



Architecture - Engineering - Planning
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SHOP DRAWING REVIEW

PROJECT NAME: **Westlake High School**

JOB NO: **09-ED1-045A**

SUBMITTAL ITEM: **Fire alarm equipment**

SPEC. REFERENCE: **28 31 12**

MANUFACTURER: **Edwards/GE**

REVIEWED ☐

REVIEWED AS NOTED ☒

REVISE AND RESUBMIT ☐

NOT ACCEPTED ☐

Checking is only for conformance with the design concept of the project and compliance with the information given in the contract documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site. For information that pertains solely to the fabrication processes or to techniques of construction and for coordination of the work of all trades.

DATE: **12-04-2012**

BY: **TMM**

COMMENTS:

THE FOLLOWING COMMENTS HAVE NOT BEEN MARKED ON THE ATTACHED SHOP DRAWINGS:

1. Candela ratings of strobes are the responsibility of the fire alarm designer.
2. All devices shall be individually addressed.
3. All applicable comments as noted on shop drawing #283112-2-R-1 shall also apply.
4. All horn/strobes and strobes of all types shall be "RED" in color. No white devices will be accepted.

Shop drawing 283112-1 (revised)

Westlake City Schools
Submittal Cover Sheet
(To be filled out and submitted with each submittal)

School High School Contractor: Enertech Electrical, Inc. Date Mar. 15, 2012
Specification Section: 283112 Sub Specification Section: 2.3.1; 2.3.2; 2.3.3; 2.3.4; 2.3.5 & 2.3.6
Contractor's Submittal # 00016 Revision # _____ Submittal Type PD
Lead Time After Approval (wks) 4 weeks Manufacturer/Supplier: Radi-O-Sound Communications
Intended Area of Use, Drawing # and Detail Reference: Whole Job

Contractor Stamp

ENERTECH ELECTRICAL, INC.
101 Youngstown-Lowellville Rd.
Lowellville, OH 44436

PROJECT WESTLAKE HIGH SCHOOL

DRWG. # _____

SPEC. 283112 FIRE ALARM

2.3.1; 2.3.2; 2.3.3; 2.3.4; 2.3.5 & 2.3.6

APPROVED BY  DATE 3/15/2012

SUBMITTED FOR APPROVAL

CM Stamp

TURNER/RESOURCE

Reviewed for general acceptance only. This review does not relieve the Contractor of the responsibility for making the work conform to the requirements of the contract. The Contractor is responsible for all dimensions, correct fabrication and accurate fit with the work of other trades.

SUBJECT TO ARCHITECT'S APPROVAL

Signed: Kyle Richardson Date: 3/19/12

CM Submittal #: 283112-1

Architect Stamp

Engineer Stamp

LETTER OF TRANSMITTAL

TO: Turner Construction Company Westlake High School 27840 Hilliard Blvd. Westlake, OH 44145		JOB #11687	DATE: 03/15/2012
		Attn: Kyle Richardson	
		RE: Submittal for Westlake City School District – High School	

WE ARE SENDING YOU: ☒ **Attached** ☐ Under separate cover via UPS

THE FOLLOWING ITEMS:

☐ Shop Drawings ☐ Prints ☐ Plans & Specifications
☐ Samples ☐ Copy of Letter ☐ Change Orders
☐ Other:

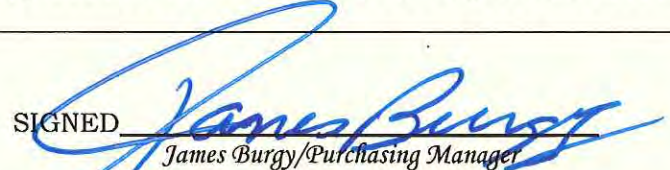
COPIES	DATE	SUBMITTAL #	DESCRIPTION
ONE (1) EACH	03/15/2012	#00016	SECTION: #283112 FIRE ALARM (2.3.1; 2.3.2; 2.3.3; 2.3.4; 2.3.5 & 2.3.6)

THESE ARE TRANSMITTED AS CHECKED BELOW:

☐ As requested ☐ Approved drawings as noted
☒ **For your use** ☐ Copies for approval
☒ **For further processing** ☐ Make all corrections
☐ For review and comments ☐ Other: For Permitting
☐ For refund on deposit
☐ For bids due/date: ☐ Prints returned after loaned to us

REMARKS:

If you have any questions or problems, please feel free to contact us at (330) 536-2131.

SIGNED 
James Burgy/Purchasing Manager

Cc: File

If enclosures are not as noted, please notify us at once.

**WESTLAKE CITY SCHOOL DISTRICT
PHASE ONE CONSTRUCTION PROJECT
WESTLAKE, OHIO 44145**

**BP HS 08 ELECTRICAL TRADES
HIGH SCHOOL**

SUBMITTAL DATA

SECTION: #283112 FIRE ALARM

**ENERTECH ELECTRICAL, INC.
101 YOUNGSTOWN-LOWELLVILLE ROAD
LOWELLVILLE, OHIO 44436**

ENGINEER STAMP/ REMARKS:

**PROJECT: WESTLAKE CITY SCHOOL
DISTRICT PHASE ONE CONSTRUCTION
PROJECT WESTLAKE, OHIO 44145**

DRW NO:

SPEC NO: #283112 FIRE ALARM

**PACKAGE: (2.3.1; 2.3.2; 2.3.3; 2.3.4; 2.3.5 &
2.3.6)**

REVIEWED BY: JB DATE: 03/15/2012

SUBMITTAL: #00016

SUBMITTED FOR APPROVAL

James Burgoyne

Material List

Westlake High School

Fire Alarm System

ITEM NO	DESCRIPTION
EDW-3XSFS1B	Edwards FACP with CPU, 1 Loop, 4 NACs, Power Supply- 3X-SFS1B
EDW-3MODCOM	Edwards EST3 Dialer 3-MODCOM
EDW-3XNET	Edwards Network Option Card, RS485, CI A or B, Max 64 Nodes
EDW-BC1	GE Security Battery Cabinet - BC-1
EDW-3LCDANN	GE Security LCD Annunciator with CPU and Door - 3-LCDANN
EDW-RLCMB	GE Security Flush Box for 3-LCDANN - RLCM/B
EDW-BPS10A6	Edwards 6 pack, Remote Booster Power Supply, 10amp, 120vac – BPS10A6
EDW-BPS10A	Edwards 10Amp Power Supply Booster - BPS10A
EDW-SIGACC1S	Edwards Riser Module w/sync SIGA-CC1S
EDW-SIGA2PS	Edwards Photoelectric Smoke Detector - SIGA2-PS
EDW-SIGA2HFS	Edwards Fixed Temp Heat Detector - SIGA2-HFS
EDW-SIGASB4	GE Security Smoke Detector Base - SIGA-SB4
EDW-SIGASD	GE Security Superduct SIGA-SD
EDW-SDTRK	GE Security Superduct Keyed Test station SD-TRK
EDW-SDT60	Edwards Sample Tube SD-T60
EDW-SIGA278	GE Security Manual Pull Station SIGA-278
EDW-SIGACT1	Edwards Addressable Single Zone Module SIGA-CT1
EDW-SIGACR	Edwards Addressable Relay Module SIGA-CR
EDW-G1FHDVM	Edwards Horn Strobe, White, with FIRE Marking - G1F-HDVM
EDW-7578ATW	Edwards 110cd Temporal Horn/Strobe - 757-8A-TW

Material List

Westlake High School

Fire Alarm System

ITEM NO	DESCRIPTION
EDW-757AWBW	Edwards Weatherproof Box, Cast - 757A-WBW
EDW-G1FVM	Edwards Strobe, White, with FIRE Marking - G1F-VM
EDW-CS4058AT	GE Security 110 Candela Outdoor Strobe Only - CS-405-8A-T
EDW-449	GE Security Backbox Weatherproof - 449
EDW-1504AQN5	Edwards Door Holder, Flush, Wall Mount, 24vac/dc or 120vac – 1504AQN%
BAT-12V12AH	Battery, 12 Volt, 12AH - 12V12AH
BAT-12V7AH	Battery, 12V, 7AH - 12V7AH
CHA-CSGWV642	Chase Wire Guard, 6" x 4" x 2" - CSGWV642 (G1R series)

EST3X Life Safety Control System



FDNY
APPROVAL
#6087



Description

EST3X represents the latest generation of life safety control panels for mid to large sized applications. With large multi-message displays and innovative controls, intuitive interfaces, and bold colored cabinets — these systems capture the imagination, and catch the eye. But behind the LCD display is where they really shine.

New microprocessors and chipsets take full advantage of the latest advances in computing technology, leading to smarter, faster, higher-capacity processing and more efficient designs. EST3X's patented Voltage Boost™ technology, for example, delivers consistent voltage — even at low battery power — resulting in lighter cable requirements and/or longer runs. That saves time and money.

High performance processing also leads to powerful networking features and versatile digital audio functionality. The wide range of EST3X configurations include standalone operation, networking with up to 64 nodes, or integration with an EST3 network comprising as many as 64 nodes — complete with EST3-Sixty mass notification capabilities and display of security events.

EST3X sets a new standard in front-panel life safety control interfaces. Its exclusive SpeedTouch™ rotary control offers nimble forward and back scrolling through events and options, while a mere tap of the control selects items with an unprecedented fluidity of motion. Its extra-large backlit display reveals up to eight concurrent messages, and switch/LED strips provide ample space for meaningful custom labels. And for end users, large tactile control buttons instill confidence and promote quick response when time is of the essence.

Standard Features

- Up to six intelligent analog loops hosting as many as 1,500 Signature Series devices per panel
- Optional integrated eight-channel digital audio
- 10 amp power supply with universal 94 to 264 Vac input voltage
- Patented Voltage Boost™ technology delivers consistent voltage — even at low battery power
- Four built-in 3-amp notification/auxiliary circuits
- Large 24-line by 40-character backlit LCD
- Simplified operation with the SpeedTouch™ rotary control
- 65 amp hour battery charger
- 64-node network nodes using copper and/or fiber
- Supports up to 30 R-Series remote annunciators
- Removable terminals on all low voltage wiring
- Space for up to three additional option cards such as extra SLC loops, amplifiers, or dialer/modem
- Optional Ethernet interface
- 1,100 event history log

Application

Application flexibility is where EST3X's leading edge computing power is put to best use. This generation of control panels is equally at home as the center of a simple single-building standalone system as it is when part of a sophisticated life safety network serving thousands of points across multiple buildings. Optional voice evacuation bridges the gap left by other mid-range systems, and makes these panels a cost-effective solution for most applications.

Strong Networking

Networking is among EST3X's strong suits. Highly efficient RS485 connectivity, plus fiber-optic communications deliver faster response times and more sophisticated diagnostic capabilities, while cost-effective remote annunciation solutions keep basic monitoring and control always within reach.

A simple EST3X network can comprise up to 64 nodes – enough to serve the needs of most campuses and larger buildings. Its ability to join an EST3 network with as many as 64 nodes extends EST3X's reach into mass notification applications, security reporting, as well as making it an ideal candidate for retrofits.

High Capacity Audio

EST3X features a full eight channels of integrated digital audio with up to two minutes of on-board programmable message storage. An optional high quality paging microphone gives live access to local, as well as remote, audio functions. Auxiliary inputs are available for mass notification operations, and ZA Series amplifiers may be mounted directly on the EST3X rail assembly.



An optional paging microphone provides local, as well as remote, audio functions.

Seamless System Integration

EST3X borrows much from its larger sibling, the venerable EST3 Life Safety Platform. And for good reason: by integrating with the EST3 networking and computing environment, an EST3X control panel can serve as a cost-effective remote node for extinguishing, smoke control, or even mass notification functions – all within the same compliance framework.

Retrofits and expansions benefit enormously from this arrangement, but programming and equipment management for new installations is equally efficient as a result of these shared resources. EST3X will accommodate up to three EST3 modules on its own rail assembly, giving it access to such proven EST3 successes as zoned amplifiers, conventional device circuits, modem communicators, and RS-485 functions. Meanwhile, installers familiar with EST3 configuration will find that the two systems share many of the same programming and diagnostic conventions.

Local and Remote Annunciation

Up to 30 R-Series LCD, LED annunciators and driver interface cards may be configured for each node on the EST3X network. No additional nodes are required for annunciation purposes. In addition, EST3X supports EST3 network annunciators, while GCI and GCIX driver interface cards provide cost-effective graphic annunciation solutions. And all annunciator inputs and outputs are easily programmable through the rules and labels function of EST3X's Software Definition Utility.



Up to 30 R-Series annunciators may be configured for each node on the EST3X network.

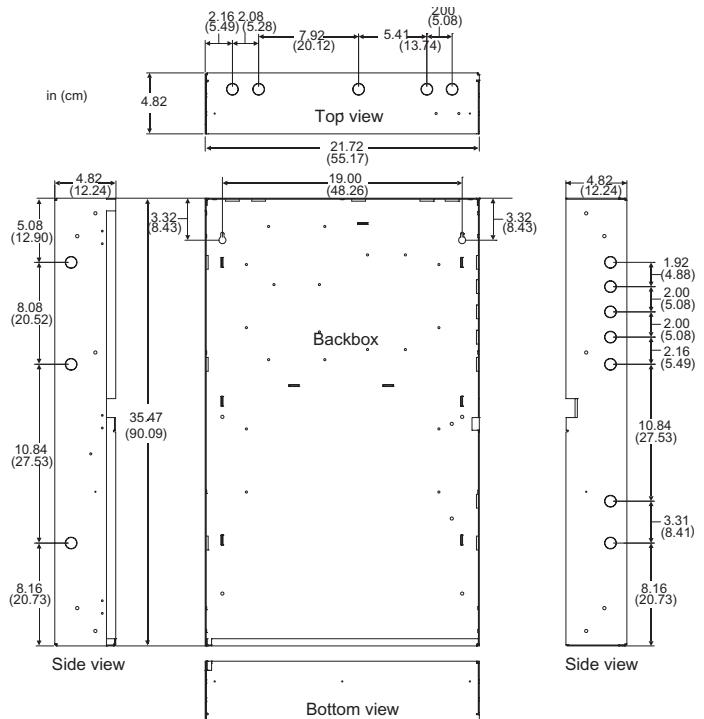
Power to Count On

Edwards' patented Voltage Boost™ technology delivers a consistent 22.5 Vdc – even at low battery power. This means lighter gauge cable can be used for equivalent distances compared with conventional power supplies, or longer wire runs on the same gauge cable. Either way, this breakthrough technology saves time and equipment costs, making EST3X not only a high-performance solution – but a cost-effective one as well.

EST3X's four on-board Notification Appliance Circuits are fully synchronized to UL 1971 standards – without the need for external modules or other electronics. Its ample 10-amp power supply is finely tuned to get the most out of Edwards' widely-acclaimed low profile Genesis notification appliances.

Dimensions

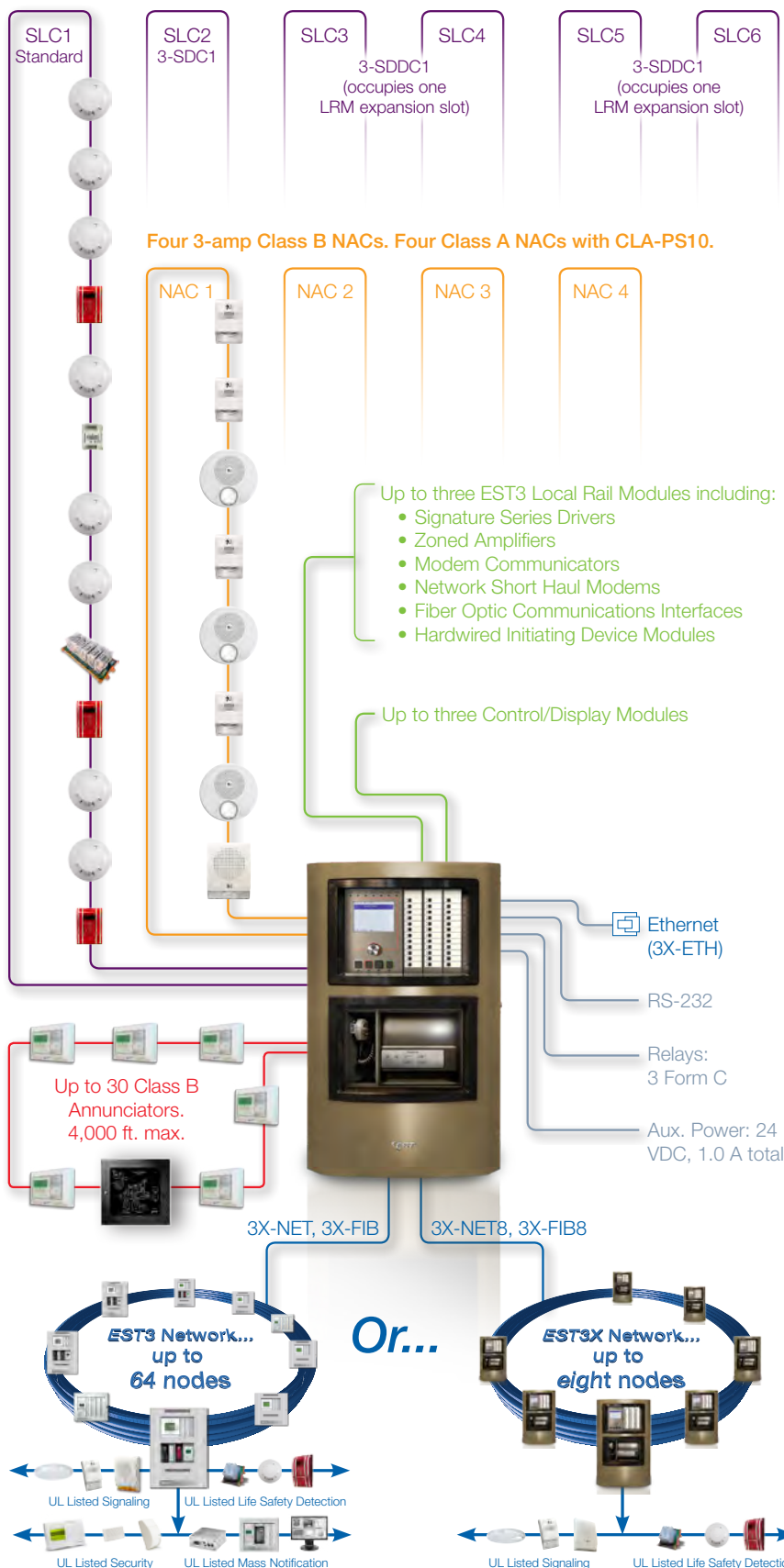
The backbox is designed for semiflush or surface mounting. Conduit and nail knockouts, keyhole style mounting holes, and wide wiring troughs facilitate efficiency during installation.



Note: Add 0.25 in (0.64 cm). to height and width dimensions to allow for knockouts when framing in the backbox for semiflush mounting.

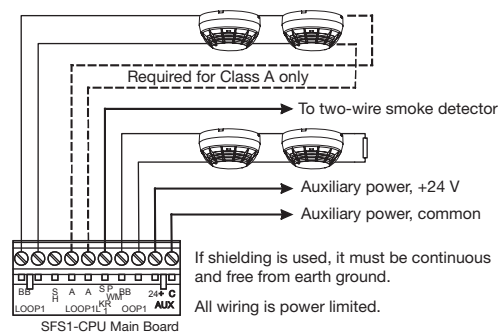
System Layout

Up to six intelligent analog loops hosting as many as 250 devices each.

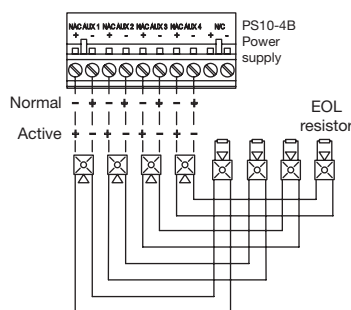


Wiring

- **Signature (initiating) Data Circuit**



■ Notification Appliance Circuits



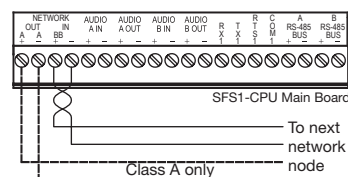
Wiring is supervised and power limited.

TB2 terminal marking indicates signal polarity when the circuit is not active. Polarity reverses when the circuit is active.

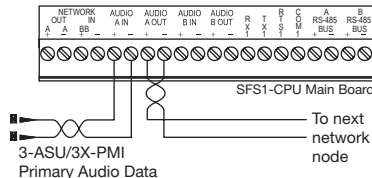
For proper circuit supervision, break the wire run at each notification appliance and install the EOL resistor at the end of the circuit.

Do not loop wires around notification appliance terminals.

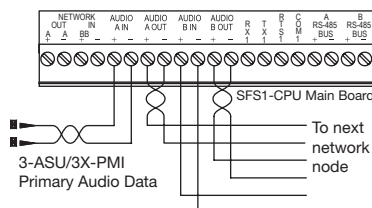
- Network data circuit



- Network data circuit, Class B audio

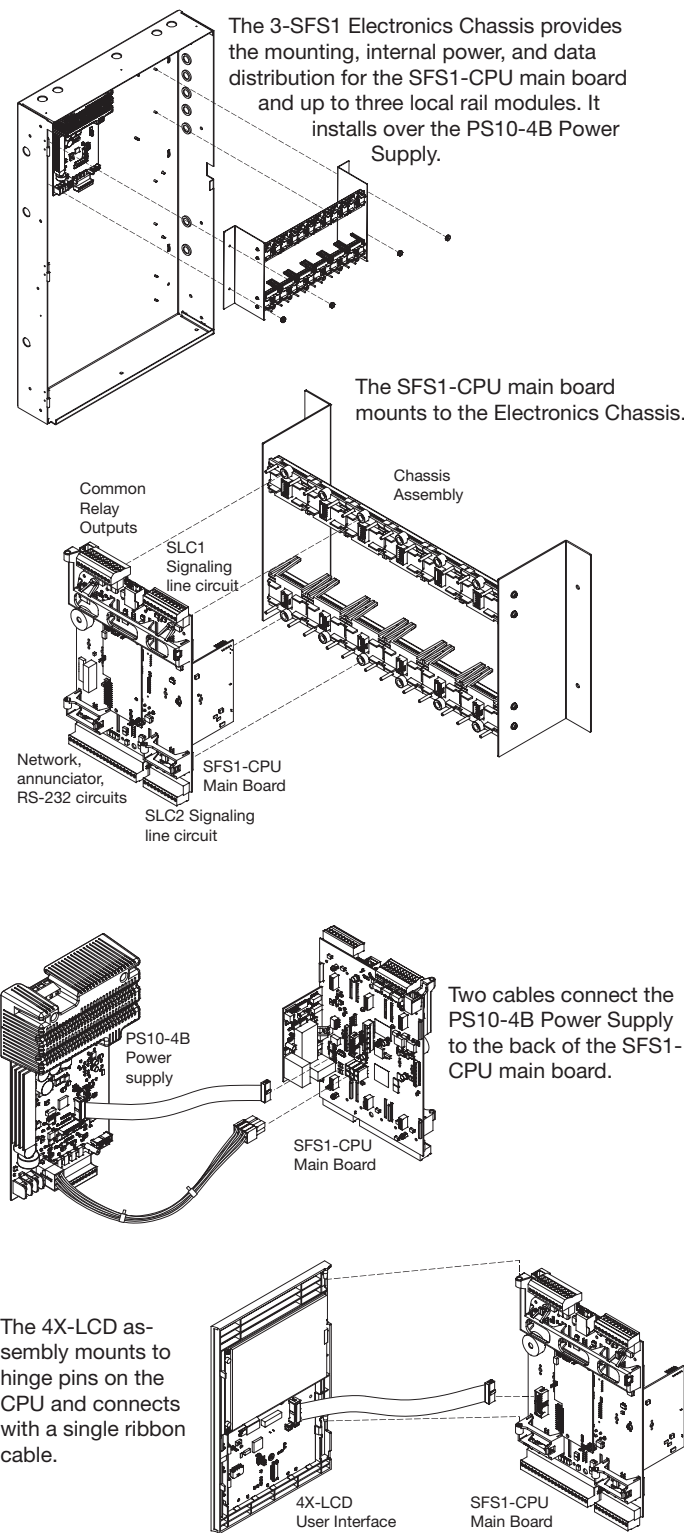


- Network data circuit, Class A audio



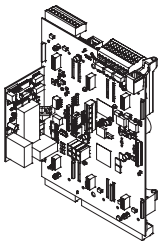
Main Component Assembly

EST3X systems are designed for quick assembly and easy access in the field. Components are modular and require no special tools to service or replace.



SFS1-CPU Main Board

The SFS1-CPU main board processes all information from modules installed within the cabinet as well as data received from other panels over the network data riser. When a network card is installed, the CPU employs a command set to determine its type.



SFS1-CPU Specifications

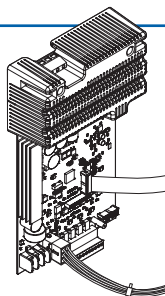
Voltage	24 VDC	
Current	Standby	115 mA at 24 VDC
	Alarm	115 mA at 24 VDC
Relay outputs		
	Quantity	3 (alarm, supervisory, and trouble)
	UL type	Common
	Contact arrangement	Form C
	Rating	30 VDC at 1 A
AUX power outputs		
	Quantity	2
	Voltage	24 VDC, resettable or continuous
	Current	1.0 A each circuit, 1.0 A total
Data network (RS-485)		
	Nodes	2 to 64 (requires optional network card)
	Performance class	Class A or Class B
	Wire type	Twisted pair, 6 twists per foot, min.
	Circuit length	5,000 ft. (1,524 m) between any three panels
	Circuit resistance	90 Ω , max.
	Circuit capacitance	0.3 μ F, max.
Serial Port (RS-232)		
	Circuit length	20 ft. (6 m) max.
	Circuit resistance	13 Ω , max.
	Circuit capacitance	0.7 μ F, max.
Annunciator port (RS-485)		
	Performance class	Class B and Redundant Class B
	Baud rate	9600 and 38400
	Wire type	Twisted pair, 6 twists per foot, min.
	Circuit length	4,000 ft. (1,219 m)
	Circuit resistance	90 Ω , max.
	Circuit capacitance	0.3 μ F, max.
Signaling line circuit		
	Quantity	2 (second SLC requires optional 3-SDC1 card)
	Performance class	Class A or Class B
	Circuit capacity	125 detectors, 125 single address modules
	Circuit resistance	100 Ω , max.
	Circuit capacitance	0.5 μ F, max.
	Wire size	18 to 12 AWG (0.75 mm ² to 2.50 mm ²)
	Ground fault impedance	10 k Ω
Operating environment		
	Temperature	32 to 120°F (0 to 49°C)
	Relative humidity	0 to 93% noncondensing

Notes

- For battery calculations, standby and alarm currents include all listed primary power supplies.
- The common trouble relay operation does not include AC trouble delay functionality and cannot be used for reporting troubles off premises per UL 864 9th edition.

PS10-4B Power Supply Card

The PS10-4B Power Supply Card provides the required power and related supervision functions for the control panel, as well as filtered, regulated power to the rail chassis modules. It also provides 24 VDC for operating ancillary equipment.



PS10-4B Specifications

Mains voltage	94 to 264 VAC, 50/60 Hz
AC Input Current	
Standby	1.5 amps
Alarm	3.0 amps
Brownout level	93 VRMS
Battery charging capacity	65 Ah max.
Total Power	Voltage 24vdc
Supply Ratings	Current 10 amps (UL), 9.0amps (ULC)
Notification appliance/Auxiliary power circuits	
UL rating	
Quantity	4
Circuit configuration	Class B ¹
Output voltage	Special: 24 Vdc Regulated: 24 Vdc
Output current	Special: 3 amps Regulated: 1.5 amps
EOLR	15 k Ω (UL P/N EOL-15, ULC P/N EOL-P1)
Wiring	
Mains input ²	Supervised, non power-limited
Battery input	Supervised, non power-limited
NAC outputs	Supervised, power-limited
Wire size	18 to 12 AWG (0.75 mm ² to 2.50 mm ²)
Ground fault impedance	10 k Ω
Operating environment	
Temperature	32 to 120 °F (0 to 49 °C)
Relative humidity	0 to 93% noncondensing

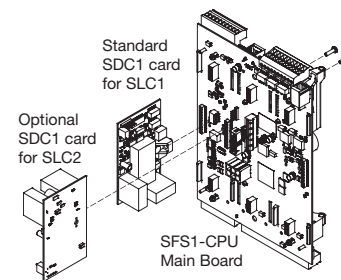
¹Class A when a CLA-PS10 Class A adapter card is installed.

² Connect the mains supply using a dedicated branch.

3-SDC1 Signature Data Circuit Card

Each 3-SDC1 Signature Data Circuit Card provides one Class A or Class B signaling line circuit (SLC1) that supports up to 125 Signature Series detectors and 125 Signature Series module addresses. These modules also provide connection for powering conventional two-wire smoke detector circuits on Signature Series modules.

EST3X comes standard with one 3-SDC1 card installed as SLC1. An optional second 3-SDC1 card may be installed to provide SLC2, thus doubling system signaling line capacity.



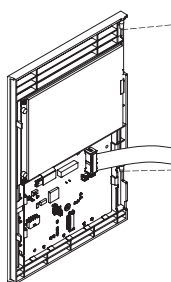
3-SDC1 Specifications

Voltage	24 VDC
Operating Current	
Standby	3-SSDC1 144 mA; 3-SDDC1 264 mA
Alarm	3-SSDC1 204 mA; 3-SDDC1 336 mA
Smoke power	19.95 VDC max. ¹
Circuit	
Configuration	Class B, Style 4, DCLB; Class A, Style 6, DCLA
Capacity	125 Signature Series detectors and 125 Signature Series modules per SLC
Resistance	100 Ω with 250 devices
Capacitance	0.5 μ F max.
Wire size	12 AWG (1.5 mm ²) max.
Termination	Removable plug-in terminal strips on the SFS1-CPU main board and Signature module
Operating environment	
Temperature	32 to 120 °F (0 to 49 °C)
Relative humidity	0 to 93% noncondensing

¹For special applications, refer to EST3X ULI/ULC Compatibility Lists (P/N 3100427)

4X-LCD User Interface

Included in the EST3X basic package, the 4X-LCD provides the user interface for the EST3X system. It connects to the SFS1-CPU main board with a ribbon cable, and attaches to the CPU via hinges. Only one display module is required to provide a point of control for the entire network. Additional displays can be added to any EST3X panel in the network to provide additional points of control.

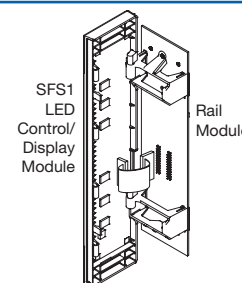


4X-LCD Specifications

Operating current	
Standby	38 mA
Alarm	50 mA
LCD display	Backlit liquid crystal display 240 x 320 pixels 24 lines of 40 characters
Operating environment	
Temperature	32 to 120 °F (0 to 49 °C)
Relative humidity	0 to 93% noncondensing

SFS1 LED Control/Display Module

The SFS1 LED Control/Display Module provides additional operator interface capability for the SFS1 system. It can be mounted on any of the three right-most local rail modules on the 3-SFS1 electronics chassis. Inserts are provided for labeling switches and LEDs.

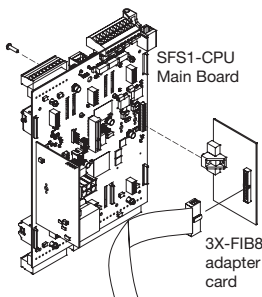


SFS1 Specifications

Voltage	24 VDC
Operating current	
Standby	2.0 mA plus 1.5 mA for each active LED
Alarm	2.0 mA plus 1.5 mA for each active LED
Operating environment	
Temperature	32 to 120 °F (0 to 49 °C)
Relative humidity	0 to 93% noncondensing

3X-FIB fiber optic network module

The 3X-FIB fiber optic network module gives an EST3X panel the ability to network 64 or more EST3X panels, or interface with an EST3 network. Both Class A and Class B connections are supported. The module consists of the adapter card and electronics card.



The 3X-FIB supports the following fiber optic transceivers:

Model	Description
SMXLO2	Standard output single mode fiber optic transceiver
SMXHI2	High output single mode fiber optic transceiver
MMXVR	Standard output multimode fiber optic transceiver

The 3X-FIB provides terminals for connecting a 24 VDC backup power source to maintain data transmissions in the event the panel is powered down.

Note: All networked panels must have the 3X-FIB network card installed.

