EST™
Life Safety & Communications

Intelligent Smoke Detector with Optional CO Sensor

SIGA2-PS, SIGA2-PCOS

Overview

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

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

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

Standard Features

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

DATA SHEET 85001-0619
Not to be used for installation purposes. Issue 1

Application

Smoke detection

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

Carbon monoxide detection

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

Installation

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

Testing & Maintenance

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

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

This detector will NOT sense fires that start in areas where smoke cannot reach the detector. Smoke from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector to alarm it.

Sensing and reporting technology

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

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

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

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

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

Accessories

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

SIGA-AB4G/T
Audible Base

SIGA-SB
Standard Base

SIGA-IB
Isolator Base

SIGA-RB
Relay Base

SIGA-LED
Remote LED

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

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

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

Typical Wiring

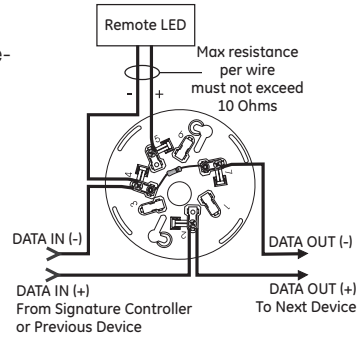
The detector mounting bases accept #18 AWG (0.75mm^2), #16 (1.0mm^2), #14 AWG (1.5mm^2), and #12 AWG (2.5mm^2) wire sizes.

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

Standard Detector Base, SIGA-SB, SIGA-SB4

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

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



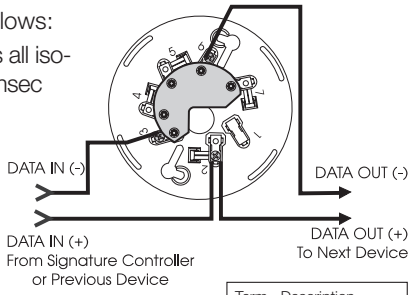
Isolator Detector Base, SIGA-IB, SIGA-IB4

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, reopens within 10 msec.

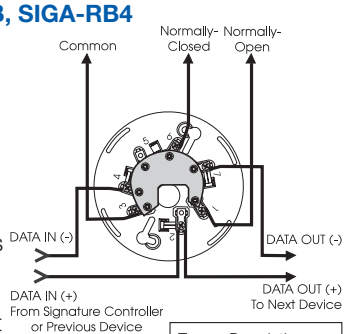
The process repeats beginning on the other side of the loop controller.



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

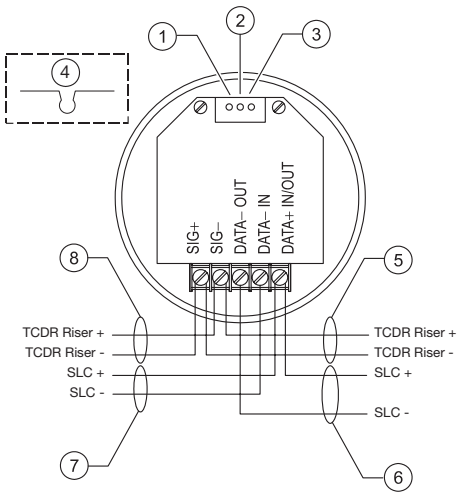


CONTACT RATING
1.0 Amp @ 30 VDC
(Pilot Duty)

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

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

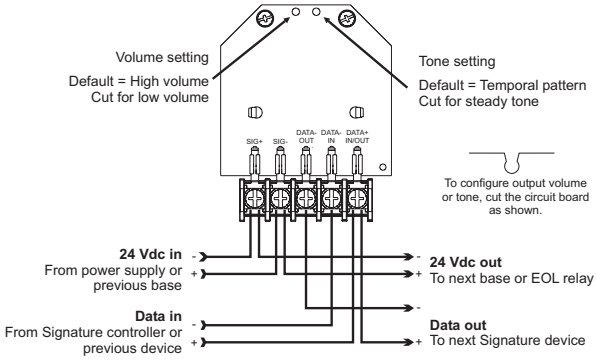
The Signature Series AB4GT sounder base, when used with the SIGA-TCDR Temporal Pattern Generator, adds an audible output function to any Signature Series detector. For more information on this device, refer to *Data Sheet 85001-0623 -- Sounder Base for CO and Fire Detectors*.



