LED (Alarm / Active)

Green LED (normal)

4 3 2 1

TB1

DATA IN (+) (−)

(+) DATA OUT (−)

From Signature controller or previous device

[1] [4]

To next device
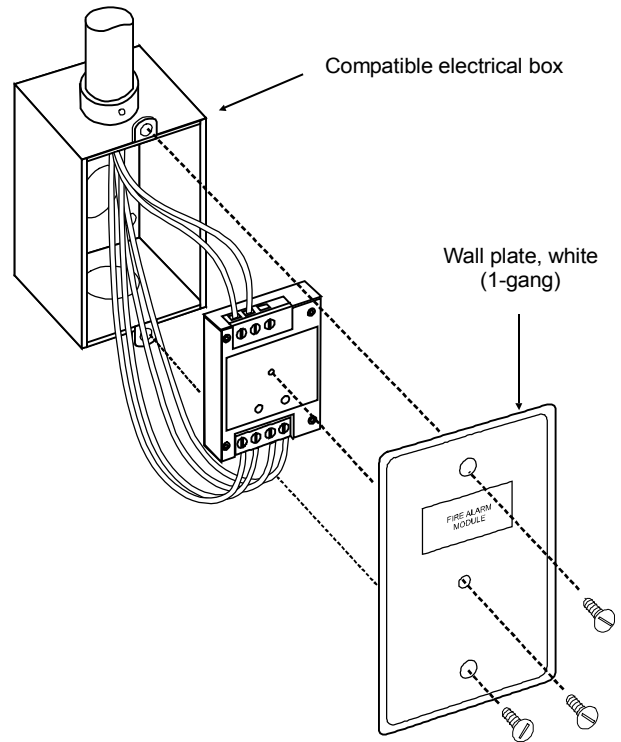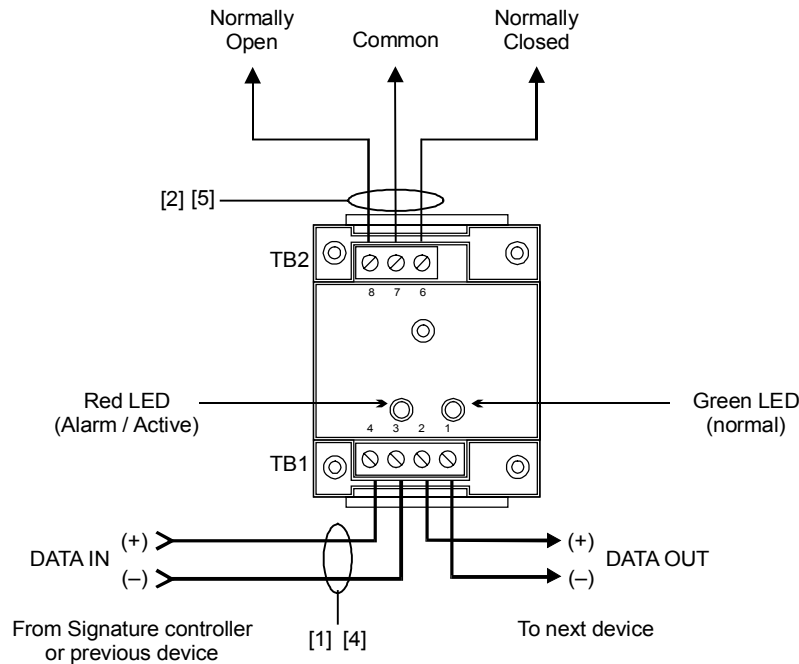
Notes

[1] Refer to the Signature loop controller installation sheet for wiring specifications

[2] The SIGA-CR must be installed within the same room as the device it is controlling

3. Maximum 12 AWG (2.5 sq mm) wire; minimum 18 AWG (0.75 sq mm) wire

[4] All wiring is power-limited and supervised

[5] Supervised and power limited when connected to power limited source. If non-power limited, then all power limited wiring in box must use FPL, FPLR, or FPLP cable or equivalent per NEC. Power limited marking must eliminated.

Description de produit
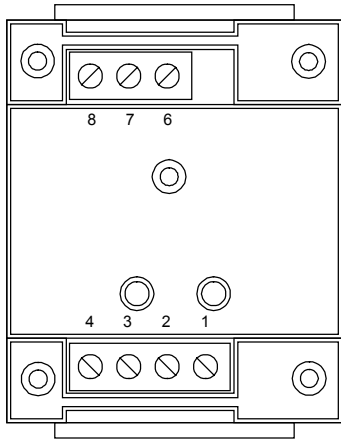
Le Module 'Relais de commande SIGA-CR est un composant du système série Signature. Le SIGA-CR est un dispositif adressable utilisé pour fournir un contact de relais sec C et commander des appareils externes (fermetures automatiques de portes, ventilateurs, registres, etc.) ou l'arrêt d'équipement. Le microprogiciel du système assure que le relais rest en position marche/arrêt correct. À la commande du contrôleur de boucle, le relais SIGA-CR est mis sous tension. Les bornes TB2-6 et TB2-7 fournissent une connexion de relais normalement fermée. Les bornes TB2-7 et TB2-8 fournissent une connexion de relais normalement ouvert. Une adresse de dispositif est nécessaire.

Le contrôleur de boucle assigne automatiquement une adresse au SIGA-CR ou une adresse particulière peut être assignée au module via ordinateur portatif; aucun commutateur d'adressage n'est utilisé.

Des témoins à DEL donnent une indication visuelle de l'état du module lorsque la plaque de protection est retirée.

• Normal: le témoin à DEL vert clignote
• Alarme/actif: le témoin à DEL rouge clignote

Montage

Le SIGA-CR peut être monté dans une boîte Amérique du Nord simple standard de 64 mm (2-1/2 po) de profondeur ou dans une boîte carrée de 10,16 cm (4 po) de côté et 38 mm (1-1/2 po) de profondeur avec couvercle simple. Les borniers acceptent des fils de 2,5, 1,5, 1,0, et de 0,75 mm carrés (AWG 12, 14, 16, ou 18). Des fils de 1,0 et de 0,75 mm carrés sont préférables.

Compatabilité avec le contrôleur du système

Le SIGA-CR est uniquement compatible avec les contrôleurs de boucle Signature.

Code de personnalité 8: sortie de contact sec: Un code de personalité de 8 est assigné au CR lors de sa fabrication et le configure comme contact de relais sec de sortie.

Avertissements

1. Ce module *ne fonctionne pas* en l'absence de courant électrique. Les incendies provoquant souvent des interruptions de courant, nous conseillons aux utilisateurs de consulter le spécialiste local de protection contre les incendies pour la mise en place de systèmes de sécurité supplémentaires.