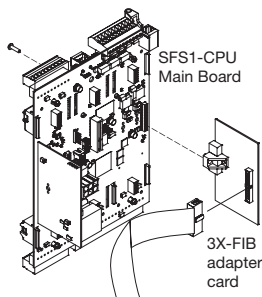
3X-FIB Specifications

Voltage	19.2 to 27.6 VDC (24 VDC nominal)		
Fiber optics network and audio			
Budget			
	SMXLO2	15 dBm between two interfaces	
	SMXHI2	25 dBm max. and 8 dBm min. 10 dBm between two interfaces	
	MMXVR	50/125, 62.5/125, or 100/140 for MMXVR	
Cable type			
Connectors	50/125, 62.5/125, or 100/140 for		
SMXLO2, SMXHI2	Type Duplex SC		
MMXVR	Type ST		
Network data circuit			
Circuit configuration	Class B (style 4) or Class A (style 7)		
Data rate	19.2 K, 38.4 kbps		
Isolation	Isolated from previous panel CPU when using copper. Total isolation when using fiber optics.		
Digitized audio data circuit			
Circuit configuration	Class B (style 4) or Class A (style 7)		
Data rate	327 kbps		
Isolation	Isolated from previous panel CPU when using copper. Total isolation when using fiber optics.		
Copper wired network data circuit segment			
Circuit			
	Length	5,000 ft. (1,524 m) max. between any three panels	
	Resistance	90 Ω max.	
	Capacitance	0.3 μF max. ¹	
	Wire type	Twisted Pair, 18 AWG (0.75 mm²) min.	
Operating environment			
	Temperature	32 to 120 °F (0 to 49 °C)	
	Relative humidity	0 to 93% noncondensing	

¹Include shield capacitance, if shielding is used.

3X-FIB8 fiber optic network module

The 3X-FIB8 fiber optic network module gives an EST3X panel the ability to network up to eight other EST3X nodes. Both Class A and Class B connections are supported. The module consists of the adapter card and electronics card.



The 3-FIB8 supports the following fiber optic transceivers:

Model	Description
SMXLO2	Standard output single mode fiber optic transceiver
SMXHI2	High output single mode fiber optic transceiver
MMXVR	Standard output multimode fiber optic transceiver

The 3X-FIB8 provides terminals for connecting a 24 VDC backup power source to maintain data transmissions in the event the panel is powered down.

Note: All networked panels must have the 3X-FIB8 network card installed.

3X-FIB8 Specifications

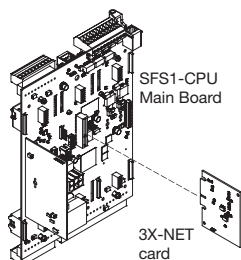
Voltage	19.2 to 27.6 VDC (24 VDC nominal)		
Fiber optics network and audio			
Budget			
	SMXLO2	15 dBm between two interfaces	
	SMXHI2	25 dBm max. and 8 dBm min. 10 dBm between two interfaces	
	MMXVR	50/125, 62.5/125, or 100/140 for MMXVR	
Cable type			
Connectors	50/125, 62.5/125, or 100/140 for		
SMXLO2, SMXHI2	Type Duplex SC		
MMXVR	Type ST		
Network data circuit			
Circuit configuration	Class B (style 4) or Class A (style 7)		
Data rate	19.2 K, 38.4 kbps		
Isolation	Isolated from previous panel CPU when using copper. Total isolation when using fiber optics.		
Digitized audio data circuit			
Circuit configuration	Class B (style 4) or Class A (style 7)		
Data rate	327 kbps		
Isolation	Isolated from previous panel CPU when using copper. Total isolation when using fiber optics.		
Copper wired network data circuit segment			
Circuit			
	Length	5,000 ft. (1,524 m) max. between any three panels	
	Resistance	90 Ω max.	
	Capacitance	0.3 μF max. ¹	
	Wire type	Twisted Pair, 18 AWG (0.75 mm²) min.	
Operating environment			
	Temperature	32 to 120 °F (0 to 49 °C)	
	Relative humidity	0 to 93% noncondensing	

¹Include shield capacitance, if shielding is used.

3X-NET Network Adapter Card

The 3X-NET network adapter card gives an SFS1-CPU main board the ability to network up to 64 nodes on an EST3 network. The card supports Class B and Class A wiring.

The 3X-NET adapter card provides two independent RS 485 circuits: one for network data communications and one for digital audio communications.



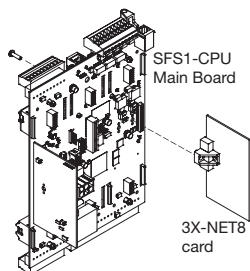
3X-NET Specifications

Voltage	24 VDC
Operating Current	
Standby	98 mA at 24 VDC
Alarm	98 mA at 24 VDC
Circuit configuration	
Network data	Class A, Style 6 & Class B, Style 4
Network audio	Class A, Style 6 & Class B, Style 4
Isolation	
Network data	Network A port not isolated; Network B port isolated
Network audio	Audio A IN and Audio B IN isolated Audio A OUT and Audio B OUT not isolated
Wire size	Twisted pair ¹ 18 AWG (0.75 mm) min.
Circuit length	5,000 ft. (1,524 m) between any three panels
Circuit resistance	90 Ω max.
Circuit capacitance	Data: 0.3 μ F max.; Audio 0.09 μ F max.
Operating environment	
Temperature	32 to 120 °F (0 to 49 °C)
Relative humidity	0 to 93% noncondensing

¹Six twists per foot minimum

3X-NET8 network card

The 3X-NET8 RS-485 network card gives an SFS1-CPU main board the ability to network through dedicated copper wire up to 64 EST3X control panels. The card supports Class B and Class A wiring.



Note: All networked panels must have a 3X-NET8 network card installed.

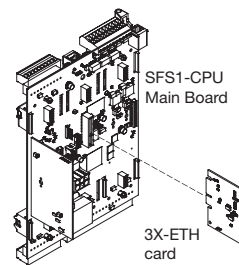
3X-NET8 Specifications

Voltage	24 VDC
Operating Current	
Standby	98 mA at 24 VDC
Alarm	98 mA at 24 VDC
Circuit configuration	
Network data	Class A, Style 6 & Class B, Style 4
Isolation	
Network data	Network A port not isolated, Network B port isolated
Wire size	Twisted pair ¹ 18 AWG (0.75 mm) min.
Circuit length	5,000 ft. (1,524 m) between any three panels
Circuit resistance	90 Ω max.
Circuit capacitance	0.3 μ F max.
Operating environment	
Temperature	32 to 120 °F (0 to 49 °C)
Relative humidity	0 to 93% noncondensing

¹ Six twists per foot min.

3X-ETH1 Ethernet Adapter Card

The 3X-ETH1 adapter card provides a standard 10/100 Base-T Ethernet network connection for panel programming, diagnostics, and status monitoring. Four LEDs on the adapter card indicate card and network status.



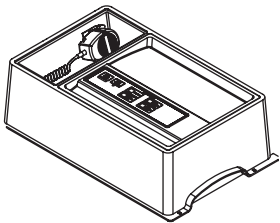
3X-ETH1 Specifications

Ethernet	10/100 Base-T
Voltage	24 VDC
Operating current	
Standby	44 mA at 24 VDC (54 mA when connected to an active Ethernet connection)
Alarm	44 mA at 24 VDC
Connection mode	Auto negotiation
Copper wired network data circuit segment	
Circuit	
Length	5,000 ft. (1,524 m) max. between any three panels
Resistance	90 Ω max.
Capacitance	0.3 μ F max. ¹
Wire type	Twisted Pair, 18 AWG (0.75 mm ²) min.
Copper wired audio data circuit	
Circuit	
Length	5,000 ft. (1,524 m) max. between any 3 panels
Resistance	90 Ω max.
Capacitance	0.09 μ F, max. ¹
Wire type	Twisted pair, 18 AWG (0.75 sq ²) min.
Wire runs	
Distance	200 ft. (60 m) max. ¹
Type	Cat 5
Connector	RJ-45
Operating environment	
Temperature	32 to 120 °F (0 to 49 °C)
Relative humidity	0 to 93% noncondensing

¹Panel to communication equipment

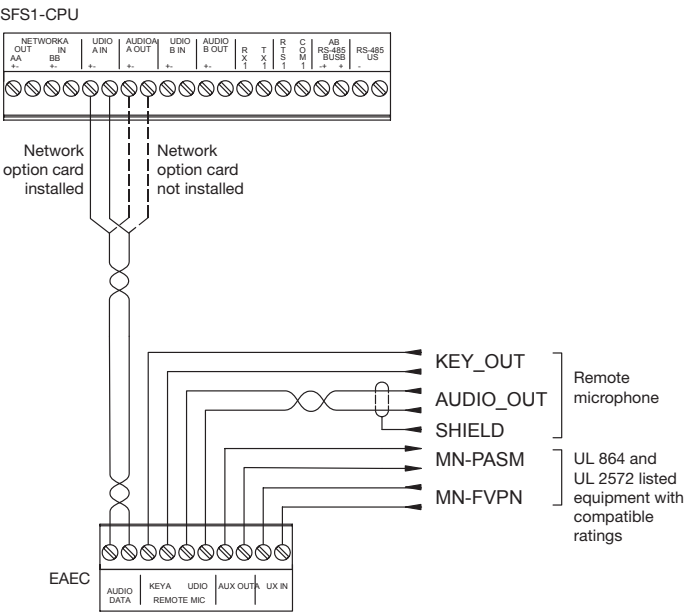
3X-PMI Paging
Microphone Interface

The 3X-PMI Paging Microphone Interface provides controls for emergency voice/alarm communications. It consists of an audio mounting bracket, EAEC Emergency Audio Evacuation Controller card, audio enclosure, and paging microphone.



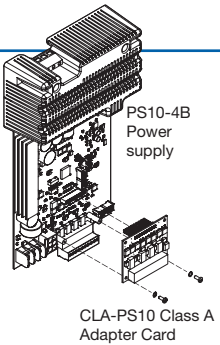
3X-PMI Paging Microphone Interface Specifications

Voltage		24 VDC
	Current	Standby 15.5 mA
	Alarm	16.6 mA
Ground fault impedance		10 kΩ
Wire size		18 to 12 AWG (0.75 to 2.50 mm²)
Audio channels		8 simultaneous
Audio inputs		
Local microphone		Isolated and supervised
Remote microphone		Isolated and supervised
Remote audio		Isolated and supervised
EAEC communication		See the EAEC Emergency Audio Evacuation Control Installation Sheet (P/N 3101789)
Messages		
	Storage	2 min. total
	Length	39 sec. max.
Controls and indicators		
Common		
Paging Volume		Indicates relative signal strength during active page
Ready To Page		Flashes during preannouncement tone, steady when ready to page
Paging Microphone		
All Call		Activates/deactivates page to all areas
All Call Minus		Activates/deactivates page to areas not receiving EVAC or Alert message
Page To Evac		Activates/deactivates page to areas currently receiving the EVAC message
Page To Alert		Activates/deactivates page to areas currently receiving the Alert message
Operating environment		
Temperature		32 to 120°F (0 to 49°C)
Relative humidity		0 to 93% noncondensing



CLA-PS10 Class A
Adapter Card

The CLA-PS10 Class A Adapter Card is an optional card used to convert the four Class B notification appliance/auxiliary power circuits on the power supply card to Class A.



CLA-PS10 Specifications

Voltage	24 VDC
Notification appliance/Auxiliary power circuits	
UL rating	Special application or Regulated
Quantity	4
Performance class	Class A
Output current	Special 3.0 A; Regulated: 1.5 A each circuit
EOLR	15 kΩ (UL P/N EOL-15, ULC P/N EOL-P1)
Wiring	Supervised, power-limited
Wire size	18 to 12 AWG (0.75 mm² to 2.50 mm²)
Operating environment	
Temperature	32 to 120 °F (0 to 49 °C)
Relative humidity	0 to 93% noncondensing

Ordering Information

Intelligent Analog Control Panels

Model	Door Color	Language	Description
3X-SFS1B	Bronze	English Selectable	FACP, complete system with user interface, CPU, one loop with second loop expansion, three option card slots, four Class B NAC, universal 110/220v 10 amp power supply. Order 3-SDC1 for second loop.
3X-SFS1R	Red		
3X-SFS1Bi	Bronze		
3X-SFS1Ri	Red		
TRIM6			Flush trim ring

Network communication option cards

3X-NET8	RS485, eight node max. Class A/B network. Use on 3-SFS systems only.		
3X-NET	RS485, Class A/B network. For connection to EST3 systems.		
3X-FIB8	Fiber, 8 node max. Uses MMXVR, SMXHI2, SMXLO2. Use on 3-SFS systems only.		
3X-FIB	Fiber motherboard for connection to EST3 systems. Used with MMXVR, SMXHI2 and SMXLO2.		
SMXLO2	Standard output single mode fiber optic transceiver		
SMXHI2	High output single mode fiber optic transceiver		
MMXVR	Standard output multimode fiber optic transceiver		

Communication Options

3X-ETH1	Ethernet Adapter, 10/100. Provides Ethernet connection from system to 3-SDU for remote programming and diagnostics. Uses standard Ethernet cable (not supplied).
---------	--

Front Panel LED/Switch display modules

4X-12/S1GY	LED Display/Control Module - 12 Switches, 1 Green, 1 YELLOW LED per switch.
4X-12/S1RY	LED Display/Control Module - 12 Switches, 1 RED, 1 YELLOW LED per switch.
4X-12SR	LED Display/Control Module - 12 Switches with 12 RED LEDs.
4X-12RY	LED Display Module - 12 pairs of LEDs (1 Red; 1 Yellow)
4X-24Y	LED Display Module - 24 YELLOW
4X-24R	LED Display Module - 24 RED
4X-6/3S1G2Y	LED/Switch Module - six groups of three Switches with one LED each.
4X-6/3S1GYR	LED/Switch Module - six groups of three Switches with one LED each.
4X-4/3SGYWR	LED/Switch Module, four groups of three switches and four LEDs. LED colors: Green, Red, Yellow and White.
4X-LKF	Label Kit, French

Option Cards and Interfaces

3X-PMI	Paging Microphone Interface
3-SSDC1	Single Signature Driver Controller, c/w one 3-SDC1
3-SDDC1	Dual Signature Driver Controller, c/w two 3-SDC1s
3-SDC1	Signature Device Card - expands the 3X base panel to two loops
3-ZA20A	20 Watt Zoned Amplifier w/Class A/B Audio & Class A/B 24 VDC outputs
3-ZA20B	20 Watt Zoned Amplifier w/Class B Audio & Class B 24 VDC outputs
3-ZA40A	40 Watt Zoned Amplifier w/Class A/B Audio & Class A/B 24 VDC outputs
3-ZA40B	40 Watt Zoned Amplifier w/Class B Audio & Class B 24 VDC outputs
3-MODCOM	Modem/Dialer (DACT)
3-MODCOMP	Modem/Dialer (DACT) w/TAP Pager Protocol
3-AADC1	Addressable Analog Module
3-IDC8/4	Initiating Device Circuit Module
3-OPS	Off Premises Signaling module
CLA-PS10	Class A Adapter, PS10 NACs
CDR-3	PSNI Coder Module
GCI	Graphic Annunciator Driver Master, provides outputs for 32 LEDs and connection to common control switches and LEDs for R-Series annunciators.
GCIX	Graphic Annunciator Driver Expander, provides outputs for 48 LEDs and inputs for 24 switches.



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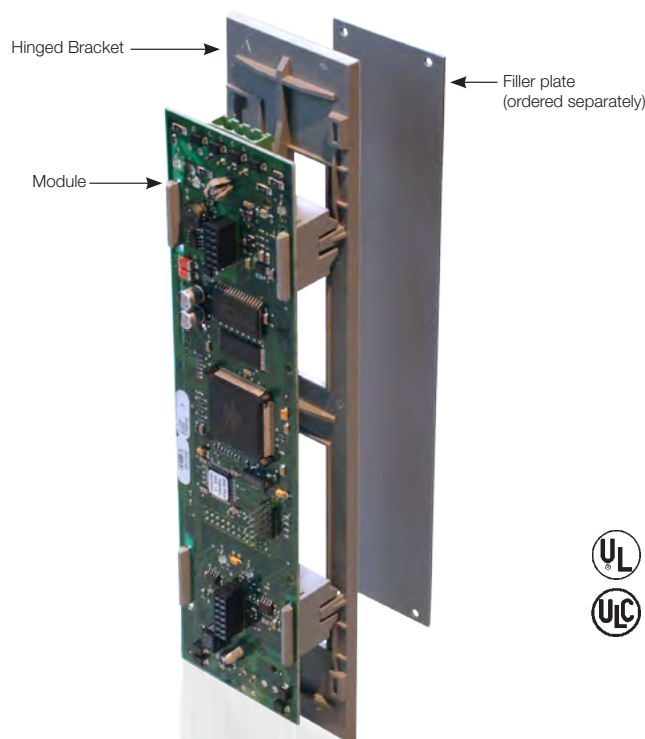
Accessories	
PS10-4B	Power Supply, Replacement
SFS1-ELEC	Base Electronics, replacement
4X-LCD	Main user interface assembly, monochrome. Eight line 1/4 VGA LCD, four controls plus rotary knob. English language.
4X-LCD-LC	Main user interface assembly, monochrome. Eight Line 1/4 VGA LCD, four controls plus Rotary knob. Insertable language, shipped with English inserts. Order alternate languages separately.
4X-CAB6D	Replacement door, bronze
4X-CAB6DR	Replacement door, red
4X-CAB6B	Backbox, black

Related Data Sheets

85010-0129 -- Signature Driver Controller Modules
85010-0057 -- EST3 Zoned Audio Amplifiers
85010-0107 -- EST3 Modem Communicator
85010-0131 -- Fiber Optic Communications Interface
85010-0113 -- Network Short Haul Modem
85005-0128 -- R-Series Remote Annunciators

Modem Communicator

3-MODCOM, 3-MODCOMP



Overview

The **Modem** Communicator is a two-way local rail module that performs a variety of off-premise communications functions for the EST3 system.

Using the latest in digital signal processing (DSP) techniques, the Modcom provides off premise communication features unavailable on any other system.

The module has provisions for supervising two loop-start telephone lines. The module features a modular jack for telephone line connections. The Modcom's configuration and firmware can also be updated from any network node.

Modcom series modules occupy a single local rail space and can be mounted in any node on the network. Any EST3 Control/Display module can be mounted on the face of a Modcom series module. Power for the Modcom is supplied by the EST3 system supply.

The Modcom provides an enhanced level of survivability in the event of a network CPU failure by notifying the Central Monitoring Station of the failure and entering a degraded mode of operation. In degraded mode, the Modcom can transmit a default fire alarm message during a fire alarm condition.

Standard Features

- Listed for fire, security and access control
- V.32bis 14.4K full duplex modem
- Digital alarm communicator transmitter supporting: SIA DCS protocol, Contact ID protocol, 3/1 and 4/2 pulse format protocol
- Supports "tap" alphanumeric pager protocol
- Fully programmable messages
- Alarm override of upload/download
- Two phone line capability
- Field upgradable firmware
- Split and multiple reporting to as many as 80 different receivers
- 255 subscriber accounts
- Supports control/display modules
- Supervised by the network controller

Application

Two versions of the Modcom are available:

3-MODCOM - Has an internal V.32bis 14.4K baud full duplex modem. The modem permits upload and download of system data remotely via a telephone line. In addition, the 3-MODCOM has a Digital Alarm Communications Transmitter (DACT) or dialer function that transmits network status information to Central Monitoring Stations (CMS) via telephone. Four DACT protocols are available:

1. Digital Communicator Standard (DCS) "SIA forma" Dialer – 300 baud format, which transmits alphanumeric system status data to the CMS;
2. Contact ID;
3. SIA 3/1 dialer; and,
4. SIA 4/2 dialer.

Alarm code content is determined by system rules.

3-MODCOMP – In addition to all modem and dialer (DACT) functions of the 3-MODCOM, the 3-MODCOMP can dial directly into paging systems using Telelocator Alphanumeric Protocol (TAP). Alphanumeric system data can be sent to a single pager or group(s) of pagers. Some pager services can forward messages via e-mail and Fax.

Multiple Priority

Each Modcom can buffer up to 500 events in its event queue. It reviews all active events in the queue and identifies the highest priority event and dials the associated receiver. When the receiver is contacted, the MODCOM will transmit the highest priority message for that receiver. If the message is successfully received, the MODCOM identifies the next highest priority message and the process repeats.

Phone Line Friendly

The Modcom series has been designed for installation on the same phone lines with other devices such as phones and faxes. The module makes its first dial out attempt on either of the two phone lines that is not in use. This prevents unnecessary interruption of calls in progress by the line seizure relays. In the event that both lines are busy, the module seizes line one.

A fixed DACT testing time can be set at an off-hour, e.g. 2:00am, again minimizing interruptions and phone line costs. The call time is programmable, and allows testing of the DACT with the central station.

The Modcom series also has the ability to detect Type 1, Type 2 and Type 3 distinctive ringing patterns, permitting it to share its phone lines with other devices and still have a unique phone number for incoming modem calls.

Multiple Modcoms per Network

Multiple Modcoms can be installed in a single cabinet or located in nodes throughout the network to provide added availability and enhanced redundancy of off premise communications.

Multiple Receiver Capability

In large system applications the EST3 system may be partitioned such that it supports a number of different customers, each using different Central Monitoring Stations and/or paging companies. The Modcom can accommodate up to 255 different accounts using up to 80 different receivers.

The Modcom supports split reporting, a process where the system directs the Modcom to send some events or event types to one receiver, and different events to alternate receivers. The module's

multi-dial reporting capability permits an individual event to be transmitted to multiple receivers, including pagers.

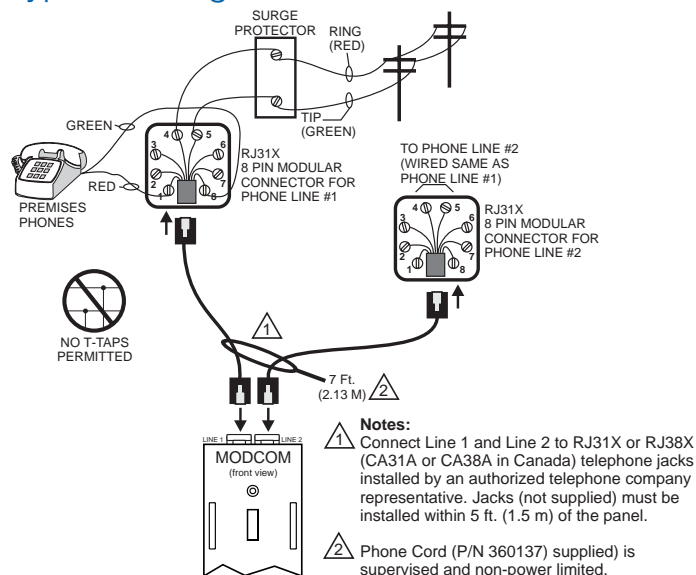
Remote Data Upload/Download

The modem permits data to be downloaded into the memories of the various components making up an EST3 system. Data can be remotely uploaded and downloaded for use with the Edwards Access Control Database Program. In the event that an alarm is received during upload/download activity, the Modcom automatically terminates the call and transmits the alarm events to the appropriate receivers. When completed sending the events, the download will continue where it left off.

Engineering Specification

The system shall provided an off premise communications module capable of transmitting system events to multiple Central Monitoring Station (CMS) receivers. The module shall provide the CMS with point identification of system events via 4/2, Contact ID or SIA DCS protocols. <The module shall also be capable of transmitting alphanumeric system activity by event to a commercial paging system using TAP Pager protocol.> The dialer shall have the capability to support up to 255 individual accounts and to send account information to eighty (80) different receivers, each having a primary and secondary telephone access number. System events shall be capable of being directed to one or more receivers depending on event type or location as specified by the system designer. The module shall have a degrade mode capable of transmitting fire alarm signals to the CMS in the event of system CPU failure. The module shall provide a high speed (V.32bis or greater) modem function in order to upload and download system data to/from a remote location.

Typical Wiring



Specifications

Agency Listings	UL, FCC Part 68 / CFR 47, ULC. See Note 1.	
Installation	Takes up one LRM space in 3-CHAS7	
Input Power	24 Vdc @ 60mA standby, 95 mA active	
Modem Protocol	ITU - V.32bis 14.4K baud full duplex using standard PC modem compatible data	
Dialer Protocol	SIA 3/1 (format P2) and 4/2 (format P3): 20 pulses per second, double round Contact ID (DTMF format) Digital Communications Standard (DCS) "SIA format": Level 2 (300 baud, Bell 103)	
Pager Protocol (3-MODCOMP only)	Telocator Alphanumeric Protocol (TAP), Version 1.8, 300 baud, Bell 103	
Telephone	Dialing Connector	Pulse or Tone (DTMF) Two 8-position modular phone jacks
CMS Telephone Numbers	Quantity Available Digits	Two per receiver - 160 max. Up to 24 digits per number
Receivers	Supports up to 80 individual receivers.	
Event Buffer	500 events	
Operating Environment	32°F (0°C) to 120°F (49°C), 93% RH Non-condensing	

Receivers Tested

Format	Manufacturer	Model	Receiver Card
4/2 and 3/1	Ademco	685	685-1 or 685-8
	FBI (Fire Burglary Instruments)	CP220	
	Osborne-Hoffman	OH2000	
	Radionics	D6600	
	Silent Knight	9000	
	Sur-Gard	MLR2, SG-SLR	
Contact ID	MCDI	TLR, TLR+	9032
	Ademco	685	
	Osborne-Hoffman	OH2000	
	Sur-Gard	MLR2, SG-SLR	
	Radionics	D6600	
	Silent Knight	9000	
SIA DCS	MCDI	TLR, TLR+	9032
	Sur-Gard	MLR2, SG-SLR	

Note 1:

The EST3 is modularly listed under the following standards:

UL 864 categories: UQJZ, UOXX, UUKL and SYZV, UL 294 category ALVY, UL 609 category AOTX, UL 636 category ANET, UL 1076 category APOU, UL 365 category APAW, UL 1610 category AMCX, UL 1635 category AMCX
ULC-S527, ULC-S301, ULC-S302, ULC-S303, ULC-S306, ULC/ORD-C1076 and ULC/ORD-C693

Please refer to EST3 Installation and Service Manual for complete system requirements.

Ordering Information

Catalog Number	Description	Ship Wt. lb (kg)
3-MODCOM	Modem/Dialer (DACT) version	0.5 (0.23)
3-MODCOMP	Modem/Dialer (DACT) w/TAP Pager Protocol	0.5 (0.23)
3-FP	Filler Plate, order separately when no LED or LED/Switch module installed.	0.1 (0.05)



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EST3 Remote Annunciators

3-ANNCPU3, 3-LCDANN, 3-6ANN, 3-10ANN, 3-EVxxx, 3-4ANN



EN54-2:1997+A1 and
EN54-4:1997+A1:2002+A2
pending

Overview

EST3 supports a full range of annunciator options for Mass Notification/Emergency Communication (MNEC), Life Safety and other purposes. Annunciator cabinets are constructed from 16 gauge cold rolled steel. The gray textured enamel finish of the annunciators complements any decor. Both surface and semi-flush mounting cabinet configurations maximize mounting flexibility and esthetic appeal. Cabinet arrangements allow both LED and LCD annunciation to easily combine in a single enclosure. Slide in labeling for LEDs and switches provides designation flexibility for labeling in local languages. For graphic annunciation EST3 offers LED driver boards perfectly suited to operate in most graphic annunciators.

EST3 annunciators are perfect for MNEC applications. They can be used in Central Control Stations (CCS), Autonomous Control Units (ACU), Local Operating Console (LOC) and combination units. In these applications, annunciators are configured to operate as Local Operation Consoles, or even Central Command Stations, from which MNEC is initiated and controlled.

Standard Features

- Standard 3-LCD (168 characters) and large-format 3-LCDXL1 (960 character) display options
- LCD uses queues to sort events
- Variety of wallbox configurations
- Programmable LED flash rates
- Slide-in labels
Makes customization for regional language easy
- Full line of driver boards for graphic annunciators

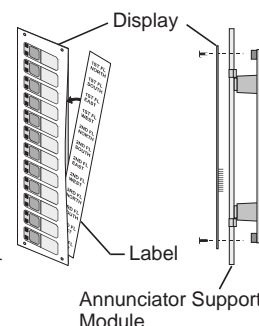
Application

Use EST3 remote annunciators when a compact system status display is needed. Annunciator configurations include: LCD only display, LED only displays or combination LED and LCD display in a single enclosure.

The LCD display uses either the 3-LCD or 3-LCDXL1 Liquid crystal display module. The 3-LCD has a 128 x 64 graphical display typically used to display eight lines of 21 characters on its LCD display while the 3-LCDXL1 has a larger 240 x 320 pixel backlit display that supports 24 lines of 40 characters. Both LCD displays provide the room needed to convey emergency information in a useful format.

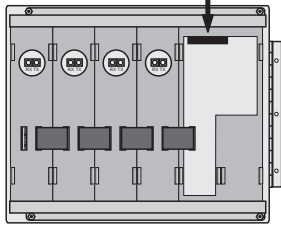
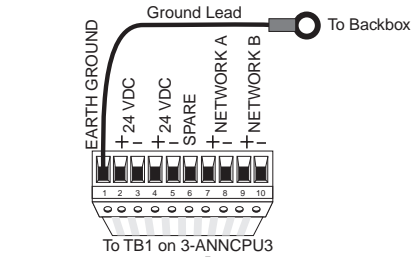
The 3-LCD always displays the last highest priority event even when the user is viewing other message queues. To give the greatest message flexibility EST3 event messages can route to specific annunciators. Routing can be initiated at a specific time/shift change. Messages need only display in areas having to respond to an event.

For LED display, the full line of EST3 Control/Display Modules support event display. Control/Display modules install over any annunciator support module maximizing annunciator design flexibility. A Lamptest feature can program to any spare control switch. If an LCD display is installed in the annunciator, simply operate the Alarm Silence and Trouble Silence switches simultaneously to lamptest all LEDs.



Typical Wiring

Rear view 3-ANNCPU3 Field Wiring 3-6ANN Shown



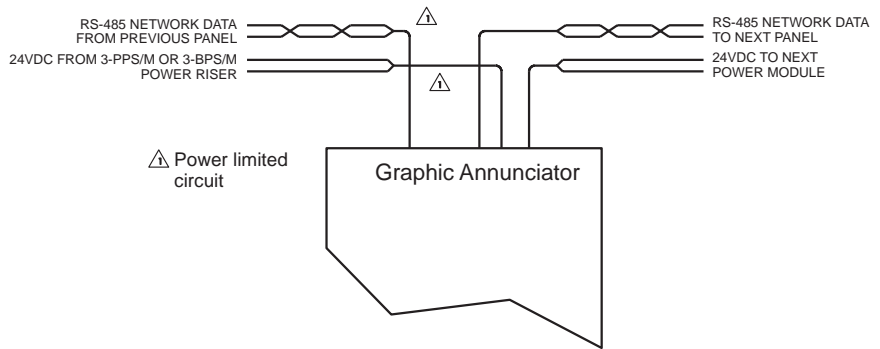
NOTES:

1. All wiring except earth ground supervised and power limited.
2. 24 VDC available from Primary or Booster Power supply.
3. Uses RS-485 Network communication format
4. Network wiring Twisted Pair

Power Riser

Calculate wire size for a maximum 3.4 Vdc total line loss from the 24 Vdc nominal voltage.

Graphic Annunciator Field Wiring



Wire Specifications

Network Data Communications - RS485 Format

Minimum Twisted Pair	18 AWG (0.75 mm ²).
Maximum Circuit Resistance	90 Ohms
Maximum Circuit Capacitance	0.3 µF
Maximum Distance between any 3 panels	5,000 ft. (1,524 m).

Capacitance, entire network

Maximum Accumulative Capacitance

Wire Size	38.4K Baud	19.2K Baud
18 AWG	1.4 µF	2.8 µF
16 AWG	1.8 µF	3.6 µF
14 AWG	2.1 µF	4.2 µF

Distance limits are determined using the maximum allowable circuit resistance and capacitance, and manufacturer's cable specifications.

Specifications

Catalog Number	3-ANNCPU3	3-ANNSM	3-LCD	3-LCDXL1
Agency Listings	UL, ULC, FM, CE, LPCB EN54* pending.			
Mounting Space	Two Spaces	One Space	Mounts over 3-ANNCPU	Mounts over 3-ANNCPU plus two spaces.
Communication Format	RS-485	N/A	N/A	N/A
Current @ 24 Vdc				
Standby	144 mA	10mA	40mA	48mA
Alarm	144 mA	10mA	42mA	50mA
Wiring Termination	Plug in terminal strip	N/A		
Wiring Size	Twisted Pair 18-14 AWG (0.75-1.5 mm²)			
Max. Wire Distance	5000 ft (1524m) between any 3 panels			
Relative Humidity	93% non condensing at 90° F (32° C)			
Temperature Rating	0-49° C (32 - 120° F)			
Wiring Styles	Class A or Class B			

Note: For a complete list of EST3 annunciator display and control modules please refer to Edwards literature sheet part number 85010-0055.