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

Audible Detector Base, SIGA-AB4G

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



Relay and Audible Bases operate as follows:

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

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Compatibility

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

Warnings & Cautions

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

This detector will NOT sense fires that start in areas where smoke cannot reach the detector. Smoke from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector to alarm it.

Specifications

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

Ordering Information

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

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

*Release pending.

EST™
Life Safety & Communications

Intelligent Smoke & Heat Detector with Optional CO Sensor

SIGA2-PHS, SIGA2-PHCOS

Overview

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

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

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

Standard Features

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

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

Application

Smoke detection

The SIGA2-PHS 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

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

Carbon monoxide detection

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

Installation

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

Testing & Maintenance

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

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

Sensing and reporting technology

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

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

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

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

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

Accessories

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

SIGA-AB4G/T
Audible Base

SIGA-SB
Standard Base

SIGA-IB
Isolator Base

SIGA-RB
Relay Base

SIGA-LED
Remote LED

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

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

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

Typical Wiring

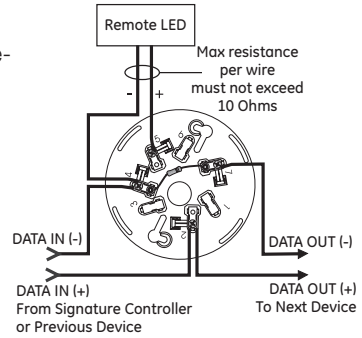
The detector mounting bases accept #18 AWG (0.75mm^2), #16 (1.0mm^2), #14 AWG (1.5mm^2), and #12 AWG (2.5mm^2) wire sizes.

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

Standard Detector Base, SIGA-SB, SIGA-SB4

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

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



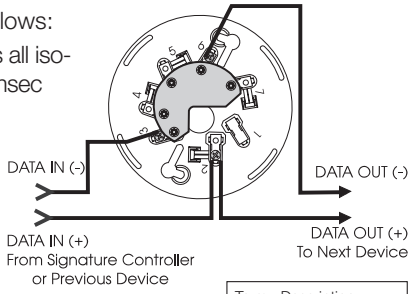
Isolator Detector Base, SIGA-IB, SIGA-IB4

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, reopens within 10 msec.

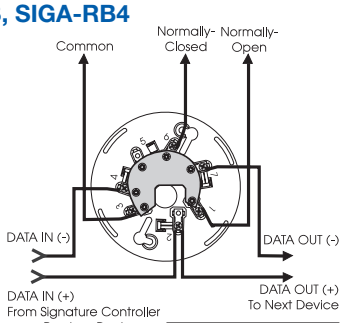
The process repeats beginning on the other side of the loop controller.



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

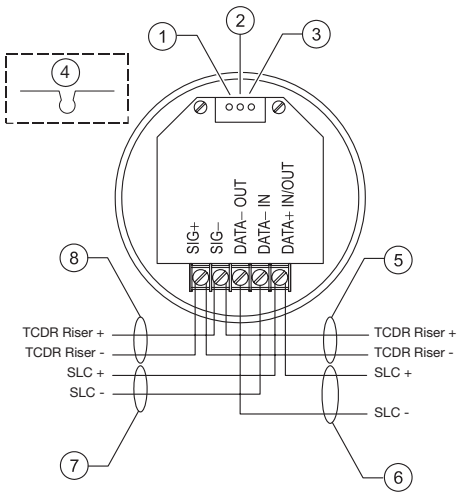


CONTACT RATING
1.0 Amp @ 30 VDC
(Pilot Duty)

