



# EST3X Life Safety Control System



## 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 eight 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
- Eight- or 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 eight 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.

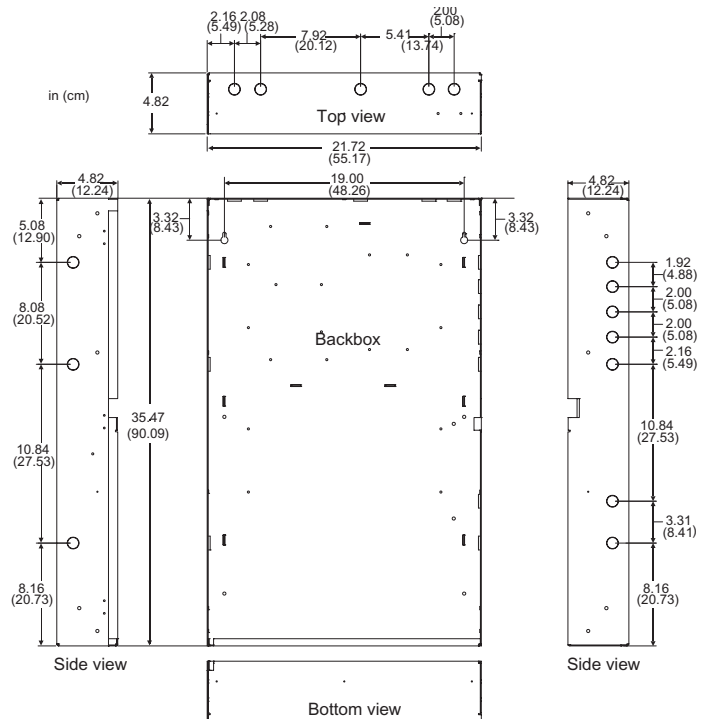
### Power to Count On

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

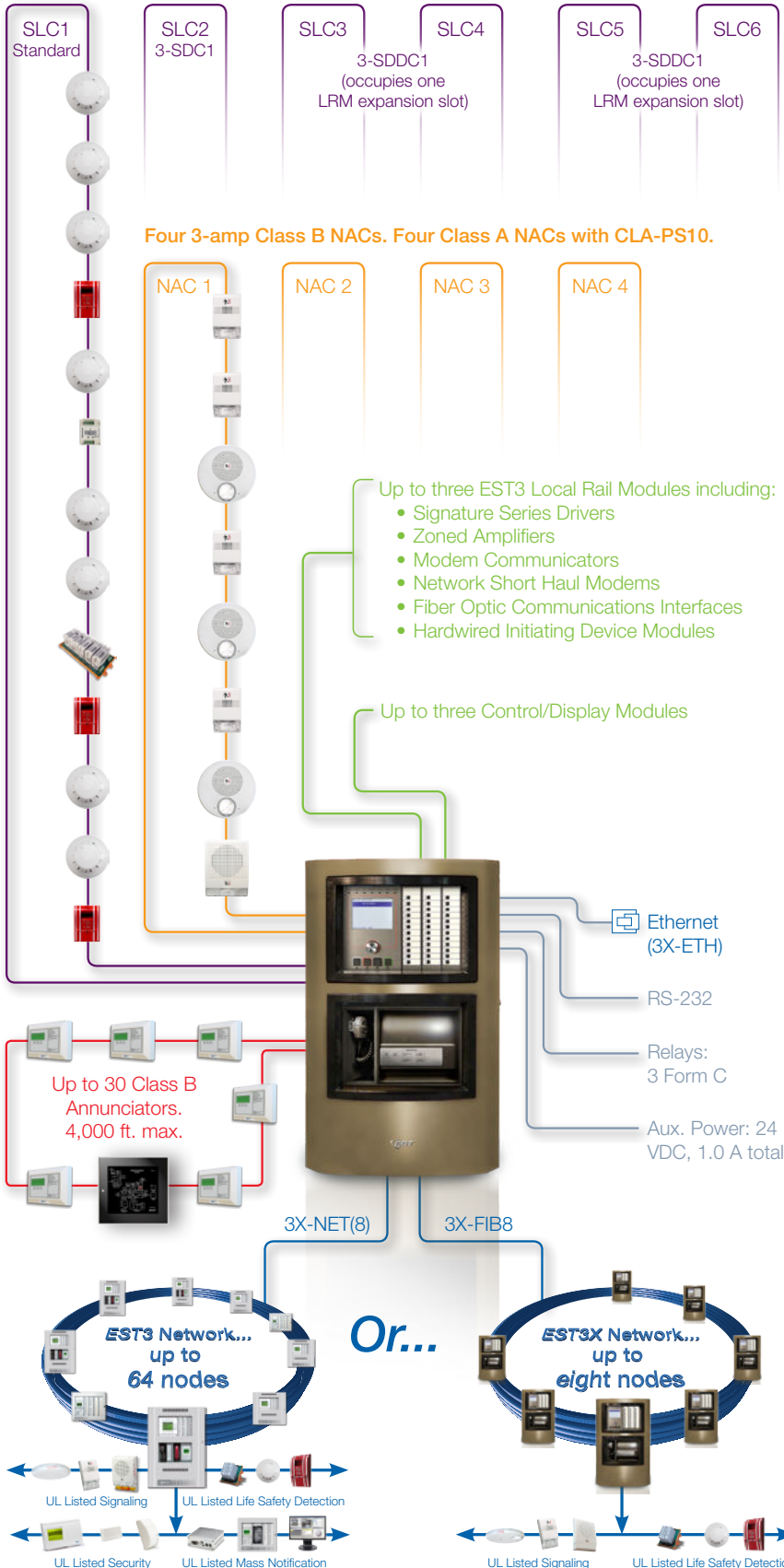
The backbox is designed for semiflush or surface mounting. Conduit and nail knockouts, keyhole style mounting holes, and wide wiring troughs facilitate efficiency during installation.



**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.

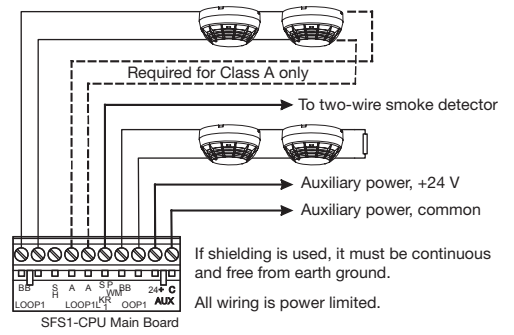
# System Layout

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

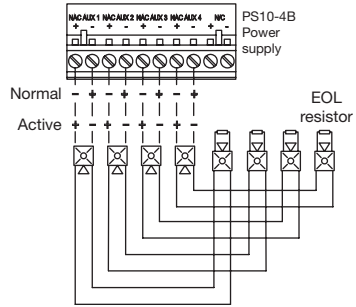


# Wiring

## Signature (initiating) Data Circuit



## Notification Appliance Circuits



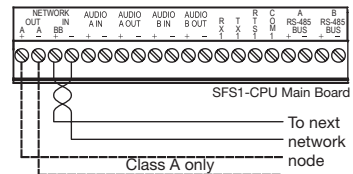
Wiring is supervised and power limited.

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

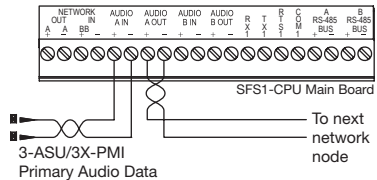
For proper circuit supervision, break the wire run at each notification appliance and install the EOL resistor at the end of the circuit.

Do not loop wires around notification appliance terminals.

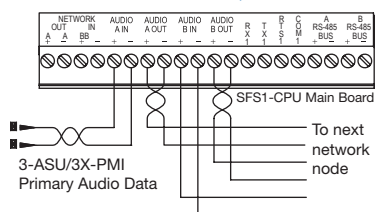
## Network data circuit



## Network data circuit, Class B audio

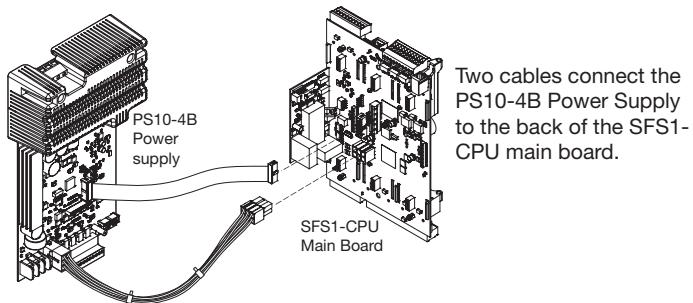
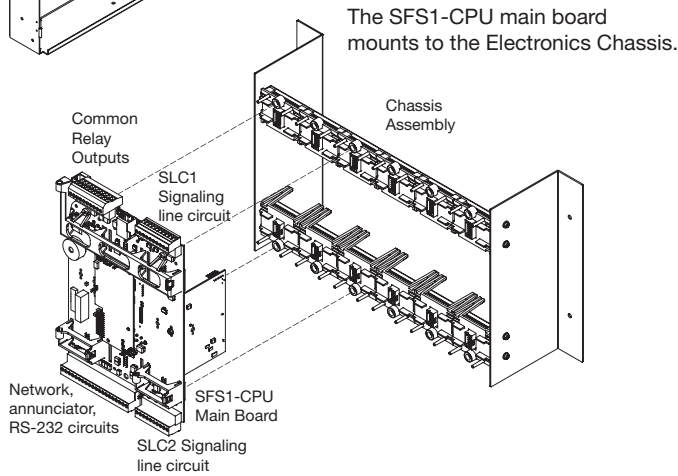
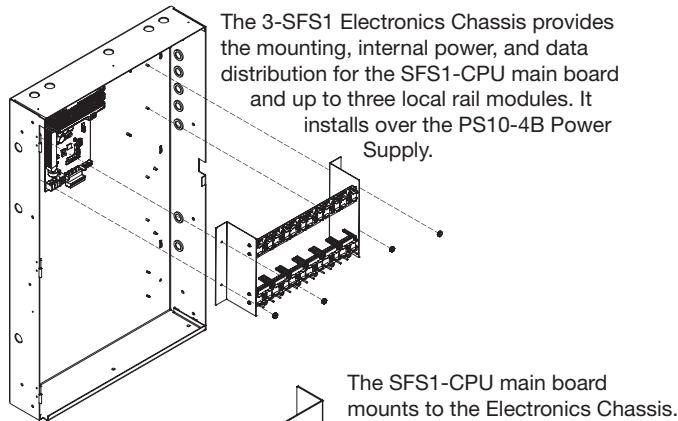


## Network data circuit, Class A audio

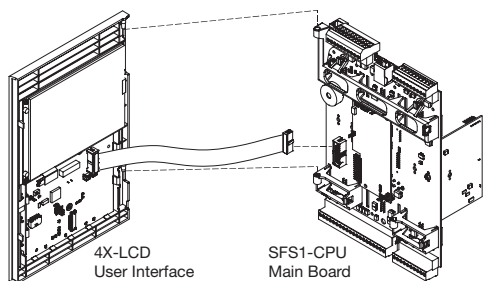


## Main Component Assembly

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.

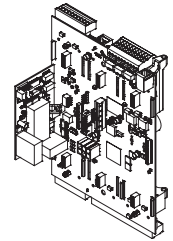


The 4X-LCD assembly mounts to hinge pins on the CPU and connects with a single ribbon cable.



## 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

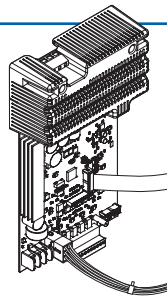
|                           |   |
|---------------------------|---|
| Voltage                   | 24 VDC  |
| Current                   | Standby 115 mA at 24 VDC<br>Alarm 115 mA at 24 VDC  |
| Relay outputs             | Quantity 3 (alarm, supervisory, and trouble)<br>UL type Common<br>Contact arrangement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

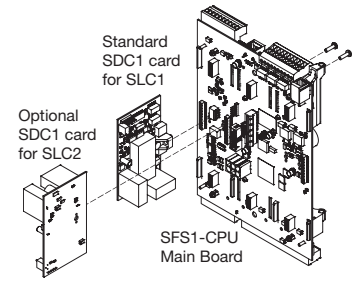
|   |  |
|---|--|
| Mains voltage                                   | 94 to 264 VAC, 50/60 Hz                                      |
| AC Input Current                                |  |
| Standby   | 1.5 amps   |
| Alarm   | 3.0 amps   |
| Brownout level                                  | 93 VRMS  |
| 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 <sup>1</sup>   |
| Output voltage                                  | Special: 24 Vdc<br>Regulated: 24 Vdc                         |
| Output current                                  | Special: 3 amps<br>Regulated: 1.5 amps                       |
| EOLR  | 15 kΩ (UL P/N EOL-15, ULC P/N EOL-P1)                        |
| Wiring  |  |
| Mains input <sup>2</sup>                        | Supervised, non power-limited                                |
| Battery input                                   | Supervised, non power-limited                                |
| NAC outputs                                     | Supervised, power-limited                                    |
| Wire size                                       | 18 to 12 AWG (0.75 mm <sup>2</sup> to 2.50 mm <sup>2</sup> ) |
| Ground fault impedance                          | 10 kΩ  |
| Operating environment                           |  |
| Temperature                                     | 32 to 120 °F (0 to 49 °C)                                    |
| Relative humidity                               | 0 to 93% noncondensing                                       |

<sup>1</sup>Class A when a CLA-PS10 Class A adapter card is installed.

<sup>2</sup> 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.

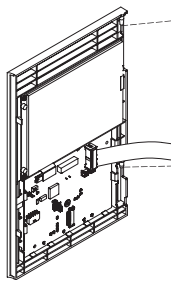
### 3-SDC1 Specifications

|                       |   |
|-----------------------|---|
| 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. <sup>1</sup>   |
| 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 μF max.   |
| Wire size             | 12 AWG (1.5 mm <sup>2</sup> ) 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  |

<sup>1</sup>For special applications, refer to EST3 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.

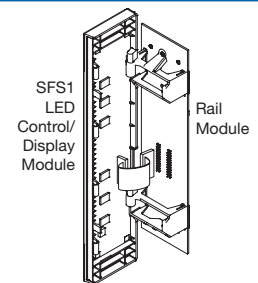


### 4X-LCD Specifications

|                       |  |
|-----------------------|--|
| Operating current     |  |
| Standby               | 38 mA  |
| Alarm                 | 50 mA  |
| LCD display           | Backlit liquid crystal display 240 x 320 pixels<br>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.

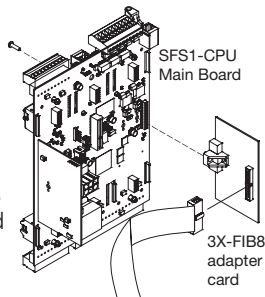


### SFS1 Specifications

|                       |  |
|-----------------------|--|
| 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-FIB8 fiber optic network module

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



The 3-FIBMB2 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.

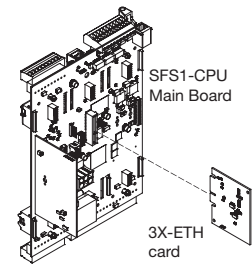
### 3X-FIB8 Specifications

|   |  |  |
|---|--|--|
| 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. <sup>1</sup>                                 |
|   | Wire type  | Twisted Pair, 18 AWG (0.75 mm <sup>2</sup> ) min.        |
| Operating environment                     |  |  |
|   | Temperature  | 32 to 120 °F (0 to 49 °C)                                |
|   | Relative humidity  | 0 to 93% noncondensing                                   |

<sup>1</sup>Include shield capacitance, if shielding is used.

## 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.



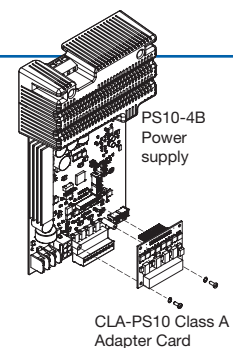
### 3X-ETH1 Specifications

|   |                   |   |
|---|-------------------|---|
| 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 μF max. <sup>1</sup>  |
|   | Wire type         | Twisted Pair, 18 AWG (0.75 mm <sup>2</sup> ) 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 μF, max <sup>1</sup>   |
|   | Wire type         | Twisted pair, 18 AWG (0.75 sq <sup>2</sup> ) min.                       |
| Wire runs                                 |                   |   |
|   | Distance          | 200 ft. (60 m) max. <sup>1</sup>  |
|   | Type              | Cat 5   |
|   | Connector         | RJ-45   |
| Operating environment                     |                   |   |
|   | Temperature       | 32 to 120 °F (0 to 49 °C)   |
|   | Relative humidity | 0 to 93% noncondensing  |

<sup>1</sup>Panel to communication equipment

## 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.



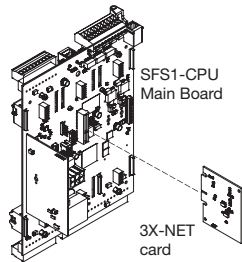
### CLA-PS10 Specifications

|   |  |  |
|---|--|--|
| Voltage   | 24 VDC   |  |
| Notification appliance/Auxiliary power circuits |  |  |
|   | UL rating  | Special application or Regulated             |
|   | Quantity   | 4  |
| Performance class                               |  |  |
|   | Class  | 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 mm <sup>2</sup> to 2.50 mm <sup>2</sup> ) |  |
| Operating environment                           |  |  |
|   | Temperature  | 32 to 120 °F (0 to 49 °C)                    |
|   | Relative humidity  | 0 to 93% noncondensing                       |

## 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.



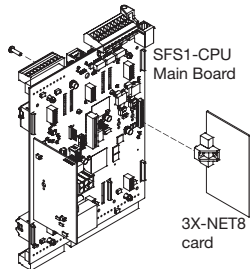
### 3X-NET Specifications

|                       |  |
|-----------------------|--|
| 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<br>Audio A OUT and Audio B OUT not isolated |
| Wire size             | Twisted pair <sup>1</sup> 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 μF max.; Audio 0.09 μF max.  |
| Operating environment |  |
| Temperature           | 32 to 120 °F (0 to 49 °C)  |
| Relative humidity     | 0 to 93% noncondensing   |

<sup>1</sup>Six 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 eight EST3X control panels. The card supports Class B and Class A wiring.



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

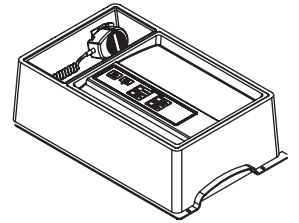
### 3X-NET8 Specifications

|                       |  |
|-----------------------|--|
| 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 <sup>1</sup> 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 μF max.  |
| Operating environment |  |
| Temperature           | 32 to 120 °F (0 to 49 °C)                            |
| Relative humidity     | 0 to 93% noncondensing                               |

<sup>1</sup> Six twists per foot min.

## 3X-PMI Paging Microphone Interface

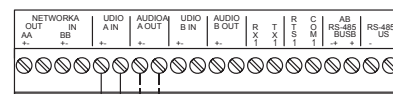
The 3X-PMI Paging Microphone Interface provides controls for emergency voice/alarm communications. It consists of an audio mounting bracket, EAEC Emergency Audio Evacuation Controller card, audio enclosure, and paging microphone.



### 3X-PMI Paging Microphone Interface Specifications

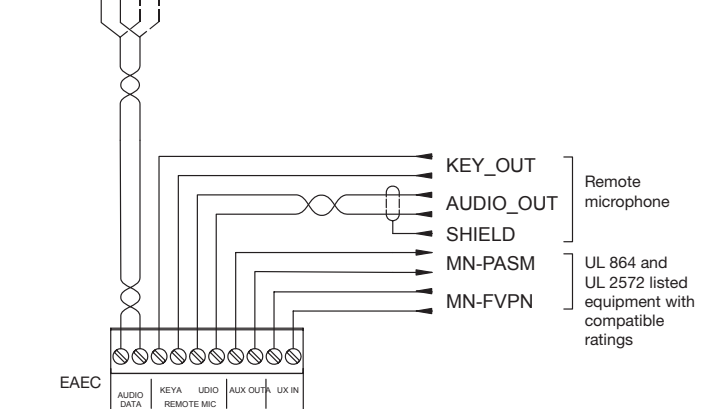
|                         |                |  |
|-------------------------|----------------|--|
| Voltage                 | Current        | 24 VDC   |
|                         | Standby        | 15.5 mA  |
| Alarm                   |                | 16.6 mA  |
| Ground fault impedance  |                | 10 kΩ  |
| Wire size               |                | 18 to 12 AWG (0.75 to 2.50 mm <sup>2</sup> )                                     |
| 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 Length | 2 min. total<br>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   |

### SFS1-CPU



Network option card installed

Network option card not installed





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**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

**Ordering Information**

**Intelligent Analog Control Panels**

| Model     | Door Color | Language   | Description   |
|-----------|------------|------------|---|
| 3X-SFS1B  | Bronze     | English    | 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     | Selectable |   |
| 3X-SFS1Ri | Red        |            |   |

**Network communication option cards**

|          |   |
|----------|---|
| 3X-NET8  | RS485, eight node max. Class B wiring. Use on 3-SFS systems only.         |
| 3X-FIB8  | Fiber, 8 node max. Uses MMXVR, SMXHI2, SMXLO2. Use on 3-SFS systems only. |
| 3X-NET   | RS485, Class B wiring. For connection to EST3 systems.                    |
| 3-FIBMB2 | Fiber Optic Communications Interface (requires one or more transceivers). |

**Communication Options**

|         |  |
|---------|--|
| 3X-ETH1 | Ethernet Adapter, 10/100. Provides Ethernet connection from system to 3-SDU for programming and diagnostics remotely. 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-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.<br>LED colors: Green, Red, Yellow and White. |

**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-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  |
| CDR-3     | PSNI Coder Module  |

**Accessories**

|           |  |
|-----------|--|
| CLA-PS10  | Class A Adapter, PS10 NAC's  |
| 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, gray   |
| 4X-CAB6DR | Replacement door, red  |
| 4X-CAB6B  | Backbox, black   |
| TRIM6     | Flush trim ring  |





LIFE SAFETY &amp; INCIDENT MANAGEMENT

# Intelligent Fire Alarm Systems

iO64, iO1000

FDNY  
COA 62277165-1657:  
0244

S3000

## Overview

EDWARDS brand intelligent life safety systems offer the power of high-end intelligent processing in configurations that deliver uncomplicated solutions for small to mid-sized applications. With intelligent detection, electronic addressing, automatic device mapping, optional Ethernet® connectivity, and a full line of easily-configured option cards and modules, these flexible systems offer versatility that benefits building owners and contractors alike.

The iO64 provides one Class A or Class B intelligent device loop that supports up to 64 device addresses, and two Class B Notification Appliance Circuits (NACs). Optional Class A device wiring is available with the use of a module.

The iO1000 provides one Class A or Class B intelligent device loop that supports up to 250 device addresses. Loop controller modules may be added in combination to expand total system capacity in 250-point increments to up to 1,000 device addresses. The iO1000 panel includes four NACs that may be wired for either Class A or Class B operation.

The RZ116-2 module adds even more capacity to iO installations by adding up to 16 conventional device circuits and two additional notification appliance circuits. This makes them an ideal retrofit solution that can accommodate new intelligent detectors, as well as existing conventional devices.

iO Series supports a wide range of high-end features, including:

- Supports 10-Year Carbon Monoxide detectors
- R-Series remote annunciators
- SIGA-REL Releasing Modules
- Fully integrated CO detection using Signature Series detectors with or without audible signaling

## Features

- Auto-programming reduces installation time
- Supports Signature Series intelligent modules and detectors
- Combines the Signature intelligent releasing module with Signature multisensor detectors for reliable fire suppression
- Form C contacts for alarm and trouble, Form A for supervisory
- Electronic addressing with automatic device mapping
- Optional Ethernet port for diagnostics, programming and a variety of system reports
- Two programmable switches with LEDs and custom labeling
- Supports Genesis horn silence over two wires, and UL 1971-compliant strobe synchronization
- Class B or Class A wiring
- Ground fault detection by module
- Supports up to eight serial annunciators, (LCD, LED-only, and graphic interface)
- Can use existing wiring for most retrofit applications
- Upload/download remotely or locally
- Two-level maintenance alert reporting
- Pre-alarm and alarm verification by point
- Adjustable detector sensitivity
- 4 x 20 character backlit LCD display
- Optional earthquake hardening: seismic Importance Factor 1.5
- Standalone operation
- Alarm ON command manually activates alarm condition

## Application

EDWARDS iO Series life safety systems are powerful intelligent solutions for small to mid-sized buildings. Advanced intelligent technology delivers the benefits of flexible system installation, while clean and easy-to-operate user interfaces make panel operation and system maintenance quick and intuitive.

### The smart choice

Signature Series electronic addressing eliminates the tedium of setting dipswitches, and automatic device mapping ensures that each device resides on the system at its correct location. Meanwhile, innovative programming allows the designer to customize the system to precisely suit the needs of the building owner.

### Reliability you can count on

The inherent fault-tolerant characteristics of Analog/Addressable Technology boosts the reliability of EDWARDS fire alarm systems. When combined with iO Series smoke and heat detectors, these systems deliver a level of dependability not previously available for small to mid-sized applications. All EDWARDS systems are built to exacting reliability benchmarks.

### Clear-cut remote annunciation

Remote annunciation is a strong suit of the iO Series fire alarm systems. Up to eight annunciators can be installed on a single system. Compatible annunciators include a range of LED and LCD models that provide zone or point annunciation, as well as common control capabilities. iO control panels also supports graphic annunciation with optional RA Graphic Annunciator nterface modules. Each interface provides common control and 32 LEDs.

### Flexibility built right in

Two fully-programmable front panel switch/LED combinations provide an added measure of flexibility. Their slide-in labels take the mystery out of custom applications, and present a clean finished appearance.

### Perfect for retrofits

EDWARDS iO Series control panels are particularly well-suited to retrofit applications. All connections are made over standard wiring – no shielded cable required. This means that in most situations existing wiring can be used to upgrade a legacy control panel to iO technology without the expense or disruption of rewiring the entire building. iO control panels also support the ingenious RZ116-2 Zone Module, which adds up to 16 conventional circuits and two NACs. This combination easily accommodates new intelligent detection alongside existing conventional circuits, making it an superior solution in the retrofit market.

### Scalable IP and Cellular Communications

Several popular third-party IP/Cellular communicators have been tested with the iO control panels and are compatibility listed to UL864. The IP/Cellular communicators meet NFPA72 2013 edition requirements for sole or secondary transmission paths. Using IP/Cellular communicators can reduce the cost of ownership by eliminating POTS lines. Please see the iO control panel compatibility documentation part number 3102353-EN for a full list of compatible communicators.

### Signals with a difference

iO system NACs are configurable to fully support the advanced signaling technology of EDWARDS Genesis and Enhanced Integrity notification appliances. These devices offer precision synchronization of strobes to UL 1971 standards. For Genesis devices, enabling this feature allows horns to be silenced while strobes on the same two-wire circuit continue to flash until the panel is reset.

### A complete line of accessories

iO Series life safety systems are supported by a complete line of analog/addressable detectors, modules and related equipment. Consult the Ordering Information section for details.

## Programming and remote diagnostics

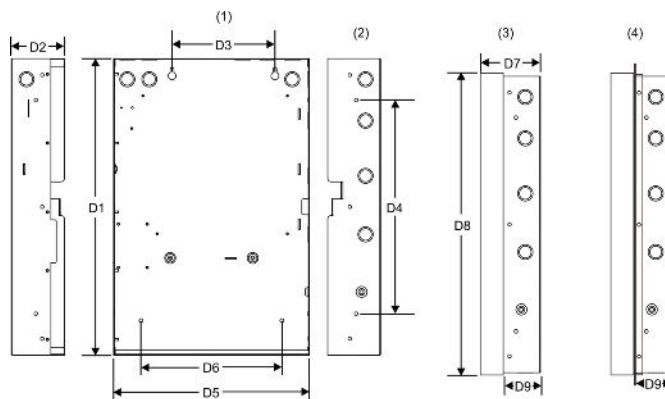
EDWARDS iO Series life safety systems are simple to set up, yet offer advanced programming features that put these small building panels into a class of their own. The auto programming feature quickly gets the panel operational using factory default settings. Basic zone and point settings can be programmed through the front panel interface, so the system is up and running in no time.

For more advanced system configuration and correlation groups programming, iO Series systems interface to a PC running compatible iO-CU software. This option offers full system configuration in the familiar Windows® operating environment. Connection is made to a laptop through the panel's optional RS-232 communications port, which can also be used to connect a system printer.

Among the many innovative features of iO Series control panels is the optional network card. This module provides a standard 10/100 Base T Ethernet® network connection that permits access to the control panel from any remote location with the correct communications protocols. The connection can be used to download to the panel from the iO-CU, or upload and view system reports using the iO-CU.

Available system reports include: Correlation groups, Device details, Device maintenance, History, Internal status, System configuration, System status, Walk test, Dialer, and CO runtime.

## Dimensions



- (1) Surface Mounting Holes
- (2) Semi-flush mounting Holes
- (3) Backbox with Door Attached
- (4) Backbox with door and trim kit attached.

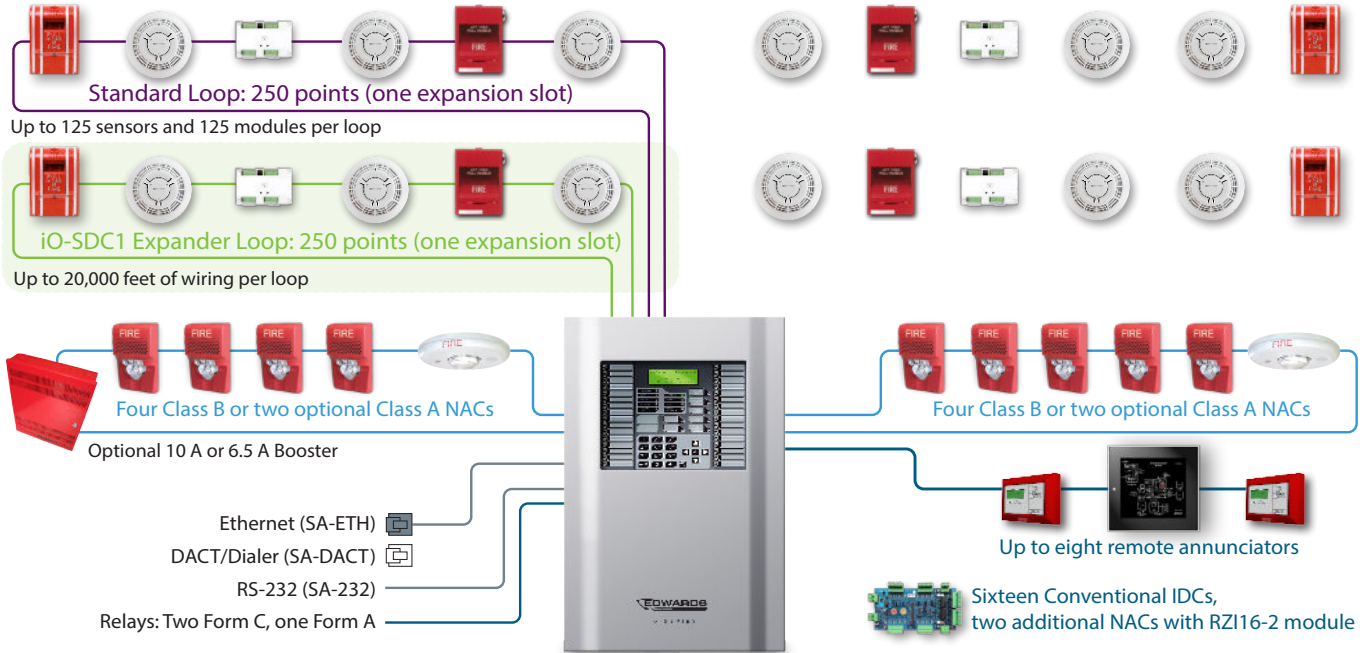
| Panel dimensions, in (cm) |                |               |               |                |                 |                 |               |                |              |
|---------------------------|----------------|---------------|---------------|----------------|-----------------|-----------------|---------------|----------------|--------------|
| Model                     | D1*            | D2            | D3            | D4             | D5*             | D6              | D7            | D8             | D9           |
| iO1000                    | 28.0<br>(71.1) | 3.85<br>(9.8) | 9.0<br>(22.8) | 22.0<br>(55.8) | 15.75<br>(40.0) | 10.25<br>(26.0) | 4.4<br>(11.1) | 28.2<br>(71.6) | 2.7<br>(6.8) |
| iO64                      | 21.5<br>(54.6) | 3.85<br>(9.8) | 7.5<br>(19.0) | 15.5<br>(39.4) | 14.25<br>(36.2) | 10.25<br>(26.0) | 4.5<br>(11.4) | 21.7<br>(55.1) | 2.7<br>(6.8) |

\* Add 1-1/2 in. (3.81 cm) to D1 and D5 dimensions for trim kit. The trim kit provides 0.75 inches (1.9 cm) of trim to the top, bottom, and sides of the backbox.

# System Layout

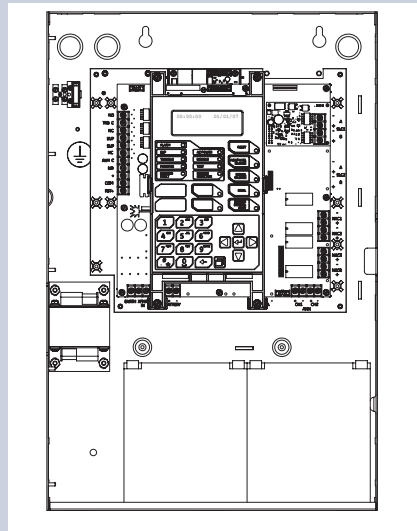
iO1000

Any combination of two single- or dual Signature loop modules



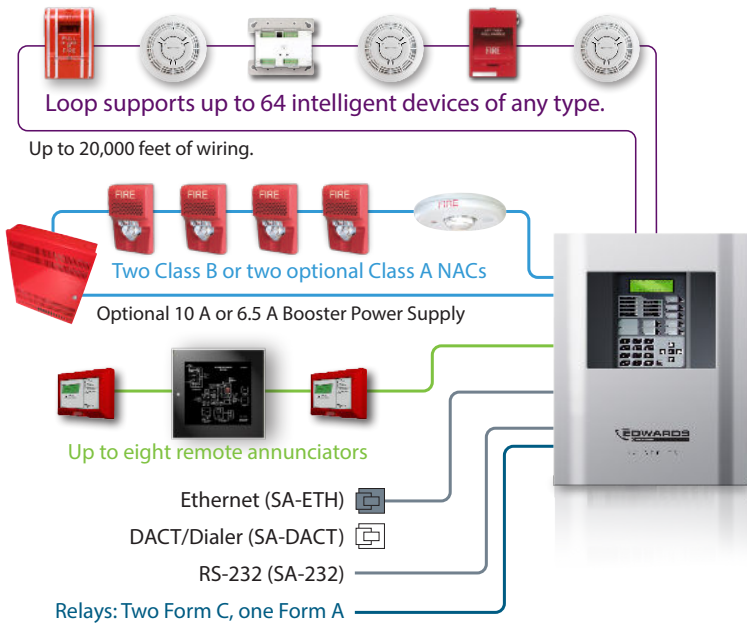
Each iO1000 panel has room for up to two Signature loop controller modules in any combination of single or dual 250-device loops. iO1000 loops support 125 detectors and 125 modules.

## Panel Layout



- 1 Transformer
- 2 Main AC wiring block & fuse holder
- 3 RS-232 card connector (J3)
- 4 Dialer card connection (J8)
- 5 Ethernet card connector (J1)
- 6 Main circuit board
- 7 Panel backbox enclosure
- 8 Operator interface
- 9 SLC card connector (J7)
- 10 Class A card connector (J2)
- 11 Tie wrap mounts
- 12 LED expander connector (J6)
- 13 Standby batteries

iO64



Each iO64 panel ships with one Signature loop controller that supports 64 devices of any type. This panel's device capacity cannot be expanded.

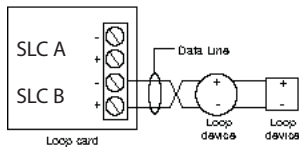
# Wiring & Configuration

## Signature device loop

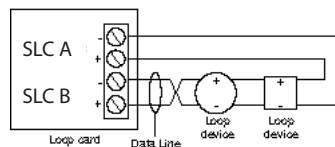
The system provides one Signature device loop circuit with a total capacity of 125 detectors and 125 module addresses. The loop circuit is supervised for opens, shorts, and grounds.

| Circuit specifications     | iO1000   | iO64  |
|----------------------------|--|---|
| Device loops               | One Class B or A loop, supporting 125 detectors and 125 modules. Expandable to four loops.   | One Class B or A loop, supporting 64 devices of any kind. |
| Communication line voltage | Maximum 20 V peak-to-peak  |   |
| Circuit current            | 0.5 A max  |   |
| Circuit impedance          | 66Ω total, 0.5 μF, max   |   |
| Isolators                  | 64 maximum   |   |
| Signal Synchronization     | Supported on a system-wide basis (all device loops) when using a SIGA-CC15 or SIGA-MCC15 module and Genesis or Enhanced Integrity notification appliances. |   |

Class B wiring



Class A wiring

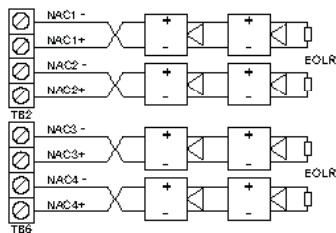


## Notification appliance circuits (TB2)

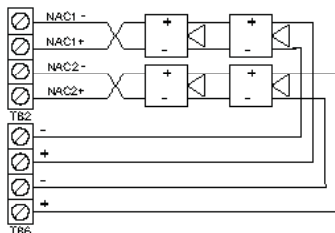
iO1000 control panels come equipped with four notification appliance circuits. iO64 control panels come with two NACs. Each circuit can be individually configured for continuous, temporal, synchronized, and coded output.

| Specifications  | iO1000   | iO64  |
|-----------------|--|---|
| Circuit Type    | 4 Class B or 2 Class A   | 2 Class B or 2 Class A with SA-CLA module   |
| Voltage         | 24 VFWR  |   |
| Current         | 6.0 A total, 2.5 A max. per circuit at 120/230 VAC 60 Hz.<br>5.0 A total, 2.5 A max. per circuit at 230 VAC 50 Hz. | 3.75 A total, 2.5 A max. per circuit at 120/230 VAC 60 Hz.<br>3.0 A total, 2.5 A max. per circuit at 230 VAC 50 Hz. |
| Impedance       | 26 Ω total, 0.35 μF max  |   |
| EOLR            | 15 K Ω, ½ W  |   |
| Synchronization | Supported system-wide  |   |

Class B wiring



Class A wiring



Marking indicates output signal polarity when the circuit is active. Polarity reverses when the circuit is not active. Wire notification appliances accordingly. Notification appliance polarity shown in active state.

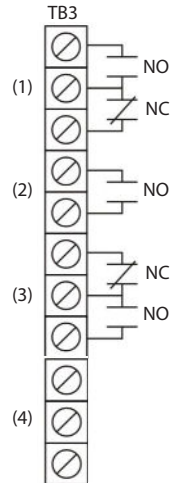
## Auxiliary & smoke power outputs (TB3)

The control panel provides two auxiliary power outputs that can be used for powering ancillary equipment such as remote annunciators and two wire smoke detectors. Aux 2 can be software selected to operate continuously. The circuit is supervised for shorts and grounds.

### Circuit specifications

|                                  |   |
|----------------------------------|---|
| Circuit voltage range            | 21.9 to 28.3 V  |
| Resettable circuit (Aux power 2) | 24 VDC nominal at 500 mA  |
| Continuous circuit (Aux power 1) | 24 VDC nominal at 500 mA. Use this circuit for powering two-wire smoke detectors. |

Note: Any current above 0.5 amp connected to both Aux 1 and 2 will reduce the total available NAC power by that amount.



- (1) Trouble
- (2) Supervisory
- (3) Alarm
- (4) Smoke/Aux

## Alarm, trouble, and supervisory relay (TB3)

The trouble relay is normally-open, held closed, and opens on any trouble event or when the panel is de-energized. The supervisory relay is normally-open, and closes on any supervisory event. The alarm relay changes over on any alarm event.

### Relay specifications

|         | Alarm                   | Trouble | Supervisory |
|---------|-------------------------|---------|-------------|
| Type    | Form C                  |         |             |
| Voltage | 24 VDC at 1 A resistive |         |             |

Relay circuits can only be connected to power-limited sources.

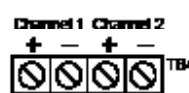
## Annunciator loop (TB4)

The control panel provides a connection for up to eight serially driven and supervised remote annunciators.

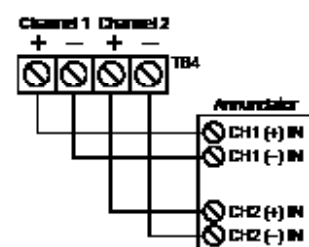
### Circuit specifications

|                   |  |
|-------------------|--|
| Device loops      | Class B (Style Y) or Class A (Style Z) |
| Circuit voltage   | 2.55 V                                 |
| Circuit current   | 30 mA max                              |
| Circuit impedance | Up to 8 annunciators or 4000 feet      |

Class B



Class A



## Option Cards

EDWARDS iO Series panels are supported by a complete line of modules and related equipment that enhance performance and extend system capabilities. Option cards plug directly into the control panel main circuit board or are connected to it with a ribbon cable. After installation, terminals remain accessible. The cabinet provides ample room for wire routing, keeping wiring neat at all times.

### Single and Dual Loop Controller Cards

The iO-SDC1 is a single loop controller card that can be used with the iO64 as a replacement for the standard 64-point loop, or with the iO1000 as a 250-point expansion module.