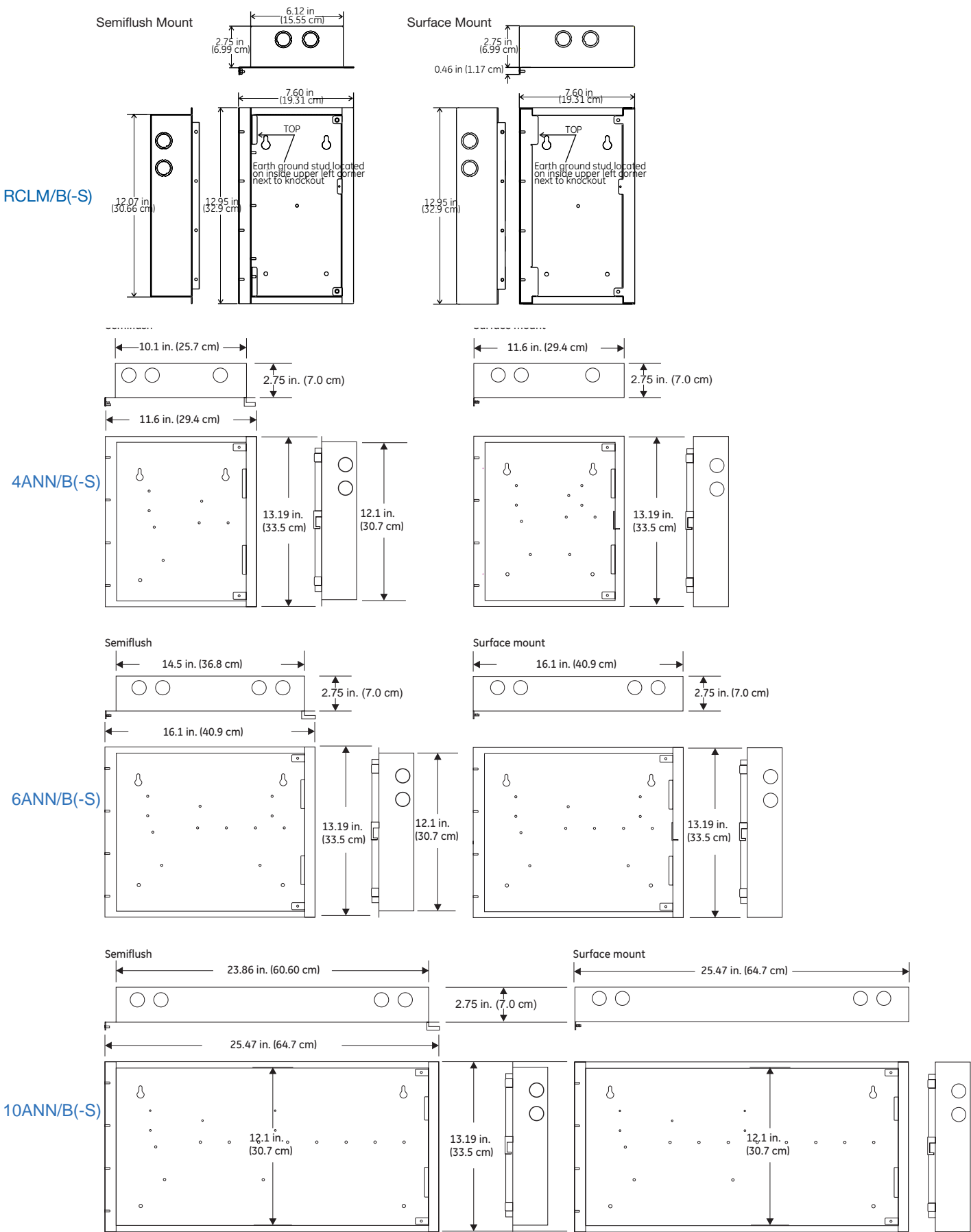
* EN54-2:1997+A1 and EN54-4:1997+A1:2002+A2 pending

Engineering Specification

The Life Safety system shall incorporate annunciation of Alarm, Supervisory, Trouble and Monitor operations. Annunciation must be through the use of both LED display strips complete with a means to custom label each LED as to its function. Where applicable control switches must be provided. Switches with LEDs must provide positive feed back to the operator of remote equipment status. An LCD display with basic common control LEDs and switches shall be provided. The Common Control Switches and LEDs provided as minimum will be: Reset switch and LED, Alarm Silence switch and LED, Panel Silence switch and LED, Drill switch and LED. It must be possible to add additional common controls as required through the use of modular display / control

units. The LCD interface must provide the ability to display custom event messages of a minimum of 40 characters. The LCD must provide the emergency user, hands free viewing of the first and last highest priority event. The last highest priority event must always display and update automatically. System events must automatically be placed in queues. It shall be possible to view specific event types separately. Having to scroll through a mixed list of events types is not acceptable. The total number of active events by type must be displayed. It must be possible to customize the designations of all user interface LEDs and switches for local language requirements. It must be possible to route system event messages to specific annunciator locations.

Dimensions



Ordering Information



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Catalog Number	Description	Ship Wt. lb (kg)
Command Module Annunciators (Come with CPU, LCD display and doors. Order wallbox separately.)		
3-LCDANN	Remote LCD Command Module Annunciator.	3.8 (1.7)
3-LCDANN-E	Remote LCD Command Module Annunciator. For EN54* market only, CE.	3.8 (1.7)
<i>Base Annunciators (Come with two 3-ANNSM annunciator support modules, a CPU, and doors. Order Display/Control modules, additional support modules & wallbox separately.)</i>		
3-4ANN	Four Position Base Annunciator.	
3-4ANN-E	Four Position Base Annunciator. For EN54* market only, CE.	
3-6ANN	Six Position Base Annunciator.	6.28 (2.85)
3-6ANN-E	Six Position Base Annunciator. For EN54* market only, CE.	6.28 (2.85)
3-10ANN	10 Position Base Annunciator.	10.5 (4.8)
3-10ANN-E	10 Position Base Annunciator. For EN54* market only, CE.	10.5 (4.8)
<i>*EN54-2:1997+A1 and EN54-4:1997+A1:2002+A2 pending</i>		
CPU, Support Module, & LCD Displays		
3-ANNCPU3	Annunciator CPU	1 (.45)
3-CPUDR	CPU doors with filler plates. Order separately, one required per CPU where no LCD display is installed.	0.25 (.11)
3-ANNSM	Annunciator Support Module	.45 (.2)
3-LCD	Liquid Crystal Display Module, eight lines.	.8 (.36)
3-LCDXL1	Liquid Crystal Display Module, 40 lines mounts in 3-4ANN, 3-6ANN or 3-10ANN annunciators. <i>Note one 3-LCDXL1KBL, (ordered separately) is required for each 3-LCDXL1 mounting into 3-6ANN or 3-10ANN annunciator boxes.</i>	
3-LCDXL1KBL	Cable for 3-LCDXL1 (Use to connect from 3-ANNCPU3 to the first annunciator support model. Not required with 3-4ANN and 3-LCDXL1 applications.)	
Control/Display Modules		
3-CPUDR	Two blank filler plates suitable for any annunciator blank space.	.5 (.22)
3-24R	24 Red LED Display Module	.35 (.12)
3-24Y	24 Yellow LED Display Module	.35 (.12)
3-24G	24 Green LED Display Module	.35 (.12)
3-12SR	12 switches with 12 Red LED Display/Control Module	.35 (.12)
3-12SY	12 switches with 12 Yellow LED Display/Control Module	.35 (.12)
3-12SG	12 switches with 12 Green LED Display/Control Module	.35 (.12)
3-12RY	12 Red LED and 12 Yellow LED Display Module	.35 (.12)
3-12/S1GY	12 switches with one Green and one Yellow LED per switch	.35 (.12)
3-12/S1RY	12 switches with one Red and one Yellow LED per switch	.35 (.12)
3-12/S2Y	12 switches with two Yellow LEDs per switch	.35 (.12)
3-6/3S1G2Y	Six groups of three switches. Each switch with one LED: Green, Yellow, Yellow.	.35 (.12)
3-6/3S1GYR	Six groups of three switches. Each switch with one LED: Green, Yellow, Red.	.35 (.12)
3-REMICA	Remote microphone for use in 3-ANN series annunciator cabinets	15 (6.8)
3-FP	Filler Plate, order separately one required per 3-ANNSM when no LED or LED/Switch module installed on operator layer.	0.1 (0.05)
Driver Modules, Power Supplies		
3-EVDVR	LED/SWITCH Driver Module, For Edwards Graphics	.35 (.12)
3-EVDVRA	LED/SWITCH Driver Module Assembly for Third-party Graphics	.35 (.12)
3-EVPWR	Power Supply for Edwards Graphics	.5 (.22)
3-EVPWRA	Power Supply Assembly c/w 19 inch rail mounting chassis assembly space for one 3-ANNCPU3 for Third-party Graphics	2.5 (1.2)
3-EVDVRX	Plastic mounting extrusion 19 inch mounting - Space for up to three 3-EVDVRA modules.	.35 (.12)
Enclosures		
RLCM/B	Remote Command module flush mount LCD wallbox	2.5 (1.2)
RLCM/B-S	Remote Command module surface mount LCD wallbox	2.5 (1.2)
3-RLCM/D	Inner & outer doors for RLCM/B(-S)	2.0 (0.9)
4ANN/B	Four Position LED/LCD flush mount wallbox.	6.0 (2.7)
4ANN/B-S	Four position LED/LCD surface mount wallbox.	6.0 (2.7)
6ANN/B	Six position LED/LCD flush mount wallbox	7.0 (3.2)
6ANN/B-S	Six position LED/LCD surface mount wallbox	7.0 (3.2)
10ANN/B	Ten position LED/LCD flush mount wallbox	9.0 (4.1)
10ANN/B-S	Ten position LED/LCD surface mount wallbox	9.0 (4.1)

Overview

The EST3 system supports a full range of annunciator options. Annunciator cabinets are constructed from 16 gauge cold rolled steel. The gray textured enamel finish of the annunciators complements any decor. Both surface and semi-flush mounting cabinet configurations maximize mounting flexibility and esthetic appeal. Cabinet arrangements allow both LED and LCD annunciation to easily combine in a single enclosure. Slide in labeling for LEDs and switches provides designation flexibility for labeling in local languages. For graphic annunciation EST3 offers LED driver boards perfectly suited to operate in most graphic annunciators.

Standard Features

- Graphical display supports up to 168 characters
- LCD uses queues to sort events
- Variety of wallbox configurations
- Programmable LED flash rates
- Slide-in labels
Makes customization for regional language easy
- Full line of driver boards for graphic annunciators

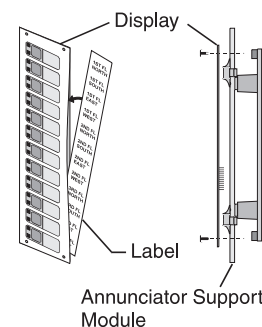
Application

Use EST3 remote annunciators when a compact system status display is needed. Annunciator configurations include: LCD only display, LED only displays or combination LED and LCD display in a single enclosure.

The LCD display uses the 3-LCD Liquid crystal display module. The 3-LCD has a 128 x 64 graphical display typically used to display eight lines of 21 characters on its LCD display providing the room needed to convey emergency information in a useful format.

The 3-LCD always displays the last highest priority event even when the user is viewing other message queues. To give the greatest message flexibility EST3 event messages can route to specific annunciators. Routing can be initiated at a specific time/shift change. Messages need only display in areas having to respond to an event.

For LED display, the full line of EST3 Control/Display Modules support event display. Control/Display modules install over any annunciator support module maximizing annunciator design flexibility. A Lamptest feature can program to any spare control switch. If a 3-LCD display is installed in the annunciator, simply operate the Alarm Silence and Trouble Silence switches simultaneously to lamptest all LEDs.



EST3 Remote Annunciators

3-ANNCPU3, 3-LCDANN, 3-6ANN, 3-10ANN, 3-EVXXX



EN54-2:1997+A1 and EN54-4:1997+A1:2002+A2 pending



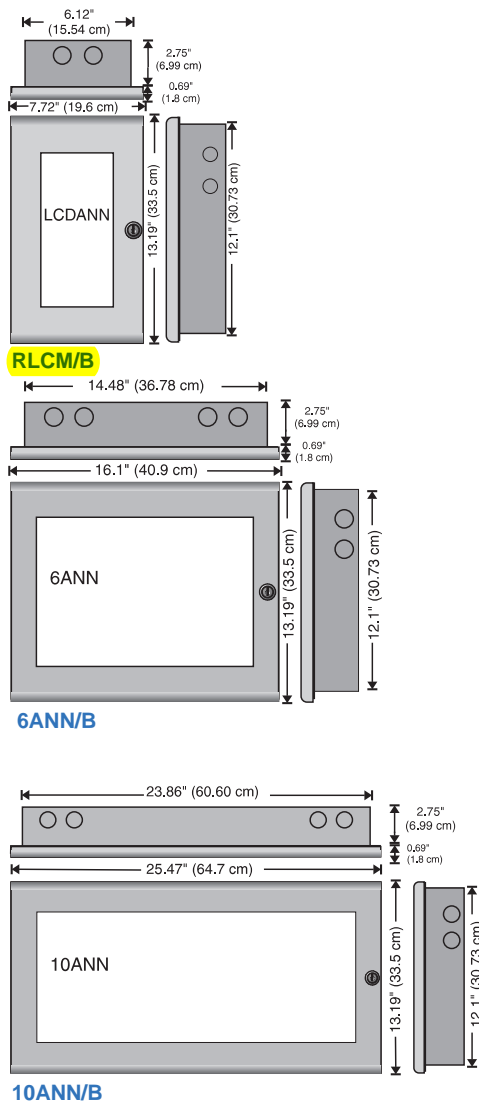
Engineering Specification

The Life Safety system shall incorporate annunciation of Alarm, Supervisory, Trouble and Monitor operations. Annunciation must be through the use of both LED display strips complete with a means to custom label each LED as to its function. Where applicable control switches must be provided. Switches with LEDs must provide positive feed back to the operator of remote equipment status. An LCD display with basic common control LEDs and switches shall be provided. The Common Control Switches and LEDs provided as minimum will be: Reset switch and LED, Alarm Silence switch and LED, Panel Silence switch and LED, Drill switch and LED. It must be possible to add additional common controls as required though the use of modular display / control units. The LCD interface must

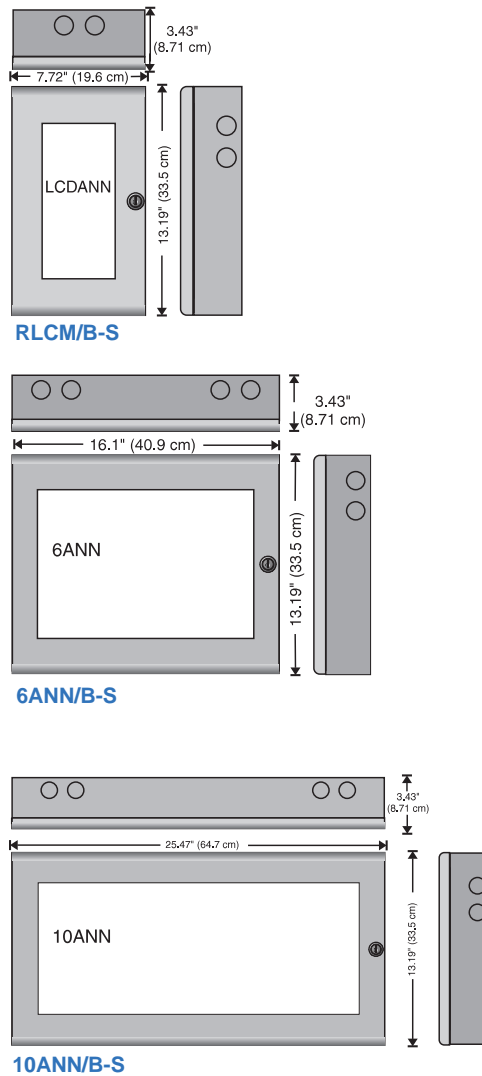
provide the ability to display custom event messages of up to 42 characters. The LCD must provide the emergency user, hands free viewing of the first and last highest priority event. The last highest priority event must always display and update automatically. System events must automatically be placed in queues. It shall be possible to view specific event types separately. Having to scroll through a mixed list of events types is not acceptable. The total number of active events by type must be displayed. It must be possible to customize the designations of all user interface LEDs and switches for local language requirements. It must be possible to route system event messages to specific annunciator locations.

Wallbox Installation and Mounting

Semi-Flush Mounting

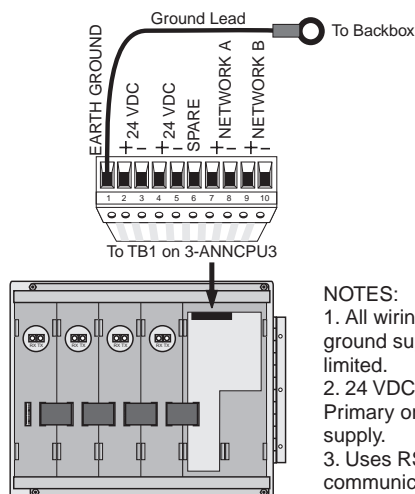


Surface Mounting



Typical Wiring

Rear view 3-ANNCPU3 Field Wiring 3-6ANN Shown



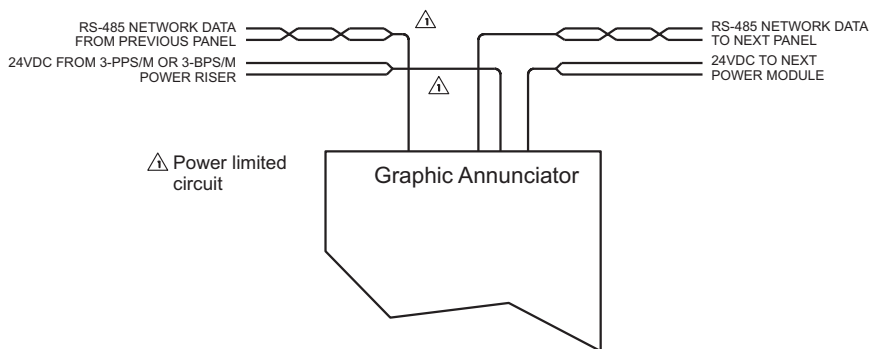
NOTES:

1. All wiring except earth ground supervised and power limited.
2. 24 VDC available from Primary or Booster Power supply.
3. Uses RS-485 Network communication format
4. Network wiring Twisted Pair

Power Riser

Calculate wire size for a maximum 3.4 Vdc total line loss from the 24 Vdc nominal voltage.

Graphic Annunciator Field Wiring



Wire Specifications

Network Data Communications - RS485 Format

Minimum Twisted Pair	18 AWG (0.75 mm ²).
Maximum Circuit Resistance	90 Ohms
Maximum Circuit Capacitance	0.3 µF
Maximum Distance between any 3 panels	5,000 ft. (1,524 m).

Capacitance, entire network

Maximum Accumulative Capacitance

Wire Size	38.4K Baud	19.2K Baud
18 AWG	1.4 µF	2.8 µF
16 AWG	1.8 µF	3.6 µF
14 AWG	2.1 µF	4.2 µF

Distance limits are determined using the maximum allowable circuit resistance and capacitance, and manufacturer's cable specifications.

Specifications

Catalog Number	3-ANNCPU3	3-ANNSM	3-LCD
Agency Listings	UL, ULC, FM, CE, LPCB EN54* pending.		
Mounting Space	Two Spaces	One Space	Mounts over 3-ANNCPU
Communication Format	RS-485	N/A	N/A
Current @ 24 Vdc			
Standby	120 mA	10mA	38 mA
Alarm	140 mA	10mA	38 mA
Wiring Termination	Plug in terminal strip	N/A	
Wiring Size	Twisted Pair 18-14 AWG (0.75-1.5 mm²)		
Max. Wire Distance	5000 ft (1524m) between any 3 panels		
Relative Humidity	93% non condensing at 90° F (32° C)		
Temperature Rating	0-49° C (32 - 120° F)		
Wiring Styles	Class A or Class B		

Note: For a complete list of EST3 annunciator display and control modules please refer to GE Security literature sheet part number 85010-0055.

* EN54-2:1997+A1 and EN54-4:1997+A1:2002+A2 pending

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F 32 2 721 86 13

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Ordering Information

Catalog Number	Description	Ship Wt. lb (kg)
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<i>Base Annunciators (Come with two 3-ANNSM annunciator support modules, a CPU, and doors. Order Display/Control modules, additional support modules & wallbox separately.)</i>		
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3-6ANN(-E)	Six Position Base Annunciator. For EN54* market only, CE.	6.28 (2.85)
3-10ANN	10 Position Base Annunciator.	10.5 (4.8)
3-10ANN(-E)	10 Position Base Annunciator. For EN54* market only, CE.	10.5 (4.8)
<i>*EN54-2:1997+A1 and EN54-4:1997+A1:2002+A2 pending</i>		
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3-ANNSM	Annunciator Support Module	.45 (.2)
3-LCD	Liquid Crystal Display Module, eight lines.	.8 (.36)
Control/Display Modules		
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3-24R	24 Red LED Display Module	.35 (.12)
3-24Y	24 Yellow LED Display Module	.35 (.12)
3-24G	24 Green LED Display Module	.35 (.12)
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3-12SG	12 switches with 12 Green LED Display/Control Module	.35 (.12)
3-12RY	12 Red LED and 12 Yellow LED Display Module	.35 (.12)
3-12/S1GY	12 switches with one Green and one Yellow LED per switch	.35 (.12)
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3-12/S2Y	12 switches with two Yellow LEDs per switch	.35 (.12)
3-6/3S1G2Y	Six groups of three switches. Each switch with one LED: Green, Yellow, Yellow.	.35 (.12)
3-6/3S1GYR	Six groups of three switches. Each switch with one LED: Green, Yellow, Red.	.35 (.12)
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3-EVDVRA	LED/SWITCH Driver Module Assembly for Third-party Graphics	.35 (.12)
3-EVPWR	Power Supply for GE Security Graphics	.5 (.22)
3-EVPWRA	Power Supply Assembly c/w 19 inch rail mounting chassis assembly space for one 3-ANNCPU3 for Third-party Graphics	2.5 (1.2)
3-EVDVRX	Plastic mounting extrusion 19 inch mounting - Space for up to three 3-EVDVRA modules.	.35 (.12)
Enclosures		
RLCM/B	Remote Command module flush mount LCD wallbox	2.5 (1.2)
RLCM/B-S	Remote Command module surface mount LCD wallbox	2.5 (1.2)
3-RLCM/D	Inner & outer doors for RLCM/B(-S)	2 (.9)
6ANN/B	Six position LED/LCD flush mount wallbox	6 (2.7)
6ANN/B-S	Six position LED/LCD surface mount wallbox	6 (2.7)
10ANN/B	Ten position LED/LCD flush mount wallbox	6 (2.7)
10ANN/B-S	Ten position LED/LCD surface mount wallbox	6 (2.7)



imagination at work

Remote Booster Power Supplies

BPS6A, BPS10A



Overview

The Booster Power Supply (BPS) is a UL 864, 9th Edition listed power supply. It is a 24 Vdc filtered-regulated, and supervised unit that can easily be configured to provide additional notification appliance circuits (NACs) or auxiliary power for Mass Notification/Emergency Communication (MNEC), as well as life safety, security, and access control applications.

The BPS contains the circuitry to monitor and charge internal or external batteries. Its steel enclosure has room for up to two 10 ampere-hour batteries. For access control-only applications, the BPS can support batteries totaling up to 65 ampere-hours in an external enclosure. The BPS has four Class B (convertible to two Class A) NACs. These can be activated in one or two groups from the BPS's unique dual input circuits.

The BPS is available in 6.5 or 10 ampere models. Each output circuit has a capacity of three amperes; total current draw cannot exceed the unit's rating.

The BPS meets current UL requirements and is listed under the following standards:

Standard (CCN)	Description
UL864 9th ed.ition (UOXX)Fire Alarm Systems	
UL636 (ANET, UEHX7)	Holdup Alarm Units and Systems
UL609 (AOTX, AOTX7)	Local Burglar Alarm Units and Systems
UL294 (ALVY, UEHX7)	Access Control Systems
UL365 (APAW, APAW7)	Police Station Connected Burglar Alarm Units and Systems
UL1076 (APOU, APOU7)	Proprietary Burglar Alarm System Units
UL1610 (AMCX)	Central Station Alarm Unit
ULC-S527 (UOXXC)	Control Units, Fire Alarm (Canada)
ULC-S303 (AOTX7)	Local Burglar Alarm Units and Systems (Canada)
C22.2 No. 205	Signaling Equipment (Canada)

Standard Features

- Allows for reliable filtered and regulated power to be installed where needed
- Cost effective system expansion
- Provides for Genesis and Enhanced Integrity notification appliance synchronization
- Supports coded output operation
- Self-restoring overcurrent protection
- Multiple signal rates
- Can be cascaded or controlled independently
- Easy field configuration
- On-board diagnostic LEDs identify wiring or internal faults
- Standard Edwards keyed lockable steel cabinet with removable door
- 110 and 230 Vac models available
- Accommodates 18 to 12 AWG wire sizes
- Optional tamper switch
- Dual battery charging rates
- Optional earthquake hardening: OSHPD seismic pre-approval for component Importance Factor 1.5

Application

The BPS provides additional power and circuits for notification appliances and other 24 Vdc loads. It is listed for indoor dry locations and can easily be installed where needed.

Fault conditions are indicated on the on-board diagnostic LEDs, opening the BPS input sense circuit and the trouble relay (if programmed). While this provides indication to the host system, the BPS can still be activated upon command. A separate AC Fail contact is available on the BPS circuit board, which can be programmed for trouble or AC Fail. There are seven on-board diagnostic LEDs: one for each NAC fault, one for battery fault, one for ground fault, and one for AC power.

The unique dual-input activation circuits of the BPS can be activated by any voltage from 6 to 45 VDC (filtered-regulated) or 11 to 33 Vdc (full-wave rectified, unfiltered). The first input circuit can be configured to activate 1-4 of the four possible outputs. The second input circuit can be configured to control circuits 3 and 4. When outputs are configured for auxiliary operation, these circuits can be configured to stay on or automatically deactivate 30 seconds after AC power is lost. This feature makes these circuits ideal for door holder applications. The BPS also has a separate 200 mA 24 Vdc output that can be used to power internal activation modules.

BPS NACs can be configured for a 3-3-3 temporal or continuous output. California temporal rate outputs are also available on certain models. This makes the BPS ideal for applications requiring signaling rates that are not available from the main system.

In addition to the internally generated signal rates, the BPS can also be configured to follow the coded signal rate of the main system NACs. This allows for the seamless expansion of existing NACs.

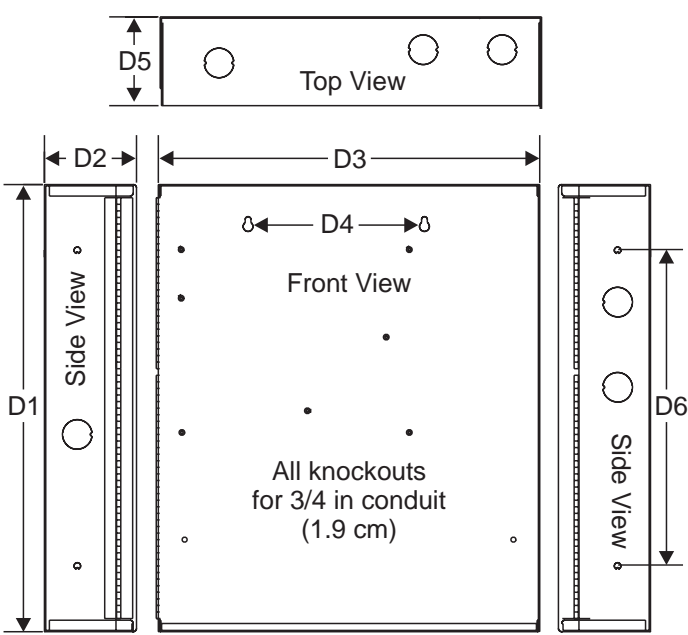
The BPS enclosure has mounting brackets for up to three Signature modules to the right of the circuit board.

Engineering Specification

Supply, where needed, Edwards BPS Series Booster Power Supplies (BPS) that are interconnected to and supervised by the main system. The BPS shall function as a stand-alone auxiliary power supply with its own fully-supervised battery compliment. The BPS battery compliment shall be sized to match the requirements of the main system. The BPS shall be capable of supervising and charging batteries having the capacity of 24 ampere-hours for Mass Notification/Emergency Communication (MNEC), life safety and security applications, and the capacity of 65 ampere-hours for access control applications.

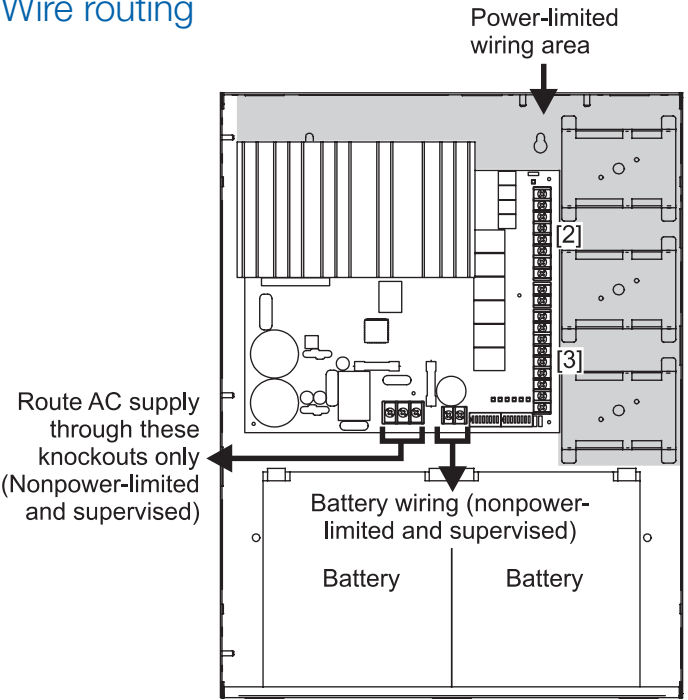
<<The BPS shall be capable of installation for a seismic component Importance Factor of 1.5.>> The BPS shall provide a minimum of four independent, fully supervised Class B circuits that can be field configurable for notification appliance circuits or auxiliary 24 Vdc power circuits. BPS NACs shall be convertible to a minimum of two Class A NACs. Each BPS output circuit shall be rated at 3 amperes at 24 Vdc. Each output circuit shall be provided with automatically restoring overcurrent protection. The BPS shall be operable from the main system NAC and/or Edwards Signature Series control modules. BPS NACs shall be configurable for continuous, 3-3-3 temporal or optionally, California rate. Fault conditions on the BPS shall not impede operation of main system NAC. The BPS shall be provided with ground fault detection circuitry and a separate AC fail relay.

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)

Wire routing

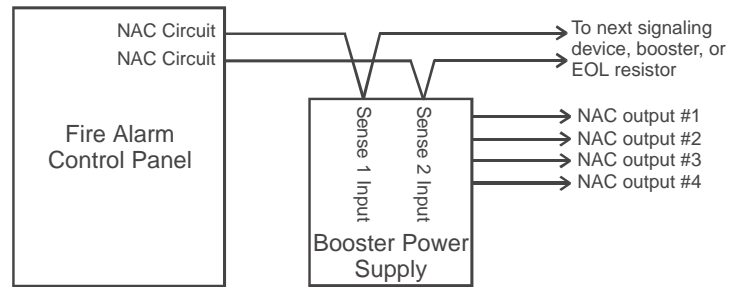


- Notes
- 1. Maintain 1/4-inch (6 mm) spacing between power-limited and nonpower-limited wiring or use type FPL, FPLR, or FPLP cable per NEC.
 - 2. Power-limited and supervised when not configured as auxiliary power. Non-supervised when configured as auxiliary power.
 - 3. Source must be power-limited. Source determines supervision.
 - 4. When using larger batteries, make sure to position the battery terminals towards the door.