2. Ce module *ne supporte pas* les détecteurs de fumée conventionnels.

Caractéristiques

Tension de fonctionnement: 15,2 à 19,95 Vcc
Courant de veille: 100 µA
Courant de fonctionnement actif: 100 µA
Ampèrage des contacts (fonction de commande)
    24 V CC et 2A
    120 V CA et 0,5 A
Type de relais: C
Gamme de températures de fonctionnement: 0 à 49 °C (32 à 120 °F)
Gamme d'humidités de fonctionnement: 0 à 93 % HR
Gamme de températures de stockage: -20 à 60 °C (-4 à 140 °F)
Construction: Polymère technique avec résistance élevée aux impacts
Poids à la livraison: 145 g (5,1 oz)
Boîtes électriques compatibles
    Boîte Amérique du Nord simple standard de 64 mm (2-1/2 po) de profondeur
    Boîte carrée standard de 10,16 cm (4 po) de côté et 38 mm (1-1/2 po) de profondeur, avec couvercle simple

Installation

Note: Le SIGA-CR est expédié de l'usine complètement monté; il ne contient aucune pièce dépannable par l'utilisateur et *ne doit pas être démonté.*

Pour installer le module:

1. Vérifier que le câblage électrique du site ne comprend ni défauts de connexion, ni court-circuits, ni défauts de mise à la terre.

2. Faire les connexions indiquées dans le diagramme de câblage.

3. Écrire l'adresse assignée au module sur l'étiquette fournie et coller cette étiquette sur le module. Décoller du module l'étiquette de numéro de série et la recoller à l'endroit approprié dans le registre des numéros de série.

4. Avec le vis autotaraudeuses de 4-24 x 1/2 po. (13 mm) fournie, monter la plaque murale sur le module.

5. Avec les deux vis machine de 6-32 x 1/2 po (13 mm) fournies, monter le module dans la boîte électrique.

Notes

1. Si une boîte standard simple de 51 mm (2 po) est utilisée, le conduit électrique ne peut pénétrer dans la boîte électrique que par *une* débouchure seulement.

2. Si une boîte simple standard de 64 mm (2-1/2 po) est utilisée, le conduit électrique peut pénétrer dans la boîte électrique par *une* débouchure ou par *les deux.*

3. Le câblage doit être conforme à la NFPA 70, *National Electric Code.*

Dénudage des fils
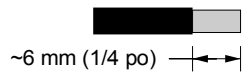
~6 mm (1/4 po)

Dénuder l'extrémité de *tous* les fils sur une longueur de ~6 mm (1/4 po) avant de les connecter sur le bornier du module.

Attention: Exposer le fil sur une plus grande longueur peut provoquer un défaut de mise à la terre. Exposer le fil sur une longueur plus courte peut se traduire par une mauvaise connexion.

Boîte électrique compatible

Plaque murale, blanche (simple standard)

FIRE ALARM MODULE

Schéma de câblage

Normalement ouvert   Commun   Normalement fermé

[2] [5]

TB2

8 7 6

Témoin à DEL rouge (Alarme/Actif)

4 3 2 1

Témoin à DEL vert (Normal)

TB1

ENTRÉE DES DONNÉES (+)
(−)

(+) SORTIE DES DONNÉES
(−)

Du contrôleur de boucle Signature ou du dispositif précédent

[1] [4]

Au dispositif suivant
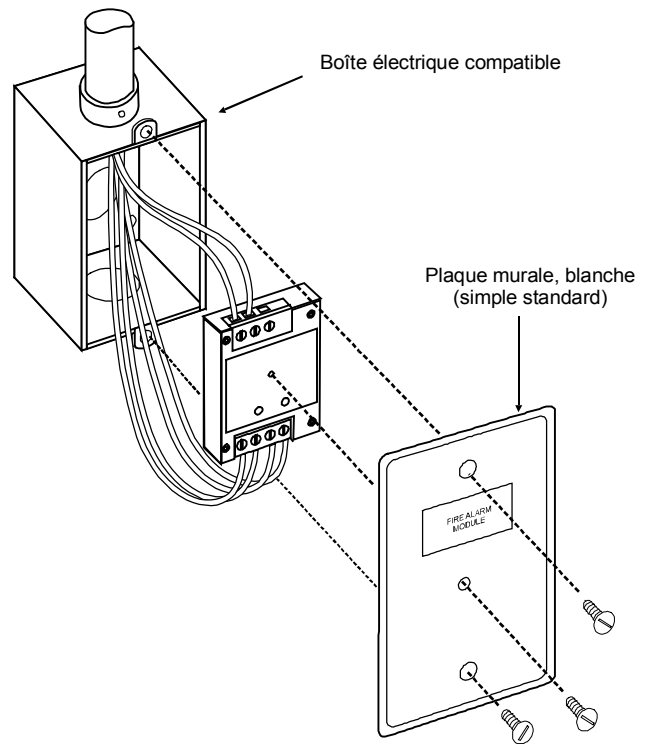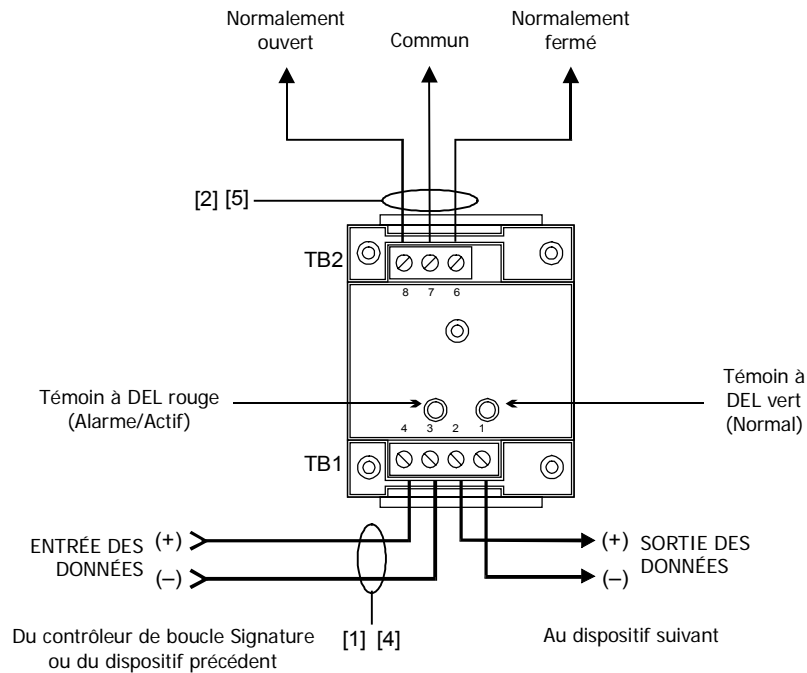
Notes

[1] Se référer à la fiche d'installation du contrôleur de boucle Signature pour obtenir les spécifications du câblage

[2] Le SIGA-CR doit être installé dans la même pièce que le dispositif qu'il contrôle

3. Calibre de fil maximum: 2,5 mm carrés (AWG 12); minimum: 0,75 mm carrés (AWG 18)

[4] Puissance limitée et contrôlée pour l'ensemble du câblage

[5] Supervisé et limité en courant lorsque raccordé à la source de courant limité. Si non limité en courant, alors tous les câbles à courant limité à l'intérieur du boîtier doit être un câble de type FPL, FPLR, FPLP ou équivalent tel que NEC. L'identification de courant limité doit être éliminé.

Product information

These instructions apply to the following model numbers:

Genesis™ Temporal Horn *G1-H**, *G1R-H**, *G1-HO** *G1R-HO**, *G1F-HO** and *G1RF-HO**.

Genesis™ Strobe *G1-V15**, *G1R-V15**, *G1F-V15**, *G1RF-V15**, *G1-V30**, *G1R-V30**, *G1F-V30**, *G1RF-V30**, *G1-V60**, *G1R-V60**, *G1F-V60**, *G1RF-V60**, *G1-V75**, *G1R-V75**, *G1F-V75**, *G1RF-V75**, *G1-V110**, *G1R-V110, *G1F-V110**, and *G1RF-V110**.