The iO-SDC2 is a 500-point dual loop controller card for the iO1000 that provides two SLC circuits, each with 125 detector addresses and 125 module addresses.

| Specifications  | iO-SDC1   | iO-SDC2                                 |
|---|---|---|
| Device Addresses  | iO1000: one loop, 250 device addresses<br>iO64: 64 addresses          | iO1000: two loops, 500 device addresses |
| Wiring  | Class B or Class A  |   |
| Operating Voltage   | 24 VDC  |   |
| Operating Current (fully loaded loop)                                 | Standby: 55 mA<br>Alarm: 80 mA  | Standby: 45 mA<br>Alarm: 70 mA          |
| Note: These ratings do not include the use of two-wire smoke modules. |   |   |
| Communication Line Voltage  | Max. 20.6 V peak-to-peak  |   |
| Terminal Rating   | 12 to 18 AWG (0.75 to 2.5 mm <sup>2</sup> )                           |   |
| Circuit Current   | 0.5 A max.  |   |
| Max total loop resistance   | 66 Ω  |   |
| Max total loop capacitance  | 0.5 μF  |   |
| Isolators   | 64 isolators maximum per loop (total both isolator bases and modules) |   |
| Ground Fault Impedance  | 0 to 5 kΩ   |   |
| Operating Environment   | 32 to 120°F (0 to 49°C)<br>0 to 93% noncondensing at 90°F (32°C)      |   |

### SA-ETH Ethernet Interface Card

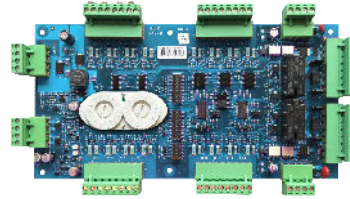


The SA-ETH card provides a standard 10/100 Base T Ethernet network connection for connecting to an intranet, a local network, or the Internet. The card can be used to download configuration programming from the iO-CU to the panel.

The Ethernet card is installed on the plastic assembly and connects to the main circuit board via a ribbon cable.

| SA-ETH specifications |   |
|-----------------------|---|
| Ethernet              | 10/100 Base T                             |
| Operating environment |   |
| Temperature           | 32 to 120°F (0 to 49°C)                   |
| Humidity              | 0 to 93% RH, noncondensing at 90°F (32°C) |

### RZI16-2 Remote Zone Interface Module



The RZI16-2 Addressable Remote Zone Interface Module is an addressable device that provides connections for sixteen Class B Initiating Device Circuits and two Class B Supervised Output Circuits. The inputs and outputs can be configured individually for several device types.

It requires 18 consecutive addresses on the Signaling Line Circuit (SLC). Addresses are assigned electronically. There are no address switches to set.

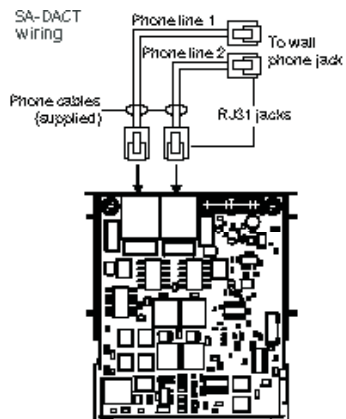
The RZI16-2 incorporates two 8-segment DIP switches that are used to select the Alarm or Supervisory default device type for each of the 16 IDC circuits. The module also includes one 4-segment DIP switch used to select the default Relay or NAC output device type. Device types other than the default are accomplished through programming.

#### RZI16-2 Specifications

|  |  |
|--|--|
| Voltage                                |  |
| 24V/Aux nominal:                       | 24 VDC   |
| Supervisory current:                   | 250 mA at 24 VDC nominal                                 |
| Alarm Current                          | 1000 mA  |
| 24V/Aux minimum:                       | 18.4 VDC   |
| 24V/Aux maximum:                       | 26.4 VDC   |
| NAC1, NAC2 nominal:                    | 24 VDC   |
| Current                                |  |
| Standby current for 4.7 k EOL (U.S.)   | 4.8 mA/ circuit  |
| Standby current for 3.9 k EOL (Canada) | 5.7 mA/ circuit  |
| Alarm current at nominal voltage       | 31.1 mA/ circuit   |
| Relay outputs                          |  |
| Quantity                               | 2  |
| Type Rating (pilot duty)               | Programmable 24 VDC at 2.5 A                             |
| Input circuit wiring resistance        | 25 Ω per wire  |
| Initiating device circuits             |  |
| Quantity                               | 16   |
| EOL resistor                           | 4.7 kΩ (U.S.); 3.9 kΩ Canada                             |
| Zone voltage                           | 22.78 V for 4.7 kΩ (U.S.)<br>22.08 V for 3.9 kΩ (Canada) |
| Alarm current                          | 31.1 mA/ channel at nominal voltage                      |
| Alarm impedance range                  | < 680 Ω  |
| Trouble impedance range                | > 5.55 kΩ  |
| Supervised output circuits             |  |
| EOL resistor                           | 15 kΩ  |
| Quantity                               | 2  |
| Short circuit detection                | < 2.6 kΩ   |
| Open circuit detection                 | > 61.9 kΩ  |
| Contact ratings                        | 24 VDC at 2.5 A (5 A for two NACs)                       |
| Compatible cabinets                    | MFC(A), iO1000, APS                                      |

### SA-DACT Dialer

The SA-DACT provides communications between the control panel and the central station over a telephone line system. It transmits system status changes (events) to a compatible digital alarm communicator receiver over the public switched telephone network. The dialer is capable of single, dual, or split reporting of events to two different account and telephone numbers. The modem feature of the SA-DACT can also be used for uploading and downloading panel configuration, history, and current status to a PC running the iO-CU.



The dialer phone lines connect to connectors on the dialer's main circuit board. Phone line 1 connects to connector J4 and phone line 2 connects to connector J1.

The SA-DACT queues messages and transmits them based on priority (alarm, supervisory, trouble, and monitor). Activations are transmitted before restorations.

The SA-DACT is installed on the plastic assembly and connects to the main circuit board via a ribbon cable.

#### SA-DACT specifications

|                       |   |
|-----------------------|---|
| Phone line type       | One or two loop-start lines on a public, switched network |
| Phone line connector  | RJ-31/38X (C31/38X)                                       |
| Communication formats | Contact ID (SIA DC-05)                                    |
| Operating environment |   |
| Temperature           | 32 to 120°F (0 to 49°C)                                   |
| Humidity              | 0 to 93% RH, noncondensing at 90°F (32°C)                 |

#### Compatible DACRs

| Receiver        | Models        | Formats    |
|-----------------|---------------|------------|
| Ademco          | 685           | Contact ID |
| FBII            | CP220         | Contact ID |
| Osborne-Hoffman | OH 2000       | Contact ID |
| Bosch           | D6600         | Contact ID |
| Silent Knight   | 9800          | Contact ID |
| Sur-Gard        | SG-MLR1, MLR2 | Contact ID |

### SA-232 RS-232 interface

The SA-232 card provides an RS-232 interface with iO panels. It can be used for connecting a printer to the control panel to print system events. The card also can be used for connecting a computer to download a configuration program from the iO-CU to the control panel.



The RS-232 card is installed on the plastic assembly and connects to the main circuit board via a ribbon cable.

#### SA-232 specifications

|                       |   |
|-----------------------|---|
| Operating voltage     | Standard EIA-232                          |
| Terminal rating       | 12 to 18 AWG (0.75 to 2.5 sq mm)          |
| Operating environment |   |
| Temperature           | 32 to 120°F (0 to 49°C)                   |
| Humidity              | 0 to 93% RH, noncondensing at 90°F (32°C) |

### SA-CLA Class A Module (iO64 only)

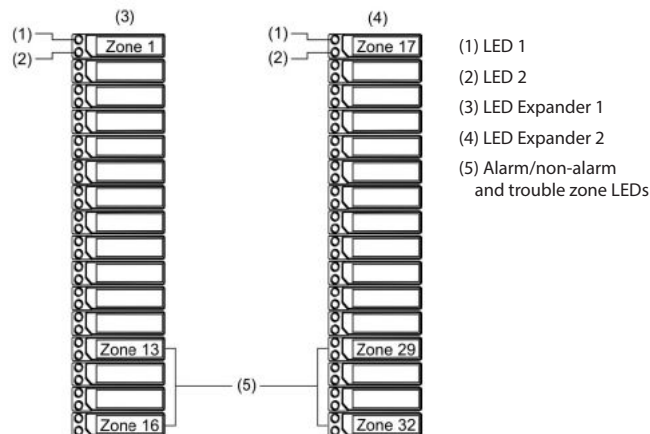
The SA-CLA card provides Class A capability for NAC wiring. Its terminal block provides the wiring connection for NAC return wiring. The card is required for annunciator Class A wiring even though this wiring does not return to the SA-CLA card. The SA-CLA is compatible with iO64 control panels only. iO1000 panels are Class A Ready. The SA-CLA is installed directly to the control panel circuit board using its plastic standoffs and plug connection.

#### SA-CLA specifications

|                       |  |
|-----------------------|--|
| Operating voltage     | 24 VFWR  |
| Operating current     | 3.75 A FWR total at 120/230 VAC 60 Hz<br>3.0 A FWR total at 230 VAC 50 Hz<br>2.5 A max per circuit |
| Circuit impedance     | 26 ohms, 0.35uF  |
| Terminal rating       | 12 to 18 AWG (0.75 to 2.5 sq mm)   |
| Operating environment |  |
| Temperature           | 32 to 120°F (0 to 49°C)  |
| Humidity              | 0 to 93% RH, noncondensing at 90°F (32°C)  |

### D16L-iO LED Display Expander (iO1000 only)

The D16L-iO LED Display Expanders provide LED annunciation for up to 16 zones. It provides two LEDs for each zone. Two D16L-iO LED display expanders can be installed in each iO1000 panel.



# Specifications

|                                 | iO64   | iO1000  |
|---------------------------------|--|---|
| Device loops                    | 1 loop Class B or Class A (Styles 4, 6, 7) supporting up to 64 device addresses (any combination of detectors and modules)<br><br>Maximum T-taps: 63<br>(each device can be on its own branch)   | 1 loop, expandable to 4, Class A or B (Styles 4, 6, 7), each loop supporting up to 250 device addresses (125 detectors and 125 modules max.). Addresses 1 to 125 are for detectors and addresses 126 to 250 are for modules<br><br>Maximum T-taps/loop: 124 |
| Notification appliance circuits | 2 Class B (Style Y), Class A (Style Z) optional<br><br>3.75 A FWR total at 120/230 VAC 60 Hz<br><br>3.0 A FWR total at 230 VAC 50 Hz<br><br>2.5 A FWR each max. per circuit  | 4 Class B (Style Y) or 2 Class A (Style Z)<br><br>6.0 A FWR total at 120/230 VAC 60 Hz<br><br>5.0 A FWR total at 230 VAC 50 Hz<br><br>2.5 A FWR each max. per circuit   |
| Primary power                   | 120 VAC, 60 Hz, 1.3 A max.<br><br>230 VAC, 50-60 Hz, 0.62 A max.   | 120 VAC, 60 Hz, 2.0 A max.<br><br>230 VAC, 50-60 Hz, 0.97 A max.  |
| Base panel current standby      | 155 mA   | 172 mA  |
| Base panel current alarm        | 204 mA   | 267 mA  |
| Input zones                     | 16 max.  | 32 max.   |
| Remote annunciator              | 8 drops max., RS-485 Class B, Class A is optional<br><br>Data line length: 4,000 ft. (1,219 m)   | 8 drops max., RS-485 Class A or B<br><br>Data line length: 4,000 ft. (1,219 m)  |
| Operating voltage               | 24 VDC panel   |   |
| Auxiliary power output circuit  | Aux power 1: 500 mA, 24 VDC (1 A possible if you reduce total available NAC power by 500 mA)<br><br>Aux power 2: 500 mA, 24 VDC<br><br>Output: 28.3 to 21.9 VDC, special application<br><br>Note: For a list of compatible devices, see the iO64 and iO1000 Series Compatibility List (P/N 3102353-EN)   |   |
| Loop circuit                    | Maximum loop resistance: 66 $\Omega$<br><br>Maximum loop capacitance: 0.5 $\mu$ F<br><br>Communication line voltage: Maximum 20.6 V peak-to-peak<br><br>Operating current (fully loaded loop) Stand by: 55 mA/45 mA<br><br>Alarm: 125 mA/115 mA (not including two-wire smoke modules)<br><br>Circuit current: 0.5 A max. Style 4, 6, and 7 wiring<br><br>Max. resistance between isolators: Limited only by overall wire run lengths<br><br>64 isolators maximum per loop (total both isolator bases and modules) |   |
| Batteries                       | Type: Sealed lead acid<br><br>Voltage: 24 VDC<br><br>Charging current: 2.47 A max. Amp hour capacity: 26 Ah<br><br>Standby operation: 24 hour or 60 hour<br><br>Placement: Up to two 10 Ah batteries will fit in the iO64 control panel cabinet and two 18 Ah batteries will fit in the iO1000 control panel cabinet. If larger batteries are required, use an EDWARDS battery cabinet.  |   |
| SA-DACT dialer                  | Phone line type: One or two loop-start lines on a public, switched network<br><br>Phone line connector: RJ-31/38X (C31/38X)<br><br>Communication formats: Contact ID (SIA DC-05)<br><br>Operating current Standby/Alarm: 41 mA Max.: 100 mA<br><br>FCC registration number: GESAL01BSADACT<br><br>Industry Canada Registration number: 3944A-SADACT<br><br>Ringer equivalence number: 0.1B   |   |
| Ground fault impedance          | 0 to 5 k $\Omega$  |   |
| Alarm contact                   | Form C N.O. 24 VDC at 1 A (resistive load)   |   |
| Trouble contact                 | Form C 24 VDC at 1 A (resistive load)  |   |
| Supervisory contact             | Form A N.O. 24 VDC at 1 A (resistive load)   |   |
| Environmental                   | Temperature: 0 to 49°C (32 to 120°F) Relative humidity: 0 to 93% noncondensing   |   |
| Terminal rating                 | All terminals rated for 12 to 18 AWG (0.75 to 2.5 mm <sup>2</sup> )  |   |



LIFE SAFETY & INCIDENT MANAGEMENT

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## Ordering Information

| Part                             | Description  |
|----------------------------------|--|
| <b>iO1000 Fire Alarm Systems</b> |  |
| IO1000G                          | Four loop system with one 250-point loop installed. 110v, gray door.                 |
| IO1000G-2                        | Four loop system with one 250-point loop installed. 230v, gray door.                 |
| IO1000G-2-PG                     | Four loop system with one 250-point loop installed. 230v, gray door, Portuguese.     |
| IO1000G-2-SP                     | Four loop system with one 250-point loop installed. 230v, gray door, Spanish.        |
| IO1000G-CA                       | Four loop system, one 250-point loop installed. 110v, gray door, LED strips, Canada. |
| IO1000GD                         | Four loop system, one 250-point loop installed. 110v, gray door, with dialer.        |
| IO1000G-F                        | Four loop system, one 250-point loop. 110v, gray door, LED strips, French Canada.    |
| IO1000G-PG                       | Four loop system with one 250-point loop installed. 110v, gray door, Portuguese.     |
| IO1000G-SP                       | Four loop system with one 250-point loop installed. 110v, gray door, Spanish.        |
| IO1000R                          | Four loop system with one 250-point loop installed. 110v, red door.                  |
| IO1000R-2                        | Four loop system with one 250-point loop installed. 230v, red door.                  |
| IO1000RD                         | Four loop system, one 250-point loop installed. 110v, red door, with dialer.         |
| SA-TRIM2                         | iO1000 Flush mount trim, black.  |

### iO64 Fire Alarm Systems

|            |  |
|------------|--|
| IO64G      | One loop system with one 64-point loop installed. 110v, gray door.             |
| IO64G-2    | One loop system with one 64-point loop installed. 230v, gray door.             |
| IO64G-2-PG | One loop system with one 64-point loop installed. 230v, gray door, Portuguese. |
| IO64G-2-SP | One loop system with one 64-point loop installed. 230v, gray door, Spanish.    |
| IO64GD     | One loop system, one 64-point loop installed. 110v, gray door, with dialer.    |
| IO64GL     | One loop system, one 64-point loop installed. 110v, gray door, English Canada. |
| IO64GL-F   | One loop system, one 64-point loop installed. 110v, gray door, French Canada.  |
| IO64G-PG   | One loop system with one 64-point loop installed. 110v, gray door, Portuguese. |
| IO64G-SP   | One loop system with one 64-point loop installed. 110v, gray door, Spanish.    |
| IO64R      | One loop system with one 64-point loop installed. 110v, red door.              |
| IO64R-2    | One loop system with one 64-point loop installed. 230v, red door.              |
| IO64RD     | One loop system, one 64-point loop installed. 110v, red door, with dialer.     |
| SA-TRIM1   | iO64 Flush mount trim, black   |

### Option Cards

|           |  |
|-----------|--|
| iO-SDC1   | Expansion module, one 250-device loop.   |
| iO-SDC2   | Expansion module, two 250-device loops, 500 devices total. For iO1000 only.  |
| RZI16-2   | Remote Zone Interface Module. 16 Class B IDCs, 2 Class B Output. Includes bracket.   |
| SA-DACT   | Dual Line Dialer/Modem, supports Contact ID, mounts in cabinet on base plate.  |
| SA-232    | RS-232 Serial Port for connection to printers & computers, mounts in cabinet.  |
| SA-ETH    | Ethernet Port, Slave, mounts in cabinet on base plate.   |
| SA-CLA    | Class A adapter module. Provides Class A capacity on NACs. Mounts in cabinet on main board. iO64 systems only.   |
| D16L-iO-2 | LED Annunciator module, 16 X 2-LED zones (4 programmable for sup). Mounts in cabinet to right of LCD display for zones 17-32. For iO1000 only.                   |
| D16L-iO-1 | LED Annunciator module, 16 X 2-LED zones (4 programmable for sup). Mounts in cabinet to left of LCD display for zones 1-16. For iO1000 only.                     |
| D8RY-iO-2 | Canada only: LED Annunciator module, two LEDs per zone, 16 zones (4 alarm only, 8 supervisory only, 4 alarm or supervisory). Mounts in cabinet. For iO1000 only. |
| D8RY-iO-1 | Canada only: LED Annunciator module, two LEDs per zone, 16 zones (4 alarm only, 8 supervisory only, 4 alarm or supervisory). Mounts in cabinet. For iO1000 only. |

### Accessories

|          |   |
|----------|---|
| CTM      | City Tie Module. 2-gang. Connection to a local energy fire alarm box.   |
| MFC-A    | Multifunction Fire Cabinet, 8" x 14" x 3.5" - red.  |
| SIGA-REL | Releasing Module  |
| PT-1S    | System Printer  |
| BC-1     | Battery Cabinet. 14.0" x 18.25" x 7.25". Holds two 12V24A batteries.  |
| BC-1R    | Battery Cabinet - Red. 14.0" x 18.25" x 7.25". Holds two 12V24A batteries.  |
| BC-1EQ   | Seismic hardening Kit for iO series panels. Includes battery hardening for BC-1 enclosure and components to harden panel internal components. |

### Programming Tools

|        |  |
|--------|--|
| iO-CU  | iO Series configuration and diagnostics utility. |
| 260097 | RS232 cable, 4 conductor, DB9 PC interface       |





# iO64 Intelligent Life Safety System



## Overview

The Edwards EST iO64 intelligent life safety system offers the power of high-end intelligent processing in a configuration that delivers an uncomplicated solution for small to mid-sized applications. With intelligent detection, electronic addressing, automatic device mapping, optional Ethernet® connectivity, and a full line of easily-configured option cards and modules, this flexible system offers advanced features that benefit building owners and contractors alike.

The iO64 provides one Class B analog device loop that supports up to 64 device addresses, and two Class B Notification Appliance Circuits (NACs). Optional Class A device wiring is available with the use of a module.

This life safety system features an attractive design that fits with any decor. Its distinctive doorfront offers a contemporary look that's available with red or silver finishes. All LED indicators and its large backlit display remain easy to see at all times.

The iO64 supports a wide range of accessories and related equipment, including:

- Signature Series intelligent modules, detectors, and bases
- R-Series remote annunciators
- option cards that expand system capacity and extend system capabilities.

## Features

- Comes standard with one loop that supports up to 64 intelligent devices of any type and two Class B NACs.
- Supports Signature Series modules and detectors
- Form C for Alarm and Trouble, Form A for Supervisory
- Electronic addressing with automatic device mapping
- Optional Ethernet port for diagnostics, programming and variety of system reports
- Two programmable switches with LEDs and custom labeling
- Supports Genesis horn silence over two wires and UL 1971-compliant strobe synchronization
- Supports up to eight serial annunciators, (LCD, LED-only, and graphic interface).
- Can use existing wiring for most retrofit applications
- Upload/download remotely or locally
- Two-level maintenance alert reporting
- Pre-alarm and alarm verification by point
- Adjustable detector sensitivity
- 4 x 20 character backlit LCD display

## Application

The iO64 life safety system is a powerful intelligent solution for small to mid-sized buildings. Advanced analog technology delivers the benefits of flexible system installation, while a clean and easy-to-operate user interface makes panel operation and system maintenance quick and intuitive.

### The smart choice

Signature Series electronic addressing eliminates the tedium of setting dipswitches, and automatic device mapping ensures that each device resides on the system at its correct location. Meanwhile, innovative programming features allow the system designer to customize powerful built-in features to precisely suit the needs of the building owner.

### Flexibility built right in

Two fully-programmable front panel switch/LED combinations provide an added measure of flexibility. Their slide-in labels take the mystery out of custom applications, and present a clean finished appearance.

### Perfect for retrofits

The iO64 is particularly well-suited to retrofit applications. All connections are made over standard wiring – no shielded cable required. This means that in most situations existing wiring can be used to upgrade a legacy control panel to iO-Series technology without the expense or disruption of rewiring the entire building.

### Signals with a difference

iO64 NACs are configurable to fully support the advanced signaling technology of Edwards Genesis and Enhanced Integrity notification appliances. These devices offer precision synchronization of strobes to UL 1971 standards. For Genesis devices, enabling this feature allows connected horns to be silenced while strobes on the same two-wire circuit continue to flash until the panel is reset.

### Clear-cut remote annunciation

Remote annunciation is a strong suit of the iO64. Up to eight annunciators can be installed on a single system. Compatible annunciators include a range of LED and LCD models that provide zone or point annunciation, as well as common control capabilities.

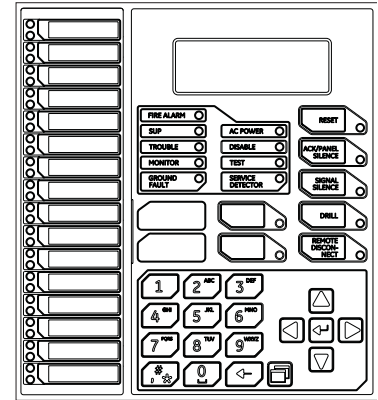
The iO64 also supports graphic annunciation with optional graphic annunciator interface modules. Each interface provides common control, indicators, and LED drivers. Consult the Ordering Information section for details.

### A complete line of accessories

The iO64 life safety system is supported by a complete line of intelligent detectors, modules and related equipment. Consult the Ordering Information section for details.

## Operation

The front panel provides an easy-to-use operator's interface, as well as all the necessary controls for front panel programming. A large back-lit 80-character LCD displays system status, event details, and programming prompts. Large tactile control buttons are easy to see in low light conditions, and bright multi-color LEDs offer at-a-glance status indication.



### Control buttons

| Button               | Description   |
|----------------------|---|
| System Reset         | Initiates a system reset.   |
| ACK/Panel Silence    | Silences the panel and remote annunciators during an active trouble, supervisory, or alarm event and acknowledges new event activations.  |
| Signal Silence       | <i>Alarm mode:</i> Silences active notification appliances. Pressing Signal Silence a second time turns NACs back on.   |
| Drill                | Initiates a drill confirmation. Pressing drill a second time turns off the drill function.  |
| Remote Disconnect    | <i>Dialer:</i> Disables or enables dialer.<br><i>Dialer set to modem only:</i> Disables or enables the common alarm relay.  |
| Left arrow           | <i>Display mode:</i> Moves the cursor to the left.<br><i>Menu mode:</i> Toggles between programming selections.   |
| Right arrow          | <i>Display mode:</i> Moves the cursor to the right.<br><i>Menu mode:</i> Retrieves a programming option's sub menu and toggles between a programming option's selections.   |
| Up arrow             | <i>Display mode:</i> Advances to the previous event.<br><i>Menu mode:</i> Moves the cursor up.  |
| Down arrow           | <i>Display mode:</i> Advances to the next event.<br><i>Menu mode:</i> Moves the cursor down.  |
| Enter                | <i>Display mode:</i> Displays selected event details.<br><i>Menu mode:</i> Retrieves a programming option's sub menu or jumps to the Save function in the menu.<br><i>Entry mode:</i> Enters the selected data into the system. |
| Cancel               | <i>Display mode:</i> Exits the detailed information display.<br><i>Menu mode:</i> Exits the current menu level.<br><i>Entry mode:</i> Clears the current entry.   |
| Menu                 | <i>Display mode:</i> Enters the menu mode<br><i>Menu mode:</i> Exits menu mode  |
| Space                | Enters a space, such as a space between words.  |
| Alphanumeric keypad  | <i>Entry mode:</i> Pressing a button once enters the number on the button. Pressing the button twice enters the secondary value.  |
| Programmable buttons | These buttons can be programmed to control outputs, disable devices or unlatch system outputs.  |

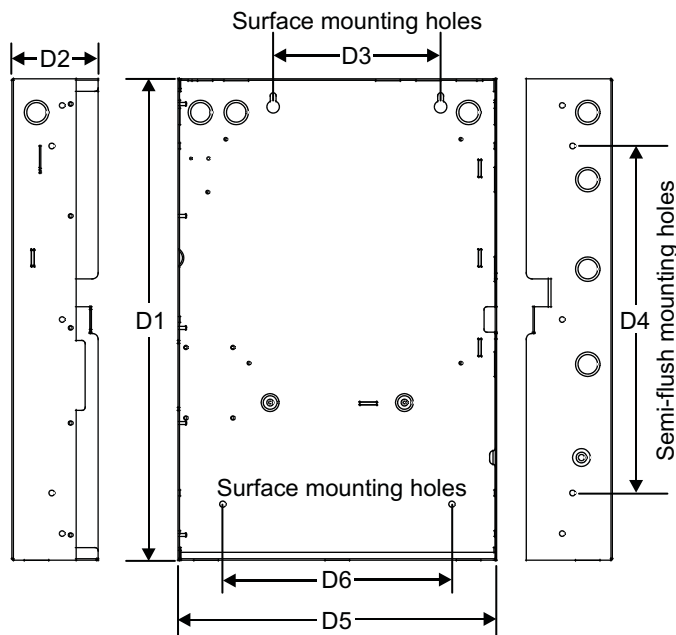
## System LEDs

| Led               | Description   |
|-------------------|---|
| Fire Alarm        | Red LED. Flashes when there is an active alarm event on any loop. On steady once acknowledged.  |
| Trouble           | Yellow LED. Flashes when there's a fault with a monitored circuit or system component or when a circuit is disabled. On steady once acknowledged.                             |
| Sup               | Yellow LED. Flashes when there is an active supervisory event on any loop. On steady once acknowledged.   |
| Ac Power          | Green LED. On when the panel has AC power.  |
| Disable           | Yellow LED. Double-flashes when there is a disabled circuit, alarm relay, or remote annunciator.  |
| Ground Fault      | Yellow LED. On steady during an active ground fault.  |
| Test              | Yellow LED. Flashes when performing an audible walk test. Steady indicates a silent test.   |
| Monitor           | Yellow LED. Flashes when there is an active monitor event on any loop. On steady once acknowledged.   |
| Service Detector  | Yellow LED. Indicates that detector needs servicing.  |
| Signal Silence    | Yellow LED. On steady indicates that NAC circuits are turned off but the panel is still in alarm.   |
| Remote Disconnect | Yellow LED. On steady indicates that the dialer is disabled or that the alarm relay is enabled or disabled when the dialer is set to modem only.                              |
| Drill             | Yellow LED. Indicates that the panel is in drill.   |
| Reset             | Yellow LED. Indicates that the panel is resetting.  |
| Panel Silence     | Yellow LED. Indicates that the panel has been silenced during an active trouble, supervisory, or alarm event and indicates that new event activations have been acknowledged. |
| User Keys         | Yellow LED. Indicates the programmed key function is active.  |

## Panel Operation Options

|                                  |  |
|----------------------------------|--|
| Language                         | English or French  |
| Marketplace                      | U.S. or Canada   |
| AC fail delay                    | <i>Off:</i> Off-premise notification of an AC power failure is immediate.<br><i>1 to 15 hours:</i> Delays the off-premise notification of an AC power failure by the time period selected.   |
| Zone resound                     | <i>On:</i> NACs resound each time a device in the zone goes into alarm even if they were silenced<br><i>Off:</i> Inhibits the NACs from turning on again (after they were silenced) when a second device in the zone goes into alarm.  |
| Reset inhibit after NACs turn on | <i>Off:</i> Panel reset is operational immediately.<br><i>1 minute:</i> Panel reset is inhibited for one minute.   |
| Auto signal silence              | <i>Off:</i> Allows immediate silencing of signals from an off-normal condition using the Signal Silence button<br><i>5 to 30 minutes:</i> Delays the silencing of signals from an off-normal condition by disabling the Signal Silence button for the time period selected.  |
| Day start                        | Start time for daytime sensitivity   |
| Night start                      | Start time for nighttime sensitivity   |
| Date                             | <i>U.S.:</i> MM/DD/YYYY, <i>Canada:</i> DD/MM/YYYY   |
| Sounder Base                     | Six configuration settings   |
| Mapping                          | <i>Disabled:</i> Device mapping is not available<br><i>Enabled:</i> Device mapping is available  |
| LCD banner                       | Banner text for line one and line two. Each line is capable of up to 20 characters.  |
| Event notification               | <i>Zone:</i> When a device is a member of a zone, only the zone information is sent to the LCD display, LEDs, printer, and dialer.<br><i>Zone/device:</i> Zone information is sent to the LCD display and LEDs. Device information is sent to the printer and dialer.<br><i>Device:</i> Only device information is reported. |

## Dimensions



Panel dimensions, in (cm)

| Model | D1*             | D2            | D3            | D4             | D5*             | D6              |
|-------|-----------------|---------------|---------------|----------------|-----------------|-----------------|
| iO64  | 21.50<br>(54.6) | 3.85<br>(9.8) | 7.5<br>(19.0) | 15.5<br>(39.4) | 14.25<br>(36.2) | 10.25<br>(26.0) |

\* Add 1-1/2 in. (3.81 cm) to D1 and D5 dimensions for trim kit.

## Programming

iO-Series life safety systems are simple to set up, yet also offer advanced programming features that put these small building panels into a class of their own. The auto programming feature quickly gets the panel operational using factory default settings. Basic zone and point settings can be programmed easily through the front panel interface, so the system is up and running in no time.

For more advanced system configuration and correlation groups programming, iO-Series systems interface to a PC running compatible iO-CU software. This option offers full system configuration in the familiar Windows® operating environment. Connection is typically made to a laptop through the panel's optional RS-232 communications port, which can also be used to connect a system printer.

Among the many advanced features of iO-Series control panels is the optional network card. This module provides a standard 10/100 Base T Ethernet® network connection that permits access to the control panel from any remote location with the correct communications protocols. The connection can be used to download to the panel from the iO-CU, or upload and view system reports using the iO-CU.

Available system reports include:

- Correlation groups
- Device details
- Device maintenance
- History
- Internal status
- System configuration
- System status
- Walk test
- Dialer

# Wiring & Configuration

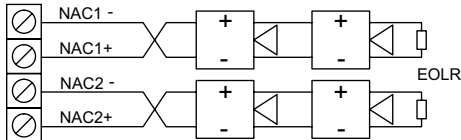
## Notification appliance circuits (TB2)

The iO64 comes equipped with two notification appliance circuits. Each circuit can be individually configured for continuous, temporal, synchronized, latching, and coded output.

### Circuit Specifications

|              |  |
|--------------|--|
| Circuit Type | 2 Class B, Class A optional when Class A card is installed.<br>Each circuit is 2.5 amps. |
| Voltage      | 24 VFWR  |
| Current      | 3.75A total (115/230 60hz)<br>3.0A total (230v 50hz)<br>2.5 A max per circuit            |
| Impedance    | 26 Ω total, 0.35 μF max  |
| EOLR         | 15 K Ω, ½ W  |

Class B wiring



Wiring indicates output signal polarity when the circuit is active. Polarity reverses when the circuit is not active. Wire notification appliances accordingly. Notification appliance polarity shown in active state.

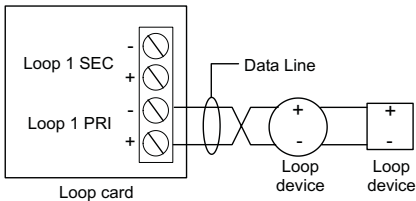
## Signature Device loop

The system provides one device loop circuit that can be used with any mix of Signature Series detectors and modules. The loop circuit is supervised for opens, shorts, and grounds.

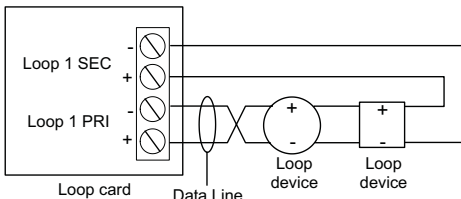
### Circuit Specifications

|                            |  |
|----------------------------|--|
| Device loops               | 1 loop Class B, Class A optional when Class A card is installed. Supporting up to 64 device addresses. |
| Communication line voltage | Maximum 20 V peak-to-peak  |
| Circuit current            | 0.5 A max  |
| Circuit impedance          | 66Ω total, 0.7 μF, max   |
| Isolators                  | 64 maximum   |

Class B wiring



Class A wiring



## Alarm, trouble, and supervisory relay (TB3)

The trouble relay is normally-open, held closed, and opens on any trouble event or when the panel is de-energized. The supervisory relay is normally-open, and closes on any supervisory event. The alarm relay changes over on any alarm event.

### Relay specifications

|         | Alarm                   | Trouble                 | Supervisory |
|---------|-------------------------|-------------------------|-------------|
| Type    | Form C                  |                         | Form A      |
| Voltage | 24 VDC at 1 A resistive | 24 VDC at 1 A resistive |             |

Relay circuits can only be connected to power-limited sources.

## Auxiliary & Smoke power outputs (TB3)

The control panel provides two auxiliary power outputs which can be used for powering ancillary equipment such as remote annunciators and two wire smoke detectors. Aux 2 can be software selected to operate continuous. The circuit is supervised for shorts and grounds.

Note: For a complete list of devices that can be connected to this circuit, refer to the iO Series compatibility list (p/n 3101064).

### Circuit specifications

|                                  |   |
|----------------------------------|---|
| Circuit voltage range            | 21.9 to 28.3 V  |
| Resettable circuit (Aux power 2) | 24 VDC nominal at 500 mA  |
| Continuous circuit (Aux power 1) | 24 VDC nominal at 500 mA. Use this circuit for powering two-wire smoke detectors. |

Note: Any current above 0.5 amp connected to both Aux 1 and 2 will reduce the total available NAC power by that amount.

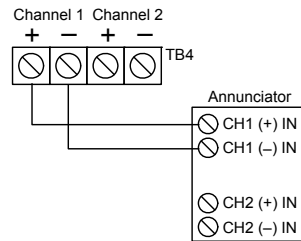
## Annunciator loop (TB4)

The control panel provides a connection for up to eight serially driven and supervised remote annunciators.

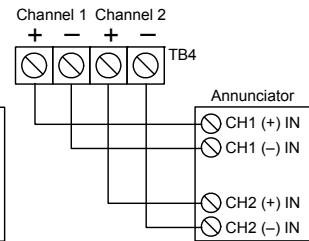
### Circuit specifications

|                   |  |
|-------------------|--|
| Device loops      | Class B (Style Y) or Class A (Style Z) |
| Circuit voltage   | 2.55 V                                 |
| Circuit current   | 30 mA max                              |
| Circuit impedance | Up to 8 annunciators or 4000 feet      |

Class B



Class A

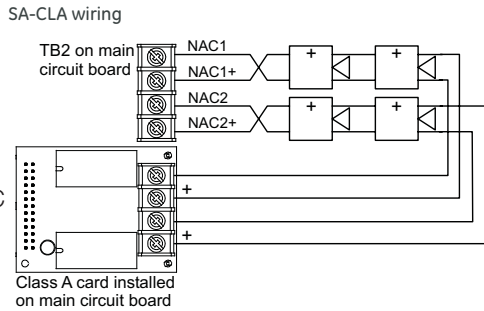


## Option Cards

iO-Series panels are supported by a complete line of modules and related equipment that enhance performance and extend system capabilities. Option cards are easy to install and set up. They simply plug directly into the control panel main circuit board or are connected to it with a ribbon cable. After installation, terminals remain easily accessible for quick connection of field wiring. The cabinet provides ample room for wire routing, keeping wiring neat and easy to service at all times.

### SA-CLA Class A Module

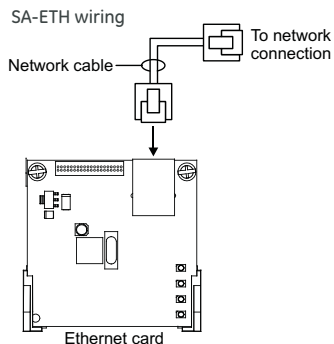
The SA-CLA card provides Class A capability for NAC, loop, and annunciator wiring. Its terminal block provides the wiring connection for NAC return wiring. The card is required for loop and annunciator Class A wiring even though this wiring does not return to the SA-CLA card. The SA-CLA is compatible with iO64 control panels only. iO500 panels are Class A ready. The SA-CLA is installed directly to the control panel circuit board using its plastic standoffs and plug connection.



#### SA-CLA specifications

|                       |   |
|-----------------------|---|
| Operating voltage     | 24 VFWR   |
| Operating current     | 2.5 A/circuit, 3.75A total (115/230 60hz)<br>3.0A total (230v 50hz) |
| Circuit impedance     | 26 Ω, 0.35 μF, max  |
| Terminal rating       | 12 to 18 AWG (0.75 to 2.5 sq mm)                                    |
| Operating environment |   |
| Temperature           | 32 to 120°F (0 to 49°C)   |
| Humidity              | 0 to 93% RH, noncondensing at 90°F (32°C)                           |

### SA-ETH Ethernet Interface Card



The SA-ETH card provides a standard 10/100 Base T Ethernet network connection for connecting to an intranet, a local network, or the Internet. The card can be used to download configuration programming from the iO-CU to the panel over the network.

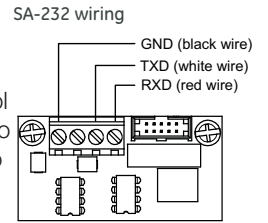
The Ethernet card is installed on the plastic assembly and connects to the main circuit board via a ribbon cable.

#### SA-ETH specifications

|                       |   |
|-----------------------|---|
| Ethernet              | 10/100 Base T                             |
| Operating environment |   |
| Temperature           | 32 to 120°F (0 to 49°C)                   |
| Humidity              | 0 to 93% RH, noncondensing at 90°F (32°C) |

### SA-232 RS-232 interface

The SA-232 card provides an RS-232 interface with iO-Series panels. It can be used for connecting a printer to the control panel to print system events. The card also can be used for connecting a computer to download a configuration program from the iO-CU to the control panel.



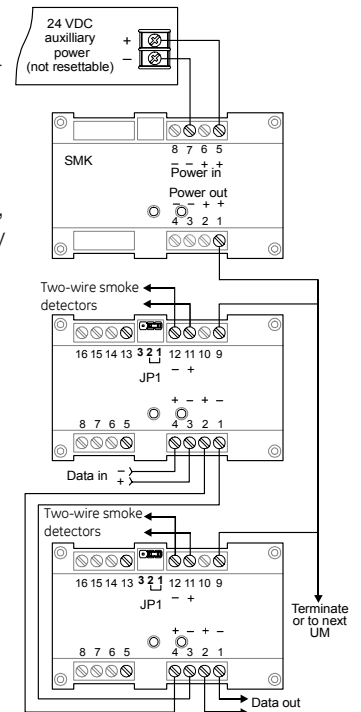
The RS-232 card is installed on the plastic assembly and connects to the main circuit board via a ribbon cable.

#### SA-232 specifications

|                       |   |
|-----------------------|---|
| Operating voltage     | Standard EIA-232                          |
| Terminal rating       | 12 to 18 AWG (0.75 to 2.5 sq mm)          |
| Operating environment |   |
| Temperature           | 32 to 120°F (0 to 49°C)                   |
| Humidity              | 0 to 93% RH, noncondensing at 90°F (32°C) |

### SMK Smoke Power Converter

The SMK Smoke Power Converter Module provides a regulated power source for two-wire smoke circuits connected to a Signature data circuit. The SMK monitors the operating power from the power supply. When power begins to degrade, the SMK provides the necessary operating voltage to the two-wire smoke detection circuits.

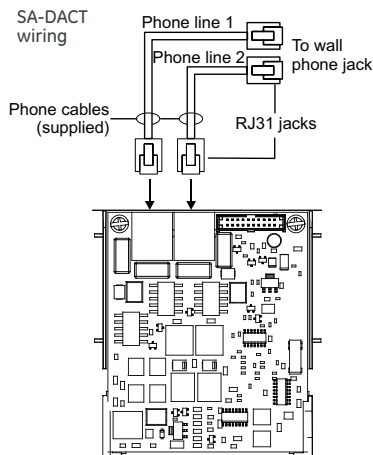


#### SMK specifications

|                             |  |
|-----------------------------|--|
| Input voltage               | 21.9 to 28.3 VDC (not resettable)  |
| Output voltage              | 24 VDC nom. at 200 mA, max., special applications  |
| Ground fault impedance      | 10 k ohm   |
| Operating environment       |  |
| Temperature                 | 32 to 120°F (0 to 49°C)  |
| Humidity                    | 0 to 93% RH, noncondensing at 90°F (32°C)  |
| Storage temperature         | -4 to 140°F (-20 to 60°C)  |
| Compatible electrical boxes | North American 4 inch square x 2-1/2 in. (64 mm) deep 2 gang box or Standard 4 in. square box 1-1/2 in. (38 mm) deep |
| Wire size                   | 14, 16, or 18 AWG wire (1.5, 1.0, or 0.75 sq. mm) (Sizes 16 and 18 AWG are preferred)                                |

## SA-DACT Dialer

The SA-DACT provides communications between the control panel and the central station over a telephone line system. It transmits system status changes (events) to a compatible digital alarm communicator receiver over the public switched telephone network. The dialer is capable of single, dual, or split reporting of events to two different account and telephone numbers. The modem feature of the SA-DACT can also be used for uploading and downloading panel configuration, history, and current status to a PC running the iO-CU.