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

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

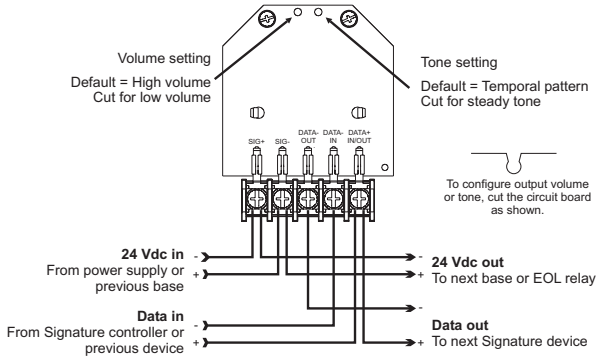
The Signature Series AB4GT sounder base, when used with the SIGA-TCDR Temporal Pattern Generator, adds an audible output function to any Signature Series detector. For more information on this device, refer to *Data Sheet 85001-0623 -- Sounder Base for CO and Fire Detectors*.



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

Audible Detector Base, SIGA-AB4G

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



Relay and Audible Bases operate as follows:

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

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Compatibility

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

Warnings & Cautions

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

This detector will NOT sense fires that start in areas where smoke cannot reach the detector. Smoke from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector to alarm it.

Specifications

	SIGA2-PHS	SIGA2-PHCOS
Operating voltage	15.20 to 19.95 VDC	
Normal operating current	70 µA	
Standalone alarm current	18 mA	
Alarm Current	70 µA	
Air velocity	0 to 4,000 ft./min (0 to 20 m/s).	
Heat sensor alarm point	130 to 140 °F (54 to 60 °C)	
Construction and finish	High impact engineering polymer	
Wall mounting	Maximum 12 in (305 mm) from ceiling	
Mounting	Plug-in	
Maximum spacing	50 ft. (15.2 m) centers	
Shipping weight	0.44 lb. (164 g)	
Compatible bases	See Ordering Information	
Operating environment		
Operating environment	32 to 100°F (0 to 38°C) 0 to 93% RH, noncondensing	32 to 120°F (0 to 49°C) 0 to 93% RH, noncondensing
Storage temperature	–4 to 140°F (–20 to 60°C)	
Environmental compensation	Automatic	

Ordering Information

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

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

*Release pending.

EST™
Life Safety & Communications

Intelligent Heat Detectors with Optional CO Sensors

SIGA2-HFS, SIGA2-HRS, SIGA2-HCOS

Overview

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

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

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

Standard Features

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

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

Application

Heat detection

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

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

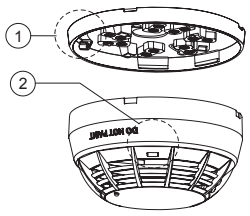
Carbon monoxide detection

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

Installation

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

Installation



1. Tamper-resist lever arm on base (Break off to disable.)
2. Access slot for tamper-resist mechanism

Testing & Maintenance

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

Compatibility

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

Sensing and reporting technology

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

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

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

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

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

Accessories

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


SIGA-AB4G/T
Audible Base


SIGA-SB
Standard Base


SIGA-IB
Isolator Base


SIGA-RB
Relay Base


SIGA-LED
Remote LED

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

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

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

Typical Wiring

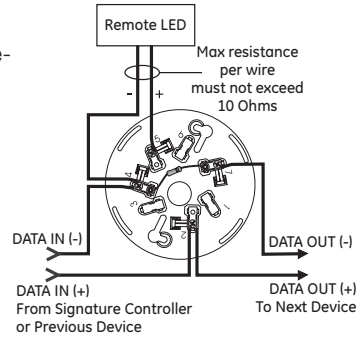
The detector mounting bases accept #18 AWG (0.75mm^2), #16 (1.0mm^2), #14 AWG (1.5mm^2), and #12 AWG (2.5mm^2) wire sizes.