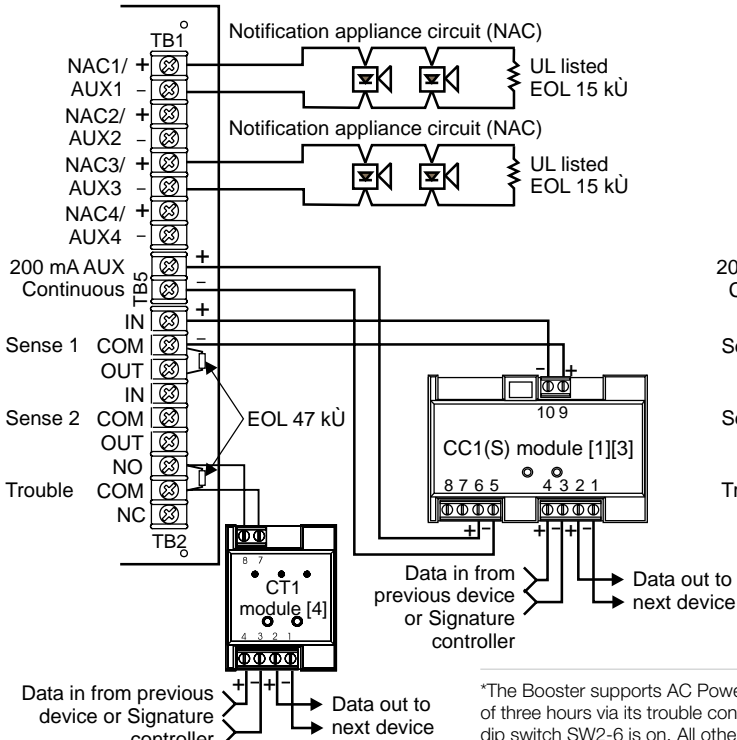
Typical Wiring

Single or cascaded booster anywhere on a notification appliance circuit

Existing NAC end-of-line resistors are not required to be installed at the booster's terminals. This allows multiple boosters to be driven from a single NAC circuit without the need for special configurations.

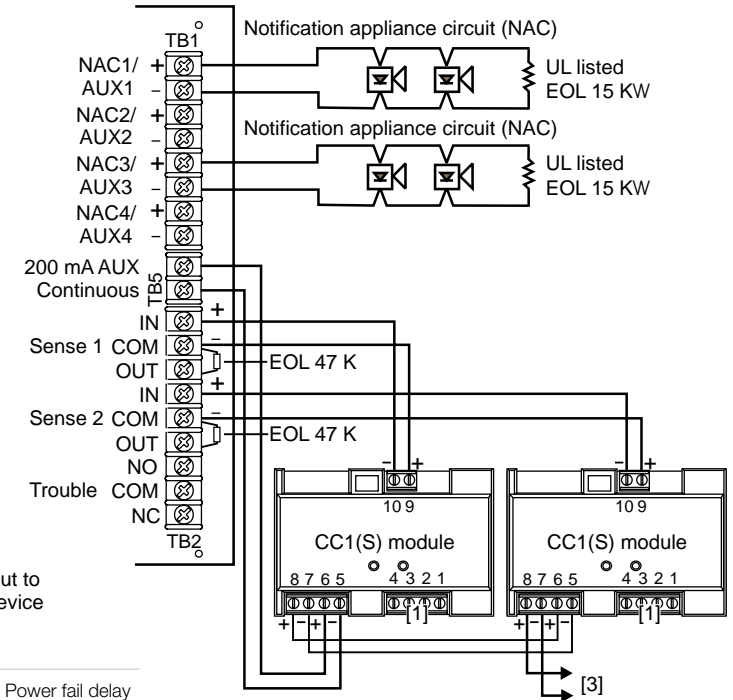


Configuring the Booster for AC Power Fail delay operation*

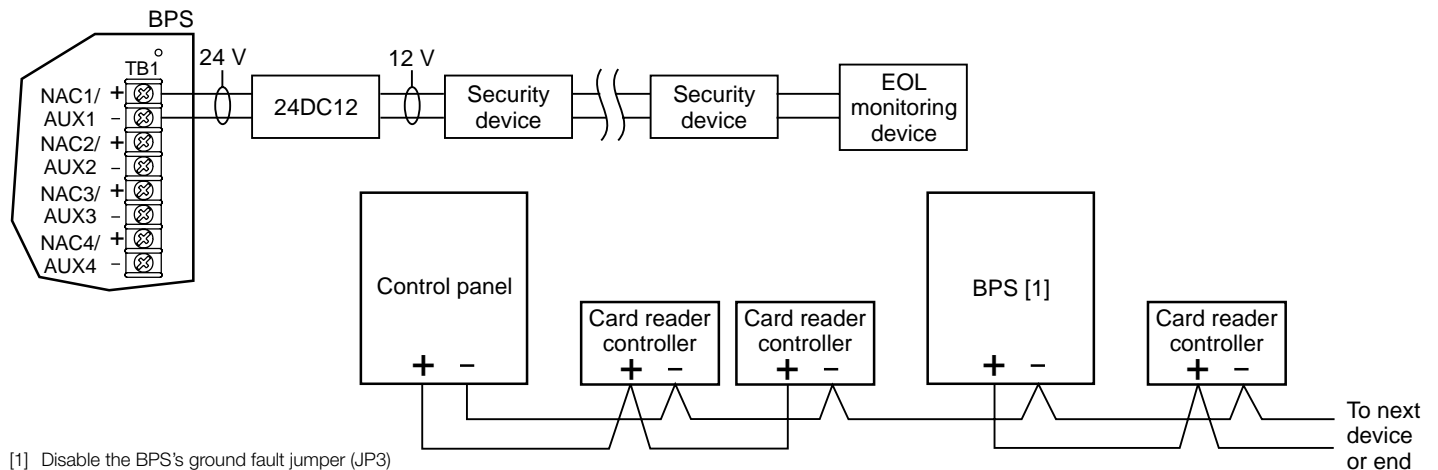


*The Booster supports AC Power fail delay of three hours via its trouble contact when dip switch SW2-6 is on. All other troubles are reported to supervising module or panel without delay via Sense inputs.

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



Security and access



[1] Disable the BPS's ground fault jumper (JP3)



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Specifications

Model	6.5 amp Booster	10 amp Booster
AC Line Voltage	120VAC or 220-240VAC 50/60Hz 390 watts	120VAC or 220-240VAC 50/60Hz 580 watts
Notification Appliance Circuit Ratings	3.0A max. per circuit @ 24Vdc nominal 6.5A max total all NACs	3.0A max. per circuit @ 24Vdc nominal 10A max total all NACs
Trouble Relay	2 Amps @ 30Vdc	
Auxiliary Outputs	Four configurable outputs replace NACs 1, 2, 3 or 4. as auxiliary outputs and 200 mA dedicated auxiliary. (See note 2.)	
Input Current (from an existing NAC)	3mA @ 12Vdc, 6mA @ 24Vdc	
Booster Internal Supervisory Current	70mA	
Signature Mounting Space	Accommodates three two-gang modules.	
Maximum Battery Size	10 Amp Hours (2 of 12V10A) in cabinet up to 24 Amp hours with ex- ternal battery cabinet for fire and security applications; up to 65 Amp hours for access control applications in external battery box.	
Terminal Wire Gauge	18-12 AWG	
Relative Humidity	0 to 93% non condensing @ 32°C	
Temperature Rating	32° to 120°F (0° to 49°C)	
NAC Wiring Styles	Class A or Class B	
Output Signal Rates	Continuous, California rate, 3-3-3 temporal, or follow installed panel's NAC. (See note 1.)	
Ground Fault Detection	Enable or Disable via jumper	
Agency Listings	UL, ULCL, CSFM	

1. Model BPS*CAA provides selection for California rate, in place of temporal.
2. Maximum of 8 Amps can be used for auxiliary output.

Ordering Information

Catalog Number	Description	Shipping Wt. lb (kg)
BPS6A	6.5 Amp Booster Power Supply	13 (5.9)
BPS6AC	6.5 Amp Booster Power Supply (ULC)	13 (5.9)
BPS6A/230	6.5 Amp Booster Power Supply (220V)	13 (5.9)
BPS6CAA	6.5 Amp Booster Power Supply with California rate	13 (5.9)
BPS10A	10 Amp Booster Power Supply	13 (5.9)
BPS10AC	10 Amp Booster Power Supply (ULC)	13 (5.9)
BPS10A/230	10 Amp Booster Power Supply (220V)	13 (5.9)
BPS10CAA	10 Amp Booster Power Supply with California rate	13 (5.9)

Related Equipment

12V6A5	7.2 Amp Hour Battery, two required	3.4 (1.6)
12V10A	10 Amp Hour Battery, two required	9.5 (4.3)
3-TAMP	Tamper switch	
BC-1EQ	Seismic Kit for BC-1. Order BC-1 separately. See note 3.	
BPSEQ	Seismic kit for BPS6A or BPS10 Booster Power Supplies. See note 3	
BC-1	Battery Cabinet (up to 2 - 40 Amp Hour Batteries)	58 (26.4)
BC-2	Battery Cabinet (up to 2 - 17 Amp Hour Batteries)	19 (8.6)
12V17A	18 Amp Hour Battery, two required (see note 1)	13 (5.9)
12V24A	24 Amp Hour Battery, two required (see note 1)	20 (9.07)
12V40A	40 Amp Hour Battery, two required (see notes 1, 2)	32 (14.5)
12V50A	50 Amp Hour Battery, two required (see notes 1, 2)	40 (18.14)
12V65A	65 Amp Hour Battery, two required (see notes 1, 2)	49 (22.2)

1. Requires installation of separate battery cabinet.
2. BPS supports batteries greater than 24 Amp hours for access control applications only.
3. For earthquake anchorage, including detailed mounting weights and center of gravity detail, refer to Seismic Application Guide 3101676. Approval of panel anchorage to site structure may require local AHJ, structural or civil engineer review.

Synchronization Output Module

SIGA-CC1S, MCC1S



Overview

SIGA-CC1S and **MCC1S** Synchronization Output Modules are intelligent analog addressable devices that form part of EST's Signature line of products. The actual operation of the SIGA-CC1S and MCC1S is determined by the "personality code" selected by the installer, which is downloaded to the module from the Signature loop controller during system configuration.

Depending on their assigned personality, Synchronization Output Modules may be used as a signal power riser selector to provide synchronization of fire alarm signals across multiple zones, or for connecting, upon command from the loop controller, supervised Class B signal or telephone circuits to their respective power inputs. The power inputs may be polarized 24 Vdc to operate audible and visible signal appliances or 25 and 70 VRMS to operate audio evacuation speakers and firefighter's telephones.

Standard Features

- Provides UL 1971-compliant auto-sync output for visual signals**
Use for connecting a supervised output circuit to a supervised 24 Vdc riser input and synchronizing multiple notification appliance circuits.
- Functions as an audible signal riser selector**
Use as a synch module or for connecting supervised 24 Vdc Audible/Visible signal circuits, or 25 and 70 VRMS Audio Evacuation and Telephone circuits to their power inputs.
- Built-in ring-tone generator**
When configured for telephone circuits, the SIGA-CC1S generates its own ring-tone signal, eliminating the need for a separate ring-tone circuit.
- 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.
- Intelligent device with microprocessor**
All decisions are made at the module to allow lower communication speed with substantially improved control panel response time and less sensitivity to line noise and loop wiring properties; twisted or shielded wire is not required.

Application

The SIGA-CC1S mounts to a standard North American two-gang electrical box, making it ideal for locations where only one module is required. Separate I/O and data loop connections are made to each module.

The SIGA-MCC1S is part of the UIO family of plug-in Signature Series modules. It functions identically to the SIGA-CC1S, but takes advantage of the modular flexibility and easy installation that characterize all UIO modules. Two- and six-module UIO motherboards are available. These can accommodate individual risers for each on-board module, or risers that are shared by any combination of its UIO modules. All wiring connections are made to terminal blocks on the motherboard. UIO assemblies may be mounted in Edwards enclosures.

Personality Codes

The operation of the **SIGA-CC1S** 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.

Personality Code 5: Signal Power or Audio Evacuation (single riser). Configures the module for use as a Class B Audible/Visible Signal power (24 Vdc polarized) or Audio Evacuation (25 or 70 VRMS) power selector. The ring-tone generator is disabled. The output circuit is monitored for open or shorted wiring. If a short exists, the control panel inhibits the activation of the audible/visible signal circuit to prevent connection to the power circuit.

Personality Code 6: Telephone with ring-tone (single riser). Configures the module for use as a Telephone power 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 circuit is not needed. The module sends this signal to the control panel to indicate that an off-hook condition is present. When the system operator responds to the call, the ring-tone signal is disabled.

Personality Code 25: Visual Signal Synchronization. This personality code configures the module to provide synchronization of fire alarm signals across multiple zones. It functions as a signal power (24 Vdc) riser selector. The output wiring is monitored for open circuits and short circuits. A short circuit will cause 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.

Warnings & Cautions

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

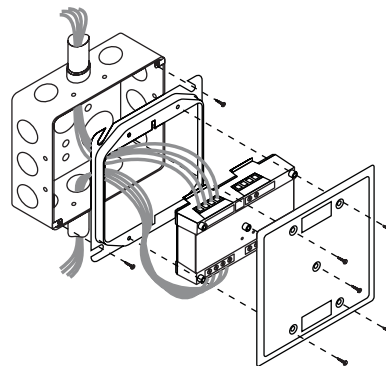
Edwards recommends that these modules be installed according to latest recognized edition of national and local fire alarm codes.

Compatibility

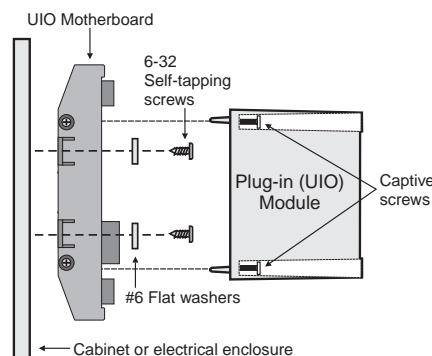
The Synchronization Output Module is compatible with EST's Signature Loop Controller operating under EST3 version 2.0 or higher, and QuickStart Signature Loop Intelligent Controller.

Installation

The SIGA-CC1S: mounts to North American 2-1/2 inch (64 mm) deep 2-gang boxes and 1-1/2 inch (38 mm) deep 4 inch square boxes with 2-gang covers and SIGA-MP mounting plates. The terminals are suited for #12 to #18 AWG (2.5 mm² to 0.75 mm²) wire size.



SIGA-MCC1S: mount the UIOxR motherboard inside a suitable Edwards enclosure with screws and washers provided. Plug the module into any available position 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). UIOxR motherboard terminals are suited for #12 to #18 AWG (2.5 mm² to 0.75 mm²) 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.

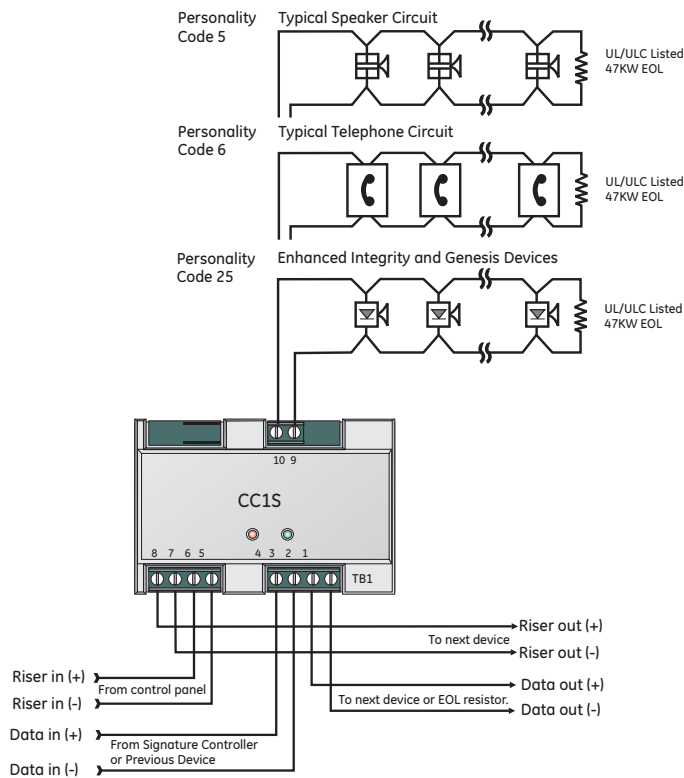
Testing & Maintenance

The module's automatic self-diagnosis identifies when it is defective and causes a trouble message. The user-friendly maintenance program shows the current state of each module and other pertinent messages. Single modules may be turned off (de-activated) temporarily, from the control panel.

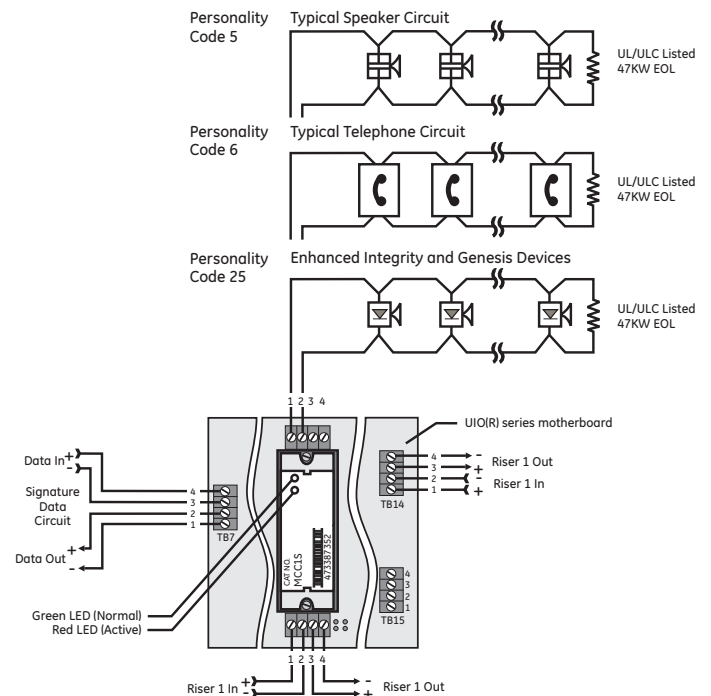
Scheduled maintenance (Regular or Selected) for proper system operation should be planned to meet the requirements of the Authority Having Jurisdiction (AHJ). Refer to current NFPA 72 and ULC CAN/ULC 536 standards.

Typical Wiring

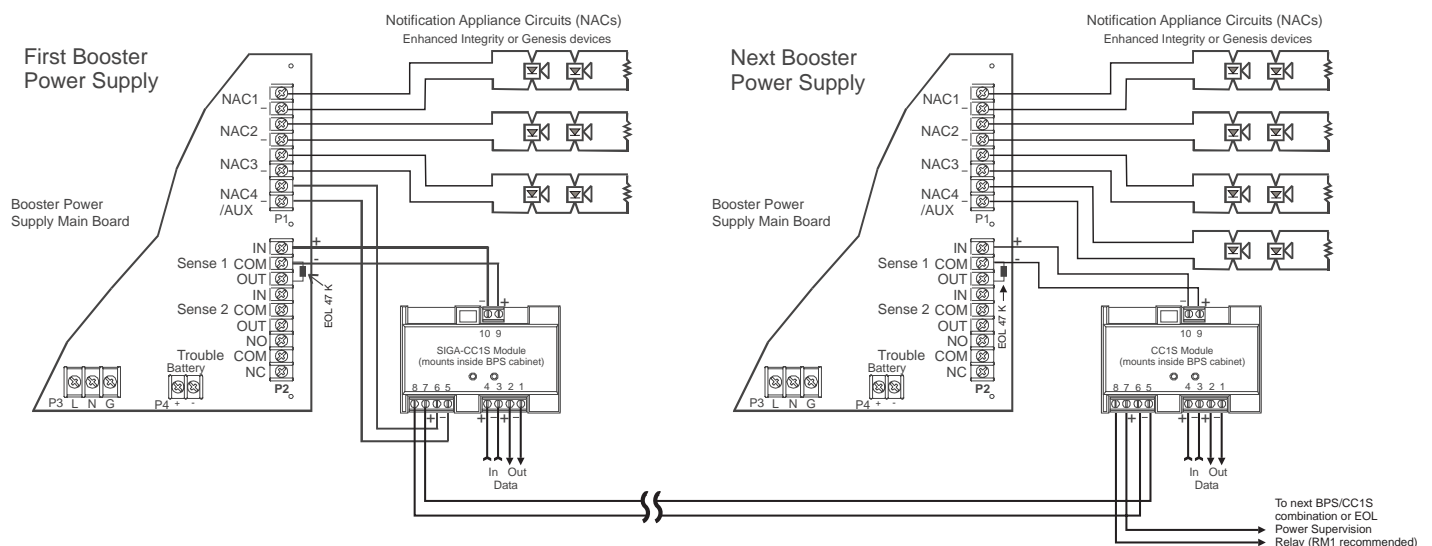
SIGA-CC1S (Standard Mount)



SIGA-MCC1S (UIO Mount)



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Specifications

Catalog Number	SIGA-CC1S	SIGA-MCC1S
Mounting	North American 2½ inch (64 mm) deep two-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 2-gang covers and SIGA-MP mounting plates	Plugs into UIO2R, UIO6R or UIO6 Motherboards
Description	Synchronization Output Module	
Type Code	50 (factory set)	
Address Requirements	Uses one module address	
Wiring Terminations	Suitable for #12 to #18 AWG (2.5 mm² to 0.75mm²)	
Operating Current	Standby = 223µA Activated = 100µA	
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)	
Output Rating	24 Vdc = 2 amps 25 V Audio = 50 watts 70 V Audio = 35 watts	
Construction	High Impact Engineering Polymer	
Storage and Operating Environment	Operating: 32°F to 120°F (0°C to 49°C) Storage: -4°F to 140°F (-20°C to 60°C) Humidity: 0 to 93% RH	
LED Operation	Green LED - Flashes when polled Red LED - Flashes when in alarm/active	
Compatibility	Use with: Signature Loop Controller under EST3 version 2.0 or higher	
Agency Listings	UL, ULC, CSFM, MEA	

Ordering Information

Catalog Number	Description	Shipping Wt. lbs (kg)
SIGA-CC1S	Synchronization Output Module (Standard Mount) - UL/ULC Listed	0.5 (0.23)
SIGA-MCC1S	Synchronization Output Module (UIO Mount) - UL/ULC Listed	0.18 (0.08)

Related Equipment		
27193-21	Surface Mount Box - Red, 2-gang	2 (1.2)
27193-26	Surface Mount Box - White, 2-gang	2 (1.2)
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)
235196P	Bi-polar Transient Protector	0.01 (0.05)
MFC-A	Multifunction Fire Cabinet - Red, supports Signature Module Mounting Plates	7.0 (3.1)
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)

Intelligent Smoke Detector with Optional CO Sensor

SIGA2-PS, SIGA2-PCOS



Overview

Signature Series **SIGA2-P(CO)S** photoelectric detectors bring advanced sensing technology to a practical design that increases efficiency, saves installation time, cuts costs, and extends life safety and property protection capabilities. Continuous self-diagnostics ensure reliability over the long-haul, while innovative field-replaceable smoke chambers make detector maintenance literally a snap. With its modular CO sensor, this detector pulls double-duty — continually monitoring the environment for signs of smoke, as well as its invisible yet deadly companion, carbon monoxide.

Like all Signature Series detectors, the **SIGA2-P(CO)S** is an intelligent device that gathers analog information from its smoke and CO sensor (if present), converting this data into digital signals. To make an alarm decision, the detector's on-board microprocessor measures and analyzes sensor readings and compares this information to historical data. Digital filters remove signal patterns that are not typical of fires, thus virtually eliminating unwanted alarms.

The SIGA2-PCOS includes an advanced carbon monoxide sensor and daughterboard. When the electrochemical cell reaches its end of life after approximately six years, the detector signals a trouble condition to the control panel. The sensor/daughterboard module is field-replaceable.

Standard Features

- Optical smoke sensing technology with optional carbon monoxide sensor
- Field-replaceable smoke chamber
- Field-replaceable carbon monoxide sensor/daughterboard module
- Uses existing wiring
- Automatic device mapping
- Ground fault detection by module
- Up to 250 devices per loop
- Two levels of environmental compensation
- Two levels of dirty detector warning
- Twenty pre-alarm settings
- Five sensitivity settings
- Non-volatile memory
- Electronic addressing
- Environmental compensation
- Identification of dirty or defective detectors
- Automatic day/night sensitivity adjustment
- Bicolor (green/red) status LED
- Standard, relay, fault isolator, and audible mounting bases

Application

Smoke detection

The **SIGA2-PS** detects extremely small particles of combustion and triggers an alarm at the first sign of smoke. Thanks to its high-performance forward scattering reflective response technology, the photoelectric smoke sensor responds quickly and reliably to a wide range of fire types, especially slow burning fires fuelled by combustibles typically found in modern multi-use buildings.

Carbon monoxide detection

CO detection has rapidly become a standard part of life safety strategies everywhere. Monitored CO detection is becoming mandated with increasing frequency in all types of commercial applications, but particularly in occupancies such as hotels, rooming houses, dormitories, day care facilities, schools, hospitals, assisted living facilities, and nursing homes. In fact, more than half of the U.S. population already lives in states requiring the installation of CO detectors in some commercial occupancies. This is because carbon monoxide is the leading cause of accidental poisoning deaths in America. Known as the "Silent Killer," CO is odorless, tasteless, and colorless. It claims nearly 500 lives, and results in more than 15,000 hospital visits annually.

Installation

Signature Series detectors mount to North American 1-gang boxes, 3-1/2 inch or 4 inch octagon boxes, and to 4 inch square electrical boxes 1-1/2 inches (38 mm) deep. They mount to European BESA and 1-gang boxes with 60.3 mm fixing centers. See mounting base installation and wiring for more information.

Testing & Maintenance

Each detector automatically identifies when it is dirty or defective and causes a "dirty detector" message. The detector's sensitivity measurement can also be transmitted to the loop controller. A sensitivity report can be printed to satisfy NFPA sensitivity measurements which must be conducted at the end of the first year and every two years thereafter.

The user-friendly maintenance program shows the current state of each detector and other pertinent messages. Single detectors may be turned off temporarily from the control panel. Availability of maintenance features is dependent on the fire alarm system used. When the CO sensor's electrochemical cell reaches its end of life, the detector signals a trouble condition to the control panel. The sensor/daughterboard module is field-replaceable. Scheduled maintenance (Regular or Selected) for proper detector operation should be planned to meet the requirements of the Authority Having Jurisdiction (AHJ). Refer to current NFPA 72, NFPA 720, and ULC CAN/ULC 536 standards.

This detector will NOT sense fires that start 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 to alarm it.

Sensing and reporting technology

The microprocessor in each detector 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 detector constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in the detector's non-volatile memory

Automatic Device Mapping - The loop controller learns where each device's serial number address is installed relative to other devices on the circuit. The mapping feature provides supervision of each device's installed location to prevent a detector from being reinstalled (after cleaning etc.) in a different location from where it was originally.

Stand-alone Operation - A decentralized alarm decision by the detector is guaranteed. On-board intelligence permits the detector to operate in stand-alone mode. If loop controller CPU communications fail for more than four seconds, all devices on that circuit go into stand-alone mode. The circuit acts like a conventional alarm receiving circuit.

Fast Stable Communication - On-board intelligence means less information needs to be sent between the detector and the loop controller. Other than regular supervisory polling response, the detector only needs to communicate with the loop controller when it has something new to report.

Accessories

Detector mounting bases have wiring terminals that are accessible from the "room-side" after mounting the base to the electrical box. The bases mount to North American 1-gang boxes and to 3½ inch or 4 inch octagon boxes, 1½ inches (38 mm) deep. They also mount to European BESA and 1-gang boxes with 60.3 mm fixing centers. The SIGA-SB4, SIGA-RB4, and SIGA-IB4 mount to North American 4 inch sq. electrical boxes in addition to the above boxes. They include the SIGA-TS4 Trim Skirt which is used to cover the "mounting ears" on the base. The SIGA-AB4G mounts to a 4" square box only.



Remote LED SIGA-LED - The remote LED connects to the SIGA-SB or SIGA-SB4 Standard Base only. It features a North American size 1-gang plastic faceplate with a white finish and red alarm LED.

SIGA-TS4 Trim Skirt - Supplied with 4 inch bases, it can also be ordered separately to use with the other bases to help hide surface imperfections not covered by the smaller bases.

SIGA-AB4G and SIGA-AB4GT - These sounder bases are designed for use where localized or group alarm signaling is required. The SIGA-AB4G is compatible with Signature Series smoke and heat detectors. The SIGA-AB4GT sounder base, when used with the SIGA-TCDR Temporal Pattern Generator module, adds an audible output function to any Signature Series detector, including fire and CO detectors.

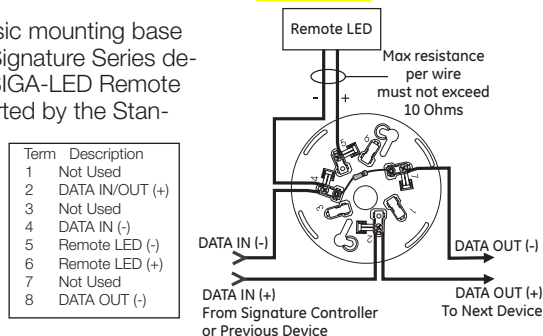
Typical Wiring

The detector mounting bases accept #18 AWG (0.75mm²), #16 (1.0mm²), #14 AWG (1.5mm²), and #12 AWG (2.5mm²) 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.

Standard Detector Base, SIGA-SB, SIGA-SB4

This is the basic mounting base for Edwards Signature Series detectors. The SIGA-LED Remote LED is supported by the Standard Base.



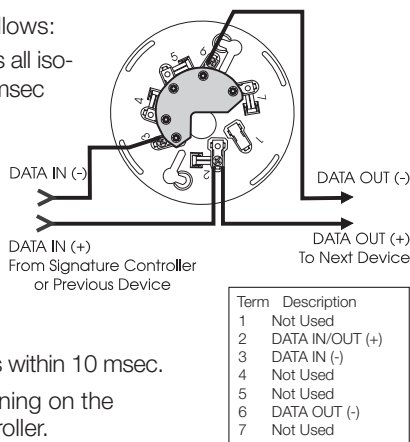
Isolator Detector Base, SIGA-IB, SIGA-IB4

This base includes a built-in line fault isolator for use on Class A circuits. A detector must be installed for it to operate. The isolator base does not support the SIGA-LED Remote LED.

The isolator operates as follows:

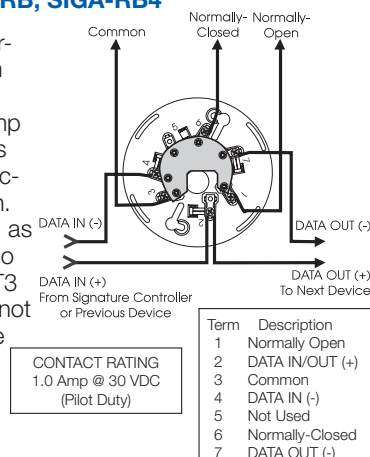
- a short on the line causes all isolators to open within 23 msec
- at 10 msec intervals, beginning on one side of the Class A circuit nearest the loop controller, the isolators close to provide the next isolator down the line with power
- when the isolator next to the short closes, reopens within 10 msec.

The process repeats beginning on the other side of the loop controller.



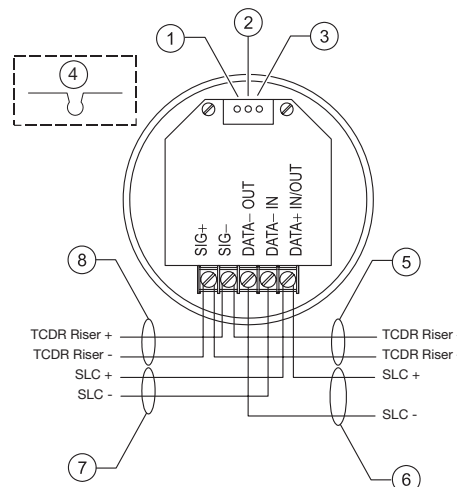
Relay Detector Base, SIGA-RB, SIGA-RB4

This base includes a relay. Normally open or closed operation is selected during installation. The dry contact is rated for 1 amp (pilot duty) @ 30 Vdc. The relay's position is supervised to avoid accidentally jarring it out of position. The SIGA-RB can be operated as a control relay if programmed to do so at the control panel (EST3 V.2 only). The relay base does not support the SIGA-LED Remote LED.



Audible Detector Base for CO and Fire Detectors, SIGA-AB4GT

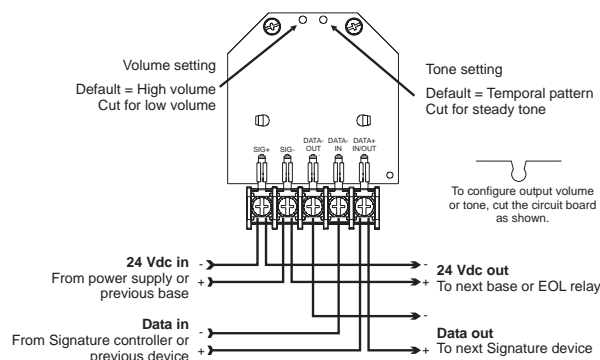
The Signature Series AB4GT sounder base, when used with the SIGA-TCDR Temporal Pattern Generator, adds an audible output function to any Signature Series detector. For more information on this device, refer to *Data Sheet 85001-0623 -- Sounder Base for CO and Fire Detectors*.