The dialer phone lines connect to connectors on the dialer's main circuit board. Phone line 1 connects to connector J4 and phone line 2 connects to connector J1.

The SA-DACT queues messages and transmits them based on priority (alarm, supervisory, trouble, and monitor). Activations are transmitted before restorations.

The SA-DACT is installed on the plastic assembly and connects to the main circuit board via a ribbon cable.

### SA-DACT specifications

|                       |   |
|-----------------------|---|
| Phone line type       | One or two loop-start lines on a public, switched network |
| Phone line connector  | RJ-31/38X (C31/38X)                                       |
| Communication formats | Contact ID (SIA DC-05)                                    |
| Operating environment |   |
| Temperature           | 32 to 120°F (0 to 49°C)                                   |
| Humidity              | 0 to 93% RH, noncondensing at 90°F (32°C)                 |

### Compatible DACRs

| Receiver        | Models        | Formats    |
|-----------------|---------------|------------|
| Ademco          | 685           | Contact ID |
| FBI             | CP220         | Contact ID |
| Osborne-Hoffman | OH 2000       | Contact ID |
| Radionics       | D6600         | Contact ID |
| Silent Knight   | 9800          | Contact ID |
| Sur-Gard        | SG-MLR1, MLR2 | Contact ID |

## Specifications

|                                  |   |
|----------------------------------|---|
| Device loops                     | 1 loop Class B, Class A optional, supporting up to 64 device addresses  |
| Notification appliance circuits  | 2 Class B, Class A optional, 2.5 amps each  |
| Power supply                     | 3.75 A FWR total at 120/230 VAC 60 Hz<br>3.0 A FWR total at 230 VAC 50 Hz<br>0.5 amps aux power                       |
| NAC Operating voltage            | 24 VDC. NAC minimum voltage: 19.5 VDC @ 20.4 V battery voltage  |
| SLC Loop operating voltage       | 20 V peak-to-peak   |
| Primary power                    | 120 VAC, 60 Hz, 230 VAC 50-60 Hz  |
| Aux Power 1 (Continuous circuit) | 24 VDC nominal at 500 mA. A SMK module is required when using the SIGA-UM module to support two-wire smoke detectors. |
| Aux Power 2 (Resettable circuit) | 24 VDC nominal at 500 mA.   |
| Auxiliary output                 | 19 to 25.7 VDC  |
| Base panel current draw          | Standby: 155 mA Alarm: 204 mA   |
| Battery placement                | iO64 cabinets accommodate up to 10 A/H batteries. Use an external cabinet for larger battery sizes.                   |

|   |   |
|---|---|
| Batteries                                 | Batteries must be sealed lead acid type only. Maximum charging capacity = 26 Ah.                                |
| Loop circuit                              | Maximum loop resistance: 66 Ω. Maximum loop capacitance: 0.7 μF. Style 4, 6, and 7 wiring. 64 isolators maximum |
| Loop circuit max detector standby current | 1.5 mA (see the UL and ULC compatibility list for your panel for the maximum quantity of detectors per circuit) |
| Compatibility ID                          | 100   |
| Alarm contact                             | Form C 24 VDC @ 1 A (resistive load)  |
| Trouble contact                           | Form C 24 VDC @ 1 A (resistive load)  |
| Supervisory contact                       | Form A 24 VDC @ 1 A (resistive load)  |
| Environmental                             | Temperature: 0 to 49°C (32 to 120°F). Humidity: 0 to 93% RH, noncondensing                                      |
| Terminal rating                           | All terminals rated for 12 to 18 AWG (0.75 to 2.5 sq mm)  |
| Serial communications                     | Voltage: 2.55 V. Current: 30 mA max   |
| Remote annunciator                        | 8 drops max, RS-485 Class B, Class A  |
| Input zones                               | 16 max.   |
| Agency Listing                            | UL, CSFM and ULC  |

## Ordering Information

| Part   | Description  |
|--|--|
| <b>iO64 Intelligent Single Loop Analog Systems</b> |  |
| iO64G  | 1 Loop System, 64 point capacity, 2 Class B NACs, gray door, surface mount enclosure, 115 Vac, English.                      |
| iO64GD   | 1 Loop System, 64 point capacity, 2 Class B NACs, 2 Line Dialer, gray door, surface mount enclosure, 115 Vac, English.       |
| iO64R  | 1 Loop System, 64 point capacity, 2 Class B NACs, Red Door, surface mount enclosure, 115 Vac, English.                       |
| iO64RD   | 1 Loop System, 64 point capacity, 2 Class B NACs, 2 Line Dialer, Red Door, surface mount enclosure, 115 Vac, English.        |
| iO64G-2 (Note 2)                                   | 1 Loop System, 64 point capacity, 2 Class B NACs, gray door, surface mount enclosure, 230 Vac, English.                      |
| iO64R-2 (Note 2)                                   | 1 Loop System, 64 point capacity, 2 Class B NACs, Red door, surface mount enclosure, 230 Vac, English.                       |
| iO64G-SP (Note 2)                                  | 1 Loop System, 64 point capacity, 2 NACs, gray door. surface mount enclosure, 115 Vac, Spanish.                              |
| iO64G-2-SP (Note 2)                                | 1 Loop System, 64 point capacity, 2 NACs, gray door. surface mount enclosure, 230 Vac, Spanish.                              |
| iO64G-PG (Note 2)                                  | 1 Loop System, 64 point capacity, 2 NACs, gray door. surface mount enclosure, 115 Vac, Portuguese.                           |
| iO64G-2-PG (Note 2)                                | 1 Loop System, 64 point capacity, 2 NACs, gray door. surface mount enclosure, 230 Vac, Portuguese.                           |
| iO64GL (Note 1)                                    | 1 Loop System, 64 point capacity, 2 Class B NACs, 16-zone LED display, gray door, surface mount enclosure, 115 Vac, English. |
| iO64GL-F (Note 1)                                  | 1 Loop System, 64 point capacity, 2 Class B NACs, 16-zone LED display, gray door, surface mount enclosure, 115 Vac, French.  |
| SA-TRIM1   | Flush mount trim, black  |

### Replacement Electronics

|                       |  |
|-----------------------|--|
| 64elec-iO             | Replacement electronics kit, complete motherboard and user interface, English    |
| 64elec-iO-SP (Note 2) | Replacement electronics kit, complete motherboard and user interface, Spanish    |
| 64elec-iO-PG (Note 2) | Replacement electronics kit, complete motherboard and user interface, Portuguese |
| 64elec-iO-FR (Note 1) | Replacement electronics kit, complete motherboard and user interface, French     |

### Option Cards

|                    |   |
|--------------------|---|
| SA-DACT            | Dual Line Dialer/Modem, supports 4/2 and Contact ID, mounts in cabinet on base plate.   |
| SA-232             | Serial Port (RS-232), for connection to printers & computers, mounts in cabinet to base plate   |
| SA-ETH             | Ethernet Port, Slave, mounts in cabinet on base plate.  |
| SA-CLA             | Class A adapter module. Provides Class A capacity on NACs. Mounts in cabinet on main board.   |
| D16L-iO-1          | LED Annunciator module, 16 X 2-LED zones (4 max programmable for sup). Mounts in cabinet to left of LCD display for zones 1-16.                               |
| D8RY-iO-1 (Note 1) | LED Annunciator module, 16 X 2-LED zones (4 alarm only, 8 supervisory only, 4 alarm or supervisory). Mounts in cabinet to left of LCD display for zones 1-16. |

### Remote Annunciators (refer to Data Sheet 85005-0128)

#### LCD Remote Annunciators (mount to standard 4" square electrical box)

|                    |  |
|--------------------|--|
| RLCD               | Remote Annunciator, 4X20 LCD & Common Indicators for displaying system status. White housing.        |
| RLCD-R             | Remote Annunciator, 4X20 LCD & Common Indicators for displaying system status. Red housing.          |
| RLCD-C             | Remote Annunciator, 4X20 LCD. Common controls and status indicators. White housing.                  |
| RLCD-CR            | Remote Annunciator, 4X20 LCD. Common controls and status indicators. Red housing.                    |
| RLCDF (Note 1)     | Remote Annunciator, 4X20 LCD & Common Indicators for displaying system status. White housing, French |
| RLCD-CF (Note 1)   | Remote Annunciator, 4X20 LCD. Common controls and status indicators. White housing, French           |
| RLCD-SP (Note 2)   | Remote Annunciator, 4X20 LCD. Common system status indicators. White housing. Spanish.               |
| RLCD-PG (Note 2)   | Remote Annunciator, 4X20 LCD. Common system status indicators. White housing. Portuguese.            |
| RLCD-C-SP (Note 2) | Remote Annunciator, 4X20 LCD. Common controls and status indicators. White housing. Spanish.         |
| RLCD-C-PG (Note 2) | Remote Annunciator, 4X20 LCD. Common controls and status indicators. White housing. Portuguese.      |

#### LED Remote Annunciators & Expander (mount to standard 4" square electrical box)

|                    |   |
|--------------------|---|
| RLED-C             | Remote Annunciator. Common controls and status indicators with 16 X 2-LED groups for zone display. White housing.               |
| RLED-CR            | Remote Annunciator. Common controls and status indicators with 16 X 2-LED groups for zone display. Red housing.                 |
| RLED-CF (Note 1)   | Remote Annunciator. Common controls and status indicators with 16 X 2-LED groups for zone display. White housing, French.       |
| RLED-C-SP (Note 2) | Remote Annunciator, common controls and status indicators. 16 groups w/2 LEDs each for zone display. White housing. Spanish.    |
| RLED-C-PG (Note 2) | Remote Annunciator, common controls and status indicators. 16 groups w/2 LEDs each for zone display. White housing. Portuguese. |
| RLED24             | Remote Annunciator Zone expander. 24 X 2-LED groups with custom label areas for display of alarm and trouble. White housing.    |
| RLED24R            | Remote Annunciator Zone expander. 24 X 2-LED groups with custom label areas for display of alarm and trouble. Red housing.      |

#### Remote Annunciator Cabinets & Accessories

|         |  |
|---------|--|
| RA-ENC1 | Remote Annunciator Enclosure, key locked with plexiglass window for one RLCD(C) or RLED(C).                        |
| RA-ENC2 | Remote Annunciator Enclosure, key locked with plexiglass window with space for 2 of either RLCDx, RLEDx or RLED24. |
| RA-ENC3 | Remote Annunciator Enclosure, key locked with plexiglass window with space for 3 of either RLCDx, RLEDx or RLED24. |
| RKEY    | Keyswitch, single gang, provides key operated enable or disable of common controls on RLCD or RLED units.          |
| LSRA-SB | Surface Mount Box - for R Series single units.   |

### Programming Tools

|        |   |
|--------|---|
| iO-CU  | EST Series configuration and diagnostics utility. |
| 260097 | RS232 cable, 4 conductor, DB9 PC interface        |

**Note 1** — Available in Canada only. **Note 2** — Available in International markets.



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## Analog Addressable Devices & Accessories

| Model                                    | Description   | Ship wt.    |
|--|---|-------------|
| <b>Intelligent Detectors &amp; Bases</b> |   |             |
| SIGA-HFS                                 | Intelligent Fixed Temperature Heat Detector - UL/ULC Listed   |             |
| SIGA-HRS                                 | Intelligent Fixed Temperature/Rate-of-Rise Heat Detector - UL/ULC Listed  |             |
| SIGA-IPHS                                | Intelligent 4D Multisensor Detector - UL/ULC Listed   |             |
| SIGA-IPHSB                               | Intelligent 4D Multisensor Detector (Black) - UL/ULC Listed   | 0.5 (0.23)  |
| SIGA-PHS                                 | Intelligent 3D Multisensor Detector - UL/ULC Listed   |             |
| SIGA-PS                                  | Intelligent Photoelectric Detector - UL/ULC Listed  |             |
| SIGA-IS                                  | Intelligent Ionization Detector - UL/ULC Listed   |             |
| SIGA-SD                                  | Intelligent SuperDuct Detector  | 2.4 (1.1)   |
| SIGA-SB                                  | Detector Mounting Base  |             |
| SIGA-SB4                                 | 4-inch Detector Mounting Base c/w SIGA-TS Trim Skirt  |             |
| SIGA-RB                                  | Detector Mounting Base w/Relay  |             |
| SIGA-RB4                                 | 4-inch Detector Mounting Base /w Relay c/w SIGA-TS Trim Skirt   | 0.2 (0.09)  |
| SIGA-IB                                  | Detector Mounting Base w/Fault Isolator   |             |
| SIGA-IB4                                 | 4-inch Detector Mounting Base w/ Fault Isolator c/w SIGA-TS Trim Skirt  |             |
| SIGA-LED                                 | Remote Alarm LED  |             |
| SIGA-AB4G                                | Audible (Sounder) Base  | 0.3 (0.15)  |
| SIGA-TS4                                 | Trim Skirt (supplied with 4-inch bases)   | 0.1 (.04)   |
| <b>Modules</b>                           |   |             |
| SIGA-CC1                                 | Single Input Signal Module (Standard Mount)   | 0.5 (0.23)  |
| SIGA-MCC1                                | Single Input Signal Module (UIO Mount)  | 0.18 (0.08) |
| SIGA-CC1S                                | Synchronization Output Module (Standard Mount)  | 0.5 (0.23)  |
| SIGA-MCC1S                               | Synchronization Output Module (UIO Mount)   | 0.18 (0.08) |
| SIGA-CC2                                 | Dual Input Signal Module (Standard Mount)   | 0.5 (0.23)  |
| SIGA-MCC2                                | Dual Input Signal Module (UIO Mount)  | 0.18 (0.08) |
| 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) |
| SIGA-RM1                                 | Riser Monitor Module (Standard Mount)   | 0.5 (0.23)  |
| SIGA-MRM1                                | Riser Monitor Module (Plug-in)  | 0.18 (0.08) |
| SIGA-IO                                  | Input/Output Module (Standard Mount)  | 0.34 (0.15) |
| SIGA-MIO                                 | Input/Output Module (Plug-in)   | 0.22 (0.10) |
| SIGA-MAB                                 | Universal Class A/B Module (Plug-in)  | 0.18 (0.08) |
| SIGA-CT1                                 | Single Input Module   | 0.4 (0.15)  |
| SIGA-CT2                                 | Dual Input Module   | 0.4 (0.15)  |
| SIGA-MCT2                                | Dual Input Plug-in (UIO) Module   | 0.1 (0.05)  |
| SIGA-IM                                  | Fault Isolator Module   | .5 (.23)    |
| SIGA-MM1                                 | Monitor Module  | 0.4 (.15)   |
| SIGA-WTM                                 | Waterflow/Tamper Module   | 0.4 (.15)   |
| SMK                                      | Smoke Power Converter Module  | 0.4 (0.15)  |
| SIGA-UIO2R                               | Universal Module Board w/Riser Inputs - Two Module Positions  | 0.32 (0.15) |
| SIGA-UIO6R                               | Universal Module Board w/Riser Inputs - Six Module Positions  | 0.62 (0.28) |
| SIGA-UIO6                                | Universal Module Board - Six Module Positions   | 0.56 (0.25) |
| <b>Accessories</b>                       |   |             |
| GCI                                      | Graphic Annunciator Driver, provides outputs for common indicators and 32 alarm/supv zones as well as inputs for common switches. Provided with a snap track for mounting in custom graphic enclosures. |             |
| CTM                                      | City Tie Module. Provides connection to a local energy fire alarm box.  | 0.6 (0.3)   |
| RPM                                      | Reverse Polarity Module   | 3.0 (1.36)  |
| BC-1                                     | Battery Cabinet. 14.0" x 18.25" x 7.25". Holds 2 12V24A batteries.  | 50.0 (22.7) |
| BC-1R                                    | Battery Cabinet - Red. 14.0" x 18.25" x 7.25". Holds 2 12V24A batteries.  | 50.0 (22.7) |
| MFC-A                                    | Multifunction Fire Cabinet, 8" x 14" x 3.5" - RED.  | 20.6 (9.4)  |
| PT-1S                                    | System Printer - Desktop style.   | 36.6 (16.6) |



# R-Series Remote Annunciators

E-RLCD, E-RLCD-C, E-RLED-C, RLED24, GCI



## Overview

Edwards R-Series Annunciators are high-performance remote annunciators that provide status indication and common controls for compatible fire alarm control panels, including E-FSA-Series small analog fire alarm systems. This family of annunciators offers LCD or LED annunciation. Models are available with and without common controls.

There are three R-Series annunciator models, plus an LED-based expander. Up to two expanders can be connected to any annunciator. The expander includes 24 pairs of LEDs that extend the capabilities of any of the annunciators.

All annunciator models include status LEDs and an internal buzzer. Two models have an LCD text display, and one has 16 pairs of LEDs for zone annunciation. LCD models feature a large back-lit, four by twenty character per line, super-twist liquid crystal display.

R-Series annunciators and expanders are mounted on a standard 4-inch square electrical box, using the included mounting ring. They can also be surface mounted in locking steel enclosures. Three different enclosures are available.

A keyswitch and graphic annunciator interface is available for R-Series annunciator applications. The keyswitch enables or disables common controls. The graphic annunciator interface cards supports 32 LEDs and 16 switches on the graphic panel display.

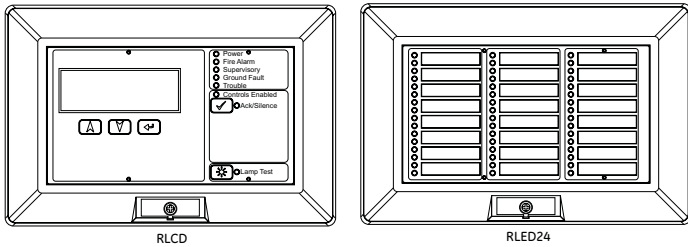
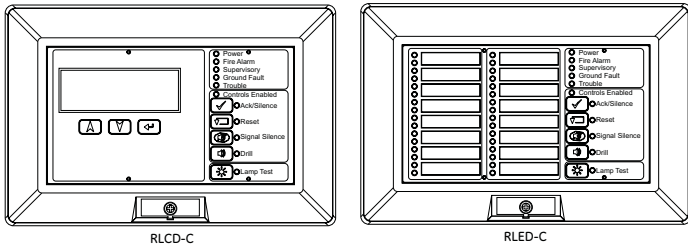
## Features

- LCD models feature large 4 x 20 character backlit LCD display
- LED models provide 16 pairs of LEDs for zone annunciation
- Available expander extends capability with 24 pairs of LEDs
- Up to two expanders may be wired to each annunciator
- Status LEDs and internal buzzer standard on all models
- Common controls available for LED and LCD display models
- Available keyswitch for disabling common controls
- Standard 4-inch square electrical box mounting
- Class B or Class A RS485 wiring standard
- One-, two-, and three-position enclosures available
- Graphic Annunciator interface, includes common control, indicators and 32 LEDs
- No programming required, set the address and unit receives all information from panel

## Application

R-Series annunciators communicate with the FACP on the RS-485 data riser. This can be configured for Class A or Class B communication. Annunciators do not provide ground fault isolation.

These annunciators are stand-alone units that can be powered by the FACP or by an approved power supply.



| Features by model | E-RLCD | E-RLCD-C | E-RLED-C | RLED24 |
|-------------------|--------|----------|----------|--------|
| Reset             | ✓      | ✓        | ✓        | -      |
| Ack/Silence       | ✓      | ✓        | ✓        | -      |
| Fire Alarm        | ✓      | ✓        | ✓        | -      |
| Supervisory       | ✓      | ✓        | ✓        | -      |
| Ground Fault      | ✓      | ✓        | ✓        | -      |
| Trouble           | ✓      | ✓        | ✓        | -      |
| Controls Enabled  | ✓      | ✓        | ✓        | -      |
| Ack/Silence       | ✓      | ✓        | ✓        | -      |
| Reset             | ✓      | ✓        | ✓        | -      |
| Signal Silence    | ✓      | ✓        | ✓        | -      |
| Drill             | ✓      | ✓        | ✓        | -      |
| Lamp Test         | ✓      | ✓        | ✓        | -      |
| LCD Display       | ✓      | ✓        | -        | -      |
| Zone Active LEDs  | -      | -        | 16 *     | 24 **  |
| Zone Trouble LEDs | -      | -        | 16       | 24     |

\* zones 13-16 may be selected as Supervisory on E-FSA64

\*\* zones 13-16 and 29-32 may be selected as Supervisory on E-FSA250

## Graphic Annunciator Interface

The GCI Graphic Annunciator Driver is an interface card that connects the fire alarm control panel to the display panel of an LED-based graphic annunciator.

The annunciator card supports 32 LEDs and 16 switches on the graphic panel display. It includes status LEDs and an internal buzzer.

The graphic interface is supplied with snap track mounting. It is attached to a plastic mounting rail that requires two EIA panels.

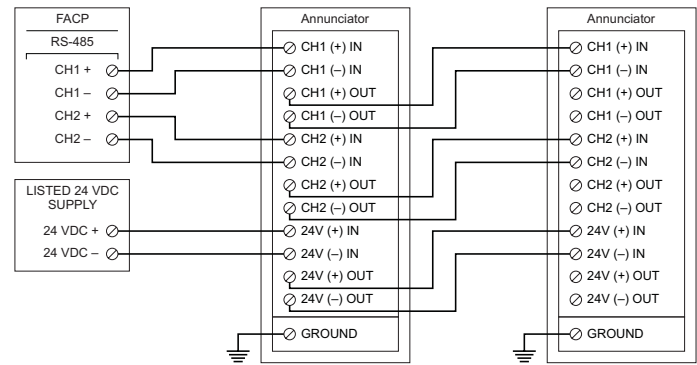
The annunciator communicates with the FACP on the RS-485 data riser. This can be configured for Class A or Class B communication. The annunciator does not provide ground fault isolation. It is a stand-alone unit that can be powered by the FACP or by an approved power supply.

### Graphic Annunciator Interface Specifications

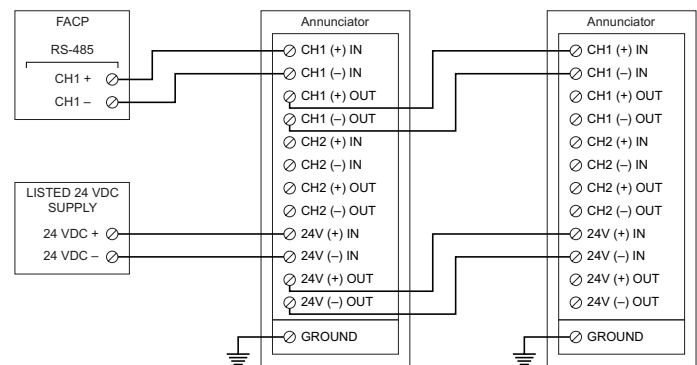
|                 |                                    |
|-----------------|------------------------------------|
| Alarm current   | 146 mA at 24 Vdc (with 36 LEDs ON) |
| Standby current | 36 mA at 24 Vdc (with no LEDs ON)  |
| Maximum current | 10 mA per LED                      |

## Annunciator Wiring

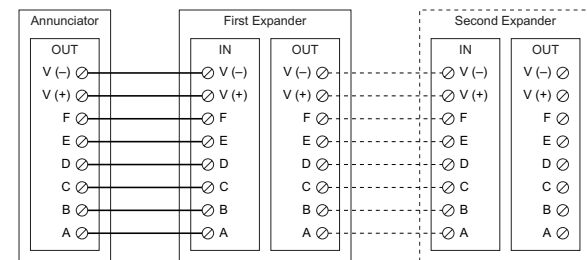
### Annunciator, Class A



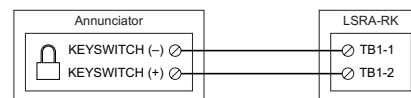
### Annunciator, Class B



### Expander

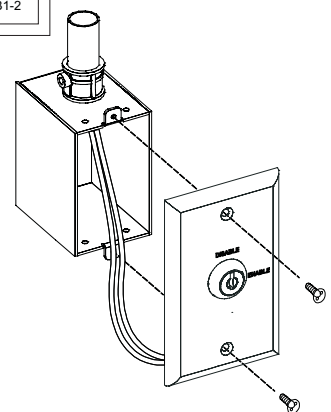


## Remote Keyswitch



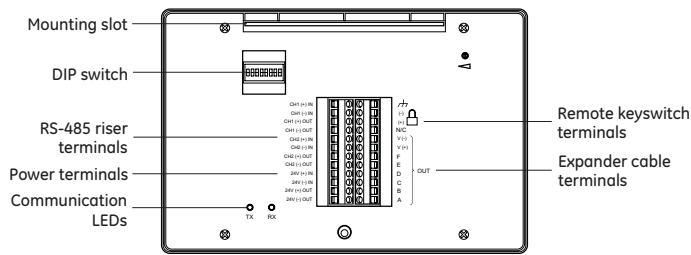
### Keyswitch Specifications

|                       |                                  |
|-----------------------|----------------------------------|
| Maximum voltage       | 5 Vdc                            |
| Maximum current       | 200 mA                           |
| Mounting              | 2-1/2 in (64 mm) deep 1-gang box |
| Termination           | Screw terminals                  |
| Maximum wire size     | 12 AWG (2.5 mm sq)               |
| Contact configuration | Normally open                    |

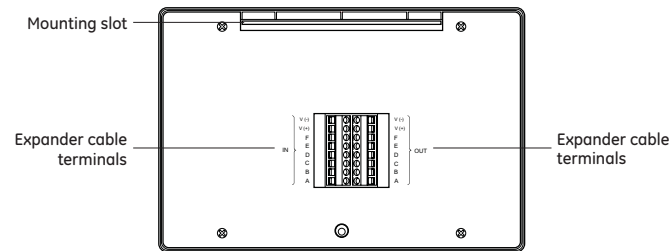


## Annunciator Connections

### Annunciator



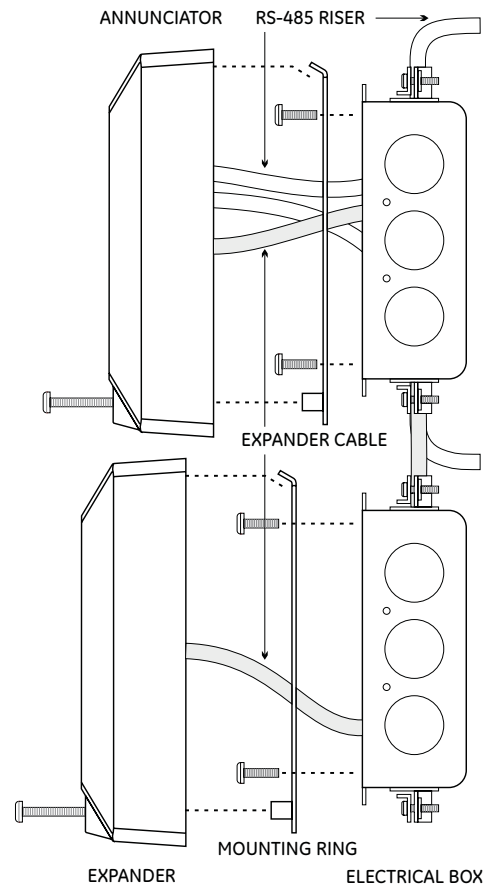
### Expander



### DIP switch settings

| Switch               | Description and values   |
|----------------------|--|
| S1 to S5             | The annunciator network address (in binary).<br>Network address<br>Examples: 10000 = 1 01000 = 2 11000 = 3 00100 = 4 |
| S6 Network baud rate | OFF = 9600 baud (factory default setting)<br>ON = 38,400 baud  |
| S7 to S8             | Not used   |

## Annunciator Mounting

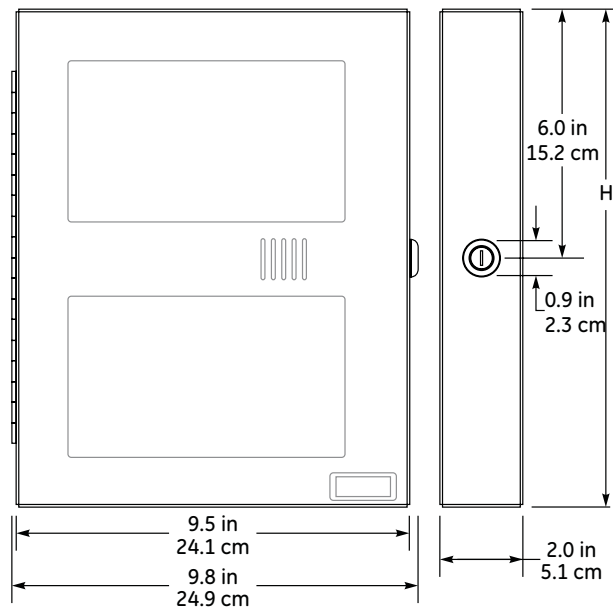
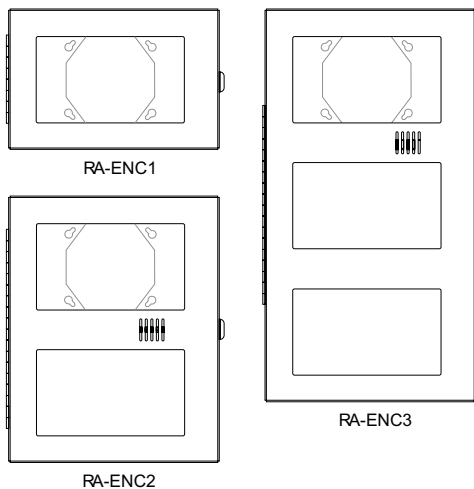


## Annunciator Enclosures

The RA Remote Annunciator Enclosures provide secure, surface mounted protection for annunciators and extenders. Each consists of a back plate, hinged cover, and key lock.

The enclosures are 16-gauge welded steel with a white, painted finish. Each enclosure includes a security lock and two keys. The two- and three-position enclosures have wiring channels for correct routing of interconnections.

The enclosures attach to a standard electrical box, and provide a mounting lip that takes the place of the integral mounting ring supplied with the annunciators and expanders.



### Dimensions (H x W x D)

|         |  |
|---------|--|
| RA-ENC1 | 6.3 x 9.8 x 2.0 in (16.0 x 24.9 x 5.1 cm)  |
| RA-ENC2 | 12.0 x 9.8 x 2.0 in (30.5 x 24.9 x 5.1 cm) |
| RA-ENC3 | 17.7 x 9.8 x 2.0 in (45.0 x 24.9 x 5.1 cm) |

Note: Allow approximately 2 inches (50 cm) clearance on both sides of the enclosure, to permit inserting and removing the key, and opening the door through 90 degrees.



Contact us...

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 Web: [www.edwardssignaling.com](http://www.edwardssignaling.com)

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## Specifications

|                           | E-RLCD-C  | E-RLCD | E-RLED-C | RLED24 |
|---------------------------|---|--------|----------|--------|
| Operating voltage         | 24 VDC, continuous.   |        |          |        |
| Standby current           | 99 mA   | 98 mA  | 28 mA    | 6 mA   |
| Alarm current             | 115 mA  | 113 mA | 62 mA    | 34 mA  |
| RS-485 communications     | Class A or Class B, 9600 baud   |        |          |        |
| Data wiring               | 18 to 14 AWG (1.0 to 2.5 sq mm) twisted pair (6 twists per foot minimum). Maximum wire run is 4,000 ft. (1,219 m) |        |          |        |
| Remote key switch circuit | 5 VDC at 1 mA, power-limited, unsupervised  |        |          |        |
| Ground fault impedance    | 0   |        |          |        |
| Power wiring              | 18 to 14 AWG (1.0 to 2.5 sq. mm)  |        |          |        |
| Display area              | 4 lines of 20 characters each   |        |          |        |
| Dimensions (H x W x D)    | 5-5/8 x 8-1/2 x 1-1/2 in. (14.3 x 21.4 x 3.8 cm)  |        |          |        |
| Mounting                  | North American 4-inch square electrical box or listed enclosure   |        |          |        |
| Agency Listing            | UL, ULC   |        |          |        |
| Operating environment     | Temperature: 32 to 120°F (0 to 49°C) Humidity: 0 to 93% RH, noncondensing at 90°F (32°C)                          |        |          |        |

## Ordering Information

| Part                               | Description   |
|------------------------------------|---|
| <b>Remote Annunciators</b>         |   |
| E-RLCD                             | LCD text annunciator without common controls. English.  |
| E-RLCD-C                           | LCD text annunciator with common controls. English.   |
| E-RLED-C                           | 16-pair LED zone annunciator with common controls. English.   |
| <b>Remote Expanders</b>            |   |
| RLED24                             | 24-pair LED zone expander with expander cable and zone card insert.   |
| <b>Enclosures</b>                  |   |
| RA-ENC1                            | One-position enclosure for Remote Annunciator.  |
| RA-ENC2                            | Two-position enclosure for Remote Annunciator and one Remote Expander, including one interconnection cable.   |
| RA-ENC3                            | Three-position enclosure for Remote Annunciator and two Remote Expanders, including two interconnection cables.   |
| LSRA-SB                            | Surface Mount Box - for single R Series annunciator.  |
| <b>Graphic Annunciator Drivers</b> |   |
| GCI                                | Graphic Annunciator Driver, provides outputs for common indicators and 32 alarm/supv zones as well as inputs for common switches. Provided with a snap track for mounting in custom graphic enclosures. |
| <b>Accessories</b>                 |   |
| RKEY                               | Remote key switch on plate for enabling or disabling common controls (Lock/Unlock).   |
| 27193-16                           | Electrical box, surface mount, white, single-gang, for RKEY.  |



LIFE SAFETY &amp; INCIDENT MANAGEMENT

# Temporal Horns and Horn-strobes

## 757 Series



Patented



ME A



### 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 (2.5mm<sup>2</sup>) 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

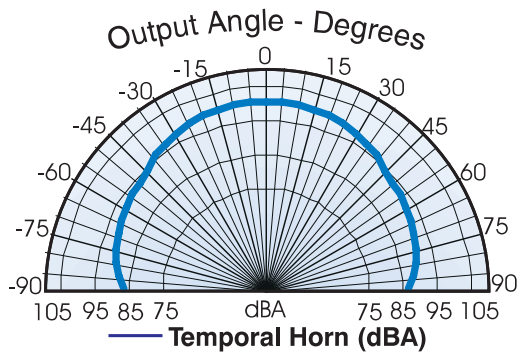
**NOTE:** The installation of visible and audible signals are subject to national and local standards, codes, and ordinances. Consult your Authority Having Jurisdiction for device installation requirements, application standards, and minimum performance specifications.

### 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.

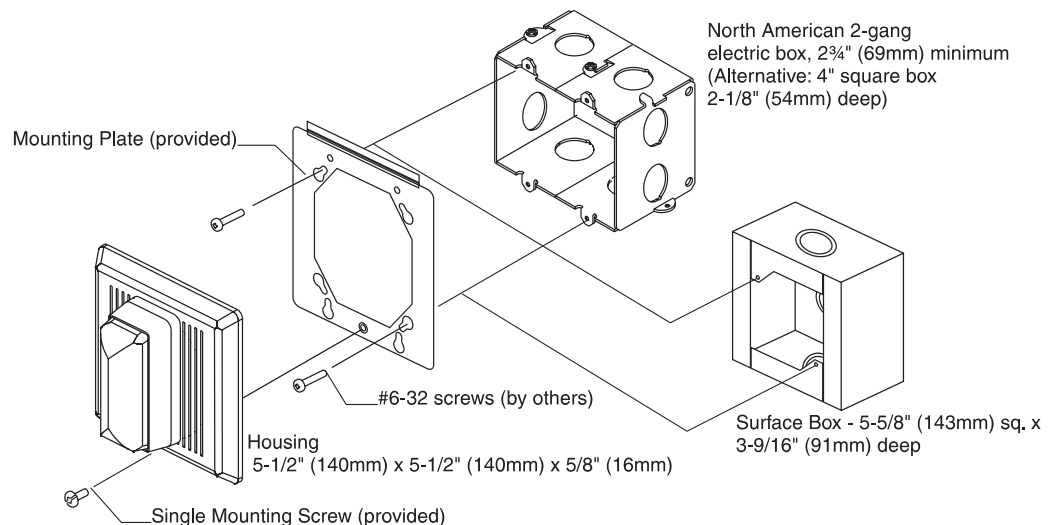
Integrity strobes are fully compatible with EDWARDS Genesis signals.

**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.

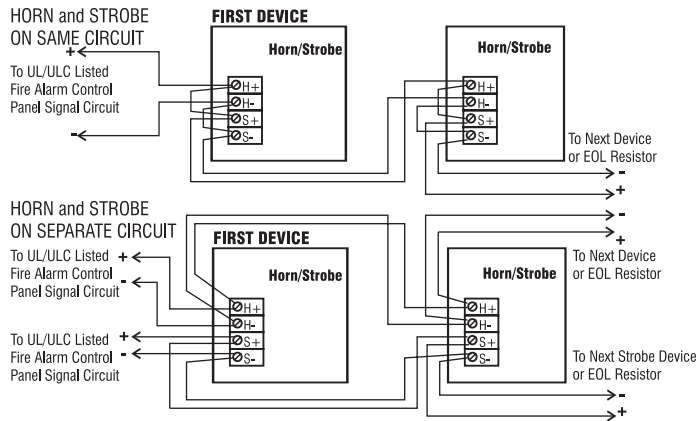
## Installation and Mounting

All models fit to a standard flush mounted, North-American two-gang electrical box, 2 $\frac{3}{4}$  inch (69 mm) minimum. Optional flush trims are not required. For surface mount, use EDWARDS'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

1. Current values are shown in mA.
2. UL Nameplate Rating can vary from Typical Current due to measurement methods and instruments used.
3. EDWARDS 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

## 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   |

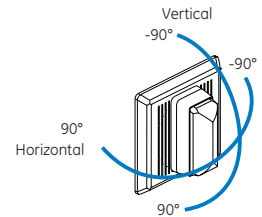
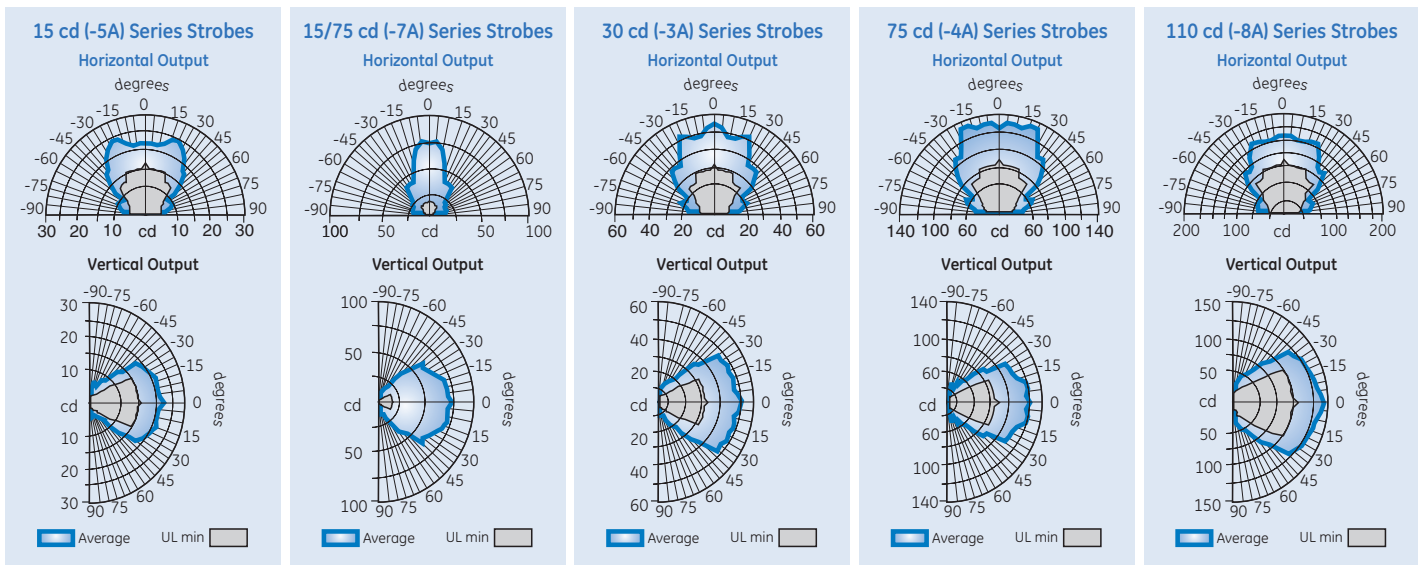
determines the heating affect and therefore, the trip and hold threshold for those

| 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<br>15 cd ceiling | 30 cd wall<br>15 cd ceiling | 75 cd wall<br>60 cd ceiling | 110 cd wall<br>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<br>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)<br>Reverberant: High Setting - 85 dBA (continuous)/82 dBA (temporal);<br>Low Setting - 82 dBA (continuous)/75 dBA (temporal)  |                         |                             |                             |                             |                              |
| Horn Current  | High Output: 40 mA @ 24 Vdc; 55mA @ 24 Vrms FWR<br>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 <sup>2</sup> ) 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<br>(757-4A: rated at 48 cd @ -35° C per UL/@ -40° C per ULC)<br>(757-7A: rated at 17.7 cd @ -35° C per UL/@ -40° C per ULC)<br>(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 <sup>3</sup> / <sub>4</sub> " (69 mm) minimum<br>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<br>(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: ½ sec ON, ½ sec OFF, ½ sec ON, ½ sec OFF, ½ sec ON, 1½ 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) |
|--------------------------------|--|--------------------|
| <b>Temporal Horns</b>          |  |                    |
| 757-1A-T*                      | Temporal Horn, Red   | 1.7 (0.8)          |
| <b>Temporal Horn-Strobes</b>   |  |                    |
| 757-7A-T*                      | Temporal Horn-Strobe, 15/75cd, Red                             |                    |
| 757-5A-T*                      | Temporal Horn-Strobe, 15cd, Red                                |                    |
| 757-3A-T*                      | Temporal Horn-Strobe, 30cd, Red                                | 2.0 (0.9)          |
| 757-4A-T*                      | Temporal Horn-Strobe, 75cd, Red                                |                    |
| 757-8A-T*                      | Temporal Horn-Strobe, 110cd, Red                               |                    |
| <b>Synchronization Sources</b> |  |                    |
| 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)          |
| <b>Mounting Accessories</b>    |  |                    |
| 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.

| <b>Lens Marking Kits (see note 1)</b> |                                     |
|---------------------------------------|-------------------------------------|
| LKW-1                                 | "FIRE", Wall Orientation (supplied) |
| 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           |
| LKW-10                                | "ALERT", Wall Orientation           |

0.1 (.05)

Add Suffix "W" to catalog no. for WHITE. (e.g. 757-7A-TW)  
Change "W" to "C" for CEILING mount. (e.g. LKC-1)



LIFE SAFETY & INCIDENT MANAGEMENT

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Web: [edwards-fire.com](http://edwards-fire.com)

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Mebane, NC 27302

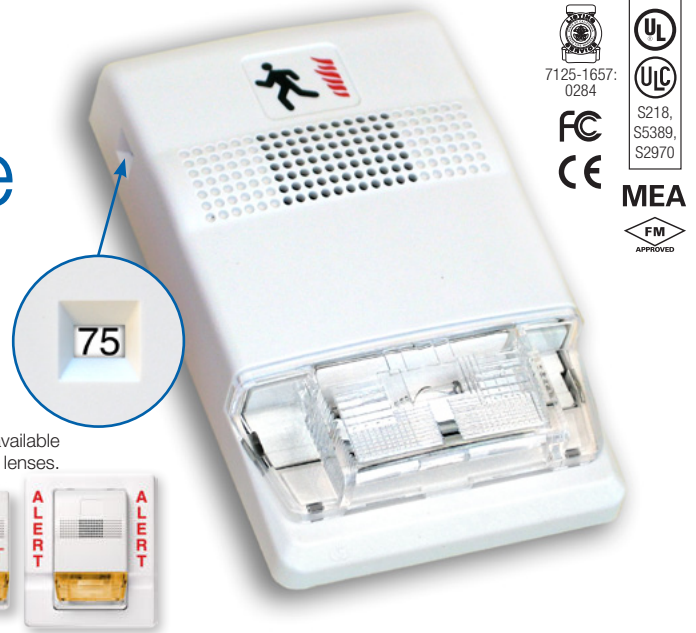
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# Field Configurable Horns and Strobes

## Genesis Series



ECS/MNS appliances available with clear or amber lenses.