Genesis™ Temporal Horn-Strobe low dBA *G1-HV15**, *G1R-HV15**, *G1-HV30**, *G1R-HV30**, *G1-HV60**, *G1R-HV60**, *G1-HV75**, and *G1R-HV75**.

Genesis™ Temporal Horn-Strobe high dBA *G1-HOV15**, *G1R-HOV15**, *G1F-HOV15**, *G1RF-HOV15**, *G1-HOV30**, *G1R-HOV30**, *G1F-HOV30**, *G1RF-HOV30**, *G1-HOV60**, *G1R-HOV60**, *G1F-HOV60**, *G1RF-HOV60**, *G1-HOV75**, *G1R-HOV75**, *G1F-HOV75**, *G1RF-HOV75**, *G1-HOV110**, G1R-HOV110**, *G1F-HOV110**, and *G1RF-HOV110**.

Model number options:

* = ADT, E, M, XLS, or Z
** = -LG
For EST do not substitute for * and **

Install in accordance with applicable requirements in the latest editions of the NFPA codes and standards and *Canadian Electrical Code*, Part 1, Section 32, and in accordance with the local authorities having jurisdiction

Installation instructions

The Genesis models are for indoor use only.

To install:

1. Remove the cover by depressing and slightly twisting both tabs on top of the device with a small screwdriver.

2. Set the horn signal or the strobe signal if required (See "Horn and strobe settings").

3. Connect wires as shown. Electrical supervision requires the wire to be broken at each terminal (see "Wiring diagram").

4. Mount on a compatible electrical box, making sure not to over tighten the mounting screws.

5. Replace the cover by aligning at the bottom, then snapping in at the top.

6. Test the unit for proper operation.

Horn and strobe settings

To change **horn** from temporal to steady cut from circle J1 to edge of circuit board

To change **strobe** to temporal (private mode) cut from circle J2 to edge of circuit board
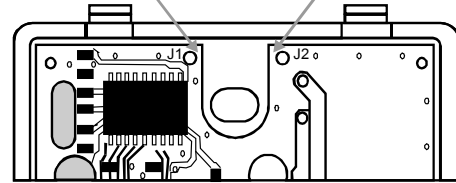
Note: Temporal horn is for evacuation purposes only. If the strobe is set to temporal (private mode), this device is no longer UL 1971 listed but is UL 1638 listed.

Warning: To reduce the risk of shock, disconnect all power, and allow 10 minutes for stored energy to dissipate before handling.

Wiring diagram

From compatible fire alarm control panel

To next device or end of line device
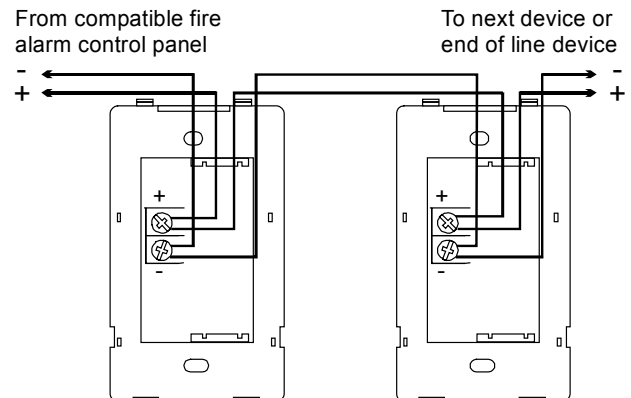
Note: Polarity shown in alarm condition

Notes

The Genesis models have no serviceable parts inside. When determining allowable wire resistance, refer to voltage rating of the signaling device and the control panel specifications.

Specifications

Operating voltage: 20 to 31 Vdc, 20 to 27 Vfwr continuous
Wire gauge: 12 to 18 AWG
Operating temperature range: 32 to 120 °F (0 to 49 °C)
Operating humidity range: 0 to 93% RH
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), 2-gang, or 4
    in octagonal with *G1T** or*G1RT** trim accessory
Synchronization: See Genesis Signal Master *G1M** or
    Genesis Signal Master Remote Mount *G1M-RM**
    installation sheets for details

Sound output

		Non HO models	HO models
Temporal	20 Vdc	76.7 dBA	82.7 dBA
	24 Vdc	78.4 dBA	84.0 dBA
	31 Vdc	80.4 dBA	85.4 dBA
Continuous	20 Vdc	80.7 dBA	85.4 dBA
	24 Vdc	82.9 dBA	87.6 dBA
	31 Vdc	85.3 dBA	88.3 dBA

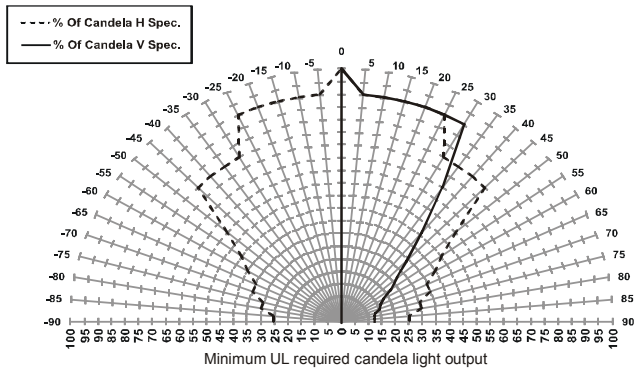Sound output for reverberant room at 10 feet (3.05m)

Meets or exceeds 85 dBA anechoic chamber at 10 ft (3.05 m)

Candela output: Meets or exceeds minimum UL required light output

Minimum UL required candela light output

Operating currents in RMS (mean) mA

Horn

Type	Temporal	Continuous
20 Vdc	17 (15)	23 (21)
24 Vdc	20 (17)	26 (24)
31 Vdc	25 (20)	32 (29)
20 Vfwr	55 (24)	55 (26)
24 Vfwr	70 (29)	64 (30)

Strobe

Type	15 cd	30 cd	60 cd	75 cd	110 cd
20 Vdc	76 (68)	137 (120)	180 (171)	210 (196)	229 (225)
24 Vdc	66 (58)	117 (100)	149 (141)	170 (158)	193 (180)
31 Vdc	54 (48)	91 (78)	116 (109)	133 (123)	151 (147)
20 Vfwr	99 (60)	151 (103)	240 (148)	272 (171)	293 (152)
24 Vfwr	88 (50)	149 (92)	202 (117)	227 (136)	288 (155)

Horn-strobe temporal

Type	15 cd	30 cd	60 cd	75 cd	110 cd
20 Vdc	82 (74)	142 (124)	177 (168)	211 (200)	240 (234)
24 Vdc	74 (66)	120 (104)	157 (148)	167 (157)	210 (204)
31 Vdc	62 (54)	100 (88)	130 (122)	131 (123)	177 (171)
20 Vfwr	110 (67)	154 (103)	250 (154)	280 (168)	303 (162)
24 Vfwr	105 (61)	158 (101)	209 (120)	230 (135)	317 (170)

Horn-strobe continuous

Type	15 cd	30 cd	60 cd	75 cd	110 cd
20 Vdc	88 (81)	146 (130)	190 (183)	217 (206)	240 (234)
24 Vdc	81 (73)	128 (114)	165 (158)	185 (176)	210 (204)
31 Vdc	78 (69)	112 (99)	142 (135)	155 (147)	177 (171)
20 Vfwr	122 (77)	166 (113)	266 (166)	290 (184)	303 (162)
24 Vfwr	117 (71)	171 (111)	243 (144)	267 (162)	317 (170)

Product information
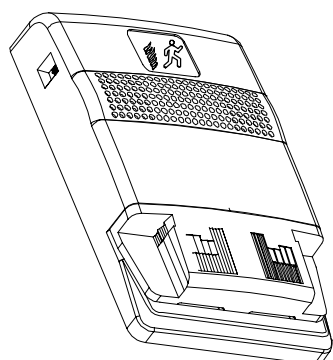
The Genesis Strobe is a visible fire alarm notification appliance designed for indoor walls. See Table 1 for a list of model numbers.