1. Volume setting. Default is high volume. For low volume, cut trace per item 4.
2. Reserved for future use. Do not cut.
3. Reserved for future use. Do not cut.
4. To configure output volume, cut trace as shown.
5. To next SIGA-AB4GT sounder base or EOL relay.
6. SLC_OUT to next intelligent addressable device.
7. SLC_IN from intelligent addressable controller or previous device.
8. From SIGA-TCDR Temporal Pattern Generator or previous SIGA-AB4GT sounder base.

Audible Detector Base, SIGA-AB4G

This base is designed for use where localized or group alarm signaling is required. When the detector senses an alarm condition, the audible base emits a local alarm signal. The optional SIGA-CRR Polarity Reversal Relay can be used for sounding to other audible bases on the same 24 Vdc circuit.



Relay and Audible Bases operate as follows:

- at system power-up or reset, the relay is de-energized
- when a detector is installed in the base with the power on, the relay energizes for four seconds, then de-energizes
- when a detector is removed from a base with the power on, the relay is de-energized
- when the detector enters the alarm state, the relay is energized.



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Compatibility

SIGA2-P(CO)S detectors are compatible only with the Signature Loop Controller.

Warnings & Cautions

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

This detector will NOT sense fires that start 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 to alarm it.

Specifications

	SIGA2-PS	SIGA2-PCOS
Normal operating current	45 µA	70 µA
Alarm current	18 mA	18 mA
Standalone alarm current	45 µA	70 µA
Operating voltage	15.20 to 19.95 VDC	
Air velocity	0 to 4,000 ft./min (0 to 20 m/s).	
Construction	High impact engineering polymer	
Wall mounting	Maximum 12 in (305 mm) from ceiling	
Mounting	Plug-in	
Shipping weight	0.44 lb. (164 g)	
Compatible bases	See Ordering Information	
Operating environment	32 to 120°F (0 to 49°C), 0 to 93% RH, noncondensing	
Storage temperature	-4 to 140°F (-20 to 60°C)	
Environmental compensation	Automatic	

Ordering Information

Catalog Number	Description	Ship Wt. lbs (kg)
SIGA2-PS	Intelligent Photoelectric Detector	0.4 (0.16)
SIGA2-PCOS	Intelligent Photoelectric Detector with carbon monoxide sensor	0.4 (0.16)
SIGA2-PCOS-CA	Intelligent Photoelectric Detector with carbon monoxide sensor (for use in Canadian markets only).	0.4 (0.16)

Accessories		
SIGA-SB	Detector Mounting Base - Standard	
SIGA-SB4	4-inch Detector Mounting Base c/w Trim Skirt	
SIGA-RB	Detector Mounting Base w/Relay	
SIGA-RB4	4-inch Detector Mounting Base w/Relay, c/w Trim Skirt	0.2 (.09)
SIGA-IB	Detector Mounting Base w/Fault Isolator	
SIGA-IB4	4-inch Detector Mounting Base w/ Fault Isolator, c/w Trim Skirt	
SIGA-LED	Remote Alarm LED (not for EN54 applications)	
SIGA-AB4G	Audible (Sounder) Base for Fire Detectors	0.3 (0.15)
SIGA-AB4GT	Audible (Sounder) Base for CO and Fire Detectors	0.3 (0.15)
SIGA-TCDR	Temporal Pattern Generator	0.3 (0.15)
SIGA-TS4	Trim Skirt (supplied with 4-inch bases)	0.1 (.04)
2-SPRC1*	Replacement Smoke Chamber (for SIGA2-PS detectors)	0.1 (.04)
2-SPRC2*	Replacement Smoke Chamber (for SIGA2-PCOS detectors)	0.1 (.04)
2-CORPL*	Replacement CO Sensor	0.1 (.04)

*Release pending.

Intelligent Heat Detectors with Optional CO Sensors

SIGA2-HFS, SIGA2-HRS, SIGA2-HCOS



Overview

Signature Series fixed temperature and rate-of-rise heat detectors bring advanced sensing technology to a practical design that increases efficiency, saves installation time, cuts costs, and extends property protection capabilities. Continuous self-diagnostics ensure reliability over the long-haul, while the latest thermister technology makes these detectors ideal wherever dependable heat detection is required. With their modular CO sensor, these devices pull double-duty — continually monitoring the environment for heat from combustion, as well as its invisible yet deadly companion, carbon monoxide.

Like all Signature Series detectors, these are intelligent devices that gather analog information from their heat and CO sensor (if present), converting this data into digital signals. To make an alarm decision, the detector's on-board microprocessor measures and analyzes sensor readings and compares this information to historical data. Digital filters remove signal patterns that are not typical of fires, thus virtually eliminating unwanted alarms.

The SIGA2-HCOS is a fixed temperature heat detector that includes an advanced carbon monoxide sensor and daughterboard. When the electrochemical cell reaches its end of life after approximately six years, the detector signals a trouble condition to the control panel. The sensor/daughterboard module is field-replaceable.

Standard Features

Note: Some features described here may not be supported by all control systems. Check your control panel's *Installation and Operation Guide* for details.

- Fixed temperature or rate-of-rise heat detection with optional carbon monoxide sensor
- Field-replaceable carbon monoxide sensor/daughterboard module
- Uses existing wiring
- Automatic device mapping
- Ground fault detection by module
- Up to 250 devices per loop
- Non-volatile memory
- Electronic addressing
- Bicolor (green/red) status LED
- Standard, relay, fault isolator, and audible mounting bases
- 50 foot (15.2 meter) spacing
- 15 °F (8 °C) per minute rate-of-rise alarm point (HRS)
- 135 °F (57 °C) fixed temperature alarm point (HFS/HCOS)

Application

Heat detection

SIGA2-HRS rate-of-rise heat detectors provide a 15 °F (9 °C) per minute rate-of-rise heat sensor for the detection of heat due to fire. The heat sensor monitors the temperature of the air and determines whether an alarm should be initiated.

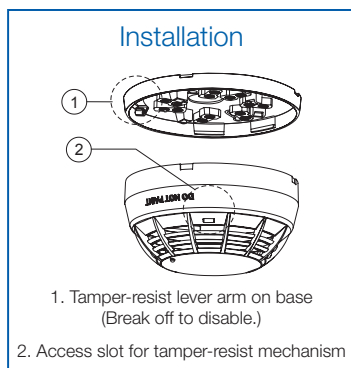
SIGA2-HFS and SIGA2-HCOS fixed temperature heat detectors provide a 135°F (57°C) fixed-temperature heat sensor for the detection of heat due to fire. The heat sensor monitors the temperature of the air and determines whether an alarm should be initiated.

Carbon monoxide detection

The SIGA2-HCOS includes a replaceable chemical cell for the detection of carbon monoxide (CO). CO detection has rapidly become a standard part of life safety strategies everywhere. Monitored CO detection is becoming mandated with increasing frequency in all types of commercial applications, but particularly in occupancies such as hotels, rooming houses, dormitories, day care facilities, schools, hospitals, assisted living facilities, and nursing homes. In fact, more than half of the U.S. population already lives in states requiring the installation of CO detectors in some commercial occupancies. This is because carbon monoxide is the leading cause of accidental poisoning deaths in America. Known as the "Silent Killer," CO is odorless, tasteless, and colorless. It claims nearly 500 lives, and results in more than 15,000 hospital visits annually.

Installation

Signature Series detectors mount to North American 1-gang boxes, 3-1/2 inch or 4 inch octagon boxes, and to 4 inch square electrical boxes 1-1/2 inches (38 mm) deep. They mount to European BESA and 1-gang boxes with 60.3 mm fixing centers. See mounting base installation and wiring for more information.



Testing & Maintenance

The user-friendly maintenance program shows the current state of each detector and other pertinent messages. Single detectors may be turned off temporarily from the control panel. Availability of maintenance features is dependent on the fire alarm system used. When the CO sensor's electrochemical cell reaches its end of life, the detector signals a trouble condition to the control panel. The sensor/daughterboard module is field-replaceable. Scheduled maintenance (Regular or Selected) for proper detector operation should be planned to meet the requirements of the Authority Having Jurisdiction (AHJ). Refer to current NFPA 72, NFPA 720, and ULC CAN/ULC 536 standards.

Compatibility

SIGA2-PS detectors are compatible only with the Signature Loop Controller.

Sensing and reporting technology

The microprocessor in each detector 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 detector constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in the detector's non-volatile memory

Automatic Device Mapping - The loop controller learns where each device's serial number address is installed relative to other devices on the circuit. The mapping feature provides supervision of each device's installed location to prevent a detector from being reinstalled (after cleaning etc.) in a different location from where it was originally.

Stand-alone Operation - A decentralized alarm decision by the detector is guaranteed. On-board intelligence permits the detector to operate in stand-alone mode. If loop controller CPU communications fail for more than four seconds, all devices on that circuit go into stand-alone mode. The circuit acts like a conventional alarm receiving circuit.

Fast Stable Communication - On-board intelligence means less information needs to be sent between the detector and the loop controller. Other than regular supervisory polling response, the detector only needs to communicate with the loop controller when it has something new to report.

Accessories

Detector mounting bases have wiring terminals that are accessible from the "room-side" after mounting the base to the electrical box. The bases mount to North American 1-gang boxes and to 3½ inch or 4 inch octagon boxes, 1½ inches (38 mm) deep. They also mount to European BESA and 1-gang boxes with 60.3 mm fixing centers. The SIGA-SB4, SIGA-RB4, and SIGA-IB4 mount to North American 4 inch sq. electrical boxes in addition to the above boxes. They include the SIGA-TS4 Trim Skirt which is used to cover the "mounting ears" on the base. The SIGA-AB4G mounts to a 4" square box only.



Remote LED SIGA-LED - The remote LED connects to the SIGA-SB or SIGA-SB4 Standard Base only. It features a North American size 1-gang plastic faceplate with a white finish and red alarm LED.

SIGA-TS4 Trim Skirt - Supplied with 4 inch bases, it can also be ordered separately to use with the other bases to help hide surface imperfections not covered by the smaller bases.

SIGA-AB4G and SIGA-AB4GT - These sounder bases are designed for use where localized or group alarm signaling is required. The SIGA-AB4G is compatible with Signature Series smoke and heat detectors. The SIGA-AB4GT sounder base, when used with the SIGA-TCDR Temporal Pattern Generator module, adds an audible output function to any Signature Series detector, including fire and CO detectors.

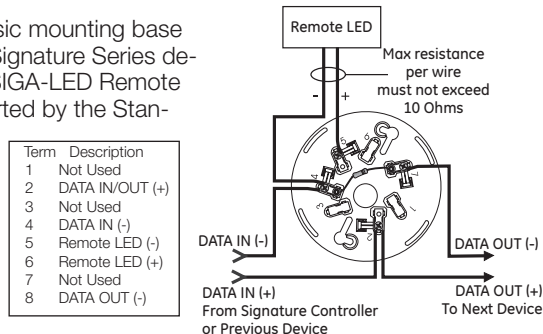
Typical Wiring

The detector mounting bases accept #18 AWG (0.75mm²), #16 (1.0mm²), #14 AWG (1.5mm²), and #12 AWG (2.5mm²) 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.

Standard Detector Base, SIGA-SB, SIGA-SB4

This is the basic mounting base for Edwards Signature Series detectors. The SIGA-LED Remote LED is supported by the Standard Base.



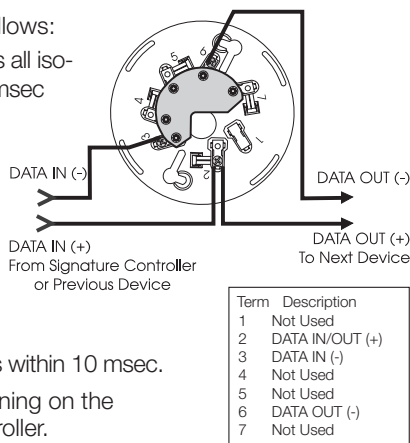
Isolator Detector Base, SIGA-IB, SIGA-IB4

This base includes a built-in line fault isolator for use on Class A circuits. A detector must be installed for it to operate. The isolator base does not support the SIGA-LED Remote LED.

The isolator operates as follows:

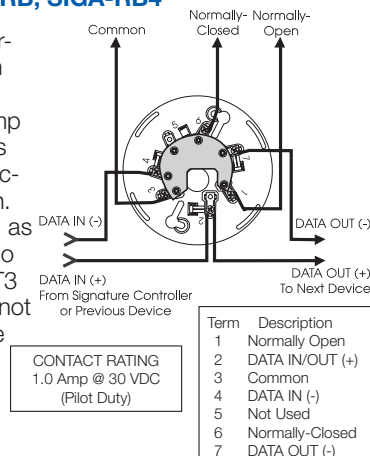
- a short on the line causes all isolators to open within 23 msec
- at 10 msec intervals, beginning on one side of the Class A circuit nearest the loop controller, the isolators close to provide the next isolator down the line with power
- when the isolator next to the short closes, reopens within 10 msec.

The process repeats beginning on the other side of the loop controller.



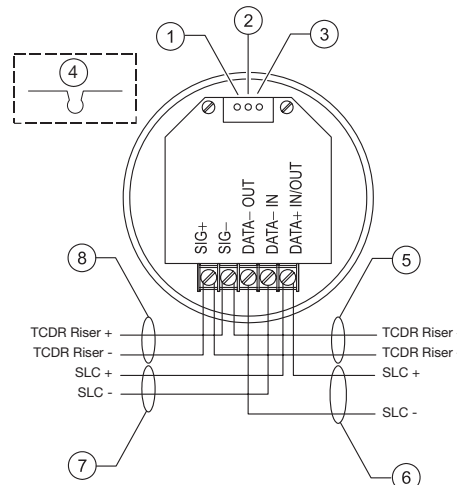
Relay Detector Base, SIGA-RB, SIGA-RB4

This base includes a relay. Normally open or closed operation is selected during installation. The dry contact is rated for 1 amp (pilot duty) @ 30 Vdc. The relay's position is supervised to avoid accidentally jarring it out of position. The SIGA-RB can be operated as a control relay if programmed to do so at the control panel (EST3 V.2 only). The relay base does not support the SIGA-LED Remote LED.



Audible Detector Base for CO and Fire Detectors, SIGA-AB4GT

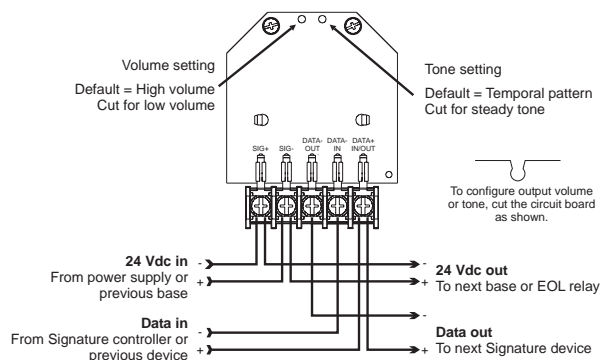
The Signature Series AB4GT sounder base, when used with the SIGA-TCDR Temporal Pattern Generator, adds an audible output function to any Signature Series detector. For more information on this device, refer to *Data Sheet 85001-0623 -- Sounder Base for CO and Fire Detectors*.



1. Volume setting. Default is high volume. For low volume, cut trace per item 4.
2. Reserved for future use. Do not cut.
3. Reserved for future use. Do not cut.
4. To configure output volume, cut trace as shown.
5. To next SIGA-AB4GT sounder base or EOL relay.
6. SLC_OUT to next intelligent addressable device.
7. SLC_IN from intelligent addressable controller or previous device.
8. From SIGA-TCDR Temporal Pattern Generator or previous SIGA-AB4GT sounder base.

Audible Detector Base, SIGA-AB4G

This base is designed for use where localized or group alarm signaling is required. When the detector senses an alarm condition, the audible base emits a local alarm signal. The optional SIGA-CRR Polarity Reversal Relay can be used for sounding to other audible bases on the same 24 Vdc circuit.



Relay and Audible Bases operate as follows:

- at system power-up or reset, the relay is de-energized
- when a detector is installed in the base with the power on, the relay energizes for four seconds, then de-energizes
- when a detector is removed from a base with the power on, the relay is de-energized
- when the detector enters the alarm state, the relay is energized.



Detection & alarm since 1872

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Warnings & Cautions

- 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 heat cannot reach the detector. Heat from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector.
- This heat detector by itself does not provide life safety protection. Use this detector with ionization and/or photoelectric smoke detectors.
- This detector does not detect oxygen levels, smoke, toxic gases, or flames. Use this device as part of a broad-based life safety program which includes a variety of information sources pertaining to heat and smoke levels, extinguishment systems, visual and audible devices, and other safety measures.
- Independent studies indicate that heat detectors should only be used when property protection alone is involved. Never rely on heat detectors as the sole means of fire protection.

Specifications

	SIGA2-HRS	SIGA2-HFS	SIGA2-HCOS
Normal operating current	45 µA	45 µA	45 µA
Standalone alarm current	18 mA	18 mA	18 mA
Alarm Current	45 µA	45 µA	45 µA
Actual alarm point	15°F (8°C)/min.	130 to 140°F (54 to 60°C)	
Operating voltage	15.20 to 19.95 VDC		
Maximum spacing	50 ft. (15.2 m) centers*		
Construction	High impact engineering polymer		
Mounting	Plug-in		
Shipping weight	0.44 lb. (164 g)		
Compatible bases	See Ordering Information		
Operating environment	32 °F to 100 °F (0 °C to 38 °C), 0 to 93% RH, noncondensing		
Storage temperature	– 4 °F to 140 °F (– 20 °C to 60 °C)		

*When replacing SIGA-HRS/HFS ensure spacing is 50ft or less.

Ordering Information

Catalog Number	Description	Ship Wt. lbs (kg)
SIGA2-HRS	Intelligent rate-of-rise heat detector	0.4 (0.16)
SIGA2-HFS	Intelligent fixed temperature heat detector	0.4 (0.16)
SIGA2-HCOS	Intelligent fixed temperature heat detector with CO sensor	0.4 (0.16)
SIGA2-HCOS-CA	Intelligent fixed temperature heat detector with CO sensor (for use in Canadian markets only)	0.4 (0.16)

Accessories		
SIGA-SB	Detector Mounting Base - Standard	
SIGA-SB4	4-inch Detector Mounting Base c/w Trim Skirt	
SIGA-RB	Detector Mounting Base w/Relay	
SIGA-RB4	4-inch Detector Mounting Base w/Relay, c/w Trim Skirt	0.2 (.09)
SIGA-IB	Detector Mounting Base w/Fault Isolator	
SIGA-IB4	4-inch Detector Mounting Base w/ Fault Isolator, c/w Trim Skirt	
SIGA-LED	Remote Alarm LED (not for EN54 applications)	
SIGA-AB4G	Audible (Sounder) Base for Fire Detectors	0.3 (0.15)
SIGA-AB4GT	Audible (Sounder) Base for CO and Fire Detectors	0.3 (0.15)
SIGA-TCDR	Temporal Pattern Generator	0.3 (0.15)
SIGA-TS4	Trim Skirt (supplied with 4-inch bases)	0.1 (.04)
2-CORPL*	Replacement CO Sensor	0.1 (.04)

*Release pending.

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

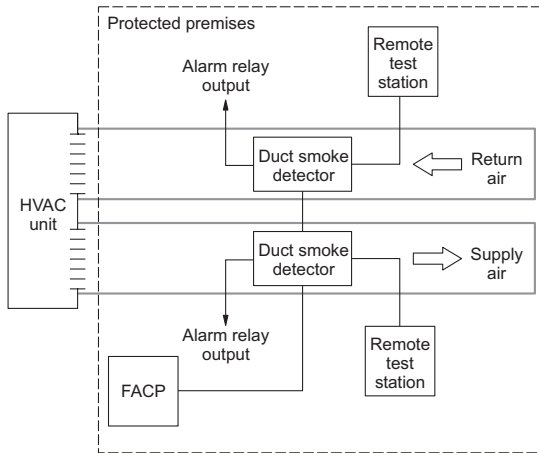
Intelligent Duct Smoke Detector

SIGA-SD



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 pre-set 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

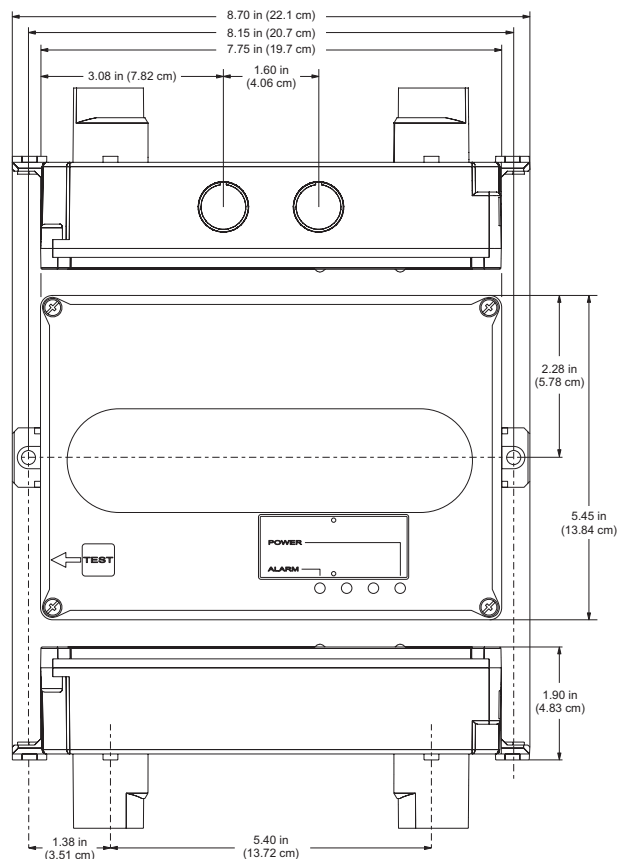


Labor-saving Remote Test/Reset stations provide alarm testing from the convenience of a remote location. Tests can be performed quickly and safely – without having to climb to the roof. Magnetically-operated and key-operated one-gang models are available. Signature *SuperDuct* detectors are also compatible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

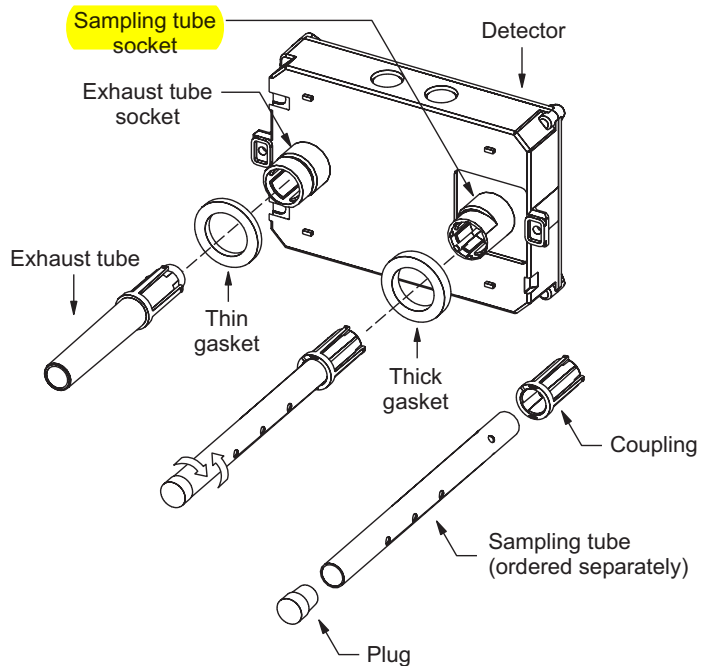
Air velocity in the duct as low as 100 ft/min. maintains adequate air flow into the sensor smoke chamber through air holes in the air sampling tube and discharges through the exhaust tube. *SuperDuct* air sampling tubes must be installed with the inlet holes facing the airstream. Sampling tubes may be 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.

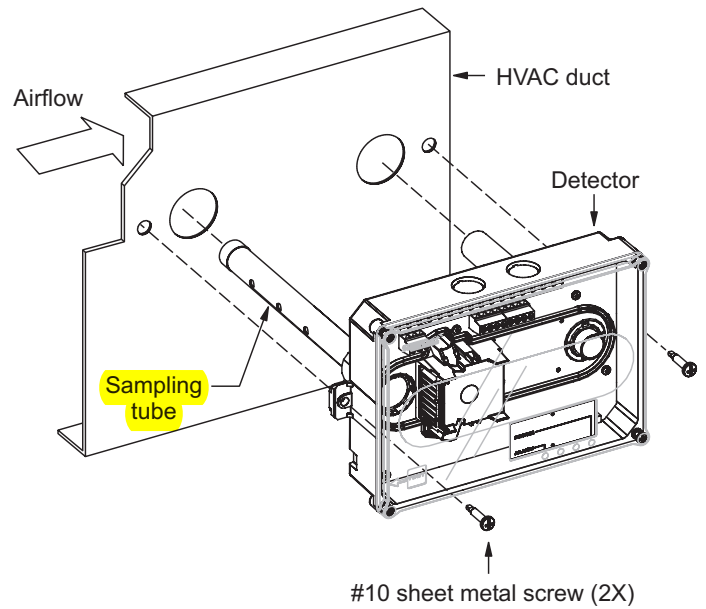
Dimensions



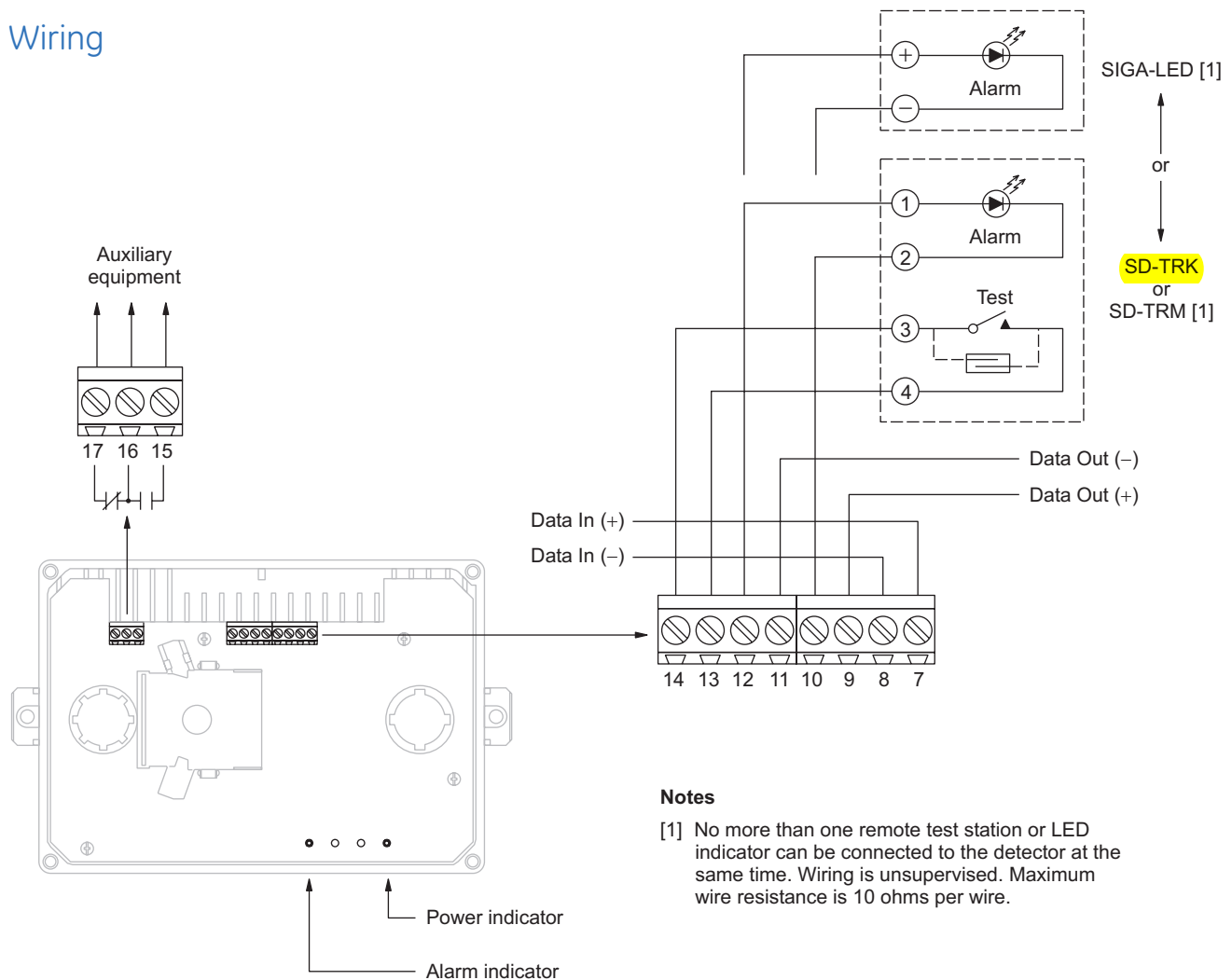
Assembly



Mounting



Wiring



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.

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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)



imagination at work

Manual Pull Stations

SIGA-270, SIGA-270P,
SIGA-278



Overview

The SIGA-270 and **SIGA-278 series Manual Pull Stations** are part of EST's Signature Series system. The SIGA-270 Fire Alarm Manual Pull Stations feature our very familiar teardrop shape. They are made from die-cast zinc and finished with red epoxy powder-coat paint complemented by aluminum colored stripes and markings. With positive pull-lever operation, one pull on the station handle breaks the glass rod and turns in a positive alarm, ensuring protection plus fool-proof operation. Presignal models (SIGA-270P) are equipped with a general alarm (GA) keyswitch for applications where two stage operation is required. The up-front highly visible glass rod discourages tampering, but is not required for proper operation.

EST's double action single stage SIGA-278 station is a contemporary style manual station made from durable red colored lexan. To initiate an alarm, first lift the upper door marked "LIFT THEN PULL HANDLE", then pull the alarm handle.

Standard Features

Note: Some features described here may not be supported by all control systems. Check your control panel's Installation and Operation Guide for details.

- **Traditional familiar appearance**
SIGA-270 models feature our familiar teardrop design with simple positive pull action and sturdy die-cast metal body.
- **One stage (GA), two stage (pre-signal), and double action models**
SIGA-270 models are available for one or two stage alarm systems. The single stage double action SIGA-278 features a rugged Lexan housing with keyed reset mechanism.

- **Break glass operation**
An up-front visible glass rod on the SIGA-270 discourages tampering.
- **Intelligent device with integral microprocessor**
All decisions are made at the station allowing lower communication speed while substantially improving control panel response time. Less sensitive to line noise and loop wiring properties; twisted or shielded wire is not required.
- **ADA Compliant**
Meets ADA requirements for manual pull stations.
- **Electronic Addressing with Non-volatile memory**
Permanently stores programmable address, serial number, type of device, and job number. Automatically updates historic information including hours of operation, last maintenance date, number of alarms and troubles, and time and date of last alarm.
- **Automatic device mapping**
Each station transmits wiring information to the loop controller regarding its location with respect to other devices on the circuit.
- **Stand-alone operation**
The station inputs an alarm even if the loop controller's polling interrogation stops.
- **Diagnostic LEDs**
Status LEDs; flashing GREEN shows normal polling; flashing RED shows alarm state.
- **Designed for high ambient temperature operation**
Install in ambient temperatures up to 120 °F (49 °C).

Application

The operating characteristics of the fire alarm stations are determined by their sub-type code or "Personality Code". NORMALLY-OPEN ALARM - LATCHING (Personality Code 1) is assigned by the factory; no user configuration is required. The device is configured for Class B IDC operation. An ALARM signal is sent to the loop controller when the station's pull lever is operated. The alarm condition is latched at the station.

Compatibility

Signature Series manual stations are compatible only with EST's Signature Loop Controller.

Warnings & Cautions

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

Testing & Maintenance

To test (or reset) the station simply open the station and operate the exposed switch. The SIGA-270 series are opened with a tool; the SIGA-278 requires the key which is supplied with that station.

The station's automatic self-diagnosis identifies when it is defective and causes a trouble message. The user-friendly maintenance program shows the current state of each Signature series device and other pertinent messages. Single devices may be deactivated temporarily, from the control panel. Availability of maintenance features is dependent on the fire alarm system used.

Scheduled maintenance (Regular or Selected) for proper system operation should be planned to meet the requirements of the Authority Having Jurisdiction (AHJ). Refer to current NFPA 72 and ULC CAN/ULC 536 standards.

Typical Wiring

The fire alarm station's terminal block accepts #18 AWG (0.75mm²) to #12 AWG (2.5mm²) wire sizes. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.