### Overview

The Genesis line of fire alarm and mass notification/emergency communications (ECS/MNS) 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 selectable candela output by means of 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 ECS/MNS 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**
- **ECS/MNS 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
  - Independent horn control over a single pair of wires
  - Highly regulated in-rush current
  - Multiple frequency tone improves sound penetration
  - Field-programmable temporal strobe output option

## 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.

**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 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.

## ECS/MNS Applications

Genesis ECS/MNS strobe 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.

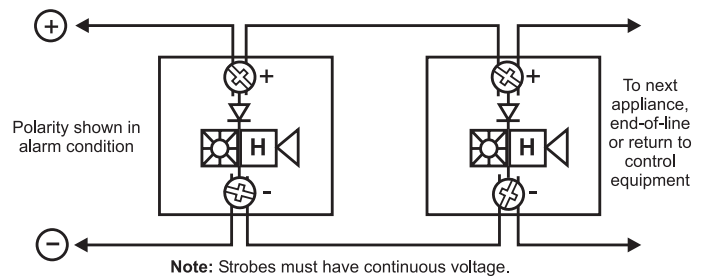
Genesis clear strobes and horn-strobes are shipped from the factory ready for use as **UL 1971 compliant** signals for public mode operation. These signals may be configured for **temporal flash** by cutting a jumper on the circuit board. This battery-saving feature is intended for private mode signaling 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 mm<sup>2</sup> to 2.5 mm<sup>2</sup>) 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*<br>RMS | 30 cd*<br>RMS | 15/75 cd**<br>RMS | 75 cd*<br>RMS | 110 cd*<br>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<br>RMS | 30 cd<br>RMS | 15/75<br>RMS | 75 cd<br>RMS | 110 cd<br>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*<br>RMS | 30 cd*<br>RMS | 15/75 cd**<br>RMS | 75 cd*<br>RMS | 110 cd*<br>RMS |                              |
|-----------|---------------|---------------|-------------------|---------------|----------------|------------------------------|
| 16 Vdc    | 129           | 167           | 172               | 281           | 337            | *G1-HDVM multi-cd            |
| 16 Vfwr   | 176           | 230           | 269               | 397           | 443            | **G1F-HDV1575 fixed 15/75 cd |

| Typical Current | 15 cd<br>RMS | 30 cd<br>RMS | 15/75<br>RMS | 75 cd<br>RMS | 110 cd<br>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*<br>RMS | 30 cd*<br>RMS | 15/75 cd**<br>RMS | 75 cd*<br>RMS | 110 cd*<br>RMS |                              |
|-----------|---------------|---------------|-------------------|---------------|----------------|------------------------------|
| 16 Vdc    | 122           | 160           | 146               | 274           | 330            | *G1-HDVM multi-cd            |
| 16 Vfwr   | 162           | 216           | 231               | 383           | 429            | **G1F-HDV1575 fixed 15/75 cd |

| Typical Current | 15 cd<br>RMS | 30 cd<br>RMS | 15/75<br>RMS | 75 cd<br>RMS | 110 cd<br>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  |

Current values are shown in mA.

## 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)

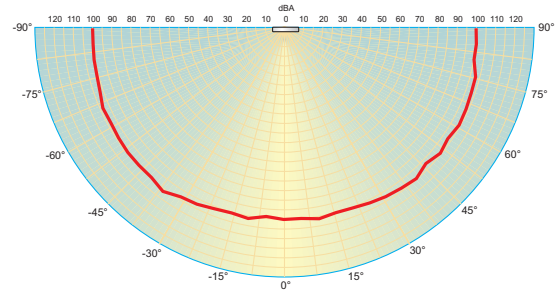
|         | UL464       | Average | Peak   |
|---------|-------------|---------|--------|
| 16 Vdc  | 77 dBA, min | 85 dBA  | 91 dBA |
| 16 Vfwr | 77 dBA, min | 85 dBA  | 91 dBA |

#### Notes

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

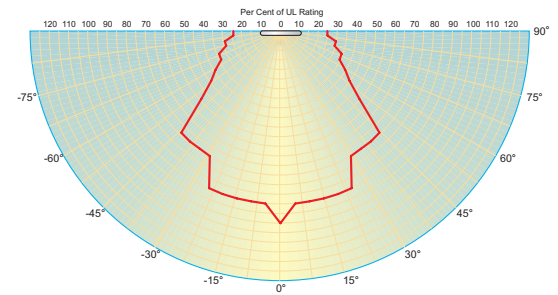
## Average Sound Output (dBA)

(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.<br>Flush mount: 2½ inch (64 mm) deep one-gang box<br>Surface mount: Model 27193 surface mount box, wiremold box, or equivalent surface-mount box<br>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 <sup>2</sup> to 2.5 mm <sup>2</sup> ) wire size  |
| Operating environment     | Indoor only: 32-120°F (0-49°C) ambient temperature. 93% relative humidity  |
| Agency listings/approvals | UL 1971 (S218), UL 1638 (S218), UL 464 (S218), ULC S525, ULC S526, CSFM, CE, FCC, MEA.<br>(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)<br>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)<br>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)<br>G1-VM series strobes: non-coded, filtered 16 - 33 Vdc or unfiltered 16-33 Vdc FWR<br>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<br>UL 1971: 15 cd (fixed 15/75 cd models)<br>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. 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<br>BPS6A, BPS10A, APS6A, APS10A, iO64, iO500, Firesfield Plus 3, 5 and 10 zone.<br>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. 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  |

## Candela Output

| Lens Color | Rating   | Switch Position A | Switch Position B | Switch Position C | Switch Position D |
|------------|----------|-------------------|-------------------|-------------------|-------------------|
| Amber      | UL 1638  | 110 cd            | 75 cd             | 30 cd             | 15 cd             |
| Amber      | UL 1971* | 88 cd             | 60 cd             | 24 cd             | 12 cd             |
| Clear      | UL 1971  | 110 cd            | 75 cd             | 30 cd             | 15 cd             |

\* Equivalent Rating

Fire appliances available with white or red housings.



ECS/MNS appliances available with clear or amber lenses.



## Ordering Information

| Model | Housing | Marking | Lens | Strobe | Horn | Ship Wt. lbs (kg) |
|-------|---------|---------|------|--------|------|-------------------|
|-------|---------|---------|------|--------|------|-------------------|

### 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 <sup>1</sup>                                   | Temporal hi/lo dB-24V  | 0.25 (0.11) |
| G1F-HDVM     | White | FIRE | 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 <sup>1</sup>                                   | 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 <sup>1</sup>                                   | Temporal hi/lo dB-24V  | 0.25 (0.11) |
| G1RF-HDVM    | Red   | FIRE | 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 <sup>1</sup>                                   | 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) |

### ECS/MNS Appliances (no running man icon on housing)

|          |       |       |       |                                  |             |             |
|----------|-------|-------|-------|----------------------------------|-------------|-------------|
| 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-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) |

### 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) |

<sup>1</sup> 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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LIFE SAFETY &amp; INCIDENT MANAGEMENT

# Genesis LED G4 Series

## Wall Mount Notification Devices



### Overview

Genesis LED G4 Series horns and LED strobes feature a sleek low profile design and energy-efficient technology that makes them less expensive to install and operate by reducing overhead. High performance LEDs require fewer power supplies, backup power, and batteries. These new appliances are designed with, energy-efficiency, and life safety in mind.

Genesis LED G4 Series uses high efficiency optics, combined with patented electronics, to deliver a highly controlled and efficiently focused light distribution pattern in exchange for lower current requirements. Strobes feature field-selectable 15, 30, 75, or 110 cd light output.

Compared with Xenon-type strobes, Genesis LED G4 Series appliances need fewer power supplies and often smaller wire gauge, which lightens conduit requirements. They are also backwards compatible with legacy strobes, so there's no need to replace all your existing devices to upgrade to new LED technology. In fact, G4 strobes can be mixed on the same circuit and used in the same field of view as Xenon-based strobes. This makes Genesis LED G4 Series ideal for new installations and retrofits alike.

Field-configurable sound output levels provide the flexibility modern life safety projects demand, while the Genesis LED control protocol keeps multiple strobes on compatible NAC circuits synchronized to well within NFPA 72 requirements.

Serviceability is another area where G4 Series appliances shine. The universal room side wiring plate allows for pre-installation and electrical wiring as well as checking continuity with the included diagnostics check bar. G4 Series devices can then be easily snapped into place with the confidence of knowing the wiring is correct. The innovative under-cover diagnostic test points provide easy access to device circuit testing while mounted.

### Standard Features

- **High Performance LED Strobe Technology**
  - Ultra low device current consumption allows:
    - More devices per circuit
    - Ability to use lower gauge wire
    - Longer wire runs
    - Fewer booster power supplies
  - High efficiency optics
  - Selectable 15, 30, 75, or 110 cd light output
  - LED devices may be mixed with legacy Xenon strobes
- **Efficient Audible Output**
  - Selectable high or low dB horn output
  - Selectable temporal or steady horn output
  - Improved audio frequency range for better wall penetration
- **Low-profile Design**
  - Ultra-slim... protrudes about 1.5" from the mounting surface
  - Attractive appearance... no visible mounting screws
- **Multiple "FIRE" Marking Options**
  - Order English, French, Spanish or no FIRE markings
  - Change markings at any time with replaceable quick-swap covers
- **Easy to Install**
  - Pre-install and pre-wire with convenient universal room side wiring plate
  - Check electrical continuity on room side wiring plate with included diagnostics check bar
  - Diagnostics port streamlines device circuit testing
  - Fits 1-gang, 2-gang, 3.5-inch octagon, and 4-inch square electrical boxes
  - Optional red and white trim plates available
  - Slide switches for field configuration
  - 12 to 18 AWG in-out screw terminals for quick wiring

# Application

## Strobes

Genesis G4 Series 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 (87 dBA in Canada), where occupants use hearing protection, and in areas of public accommodation as defined in the *Americans with Disabilities Act*.

Synchronization is important in order to avoid triggering seizures in people with photosensitive epilepsy. All Genesis strobes exceed UL synchronization requirements (within 10 milliseconds over a two-hour period) when used with a synchronization source. See the specifications table for a list of compatible sources.

## Horns

Genesis horn output reaches as high as 92 dBA and features an improved audio frequency range compared with other Genesis horns. This results in excellent sound penetration through walls and a clear warning of danger. Horn only models may be configured for either coded or non-coded notification appliance circuits. They can also be set for high or low dBA output. This setting reduces horn output by about 6 dBA. Horn-only models may be ceiling-mounted or wall-mounted.

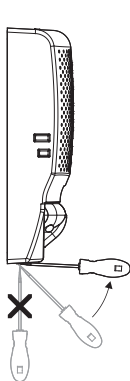
The suggested sound pressure level for each signaling zone used with alarm signals is at least 15 dBA above the average ambient sound level, or 5 dBA above the maximum sound level having a duration of at least 60 seconds, whichever is greater. These values are measured at five feet (1.5 m) above the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

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

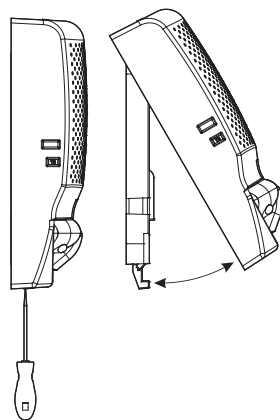
## Installation

Genesis G4 horns and strobes mount to the required GP10 room side wiring plate. The GP10 mounting plate is ordered separately from the G4 device in packs of 10 for convenient pre-installing and pre-wiring. The device can be removed easily from the room side wiring plate by pushing up with a screwdriver. The cover can also be removed from the device easily with a screwdriver to access the light and sound output settings and a diagnostics test port for voltage testing.

Removing Cover

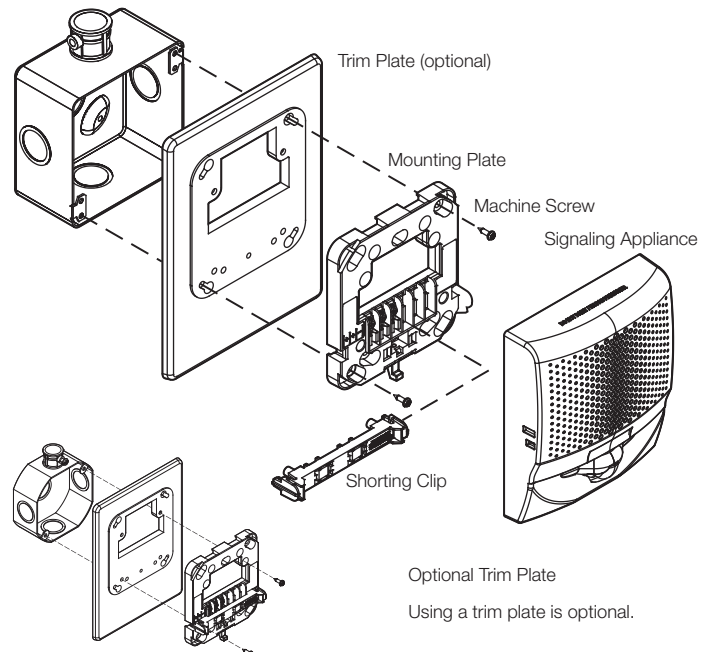


Removing Device

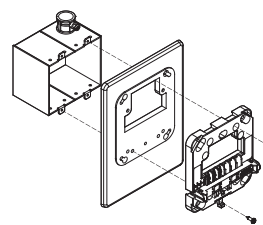


Genesis LED G4 Series horns, strobes, and horn-strobes mount to any standard one-gang, two-gang, 3.5-inch octagon, and 4-inch square electrical box. Matching optional G4T trim rings are available to cover oversized openings. Optional color matched double-gang surface boxes are also available.

Double Gang Electrical Box

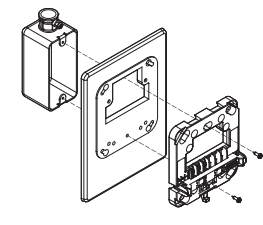


3.5-inch Octagon Electrical Box



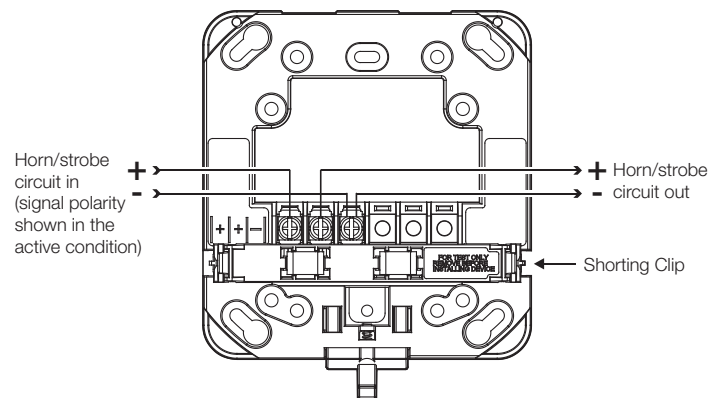
Two-gang Electrical Box

Optional Trim Plate  
Using a trim plate is optional.



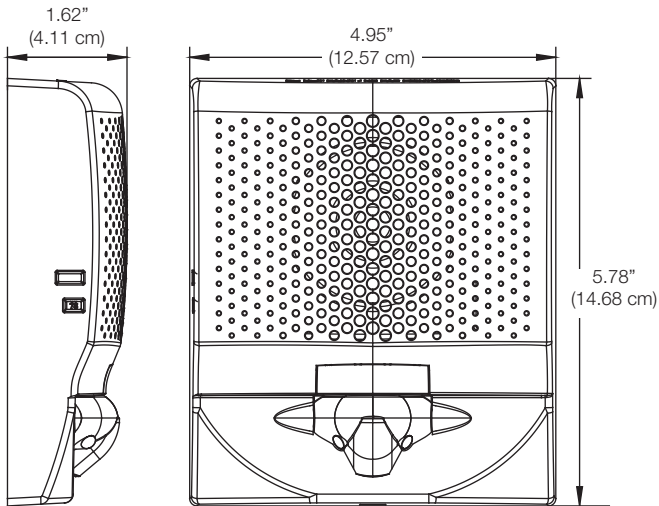
One-gang Electrical Box

## Wiring

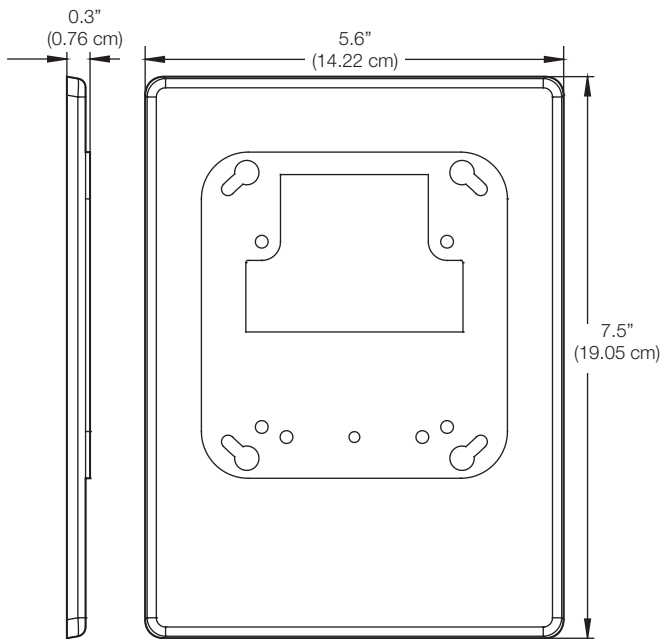


## Dimensions

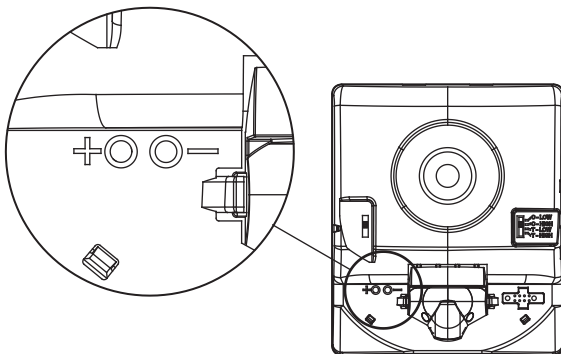
### G4 Notification Appliances



### G4T Trim Plate (optional)



## Diagnostics



Test points indicated above are used to validate the Notification Appliance Circuit and verify device function.

## Field Configuration

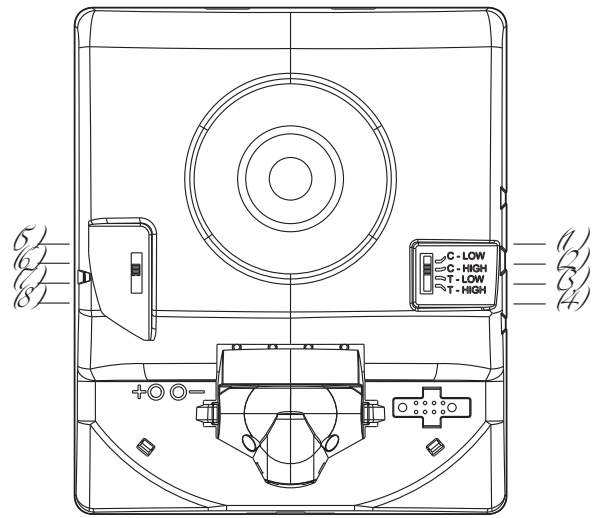
Temporal horn and horn-strobe models are factory set to sound in a three-pulse temporal pattern. By sliding the tone selector switch, horn only models may be configured for constant horn output that can be coded at precise intervals by EDWARDS control panels and control modules.

**Note:** Temporal 3 coding is the required output for fire notification devices per NFPA 72. Any device coding other than temporal 3 is at the discretion and approval of the local authority having jurisdiction (AHJ).

Horns and horn-strobes are factory set for high dB output. Low dB output may be selected by sliding the tone selector switch. This reduces the output by about 6 dBA.

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

### Light and Sound Output Settings



- (1) Constant, low dB
- (2) Constant, high dB
- (3) T3 temporal, low dB
- (4) T3 temporal, high dB
- (5) 110 candela
- (6) 75 candela
- (7) 30 candela
- (8) 15 candela

## Operating current

### Horns

| Sound setting  | 16 to 33 VDC | 16 to 33 VFWR |
|----------------|--------------|---------------|
| C-Low, T-Low   | 18 mA        | 22 mA         |
| C-High, T-High | 28 mA        | 38 mA         |

### Strobes

| Strobe setting  | 16 to 33 VDC | 16 to 33 VFWR |
|-----------------|--------------|---------------|
| 15, 30, 75, 110 | 28 mA        | 36 mA         |

### Horn-Strobes

| Strobe setting  | Sound setting  | 16 to 33 VDC | 16 to 33 VFWR |
|-----------------|----------------|--------------|---------------|
| 15, 30, 75, 110 | C-Low, T-Low   | 40 mA        | 48 mA         |
|                 | C-High, T-High | 50 mA        | 60 mA         |

## Sound Output

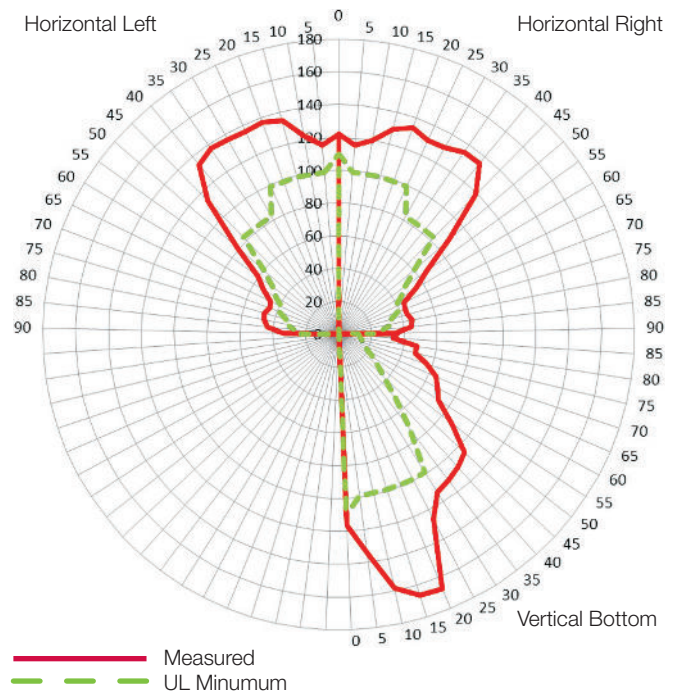
### Horn & Horn-Strobe

| Sound setting  | Reverberant (UL464) | Anechoic (CAN/ULC - 5925) |
|----------------|---------------------|---------------------------|
| C-Low, T-Low   | 80 dBA              | 86 dBA                    |
| C-High, T-High | 85 dBA              | 92 dBA                    |

### Sound pattern (ULC)

| Axis       | Angle        | Change in output |
|------------|--------------|------------------|
| Horizontal | 135° and 45° | -3 dBA           |
|            | 150° and 30° | -6 dBA           |
| Vertical   | 135° and 40° | -3 dBA           |
|            | 150° and 30° | -6 dBA           |

## Light Distribution




## Specifications


|                                 |  |
|---------------------------------|--|
| Operating voltage               | 16 to 33 VDC, 16 to 33 VFWR  |
| Horn signal type                | Constant or TC3 temporal   |
| Light output                    | 15, 30, 75, or 110 candela   |
| Strobe flash rate               | 1 fps (flash per second) approx.   |
| Synchronization                 | 20 Ω max. between any two devices. To determine allowed wire resistance, refer to these specifications, and the specifications for the synchronized signal source. |
| Synchronization Sources         | Edwards CC Series Signal Modules, Booster and Auxiliary Power Supplies, Intelligent and Conventional Control Panels  |
| Wire size                       | 12 to 18 AWG (0.75 to 2.50 mm <sup>2</sup> )   |
| Dimensions (W×H×D)              | 4.95 x 5.78 x 1.62 in (12.57 x 14.68 x 4.11 cm)  |
| Strobe-to-box center offset     | -1.70 inches (-4.32 cm)  |
| Compatible electrical boxes [1] | 1-gang, 2-gang, 3.5-inch octagon, 4-inch square  |
| Trim plates                     | G4TR, G4TW (5.6 x 7.5 x 0.3 in (14.22 x 19.05 x 0.76 cm))  |
| Operating environment           |  |
| Temperature                     | 32 to 122°F (0 to 50°C)  |
| Relative humidity               | 0 to 93% noncondensing   |
| Storage Temperature             | -40 to 158 F (-40 to 70 C)   |

[1] Electrical boxes must be at least 1-1/2 in. (3.81 cm) deep.

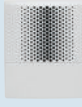
# Ordering Information


FOR REFERENCE ONLY


| Notification Appliances   | Color    | Marking     |
|---|----------|-------------|
| <br><b>Horns</b> | G4ARF    | Red FIRE    |
|   | G4ARF-FR | Red FEU     |
|   | G4ARF-SP | Red FUEGO   |
|   | G4ARN    | Red None    |
|   | G4AWF    | White FIRE  |
|   | G4AWF-FR | White FEU   |
|   | G4AWF-SP | White FUEGO |
|   | G4AWN    | White None  |

|   |          |             |
|---|----------|-------------|
| <br><b>Strobes</b> | G4VRF    | Red FIRE    |
|   | G4VRF-FR | Red FEU     |
|   | G4VRF-SP | Red FUEGO   |
|   | G4VRN    | Red None    |
|   | G4VWF    | White FIRE  |
|   | G4VWF-FR | White FEU   |
|   | G4VWF-SP | White FUEGO |
|   | G4VWN    | White None  |




|  |           |             |
|--|-----------|-------------|
| <br><b>Horn-strobes</b> | G4AVRF    | Red FIRE    |
|  | G4AVRF-FR | Red FEU     |
|  | G4AVRF-SP | Red FUEGO   |
|  | G4AVRN    | Red None    |
|  | G4AVWF    | White FIRE  |
|  | G4AVWF-FR | White FEU   |
|  | G4AVWF-SP | White FUEGO |
|  | G4AVWN    | White None  |

| Replacement Appliance Covers  | Color        | Marking     |
|---|--------------|-------------|
| <br><b>Horn Covers</b> | G4ARA-CVR    | Red ALERT   |
|   | G4ARF-CVR    | Red FIRE    |
|   | G4ARF-FR-CVR | Red FEU     |
|   | G4ARF-SP-CVR | Red FUEGO   |
|   | G4ARN-CVR    | Red None    |
|   | G4AWA-CVR    | White ALERT |
|   | G4AWF-CVR    | White FIRE  |
|   | G4AWF-FR-CVR | White FEU   |
|   | G4AWF-SP-CVR | White FUEGO |
|   | G4AWN-CVR    | White None  |

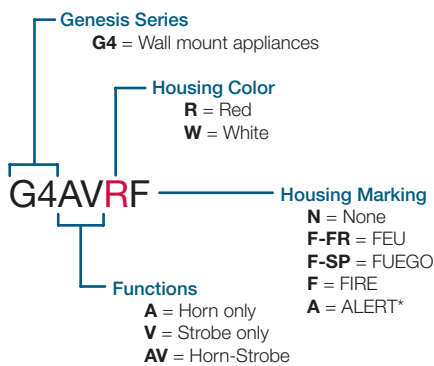
|   |              |             |
|---|--------------|-------------|
| <br><b>Strobe Covers</b> | G4VRA-CVR    | Red ALERT   |
|   | G4VRF-CVR    | Red FIRE    |
|   | G4VRF-FR-CVR | Red FEU     |
|   | G4VRF-SP-CVR | Red FUEGO   |
|   | G4VRN-CVR    | Red None    |
|   | G4VWA-CVR    | White ALERT |
|   | G4VWF-CVR    | White FIRE  |
|   | G4VWF-FR-CVR | White FEU   |
|   | G4VWF-SP-CVR | White FUEGO |
|   | G4VWN-CVR    | White None  |

|  |               |             |
|--|---------------|-------------|
| <br><b>Horn-strobe Covers</b> | G4AVRA-CVR    | Red ALERT   |
|  | G4AVRF-CVR    | Red FIRE    |
|  | G4AVRF-FR-CVR | Red FEU     |
|  | G4AVRF-SP-CVR | Red FUEGO   |
|  | G4AVRN-CVR    | Red None    |
|  | G4AWA-CVR     | White ALERT |
|  | G4AVWF-CVR    | White FIRE  |
|  | G4AVWF-FR-CVR | White FEU   |
|  | G4AVWF-SP-CVR | White FUEGO |
|  | G4AVWN-CVR    | White None  |

## Accessories

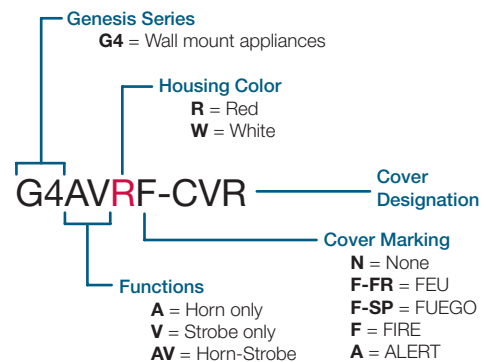
|   |      |   |   |                                 |                            |   |                                   |                              |
|---|------|---|---|---------------------------------|----------------------------|---|-----------------------------------|------------------------------|
|  | GP10 | Room Side Wiring Plate (required, ordered separately) |  | G4TR                            | Trim plate, G4 Series, red |  | G4TW                              | Trim plate, G4 Series, white |
|   |      |   | 27193-21  | Two-gang surface mount box, red |                            | 27193-26  | Two-gang surface mount box, white |                              |

## Model Number Syntax, Appliances



\* ALERT Marking available on white strobe model only. See replacement covers for more options.

## Model Number Syntax, Replacement Covers





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# 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 (0.75mm<sup>2</sup>) to #12 AWG (2.5mm<sup>2</sup>) 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.

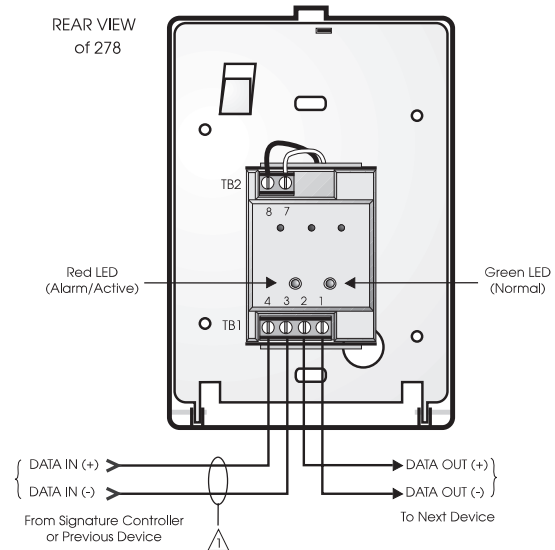


Figure 4. Single Stage Systems

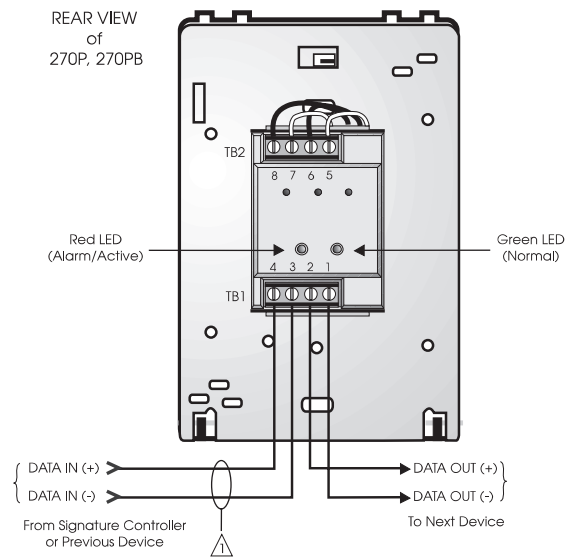


Figure 5. Two Stage Systems



## 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 mm<sup>2</sup> to 0.75 mm<sup>2</sup>) 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.

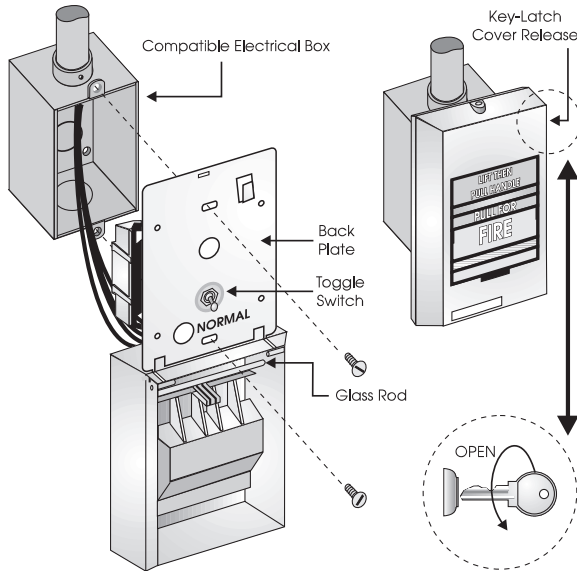


Figure 1. SIGA-278 installation

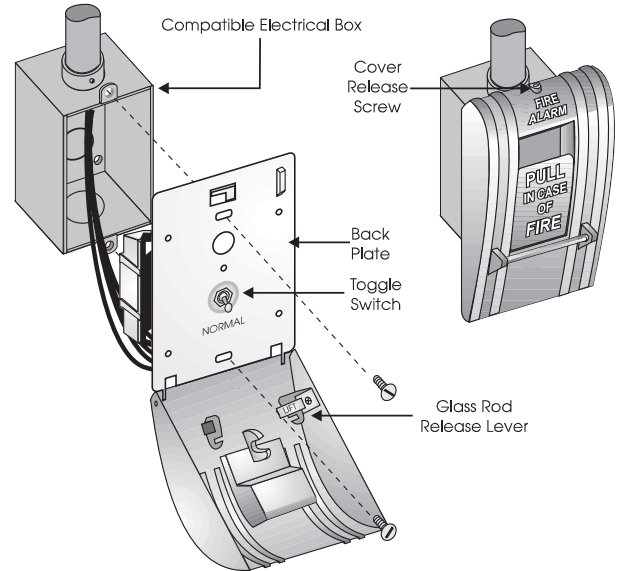


Figure 2. SIGA-270, SIGC-270F, SIGC-270B installation

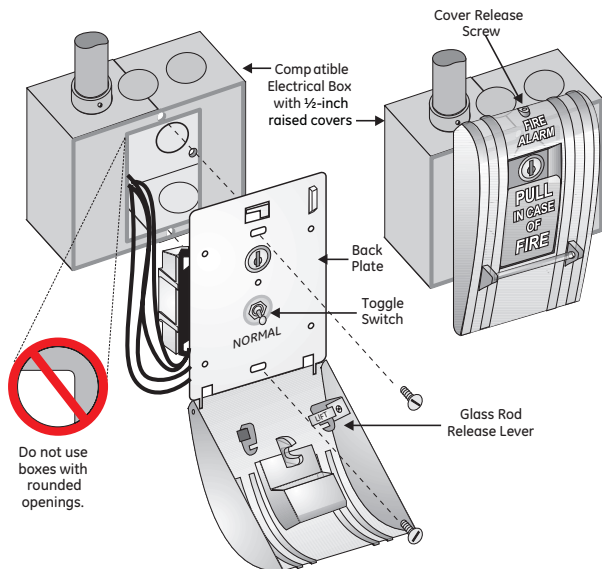


Figure 3. SIGA-270P, SIGC-270PB installation



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## 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<br>Activated = 400µA  | Standby = 396µA<br>Activated = 680µA  | Standby = 250µA<br>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)<br>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<br>On-board Red LED - Flashes when in alarm<br>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                 |                   |
| 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     | 1 (0.5)           |
| 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)     |           |
| 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)       | 0.1 (.05) |
| 270-GLR  | 20 Glass Rods - for SIGA-270 series (USA ONLY)          |           |
| 276-GLR  | 20 Glass Rods - for SIGA-278 series                     |           |
| 276B-RSB | Surface Mount Box, Red - for SIGA pull stations         | 1 (0.6)   |

# Intelligent Smoke Detector

## SIGA-PD



### Overview

The Signature Series SIGA-PD optical smoke detector brings 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 environmental compensation helps reduce maintenance costs.

Like all Signature Series detectors, the SIGA-PD is an intelligent device that gathers analog information from its optical sensor, 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.

### 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.

- Next Generation Optical Smoke Sensing Technology
- Wide 0.53 to 3.94 %/ft. (1.7 to 12.35 %/m) smoke obscuration
- Uses Existing Wiring
- Automatic Device Mapping
- Up To 250 Total Signature Addresses 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
- Identification of Dirty or Defective Detectors
- Automatic Day/Night Sensitivity Adjustment
- Bicolor (Green/Red) Status Led
- Standard, Relay, Fault Isolator, and Audible Mounting Bases
- Sensor Markings Provide Easy Testing Identification

## Application

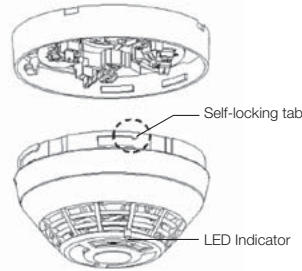
The SIGA-PD detects extremely small particles of combustion and triggers an alarm at the first sign of smoke. Thanks to its high-performance forward-scattering reflective response technology, the photoelectric smoke sensor responds quickly and reliably to a wide range of fire types, especially slow burning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

## Compatibility

The SIGA-PD detector is compatible only with the Signature Loop Controller.

## 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.



## Sensing and reporting technology

The microprocessor in each detector provides additional benefits - Self-diagnostics and History Log, Automatic Device Mapping, 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.

**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.

## 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 may 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.

## 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 inch 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.

**Sounder Bases** - Signature Series sounder bases are designed for use where localized or group alarm signaling is required.

- **SIGA-AB4G** bases provide sounder capability to Signature Series to heat and smoke detectors. They are not intended for use with combination carbon monoxide detectors in Fire-plus-CO mode.
- **SIGA-AB4GT** bases provide sounder capability to Signature Series smoke and heat detectors, as well as carbon monoxide detectors when used with a SIGA-TCDR Temporal Pattern Generator.
- **SIGA-AB4G-LF** bases provide 520 Hz low frequency sounder capability to Signature Series smoke and heat detectors, as well as carbon monoxide detectors when used with a SIGA-TCDR Temporal Pattern Generator. The SIGA-AB4G-LF is suitable for applications requiring low frequency audible tones.

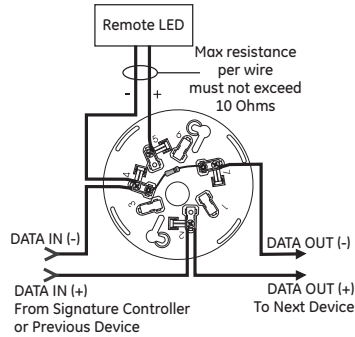
## Typical Wiring

The detector mounting bases accept #18 AWG (0.75mm<sup>2</sup>), #16 (1.0mm<sup>2</sup>), #14 AWG (1.5mm<sup>2</sup>), and #12 AWG (2.5mm<sup>2</sup>) wire sizes. Sizes #16 AWG (1.0mm<sup>2</sup>) and #18 AWG (0.75mm<sup>2</sup>) are preferred for ease of installation.