The strobe includes a field configurable switch for selecting the desired candela output and a field configurable jumper for the strobe signal output. The candela output setting is locked in place and remains visible after final installation.

This strobe features an enhanced synchronization circuit to comply with the latest requirements of UL 1971 *Signaling Devices for the Hearing Impaired* and the latest Canadian standard CAN/ULC S526-02. Synchronized operation requires a separately installed synchronization control module. See Table 2 for a list of compatible synchronization modules.

Install this device in accordance with applicable requirements in the latest editions of the NFPA codes and standards and Canadian Electrical Code, Part 1, Section 32, CAN/ULC S524-01, *Standard for the Installation of Fire Alarm Systems*, and in accordance with the local authorities having jurisdiction.

Table 1: Model numbers

Model description	Model numbers	
Strobe, 15 to 110 multi-cd, white	ADTG1-VM EG1-VM G1-VM G1-VM-LG	MG1-VM XLSG1-VM ZG1-VM
Strobe, 15 to 110 multi-cd, white, with FIRE marking	ADTG1F-VM EG1F-VM G1F-VM G1F-VM-LG	MG1F-VM XLSG1F-VM ZG1F-VM
Strobe, 15 to 110 multi-cd, red	ADTG1R-VM EG1R-VM G1R-VM G1R-VM-LG	MG1R-VM XLSG1R-VM ZG1R-VM
Strobe, 15 to 110 multi-cd, red, with FIRE marking	ADTG1RF-VM EG1RF-VM G1RF-VM G1RF-VM-LG	MG1RF-VM XLSG1RF-VM ZG1RF-VM

Table 1: Model numbers

Model description	Model numbers	
Trim plate, white	ADTG1T EG1T G1T G1T-LG	MG1T XLSG1T ZG1T
Trim plate, white, with FIRE marking	ADTG1T EG1T G1T G1T-LG	MG1T XLSG1T ZG1T
Trim plate, red	ADTG1RT EG1RT G1RT G1RT-LG	MG1RT XLSG1RT ZG1RT
Trim plate, red, with FIRE marking	ADTG1RT EG1RT G1RT G1RT-LG	MG1RT XLSG1RT ZG1RT

Table 2: Compatible synchronization modules

Model description	Model numbers	
Auto-Sync Output Module	SIGA-CC1S SIGA-CC1S-LG	SIGA-MCC1S SIGA-MCC1S-LG
Signal Master snap on piggyback	ADTG1M EG1M G1M G1M-LG	MG1M XLSG1M ZG1M
Signal Master - Remote Mount	ADTG1M-RM EG1M-RM G1M-RM G1M-RM-LG	MG1M-RM XLSG1M-RM ZG1M-RM

Specifications

Operating voltage:
    Regulated 16 to 33 Vdc, 16 to 33 Vfwr
    This device was tested to the regulated 24 Vdc/fwr operating voltage limits of 16 V and 33 V. Do not apply 80% and 110% of these values for system operation.
Strobe operating current: See Table 3
Light output: Selectable at 15, 30, 75, and 110 cd
Synchronization: Meets or exceeds UL 1971 requirements.
    Maximum allowed resistance between any two devices is 20 Ω. Refer to specifications for the synchronization control module, this strobe, and the control panel to determine allowed wire resistance.
Wire size: 12 to 18 AWG (2.50 to 0.75 sq mm)
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), 2-gang, or 4 in octagonal with G1T or G1RT trim accessory
Operating temperature range: 32 to 120 °F (0 to 49 °C)
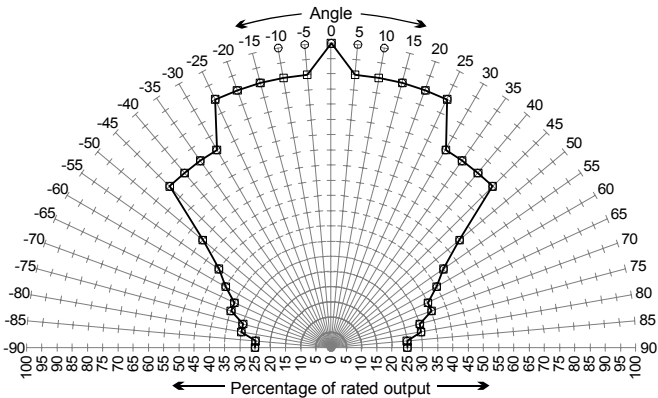Operating humidity range: 0 to 93% RH

Agency listings: Meets or exceeds year 2004 UL requirements for standards UL1638 and UL1971 (see Figure 1) and Canadian requirements for standards CAN/ULC S526-02

Table 3: Strobe operating current in RMS (A)

	15 cd	30 cd	75 cd	110 cd
Vdc	0.103	0.141	0.255	0.311
Vfwr	0.125	0.179	0.346	0.392

Vdc = Volts direct current, regulated and filtered
Vfwr = Volts full wave rectified

Operating currents shown above were measured by UL at 16 Vdc and 16 Vfwr.

Horizontal and vertical outputs reflect the same pattern.

Figure 1: UL 1971 minimum light output (% of rating vs. angle)

Installation instructions

Warning: To reduce the risk of shock, disconnect all power and allow 10 minutes for stored energy to dissipate before handling.

Caution: Electrical supervision requires the wire run to be broken at each terminal. Do not loop the signaling circuit field wires around the terminals.

To install the strobe:

1. Remove the cover by depressing both tabs on the top of the unit with a small screwdriver and twisting slightly.

2. Slide the candela switch to the desired candela output (15, 30, 75, or 110 cd) by aligning it with the indicator located beside the switch. See Figure 2.

3. Set the strobe signal if required. See Figure 3.

4. Connect the strobe terminals to the signal circuit field wiring. You must observe polarity for the unit to function properly. See Figure 4.

5. Mount the unit onto a compatible electrical box, making sure not to over-tighten the mounting screws.

6. Replace the cover by aligning at the bottom, then snapping in at the top.
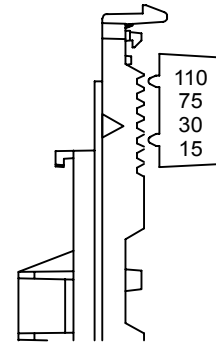
7. Test the unit for proper operation.