Wiring Notes

1. Refer to Signature Loop Controller manual for maximum wire distance.
2. All wiring is power limited and supervised.

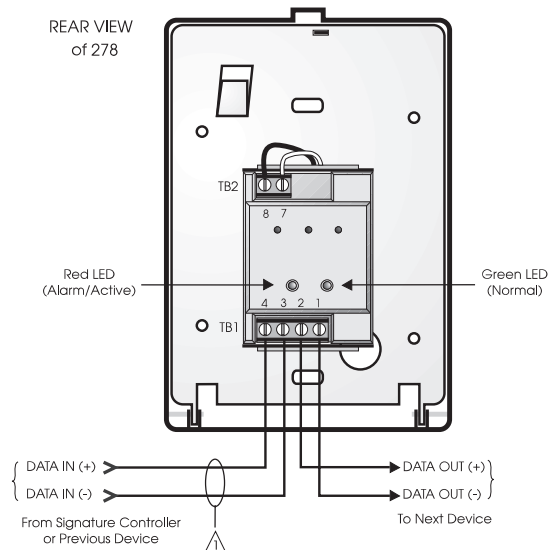


Figure 4. Single Stage Systems

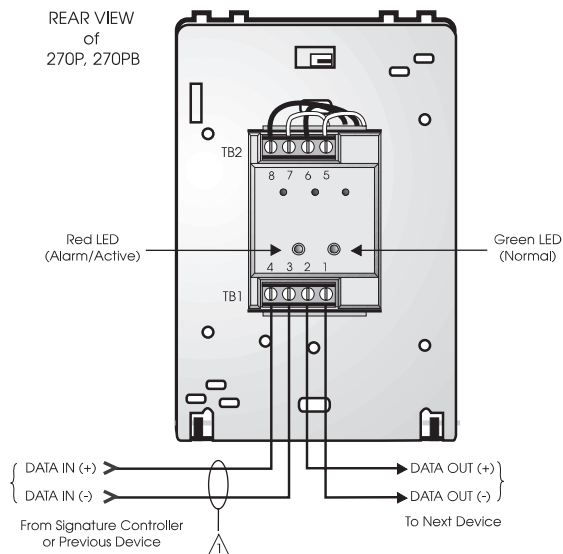


Figure 5. Two Stage Systems

Installation

Single-stage Signature Series fire alarm manual pull stations mount to North American 2½ inch (64 mm) deep 1-gang boxes.

Two stage presignal (270P) models require 1½ inch (38 mm) deep 4-inch square boxes with 1-gang, ½-inch raised covers. Openings must be angular. *Rounded openings are not acceptable.* Recommended box: Steel City Model 52-C-13; in Canada, use Iberville Model CI-52-C-49-1/2.

All models include terminals are suited for #12 to #18 AWG (2.5 mm² to 0.75 mm²) wire size. Edwards recommends that these fire alarm stations be installed according to latest recognized edition of national and local fire alarm codes.

Electronic Addressing: The loop controller electronically addresses each manual station, saving valuable time during system commissioning. Setting complicated switches or dials is not required. Each station 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 stations can be addressed using the SIGA-PRO Signature Program/Service Tool.

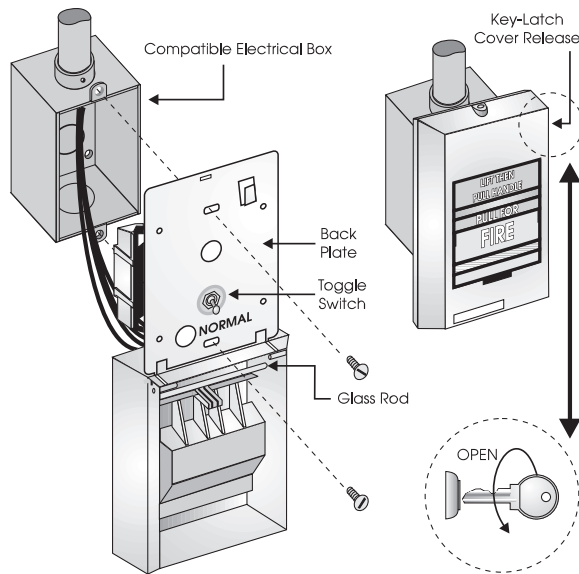


Figure 1. SIGA-278 installation

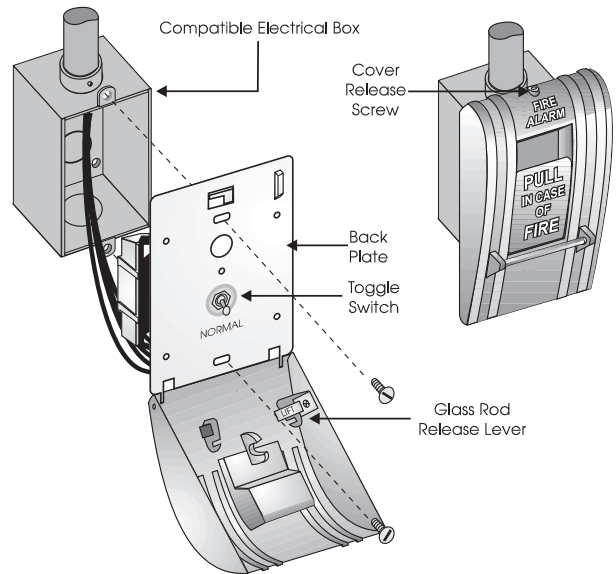


Figure 2. SIGA-270, SIGC-270F, SIGC-270B installation

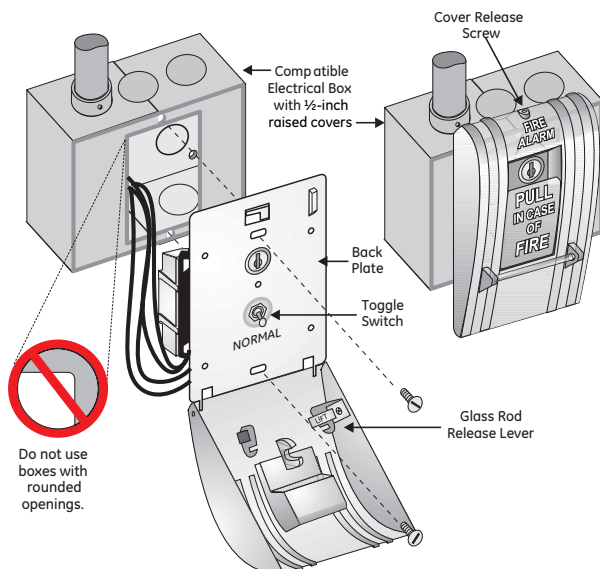


Figure 3. SIGA-270P, SIGC-270PB installation



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Australia

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Latin America

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Specifications

Catalog Number	SIGA-270, SIGC-270F, SIGC-270B	SIGA-270P, SIGC-270PB	SIGA-278
Description	Single Action - One Stage	Single Action - Two Stage (Presignal)	Double Action - One Stage
Addressing Requirements	Uses 1 Module Address	Uses 2 Module Addresses	Uses 1 Module Address
Operating Current	Standby = 250µA Activated = 400µA	Standby = 396µA Activated = 680µA	Standby = 250µA Activated = 400µA
Construction & Finish	Diecast Zinc - Red Epoxy with aluminum markings		Lexan - Red with white markings
Type Code	Factory Set		
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)		
Storage and Operating Environment	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 Both LEDs - Glow steady when in alarm (stand-alone)		
Compatibility	Use With: Signature Loop Controller		
Agency Listings	UL, ULC (note 1), MEA, CSFM		

Note: SIGC-270F, SIGC-270B and SIGC-270PB are ULC listed only. Suffix "F" indicates French markings. Suffix "B" indicates English/French bilingual markings.

Ordering Information

Catalog Number	Description	Ship Wt. lbs (kg)
SIGA-270	One Stage Fire Alarm Station, English Markings - UL/ULC Listed	1 (0.5)
SIGC-270F	One Stage Fire Alarm Station, French Markings - ULC Listed	
SIGC-270B	One Stage Fire Alarm Station, French/English Markings - ULC Listed	
SIGA-270P	Two Stage (Presignal) Fire Alarm Station, English Markings - UL/ULC Listed	
SIGC-270PB	Two Stage (Presignal) Fire Alarm Station, French/English Markings - ULC Listed	
SIGA-278	Double Action (One Stage) Fire Alarm Station, English Markings - UL/ULC Listed	

Accessories

32997	GA Key w/Tag - for pre-signal station (CANADA ONLY)	0.1 (.05)
276-K2	GA Key - for pre-signal station (USA ONLY)	
276-K1	Station Reset Key, Supplied with all Key Reset Stations	
27165	12 Glass Rods - for SIGA-270 series (CANADA ONLY)	
270-GLR	20 Glass Rods - for SIGA-270 series (USA ONLY)	
276-GLR	20 Glass Rods - for SIGA-278 series	1 (0.6)
276B-RSB	Surface Mount Box, Red - for SIGA pull stations	

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.

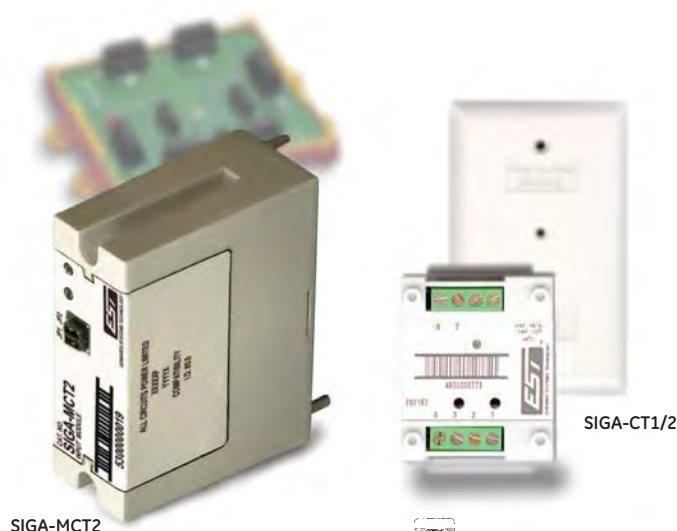
The **SIGA-MCT2** is part of the UIO family of plug-in Signature Series modules. It functions identically to the SIGA-CT2, but takes advantage of the modular flexibility and easy installation that characterizes all UIO modules. Two- and six-module UIO motherboards are available. All wiring connections 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.
- **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.
- **Non-volatile memory**
Permanently stores serial number, type of device, and job number.
- **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



Signature Series Overview

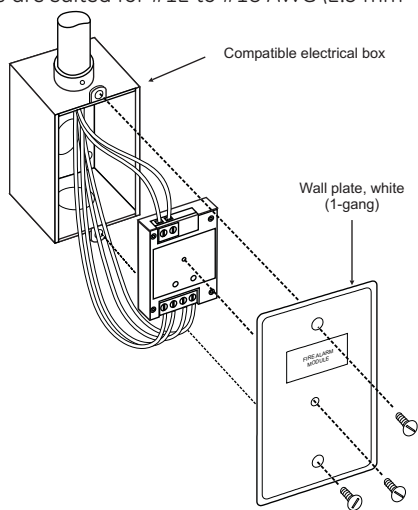
The Signature Series intelligent analog-addressable system from GE Security is an entire family of multi-sensor detectors and mounting bases, multiple-function input and output modules, network and non-network control panels, and user-friendly maintenance and service tools. Analog information from equipment 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.

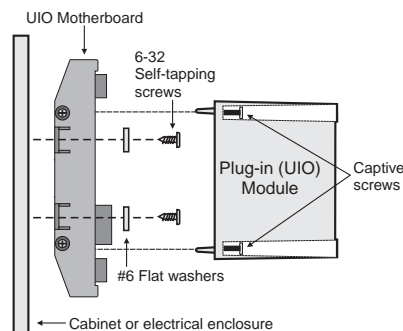
Automatic Device Mapping – The Signature Data Controller (SDC) learns where each device's serial number address is installed relative to other devices on the circuit. The SDC keeps a map of all Signature Series devices connected to it. The Signature Series Data Entry Program also uses the mapping feature. 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 mm² to 0.75 mm²) 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 position 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 mm² to 0.75 mm²) 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.

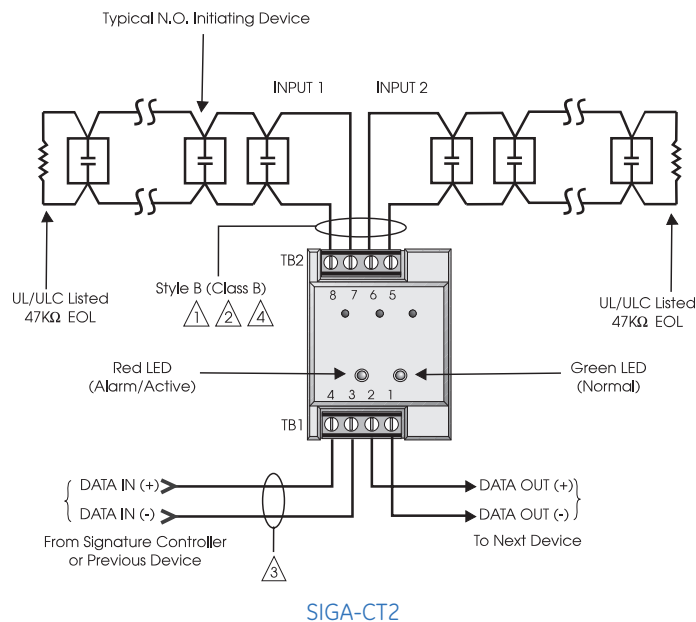
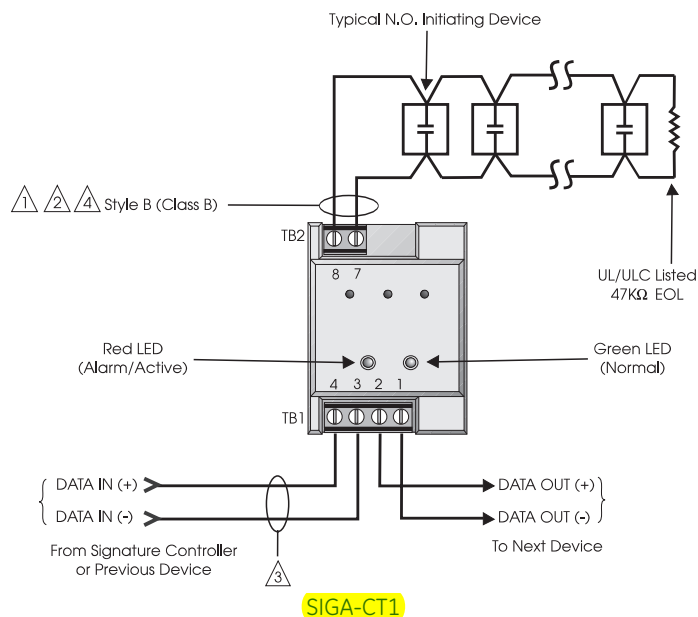
Typical Wiring

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 mm ²)	4,000 ft (1,219 m)
	#16 AWG (1.00 mm ²)	
	#14 AWG (1.50 mm ²)	
	#12 AWG (1.50 mm ²)	



NOTES

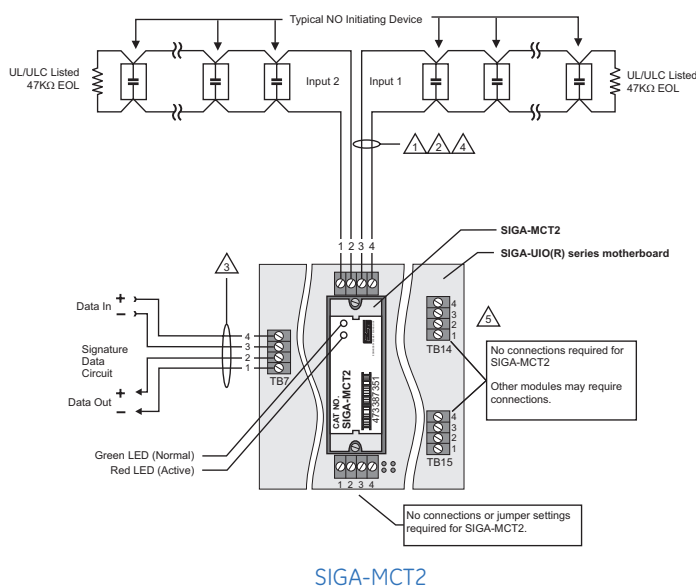
- 1 Maximum 25 Ohm resistance per wire.
- 2 Maximum #12 AWG (2.5 mm²) wire; Minimum #18 AWG (0.75 mm²).
- 3 Refer to Signature controller installation sheet for wiring specifications.
- 4 Maximum 10 Vdc @ 350 µA
- 5 The SIGA-UIO6R and the SIGA-UIO2R do not come with TB14.
- 6 All wiring is supervised and power-limited.
- 7 These modules will not support 2-wire smoke detectors.

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.



SIGA-MCT2

U.S.
T 888-378-2329
F 866-503-3996

Canada
T 519 376 2430
F 519 376 7258

Asia
T 852 2907 8108
F 852 2142 5063

Australia
T 61 3 9259 4700
F 61 3 9259 4799

Europe
T 32 2 725 11 20
F 32 2 721 86 13

Latin America
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F 305 593 4300

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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 Mother-board	
Storage and Operating Environment	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-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)



imagination at work

Overview

The Control Relay Module and the Polarity Reversal Relay Module are part of the Signature Series system. They are intelligent analog addressable devices available in either plug-in (UIO) versions, or standard 1-gang mount versions.

The **SIGA-CR/MCR Control Relay Module** provides a Form "C" dry relay contact to control external appliances such as door closers, fans, dampers etc. This device does not provide supervision of the state of the relay contact. Instead, the on-board microprocessor ensures that the relay is in the proper ON/OFF state. Upon command from the loop controller, the SIGA-CR/MCR relay activates the normally open or normally-closed contact.

The **SIGA-CRR/MCRR Polarity Reversal Relay Module** provides a Form "C" dry relay contact to power and activate a series of SIGA-AB4G Audible Sounder Bases. Upon command from the Signature loop controller, the SIGA-CRR reverses the polarity of its 24 Vdc output, thus activating all Sounder Bases on the data loop.

Standard-mount versions (SIGA-CR and SIGA-CRR) are installed 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.

Plug-in UIO versions (SIGA-MCR and SIGA-MCRR) are part of the UIO family of plug-in Signature Series modules. They function identically to the standard mount versions, but take 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

- **Provides one no/nc contact (SIGA-CR/MCR)**
Form "C" dry relay contact can be used to control external appliances such as door closers, fans, dampers etc.
- **Allows group operation of sounder bases**
The SIGA-CRR/MCRR reverses the polarity of its 24 Vdc output, thus activating all Sounder Bases on the data loop.
- **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.
- **Intelligent device with microprocessor**
All decisions are made at the module to allow lower communication speed with substantially improved control panel response time and less sensitivity to line noise and loop wiring properties; twisted or shielded wire is not required.
- **Ground fault detection by address**
Detects ground faults right down to the device level.

Control Relay Modules

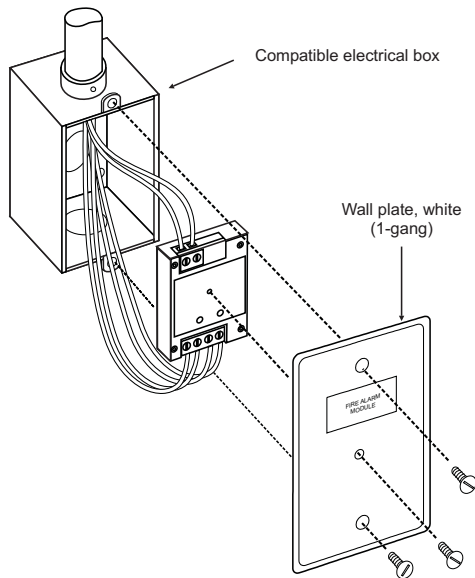
SIGA-CR, SIGA-MCR, SIGA-CRR, SIGA-MCRR



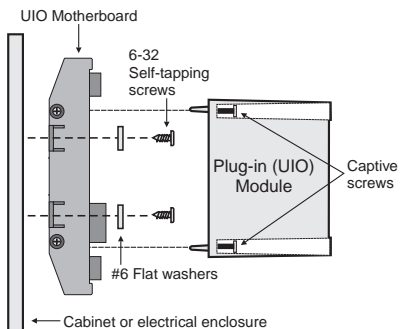
Installation

SIGA-CR and SIGA-CRR: 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 mm² to 0.75 mm²) wire size.



SIGA-MCR and SIGA-MCRR: mount the UIO motherboard inside a suitable GE Security enclosure with screws and washers provided. Plug the module into any available position 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 mm² to 0.75 mm²) 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 operation of Signature Series control relays is determined by their sub-type code or "Personality Code."

Personality Code 8: CONTROL RELAY (SIGA-CR/MCR) - Dry Contact Output. This setting configures the module to provide one Form "C" DRY RELAY CONTACT to control Door Closers, Fans, Dampers, etc. Contact rating is 2.0 amp @ 24 Vdc; 0.5 amp @ 120 Vac (or 220 Vac for non-UL applications). Personality Code 8 is assigned at the factory. No user configuration is required.

Personality Code 8: POLARITY REVERSAL RELAY MODULE (SIGA-CRR/MCRR). This setting configures the module to reverse the polarity of its 24 Vdc output. Contact rating is 2.0 amp @ 24 Vdc (pilot duty). Personality Code 8 is assigned at the factory. No user configuration is required.

Compatibility

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

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.

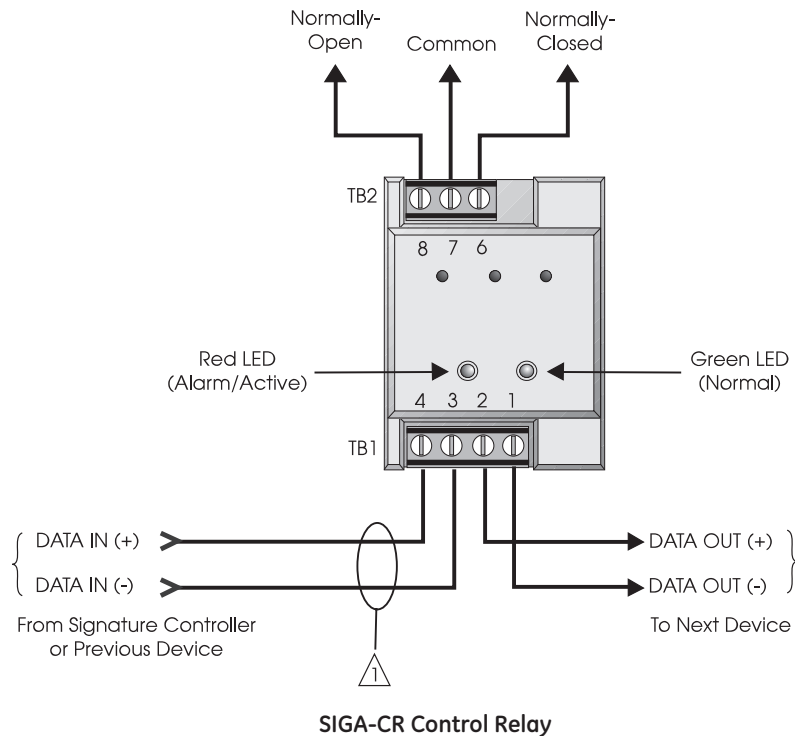
Testing & Maintenance

The module's automatic self-diagnosis identifies when it is defective and causes a trouble message. The user-friendly maintenance program shows the current state of each module and other pertinent messages. Single modules may be turned off (deactivated) temporarily, from the control panel. Availability of maintenance features is dependent on the fire alarm system used. Scheduled maintenance (Regular or Selected) for proper system operation should be planned to meet the requirements of the Authority Having Jurisdiction (AHJ). Refer to current NFPA 72 and ULC CAN/ULC 536 standards.

Typical Wiring

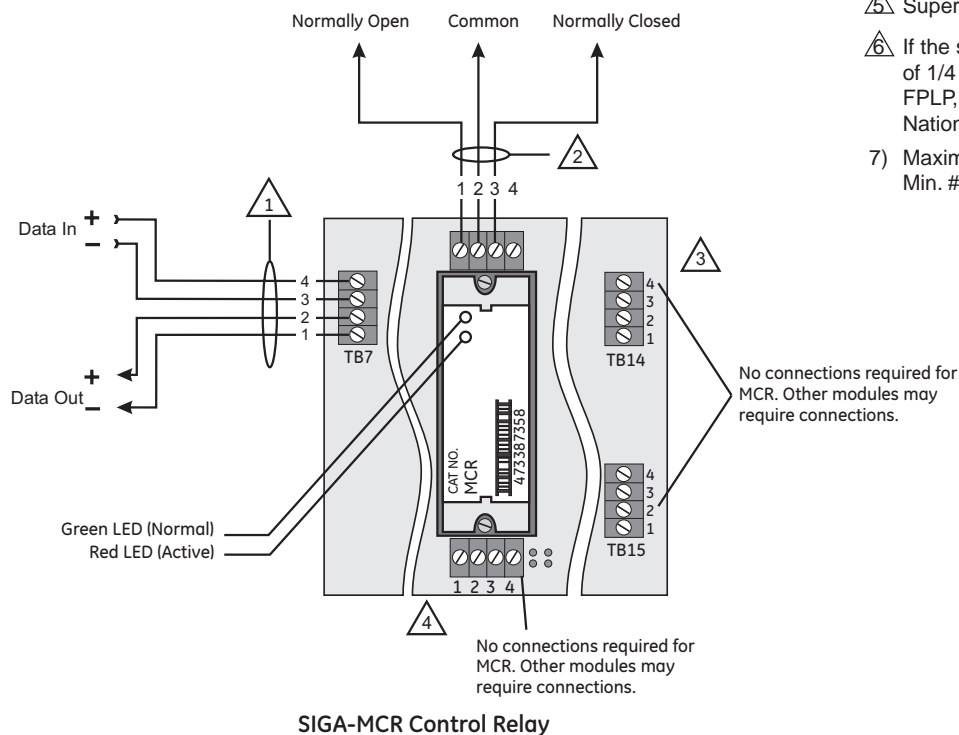
Modules will accept #18 AWG (0.75mm²), #16 (1.0mm²), #14 AWG (1.50mm²) and #12 AWG (2.5mm²) wire sizes.

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.



Notes

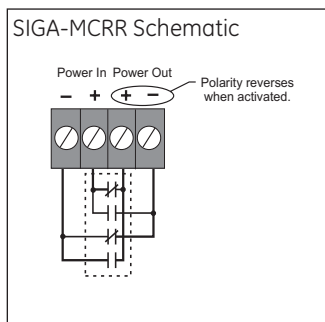
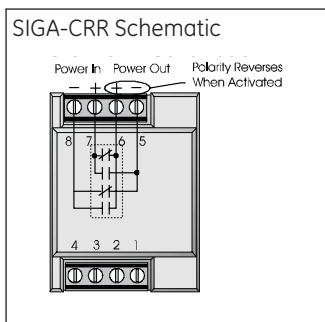
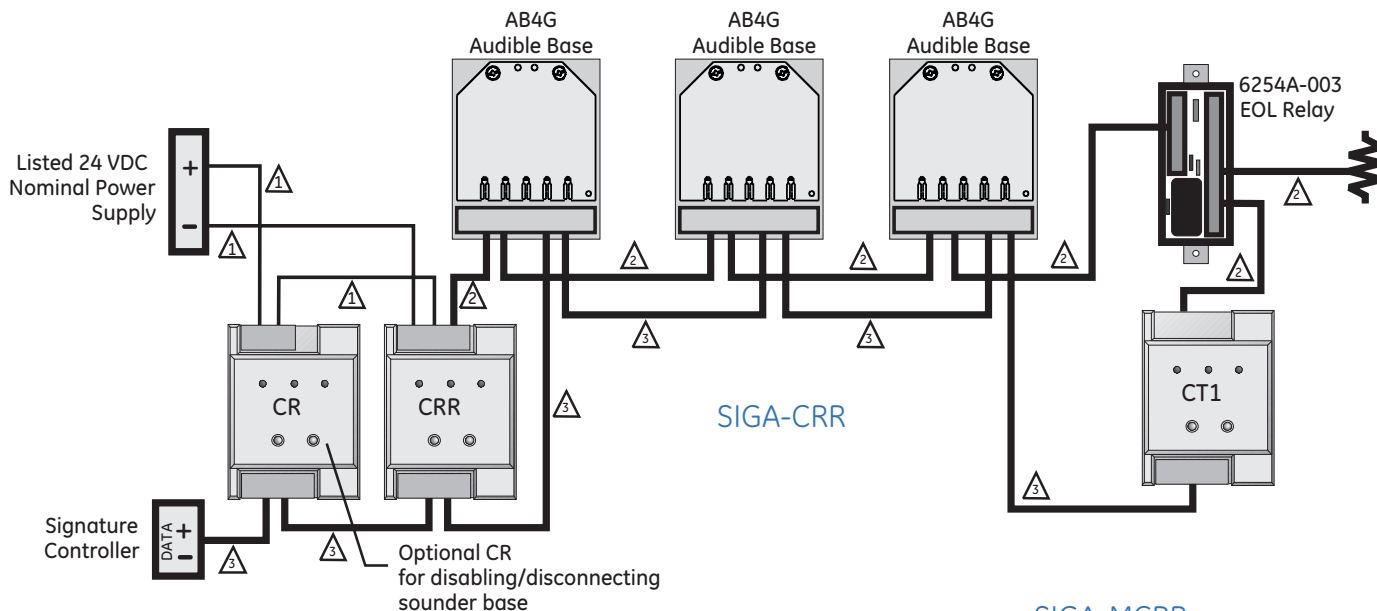
- 1 Refer to Signature Loop Controller Installation Sheet for wiring specifications.
- 2 NFPA 72 requires that the SIGA-CR/SIGA-MCR be installed in the same room as the device it is controlling. This requirement may not apply in all markets. Check with your local AHJ for details.
- 3 The SIGA-UIO6R and the SIGA-UIO2R do not come with TB14.
- 4 The SIGA-UIO6 does not come with TB8 through TB13.
- 5 Supervised and power-limited.
- 6 If the source is nonpower-limited, maintain a space of 1/4 inch from power-limited wiring or use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electrical Code.
- 7) Maximum #12 AWG (2.5mm²) wire.
Min. #18 (0.75mm²).



Typical Wiring

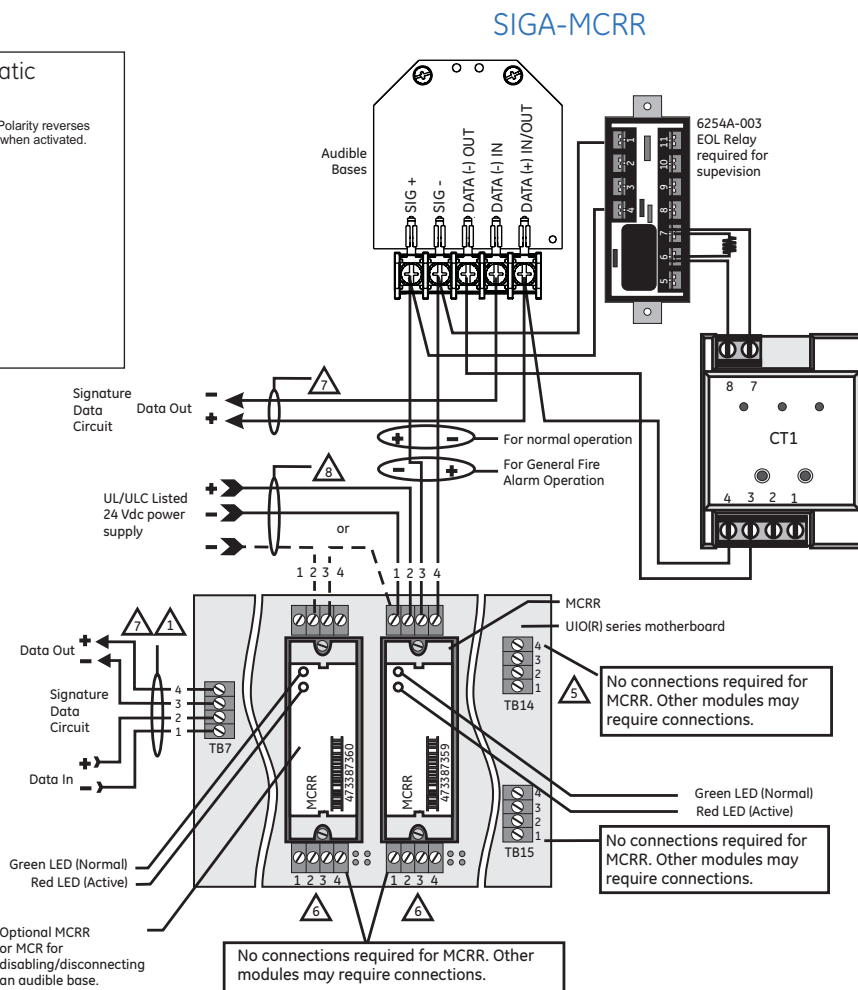
Modules will accept #18 AWG (0.75mm²), #16 (1.0mm²), #14 AWG (1.50mm²) and #12 AWG (2.50mm²) wire sizes.