### 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 this Base.

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



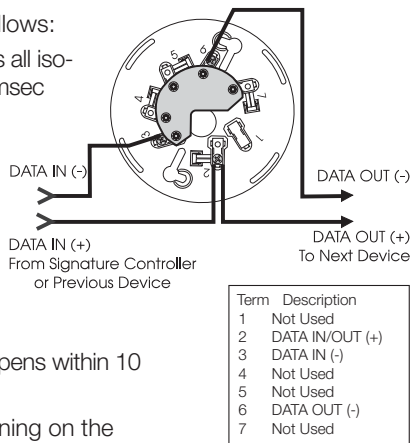
### Isolator Detector Base, SIGA-IB, SIGA-IB4

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:

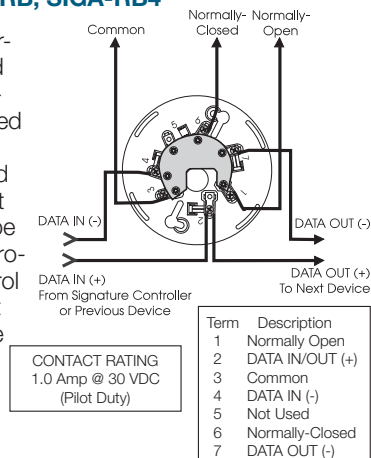
- a short on the line causes all isolators to open within 23 msec
- at 10 msec intervals, beginning on one side of the Class A circuit nearest the loop controller, the isolators close to provide the next isolator down the line with power
- when the isolator next to the short closes, it reopens within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

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



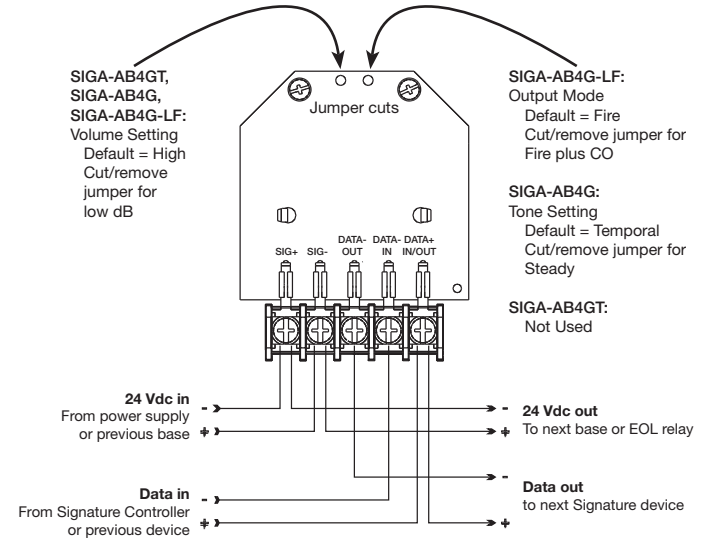
### Relay Detector Base, SIGA-RB, SIGA-RB4

This base includes a relay. Normally Open or Normally 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. The relay base does not support the SIGA-LED Remote LED.



### Audible Sounder Bases, Fire Mode

AB4GT, AB4G, AB4G-LF sounder bases



## 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 smoke cannot reach the detector. Smoke from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector.
- Photoelectric detectors have a wide range of fire-sensing capabilities and are best suited for detecting slow, smoldering fires.
- In Canada, install according to CAN/ULC-S524 Standard for the Installation of Fire Alarm Systems, CSA C22.1 Canadian Electrical Code, and the local authority having jurisdiction.



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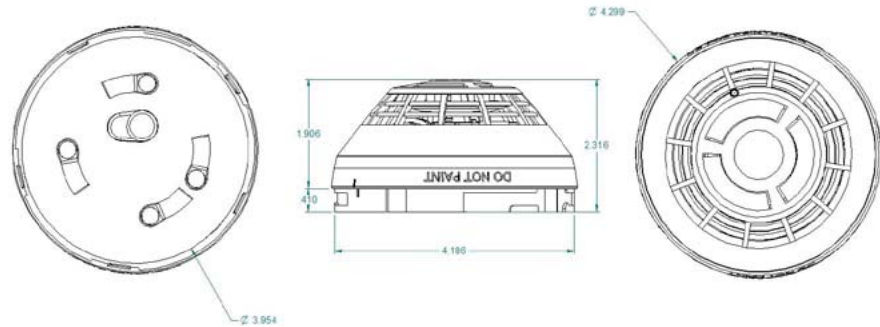
Contact us...

Email: [edwards.fire@fs.utc.com](mailto:edwards.fire@fs.utc.com)  
 Web: [Edwards-fire.com](http://Edwards-fire.com)

EDWARDS is a UTC brand.  
 1016 Corporate Park Drive  
 Mebane, NC 27302

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## Dimensions



## Specifications

|                             |   |
|-----------------------------|---|
| Operating voltage           | 15.20 to 19.95 VDC  |
| Normal operating current    | 32 $\mu$ A  |
| Alarm current               | 32 $\mu$ A  |
| Smoke Sensitivity Range     | UL/ULC: 0.53 to 3.94 %/ft. (1.7 to 12.35 %/m) obscuration |
| Vibration level             | 10 to 35 Hz, with an amplitude of 0.01 in.                |
| Air velocity                | 0 to 4,000 ft./min (0 to 20 m/s)                          |
| Wall mounting               | 12 in. (305 mm) max. from ceiling                         |
| Compatible bases            | See Ordering Information                                  |
| Compatible detector testers | Testifire 1000, Testifire 2000                            |
| Operating environment       | 32 to 120°F (0 to 49°C), 0 to 93% RH, noncondensing       |
| Construction                | High Impact Engineering Polymer, White                    |
| Storage temperature         | -4 to 140°F (-20 to 60°C)                                 |
| Environmental compensation  | Automatic   |
| Agency Listings             | CAN/ULC-S529, UL 268, UL 268A                             |

## Ordering Information

| Catalog Number | Description                        | Ship Wt. lbs (kg) |
|----------------|------------------------------------|-------------------|
| SIGA-PD        | Intelligent Optical Smoke Detector | 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-AB4G-LF | Low Frequency Audible (Sounder) Base for CO and Fire Detectors  | 0.3 (0.15) |
| SIGA-AB4GT   | Audible (Sounder) Base for CO and Fire Detectors                | 0.3 (0.15) |
| SIGA-TS4     | Trim Skirt (supplied with 4-inch bases)                         | 0.1 (0.04) |
| SIGA-TS      | Trim Skirt - (optional for non 4-inch bases)                    | 0.1 (0.04) |
| SIGA-DMP     | Detector Mounting Plate   | 3.0 (1.4)  |
| SIGA-RTA     | Detector Removal Tool   |            |
| SIGA-VA      | Detector Cleaning Tool  |            |

# Intelligent Smoke Detector

## SIGA-OSD



### Overview

The Signature Optica Series SIGA-OSD smoke detector brings advanced optical 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 environmental compensation helps reduce maintenance costs.

Like all Signature Optica Series detectors, the SIGA-OSD is an intelligent device that gathers analog information from multiple optical sensors, converting this data into digital signals. Utilizing dual optical wavelengths combined with multiple detection angles, the SIGA-OSD differentiates particles that are not representative of actual smoke. Particle data is input into digital filters which feed a series of ratios removing signal patterns that are typical of nuisance sources, thus reducing unwanted alarms. To make an alarm decision, the detector's on-board microprocessor measures and analyzes all optical sensor readings and compares this information to preprogrammed settings.

### Standard Features

- Multi-criteria optical smoke sensing technology
- Wide 0.5 to 4.36 %/ft. (1.6 to 13.6 %/m) smoke obscuration
- Uses Existing Wiring
- Integrated nuisance rejection reducing unwanted alarms from general cooking particulates
- Listed to UL 268 7th edition
- Automatic Device Mapping
- Up To 250 Total Signature Addresses 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
- Automatic Day/Night Sensitivity Adjustment
- Bicolor (Green/Red) Status LED
- Standard, Relay, Fault Isolator, and Audible Mounting Bases
- Sensor Markings Provide Easy Testing Identification

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

## Application

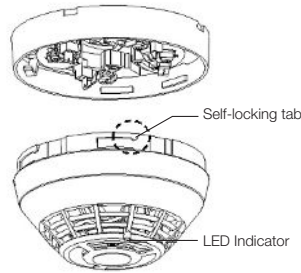
The SIGA-OSD detects particles from a wide range of combustion sources and will trigger an alarm when smoke density in the chamber reaches preprogrammed level. Thanks to its high-performance reflective response technology, the smoke sensor responds quickly and reliably to a wide range of fire types, including both fast and slow burning fires fueled by combustibles typically found in modern multi-use buildings.

## Compatibility

The SIGA-OSD detector is compatible only with control panels using a Signature Loop controller.

## 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.



## Sensing and reporting technology

The microprocessor in each detector provides additional benefits – Self-diagnostics and History Log, Automatic Device Mapping, 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.

**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.

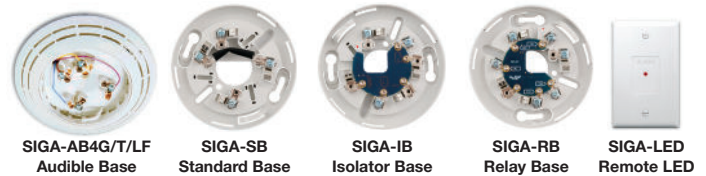
## Testing & Maintenance

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 may 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.

## 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 inch 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.

**Sounder Bases** - Signature Series sounder bases are designed for use where localized or group alarm signaling is required.

- **SIGA-AB4G** bases provide sounder capability to Signature Series to heat and smoke detectors. They are not intended for use with combination carbon monoxide detectors in Fire-plus-CO mode.
- **SIGA-AB4GT** bases provide sounder capability to Signature Series smoke and heat detectors, as well as carbon monoxide detectors when used with a SIGA-TCDR Temporal Pattern Generator.
- **SIGA-AB4G-LF** bases provide 520 Hz low frequency sounder capability to Signature Series smoke and heat detectors, as well as carbon monoxide detectors when used with a SIGA-TCDR Temporal Pattern Generator. The SIGA-AB4G-LF is suitable for applications requiring low frequency audible tones.



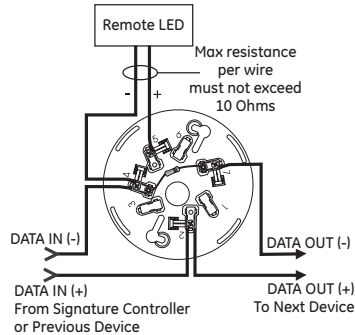
## Typical Wiring

The detector mounting bases accept #18 AWG (0.75mm<sup>2</sup>), #16 (1.0mm<sup>2</sup>), #14 AWG (1.5mm<sup>2</sup>), and #12 AWG (2.5mm<sup>2</sup>) wire sizes. Sizes #16 AWG (1.0mm<sup>2</sup>) and #18 AWG (0.75mm<sup>2</sup>) are preferred for ease of installation.

### 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 this Base.

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



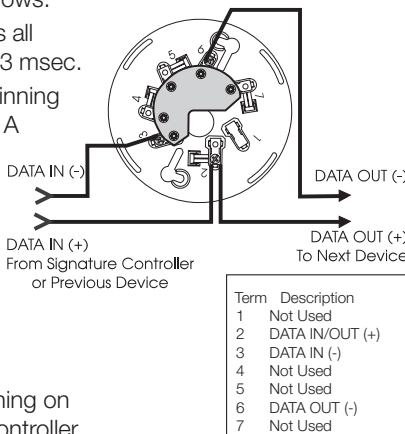
### Isolator Detector Base, SIGA-IB, SIGA-IB4

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, it reopens within 10 msec.

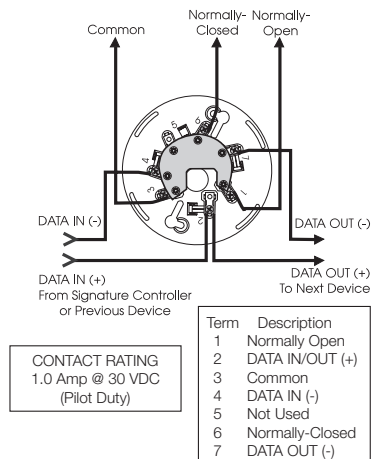
The process repeats beginning on the other side of the loop controller.



| Term | Description     |
|------|-----------------|
| 1    | Not Used        |
| 2    | DATA IN/OUT (+) |
| 3    | DATA IN (-)     |
| 4    | Not Used        |
| 5    | Not Used        |
| 6    | DATA OUT (-)    |
| 7    | Not Used        |

### Relay Detector Base, SIGA-RB, SIGA-RB4

This base includes a relay. Normally Open or Normally 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. The relay base does not support the SIGA-LED Remote LED.

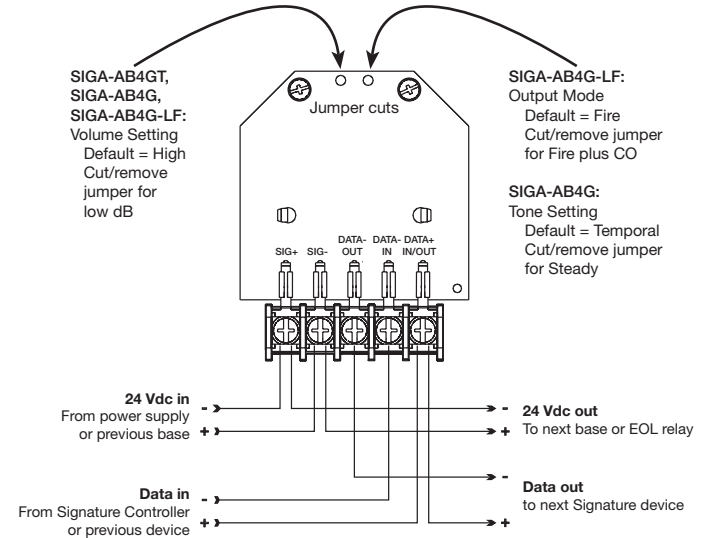


CONTACT RATING  
1.0 Amp @ 30 VDC  
(Pilot Duty)

| Term | Description     |
|------|-----------------|
| 1    | Normally Open   |
| 2    | DATA IN/OUT (+) |
| 3    | Common          |
| 4    | DATA IN (-)     |
| 5    | Not Used        |
| 6    | Normally-Closed |
| 7    | DATA OUT (-)    |

### Audible Sounder Bases, Fire Mode

AB4GT, AB4G, AB4G-LF sounder bases



## 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 smoke cannot reach the detector. Smoke from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector.
- In Canada, install according to CAN/ULC-S524 Standard for the Installation of Fire Alarm Systems, CSA C22.1 Canadian Electrical Code, and the local authority having jurisdiction.



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**Contact us...**

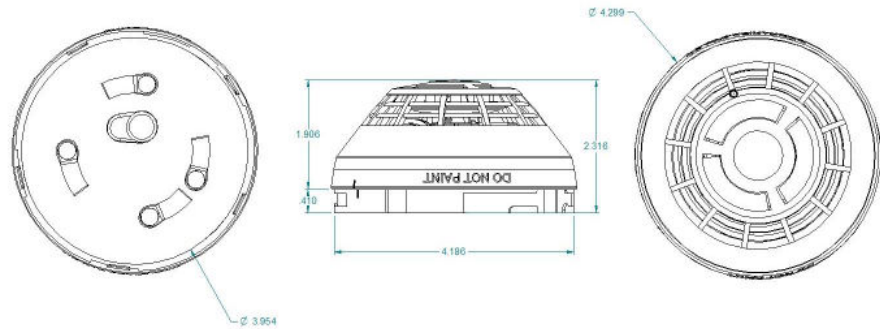
Phone: 800-655-4497, Option 1  
 Fax: 866-226-2126  
 Email: [Edwards.techsupport@fs.utc.com](mailto:Edwards.techsupport@fs.utc.com)  
 Website: <https://www.edwardsfiresafety.com/>

8985 Town Center Pkwy  
 Bradenton, FL 34202

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## Dimensions



## Specifications

|                             |   |
|-----------------------------|---|
| Operating voltage           | 15.20 to 19.95 VDC                                      |
| Normal operating current    | 32 $\mu$ A  |
| Alarm current               | 45 $\mu$ A  |
| Smoke Sensitivity Range     | UL/ULC: 0.5 to 4.36 %/ft. (1.6 to 13.6 %/m) obscuration |
| Vibration level             | 10 to 35 Hz, with an amplitude of 0.01 in.              |
| Air velocity                | 0 to 4,000 ft./min (0 to 20 m/s)                        |
| Wall mounting               | 12 in. (305 mm) max. from ceiling                       |
| Compatible bases            | See Ordering Information                                |
| Compatible detector testers | Testifire 1000, Testifire 2000                          |
| Operating environment       | 32 to 120°F (0 to 49°C), 0 to 93% RH, noncondensing     |
| Construction                | High Impact Engineering Polymer, White                  |
| Storage temperature         | -4 to 140°F (-20 to 60°C)                               |
| Environmental compensation  | Automatic   |
| Agency Listings             | CAN/ULC-S529, UL 268-7, UL 268A                         |

## Ordering Information

| Catalog Number | Description                        | Ship Wt. lbs (kg) |
|----------------|------------------------------------|-------------------|
| SIGA-OSD       | Intelligent Optical Smoke Detector | 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-AB4G-LF | Low Frequency Audible (Sounder) Base for CO and/or Fire Detectors | 0.3 (0.15) |
| SIGA-AB4GT   | Audible (Sounder) Base for CO and/or Fire Detectors               | 0.3 (0.15) |
| SIGA-TS4     | Trim Skirt (supplied with 4-inch bases)                           | 0.1 (0.04) |
| SIGA-TS      | Trim Skirt - (optional for non 4-inch bases)                      | 0.1 (0.04) |
| SIGA-DMP     | Detector Mounting Plate   | 3.0 (1.4)  |
| SIGA-RTA     | Detector Removal Tool   |            |
| SIGA-VA      | Detector Cleaning Tool  |            |

LIFE SAFETY & INCIDENT MANAGEMENT

# Intelligent Heat Detectors

## SIGA-HRD, SIGA-HFD



### Overview

The Signature Series smoke 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 ensures reliability over the long-haul, while the latest thermister technology makes these detectors ideal wherever dependable heat detection is required.

**The SIGA-HRD** is an intelligent fixed temperature/rate-of-rise fire detector. It monitors the temperature of the surrounding air and analyzes the data from the sensor to determine whether to initiate an alarm. The rate-of-rise heat function quickly detects a fast, flaming fire. The fixed-temperature heat function detects fire when the air temperature near the detector exceeds the alarm point.

**The SIGA-HFD** is an intelligent fixed-temperature heat detector that contains a fixed-temperature heat sensor rated at 135 °F (57.2 °C). It does not have a rate-of-rise function. The heat sensor monitors the temperature of the air in its surroundings and the detector analyzes the data to determine when the air temperature near the detector exceeds the device's alarm point.

### 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.

- Next Generation Heat Sensing Technology
- 135 °F (57 °C) fixed temperature alarm point (HRD and HFD)
- 15 °F (9 °C) per minute rate-of-rise alarm point (HRD)
- Uses existing wiring
- Automatic device mapping
- Sensor Markings Provide Easy Testing Identification
- Up To 250 Total Signature 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

## Application

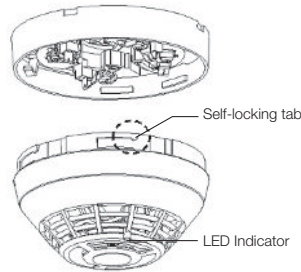
The SIGA-HRD combination fixed temperature/rate-of-rise heat detector provides a 15 °F (9 °C) per minute rate-of-rise heat sensor for the detection of fast-developing fires, as well as a 135°F (57°C) fixed temperature sensor for slow building-fires. The SIGA-HFD fixed temperature detector provides a 135°F (57°C) fixed temperature sensor for slow building-fires.

## Compatibility

Signature Series heat detectors are compatible only with the Signature Loop Controller.

## 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.



## Sensing and reporting technology

The microprocessor in each detector provides additional benefits – Self-diagnostics and History Log, Automatic Device Mapping, and Fast, Stable Communication.

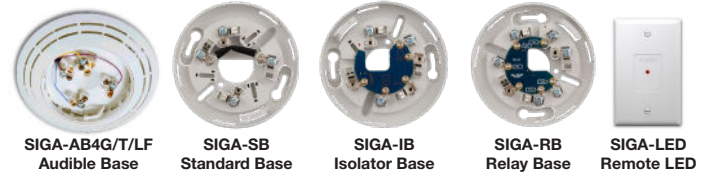
**Self-diagnostics and History Log** - Each Signature Series detector constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in the detector's non-volatile memory.

**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.

**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 inch 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.

**Sounder Bases** - Signature Series sounder bases are designed for use where localized or group alarm signaling is required.

- **SIGA-AB4G** bases provide sounder capability to Signature Series to heat and smoke detectors. They are not intended for use with combination carbon monoxide detectors in Fire-plus-CO mode.
- **SIGA-AB4GT** bases provide sounder capability to Signature Series smoke and heat detectors, as well as carbon monoxide detectors when used with a SIGA-TCDR Temporal Pattern Generator.
- **SIGA-AB4G-LF** bases provide 520 Hz low frequency sounder capability to Signature Series smoke and heat detectors, as well as carbon monoxide detectors when used with a SIGA-TCDR Temporal Pattern Generator. The SIGA-AB4G-LF is suitable for applications requiring low frequency audible tones.

## 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.

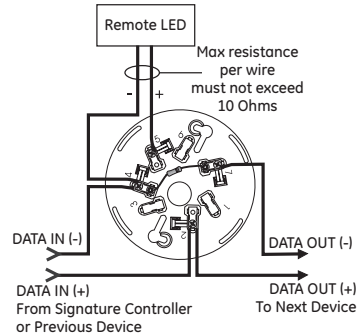
## Typical Wiring

The detector mounting bases accept #18 AWG (0.75mm<sup>2</sup>), #16 (1.0mm<sup>2</sup>), #14 AWG (1.5mm<sup>2</sup>), and #12 AWG (2.5mm<sup>2</sup>) wire sizes. Sizes #16 AWG (1.0mm<sup>2</sup>) and #18 AWG (0.75mm<sup>2</sup>) are preferred for ease of installation.

### Standard Detector Base, SIGA-SB, SIGA-SB4

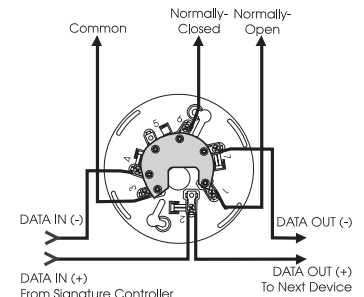
This is the basic mounting base for EDWARDS Signature Series detectors. The SIGA-LED Remote LED is supported by this Base.

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



### Relay Detector Base, SIGA-RB, SIGA-RB4

This base includes a relay. Normally Open or Normally 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. The relay base does not support the SIGA-LED Remote LED.



CONTACT RATING  
1.0 Amp @ 30 VDC  
(Pilot Duty)

| Term | Description     |
|------|-----------------|
| 1    | Normally Open   |
| 2    | DATA IN/OUT (+) |
| 3    | Common          |
| 4    | DATA IN (-)     |
| 5    | Not Used        |
| 6    | Normally-Closed |
| 7    | DATA OUT (-)    |

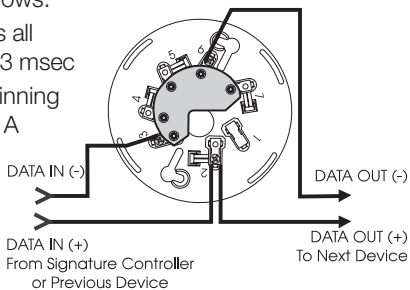
### Isolator Detector Base, SIGA-IB, SIGA-IB4

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, it reopens within 10 msec.

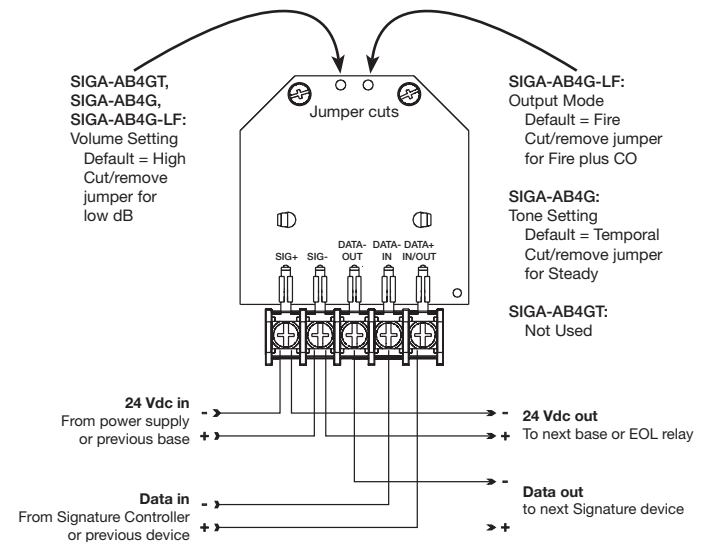
The process repeats beginning on the other side of the loop controller.



| Term | Description     |
|------|-----------------|
| 1    | Not Used        |
| 2    | DATA IN/OUT (+) |
| 3    | DATA IN (-)     |
| 4    | Not Used        |
| 5    | Not Used        |
| 6    | DATA OUT (-)    |
| 7    | Not Used        |

### Audible Sounder Bases, Fire Mode

AB4GT, AB4G, AB4G-LF sounder bases





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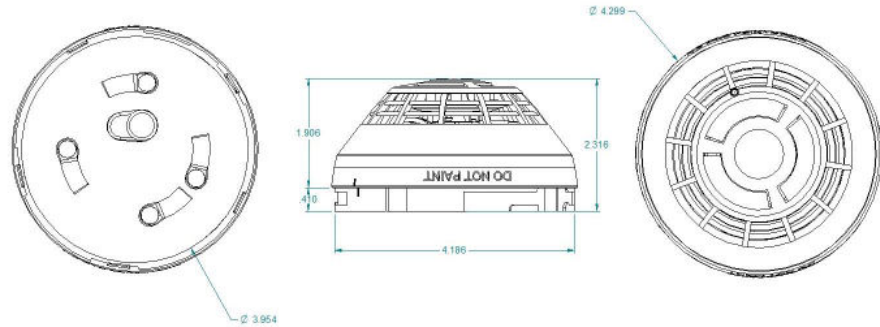
Email: [edwards.fire@fs.utc.com](mailto:edwards.fire@fs.utc.com)  
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## Dimensions



## Specifications

|                             | SIGA- HRD   | SIGA-HFD       |
|-----------------------------|---|----------------|
| Operating voltage           | 15.20 to 19.95 VDC  |                |
| Normal operating current    | 51 µA   |                |
| Alarm current               | 68 µA   |                |
| Vibration level             | 10 to 35 Hz, with an amplitude of 0.01 in.                        |                |
| Rate-of-rise rating         | 15°F/min (8°C/min)  | NA             |
| Fixed temperature rating    | 135°F (57.2°C). Actual alarm point 129 to 141°F (53.9 to 60.6°C). |                |
| Maximum spacing             | 50 ft. (15.2 m) centers   |                |
| Factory Mutual rating       | Ultra-fast  | Special        |
| Compatible bases            | See Ordering Information  |                |
| Compatible detector testers | Testifire 1000, Testifire 2000                                    | Testifire 2000 |
| Operating environment       | 32 to 100°F (0 to 38°C), 0 to 93% RH, noncondensing               |                |
| Construction                | High Impact Engineering Polymer, White                            |                |
| Storage temperature         | -4 to 140°F (-20 to 60°C)   |                |
| Agency Listings             | UL521, CAN/UL-S530, CSFM, FM approved                             |                |

## Ordering Information

| Catalog Number | Description  | Ship Wt. lbs (kg) |
|----------------|--|-------------------|
| SIGA-HRD       | Intelligent fixed temperature/Rate-of-rise heat detector | 0.4 (0.16)        |
| SIGA-HFD       | Intelligent fixed temperature heat detector              |                   |

| Compatible Bases |   |            |
|------------------|---|------------|
| SIGA-SB          | Detector Mounting Base - Standard                               |            |
| SIGA-SB4         | 4-inch Detector Mounting Base c/w Trim Skirt                    |            |
| SIGA-RB          | Detector Mounting Base w/Relay                                  | 0.2 (.09)  |
| SIGA-RB4         | 4-inch Detector Mounting Base w/Relay, c/w Trim Skirt           |            |
| SIGA-IB          | Detector Mounting Base w/Fault Isolator                         |            |
| SIGA-IB4         | 4-inch Detector Mounting Base w/ Fault Isolator, c/w Trim Skirt |            |
| SIGA-AB4G        | Audible (Sounder) Base for Fire Detectors                       |            |
| SIGA-AB4G-LF     | Low Frequency Audible (Sounder) Base for CO and Fire Detectors  | 0.3 (0.15) |
| SIGA-AB4GT       | Audible (Sounder) Base for CO and Fire Detectors                |            |
| SIGA-LED         | Remote Alarm LED (not for EN54 applications)                    |            |
| SIGA-TS4         | Trim Skirt (supplied with 4-inch bases)                         | 0.1 (0.04) |
| SIGA-TS          | Trim Skirt (optional for non 4-inch bases)                      |            |
| SIGA-RTA         | Detector Removal Tool   |            |

LIFE SAFETY & INCIDENT MANAGEMENT

# Intelligent Multisensor Smoke and Heat Detector

## SIGA-PHD, SIGA-PHDB



### Overview

The Signature Series SIGA-PHD detector brings advanced multisensor technology to a practical design that increases efficiency, saves installation time, cuts costs, and extends life safety and property protection capabilities. Continuous self-diagnostics ensures reliability over the long-haul, while environmental compensation helps reduce maintenance costs.

The SIGA-PHD provides an optical smoke sensor and a rate-of-rise heat sensor with a fixed temperature setting. Together these sensors efficiently detect smoldering fires, as well as fast flaming fires.

Like all Signature Series detectors, the SIGA-PHD gathers analog information from its sensing elements and converts this data into digital signals. To make an alarm decision, the detector's on-board microprocessor measures and analyzes smoke and heat 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.

### 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.

- Next Generation Detection Technology
- Integrates optical smoke with rate-of-rise heat sensing
- Wide 0.53 to 3.94 %/ft. (1.7 to 12.35 %/m) smoke obscuration
- Uses existing wiring
- Automatic device mapping
- Sensor Markings Provide Easy Testing Identification
- Up To 250 Total Signature Addresses 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
- Automatic day/night sensitivity adjustment
- Bicolor (green/red) status LED
- Standard, relay, fault isolator, and audible mounting bases

## Application

### Smoke detection

The SIGA-PHD 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.

### Heat detection

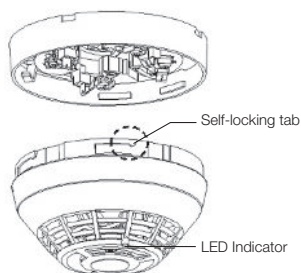
SIGA-PHD's on-board rate-of-rise heat sensor provides a 15 °F (9 °C) per minute for the detection of fast-developing fires while also providing a 135 °F (57.2 °C) fixed detection threshold. The heat sensors monitor the temperature of the air and determines whether an alarm should be initiated.

## Compatibility

The SIGA-PHD detector is compatible only with the Signature Loop Controller.

## 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

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.

### Smoke Sensor Sensitivity

The SIGA-PHD determines when its optical sensor is dirty or defective and can transmit sensitivity data to the loop controller. A sensitivity report can also be printed to satisfy NFPA sensitivity measurements which must be conducted at the end of the first year and every two years thereafter. The availability of maintenance features depends on the fire alarm system used.

## Sensing and reporting technology

The microprocessor in each detector provides additional benefits – Self-diagnostics and History Log, Automatic Device Mapping, and Fast, Stable Communication.

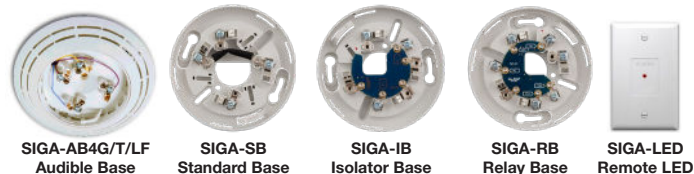
**Self-diagnostics and History Log** - Each Signature Series detector constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in the detector's non-volatile memory.

**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.

**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. Sounder bases mount to a 4 inch square boxes 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.

**Sounder Bases** - Signature Series sounder bases are designed for use where localized or group alarm signaling is required.

- **SIGA-AB4G** bases provide sounder capability to Signature Series smoke and heat detectors. They are not for use with devices that include a CO sensor.
- **SIGA-AB4GT** bases provide sounder capability to Signature Series smoke and heat detectors, as well as Signature detectors that include a CO Sensor when used with a SIGA-TCDR Temporal Pattern Generator to separate CO (TC4) and Fire (TC3) tone patterns.
- **SIGA-AB4G-LF** bases provide 520 Hz low frequency sounder capability to Signature Series smoke and heat detectors, as well as Signature detectors that include a CO Sensor when used with a SIGA-TCDR Temporal Pattern Generator to separate CO (TC4) and Fire (TC3) tone patterns. The SIGA-AB4G-LF is suitable for applications requiring low frequency audible tones.



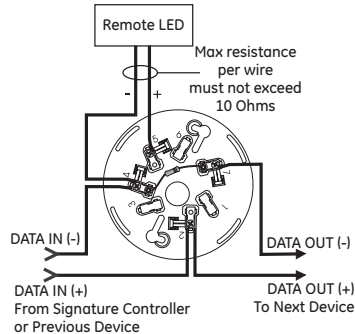
## Typical Wiring

The detector mounting bases accept #18 AWG (0.75mm<sup>2</sup>), #16 (1.0mm<sup>2</sup>), #14 AWG (1.5mm<sup>2</sup>), and #12 AWG (2.5mm<sup>2</sup>) wire sizes. Sizes #16 AWG (1.0mm<sup>2</sup>) and #18 AWG (0.75mm<sup>2</sup>) are preferred for ease of installation.

### 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 this Base.

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



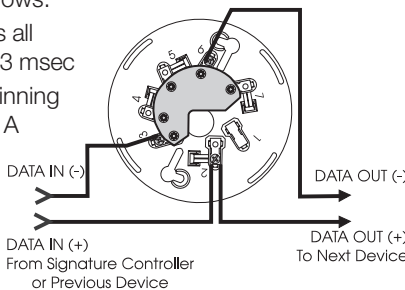
### Isolator Detector Base, SIGA-IB, SIGA-IB4

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, it reopens within 10 msec.

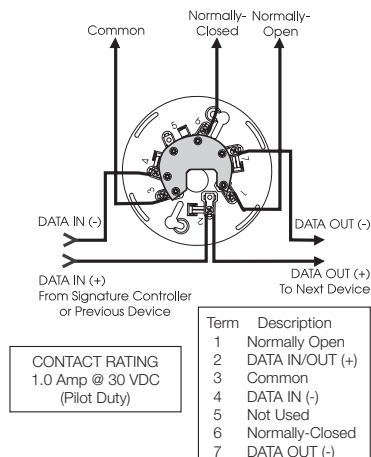
The process repeats beginning on the other side of the loop controller.



| Term | Description     |
|------|-----------------|
| 1    | Not Used        |
| 2    | DATA IN/OUT (+) |
| 3    | DATA IN (-)     |
| 4    | Not Used        |
| 5    | Not Used        |
| 6    | DATA OUT (-)    |
| 7    | Not Used        |

### Relay Detector Base, SIGA-RB, SIGA-RB4

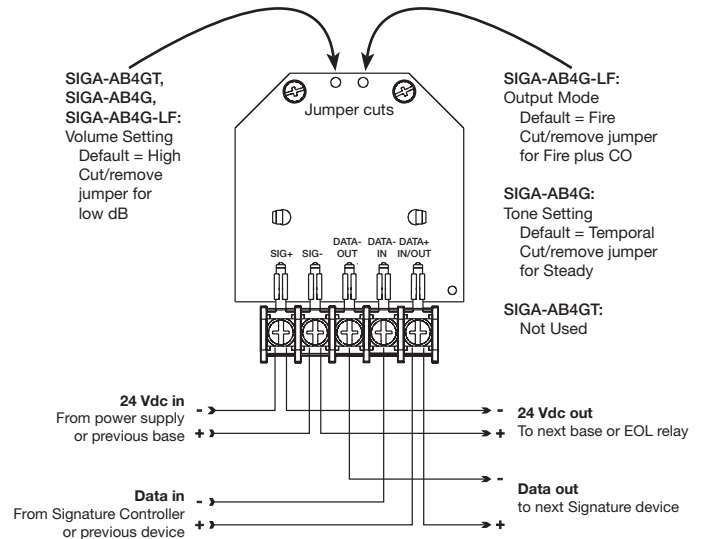
This base includes a relay. Normally Open or Normally Closed operation is selected during installation. The dry contact is rated for 1 amp (pilot duty) @ 30 Vdc. The relay's position is supervised to avoid accidentally jarring it out of position. The SIGA-RB can be operated as a control relay if programmed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



| Term | Description     |
|------|-----------------|
| 1    | Normally Open   |
| 2    | DATA IN/OUT (+) |
| 3    | Common          |
| 4    | DATA IN (-)     |
| 5    | Not Used        |
| 6    | Normally-Closed |
| 7    | DATA OUT (-)    |

### Audible Sounder Bases, Fire Mode

AB4GT, AB4G, AB4G-LF sounder bases



## 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 smoke or heat cannot reach the detector. Smoke or heat from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector.
- Photoelectric detectors have a wide range of sensing capabilities, and are best suited for detecting slow, smoldering fires. The heat sensor in this device provides a source of supplemental information. The heat sensor by itself does not provide life safety protection.
- In Canada, install according to the CAN/ULC-S524 *Standard for the Installation of Fire Alarm Systems*, the CSA C22.1 *Canadian Electrical Code*, and the local authority having jurisdiction.
- Upon completion of the original installation and following any modifications or additions to the system, perform a calibrated sensitivity test per NFPA code. Signature Series devices can perform this test and the panel can generate a system sensitivity report.



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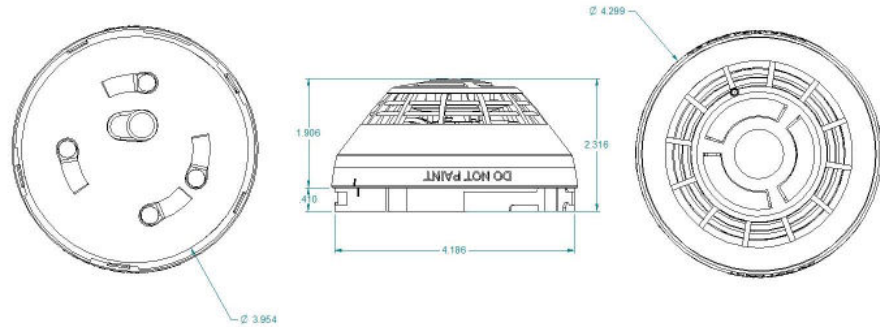
Email: [edwards.fire@fs.utc.com](mailto:edwards.fire@fs.utc.com)  
 Web: [edwards-fire.com](http://edwards-fire.com)

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 Mebane, NC 27302

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## Dimensions



## Specifications

|                             |  |
|-----------------------------|--|
| Operating voltage           | 15.20 to 19.95 VDC   |
| Normal operating current    | 51 $\mu$ A   |
| Alarm current               | 68 $\mu$ A   |
| Vibration level             | 10 to 35 Hz, with an amplitude of 0.01 in.                             |
| Smoke Sensitivity Range     | UL/ULC: 0.53 to 3.94 %/ft. (1.7 to 12.35 %/m) obscuration              |
| Rate-of-rise rating         | 15°F/min (8°C/min)   |
| Fixed temperature rating    | 135°F (57.2°C). Actual alarm point 129 to 141°F (53.9 to 60.6°C).      |
| Air velocity                | 0 to 4,000 ft./min (0 to 20.32 m/s)                                    |
| Wall mounting               | 12 in. (305 mm) max. from ceiling                                      |
| Spacing, heat detectors     | Max. 50 ft. (15.2 m) centers   |
| Compatible bases            | See Ordering Information   |
| Compatible detector testers | Testifire 1000, Testifire 2000   |
| Operating environment       | 32 to 100°F (0 to 38°C), 0 to 93% RH, noncondensing                    |
| Construction                | High Impact Engineering Polymer, White                                 |
| Storage temperature         | -4 to 140°F (-20 to 60°C)  |
| Environmental compensation  | Automatic  |
| Agency Listings             | CAN/ULC-S529, CAN/ULC-S530, UL 268, UL 268A, UL 521 CSFM, FM approved. |

## Ordering Information

| Catalog Number | Description   | Ship Wt. lbs (kg) |
|----------------|---|-------------------|
| SIGA-PHD       | Intelligent Multisensor Smoke and Heat Detector                             | 0.4 (0.16)        |
| SIGA-PHDB      | Intelligent Multisensor, Smoke and Heat Detector, Black. Use with SIGA-TSB. | 0.4 (0.16)        |

| Compatible Bases |   |            |
|------------------|---|------------|
| 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-LF     | Low Frequency Audible (Sounder) Base for CO and Fire Detectors  | 0.3 (0.15) |
| SIGA-AB4GT       | Audible (Sounder) Base for CO and Fire Detectors                | 0.3 (0.15) |
| SIGA-TS4         | Trim Skirt (supplied with 4-inch bases)                         | 0.1 (.04)  |
| SIGA-TSB         | Trim Skirt for 4" Base, Black                                   | 0.1 (.04)  |
| SIGA-DMP         | Detector Mounting Plate   | 3.0 (1.4)  |
| SIGA-RTA         | Detector Removal Tool   |            |
| SIGA-VA          | Detector Cleaning Tool  |            |



LIFE SAFETY &amp; INCIDENT MANAGEMENT

# Intelligent Multisensor Smoke and Heat Detector

## SIGA-OSHD



### Overview

The Signature Optica Series SIGA-OSHD smoke detector brings advanced optical 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 environmental compensation helps reduce maintenance costs.