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

Standard Detector Base, SIGA-SB, SIGA-SB4

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

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



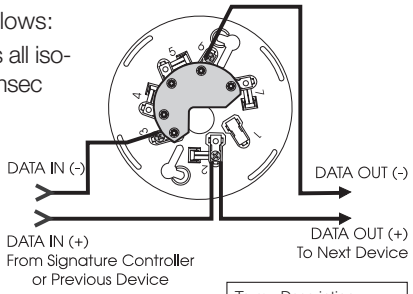
Isolator Detector Base, SIGA-IB, SIGA-IB4

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, reopens within 10 msec.

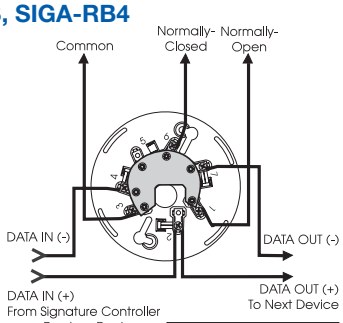
The process repeats beginning on the other side of the loop controller.



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

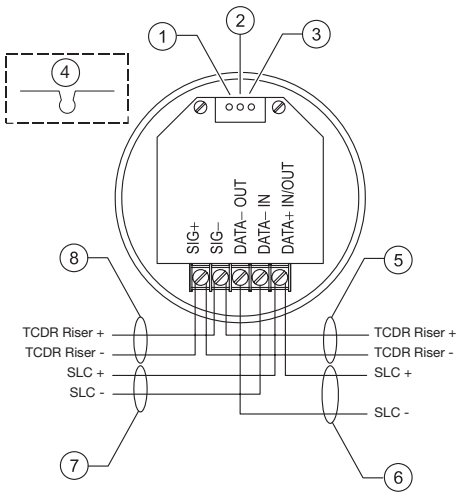


CONTACT RATING
1.0 Amp @ 30 VDC
(Pilot Duty)

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

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

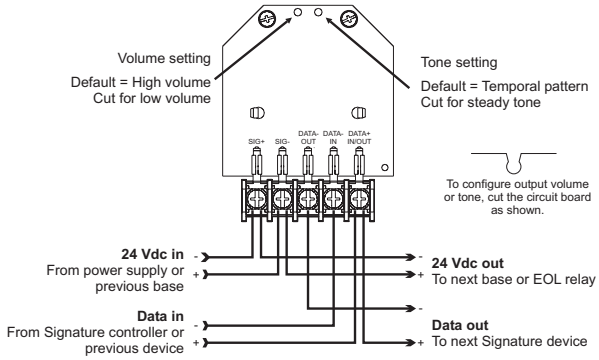
The Signature Series AB4GT sounder base, when used with the SIGA-TCDR Temporal Pattern Generator, adds an audible output function to any Signature Series detector. For more information on this device, refer to *Data Sheet 85001-0623 -- Sounder Base for CO and Fire Detectors*.



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

Audible Detector Base, SIGA-AB4G

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



Relay and Audible Bases operate as follows:

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

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Warnings & Cautions

- This detector does not operate without electrical power. As fires frequently cause power interruption, discuss further safeguards with the local fire protection specialist.
- This detector does not sense fires in areas where heat cannot reach the detector. Heat from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector.
- This heat detector by itself does not provide life safety protection Use this detector with ionization and/or photoelectric smoke detectors.
- This detector does not detect oxygen levels, smoke, toxic gases, or flames. Use this device as part of a broad-based life safety program which includes a variety of information sources pertaining to heat and smoke levels, extinguishment systems, visual and audible devices, and other safety measures.
- Independent studies indicate that heat detectors should only be used when property protection alone is involved. Never rely on heat detectors as the sole means of fire protection.

Specifications

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

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

Ordering Information

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

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

*Release pending.

Overview

The EC-50R/-100R comprises a transmitter and receiver in a single enclosure and is usually installed between 19 inches and 24 inches below the ceiling. The transmitter emits an invisible infrared light beam that is reflected via a prism mounted directly opposite and with a clear line of sight. The reflected infrared light is detected by the receiver and analyzed. Smoke in the beam path will reduce the received infrared light proportionally to the density of the smoke. The detector analyzes this attenuation or obscuration of light and acts accordingly. Detectors are typically mounted within ±30 feet (9.14 m) of a potential fire source. Consult your Authority Having Jurisdiction for spacing requirements specific to your locality.