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.



Notes

- 1 Refer to the Signature controller installation sheet for wiring.
- 2 One Pair of Wires (24 Vdc power).
- 3 One Pair of Wires (Signature Data).
- 4 Single Wire (24 Vdc power).
- 5 The SIGA-UIO6R and the SIGA-UIO2R do not come with TB14.
- 6 The SIGA-UIO6 does not come with TB8 through TB13.
- 7 Supervised and power-limited.
- 8 If the source is nonpower-limited, maintain a space of 1/4 inch from power-limited wiring or use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electrical Code.
- 9 Maximum #12 AWG (2.5 mm²) wire; Minimum #18 AWG (0.75 mm²).
- 10 End-of-Line Relay must monitor and report power supply trouble to control panel.
- 11 Class B Data wiring may be "T-tapped."



Specifications

Catalog Number	SIGA-CR	SIGA-MCR	SIGA-CRR	SIGA-MCRR
Description	Control Relay		Polarity Reversal Relay	
Type Code	Personality Code 8 (Factory Set)		Personality Code 8 (Factory Set)	
Address Requirements	Uses 1 Module Address			
Operating Current	Standby = 100µA Activated = 100µA			
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)			
Relay Type and Rating	Form "C" 24 VDC = 2 amps (pilot duty) 120 Vac = 0.5 amps 220 Vac (non-UL) = 0.5 amps			
Mounting	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	Plugs into UIO2R, UIO6R or UIO6 Motherboards	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	Plugs into UIO2R, UIO6R or UIO6 Motherboards
Construction & Finish	High Impact Engineering Polymer			
Storage and Operating Environment	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			
Compatibility	Use With: Signature Loop Controller			
Agency Listings	UL, ULC, CSFM, MEA			

Ordering Information

Catalog Number	Description	Ship Weight - lbs (kg)
SIGA-CR	Control Relay Module (Standard Mount)	0.4 (0.15)
SIGA-MCR	Control Relay Module (UIO Mount)	0.18 (0.08)
SIGA-CRR	Polarity Reversal Relay Module (Standard Mount)	0.4 (0.15)
SIGA-MCRR	Polarity Reversal Relay Module (UIO Mount)	0.18 (0.08)

Related Equipment

27193-11	Surface Mount Box - Red, 1-gang	1 (0.6)
27193-16	Surface Mount Box - White, 1-gang	1 (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)
SIGA-AB4G	Audible (Sounder) Detector Base	0.3 (0.15)

Accessories

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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F 866-503-3996

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T 519 376 2430
F 519 376 7258

Asia
T 852 2907 8108
F 852 2142 5063

Australia
T 61 3 9259 4700
F 61 3 9259 4799

Europe
T 32 2 725 11 20
F 32 2 721 86 13

Latin America
T 305 593 4301
F 305 593 4300

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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. The information stored in device memory includes:

- Device serial number, address, and type
- Time and date of last alarm
- Most recent trouble code logged by the detector — 32 possible trouble codes may be used to diagnose faults.

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. This takes the mystery out of the installation. The preparation of as-built drawings is fast and efficient.

Device mapping allows the Signature Data Controller to discover:

- Unexpected additional device addresses
- Missing device addresses
- Changes to the wiring in the circuit.

Most Signature modules use a personality code selected by the installer to determine their actual function. Personality codes are downloaded from the SDC during system configuration and are indicated during device mapping.

Standalone Operation – A decentralized alarm decision by the device is guaranteed. On-board intelligence permits the device to operate in standalone (degrade) mode. If Signature loop controller CPU communications fail for more than four seconds, all devices on that circuit go into standalone mode. The circuit acts like a conventional alarm receiving circuit. Each Signature device on the circuit continues to collect and analyze information from its slave devices. When connected to a panel utilizing standalone operation, modules with their "personality" set as alarm devices (IDC) will alarm should their slave alarm-initiating device activate.



imagination at work

Field Configurable Horns and Strobes

Genesis Series

MNEC appliances available
with clear or amber lenses.



Overview

The Genesis line of fire alarm and mass notification/emergency communications (MNEC) signals are among the smallest, most compact audible-visible life safety signaling devices in the world. About the size of a deck of playing cards, these devices are designed to blend with any decor.

Thanks to patented breakthrough technology, Edwards Genesis strobes do not require bulky specular reflectors and lenses. Instead, an exclusive cavity design conditions light to produce a highly controlled distribution pattern. Significant development efforts employing this new technology have given rise to a new benchmark in strobe performance – FullLight technology.

FullLight strobe technology produces a smooth light distribution pattern without the spikes and voids characteristic of specular reflectors. This ensures the entire coverage area receives consistent illumination from the strobe flash. As a result, Genesis strobes with FullLight technology go well beyond the UL-1971 and ULC-S526 light distribution requirements.

Genesis strobes and horn-strobes offer 15 to 110 candela output, which is selectable with a conveniently-located switch on the side of the device. Models are also available that offer fixed 15/75 cd output. The candela output setting remains clearly visible even after final installation, yet it stays locked in place to prevent unauthorized tampering.

Genesis MNEC appliances offer emergency signaling with clear or amber lenses and with optional ALERT housing labels. They are ideal for applications that require differentiation between fire alarm and mass notification alerts.

Standard Features

- **Unique low-profile design**
 - The most compact UL-1971/ULC-S526 listed strobe available
 - Ultra-slim – protrudes less than one inch
 - Attractive appearance
 - No visible mounting screws
- **Four field-configurable options in one device**
 - Select 15, 30, 75, or 110 cd strobe output
 - Select high (default) or low dB horn output
 - Select temporal (default) or steady horn output
 - Select public mode flash rate (default) or private mode temporal flash
- **Fixed 15/75 cd model available**
- **MNEC models available**
- **Easy to install**
 - Fits standard 1-gang electrical boxes – no trim plate needed
 - Optional trim plate accommodates oversized openings
 - Pre-assembled with captive hardware
 - #12 AWG terminals – ideal for long runs or existing wiring
- **Unparalleled performance**
 - Industry's most even light distribution
 - Meets tough synchronizing standards for strobes
 - Single microprocessor controls both horn and strobe
 - Low current draw minimizes system overhead
 - Independent horn control over a single pair of wires
 - Highly regulated in-rush current
 - Multiple frequency tone improves sound penetration
 - Industry's first temporal strobe output

Application

Genesis strobes are UL 1971-listed for use indoors as wall-mounted public-mode notification appliances for the hearing impaired. Prevailing codes require strobes to be used where ambient noise conditions exceed 105 dBA (87dBA in Canada), where occupants use hearing protection, and in areas of public accommodation as defined in the *Americans with Disabilities Act* (see *application notes – USA*).

Combination horn-strobe signals must be installed in accordance with guidelines established for strobe devices. Consult with your Authority Having Jurisdiction for details.

All Genesis strobes exceed UL synchronization requirements (within 10 milliseconds over a two-hour period) when used with a synchronization source. Synchronization is important in order to avoid epileptic sensitivity.

NOTE: The flash intensity of some visible signals may not be adequate to alert or waken occupants in the protected area. Research indicates that the intensity of strobe needed to awaken 90% of sleeping persons is approximately 100 cd. Edwards recommends that strobes in sleeping rooms be rated at at least 110 cd.

WARNING: These devices will not operate without electrical power. As fires frequently cause power interruptions, further safeguards such as backup power supplies may be required.

Horns

Genesis horn output reaches as high as 99 dB and features a unique multiple frequency tone that results in excellent sound penetration and an unmistakable warning of danger. Horns may be configured for either coded or non-coded signal circuits. They can also be set for low dB output with a jumper cut that reduces horn output by about 5 dB. Horn-only models may be ceiling-mounted or wall-mounted.

The suggested sound pressure level for each signaling zone used with alert or alarm signals is at least 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater, measured 5 feet (1.5 m) above the floor. The average ambient sound level is, A-weighted sound pressure measured over a 24-hour period.

Doubling the distance from the signal to the ear will theoretically result in a 6 dB reduction of the received sound pressure level. The actual effect depends on the acoustic properties of materials in the space. A 3 dBA difference represents a barely noticeable change in volume.

MNEC Applications

Genesis MNEC appliances bring the same high-performance fire alarm features and unobtrusive design to mass notification applications. Available with amber lenses and optional ALERT housing labels, they are ideal for applications that require differentiation between fire alarm and mass notification alerts.

Installation

Genesis horns and strobes mount to any standard one-gang surface or flush electrical box. Matching optional trim plates are used to cover oversized openings and can accommodate one-gang, two-gang, four-inch square, or octagonal boxes, and European 100 mm square.



Genesis Horn/Strobe with optional trim plate

All Genesis signals come pre-assembled with captive mounting screws for easy installation. Two tabs at the top of the signal unlock the cover to reveal the mounting hardware. The shallow depth of Genesis devices leaves ample room behind the signal for extra wiring. Once installed with the cover in place, no mounting screws are visible.

Field Configuration

Temporal horn and horn-strobe models are factory set to sound in a **three-pulse temporal pattern**. Units may be configured for use with coded systems by cutting a jumper on the circuit board. This results in a **steady output** that can be turned on and off (coded) as the system applies and removes power to the signal circuit. A Genesis Signal Master is required when horn-strobe models are configured for coded systems. Non-temporal, horn-only models sound a steady tone.

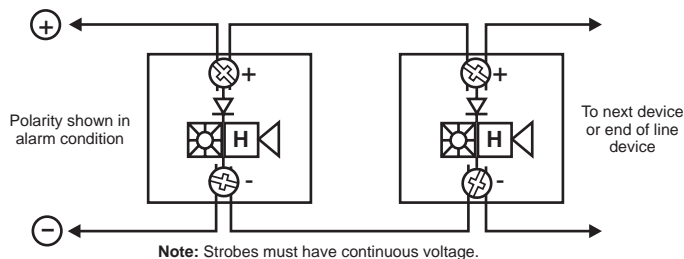
Genesis clear strobes and horn-strobes are shipped from the factory ready for use as **UL 1971 compliant** signals for public mode operation. These signals may be configured for **temporal flash** by cutting a jumper on the circuit board. This battery-saving feature is intended for private mode signaling only.

Genesis clear strobes and horn-strobes may be set for **15, 30, 75, or 110 candela output**. The output setting is changed by simply opening the device and sliding the switch to the desired setting. The device does not have to be removed to change the output setting. The setting remains visible through a small window on the side of the device after the cover is closed.

Horns and horn-strobes are factory set for **high dB output**. **Low dB output** may be selected by cutting a jumper on the circuit board. This reduces the output by about 5 dB.

Wiring

Field wiring terminals accommodate #18 to #12 AWG (0.75 mm² to 2.5 mm²) wiring. Horns, strobes, and combination horn-strobes are interconnected with a single pair of wires as shown below.



Current Draw

Strobes, Horn-Strobes

Multi-cd Wall Strobes (G1-VM)

UL Rating	15 cd* RMS	30 cd* RMS	15/75 cd** RMS	75 cd* RMS	110 cd* RMS
16 Vdc	103	141	152	255	311
16 Vfwr	125	179	224	346	392

*G1-VM multi-cd; **G1F-V1575 fixed 15/75 cd

Typical Current	15 cd RMS	30 cd RMS	15/75 RMS	75 cd RMS	110 cd RMS
16 Vdc	85	127	150	245	285
20 Vdc	71	98	123	188	240
24 Vdc	59	82	104	152	191
33 Vdc	46	64	84	112	137
16 Vfwr	119	169	223	332	376
20 Vfwr	103	143	189	253	331
24 Vfwr	94	129	169	218	262
33 Vfwr	87	112	148	179	205

Wall Temporal Horn-strobes – High dB Setting

UL Rating	15 cd* RMS	30 cd* RMS	15/75 cd** RMS	75 cd* RMS	110 cd* RMS
16 Vdc	129	167	172	281	337
16 Vfwr	176	230	269	397	443

*G1-HDVM multi-cd
**G1F-HDV1575 fixed 15/75 cd

Typical Current	15 cd RMS	30 cd RMS	15/75 RMS	75 cd RMS	110 cd RMS
16 Vdc	102	135	160	246	309
20 Vdc	88	109	137	193	248
24 Vdc	81	94	122	161	203
33 Vdc	74	72	106	124	154
16 Vfwr	144	182	247	352	393
20 Vfwr	141	162	220	274	362
24 Vfwr	136	152	203	235	282
33 Vfwr	125	144	196	201	232

Wall Temporal Horn-strobes – Low dB Setting

UL Rating	15 cd* RMS	30 cd* RMS	15/75 cd** RMS	75 cd* RMS	110 cd* RMS
16 Vdc	122	160	146	274	330
16 Vfwr	162	216	231	383	429

*G1-HDVM multi-cd
**G1F-HDV1575 fixed 15/75 cd

Typical Current	15 cd RMS	30 cd RMS	15/75 RMS	75 cd RMS	110 cd RMS
16 Vdc	96	130	158	243	302
20 Vdc	79	104	133	189	241
24 Vdc	68	88	119	156	197
33 Vdc	56	71	100	118	146
16 Vfwr	128	180	241	344	389
20 Vfwr	118	157	213	266	343
24 Vfwr	113	144	195	230	279
33 Vfwr	112	137	182	197	226

Horns

Wall or Ceiling Mounted Temporal Horns (G1-HD)

UL Rating	High dB (RMS)	Low dB (RMS)
16 Vdc	26	19
24 Vdc	36	27
33 Vdc	41	33
16 Vfwr	51	37
24 Vfwr	69	52
33 Vfwr	76	70

Typical Current	High dB RMS	Low dB RMS
16 Vdc	22	17
20 Vdc	24	19
24 Vdc	27	22
33 Vdc	32	26
16 Vfwr	34	30
20 Vfwr	40	34
24 Vfwr	45	38
33 Vfwr	52	47

Wall or Ceiling Mounted Horns (G1-P)

UL Designation	Voltage Range	Max. Current, RMS
Regulated 24 Vdc	16 - 33 Vdc	13 mA
24 fwr	16 - 33 Vfwr	11 mA

Typical Current	RMS
24 Vdc	10
24 Vdc	11
31 Vdc	12
20 Vfwr	9
24 Vfwr	10

Notes and Comments

- Current values are shown in mA.
- UL Nameplate Rating can vary from Typical Current due to measurement methods and instruments used.
- Edwards recommends using the Typical Current for system design including NAC and Power Supply loading.
- Use the Vdc RMS current ratings for filtered power supply and battery AH calculations. Use the Vfwr RMS current ratings for unfiltered power supply calculations.
- Fuses, circuit breakers and other overcurrent protection devices are typically rated for current in RMS values. Most of these devices operate based upon the heating affect of the current flowing through the device. The RMS current (not the mean current) determines the heating affect and therefore, the trip and hold threshold for those devices.

dBA output

Temporal Horns, Horn-strobes (G1-HD, G1-HDVM series)

High dB Setting	UL464		Average	Peak
	Temporal	Steady	Temporal/ Steady	Temporal/ Steady
16 Vdc	81.4	85.5	91.4	94.2
24 Vdc	84.4	88.6	94.5	97.6
33 Vdc	86.3	90.4	96.9	99.5

Low dB Setting	UL464		Average	Peak
	Temporal	Steady	Temporal/ Steady	Temporal/ Steady
16 Vdc	76.0	80.1	86.3	89.2
24 Vdc	79.4	83.5	89.8	92.5
33 Vdc	82.1	86.5	92.5	95.3

Steady Tone Horns (G1-P series)

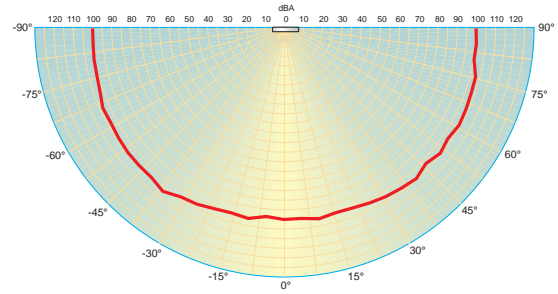
	UL464	Average	Peak
16 Vdc	77 dBA, min	85 dBA	91 dBA
16 Vfwr	77 dBA, min	85 dBA	91 dBA

Notes

1. All values shown are dBA measured at 10 feet (3.01m).
2. UL464 values measured in reverberant room.
3. Average and Peak values are measured in anechoic chamber.

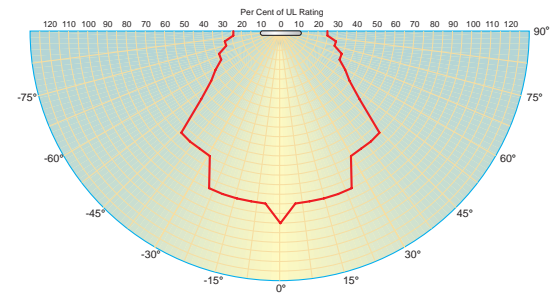
Average Sound Output (dBA)

(High dB setting, anechoic, 24V, measured at 10ft)



Light output - (effective cd)

Percent of UL rating versus angle



Specifications

Housing	Red or white textured UV stabilized, color impregnated engineered plastic. Exceeds 94V-0 UL flammability rating.
Lens	Optical grade polycarbonate (clear)
Mounting (indoor only)	Strobes and horn-strobes are for wall-mount installation only. Horn-only models may be ceiling- or wall-mounted. Flush mount: 2½ inch (64 mm) deep one-gang box Surface mount: Model 27193 surface mount box, wiremold box, or equivalent surface-mount box With optional trim plate: One-gang, two-gang, four-inch square, octagonal, or European single-gang box
Wire connections	Screw terminals: single input for both horn and strobe. #18 to #12 AWG (0.75 mm ² to 2.5 mm ²) wire size
Operating environment	Indoor only: 32-120°F (0-49°C) ambient temperature. 93% relative humidity
Agency listings/approvals	UL 1971, UL 1638, UL 464, ULC S525, ULC S526, CSFM, CE, FCC, MEA. (All models comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule.)
Dimensions (HxWxD)	Signal: 4-1/2" x 2-3/4" x 13/16" (113 mm x 68 mm x 21 mm) Trimplate: 5" (127 mm); Height – 5-7/8" (149 mm); Depth – ½" (13 mm)
Operating voltage	G1-HD series temporal-tone horns: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR (or coded when horn set to steady tone) G1-HDVM series temporal-tone horn-strobes: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR (or coded (audible NAC only) when used with optional G1M Genesis Signal Master) G1-VM series strobes: non-coded, filtered 16 - 33 Vdc or unfiltered 16-33 Vdc FWR G1-P series steady-tone horns: coded or non-coded, filtered 20-31 Vdc or unfiltered 20-27 Vfwr
Strobe output rating	UL 1971, UL 1638, ULC S526: selectable 15 cd, 30 cd, 75 cd, or 110 cd output UL 1971: 15 cd (fixed 15/75 cd models) UL 1638, ULCS526: 75 cd (fixed 15/75 cd models)
Strobe flash rate	G1-VM strobes and G1-HDVM series temporal-tone horn-strobes: one flash per second synchronized with optional G1M Genesis Signal Master indefinitely within 10 milliseconds (or self-synchronized within 200 milliseconds over thirty minutes on a common circuit without G1M Genesis Signal Master) Temporal setting (private mode only): synchronized to temporal output of horns on same circuit
Synchronization Sources	SIGA-CC1S, SIGA-MCC1S, SIGA-CC2A, SIGA-MCC2A, G1M-RM BPS6A, BPS10A, APS6A, APS10A, iO64, iO500, Firesield Plus 3, 5 and 10 zone. Add G1M for G1-CVM & G1-HDVM devices only.
Horn pulse rate	G1-HD temporal-tone horns and G1-HDVM series temporal-tone horn-strobes: temporal rate synchronized with optional G1M Genesis Signal Master indefinitely within 10 milliseconds (or self-synchronized within 200 milliseconds over thirty minutes on a common circuit without G1M Genesis Signal Master) G1-P steady-tone horns: continuous, steady tone only
Temporal audible pattern	½ sec ON, ½ sec OFF, ½ sec ON, ½ sec OFF, ½ sec ON, 1½ sec OFF, then repeat cycle

Fire appliances available with white or red housings.



MNEC appliances available with clear or amber lenses.



Ordering Information

Model	Housing	Marking	Lens	Strobe	Horn	Ship Wt. lbs (kg)
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Fire Alarm Appliances (c/w running man icon screen printed on housing)

G1-VM	White	None	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)
G1F-HD	White	FIRE	Clear	Horn only	Selectable high/low dB	0.25 (0.11)
G1F-HDV1575	White	FIRE	Clear	15/75 cd ¹	Temporal hi/lo dB-24V	0.25 (0.11)
G1F-HDVM	White	None	Clear	Selectable 15, 30, 75, or 110 cd	Selectable high/low dB	0.25 (0.11)
G1F-P	White	FIRE	Clear	Steady Horn (not compatible with Genesis Signal Master)		0.25 (0.11)
G1F-V1575	White	FIRE	Clear	15/75 cd ¹	Strobe only	0.25 (0.11)
G1F-VM	White	FIRE	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)
G1-HD	White	None	Clear	Horn only	Selectable high/low dB	0.25 (0.11)
G1-HDVM	White	None	Clear	Selectable 15, 30, 75, or 110 cd	Selectable high/low dB	0.25 (0.11)
G1-P	White	None	Clear	Steady Horn (not compatible with Genesis Signal Master)		0.25 (0.11)
G1RF-HD	Red	FIRE	Clear	Horn only	Selectable high/low dB	0.25 (0.11)
G1RF-HDV1575	Red	FIRE	Clear	15/75 cd ¹	Temporal hi/lo dB-24V	0.25 (0.11)
G1RF-HDVM	Red	None	Clear	Selectable 15, 30, 75, or 110 cd	Selectable high/low dB	0.25 (0.11)
G1RF-P	Red	FIRE	Clear	Steady Horn (not compatible with Genesis Signal Master)		0.25 (0.11)
G1RF-V1575	Red	FIRE	Clear	15/75 cd ¹	Strobe only	0.25 (0.11)
G1RF-VM	Red	FIRE	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)
G1R-HD	Red	None	Clear	Horn only	Selectable high/low dB	0.25 (0.11)
G1R-HDVM	Red	None	Clear	Selectable 15, 30, 75, or 110 cd	Selectable high/low dB	0.25 (0.11)
G1R-P	Red	None	Clear	Steady Horn (not compatible with Genesis Signal Master)		0.25 (0.11)
G1R-VM	Red	None	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)

MNEC Appliances (no running man icon on housing)

G1WA-HDVMA	White	ALERT	Amber	Selectable A, B, C or D	Selectable high/low dB	0.25 (0.11)
G1WA-HDVMC	White	ALERT	Clear	Selectable 15, 30, 75, or 110 cd	Selectable high/low dB	0.25 (0.11)
G1WA-VMA	White	ALERT	Amber	Selectable A, B, C or D	Strobe only	0.25 (0.11)
G1WA-VMC	White	ALERT	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)
G1WN-HDVMC	White	None	Clear	Selectable 15, 30, 75, or 110 cd	Selectable high/low dB	0.25 (0.11)
G1WN-VMA	White	None	Amber	Selectable A, B, C or D	Strobe only	0.25 (0.11)
G1WN-VMC	White	None	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)

Lens Kits

G1LK-A	N/A	N/A	Amber	G1 Field replaceable lens kit, amber
G1LK-B	N/A	N/A	Blue	G1 Field replaceable lens kit, blue
G1LK-G	N/A	N/A	Green	G1 Field replaceable lens kit, green
G1LK-R	N/A	N/A	Red	G1 Field replaceable lens kit, red

Trim Plates

G1T	White	None	Genesis Trim Plate (for two-gang or 4" square boxes)	0.15 (0.7)
G1RT	Red	None	Genesis Trim Plate (for two-gang or 4" square boxes)	0.15 (0.7)
G1T-FIRE	White	FIRE	Genesis Trim Plate (for two-gang or 4" square boxes)	0.15 (0.7)
G1RT-FIRE	Red	FIRE	Genesis Trim Plate (for two-gang or 4" square boxes)	0.15 (0.7)
G1WT-ALERT	White	ALERT	Genesis Trim Plate (for two-gang or 4" square boxes)	0.15 (0.7)

Surface Boxes

27193-16	White	N/A	One-gang surface mount box	1 (0.4)
27193-11	Red	N/A	One-gang surface mount box	1 (0.4)

¹ These 15/75 cd models provide fixed output and are not multi-candela devices. The 15 cd output component complies with UL1971, while the 75 cd output component complies with UL 1638.



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Temporal Horns and Horn-strobes

757 Series



Overview

Integrity temporal horns and temporal horn-strobes are specially designed for use with compatible life safety communication and control equipment to alert occupants of a life safety event. The horn emits a piercing low frequency sound that is easily heard above moderate ambient noise levels. The flash from its strobe can be noticed from almost any position in the room, corridor, or large open space.

Integrity's rugged plastic housing is made from durable and fire retardant, high impact plastic with a slightly textured surface. Its ingenious mounting plate firmly holds the device in place with a single screw. A separate trim plate is not required. Terminals accept up to #12 AWG (2.5mm²) wire for polarized connections.

Strobes are shipped with standard wall mount style "FIRE" lens markings. Where ceiling orientation, other languages, or different lens markings are required, Edwards offers optional LKW and LKC series Lens Marking Kits. These optional lens markings simply snap on to the strobe. Consult Edwards for availability of special lens markings.

Integrity horns and horn-strobes are designed for 16 to 33 Vdc operation and must be connected to signal circuits that output a constant (not pulsed) voltage. A diode is used to allow full signal circuit supervision.

Standard Features

- **UL 1971-listed synchronizing strobe**
Integrity strobes synchronize to the latest UL 1971 requirements when used with a synchronization source.
- **Adjustable Audible Output**
Select temporal or continuous tones, and High setting for 98 dBA output or Low setting for 94 dBA sound output.
- **Genesis-compatible**
All Genesis and Integrity strobes on the same circuit meet UL 1971 synchronization requirements when used with an external control module.
- **Approved for public and private mode applications**
UL 1971-listed as signaling devices for the hearing impaired and UL 1638-listed as protective visual signaling appliances.
- **Durable red or white Noryl front plate**
Ideal for outdoor, industrial or harsh environments.
- **Field changeable field markings**
Lens language or standard "FIRE" marking is easily changed with optional LKW and LKC series lens kits.
- **Easy Installation**
Flush mount to standard North American 4" square or two-gang box. Integrity's universal mounting plate allows it to be wired and then left hanging free for easy inspection and testing before it is fastened to the electrical box.

Application

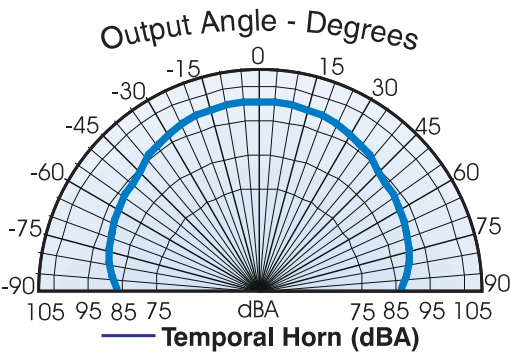
NOTE: The installation of visible and audible signals are subject to national and local standards, codes, and ordinances. Consult your Authority Having Jurisdiction for device installation requirements, application standards, and minimum performance specifications.

Horns

During installation, the horn is configured for steady or temporal tone signal and either low (94 dBA) or high (98 dBA) output. When temporal output is selected all horns on a common two-wire circuit are self-synchronized (see specifications). External control modules are not required for audible synchronization.

Suggested sound pressure level for each signaling zone used with alert or alarm signals is at least 15dB above the average ambient sound level, or 5dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater, measured 5' (1.5m) above the floor. The average ambient sound level is the RMS, A-weighted sound pressure measured over a 24-hour period.

Doubling the distance from the signal to the ear will theoretically result in a 6 dB reduction of the received sound pressure level. The actual effect depends on the acoustic properties of materials in the space. A 3 dBA difference represents a barely noticeable change in volume.



Typical Sound Output Distribution
dBA measured at 10 ft in anechoic chamber
757 Series Temporal Horn ('HIGH' output)

Strobes

Edwards strobes are UL 1971-listed for use indoors as wall-mounted public-mode notification appliances for the hearing impaired. Prevailing codes require strobes to be used where ambient noise conditions exceed specified levels, where occupants use hearing protection, and in areas of public accommodation. Consult with your Authority Having Jurisdiction for details.

As part of the Enhanced Integrity line of products, 757 Series strobes exceed UL synchronization requirements (within 10 milliseconds other over a two-hour period) when used with a synchronization source. Synchronization is important in order to avoid epileptic sensitivity.

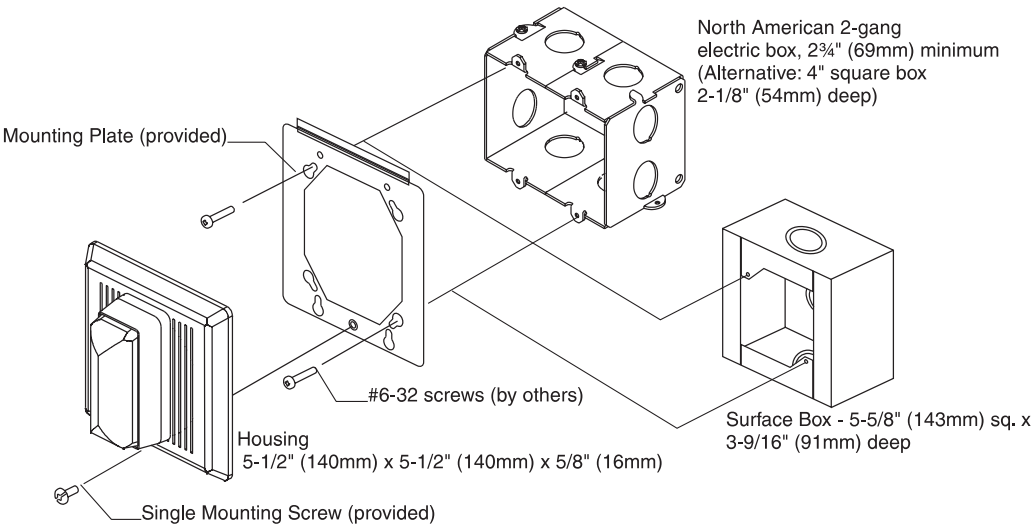
Integrity strobes are fully compatible with Edwards Genesis signals.

NOTE: The flash intensity of some visible signals may not be adequate to alert or waken occupants in the protected area. Research indicates that the intensity of strobe needed to awaken 90% of sleeping persons is approximately 100 cd. Edwards recommends that strobes in sleeping rooms be rated at at least 110 cd.

WARNING: These devices will not operate without electrical power. As fires frequently cause power interruptions, further safeguards such as backup power supplies may be required.

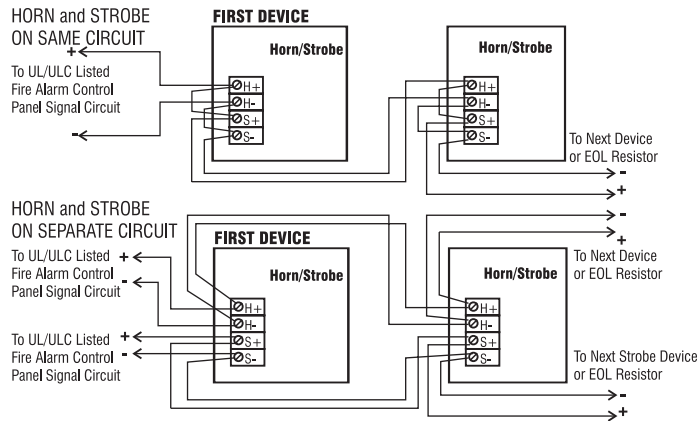
Installation and Mounting

All models fit to a standard flush mounted, North-American two-gang electrical box, 2 3/4 inch (69 mm) minimum. Optional flush trims are not required. For surface mount, use EST's custom indoor and outdoor surface boxes painted in color-matched red or white epoxy. Edwards recommends that fire alarm horn/strobes always be installed in accordance with the latest recognized edition of national and local fire alarm codes.



Typical Wiring

The strobe must be connected to signal circuits which output a constant (not pulsed) voltage. The horn can be connected to continuous voltage circuits.