The SIGA-OSHD provides an optical smoke sensor and a rate-of-rise heat sensor with a fixed temperature setting. Together these sensors efficiently detect smoldering fires, as well as fast flaming fires.

Like all Signature Optica Series detectors, the SIGA-OSHD is an intelligent device that gathers analog information from multiple optical sensors, converting this data into digital signals. Utilizing dual optical wavelengths combined with multiple detection angles, the SIGA-OSHD differentiates particles that are not representative of actual smoke. Particle data is input into digital filters which feed a series of ratios removing signal patterns that are typical of nuisance sources, thus reducing unwanted alarms. To make an alarm decision, the detector's on-board microprocessor measures and analyzes all optical sensor readings and compares this information to preprogrammed settings.

### Standard Features

- Multi-criteria optical smoke sensing technology
- Integrates optical smoke with rate-of-rise heat sensing
- Wide 0.5 to 4.36 %/ft. (1.6 to 13.6 %/m) smoke obscuration
- Integrated nuisance rejection reducing unwanted alarms from general cooking particulates
- Uses existing wiring
- Listed to UL 268 7th edition
- Automatic device mapping
- Sensor Markings Provide Easy Testing Identification
- Up To 250 Total Signature Addresses 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
- Automatic day/night sensitivity adjustment
- Bicolor (green/red) status LED
- Standard, relay, fault isolator, and audible mounting bases

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

## Application

### Smoke detection

The SIGA-OSHD detects particles from a wide range of combustion sources and will trigger an alarm when smoke density in the chamber reaches preprogrammed level. Thanks to its high-performance reflective response technology, the smoke sensor responds quickly and reliably to a wide range of fire types, including both fast and slow burning fires fueled by combustibles typically found in modern multi-use buildings.

### Heat detection

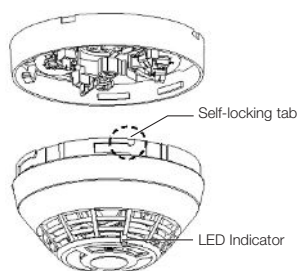
SIGA-OSHD's on-board rate-of-rise heat sensor provides a 15°F (9 °C) per minute function for the detection of fast-developing fires while also providing a 135 °F (57.2 °C) fixed detection threshold. The heat sensors monitor the temperature of the air and determines whether an alarm should be initiated.

## Compatibility

The Siga-OSHD detector is compatible only with control panels using a Signature Loop controller.

## 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

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.

### Smoke Sensor Sensitivity

The SIGA-OSHD determines when its optical sensor is dirty or defective and can transmit sensitivity data to the loop controller. A sensitivity report can also be printed to satisfy NFPA sensitivity measurements, which must be conducted at the end of the first year and every two years thereafter. The availability of maintenance features depends on the fire alarm system used.

## Sensing and reporting technology

The microprocessor in each detector provides additional benefits – Self-diagnostics and History Log, Automatic Device Mapping and Fast, Stable Communication.

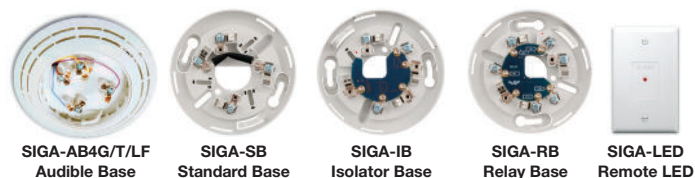
**Self-diagnostics and History Log** - Each Signature Series detector constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in the detector's non-volatile memory.

**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.

**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. Sounder bases mount to a 4 inch square boxes 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.

**Sounder Bases** - Signature Series sounder bases are designed for use where localized or group alarm signaling is required.

- **SIGA-AB4G** bases provide sounder capability to Signature Series smoke and heat detectors. They are not for use with devices that include a CO sensor.
- **SIGA-AB4GT** bases provide sounder capability to Signature Series smoke and heat detectors, as well as Signature detectors that include a CO Sensor when used with a SIGA-TCDR Temporal Pattern Generator to separate CO (TC4) and Fire (TC3) tone patterns.
- **SIGA-AB4G-LF** bases provide 520 Hz low frequency sounder capability to Signature Series smoke and heat detectors, as well as Signature detectors that include a CO Sensor when used with a SIGA-TCDR Temporal Pattern Generator to separate CO (TC4) and Fire (TC3) tone patterns. The SIGA-AB4G-LF is suitable for applications requiring low frequency audible tones.

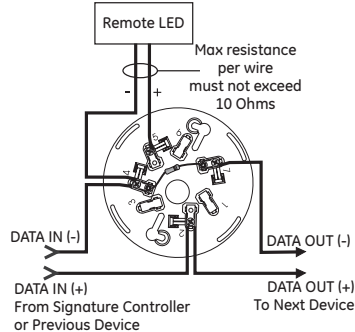
## Typical Wiring

The detector mounting bases accept #18 AWG (0.75mm<sup>2</sup>), #16 (1.0mm<sup>2</sup>), #14 AWG (1.5mm<sup>2</sup>), and #12 AWG (2.5mm<sup>2</sup>) wire sizes. Sizes #16 AWG (1.0mm<sup>2</sup>) and #18 AWG (0.75mm<sup>2</sup>) are preferred for ease of installation.

### 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 this Base.

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



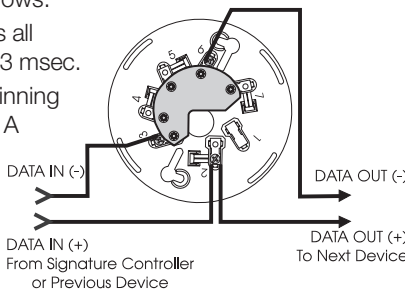
### Isolator Detector Base, SIGA-IB, SIGA-IB4

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, it reopens within 10 msec.

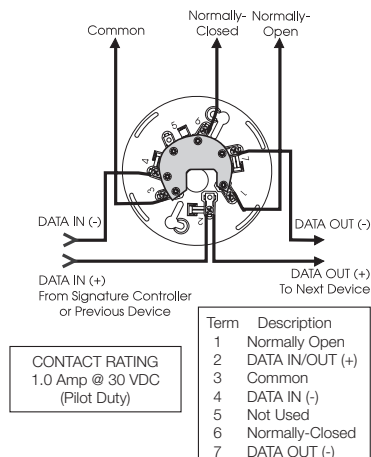
The process repeats beginning on the other side of the loop controller.



| Term | Description     |
|------|-----------------|
| 1    | Not Used        |
| 2    | DATA IN/OUT (+) |
| 3    | DATA IN (-)     |
| 4    | Not Used        |
| 5    | Not Used        |
| 6    | DATA OUT (-)    |
| 7    | Not Used        |

### Relay Detector Base, SIGA-RB, SIGA-RB4

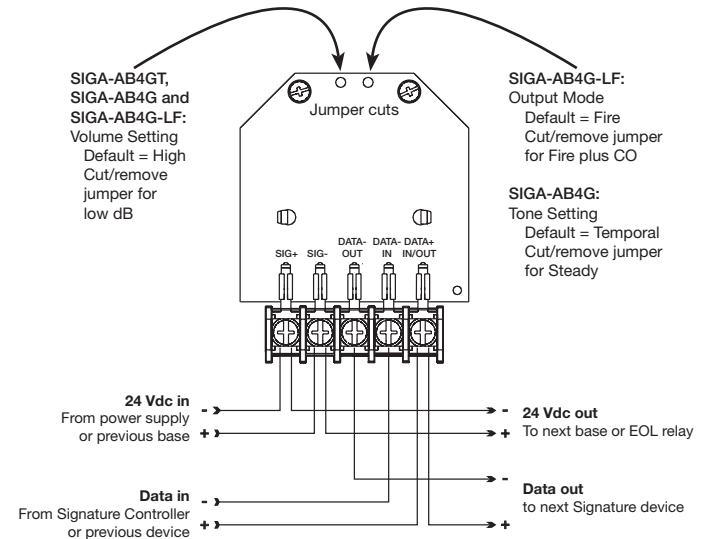
This base includes a relay. Normally Open or Normally Closed operation is selected during installation. The dry contact is rated for 1 amp (pilot duty) @ 30 Vdc. The relay's position is supervised to avoid accidentally jarring it out of position. The SIGA-RB can be operated as a control relay if programmed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



| Term | Description     |
|------|-----------------|
| 1    | Normally Open   |
| 2    | DATA IN/OUT (+) |
| 3    | Common          |
| 4    | DATA IN (-)     |
| 5    | Not Used        |
| 6    | Normally-Closed |
| 7    | DATA OUT (-)    |

### Audible Sounder Bases, Fire Mode

AB4G, AB4GT and AB4G-LF sounder bases



## 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 smoke or heat cannot reach the detector. Smoke or heat from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector.
- In Canada, install according to the CAN/ULC-S524 Standard for the Installation of Fire Alarm Systems, the CSA C22.1 Canadian Electrical Code, and the local authority having jurisdiction.
- Upon completion of the original installation and following any modifications or additions to the system, perform a calibrated sensitivity test per NFPA code. Signature Series devices can perform this test and the panel can generate a system sensitivity report.



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**Contact us...**

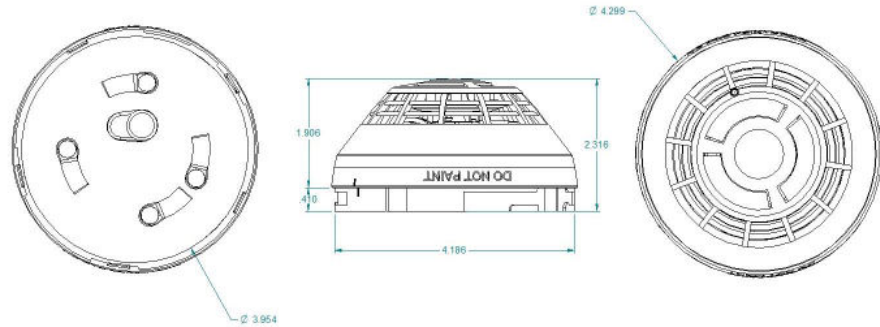
Phone: 800-655-4497, Option 1  
 Fax: 866-226-2126  
 Email: [Edwards.techsupport@fs.utc.com](mailto:Edwards.techsupport@fs.utc.com)  
 Website: <https://www.edwardsfiresafety.com/>

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 Bradenton, FL 34202

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## Dimensions



## Specifications

|                             |   |
|-----------------------------|---|
| Operating voltage           | 15.20 to 19.95 VDC  |
| Normal operating current    | 32 $\mu$ A  |
| Alarm current               | 45 $\mu$ A  |
| Vibration level             | 10 to 35 Hz, with an amplitude of 0.01 in.                        |
| Smoke Sensitivity Range     | UL/ULC: 0.5 to 4.36 %/ft. (1.6 to 13.6 %/m) obscuration           |
| Rate-of-rise rating         | 15°F/min (8°C/min)  |
| Fixed temperature rating    | 135°F (57.2°C). Actual alarm point 129 to 141°F (53.9 to 60.6°C). |
| Air velocity                | 0 to 4,000 ft./min (0 to 20.32 m/s)                               |
| Wall mounting               | 12 in. (305 mm) max. from ceiling                                 |
| Spacing, heat detectors     | Max. 50 ft. (15.2 m) centers                                      |
| Compatible bases            | See Ordering Information  |
| Compatible detector testers | Testifire 1000, Testifire 2000                                    |
| Operating environment       | 32 to 100°F (0 to 38°C), 0 to 93% RH, noncondensing               |
| Construction                | High Impact Engineering Polymer, White                            |
| Storage temperature         | -4 to 140°F (-20 to 60°C)   |
| Environmental compensation  | Automatic   |
| Agency Listings             | CAN/ULC-S529, CAN/ULC-S530, UL 268-7, UL 268A, UL 521             |

## Ordering Information

| Catalog Number | Description                                     | Ship Wt. lbs (kg) |
|----------------|---|-------------------|
| SIGA-OSHD      | Intelligent Multisensor Smoke and Heat Detector | 0.4 (0.16)        |

| Compatible Bases |   |            |
|------------------|---|------------|
| 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-LF     | Low Frequency Audible (Sounder) Base for CO and Fire Detectors  | 0.3 (0.15) |
| SIGA-AB4GT       | Audible (Sounder) Base for CO and Fire Detectors                | 0.3 (0.15) |
| SIGA-TS4         | Trim Skirt (supplied with 4-inch bases)                         | 0.1 (.04)  |
| SIGA-TSB         | Trim Skirt for 4" Base, Black                                   | 0.1 (.04)  |
| SIGA-DMP         | Detector Mounting Plate   | 3.0 (1.4)  |
| SIGA-RTA         | Detector Removal Tool   |            |
| SIGA-VA          | Detector Cleaning Tool  |            |

## Overview

The Signature Series AB4G sounder base adds an audible output function to any Signature Series detector. The base can operate as an independent local alarm, or as part of a zone or system alarm with synchronized audible output.

The sounder base matches the finish of Signature Series detectors and the sound output slots complement the smoke/heat entry openings of the detector. The result is a compact unit with an attractive appearance.

The base generates a loud piercing tone that has excellent wall penetration qualities. It uses the same tone generator found in the award-winning Genesis line of wall and ceiling horns.

The AB4G may be configured in the field for either steady or temporal output and either high or low dB output. Low dB and steady output selections are made by cutting jumpers on the circuit board. The default setting is high dB with temporal output.

AB4G sounder bases on the same circuit may be activated as a group or zone with the use of a SIGA-CRR polarity reversal module, and the group or zone may be synchronized audible output with the use of a G1M-RM signal master.

The AB4G sounder base can simply operate according to the state of its detector, or it can be configured through system programming to operate in conjunction with all sounder bases on the same circuit, or it can be controlled by program rules. Available operating modes are determined by the system that supports the Signature data loop.

## Standard Features

- **Temporal or steady tone**  
Jumper selects steady or synchronized temporal output.
- **High or low dB output**  
Jumper selects low or high dBA output.
- **Single or group operation**  
Optional polarity reversing module configures base for group alarm output.
- **UL268 and UL464 listed**  
UL listing under smoke detector and audible signal standards allows application as smoke alarm and/or audible signal.
- **Attractive installation**  
Flush mount to a wide selection of North American boxes or surface mount to optional custom-matched box.

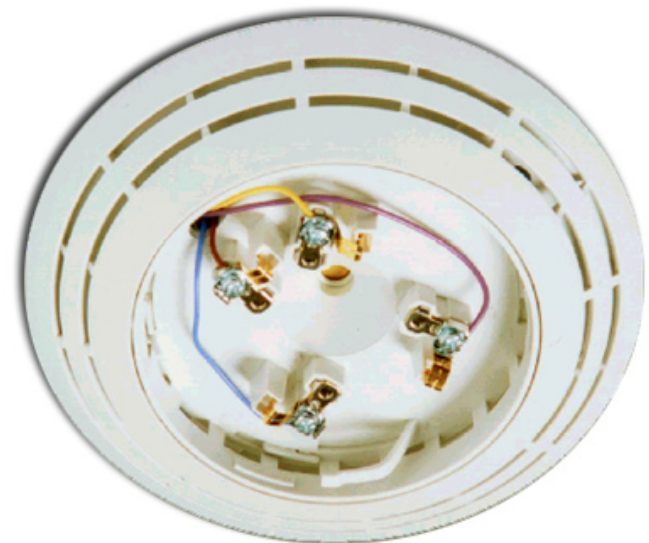
## Application

The Signature Series AB4G sounder base is for use with Signature Series detectors in applications where localized or group alarm signaling is required. The base uses the same address and programming label as the detector it supports.

The base is listed by Underwriters Laboratories under the UL268 and UL464 standards, allowing its application where both smoke alarms and/or notification appliances are required. This makes the AB4G ideal for hotels, dormitories, and other residential occupancies where supplementary audible output is required to meet required sound levels for sleeping areas or areas subject to high levels of ambient noise.

# Sounder Base

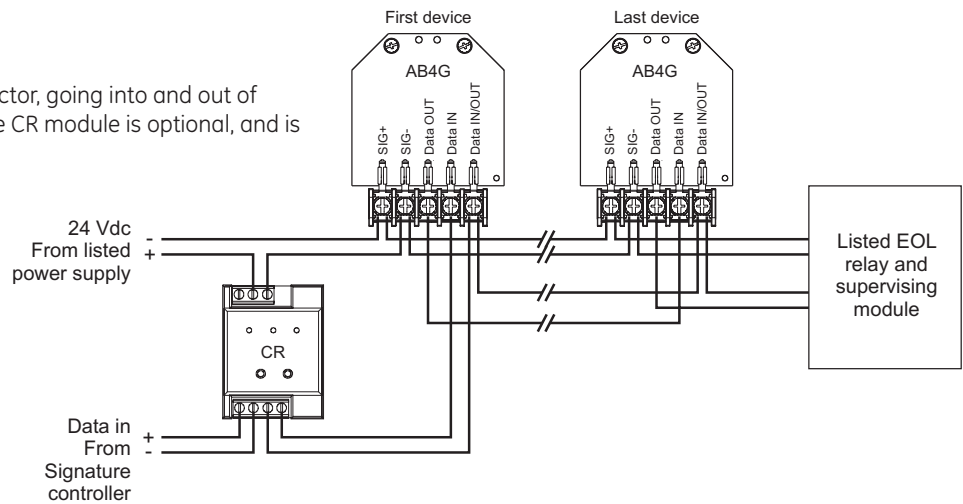
## Model SIGA-AB4G



# Applications

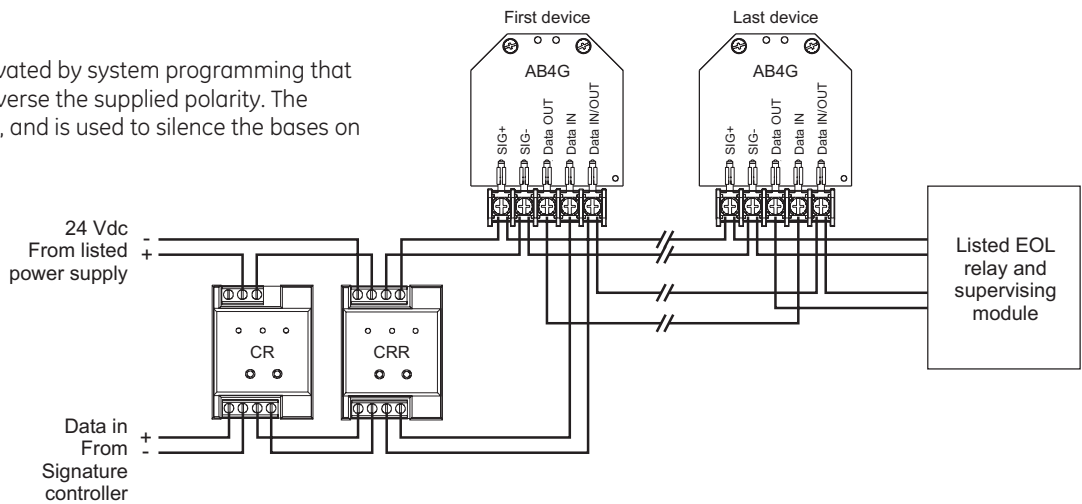
## Detector operates the base

The base follows the state of the detector, going into and out of alarm with the detector. The Signature CR module is optional, and is used to silence the bases on the line.



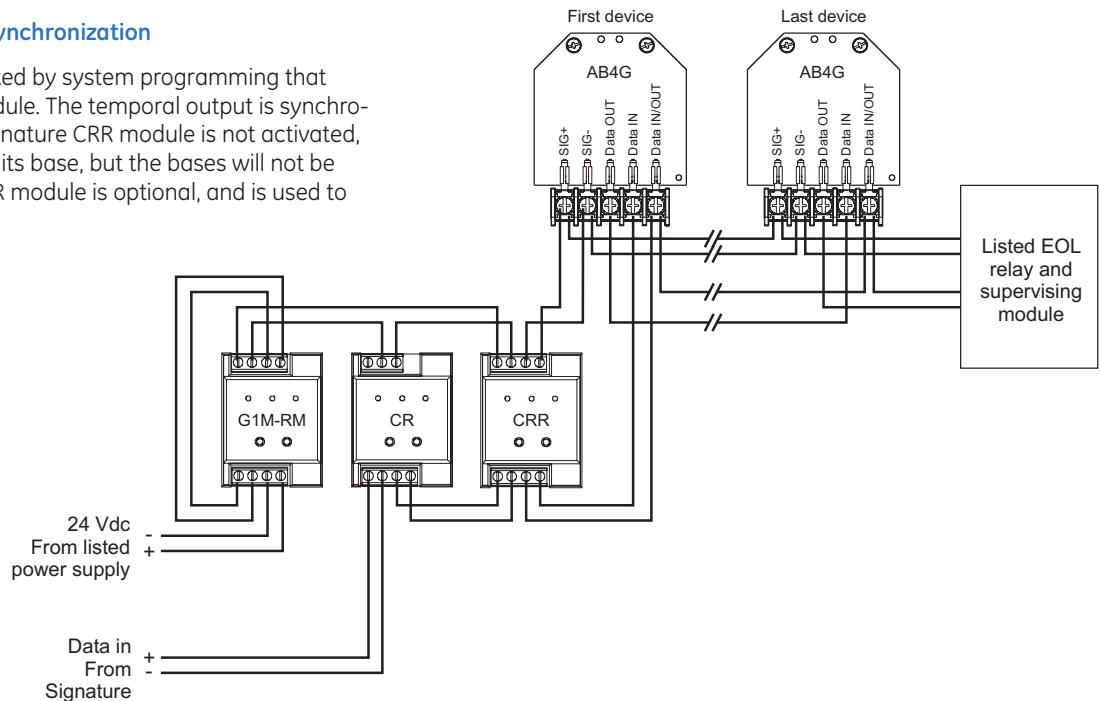
## System turns on all bases

All bases on the line can be activated by system programming that triggers the Signature CRR to reverse the supplied polarity. The Signature CR module is optional, and is used to silence the bases on the line.



## System turns on bases with synchronization

All bases on the line are activated by system programming that triggers the Signature CRR module. The temporal output is synchronized by the G1M-RM. If the Signature CRR module is not activated, each detector can still operate its base, but the bases will not be synchronized. The Signature CR module is optional, and is used to silence the bases on the line.





## References NFPA 72 (2002 edition)

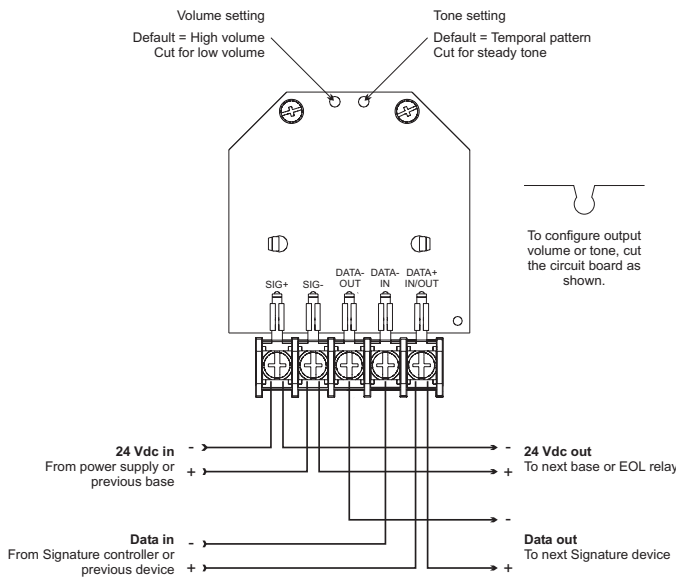
### 7.4.2 Public Mode Audible Requirements.

**7.4.2.1** To ensure that audible public mode signals are clearly heard ... they shall have a sound level 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 1.5 m (5 ft) above the floor in the occupiable area, using the A-weighted scale (dBA).

### 7.4.4 Sleeping Areas.

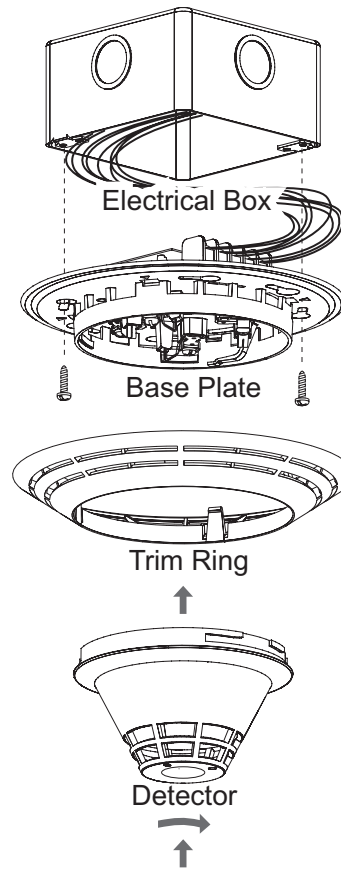
**7.4.4.1** Where audible appliances are installed to provide signals for sleeping areas, they shall have a sound level of at least 15 dB above the average ambient sound level or 5 dB above the maximum sound level having a duration of at least 60 seconds or a sound level of at least 75 dBA, whichever is greater, measured at the pillow level in the occupiable area, using the A-weighted scale (dBA).

## Configuration and Wiring



## Installation and Mounting

**Flush Mounting:** The sounder base flush mounts into 2-1/8 inch (54 mm) deep standard North American 4 inch square electric box, North American 4 x 4 inch octagonal concrete ring (mud box), and standard European 100 mm square electric boxes. The terminal block makes field wire connections fast and efficient. After wiring, a simple push and twist motion locks the Signature detector into the base.



Optional Surface Box  
(6.8" diameter x 1.8" deep)

GE Security recommends that fire alarm systems and their devices always be installed in accordance with the latest recognized edition of national and local fire alarm codes.

## Sound Level Output

| Signal                              | Voltage | Low dBA | High dBA |
|-------------------------------------|---------|---------|----------|
| <b>Reverberant room per UL 464*</b> |         |         |          |
| Temporal                            | 16 Vdc  | 71.5    | 78.1     |
|                                     | 24 Vdc  | 75.5    | 80.7     |
|                                     | 33 Vdc  | 78.5    | 83.1     |
| Steady                              | 16 Vdc  | 75.5    | 81.7     |
|                                     | 24 Vdc  | 79.5    | 84.5     |
|                                     | 33 Vdc  | 81.8    | 86.5     |
| <b>Reverberant room per UL 268</b>  |         |         |          |
| Temporal                            | 16 Vdc  | 77.5    | 84.1     |
|                                     | 24 Vdc  | 81.5    | 86.7     |
|                                     | 33 Vdc  | 84.5    | 89.1     |
| Steady                              | 16 Vdc  | 81.5    | 87.7     |
|                                     | 24 Vdc  | 85.5    | 90.5     |
|                                     | 33 Vdc  | 87.8    | 92.5     |

dBA = Decibels, A-weighted

\*For UL 464 applications low dBA settings are for private mode only.

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

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F 519 376 7258

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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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## Specifications

|                                      |   |               |               |                |                |                |  |
|--------------------------------------|---|---------------|---------------|----------------|----------------|----------------|--|
| Operating Voltage                    | 16-33 Vdc, 16-33 Vfwr<br>(continuous voltage required for temporal output)  |               |               |                |                |                |  |
| Supervisory Current                  | DC=1.46mA; FWR=2.15mA   |               |               |                |                |                |  |
| <b>Operating Current in mA (RMS)</b> | <b>16 Vdc</b>   | <b>24 Vdc</b> | <b>33 Vdc</b> | <b>16 Vfwr</b> | <b>24 Vfwr</b> | <b>33 Vfwr</b> |  |
| Low dBA                              | 17  | 24            | 31            | 41             | 51             | 60             |  |
| High dBA                             | 28  | 41            | 52            | 48             | 60             | 66             |  |
| Default Settings                     | Output volume: high dBA Output tone: temporal pattern (0.5 s on, 0.5 s off, 0.5 s on, 0.5 s off, 0.5 s on, 1.5 s off, repeat cycle).  |               |               |                |                |                |  |
| Environmental                        | Operating Temperature: 32° to 120° F (0° to 49° C)<br>Operating Humidity: 0 to 93% RH<br>Storage Temperature: -4 to 140 °F (-20 to 60 °C)   |               |               |                |                |                |  |
| Wire Size                            | 12 to 18 AWG (2.5 to 0.75 mm <sup>2</sup> )   |               |               |                |                |                |  |
| Compatible Detectors                 | All Signature Series Detectors (SIGA-IPHS, SIGA-PHS, SIGA-IS, SIGA-PS, SIGA-HFS, SIGA-HRS)  |               |               |                |                |                |  |
| Compatible Electrical Boxes          | AB4G-SB Surface Box for Audible Bases, North American 2-1/8 in (54 mm) deep 4-inch square box, North American 4 by 4 inch octagonal ring (mud box), Standard European 100 mm square box |               |               |                |                |                |  |
| Dimensions                           | Base diameter: 6.8 in (173 mm).<br>Base height from box: 0.8 in (21 mm)   |               |               |                |                |                |  |
| Wall mount applications              | Distance from ceiling 12 in (305 mm) maximum  |               |               |                |                |                |  |
| Agency Listings                      | Meets or exceeds requirements specified in UL 268, UL 464, and ULC-S525. (MEA, CSFM pending)  |               |               |                |                |                |  |

## Ordering Information

| Catalog Number | Description                  | Ship Wt., lb. (kg) |
|----------------|------------------------------|--------------------|
| SIGA-AB4G      | Audible (Sounder) Base       | 0.3 (0.15)         |
| AB4G-SB        | Surface Box for Audible Base | 1.0 (0.45)         |

| Related Equipment |   |                    |
|-------------------|---|--------------------|
| Catalog Number    | Description                                     | Ship Wt., lb. (kg) |
| SIGA-MCRR         | Polarity Reversal Relay (Plug-in UIO module)    | 0.18 (0.08)        |
| SIGA-CRR          | Polarity Reversal Relay (Standard mount module) | 0.2 (0.1)          |
| SIGA-MCR          | Control Relay Module (Plug-in UIO module)       | 0.18 (0.08)        |
| SIGA-CR           | Control Relay Module (Standard mount module)    | 0.2 (0.1)          |
| G1M-RM            | Signal Master (1-gang remote mount)             | 0.2 (0.1)          |



imagination at work



LIFE SAFETY &amp; INCIDENT MANAGEMENT

# Ceiling Speakers, Speaker-Strobes

## Genesis GC Series



See Specifications Section for listings details.

### Overview

The Genesis line of ceiling life safety and emergency communications speakers and speaker-strobes combine high performance output with a low profile design to deliver a life safety signal solution that's as versatile as it is effective. While they are designed to mount inconspicuously overhead, these devices are also rated for wall-mounted applications.

Clear-lens speaker-strobes are available in high and low candela models, which feature 15 to 95, or 95 to 177 cd output (see ordering information). Ceiling speakers feature ¼ W to 2 W operation, which allows devices to be easily fine-tuned to achieve maximum benefit in exchange for the lowest possible system overhead.

Light output and wattage tap settings are selectable with conveniently-located switches. Settings remain clearly visible even after final installation, yet they are locked in place to prevent unauthorized movement after installation.

High fidelity models meet the NPFA 520 Hz requirements for newly constructed commercial sleeping areas. They also produce crisp, clear voice audio output that is highly intelligible over large areas.

These low-profile appliances feature textured housings in architecturally neutral white or eye-catching life safety red. Optional *ALERT* or *FIRE* markings make them ideal for applications that require differentiation between life safety and mass notification alerts.

### Standard Features

- **High Fidelity 520 Hz speaker models available**  
Low frequency output meets NFPA standards for newly constructed commercial sleeping areas; increases sound fidelity and audio intelligibility.
- **Field configurable – no need to remove the device**
  - Select ¼, ½, 1, or 2 watt operation
  - 15/30/75/95 cd and 95/115/150/177 cd models available
  - Switch settings remain visible *even after the unit is installed*
- **Ideal for Mass Notification applications**
  - blue and amber lens models available
- **Unique low-profile design**
  - 30 per cent slimmer profile than comparable signals
  - Available with white or red housings
- **Unparalleled performance**
  - loud 90 dBA output ensures clear, crisp audio
  - Precision strobe timing meets UL synchronization standards
  - 25 V<sub>RMS</sub> and 70 V<sub>RMS</sub> models available
- **Easy to install**
  - Fits all standard 4-inch square electrical boxes with plenty of room for extra wire – *no extension ring or trim plate needed*
  - #18 - #12 AWG terminals – ideal for long runs, existing wiring
- **Approved for public and private mode applications**
  - UL 1971-listed as signaling devices for the hearing impaired
  - UL 1638-listed as protective visual signaling appliances
  - UL 1480-listed as life safety speaker
  - UL/ULC listed for ceiling or wall use

## Strobe Application

Genesis strobes are UL 1971 or 1638 listed for indoor use. 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.

All Genesis strobes exceed UL synchronization requirements (within 10 milliseconds over a two-hour period) when used with a synchronization source. Synchronization for multiple strobe lights in a single field of view is required. See the Specifications table for compatible synchronization sources.

## Speaker Application

The suggested sound pressure level for each signaling zone used with alert or alarm signals is a minimum of 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. This is measured 5 feet (1.5 m) above the floor.

Doubling the distance from the signal to the ear will theoretically cause a 6 dB reduction in the received sound pressure level. The actual effect depends on the acoustic properties of materials in the space. Doubling the power output of a device (e.g.: a speaker from 1 W to 2 W) will increase the sound pressure level by 3 dBA. A 3 dBA difference represents a barely noticeable change in volume.

Combination audible/visual signals must be installed in accordance with guidelines established for strobes.

### High Fidelity Models

Genesis G4HF Series High Fidelity appliances provide highly intelligible voice audio output. They are also effective in areas subject to high levels of ambient noise. These appliances are approved for use in sleeping areas under conditions described below.

### Sleeping Room Applications

Genesis GCHF Series High Fidelity appliances are ideal for hotels, dormitories, and other residential occupancies where audible output must meet the 520 Hz signaling characteristics required by NFPA 72.

In sleeping areas, always ensure that the wattage tap of the speaker is set sufficiently high so that the sound pressure reaches at least 75 dBA-fast at the pillow.

These appliances are part of an end-to-end audio system approved for use in sleeping areas when used in conjunction with approved audio hardware and a factory-supplied 520 Hz tone. Check the System Compatibility List for other 520 Hz signaling requirements.

**NOTE:** Speakers driven by third-party audio systems are not UL approved for use in sleeping rooms.

### Mass Notification Applications

Genesis Mass Notification appliances bring the same high-performance life safety features and unobtrusive design to mass notification applications. Models are available with optional ALERT housing labels, which make them ideal for applications that require differentiation between life safety and mass notification alerts.



## Application Notes - Canada

(Based in part on 1995 Canada National Building Code)

The signal sound pressure level shall not exceed 110 dBA in any normally occupied area. The sound pressure level from an audible signal in a floor area used for occupancies other than residential occupancies shall not be less than 10 dBA above ambient levels, and never less than 65 dBA. In sleeping rooms the sound pressure level from an audible signal shall not be less than 75 dBA when any intervening doors between the device and the sleeping room are closed.

## Installation and Mounting

All models are intended for indoor ceiling or wall applications only. Speaker-strobes are mounted to a flush North-American 4" square electrical box, 2 1/8" (54 mm) deep.

Genesis ceiling speaker-strobes simply unlatch and hinge down to open. This gains access to mounting screws and the selectable candela wattage tap switches. 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.

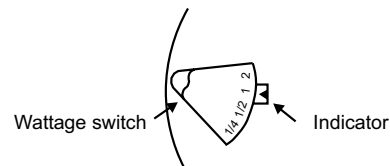
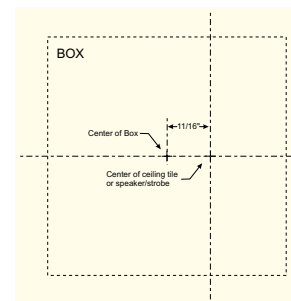
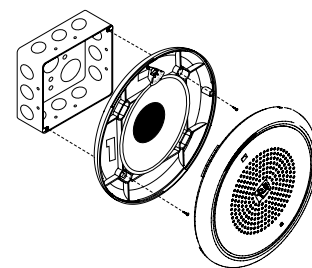
### Installation Note:

When installed, these devices are not centered on the electrical box. Make sure boxes are mounted to compensate for this difference. Use the mounting template provided with installation sheet 3100614.

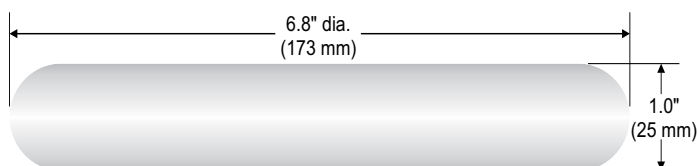
### Field Configuration

Genesis ceiling speaker-strobes may be set for 1/4, 1/2, 1, or 2 watt operation. Depending on the model, Genesis ceiling speaker-strobes have multi-candela output (see ordering information).

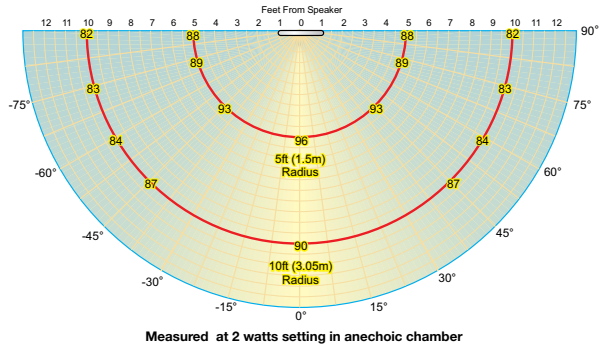
Output settings are changed by simply opening the device and sliding the switches to the desired settings. The speaker-strobe does not have to be removed to change the output settings. The settings remain visible through small windows on the front of the device after the cover is closed.



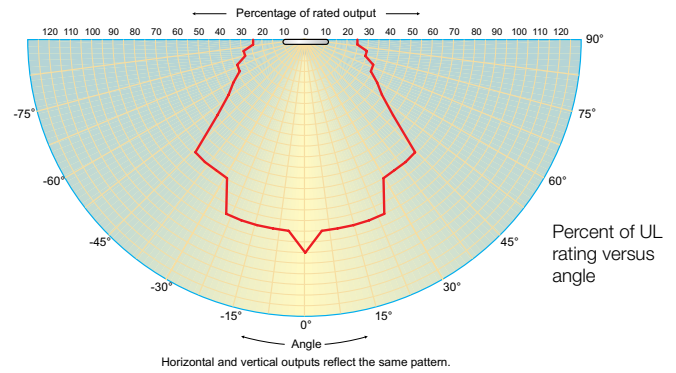
## Dimensions



## Typical Sound Output (dBA)



## Light output - (effective cd)



| Sound Output | Setting (nominal) | Wattage (actual) | UL 1480 Rating | ULC-S541 Rating | Anechoic (nominal) |
|--------------|-------------------|------------------|----------------|-----------------|--------------------|
|--------------|-------------------|------------------|----------------|-----------------|--------------------|

### 520 Hz High Fidelity models (dBA) output at 3.05 m (10 ft.)

|         |     |        |      |      |    |
|---------|-----|--------|------|------|----|
| 25 VRMS | ¼ W | 0.25 W | 81.4 | 81.5 | 81 |
|         | ½ W | 0.50 W | 84.5 | 84.3 | 84 |
|         | 1 W | 1.00 W | 88.2 | 87.2 | 87 |
|         | 2 W | 2.00 W | 90.0 | 90.1 | 91 |
| 70 VRMS | ¼ W | 0.25 W | 81.5 | 81.9 | 81 |
|         | ½ W | 0.50 W | 84.1 | 84.9 | 84 |
|         | 1 W | 1.10 W | 87.9 | 87.9 | 87 |
|         | 2 W | 2.30 W | 90.8 | 90.8 | 91 |

### Standard Hz models (dBA) at 3.05 m (10 ft.)

|         |     |        |    |
|---------|-----|--------|----|
| 25 VRMS | ¼ W | 0.25 W | 81 |
|         | ½ W | 0.50 W | 84 |
|         | 1 W | 1.00 W | 87 |
|         | 2 W | 2.00 W | 90 |
| 70 VRMS | ¼ W | 0.25 W | 81 |
|         | ½ W | 0.50 W | 84 |
|         | 1 W | 1.00 W | 87 |
|         | 2 W | 2.00 W | 91 |

| Strobe Output and Current Draw | Candela switch setting |   |   |   |
|--------------------------------|------------------------|---|---|---|
|                                | D                      | C | B | A |

### Standard cd output models

|                            |            |       |       |       |       |
|----------------------------|------------|-------|-------|-------|-------|
| Operating current, RMS (A) | VDC        | 0.109 | 0.151 | 0.281 | 0.318 |
|                            | VFWR       | 0.131 | 0.194 | 0.379 | 0.437 |
| Light output (cd)          | Clear Lens | 15    | 30    | 75    | 95    |
|                            | Amber Lens | 13    | 26    | 65    | 82    |
|                            | Blue Lens  | 6     | 12    | 31    | 40    |

### High cd output models

|                            |            |       |       |       |       |
|----------------------------|------------|-------|-------|-------|-------|
| Operating current, RMS (A) | VDC        | 0.330 | 0.392 | 0.502 | 0.565 |
|                            | VFWR       | 0.432 | 0.518 | 0.643 | 0.693 |
| Light output (cd)          | Clear Lens | 95    | 115   | 150   | 177   |
|                            | Amber Lens | 82    | 100   | 130   | 155   |
|                            | Blue Lens  | 48    | 59    | 78    | 80    |

VDC = Volts direct current, regulated and filtered. VFWR = Volts full wave rectified  
Operating currents shown above were measured at 16 VDC and 16 VFWR.

**\*Sound level output notes:** dBA = Decibels, A-weighted. **UL1480:** Sound level output at 10 ft (3.05 m) measured in a reverberant room using 400 to 4,000 Hz band limited pink noise. **ULC-S541:** Meets or exceeds 85dBA in an anechoic chamber at 10 ft (3.05 m) on at least one setting per code.  
**Directional characteristics:** Within 6 dB of on-axis sound level when measured 90° off-axis (horizontal).