Standard Features

- Coverage: 50R range 15 -160 ft (4.6 - 48.8 m); 100R range 160- 330 ft (48.8 - 100 m)
- Microprocessor controlled
- Automatic drift compensation
- Simple alignment
- Selectable alarm thresholds
- 24 Vdc operating voltage
- Latching or non-latching operation
- Low current consumption
- Optional Ground Level Test Station

Operation

Alarm Threshold: Alarm thresholds of 25%, 35% and 50% obscuration can be selected to suit the environment, with 25% the most sensitive setting. The factory default setting is 35 percent and is used for most typical applications. If the received infrared signal reduces to below the selected threshold for approximately 10 seconds, the fire relay is activated.

Fire Alarm: There are two modes to the operation of the fire relay. Auto reset mode will reset the fire relay 5 seconds after the received infrared signal has recovered to a level above the Alarm threshold. Latching mode holds the fire relay active indefinitely after an Alarm condition has occurred. To clear the latched mode, power must be removed from the Detector for a minimum of 5 seconds.

Trouble Alarm: If the infrared beam is obscured rapidly to a level of 90% or greater for approximately 10 seconds, the Trouble relay is activated. Typical causes of trouble include an object being placed in the beam path, transmitter failure, loss of the prism, or sudden misalignment of the detector. The Trouble relay will reset within 2 seconds of the trouble being cleared.

Automatic Gain Control (AGC): The Detector monitors long term degradation of signal strength caused by component aging or build up of dirt on optical surfaces. By comparing the received infrared signal against a standard every 15 minutes, the detector automatically compensates for signal differences of less than 0.7dB/hour. When the detector is showing AGC fault, detector is still capable of generating an alarm, and will display both Alarm and Trouble indications.

Reflective Beam Smoke Detector

EC-50R/-100R

Test Stations

The optional Ground Level Test Station facilitates testing of a connected detector from safe and convenient location. The unit is key-operated with a two-position Test/Run switch and includes two dedicated LEDs: one for Alarm indication and one for Power indication.

When the test station key is inserted and turned to the Test position, the Power LED flashes to indicate that power is connected and that the 2-wire data link cable is correctly installed. After several seconds in the test position, the test station initiates an alarm at the detector head, which is indicated by the red LED on the detector and the Alarm LED on the test station. Test mode automatically times out after 20 seconds at which time the detector returns to standby mode, regardless of the test station keyswitch position.

Connection between the test station and the detector is made by means of a 2-wire data link cable. The test station requires a 10.2 - 30 Vdc power connection.

Test Filter: A test filter is supplied with the detector, which is used to verify the alarm threshold. See the installation sheet for details on testing and calibration.

Application

Reflective beam smoke detectors are ideal for large open areas such as warehouses, hotel atriums, industrial plants and school gymnasiums.

An infrared signal is projected out of the transmitter optics to the reflector placed at the opposite end of the detection zone. The signal is reflected back to the receiver where it is analyzed for fire and trouble. The EC-50R/-100R must be positioned correctly to minimize the detection time. The maximum lateral distance either side of the beam is found to be typically 30 feet (9.1 m) for satisfactory detection under flat ceilings, providing a total area coverage of 19,800 square feet (60 feet x 330 feet), or 1844 square metres (18.3 x 100.6 m).

Smoke stratification may be overcome by mounting multiple beam detectors at different heights, one of which will project an infrared beam below the heat layer and into the smoke layer.

Detection time will be longer in a building with a peaked roof if a fire occurs at the fringes of the protected area. If in doubt conduct appropriate smoke tests.

The ideal location and spacing of the Detector is critical in a properly installed and operating fire alarm system. It is recommended that the detectors be located and spaced in accordance with the National Fire Protection Association (NFPA) Standard 72 "The National Fire Code". No liability will be accepted for applications not conforming to NFPA regulations.