Figure 2: Candela switch

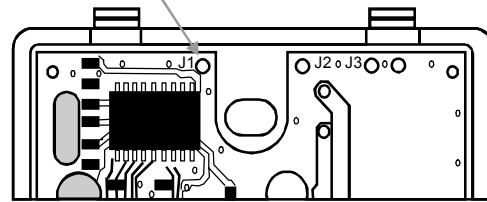To change the strobe to temporal (private mode) cut from circle J1 to edge of circuit board

Figure 3: Strobe signal setting

Note: If the strobe is set to temporal (private mode), this device is no longer UL 1971 listed but is UL 1638 listed.

From compatible fire alarm control panel

To next device or end of line device
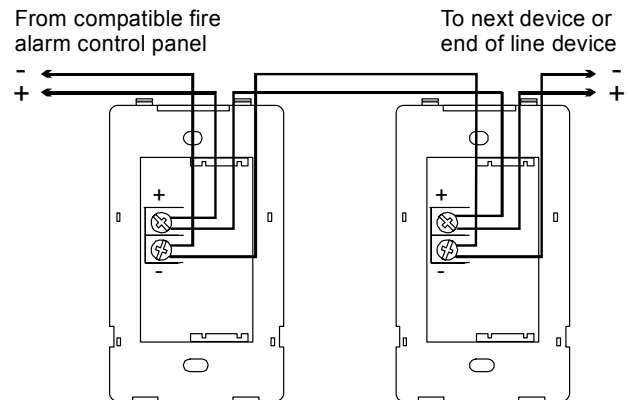
Note: Polarity shown in alarm condition

Figure 4: Wiring diagram

Maintenance

This unit is not serviceable or repairable. Should the unit fail to operate, contact the supplier for replacement.

Perform a visual inspection and an operational test twice a year or as directed by the local authority having jurisdiction.

Product description

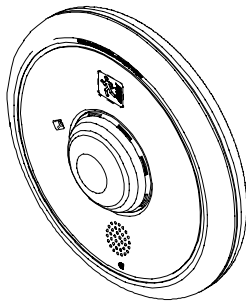The Genesis Ceiling Horn-Strobe is a fire alarm notification appliance designed for indoor ceilings and walls. See Table 1 for a list of model numbers.

Field configurable jumper options are available for selecting the desired dB output, temporal or steady horn output, and strobe signal output.

The horn-strobe includes a field configurable switch for selecting the desired candela output. The candela output setting is locked in place and remains visible after final installation.

This strobe features an enhanced synchronization circuit to comply with the latest requirements of UL 1971 *Signaling Devices for the Hearing Impaired* and the latest Canadian standard CAN/ULC S526-02. Synchronized operation requires a separately installed synchronization control module. See Table 2 for a list of compatible synchronization modules.

Install this device in accordance with applicable requirements in the latest editions of the NFPA codes and standards and Canadian Electrical Code, Part 1, Section 32 and CAN/ULC S524-01, *Standard for the Installation of Fire Alarm Systems,* and in accordance with the local authorities having jurisdiction.

Table 1: Model numbers

Model description	Model numbers	
Horn-Strobe, 95 to 177 multi-cd, white	ADTGC-HDVMH EGC-HDVMH GC-HDVMH GC-HDVMH-LG	MGC-HDVMH XLSGC-HDVMH ZGC-HDVMH
Horn-Strobe, 95 to 177 multi-cd, white, with FIRE marking	ADTGCF-HDVMH EGCF-HDVMH GCF-HDVMH GCF-HDVMH-LG	MGCF-HDVMH XLSGCF-HDVMH ZGCF-HDVMH

Table 2: Compatible synchronization modules

Model description	Model numbers	
Auto-Sync Output Module	SIGA-CC1S SIGA-CC1S-LG	SIGA-MCC1S SIGA-MCC1S-LG
Genesis Signal Master - Remote Mount	ADTG1M-RM EG1M-RM G1M-RM G1M-RM-LG	MG1M-RM XLSG1M-RM ZG1M-RM

Specifications

Operating voltage
  Regulated 16 to 33 Vdc, 16 to 33 Vfwr
  This device was tested to the regulated 24 Vdc/fwr operating voltage limits of 16 V and 33 V. Do not apply 80% and 110% of these values for system operation.
Strobe operating current: See Table 3
Light output: Selectable at 95, 115, 150, and 177 cd
Synchronization: Meets or exceeds UL 1971 requirements.
  Maximum allowed resistance between any two devices is 20 Ω. Refer to specifications for the synchronization control module, this strobe, and the control panel to determine allowed wire resistance.
Sound level output: See Table 4
Default settings
  Signal: Temporal
  Sound level output: High db
  Strobe signal output: 1 flash per second (fps)
Wire size: 12 to 18 AWG (2.50 to 0.75 sq mm)
Compatible electrical boxes
  North American 4 in square electrical box, 2-1/8 in deep (no extension ring)
Operating temperature range: 32 to 120 °F (0 to 49 °C)
Operating humidity range: 0 to 93% RH
Agency listings: Meets or exceeds ULC-S525, ULC-S526, and UL 464 Seventh Edition, year 2004 UL requirements for standards UL 1638 and UL 1971 (see Figure 1)

Table 3: Strobe operating current in RMS (A)

	95 cd	115 cd	150 cd	177 cd
Vdc	0.341	0.399	0.506	0.570
Vfwr	0.487	0.578	0.670	0.711

Vdc = Volts direct current, regulated and filtered
Vfwr = Volts full wave rectified

Operating currents shown above were measured by UL at 16 Vdc and 16 Vfwr.

Table 4: Sound level output (dBA)

Signal and voltage		High db	Low db
Temporal	16 Vdc	79.8	75.0
	24 Vdc	83.3	78.0
	33 Vdc	85.0	80.9
Steady	16 Vdc	83.2	79.3
	24 Vdc	85.4	83.0
	33 Vdc	87.8	85.9

dBA = Decibels, A-weighted

UL464: Sound level output at 10 ft (3.05 m) measured in a reverberant room.

ULC-S525: Meets or exceeds 85 dBA in an anechoic chamber at 10 ft (3.05 m).
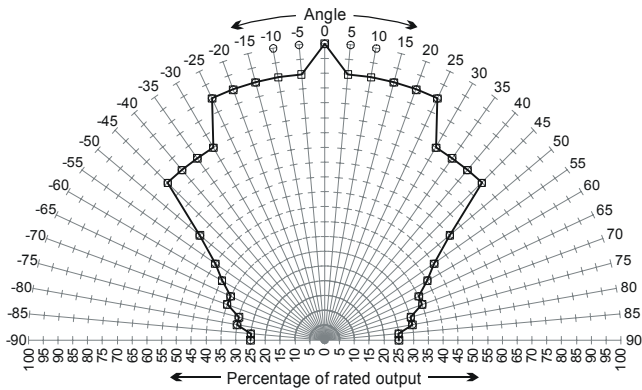
Figure 1: UL 1971 minimum light output (% of rating vs. angle)

Installation instructions

Warning: To reduce the risk of shock, disconnect all power and allow 10 minutes for stored energy to dissipate before handling.

Caution: Electrical supervision requires the wire run to be broken at each terminal. Do not loop the signaling circuit field wires around the terminals.

To install the horn-strobe:

1. Remove the cover by depressing the tab on the side of the unit with a small screwdriver. Turn the cover counterclockwise to release.

2. Set the horn signal, sound output level, and strobe signal to desired settings. See Figure 2.

3. Connect the strobe terminals to the signal circuit field wiring. You must observe polarity for the unit to function properly. See Figure 3.