## Current Draw

### UL Nameplate Rating

| See note 1 | "15" or "D" | "30" or "C" | "75" or "B" | "95" or "A" |
|------------|-------------|-------------|-------------|-------------|
|            | RMS         | RMS         | RMS         | RMS         |
| 16 Vdc     | 109         | 151         | 281         | 318         |
| 16 Vfwr    | 131         | 194         | 379         | 437         |

### UL Nameplate Rating (high cd output models)

| "95" or "D" | "115" or "C" | "150" or "B" | "177" or "A" |
|-------------|--------------|--------------|--------------|
| RMS         | RMS          | RMS          | RMS          |
| 330         | 392          | 502          | 565          |
| 432         | 518          | 643          | 693          |

### Current Draw Notes

- Light output switch settings for UL 1971 listed models are selectable by numeric candela value. ECS/MNS appliances are selectable by A, B, C, or D designations.
- Current values are shown in mA.

### Typical Current

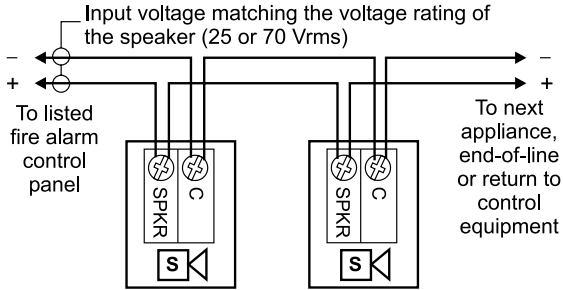
| See note 1 | "15" or "D" | "30" or "C" | "75" or "B" | "95" or "A" |
|------------|-------------|-------------|-------------|-------------|
|            | RMS         | RMS         | RMS         | RMS         |
| 16 Vdc     | 94          | 140         | 273         | 325         |
| 20 Vdc     | 74          | 108         | 205         | 244         |
| 24 Vdc     | 63          | 90          | 168         | 194         |
| 33 Vdc     | 48          | 70          | 124         | 139         |
| 16 Vfwr    | 126         | 187         | 368         | 403         |
| 20 Vfwr    | 108         | 156         | 281         | 333         |
| 24 Vfwr    | 97          | 139         | 240         | 270         |
| 33 Vfwr    | 89          | 119         | 197         | 214         |

### Typical Current (high cd output models)

| 95 cd | 115 cd | 150 cd | 177 cd |
|-------|--------|--------|--------|
| RMS   | RMS    | RMS    | RMS    |
| 333   | 392    | 499    | 551    |
| 259   | 303    | 378    | 429    |
| 212   | 245    | 306    | 342    |
| 155   | 180    | 211    | 236    |
| 484   | 570    | 673    | 724    |
| 380   | 438    | 537    | 604    |
| 318   | 361    | 434    | 484    |
| 245   | 269    | 308    | 338    |

## Wiring

Field wiring terminals accommodate #18 to #12 AWG (0.75 mm<sup>2</sup> to 2.5 mm<sup>2</sup>) wiring.



## Specifications

|  |   |
|--|---|
| Housing  | Textured UV stabilized, color impregnated engineered plastic. Exceeds 94V-0 UL flammability rating. Red and white models available.   |
| Mounting   | Flush mount to North American 4-inch square electrical box, 2-1/8 (54 mm) inches deep, or 960A-4RF round flush box. No extension ring required. Suitable for indoor wall or ceiling applications.   |
| Wire connections   | Screw terminals: polarized inputs for speaker, #18 to #12 AWG (0.75 mm <sup>2</sup> to 2.5 mm <sup>2</sup> ) wire size.   |
| Operating environment                                    | Indoor only: 32-120° F (0-49° C) ambient temperature; 0-93% relative humidity.  |
| Agency listings and approvals, GC Models                 | Meets ULC-S541, year 2004 UL requirements for standards UL1638 and UL1971. Complies with UL1480 Fifth Edition. UL/ULC File Number: S2813. FM, MEA, CSFM approved. CSFM File Number: 7320-1657: 0211/0285. Speaker-strobes comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule. |
| Agency listings and approvals, Low Frequency GCHF Models | UL 464 Listed for low frequency signaling applications. Meets ULC-S541, year 2004 UL requirements for standards UL1638 and UL1971. Complies with UL1480 Fifth Edition. FM, MEA, CSFM pending. Speaker-strobes comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule.             |
| Supervisory voltage                                      | 30 V max.   |

### Speaker

|                   |                             |
|-------------------|-----------------------------|
| Operating Voltage | 25 Vrms or 70 Vrms          |
| Speaker response  | 400 to 4,000 Hz             |
| Output            | See table on previous page. |

### Strobe

|                          |   |
|--------------------------|---|
| Light output             | Field selectable. See table on previous page.   |
| Operating current        | See table on previous page.   |
| Strobe output rating     | Clear: UL 1971, ULC S526: selectable 15/30/75/95 cd (GC-VM) and 95/115/150/177 cd (GC-VMH)<br>Amber: CAN/CSA-C22.2 No. 205, UL 1638: selectable 13/26/65/82 cd (GCW*-VMA), 82/100/130/155 cd (GCW*-VMHA)<br>Blue: CAN/CSA-C22.2 No. 205, UL 1638: selectable 6/12/31/40 cd (GCW*-VMB), 48/59/78/80 cd (GCW*-VMHB) |
| Strobe operating voltage | 16 to 33 VDC (24 VDC nominal)<br>or 16 to 33 VFWR (24 VFWR nominal)   |
| Strobe flash rate        | One flash per second, default.<br>Temporal setting (private mode only): synchronized to temporal output of Genesis audible signals on same circuit.   |
| Synchronization          | Meets or exceeds UL 1971 requirements. Maximum allowed resistance between any two devices is 20 Ohms. Refer to specifications for the synchronization control module, this strobe, and the control panel to determine allowed wire resistance.  |
| Synchronization Sources  | SIGA-CC1S, SIGA-MCC1S, SIGA-CC2A, SIGA-MCC2A, G1M-RM, BPS6A, BPS10A, APS6A, APS10A, iO Series, Fireshield Plus 3, 5 and 10 zone.  |
| Lens                     | Optical grade polycarbonate.  |

# Ordering Information

| Model                         | High Fidelity<br>(520 Hz capable) | Housing<br>Color | Text<br>Marking | Strobe<br>Output                   | Speaker<br>Voltage                            | Shipping<br>Weight     |
|-------------------------------|-----------------------------------|------------------|-----------------|------------------------------------|---|------------------------|
| <b>Life safety Appliances</b> |                                   |                  |                 |                                    |   |                        |
| GCHFRF-S2VMC                  | ✓                                 | Red              | FIRE            | Selectable<br>15, 30, 75, or 95 cd | 25 Volt<br>(Selectable<br>¼, ½, 1, or 2 watt) | 1.62 lb. (0.73<br>kg.) |
| GCHF WF-S2VMC                 | ✓                                 | White            |                 |                                    |   |                        |
| GCF-S2VM                      |                                   |                  | None            |                                    |   |                        |
| GC-S2VM                       |                                   |                  |                 |                                    |   |                        |
| GCHFRN-S2VMC                  | ✓                                 | Red              | FIRE            |                                    |   |                        |
| GCHF WN-S2VMC                 | ✓                                 | White            |                 |                                    |   |                        |
| GCHFRF-S2VMCH                 | ✓                                 | Red              | None            |                                    |   |                        |
| GCHF WF-S2VMCH                | ✓                                 | White            |                 |                                    |   |                        |
| GCF-S2VMH                     |                                   | Red              | FIRE            |                                    |   |                        |
| GCHFRN-S2VMCH                 | ✓                                 |                  |                 |                                    |   |                        |
| GCHF WN-S2VMCH                | ✓                                 | White            | None            |                                    |   |                        |
| GC-S2VMH                      |                                   |                  |                 |                                    |   |                        |
| GCHFRF-S2                     | ✓                                 | Red              | FIRE            | Speaker only models                |   |                        |
| GCFR-S2                       |                                   | White            |                 |                                    |   |                        |
| GCHF WF-S2                    | ✓                                 |                  | Red             |                                    |   |                        |
| GCHFRN-S2                     | ✓                                 |                  |                 |                                    |   |                        |
| GCHF WN-S2                    | ✓                                 | White            | None            |                                    |   |                        |
| GC-S2                         |                                   |                  |                 |                                    |   |                        |
| GCWN-S2                       |                                   | Red              | FIRE            | 15, 30, 75, or 95 cd               |   |                        |
| GCHFRF-S7VMC                  | ✓                                 |                  |                 |                                    |   |                        |
| GCHF WF-S7VMC                 | ✓                                 | White            | None            |                                    |   |                        |
| GCF-S7VM                      |                                   |                  |                 |                                    |   |                        |
| GCHFRN-S7VMC                  | ✓                                 | Red              | FIRE            |                                    |   |                        |
| GCHF WN-S7VMC                 | ✓                                 | White            |                 |                                    |   |                        |
| GCHFRF-S7VMCH                 | ✓                                 | Red              | None            |                                    |   |                        |
| GCHF WF-S7VMCH                | ✓                                 | White            |                 |                                    |   |                        |
| GCF-S7VMH                     |                                   | Red              | FIRE            |                                    |   |                        |
| GCHFRN-S7VMCH                 | ✓                                 |                  |                 |                                    |   |                        |
| GCHF WN-S7VMCH                | ✓                                 | White            | None            |                                    |   |                        |
| GC-S7VMH                      |                                   |                  |                 |                                    |   |                        |
| GCHFRF-S7                     | ✓                                 | Red              | FIRE            | Speaker only models                |   |                        |
| GCFR-S7                       |                                   | White            |                 |                                    |   |                        |
| GCHF WF-S7                    | ✓                                 |                  | Red             |                                    |   |                        |
| GCF-S7                        |                                   |                  |                 |                                    |   |                        |
| GCHFRN-S7                     | ✓                                 | White            | None            |                                    |   |                        |
| GCHF WN-S7                    | ✓                                 |                  |                 |                                    |   |                        |
| GC-S7                         |                                   | White            | None            |                                    |   |                        |
| GCWN-S7                       |                                   |                  |                 |                                    |   |                        |

See next page for Mass Notification Appliances



LIFE SAFETY & INCIDENT MANAGEMENT

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## Ordering Information

| Model   | High Fidelity | Text Marking | Lens Color | Strobe Output                   | Speaker Voltage                         | Shipping Weight     |
|---|---------------|--------------|------------|---------------------------------|---|---------------------|
| <b>Mass Notification Appliances, white housings</b> |               |              |            |                                 |   |                     |
| GCHFWA-S2VMA  | ✓             | ALERT        | Amber      | 13, 26, 65, or 82 cd            | 25 Volt (Selectable ¼, ½, 1, or 2 watt) | 1.62 lb. (0.73 kg.) |
| GCWA-S2VMA  |               |              |            |                                 |   |                     |
| GCHFWN-S2VMA  | ✓             | None         |            | 15, 30, 75, or 95 cd            |   |                     |
| GCWN-S2VMA  |               |              |            |                                 |   |                     |
| GCWN-S2VMC  |               | ALERT        | Clear      | 82, 100, 130, or 155 cd         |   |                     |
| GCHFWA-S2VMC  | ✓             |              |            |                                 |   |                     |
| GCWA-S2VMC  |               | None         |            | 95, 115, 150, or 177 cd         |   |                     |
| GCHFWA-S2VMAH                                       | ✓             |              |            |                                 |   |                     |
| GCWA-S2VMAH   |               | ALERT        | Clear      | Speaker only models             |   |                     |
| GCHFWN-S2VMAH                                       | ✓             |              |            |                                 |   |                     |
| GCWN-S2VMAH   |               | None         |            | 13, 26, 65, or 82 cd            |   |                     |
| GCWN-S2VMHC   |               |              |            |                                 |   |                     |
| GCHFWA-S2VMCH                                       | ✓             | ALERT        | Clear      | Selectable 6, 12, 31, or 40 cd  |   |                     |
| GCWA-S2VMCH   |               |              |            |                                 |   |                     |
| GCHFWA-S2   | ✓             | ALERT        |            | 15, 30, 75, or 95 cd            |   |                     |
| GCWA-S2   |               |              |            |                                 |   |                     |
| GCHFWA-S7VMA  | ✓             | ALERT        | Amber      | 82, 100, 130, or 155 cd         | 70 V (Selectable ¼, ½, 1, or 2 watt)    | 1.62 lb. (0.73 kg.) |
| GCWA-S7VMA  |               |              |            |                                 |   |                     |
| GCHFWN-S7VMA  | ✓             | None         | Blue       | Selectable 48, 59, 78, or 80 cd |   |                     |
| GCWN-S7VMA  |               |              |            |                                 |   |                     |
| GCHFWN-S7VMB  | ✓             | None         |            | 95, 115, 150, or 177 cd         |   |                     |
| GCWN-S7VMC  |               |              |            |                                 |   |                     |
| GCHFWA-S7VMC  | ✓             | ALERT        | Clear      | Speaker only models             |   |                     |
| GCWA-S7VMC  |               |              |            |                                 |   |                     |
| GCHFWA-S7VMAH                                       | ✓             | None         | Blue       |                                 |   |                     |
| GCWA-S7VMHA   |               |              |            |                                 |   |                     |
| GCHFWN-S7VMAH                                       | ✓             | ALERT        | Clear      |                                 |   |                     |
| GCWN-S7VMHA   |               |              |            |                                 |   |                     |
| GCHFWN-S7VMBH                                       | ✓             | None         |            |                                 |   |                     |
| GCWN-S7VMHC   |               |              |            |                                 |   |                     |
| GCHFWA-S7VMCH                                       | ✓             | ALERT        | Clear      |                                 |   |                     |
| GCWA-S7VMCH   |               |              |            |                                 |   |                     |
| GCHFWA-S7   | ✓             | ALERT        |            |                                 |   |                     |
| GCWA-S7   |               |              |            |                                 |   |                     |

## Accessories

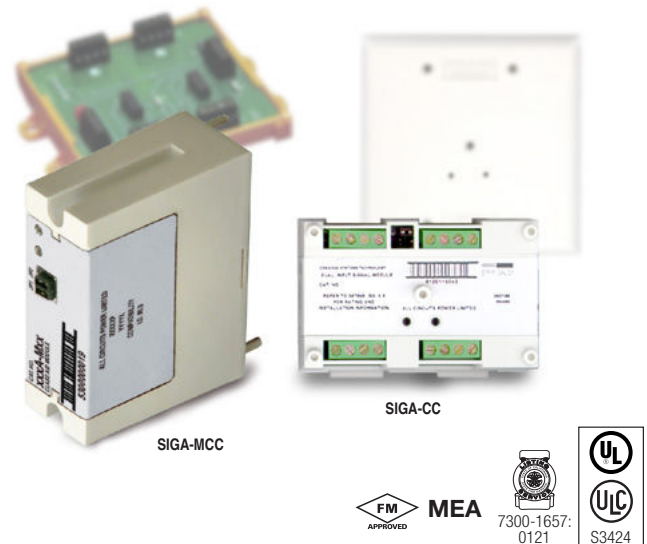
|            |  |             |
|------------|--|-------------|
| G1M-RM     | Synchronization Output Module (1-gang)             | 0.2 (0.1)   |
| SIGA-CC1S  | Intelligent Synchronization Output Module (2-gang) | 0.5 (0.23)  |
| SIGA-MCC1S | Synchronization Output Module (Plug-in UIO)        | 0.18 (0.08) |



LIFE SAFETY &amp; INCIDENT MANAGEMENT

# Signal Modules

## SIGA-CC1, SIGA-MCC1, SIGA-CC2 & SIGA-MCC2



### Overview

SIGA-CC1/MCC1 Single Input Signal Modules and SIGA-CC2/MCC2 Dual Input Signal Modules are part of EDWARDS's Signature Series system. They are intelligent analog addressable devices used 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.

The actual operation of the SIGA-CC1/MCC1 and SIGA-CC2/MCC2 is determined by the "personality code" selected by the installer. It is downloaded to the module from the Signature loop controller during system configuration.

**The SIGA-CC1 and SIGA-CC2** mount to standard North American two-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.

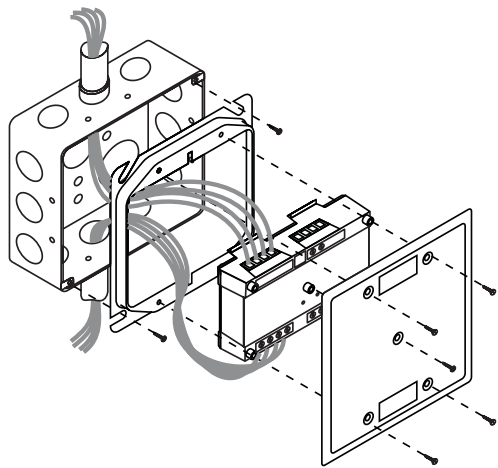
**The SIGA-MCC1 and SIGA-MCC2** are part of the UIO family of plug-in Signature Series modules. They function identically to the SIGA-CC1 and SIGA-CC2, but take advantage of the modular flexibility and easy installation that characterize all UIO modules. Two- and six-module UIO motherboards are available. 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.

### Standard Features

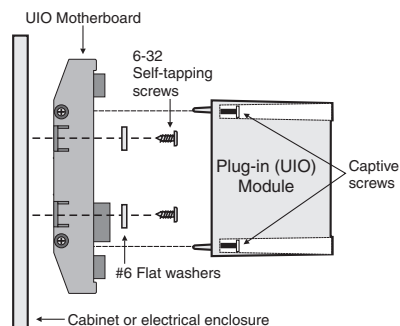
- Single and Dual input (riser) select**  
 Use for connecting supervised 24 Vdc Audible/Visible signal circuits, or 25 and 70 VRMS Audio Evacuation and Telephone circuits to their power inputs.
- Ring-tone generator**  
 When configured for telephone circuits, the SIGA-CC1 generates its own ring-tone signal eliminating the need for a separate ring-tone circuit.
- Plug-in (UIO) or standard 2-gang mount**  
 UIO versions allow quick installation where multiple modules are required. The 2-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.

## Installation

**The SIGA-CC1 and SIGA-CC2:** mount to North American 2-1/2 inch (64 mm) deep two-gang boxes and 1-1/2 inch (38 mm) deep 4-inch square boxes with two-gang covers and SIGA-MP mounting plates. The terminals are suited for #12 to #18 AWG (2.5 mm<sup>2</sup> to 0.75 mm<sup>2</sup>) wire size.



**SIGA-MCC1 and SIGA-MCC2:** mount the UIO motherboard inside a suitable EDWARDS enclosure with screws and washers provided. Plug the SIGA-MCC1 or SIGA-MCC2 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 mm<sup>2</sup> to



0.75 mm<sup>2</sup>) wire size.

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

**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.

Personality Codes 5 and 6 apply to the SIGA-CC1/MCC1 only and are assigned by the installer. Code 7 applies to the SIGA-CC2/MCC2 only. It is factory assigned; no user configuration is required.

## Application

The operation of the SIGA-CC1/MCC1 and SIGA-CC2/MCC2 is determined by their sub-type code or “Personality Code”. The code is selected by the installer depending upon the desired application and is down-loaded from the loop controller. Codes 5 and 6 apply to the SIGA-CC1/MCC1 only. Code 7 is assigned to the SIGA-CC2/MCC2 only and automatically applies to both circuits (A and B).

**Personality Code 5: SIGNAL POWER or AUDIO EVACUATION (SINGLE RISER).** Valid for the SIGA-CC1/MCC1 only. 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 w/RING-TONE (SINGLE RISER).** Valid for the SIGA-CC1/MCC1 only. 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 7: SIGNAL POWER or AUDIO EVACUATION (DUAL RISER).** Valid for the SIGA-CC2/MCC2 only. Configures the module for use as a two circuit Class B Audible/Visible Signal power (24 Vdc polarized) or Audio Evacuation (25 or 70 VRMS) power selector. The single 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.

## 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.

## Compatibility

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

## Testing & Maintenance

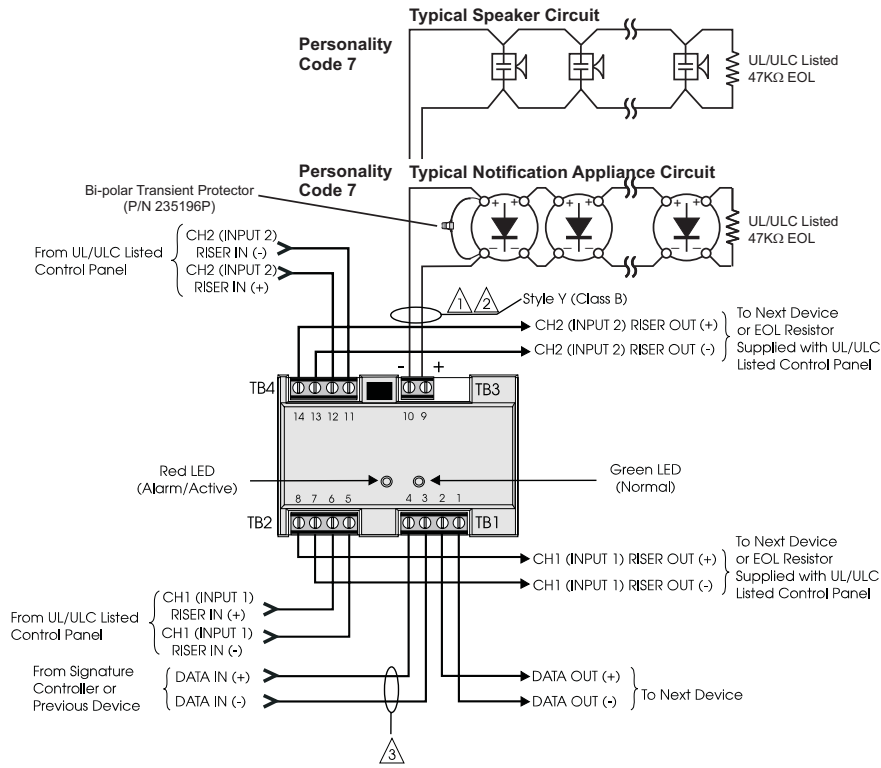
The module's automatic self-diagnosis identifies when it is defective and causes a trouble message. The user-friendly maintenance program shows the current state of each module and other pertinent messages. Single modules may be turned off (de-activated) temporarily, from the control panel.

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-CC2/MCC2)

Modules will accept #18 AWG (0.75mm<sup>2</sup>), #16 (1.0mm<sup>2</sup>), #14 AWG (1.50mm<sup>2</sup>) and #12 AWG (2.5mm<sup>2</sup>) wire sizes.

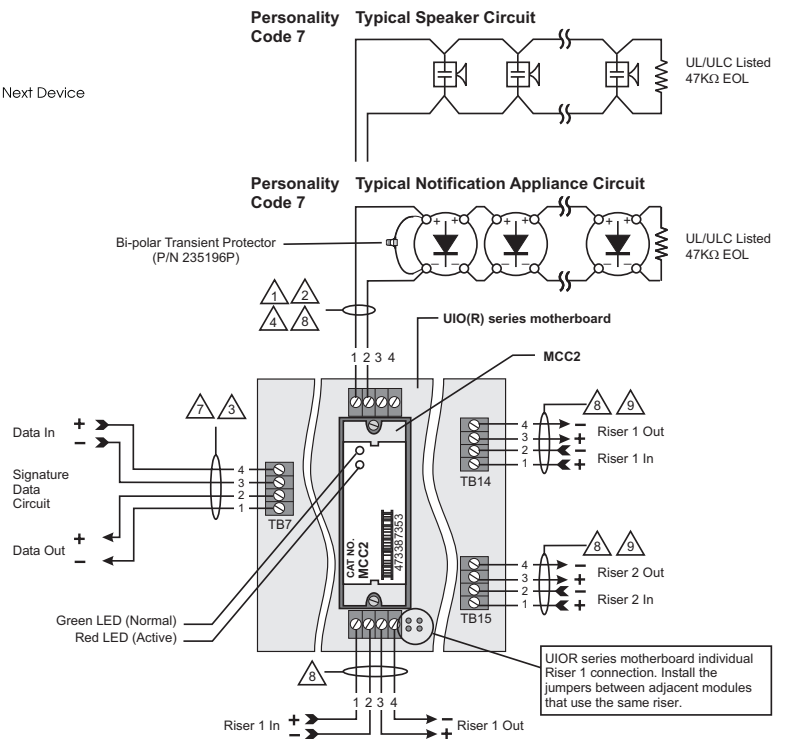
Note: Sizes #16 AWG (1.0mm<sup>2</sup>) and #18 AWG (0.75mm<sup>2</sup>) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.



## SIGA-CC2

### Notes

- ① For maximum wire resistance and maximum wire distances, refer to IOMC Manual (P/N 270144).
- ② Maximum #12 AWG (2.5mm<sup>2</sup>) wire. Min. #18 (0.75mm<sup>2</sup>).
- ③ Refer to Signature Loop Controller Installation Sheet for wiring specifications.
- ④ These modules will NOT support two-wire smoke detectors.
- ⑤ All wiring power limited and supervised. If the input source is non-power limited, then maintain spacing of 1/4 inch or use FPL, FPLP, FPLR or equivalent in accordance with NEC.
- ⑥ The SIGA-UIO6 does not come with TB8 through TB13.
- ⑦ Supervised and power-limited.
- ⑧ Supervised and power-limited when connected to a power-limited source. 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 The input for this riser is common to all modules.



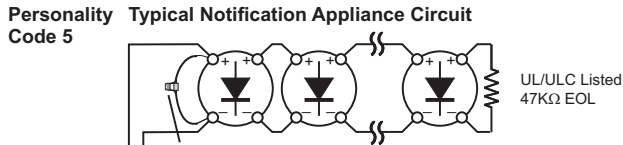
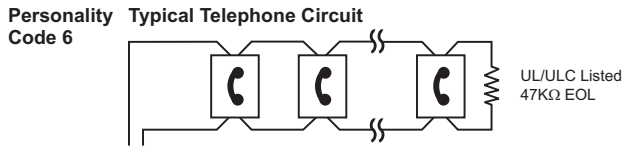
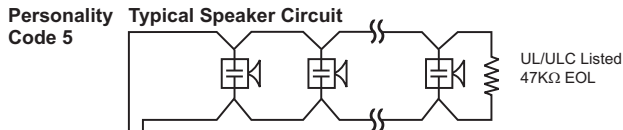
## SIGA-MCC2

| Maximum Output Load |       |       |
|---------------------|-------|-------|
| 24Vdc               | 25V   | 70V   |
| Signals             | Audio | Audio |
| 2A                  | 50W   | 35W   |

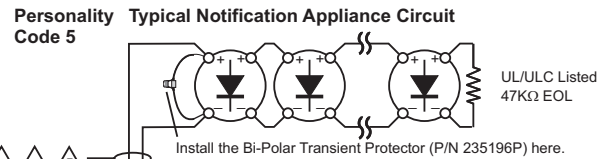
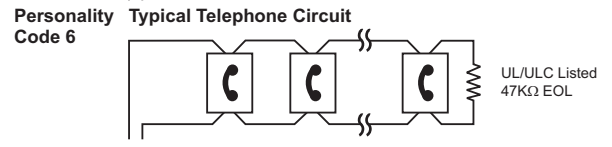
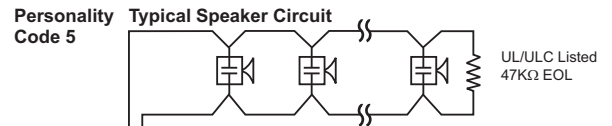
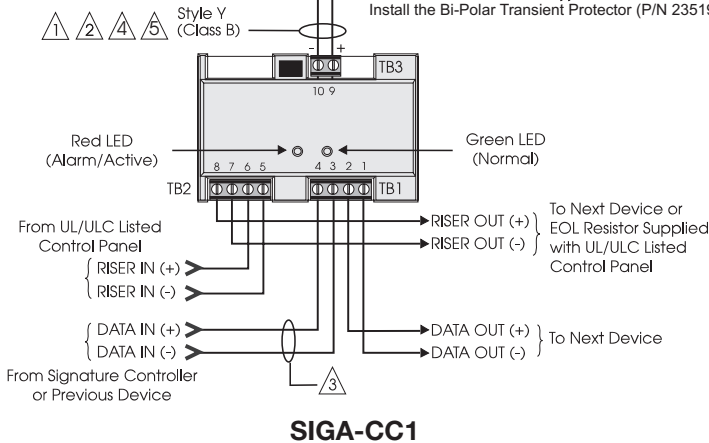
# Typical Wiring (SIGA-CC1/MCC1)

Modules will accept #18 AWG (0.75mm<sup>2</sup>), #16 (1.0mm<sup>2</sup>), #14 AWG (1.50mm<sup>2</sup>) and #12 (2.5mm<sup>2</sup>) wire sizes.

Note: Sizes #16 AWG (1.0mm<sup>2</sup>) and #18 AWG (0.75mm<sup>2</sup>) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.

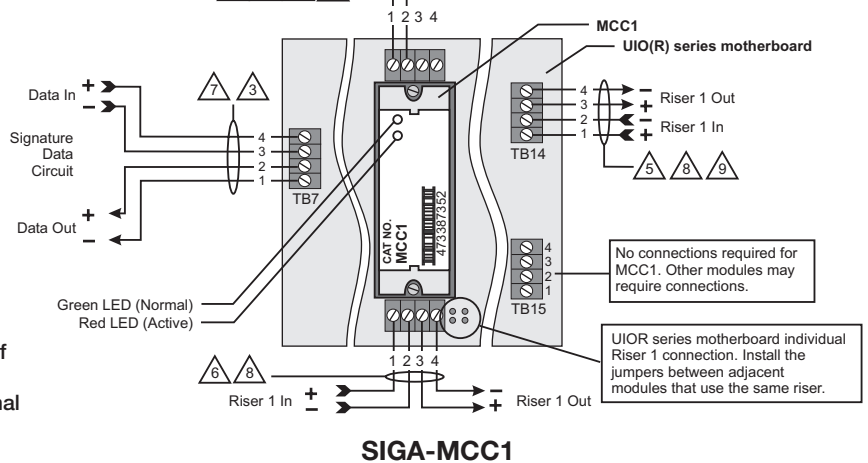


| Maximum Output Load |       |       |
|---------------------|-------|-------|
| 24Vdc               | 25V   | 70V   |
| Signals             | Audio | Audio |
| 2A                  | 50W   | 35W   |



## Notes

- 2 Maximum #12 AWG (2.5mm<sup>2</sup>) wire. Min. #18 (0.75mm<sup>2</sup>).
- 3 Refer to Signature Loop Controller Installation Sheet for wiring specifications.
- 4 These modules will NOT support two-wire smoke detectors.
- 5 All wiring power limited and supervised. If the input source is non-power limited, then maintain spacing of 1/4 inch or use FPL, FPLP, FPLR or equivalent in accordance with NEC.
- 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 The input for this riser is common to all modules.



## Signature Series Overview

The Signature Series intelligent analog-addressable system from EDWARDS 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, 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 (EST3 V 2 only.)
- 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.



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1016 Corporate Park Drive  
 Mebane, NC 27302

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## Specifications

| Catalog Number                  | SIGA-CC1   | SIGA-MCC1                                    | SIGA-CC2   | SIGA-MCC2                                    |
|---------------------------------|--|--|--|--|
| Description                     | Single Input (Riser) Signal Module   |  | Dual Input (Riser) Signal Module   |  |
| Type Code                       | 50 (factory set) Two sub-types (personality codes) are available   |  | 51 (factory set) One sub-type (personality code) is available (factory set)  |  |
| Address Requirements            | Uses one module address  |  | Uses two module addresses  |  |
| Wiring Terminations             | Suitable for #12 to #18 AWG (2.5 mm <sup>2</sup> to 0.75mm <sup>2</sup> )  |  |  |  |
| 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 | 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 |
| 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 & Operating Environment | Operating Temperature: 32°F to 120°F (0°C to 49°C)<br>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, FM   |  |  |  |

## Ordering Information

| Catalog Number | Description   | Ship Wt. lbs (kg) |
|----------------|---|-------------------|
| SIGA-CC1       | Single Input Signal Module (Standard Mount) - UL/ULC Listed | 0.5 (0.23)        |
| SIGA-MCC1      | Single Input Signal Module (UIO Mount) - UL/ULC Listed      | 0.18 (0.08)       |
| SIGA-CC2       | Dual Input Signal Module (Standard Mount) - UL/ULC Listed   | 0.5 (0.23)        |
| SIGA-MCC2      | Dual Input Signal 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) |

### Accessories

|           |   |             |
|-----------|---|-------------|
| 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) |

## Overview

The Remote Booster Power Supply is a self-contained 24 Vdc power supply designed to augment fire alarm audible and visual power requirements as well as provide power for auxiliary, access control and security applications. The booster contains all of the necessary circuits to monitor and charge batteries, control and supervise four Class B or two Class A NAC circuits and monitor two controlling inputs from external sources.

Simple switch selection provides a wide variety of operational configurations. Each remote booster power supply is supplied with its own enclosure providing ample space for additional interface modules and battery compartment.

The Remote Booster Power Supply is available in either a 6.5 or 10 amp version @ 24 Vdc.

## Standard Features

- Available in 10 amp and 6.5 amp versions.
- Includes four independent 3 amp NACs – each configurable as auxiliary outputs.
- Configurable signal rates.
- Field selectable input-to-output correlation.
- Extends power available to Notification Appliance Circuits (NACs).
- Provides strobe synchronization.
- Use as auxiliary Power Supply.

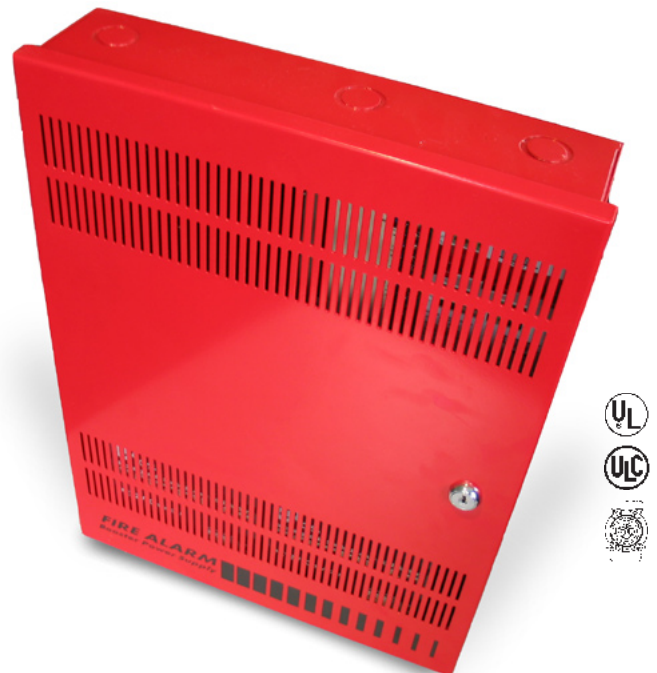
- Extensive UL Listings (Listed accessory under the following standards)

| Standard          | CCN         | Description   |
|-------------------|-------------|---|
| UL864 9th edition | 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    |
| ULC-S527          | UOXXC       | Control Units, Fire Alarm (Canada)                          |
| ULC-S303          | AOTX7       | Local Burglar Alarm Units and Systems (Canada)              |
| ULC-S304          | AMCX7       | Central and Monitoring Station Burglar Alarm Units (Canada) |
| C22.2 No. 205     |             | Signaling Equipment (Canada)                                |
| UL1076            | APOU, APOU7 | Proprietary Burglar Alarm System Units                      |
| UL1610            | AMCX        | Central Station Alarm Unit                                  |

- Two inputs allow activation by Signature Series modules or existing NACs.
- NACs configure for either four Class B or two Class A circuits.
- 110 Vac and 230 Vac versions
- On-board status LEDs for easy recognition of wiring faults.
- Supports up to 24 Amp hour batteries for fire and security applications, up to 65 Amp hour for access control applications.

# Remote Booster Power Supplies

BPS6A, BPS10A



## Application

The Remote Booster Power Supply provides additional power for audible and visual devices helping remove system capacity or site application constraints. The booster may also be used to power auxiliary, access control and security devices, in addition to fire devices.

Fault conditions detected by the BPS will open the main panel's NAC. This initiates a trouble condition and eliminates the need to wire a separate trouble contact back to the control panel. During alarm condition, detected faults are overridden and the main panel's default configuration is continuous 24 Vdc on all NACs typically used to drive visual devices. On board trouble contact is supplied for applications requiring trouble contact monitoring.

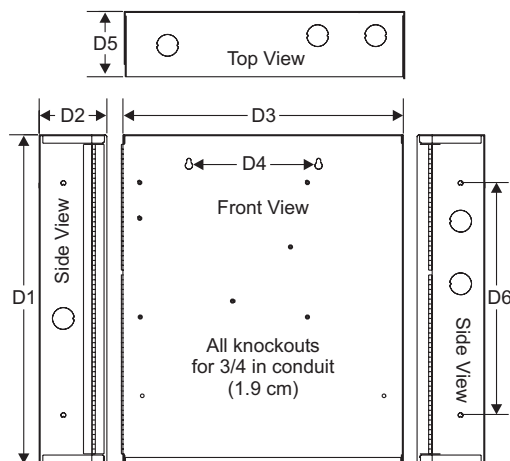
The booster power supply provides the capability to maximize available power by being able to supply power for multiple services including Access Control, Security and Fire. For security applications, space is provided to mount a tamper switch in the cabinet. When used for Fire Alarm notification with Genesis Notification appliances, the booster provides the ability to synchronize strobes as well as horn signals. The booster flexibility allows synchronization with upstream devices, or, the booster may be used to synchronize downstream devices, as well as other boosters and their connected devices. Up to 10 boosters deep may be configured while maintaining strobe synchronization.

BPS notification appliance circuits easily configure for either of two signaling rates: 3-3-3 temporal or continuous. California rate is also available on certain models. This makes the BPS ideal for applications requiring signaling rates not available from the main panel. It also allows independent setup of a notification appliance circuit without interfering with the main panel and its initiating circuits.

In addition to the generated signal rates, the BPS can also be configured to follow the signal rate of the main panel's notification appliance circuit. This allows seamless expansion of existing NACs.

The BPS includes seven on-board LED indicators: one for each

## Dimensions



| D1                   | D2                 | D3                   | D4                  | D5                   | D6                   |
|----------------------|--------------------|----------------------|---------------------|----------------------|----------------------|
| 17.0 in<br>(43.2 cm) | 3.5 in<br>(8.9 cm) | 13.0 in<br>(33.0 cm) | 6.5 in<br>(16.5 cm) | 3.375 in<br>(8.6 cm) | 12.0 in<br>(30.4 cm) |

resident NAC; one for battery supervision; one for ground fault; and, one for ac power. The trouble contact has a sixteen second delay when an ac power failure or brownout condition is detected. This reduces the reporting of troubles during short duration ac brownouts.

NAC configuration options include: ac power fail delay (16 seconds or 6 hours); sensing input to NAC output correlations; and, auxiliary outputs. All NACs are configurable as auxiliary outputs. Auxiliary outputs can be always on, or off after 30 seconds without ac power. As auxiliary output, the booster may power access control and security devices. Should an overcurrent occur, the booster automatically opens the circuit. The booster automatically restores the circuit when the overcurrent is removed. Jumpers configure the BPS for Class A or Class B wiring.

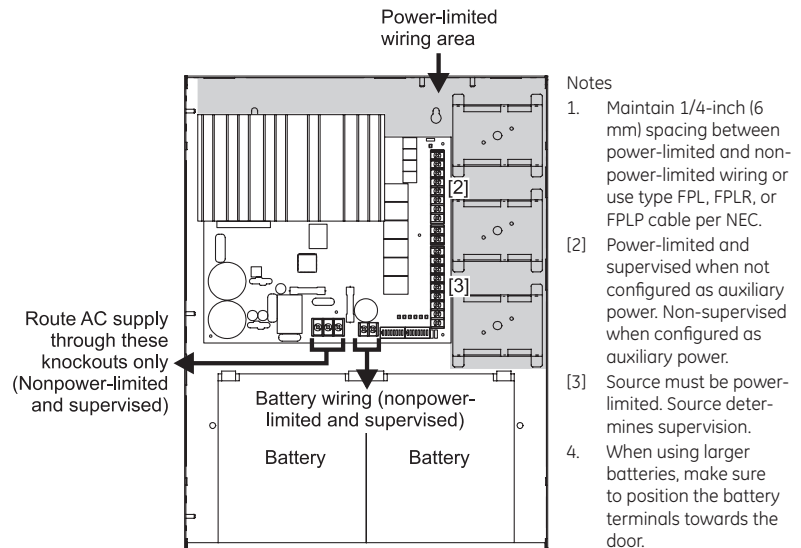
## Engineering Specification

Supply where needed GE Security BPS series Booster Power Supplies as an extension of Notification Appliance Circuits. The extension shall be in the form of a stand alone booster power supply. The supply must incorporate its own standby batteries. Batteries must be sized for <24>, <60> hours of standby followed by <5>, <30> minutes of alarm. It must be possible to support up to 24 Amp hour batteries.

The booster supply must incorporate four independent supervised Notification Appliance Circuits. It shall be possible to configure the NACs to follow the main panel's NAC or activate from intelligent Signature Series modules. The booster NACs must be configurable to operate independently at any one of the following rates: continuous, California Rate, or 3-3-3 temporal. Fault conditions on the booster shall not impede alarm activation of host NAC circuits.

The booster must be able to provide concurrent power for Notification devices, Security devices, Access Control equipment and Auxiliary devices such as door holders. The BPS must provide the ability to synchronize Genesis series strobes and horns.