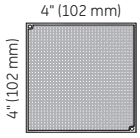
The recommended installation height is approximately 19 to 24 inches (483 to 610 mm) below the ceiling. However, in all installations the National Fire Standards for that country/state must be consulted.

Because of the reflecting properties of the beam, all objects must be kept a minimum of 19 inches (483 mm) away from the centre of the beam path down the entire beam length. If highly reflective surfaces are close to the beam, then greater clearances should be applied.

Reflector Positioning

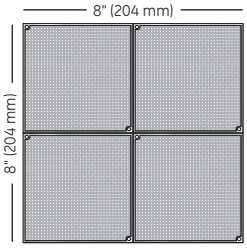
Mount the reflector(s) on a secure surface directly opposite the detector. Ensure that there is a clear line of sight between the detector and the reflector(s), and that no moving objects such as doors or mechanical equipment interfere with the beam path. All objects should be kept a minimum of 19 inches (483 mm) away from the center of the detector beam down the entire length of the beam path. Reflectors should not be mounted on glass or reflective surfaces.

EC-50R detectors should be mounted between 15 and 160 feet (4.6 and 48.8m) from a single reflector.



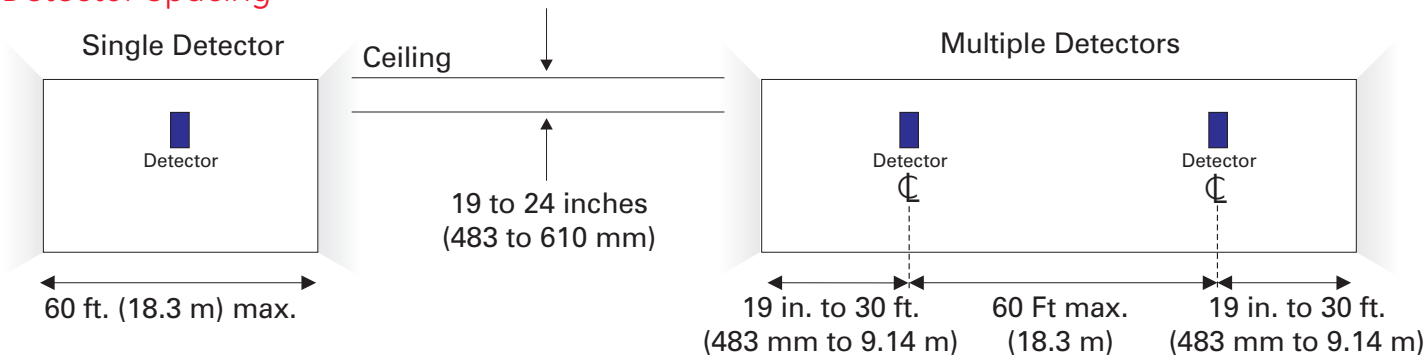
Single reflector

EC-100R detectors should be mounted between 160 and 330 feet (48.8 and 100.6 m) from a group of four reflectors.



Group of four reflectors

Detector Spacing



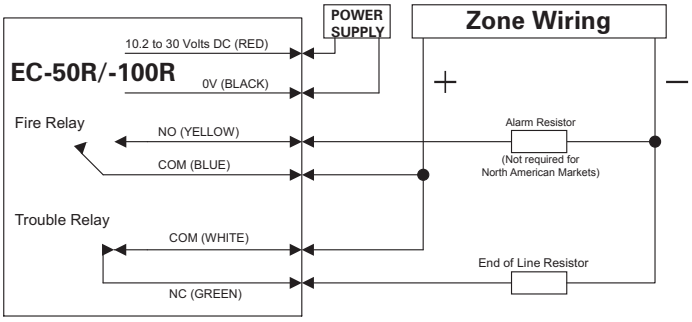
Detector positioning shown here is recommended for protected areas with flat ceilings. Spacing may vary for areas with high or sloped ceilings. In such cases, verify operation with smoke tests.