4. Slide the candela switch to the desired candela output (95, 115, 150, or 177 cd) by aligning it with the indicator below the switch. See Figure 4.

5. Mount the unit onto a compatible electrical box. See Figure 5.

6. Replace the cover by positioning the alignment arrows together and rotating the cover clockwise.

7. Test the unit for proper operation.

Maintenance

This unit is not serviceable or repairable. Should the unit fail to operate, contact the supplier for replacement.

Perform a visual inspection and an operational test twice a year or as directed by the local authority having jurisdiction.
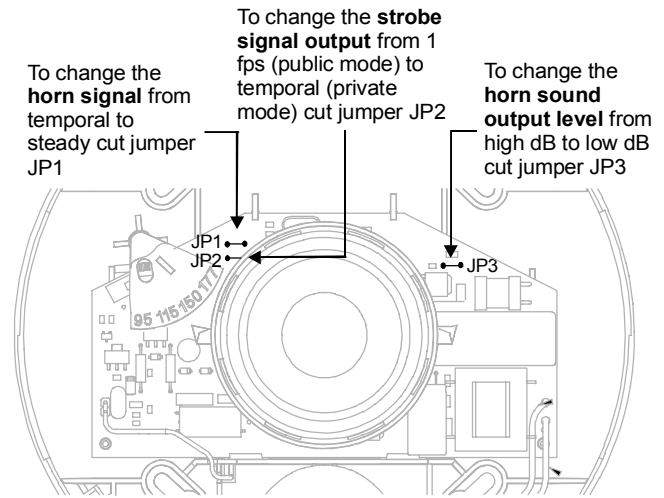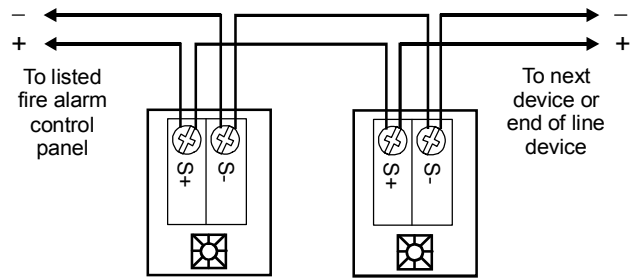

Figure 2: Horn and strobe settings
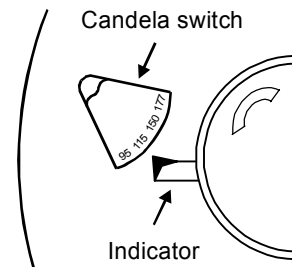

Figure 3: Wiring diagram

Figure 4: Candela switch

Figure 5: Mounting diagram

Genesis Ceiling Strobe
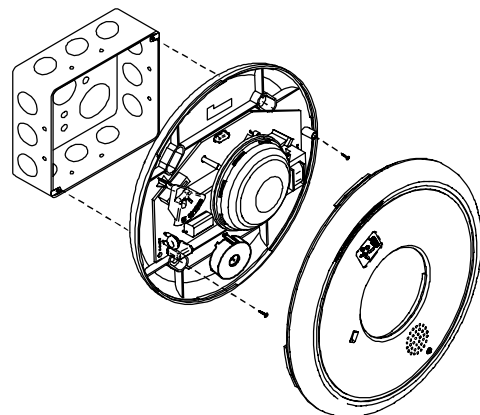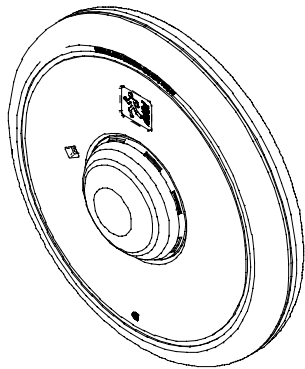
Product information

The Genesis Ceiling Strobe is a visible fire alarm notification appliance designed for indoor ceilings and walls. See Table 1 for a list of model numbers.

The strobe includes a field configurable switch for selecting the desired candela output. The candela output setting is locked in place and remains visible after final installation.

This strobe features an enhanced synchronization circuit to comply with the latest requirements of UL 1971 *Signaling Devices for the Hearing Impaired* and the latest Canadian standard CAN/ULC S526-02. Synchronized operation requires a separately installed synchronization control module. See Table 2 for a list of compatible synchronization modules.

Install this device in accordance with applicable requirements in the latest editions of the NFPA codes and standards and Canadian Electrical Code, Part 1, Section 32, CAN/ULC S524-01, *Standard for the Installation of Fire Alarm Systems,* and in accordance with the local authorities having jurisdiction.

Table 1: Model numbers

Model description	Model numbers	
Strobe, 15 to 95 multi-cd, white	ADTGC-VM EGC-VM GC-VM GC-VM-LG	MGC-VM XLSGC-VM ZGC-VM
Strobe, 15 to 95 multi-cd, white, with FIRE marking	ADTGCF-VM EGCF-VM GCF-VM GCF-VM-LG	MGCF-VM XLSGCF-VM ZGCF-VM

Table 2: Compatible synchronization modules

Model names	Model numbers	
Auto-Sync Output Module	SIGA-CC1S SIGA-CC1S-LG	SIGA-MCC1S SIGA-MCC1S-LG
Signal Master - Remote Mount	ADTG1M-RM EG1M-RM G1M-RM G1M-RM-LG	MG1M-RM XLSG1M-RM ZG1M-RM

Specifications

Operating voltage
> Regulated 16 to 33 Vdc, 16 to 33 Vfwr
> This device was tested to the Regulated 24 Vdc/fwr operating voltage limits of 16 V and 33 V. Do not apply 80% and 110% of these values for system operation.

Strobe operating current: See Table 3
Light output: Selectable at 15, 30, 75, and 95 cd
Synchronization: Meets or exceeds UL 1971 requirements.
> Maximum allowed resistance between any two devices is 20 Ω. Refer to specifications for the synchronization control module, this strobe, and the control panel to determine allowed wire resistance.

Wire size: 12 to 18 AWG (2.50 to 0.75 sq mm)
Compatible electrical boxes
> North American 4 in square electrical box, 2-1/8 in deep (no extension ring)

Operating temperature range: 32 to 120 °F (0 to 49 °C)
Operating humidity range: 0 to 93% RH
Agency listings: Meets or exceeds year 2004 UL requirements for standards UL1638 and UL1971 (see Figure 1) and Canadian requirements for standards CAN/ULC S526-02 and CAN/ULC S524-01

Table 3: Strobe operating current in RMS (A)

	15 cd	30 cd	75 cd	95 cd
Vdc	0.109	0.151	0.281	0.318
Vfwr	0.131	0.194	0.379	0.437

Vdc = Volts direct current, regulated and filtered
Vfwr = Volts full wave rectified

Operating currents shown above were measured by UL at 16 Vdc and 16 Vfwr.
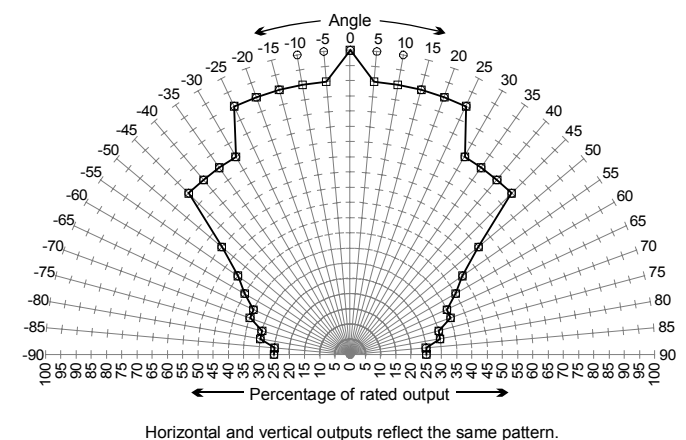

Horizontal and vertical outputs reflect the same pattern.