## Wire routing

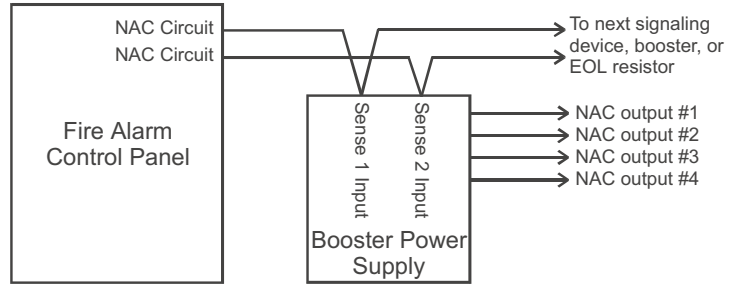




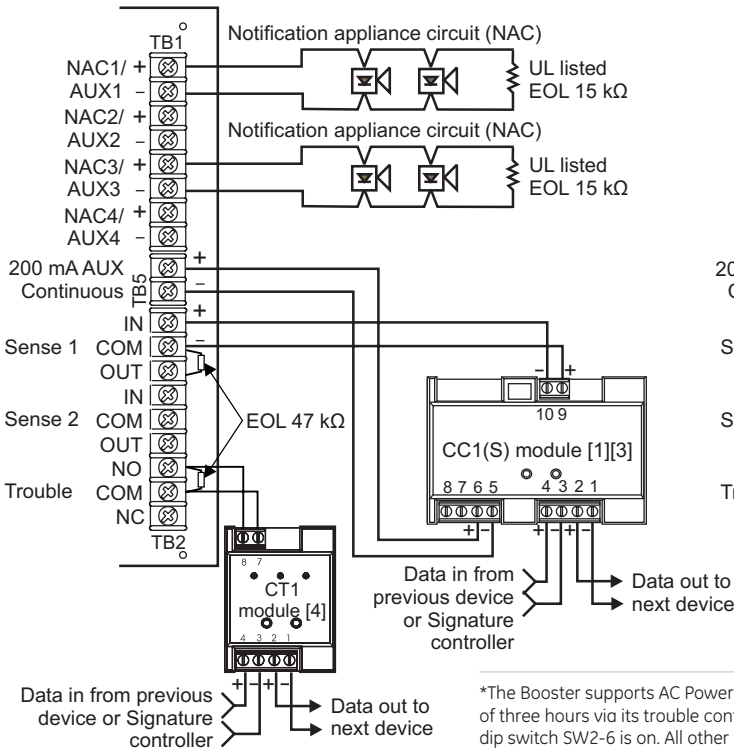
# Typical Wiring

## 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.

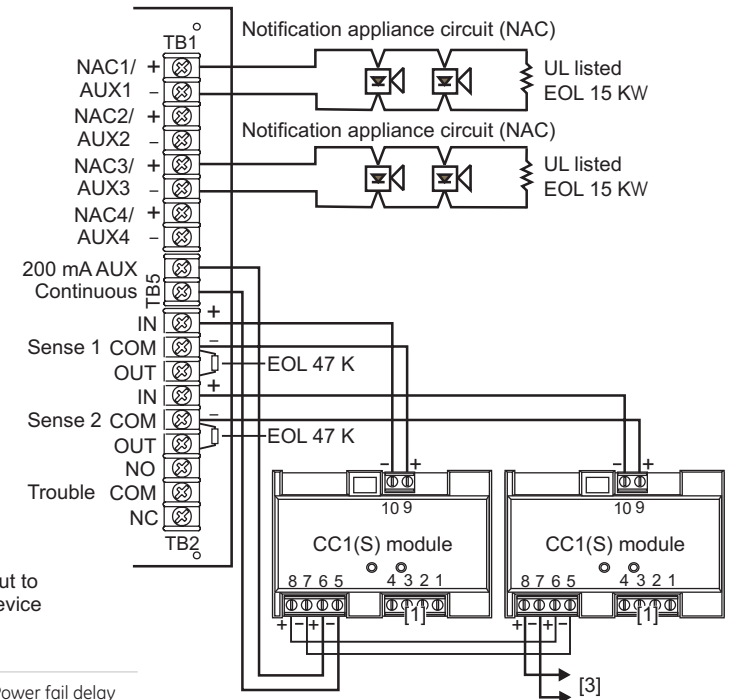


## Configuring the Booster for AC Power Fail delay operation\*

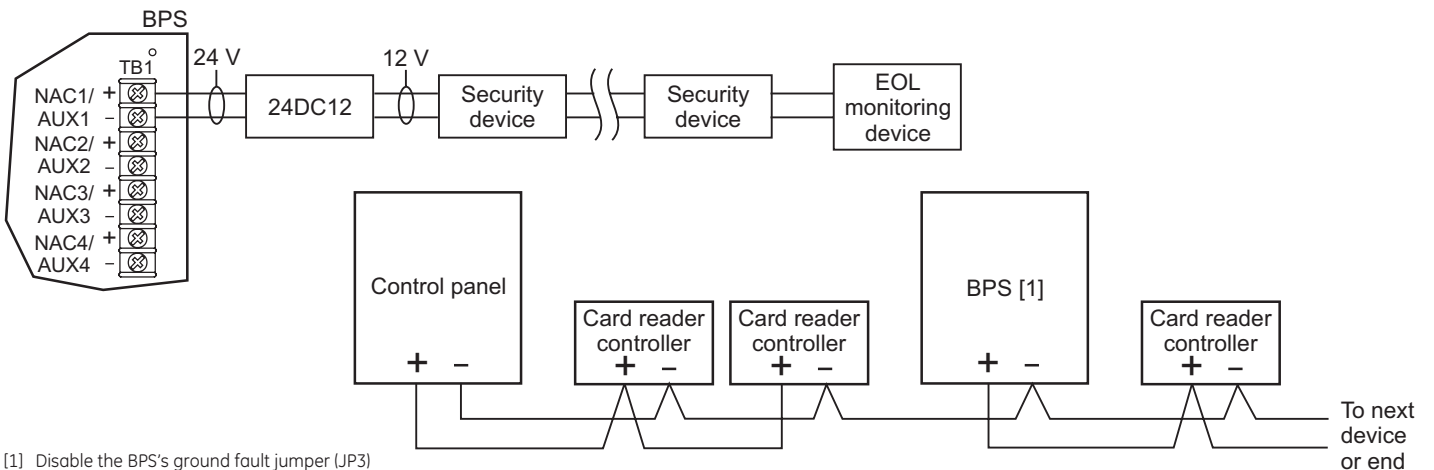


\*The Booster supports AC Power fail delay of three hours via its trouble contact when dip switch SW2-6 is on. All other troubles are reported to supervising module or panel without delay via Sense inputs.

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



## Security and access



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

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  
T 305 593 4301  
F 305 593 4300

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## Specifications

| Model                                     | 6.5 amp Booster  | 10 amp Booster  |
|---|--|---|
| AC Line Voltage                           | 120VAC or 220-240VAC 50/60Hz<br>250 watts  | 120VAC or 220-240VAC 50/60Hz<br>375 watts                       |
| Notification Appliance<br>Circuit Ratings | 3.0A max. per circuit @ 24Vdc<br>nominal 6.5A max total all NACs   | 3.0A max. per circuit @ 24Vdc<br>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<br>and 200 mA dedicated auxiliary. (See note 2.)   |   |
| Input Current<br>(from an existing NAC)   | 3mA @ 12Vdc, 6mA @ 24Vdc   |   |
| Booster Internal<br>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-<br>ternal battery cabinet for fire and security applications; up to 65 Amp<br>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,<br>or follow installed panel's NAC. (See note 1.)   |   |
| Ground Fault Detection                    | Enable or Disable via jumper   |   |
| Agency Listings                           | UL, ULC, 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.<br>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-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.



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

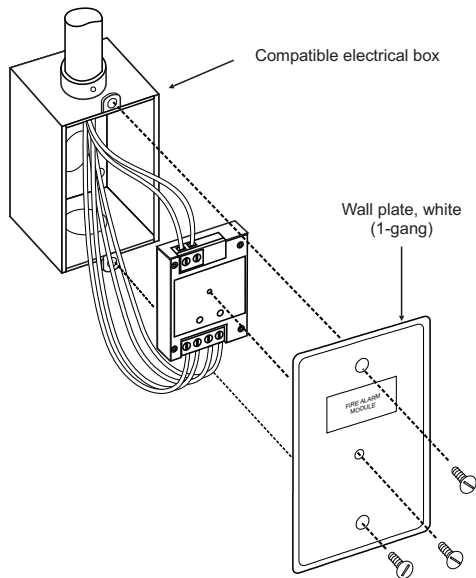


SIGA-MCRx

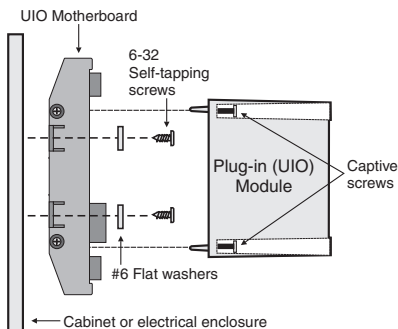
SIGA-CRx

## 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 mm<sup>2</sup> to 0.75 mm<sup>2</sup>) 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 mm<sup>2</sup> to 0.75 mm<sup>2</sup>) 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.

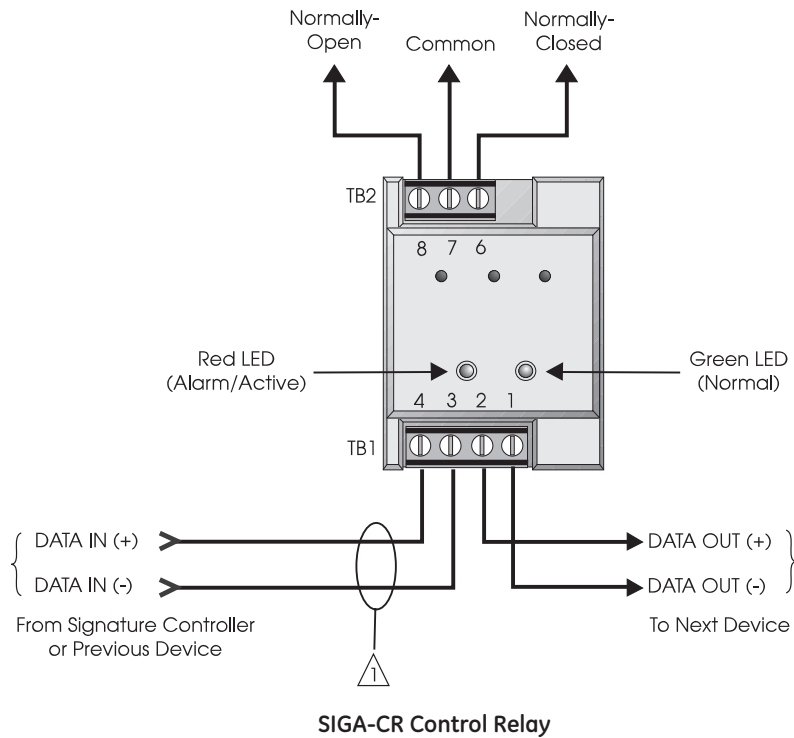
## Testing & Maintenance

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

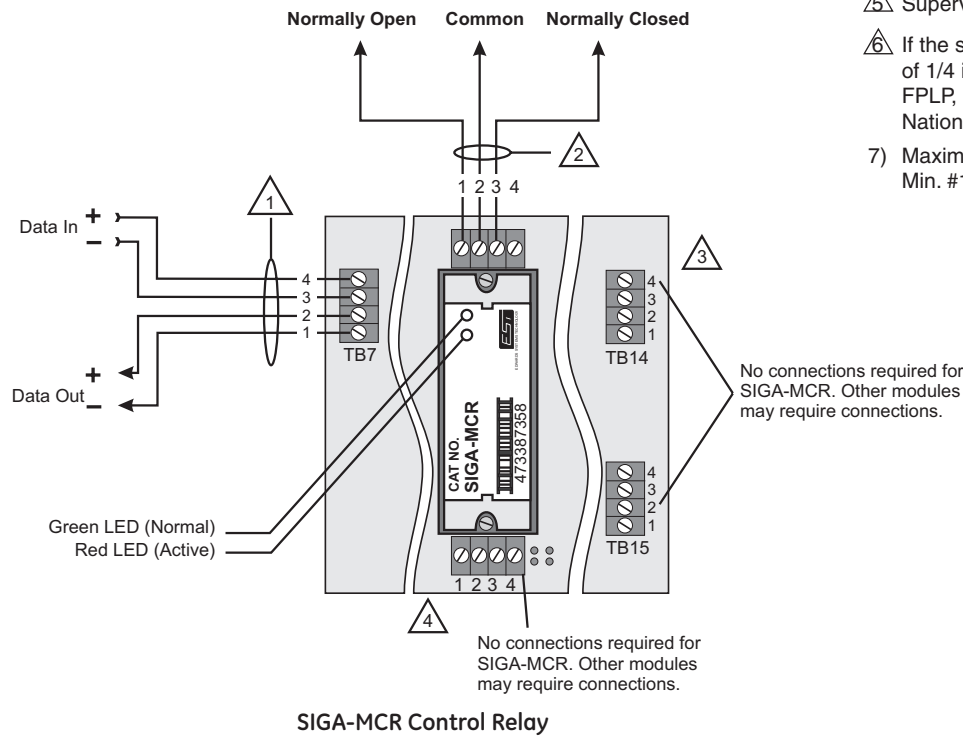
Modules will accept #18 AWG (0.75mm<sup>2</sup>), #16 (1.0mm<sup>2</sup>), #14 AWG (1.50mm<sup>2</sup>) and #12 AWG (2.5mm<sup>2</sup>) wire sizes.

Note: Sizes #16 AWG (1.0mm<sup>2</sup>) and #18 AWG (0.75mm<sup>2</sup>) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.



### Notes

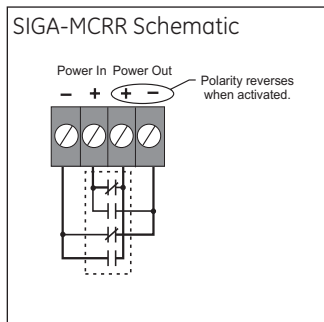
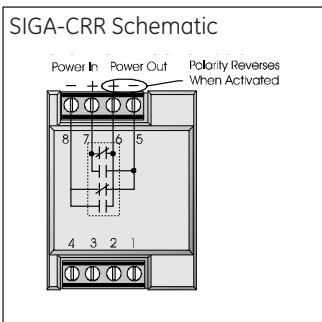
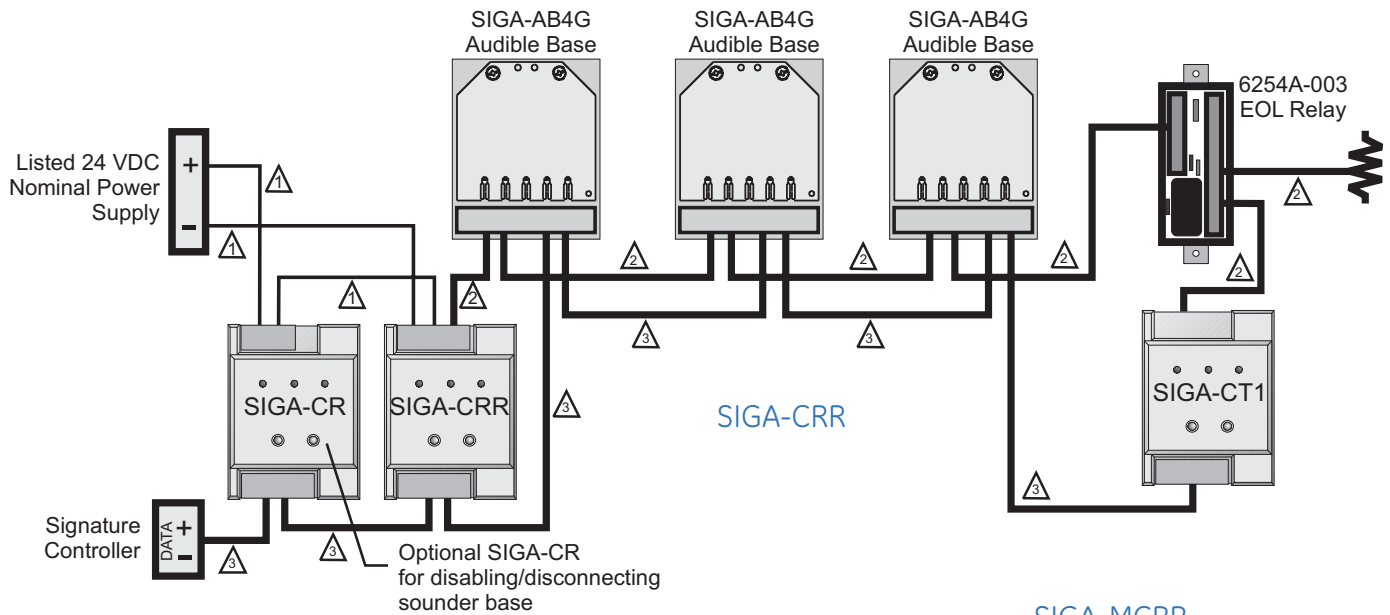
- 1 Refer to Signature Loop Controller Installation Sheet for wiring specifications.
- 2 NFPA 72 requires that the SIGA-CR/SIGA-MCR be installed in the same room as the device it is controlling. This requirement may not apply in all markets. Check with your local AHJ for details.
- 3 The SIGA-UIO6R and 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 (2.5mm<sup>2</sup>) wire. Min. #18 (0.75mm<sup>2</sup>).



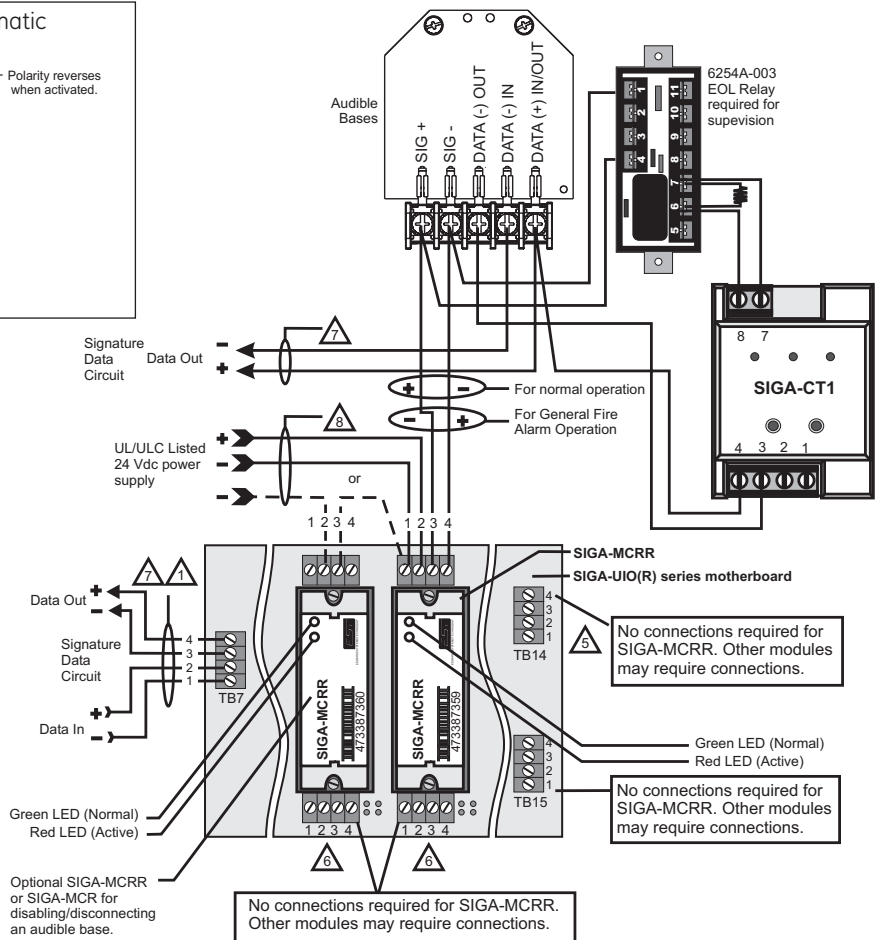
# Typical Wiring

Modules will accept #18 AWG (0.75mm<sup>2</sup>), #16 (1.0mm<sup>2</sup>), #14 AWG (1.50mm<sup>2</sup>) and #12 AWG (2.50mm<sup>2</sup>) wire sizes.

Note: Sizes #16 AWG (1.0mm<sup>2</sup>) and #18 AWG (0.75mm<sup>2</sup>) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.



## SIGA-MCRR



### Notes

- ⚠ Refer to the Signature controller installation sheet for wiring.
- ⚡ One Pair of Wires (24 Vdc power).
- ⚡ One Pair of Wires (Signature Data).
- ⚡ Single Wire (24 Vdc power).
- ⚠ The SIGA-UIO6R and the SIGA-UIO2R do not come with TB14.
- ⚠ The SIGA-UIO6 does not come with TB8 through TB13.
- ⚠ Supervised and power-limited.
- ⚠ 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 mm<sup>2</sup>) wire; Minimum #18 AWG (0.75 mm<sup>2</sup>).
- 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)<br>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) - UL/ULC Listed           | 0.4 (0.15)             |
| SIGA-MCR       | Control Relay Module (UIO Mount) - UL Listed                    | 0.18 (0.08)            |
| SIGA-CRR       | Polarity Reversal Relay Module (Standard Mount) - UL/ULC Listed | 0.4 (0.15)             |
| SIGA-MCRR      | Polarity Reversal Relay Module (UIO Mount) - UL Listed          | 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-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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## 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
- Date of manufacture, hours of operation, and last maintenance date<sup>2</sup>
- Number of recorded alarms and troubles<sup>2</sup>
- Time and date of last alarm<sup>1</sup>
- 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

<sup>1</sup>EST3 V.2 only.

<sup>2</sup>Retrievable with SIGA-PRO programming tool.



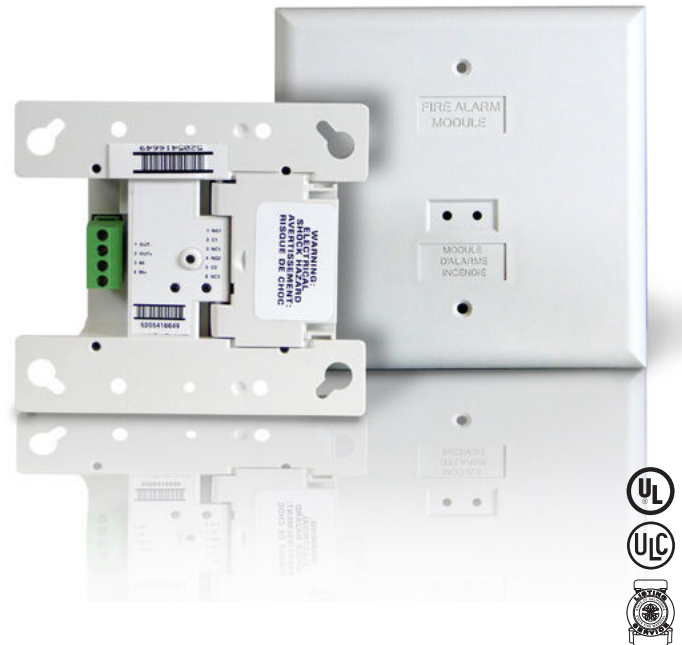




LIFE SAFETY &amp; INCIDENT MANAGEMENT

# High Power Control Relay Module

## SIGA-CRH



### Description

The SIGA-CRH High Power Control Relay Module is an addressable device designed for interface applications that require a high voltage, high current relay. Two identical sets of relay terminals are provided. Both sets of relay contacts transfer when the module is activated or restored. The state of the output terminals is not supervised.

The module requires one address on the signaling line circuit (SLC). The address is assigned electronically. There are no address switches to set.

### Standard Features

- **High Power Rating**  
120/240 VAC or 24 VDC rated contact can be used to control external appliances such as door closers, fans, dampers etc.
- **Provides one relay with two Form C contacts**  
Relay accepts 12 to 18 AWG (1.0 to 4.0 mm<sup>2</sup>) wiring from two sources
- **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.
- **Removable terminal blocks**  
Easy wiring and module replacement.
- **Electronic addressing**  
Programmable addresses are downloaded from the loop controller or PC; there are no switches or dials to set.
- **Intelligent device**  
Distributed intelligence allows 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

### Personality code

Use *Personality Code 8* to configure the SIGA-CRH module:

**Personality code 8:** Signal - dry contact output. Configures the module as a dry relay contact to control external appliances (door closers, fan controllers, dampers) or equipment shutdown.

### Indication

The status LED shows the state of the module through the cover plate:

- Normal: Green LED flashes
- Alarm/active: Red LED flashes

### Compatibility

The SIGA-CRH is part of the Signature Series intelligent processing and control platform. It is compatible with EST3, EST3X, and iO Series control panels.

### Warnings & Cautions

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

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

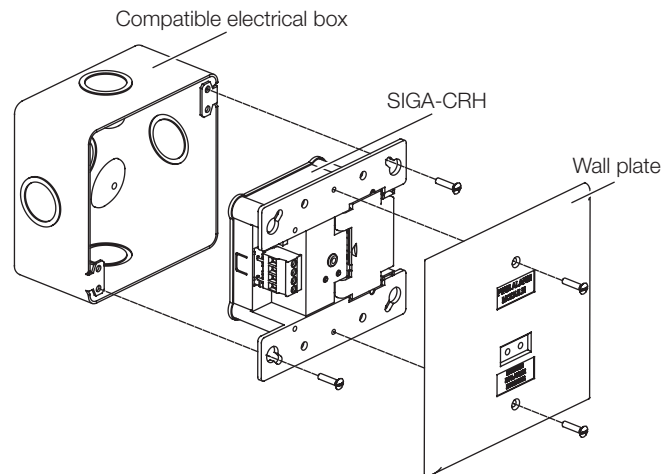
### Testing & Maintenance

SIGA-CRH 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.

### Electronic Addressing

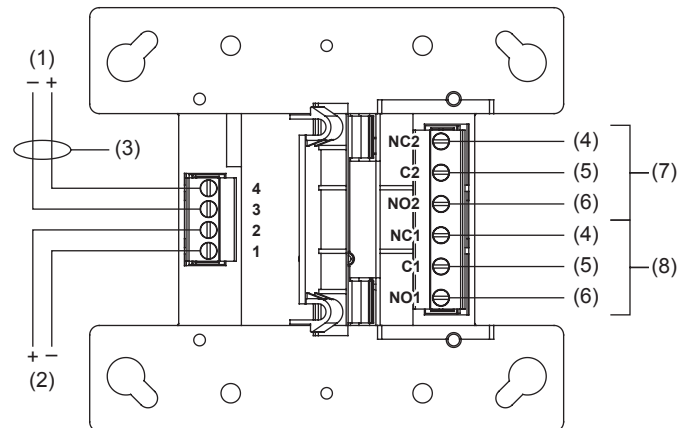
The loop controller electronically addresses the SIGA-CRH, saving valuable time during system commissioning. Setting complicated switches or dials is not required. The module has its own unique serial number stored in its on-board memory.

## Installation



Consult the SIGA-CRH High Power Control Relay Module Installation Sheet for details.

## Wiring



- (1) Signaling line circuit (SLC) from previous device
- (2) Signaling line circuit (SLC) to next device
- (3) Power-limited and supervised
- (4) Normally closed contact (NC)
- (5) Common contact (C)
- (6) Normally open contact (NO)
- (7) Relay terminal set 2.  
Not supervised. Power-limited unless connected to a nonpowerlimited source. If the source is nonpower-limited, eliminate the power-limited mark and maintain a minimum of 0.25 in. (6.4 mm) space from power-limited wiring. For other mounting methods, see enclosure and bracket installation sheets to maintain separation of power-limited and nonpower-limited wiring. The wire size must be capable of handling fault current from a nonpower-limited source.  
— or —  
Use type FPL, FPLR, FPLP, or permitted substitute cables, provided these power-limited cable conductors extending beyond the jacket are separated by a minimum of 0.25 in. (6.4 mm) space or by a nonconductive sleeve or nonconductive barrier from all other conductors. Refer to the NFPA 70 National Electrical Code for more details.
- (8) Relay terminal set 1. Identical to (7).

## Specifications

|                             |   |
|-----------------------------|---|
| SLC operating voltage       | 15.20 to 19.95 VDC  |
| SLC current                 | Standby 75 $\mu$ A max.<br>Activated 75 $\mu$ A max.  |
| Contact ratings [1][2]      | 240 V 50/60 Hz 7 A (PF 0.75), 1.5 A (PF 0.35)<br>120 V 50/60 Hz 7 A (PF 0.75), 3.0 A (PF 0.35)<br>24 VDC 6 A resistive<br>Audio switching 0 to 20 kHz [3] |
| Relay type                  | 2 Form C, programmable  |
| Relay ready delay           | 30 s max. (includes initial state set)  |
| From power up               | 5 s max. (one activation)   |
| From previous activation    | 8 s max. (two activations, 1 s apart)   |
| Circuit designation         |   |
| Signaling line circuits     | Class A, Style 6 or Class B, Style 4.<br>Refer to the control panel technical publications for SLC wiring details.  |
| Relay circuits              | Class E   |
| Number of SIGA-CRH per SLC  | 60 max.   |
| Wire size                   | 12 to 18 AWG (1.0 to 4.0 mm <sup>2</sup> )  |
| Compatible electrical boxes | North American double-gang $\times$ 2-1/8 in. (54 mm) deep box<br>North American standard 4 in. square $\times$ 2-1/8 in. (54 mm) deep box                |
| Agency Listings             | CAN/ULC-S527, UL 864  |
| Operating environment       |   |
| Temperature                 | 32 to 120°F (0 to 49°C)   |
| Relative humidity           | 0 to 93%, noncondensing   |
| Storage temperature         | -4 to 140°F (-20 to 60°C)   |

- [1] Provide external fusing and back-EMF mitigation as required by your application. Do not use the SIGA-CRH in a mixed application, where one set of relay terminals has high-power requirements and the other set carries a low-power signal, as this may result in physical contamination of the low-power signal contacts.
- [2] The minimum load required in order to avoid long-term contact oxidation is 100 mA and 12 V.
- [3] Power must not exceed the contact ratings shown for a given PF (power factor).

## Ordering Information

| Catalog Number | Description                     | Ship Weight lbs (kg) |
|----------------|---------------------------------|----------------------|
| SIGA-CRH       | High Power Control Relay Module | 0.4 (0.15)           |



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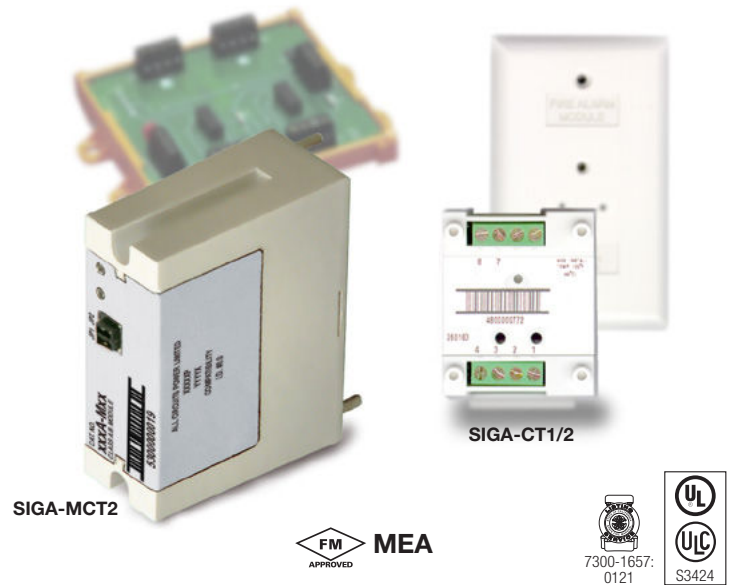
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# Input Modules

SIGA-CT1, SIGA-CT1HT,  
SIGA-CT2, SIGA-MCT2



## Overview

The SIGA-CT1 Single Input Module, SIGA-CT1HT High Temperature 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, SIGA-CT1HT 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-CT1HT module operates at an expanded temperature range of 32 °F to 158 °F (0 °C to 70 °C) for those applications requiring more extreme environmental temperature variation.

**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 EDWARDS enclosures.

## Standard Features

- Multiple applications**  
Including Alarm, Alarm with delayed latching (retard) for water-flow applications, Supervisory, and Monitor. The installer selects one of four “personality codes” to be downloaded to the module through the loop controller.
- SIGA-CT1HT rated for high temperature environments**  
Suitable for attic installation and monitoring high temperature heat detectors.
- Plug-in (UIO) or standard 1-gang mount**  
UIO versions allow quick installation where multiple modules are required. The 1-gang mount version is ideal for remote locations that require a single module.
- Automatic device mapping**  
Signature modules transmit information to the loop controller regarding their circuit locations with respect to other Signature devices on the wire loop.
- Electronic addressing**  
Programmable addresses are downloaded from the loop controller, a PC, or the SIGA-PRO Signature Program/Service Tool. There are no switches or dials to set.
- Ground fault detection by address**  
Detects ground faults right down to the device level.

## Signature Series Overview

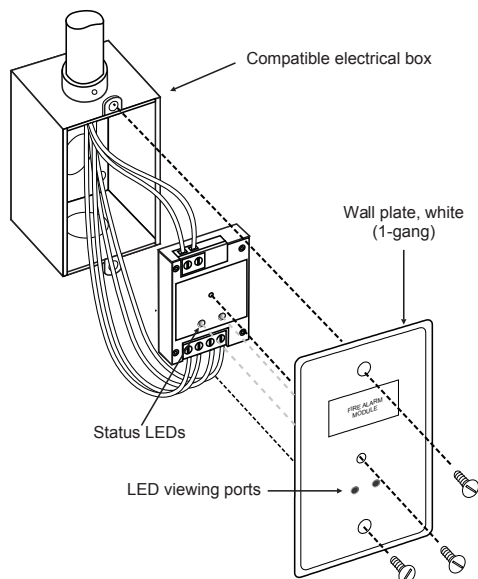
The Signature Series intelligent analog-addressable system from EDWARDS Security is an entire family of multi-sensor detectors and mounting bases, multiple-function input and output modules, network and non-network control panels, and user-friendly maintenance and service tools. Analog information from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

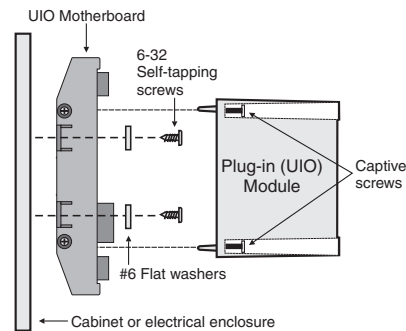
**Automatic Device Mapping** – The Signature Data Controller (SDC) learns where each device's serial number address is installed relative to other devices on the circuit. The SDC keeps a map of all Signature Series devices connected to it. The Signature Series Data Entry Program also uses the mapping 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, SIGA-CT1HT and SIGA-CT2:** modules mount to North American 2½ inch (64 mm) deep 1-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 1-gang covers and SIGA-MP mounting plates. The terminals are suited for #12 to #18 AWG (2.5 mm<sup>2</sup> to 0.75 mm<sup>2</sup>) wire size.



**SIGA-MCT2:** mount the UIO motherboard inside a suitable EDWARDS 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 mm<sup>2</sup> to 0.75 mm<sup>2</sup>) 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.

EDWARDS 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.

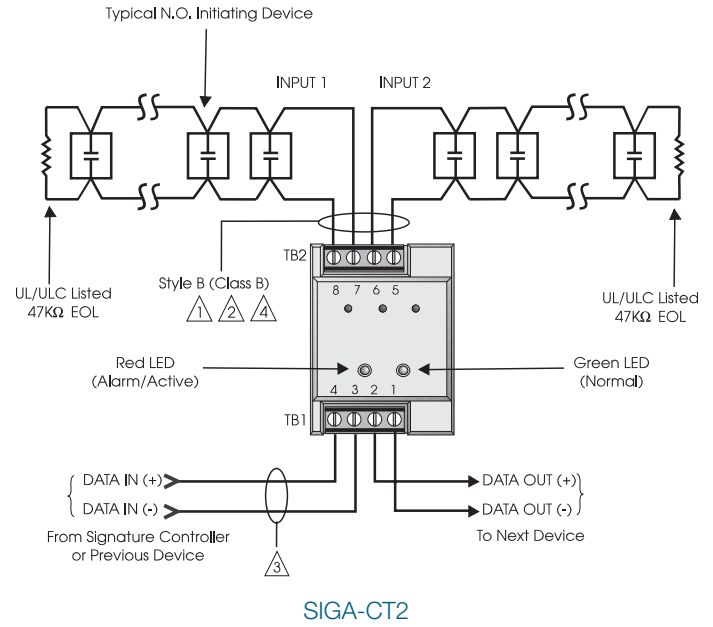
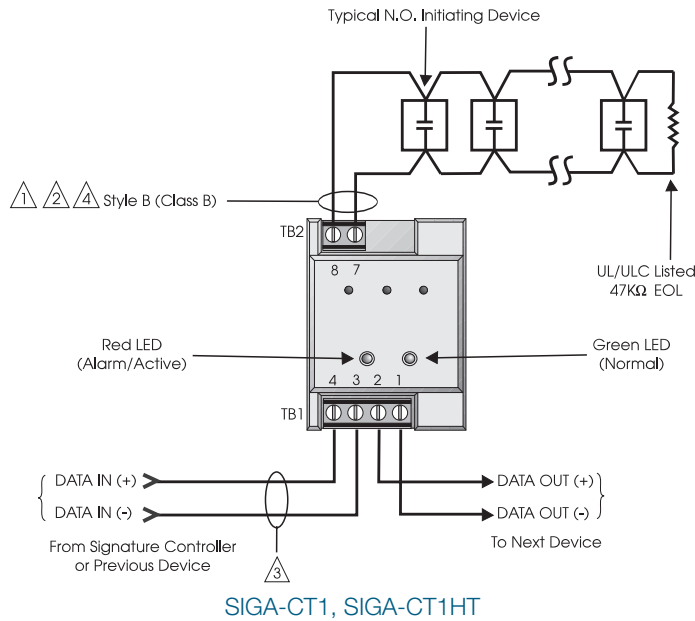
# Typical Wiring

Modules will accept #18 AWG (0.75mm<sup>2</sup>), #16 (1.0mm<sup>2</sup>), and #14AWG (1.50mm<sup>2</sup>), and #12 AWG (2.50mm<sup>2</sup>) wire sizes.

Note: Sizes #16 AWG (1.0mm<sup>2</sup>) and #18 AWG (0.75mm<sup>2</sup>) 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:              | <b>Wire Size</b>                       | <b>Maximum Distance to EOLR</b> |
|                                    | #18 AWG (0.75 mm <sup>2</sup> )        | 4,000 ft (1,219 m)              |
|                                    | #16 AWG (1.00 mm <sup>2</sup> )        |                                 |
|                                    | #14 AWG (1.50 mm <sup>2</sup> )        |                                 |
|                                    | #12 AWG (1.50 mm <sup>2</sup> )        |                                 |



### NOTES

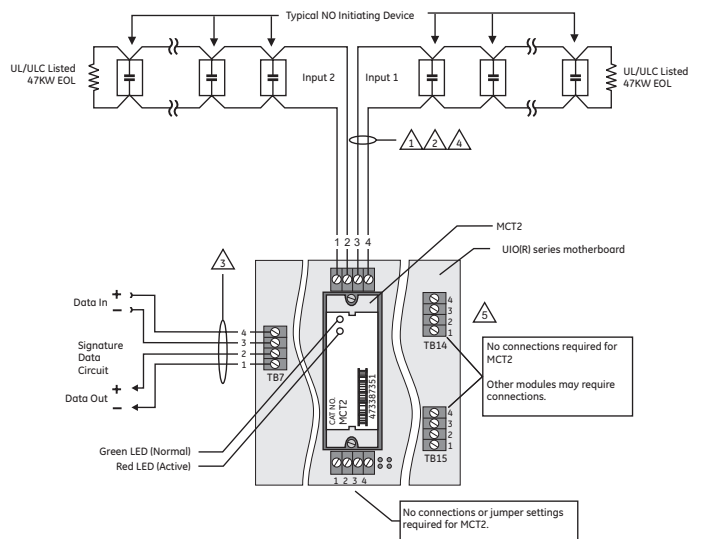
- ① Maximum 25 Ohm resistance per wire.
- ② Maximum #12 AWG (2.5 mm<sup>2</sup>) wire; Minimum #18 AWG (0.75 mm<sup>2</sup>).
- ③ Refer to Signature controller installation sheet for wiring specifications.
- ④ Maximum 10 Vdc @ 350 µA
- ⑤ The SIGA-UIO6R and the SIGA-UIO2R do not come with TB14.
- 6 All 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

These modules are part of EDWARDS's Signature Series intelligent processing and control platform. They are compatible with EST3, EST3X and iO Series control panels.





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## Specifications

| Catalog Number        | SIGA-CT1HT   | 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;<br>Activated = 400µA  |                             | Standby = 396µA;<br>Activated = 680µA                             |                        |
| Operating Voltage     | 15.2 to 19.95 Vdc (19 Vdc nominal)   |                             |   |                        |
| Construction          | High Impact Engineering Polymer  |                             |   |                        |
| Mounting              | North American 2½ inch (64 mm) deep one-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with one-gang covers and SIGA-MP mounting plates |                             |   | UIO2R/6R/6 Motherboard |
| Operating Environment | 32°F to 158°F (0°C to 70°C)  | 32°F to 120°F (0°C to 49°C) |   |                        |
| Storage Environment   | -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, MEA, CSFM   |                             |   |                        |

## Ordering Information

| Catalog Number | Description  | Ship Wt. lbs (kg) |
|----------------|--|-------------------|
| SIGA-CT1       | Single Input Module — UL/ULC Listed                          | 0.4 (0.15)        |
| SIGA-CT1HT     | Single Input Module High Temperature Operation UL/ULC Listed | 0.4 (0.15)        |
| SIGA-CT2       | Dual Input Module — UL/ULC Listed                            | 0.4 (0.15)        |
| SIGA-MCT2      | Dual Input Plug-in (UIO) Module — UL, ULC Listed             | 0.1 (0.05)        |

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