Strobe Operating Current (RMS)

UL Rating	15 cd	15/75 cd	30 cd	75 cd	110 cd
16 Vdc	109	150	130	263	329
16 Vfwr	150	210	189	333	420

Typical Current	15 cd	15/75 cd	30 cd	75 cd	110 cd
24 Vdc	69	90	89	159	180
24 Vfwr	108	128	134	255	260

Vdc: Volts direct current, regulated and filtered

Vfwr: Volts full wave rectified

Current Draw Notes and Comments

- Current values are shown in mA.
- UL Nameplate Rating can vary from Typical Current due to measurement methods and instruments used.
- Edwards recommends using the Typical Current for system design including NAC and Power Supply loading and voltage drop calculations.
- Use the 16 Vdc RMS current ratings for filtered power supply and battery AH calculations. Use the 16 Vfwr RMS current ratings for unfiltered power supply calculations.
- Fuses, circuit breakers and other overcurrent protection devices are typically rated for current in RMS values. Most of these devices operate based upon the heating affect of the current flowing through the device. The RMS current

dBA Output

Horn-strobes						
	UL464		Average - anechoic		Peak - anechoic	
	Temporal	Steady	Temporal	Steady	Temporal	Steady
High dB Output	79.0	85.0	97.0	97.0	102.0	102.0
Low dB Output	75.0	79.0	93.0	93.0	98.0	98.0

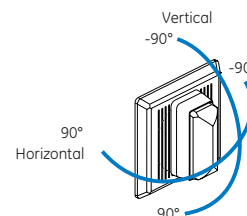
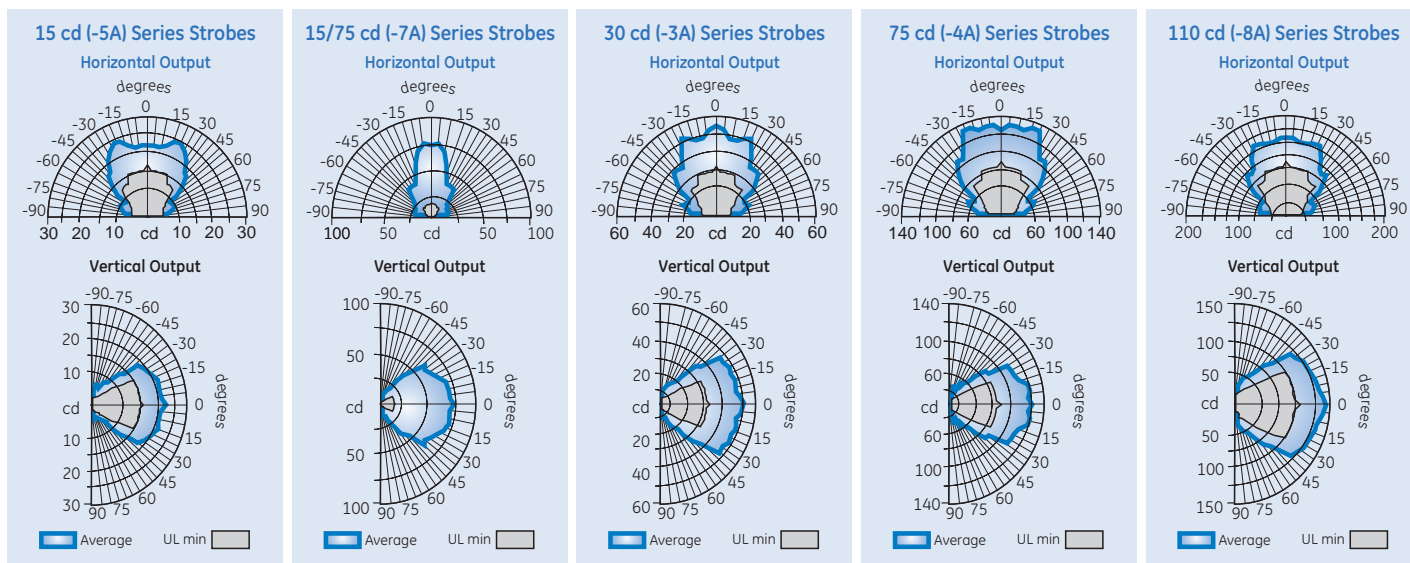
determines the heating affect and therefore, the trip and hold threshold for those

Horns						
	UL464		Average - anechoic		Peak - anechoic	
	Temporal	Steady	Temporal	Steady	Temporal	Steady
High dB Output	82.0	85.0	98.0	98.0	104.0	104.0
Low dB Output	75.0	82.0	94.0	94.0	99.0	99.0

dBA Output Notes and Comments

- All values shown are dBA measured at 10 feet (3.01m).
- UL1480 values measured in reverberation room.
- Average values are measured in anechoic chamber.

Light Output Patterns



Specifications

Rated Strobe Output - candela (cd)	757-1A-T	757-5A-T	757-7A-T	757-3A-T	757-4A-T	757-8A-T
UL 1638	N/A (horn only)	15 cd (indoor only)	75 cd	30 cd	75 cd	110 cd
UL 1971		15 cd (wall mount only)	15 cd wall 15 cd ceiling	30 cd wall 15 cd ceiling	75 cd wall 60 cd ceiling	110 cd wall 60 cd ceiling
ULC S526		15 cd	75 cd	30 cd	75 cd	120 cd
Standalone Synchronization Characteristics (note 2)	Strobe flash at 1 per second within 200 milliseconds on common circuit Horn pulses at temporal rate within 200 milliseconds on common circuit					
Operating Volts	Strobe: 16-33 Vdc or Vfwr Continuous Horn: 16-33 Vdc or Vfwr Continuous					
Horn Output (note 1)	Anechoic: High Setting - 104 dBA (peak)/98 dBA (avg); Low Setting - 99 dBA (peak)/94 dBA (avg) Reverberant: High Setting - 85 dBA (continuous)/82 dBA (temporal); Low Setting - 82 dBA (continuous)/75 dBA (temporal)					
Horn Current	High Output: 40 mA @ 24 Vdc; 55mA @ 24 Vrms FWR Low Output: 20 mA @ 24 Vdc; 28 mA @ 24 Vrms FWR					
Strobe Flash Synchronization	Synchronized at one flash per second. External control module necessary to meet UL 1971 synchronization requirements of 10 milliseconds over a two-hour period.					
Synchronization Sources	G1M-RM, SIGA-CC1S, SIGA-MCC1S, BPS6A, BPS10A					
Strobe Marking	Supplied with LKW-1 "FIRE" red letters, vertical both sides (Wall Mount) - see LKW and LKC series for ceiling style and optional markings.					
Flash Tube Enclosure	Clear LEXAN with white marking sleeve					
Housing	Textured, color impregnated engineered plastics - exceeds 94V-0 UL flammability rating					
Wire Connections	Terminals - separate, polarized inputs for Horn & Strobe, #12 AWG (2.5mm ²) maximum					
INDOOR Operating Environment	32-120° F (0-49° C) ambient temperature. 93% relative humidity @ 40° C					
OUTDOOR Operating Environment (must use weatherproof box)	98% relative humidity @ 40° C; -31-150° F (-35-66° C) ambient temperature (757-4A: rated at 48 cd @ -35° C per UL/@ -40° C per ULC) (757-7A: rated at 17.7 cd @ -35° C per UL/@ -40° C per ULC) (757-8A: rated at 70.7 cd @ -35° C per UL/@ -40° C per ULC)					
Mounting - INDOOR	Flush: North-American 2-gang box, 3" high x 4" wide x 2 3/4" (69 mm) minimum Surface: 757A-SB Back box Bi-directional: 757A-BDF Mounting Frame					
Mounting - OUTDOOR	Surface: 757A-WB Weatherproof Box					
Agency Listings	UL 1971, UL 1638, UL 464, ULC S526, ULC S525, MEA, CSFM, FM, CE (All models comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule)					

Note 1 - Measured at 10 ft (3m) @ 24 Vdc. Subtract 3 dBA for models with strobes. **Note 2** - Temporal audible pattern is defined as: 1/2 sec ON, 1/2 sec OFF, 1/2 sec ON, 1/2 sec OFF, 1/2 sec ON, 1 1/2 sec OFF, then repeat cycle. Integrity audible will not be affected by Genesis signal silence operation when on the same two wire circuit with Genesis horn strobes.

Ordering Information

Catalog Number	Description	Ship Wt., lb. (kg)
Temporal Horns		
757-1A-T*	Temporal Horn, Red	1.7 (0.8)
Temporal Horn-Strobes		
757-7A-T*	Temporal Horn-Strobe, 15/75cd, Red	2.0 (0.9)
757-5A-T*	Temporal Horn-Strobe, 15cd, Red	
757-3A-T*	Temporal Horn-Strobe, 30cd, Red	
757-4A-T*	Temporal Horn-Strobe, 75cd, Red	
757-8A-T*	Temporal Horn-Strobe, 110cd, Red	
Synchronization Sources		
G1M-RM	Genesis Signal Master Remote Mount (1-gang)	0.2 (0.1)
SIGA-CC1S	Synchronization Output Module (Standard Mount) - UL/ULC Listed	0.5 (0.23)
SIGA-MCC1S	Synchronization Output Module (UIO Mount) - UL Listed	0.18 (0.08)
BPS6A	6.5 Amp Booster Power Supply	13 (5.9)
BPS10A	10 Amp Booster Power Supply	13 (5.9)
Mounting Accessories		
757A-SB*	Surface Box, Red, Indoor	1.5 (0.7)
757A-WB*	Weatherproof Box, Red, Surface	
757A-BDF*	Bi-directional Frame, Red	4 (1.8)
* Add -W for White housings.		
Lens Marking Kits (see note 1)		

LKW-1	"FIRE", Wall Orientation (supplied)	0.1 (.05)
LKW-1R	"FIRE", Wall Orientation, RED	
LKW-2	"FEU", Wall Orientation	
LKW-3	"FIRE/FEU", Wall Orientation	
LKW-4	"SMOKE", Wall Orientation	
LKW-5	"HALON", Wall Orientation	
LKW-6	"CO2", Wall Orientation	
LKW-7	"EMERGENCY", Wall Orientation	
LKW-8	"ALARM", Wall Orientation	
LKW-9	"FUEGO", Wall Orientation	
<i>Add Suffix "W" to catalog no. for WHITE. (e.g. 757-7A-TW) Change "W" to "C" for CEILING mount. (e.g. LKC-1)</i>		



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Overview

405 Series strobes are specially designed for use with compatible life safety communication and control equipment to alert the hearing impaired of a life safety event. Strobes are available with 15 cd, 15/75 cd, 30 cd, 60 cd, and 110 cd effective flash intensity. They are fully compatible with Genesis signals.

405 Series strobes exceed UL synchronization requirements (within 10 milliseconds other over a two-hour period) when used with a separately-installed G1M Signal Master, or SIGA-CC1S Synchronization Module, or when powered by suitably enabled booster power supplies and control panels.

The flash from 405 Series strobes can be noticed from almost any position in the room, corridor, or large open space. 405 Series strobes are UL 1971 listed with both wall and ceiling cd intensity ratings (see Specifications). This is useful in areas where the Authority Having Jurisdiction (AHJ) permits ceiling-mount strobes.

405 Series strobes are designed for 16 to 33 Vdc operation and must be connected to signal circuits that output a constant (not pulsed) voltage. A diode is used to allow full signal circuit supervision and polarized connections are made to terminals that accept up to #12 AWG (2.5mm²) wire.

The strobe front plate is of steel construction finished with durable baked epoxy polyester powder-coat paint.

Standard Features

- **UL 1971-listed synchronizing strobe**
Integrity strobes synchronize to the latest UL 1971 requirements when used with a synchronization source.
- **Genesis-compatible**
All Genesis and Integrity strobes on the same circuit meet UL 1971 synchronization requirements when used with an external control module.
- **Approved for public and private mode applications**
UL 1971-listed as signaling devices for the hearing impaired and UL 1638-listed as protective visual signaling appliances.
- **Rugged red or white steel front plate**
Ideal for outdoor or harsh environments.
- **Rated for wall or ceiling installation**
- **Field changeable field markings**
Lens language or standard "FIRE" marking is easily changed with optional LKW and LKC series lens kits.
- **Fits 4-inch square flush box**
Ideal for retrofit and renovation projects.
- **UL/ULC rated outdoor option**

Harsh Environment Strobes

405-3A, -5A, -6A, -7A -8A

CS405-7A, -8A



405 Series



Patented

Application

NOTE: The installation of visible signals are subject to national and local standards, codes, and ordinances. Consult your Authority Having Jurisdiction for device installation requirements, application standards, and minimum performance specifications.

GE Security strobes are UL 1971-listed for use indoors as wall-mounted public-mode notification appliances for the hearing impaired. Prevailing codes require strobes to be used where ambient noise conditions exceed specified levels, where occupants use hearing protection, and in areas of public accommodation. Consult with your Authority Having Jurisdiction for details.

As part of the Enhanced Integrity line of products, 405 Series strobes exceed UL synchronization requirements (within 10 milliseconds other over a two-hour period) when used with a synchronization source. Synchronization is important because a small portion of the population have a condition which may cause them to become disoriented from multiple random flashes of light. Integrity strobes minimize this risk.

Integrity strobes are fully compatible with GE Genesis signals.

NOTE: The flash intensity of some visible signals may not be adequate to alert or waken occupants in the protected area. Research indicates that the intensity of strobe needed to awaken 90% of sleeping persons is approximately 100 cd. GE Security recommends that strobes in sleeping rooms be rated at at least 110 cd.

WARNING: These devices will not operate without electrical power. As fires frequently cause power interruptions, further safeguards such as backup power supplies may be required.

Operating Current (RMS)

UL Rating	15 cd	15/75 cd	30 cd	60 cd	110 cd
16 Vdc	109	150	130	269	329
16 Vfwr	150	210	189	359	420

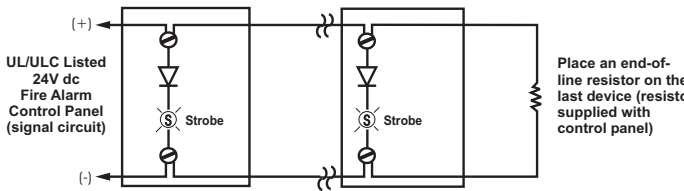
Typical Current	15 cd	15/75 cd	30 cd	60 cd	110 cd
24 Vdc	69	90	89	158	180
24 Vfwr	108	128	134	229	260

Vdc: Volts direct current, regulated and filtered
Vfwr: Volts full wave rectified

Current Draw Notes and Comments

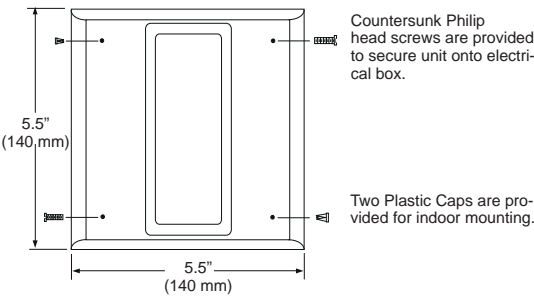
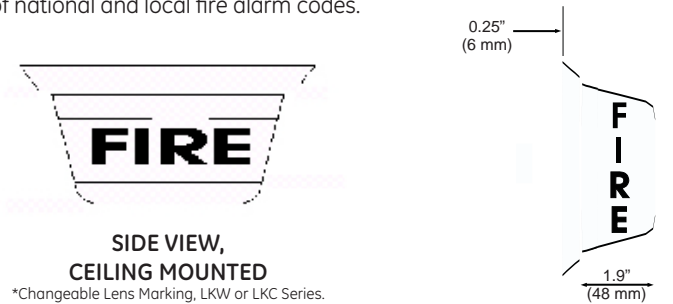
1. Current values are shown in mA.
2. UL Nameplate Rating can vary from Typical Current due to measurement methods and instruments used.
3. GE Security recommends using the Typical Current for system design including NAC and Power Supply loading and voltage drop calculations.
4. Use the 16 Vdc RMS current ratings for filtered power supply and battery AH calculations. Use the 16 Vfwr RMS current ratings for unfiltered power supply calculations.
5. Fuses, circuit breakers and other overcurrent protection devices are typically rated for current in RMS values. Most of these devices operate based upon the heating affect of the current flowing through the device. The RMS current determines the heating affect and therefore, the trip and hold threshold for those devices.

Typical Wiring - 24 Vdc

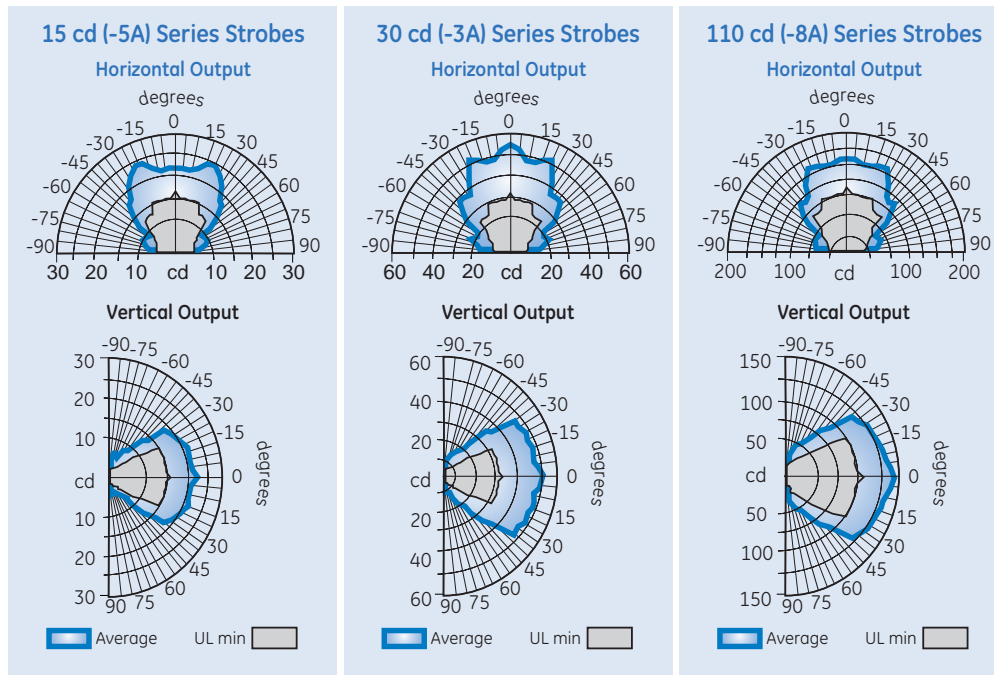


Installation and Mounting

All models fit to a standard flush mounted, North American four inch electrical box, 1-1/2 inch (38 mm) deep minimum. Optional GE Security weatherproof, surface mount boxes are available. The strobes must be connected to signal circuits which output a constant (not pulsed) voltage. GE Security recommends that these strobes always be installed in accordance with the latest recognized edition of national and local fire alarm codes.



Light Distribution



Specifications

Catalog Number	405-5A	405-3A	405-6A	405-7A	405-8A, CS405-8A
UL 1638/ULC S526 Rated Strobe Output	15cd	30cd	60cd	15/75cd	110cd
UL 1971 Rated Strobe Output	15cd (wall only)	30cd wall 15cd ceiling	60cd wall 30cd ceiling	15cd wall 15cd ceiling	110cd wall 60cd ceiling
Strobe Flash Rate	Synchronized at one flash per second. External control module necessary to meet UL 1971 synchronization requirements of 10 milliseconds over a two-hour period.				
Synchronization Sources	G1M-RM, SIGA-CC1S, SIGA-MCC1S, BPS6, BPS10				
Strobe Operating Volts	Continuous 16 to 33 Vdc or 16 to 33 Vfw				
Operating Environment	INDOOR: 30° C @ 85% RH; 32 - 120° F (0 - 49° C) ambient temperature. OUTDOOR (CS models only): 30° C @ 93% RH; -40-150° F (-40-66° C) ambient temp '7A' (17.7cd @ -35° C per UL @ -40° C per ULC) and; '8A' (70.7cd @ -35° C per UL @ -40° C per ULC) models only				
Lens Markings	Supplied with LKW-1 "FIRE" red letters, vertical both sides (Wall Mount) - see LKW and LKC series for ceiling style and optional markings				
Wire Connections	Terminals - polarized input, #12 AWG (2.5mm ²) max wire size				
Flash Tube Enclosure	Clear LEXAN				
Strobe Plate, Finish	CRS steel - 5½ in (140mm) square, red or white baked epoxy polyester powder-coat finish				
Mounting	INDOOR: North American 4 in square electrical box; OUTDOOR: 449 series weatherproof surface box				
Agency Listings	UL 1971, UL 1638, ULC S526, CE, FM, CSFM, MEA (All models comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule)				

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Ordering Information

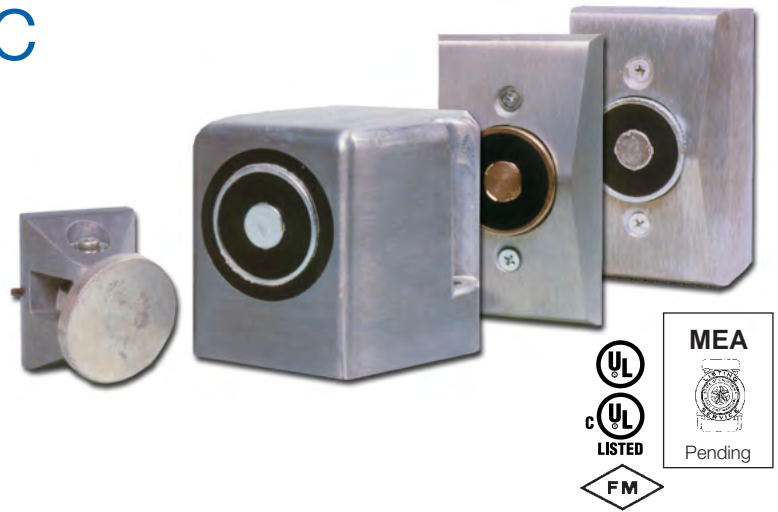
Catalog Number	Description	Ship Wt. lb (kg)
405-5A-T	Strobe, 15 cd, Red	1 (0.4)
405-5A-TW	Strobe, 15 cd, White	
405-7A-T	Strobe, 15/75, Red	
405-7A-TW	Strobe, 15/75, White	
405-3A-T	Strobe, 30 cd, Red	
405-3A-TW	Strobe, 30 cd, White	
405-6A-T	Strobe, 60 cd, Red	
405-6A-TW	Strobe, 60 cd, White	
405-8A-T	Strobe, 110 cd, Red	
405-8A-TW	Strobe, 110 cd, White	
Outdoor Listed Strobes		
CS405-7A-T	Strobe, 15/75, Outdoor, Red	1 (0.4)
CS405-8A-T	Strobe, 110 cd, Outdoor, Red	
Synchronization Sources		
G1M-RM	Genesis Signal Master Remote Mount (1-gang)	0.2 (0.1)
SIGA-CC1S	Synchronization Output Module (Standard Mount) - UL/ULC Listed	0.5 (0.23)
SIGA-MCC1S	Synchronization Output Module (UIO Mount) - UL Listed	0.18 (0.08)
BPS6A	6.5 Amp Booster Power Supply	13 (5.9)
BPS10A	10 Amp Booster Power Supply	13 (5.9)
Mounting Accessories		
449	Surface Mount Box, Gray, Outdoor, ('CS' models only)	1 (0.4)
LKW-1	"FIRE" - Wall Orientation (supplied)	0.2 (0.1)
LKW-1R	"FIRE" - Wall Orientation, red with white letters	
LKW-2	"FEU" - Wall Orientation	
LKW-3	"FIRE/FEU" - Wall Orientation	
LKW-4	"SMOKE" - Wall Orientation	
LKW-5	"HALON" - Wall Orientation	
LKW-6	"CO2" - Wall Orientation	
LKW-7	"EMERGENCY" - Wall Orientation	
LKW-8	"ALARM" - Wall Orientation	
LKW-9	"FUEGO" - Wall Orientation	
LKC-1	"FIRE" - Ceiling Orientation	
LKC-2	"FEU" - Ceiling Orientation	
LKC-3	"FIRE/FEU" - Ceiling Orientation	
LKC-4	"SMOKE" - Ceiling Orientation	
LKC-5	"HALON" - Ceiling Orientation	
LKC-6	"CO2" - Ceiling Orientation	
LKC-7	"EMERGENCY" - Ceiling Orientation	
LKC-8	"ALARM" - Ceiling Orientation	

Strobes are shipped with standard wall mount style "FIRE" lens markings.



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Electromagnetic Door Holders



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:

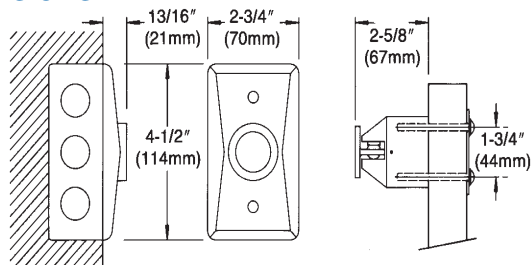
The electromagnet portion consists of a floor plate and a floor housing which when installed with gaskets provided, form a weatherproof electrical junction box. Incoming conduit connects directly into floor plate.

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.

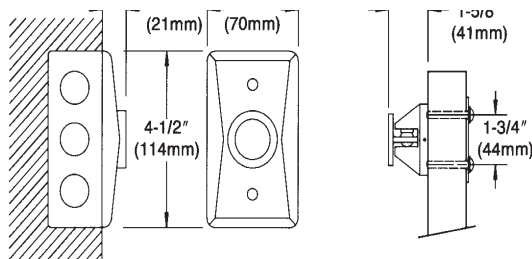
Wall Mounted:

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.

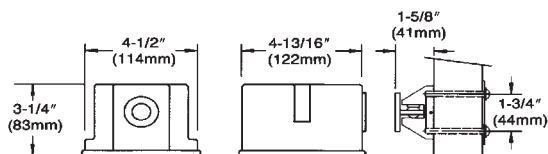
Dimensions



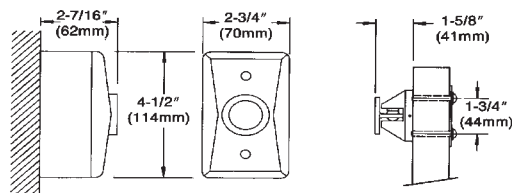
1504-AQN5 Flush Wall Mounted (Long Catch Plate)



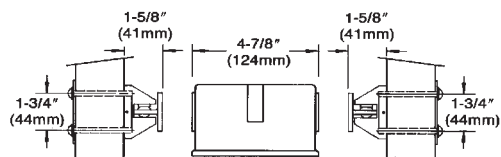
1505-AQN5 Flush Wall Mounted (Short Catch Plate)



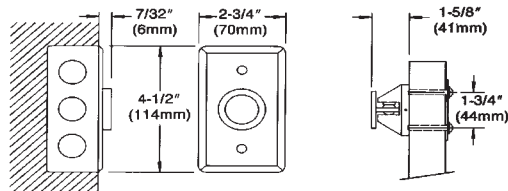
1501-AQN5 Floor Mounted (Single Door)



1508-AQN5 Surface Wall Mounted



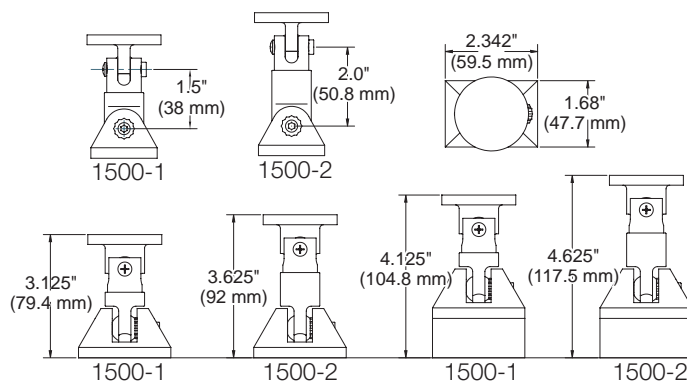
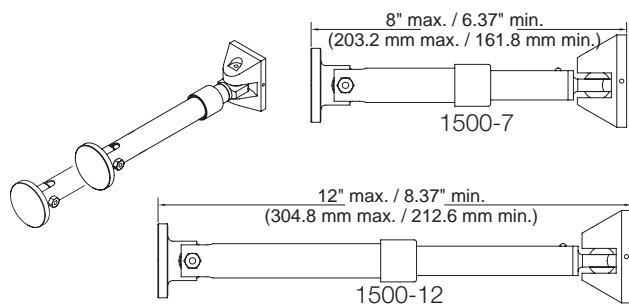
1502-AQN5 Floor Mounted (Double Door)



1509-AQN5 Completely Flush Wall Mounted

Catch Plate Extensions

Only the extension rods are included. The end pieces are included with the doorholders or can be ordered separately.



Specifications

Model No.	Style	Volts	Amps*
1501-AQN5	Floor Mounted (Single Door)	24 Vac 60 Hz 24 Vdc 120 Vac 60 Hz	.015
1502-AQN5	Floor Mounted (Double Door)		
1504-AQN5	Flush Wall Mounted (Long Catch Plate)		
1505-AQN5	Flush Wall Mounted (Short Catch Plate)		
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.



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Overview

Rechargeable sealed lead-acid batteries are ideal for use as a secondary (standby) power source as defined by NFPA 72. Their low maintenance and high energy density make them ideal for fire alarm signaling applications.

Standard Features

- Rechargeable
- Non-spillable
- Non-hazardous
- Low maintenance
- High energy density

Application

When multiple power supplies are provided, each power supply's battery requirements should be calculated individually. Consult the specific system manual to determine battery capacity requirements.

Safety Information

Due to a battery's low internal resistance and high power density, high levels of short circuit current can develop across battery terminals. Put on protective eye covering and remove all jewelry before working on batteries. Do not rest tools or cables on the battery, and only use insulated tools. Follow all manufacturers installation instructions and diagrams when installing or maintaining batteries.

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Europe
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F 32 2 721 86 13

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Specifications

Case Material	ABS Thermoplastic
Regulatory Information	DOT Class 60, Batteries, non-hazardous, non-spillable
Operating Environment	32° F to 120° F (0° C to 49° C) 0 to 93% RH, Non-condensing

Ordering Information

Catalog Number	Description	Shipping Weight, lb (kg)
12V1A2	1.2 Ah Sealed Lead Acid Battery - 12 Vdc	1.25 (0.57)
12V4A	4.5 Ah Sealed Lead Acid Battery - 12 Vdc	5 (2.27)
12V6A5	7.2 Ah Sealed Lead Acid Battery - 12 Vdc	6 (2.72)
6V8A	8 Ah Sealed Lead Acid Battery - 6 Vdc	4 (1.81)
6V10A	12 Ah Sealed Lead Acid Battery - 6 Vdc	5 (2.27)
12V10A	11 Ah Sealed Lead Acid Battery - 12 Vdc	10 (4.45)
12V17A	18 Ah Sealed Lead Acid Battery - 12 Vdc	13 (5.90)
12V24A	26 Ah Sealed Lead Acid Battery - 12 Vdc	20 (9.07)
12V40A	40 Ah Sealed Lead Acid Battery - 12 Vdc	32 (14.51)
12V50A	50 Ah Sealed Lead Acid Battery - 12 Vdc	40 (18.14)
12V65A	65 Ah Sealed Lead Acid Battery - 12 Vdc	49 (22.23)



imagination at work



CSGWV 642

**PUSH STATION / PASSIVE
INFRARED GUARD**

DESCRIPTION

The CHASE SECURITY WIRE ENCLOSURE has been designed to protect push stations, PIR's, and other devices against vandalism or accidental damage. It is designed for Prisons, HUD Projects, Universities, Hotels, Parks, Schools, Hospitals, and other public locations where both functionality and aesthetics count.

The wire enclosure provides for ease of installation and maintenance of equipment once installed. For over 30 years Chase wire products have been manufactured in a variety of sizes, styles and finishes, and sold to OEM accounts and distribution.

Can be used in a variety of applications.



FEATURES

- ◆ Constructed of 7-gauge (.177 in diameter) steel wire.
- ◆ Welded at all points for strength.
- ◆ Provided with two welded mounting plates for a solid installation.
- ◆ Finish: red, white, or nickel-plated coating.
- ◆ Dimensions I.D. 6" x 4" x 2" deep.
- ◆ Easy to install.
- ◆ Unit can be provided with electrical provisions for conduit pipes of all sizes.
- ◆ Chase custom designs and builds to your specifications.

ACCESSORIES

- ◆ Matching custom service plates available for wall or conduit applications.



Chase Security Systems, Inc., an MBE Enterprise, draws from over 30 years of experience selling to the Fire, Security, Computer, Sound, Food Processing, Forestry, Communications and Telecommunications industries. Many of our signature products are now being produced by other manufacturers but our wire enclosures are still the product of choice for their strength.

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Made with Pride in the U.S.A.

Due to changes in industry, exact product dimensions and features may differ slightly from above.

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