Figure 1: UL 1971 minimum light output (% of rating vs. angle)

Installation Instructions

Warning: To reduce the risk of shock, disconnect all power and allow 10 minutes for stored energy to dissipate before handling.

Caution: Electrical supervision requires the wire run to be broken at each terminal. Do not loop the signaling circuit field wires around the terminals.

To install the strobe:

1. Remove the cover by depressing the tab on the side of the unit with a small screwdriver. Turn the cover counterclockwise to release.

2. Connect the strobe terminals to the signal circuit field wiring. You must observe polarity for the unit to function properly. See Figure 2.

3. Slide the candela switch to the desired candela output (15, 30, 75, or 95 cd) by aligning it with the indicator below the switch. See Figure 3.

4. Mount the unit onto a compatible electrical box. See Figure 4.

5. Replace the cover by positioning the alignment arrows together and rotating the cover clockwise.

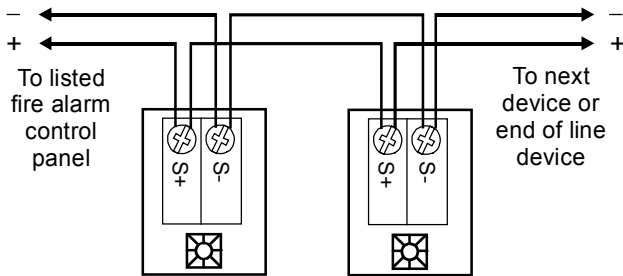6. Test the unit for proper operation.

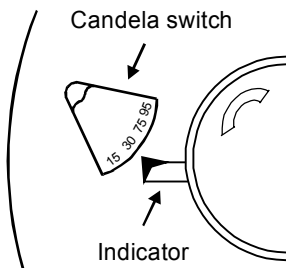Figure 2: Wiring diagram

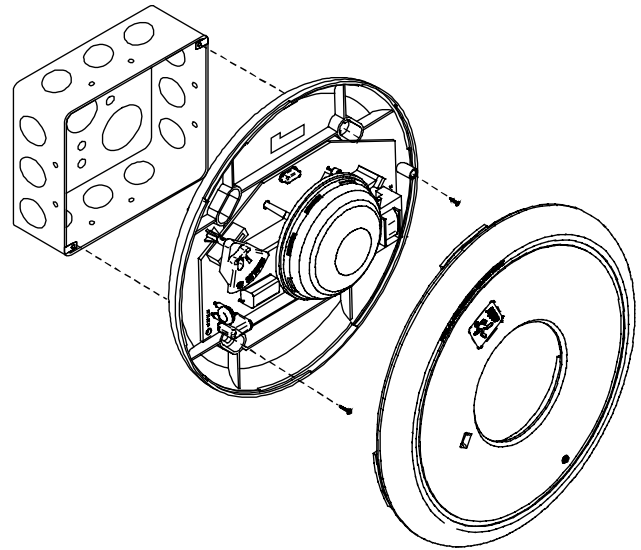Figure 3: Candela switch

Figure 4: Mounting diagram

Maintenance

This unit is not serviceable or repairable. Should the unit fail to operate, contact the supplier for replacement.
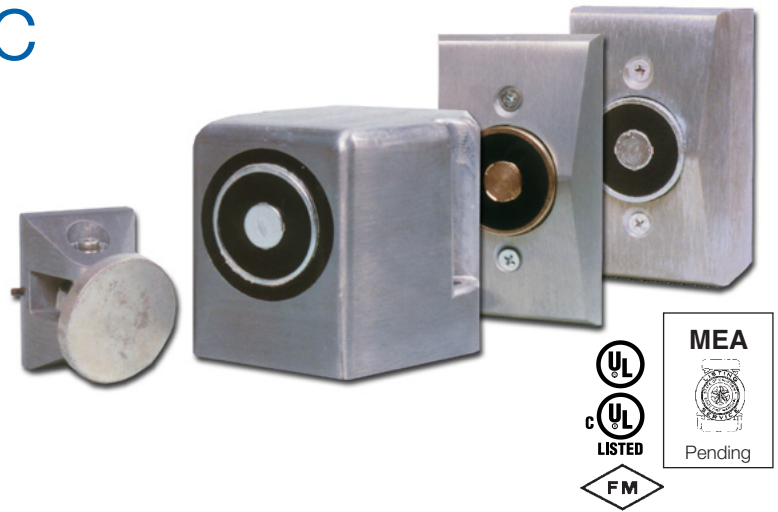
Perform a visual inspection and an operational test twice a year or as directed by the local authority having jurisdiction.

DOOR LOCKING CONTROL SYSTEM

MISCELLANEOUS DEVICES

Electromagnetic Door Holders

MEA
Pending

Overview

Edwards Electromagnetic Door Holders are ruggedly constructed and attractively designed. The housing is finished with an aluminum color, durable baked polyester powder paint. The floor or wall section houses the electromagnet while the contact plate attaches to the door. The contact plate has a shock absorbing nylon (swivel) ball which allows the plate to adjust to any door angle. Floor units are available in single-door or double-door (back to back) versions. Wall units are available in flush or surface mounted versions.

Edwards door releases should be installed wherever doors may be effectively used to confine smoke and fire, or where the release of a self-closing door from a remote location is desirable for other reasons.

Fail-safe operation is an inherent feature of Edwards door holder-releases. If power fails, doors are released automatically but may be opened or closed manually at any time. All units are free of moving parts, are self-contained and require no maintenance.

These door holder-releases have a holding force of approximately 15 to 25 Lbf (66 to 111N). The device holds a door open while energized. When de-energized by a relay controlled by the fire alarm system or other switch, the door is released to a closed position, checking the spread of smoke and flames. Electromagnetic door holders should be used and installed in accordance with local Building Codes and Standards.

Standard Features

- Floor and wall mounted styles
- Low power consumption
- AC/DC models
- Completely silent operation
- 25 Lbf (111N) nominal holding force
- Adjustable, swivel contact plate

Basic Models

Floor Mounted:
The electromagnet portion consists of a floor plate and a floor housing which when installed with gaskets provided, form a weatherproof electrical junction box. Incoming conduit connects directly into floor plate.

Floor mounted units are available with one (Cat. No. 1501) or two (Cat. No. 1502) magnet faces for holding a single door or two doors back to back.
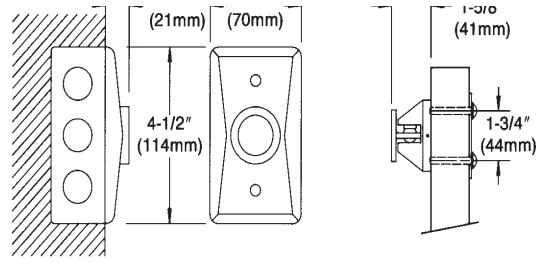
Wall Mounted:
Wall mounted models are available in flush, semi-flush and surface mounting configurations. Flush and semi-flush models are designed for concealed wiring applications and mount on standard single gang (2 x 4 inch) outlet boxes. Surface mounted models mount on a surface adaptor housing (junction box), which is provided.
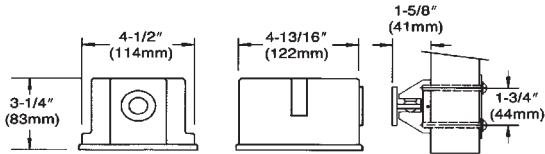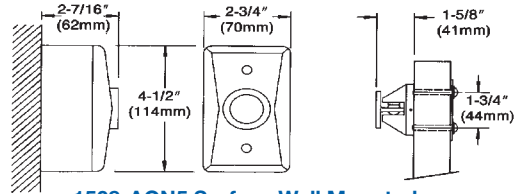
Dimensions
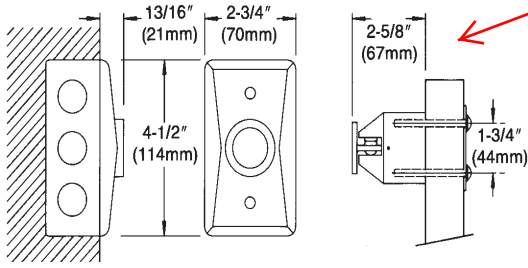
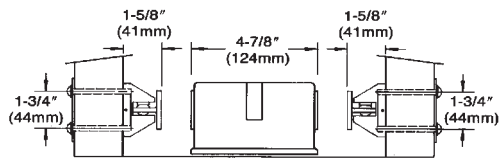**1504-AQN5 Flush Wall Mounted (Long Catch Plate)**

13/16" (21mm)   2-3/4" (70mm)   2-5/8" (67mm)   4-1/2" (114mm)   1-3/4" (44mm)

1505-AQN5 Flush Wall Mounted (Short Catch Plate)

(21mm)   (70mm)   1-5/8" (41mm)   4-1/2" (114mm)   1-3/4" (44mm)

1501-AQN5 Floor Mounted (Single Door)

4-1/2" (114mm)   4-13/16" (122mm)   1-5/8" (41mm)   3-1/4" (83mm)   1-3/4" (44mm)

1508-AQN5 Surface Wall Mounted

2-7/16" (62mm)   2-3/4" (70mm)   1-5/8" (41mm)   4-1/2" (114mm)   1-3/4" (44mm)

1502-AQN5 Floor Mounted (Double Door)

1-5/8" (41mm)   4-7/8" (124mm)   1-5/8" (41mm)   1-3/4" (44mm)   1-3/4" (44mm)

1509-AQN5 Completely Flush Wall Mounted

7/32" (6mm)   2-3/4" (70mm)   1-5/8" (41mm)   4-1/2" (114mm)   1-3/4" (44mm)
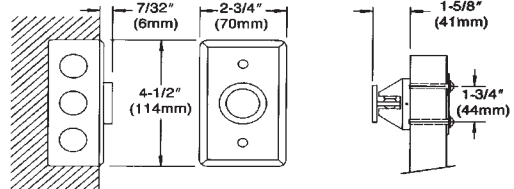
Catch Plate Extensions

Only the extension rods are included. The end pieces are included with the doorholders or can be ordered separately.

8" max. / 6.37" min. (203.2 mm max. / 161.8 mm min.)
1500-7

12" max. / 8.37" min. (304.8 mm max. / 212.6 mm min.)
1500-12

1.5" (38 mm)   **1500-1**

2.0" (50.8 mm)   **1500-2**

2.342" (59.5 mm)   1.68" (47.7 mm)

3.125" (79.4 mm)   **1500-1**

3.625" (92 mm)   **1500-2**

4.125" (104.8 mm)   **1500-1**

4.625" (117.5 mm)   **1500-2**
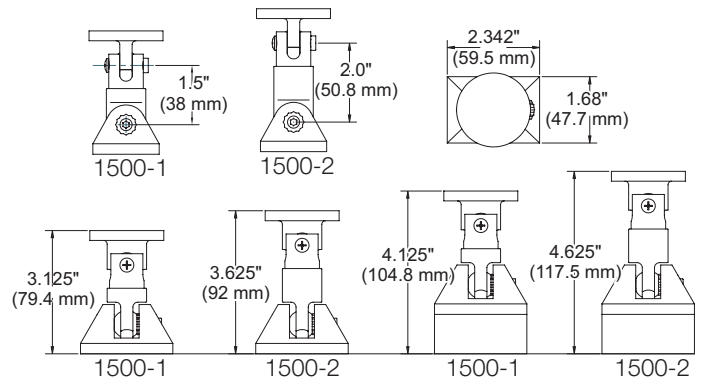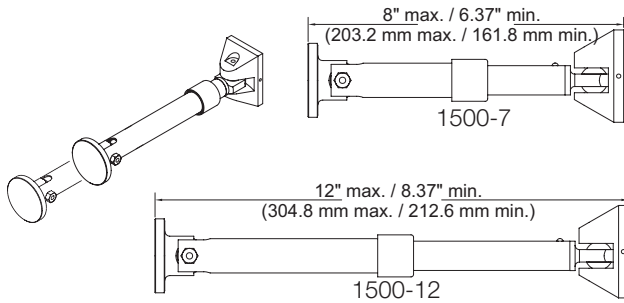
Specifications

Model No.	Style	Volts	Amps*
1501-AQN5	Floor Mounted (Single Door)		
1502-AQN5	Floor Mounted (Double Door)		
1504-AQN5	Flush Wall Mounted (Long Catch Plate)	24 Vac 60 Hz	.015
1505-AQN5	Flush Wall Mounted (Short Catch Plate)	24 Vdc 120 Vac 60 Hz	
1508-AQN5	Surface Wall Mounted		
1509-AQN5	Completely Flush Wall Mounted		

*1502-AQN5 is a double unit which draws .015 per side

Ordering Information

Model No.	Description	Ship. Wt. lb (kg)
1501-AQN5	Floor Mounted (Single Door)	5.4 (2.45)
1502-AQN5	Floor Mounted (Double Door)	5.0 (2.27)
1504-AQN5	Flush Wall Mounted (Long Catch Plate)	2.0 (0.91)
1505-AQN5	Flush Wall Mounted (Short Catch Plate)	2.0 (0.91)
1508-AQN5	Surface Wall Mounted	3.0 (1.36)
1509-AQN5	Completely Flush Wall Mounted	2.0 (0.91)

Accessories		
1500-1	Catch plate extension assembly, 1.5"	0.25 (0.11)
1500-2	Catch plate extension assembly, 2.5"	0.25 (0.11)
1500-7	Catch plate extension assembly (5.25 to 7.5 inches)	0.5 (0.23)
1500-12	Catch plate extension assembly (7.5 to 12 inches)	1.0 (0.45)
CS2595-5	Replacement armature - short (for use with 1501, 1502, 1505, 1508 and 1509 door holders)	0.25 (0.11)
CS2598-5	Replacement armature - long (for use with 1504 door holder)	0.25 (0.11)

CAUTION: These Door Holder units will not operate without electrical power.

DATA SHEET **85001-0421**
Not to be used for installation purposes. **Issue 6.1**

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05-18-11