In some cases potential smoke layering may be overcome by installing multiple beam detectors at different heights.

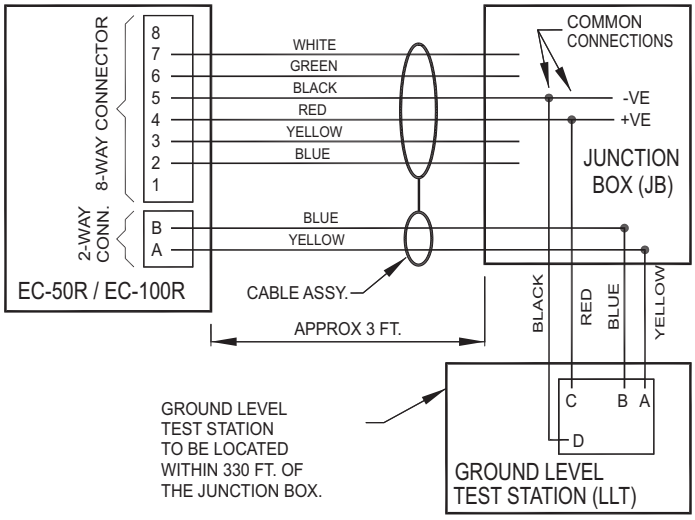
Typical Wiring

The field wiring interface is accessed through the back plate of the detector head. The 8-pin connector is the interface to the field and is numbered left to right. This diagram is an example for a single reflective beam unit installed as the only device on a zone. The correct operation for Fire and Trouble should always be verified. Relays are shown in quiescent (standby) condition. Alarm and End of Line resistor values are determined by the fire alarm control panel and market standard practices.

Zone Wiring



Ground Level Test Station



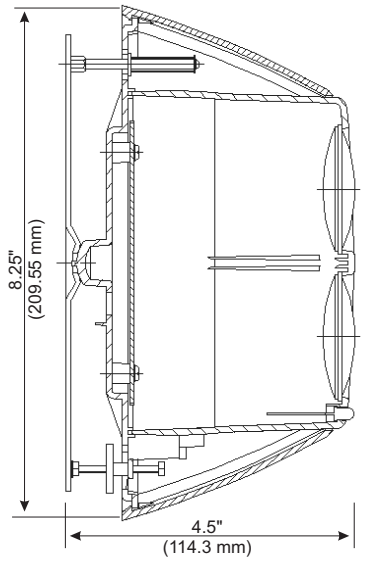
Detector Installation

Install the detector to a secure surface not subject to movement or vibration. Use the template provided to mark and install four fixing points. Secure the rear mounting plate to the four fixing points through the keyholes on the plate.

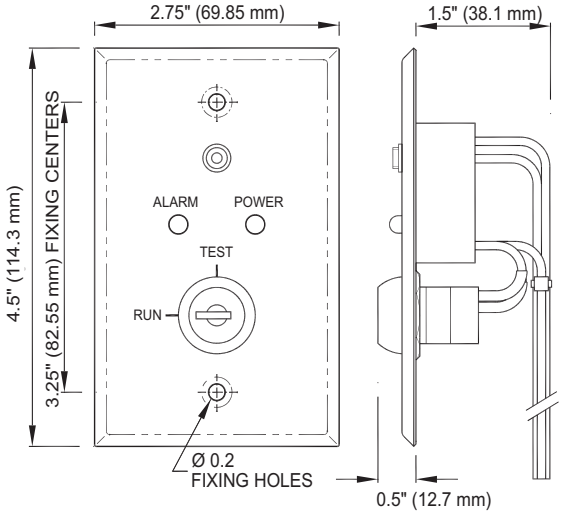
When installing the detector on a wall supported with wood studs, ensure the fixing points are secured directly to the supporting stud. When installing the detector on a wall supported with metal studs, mount a metal plate at least 1/8" (3.2 mm) thick across two studs and secure the detector to the plate.

Dimensions

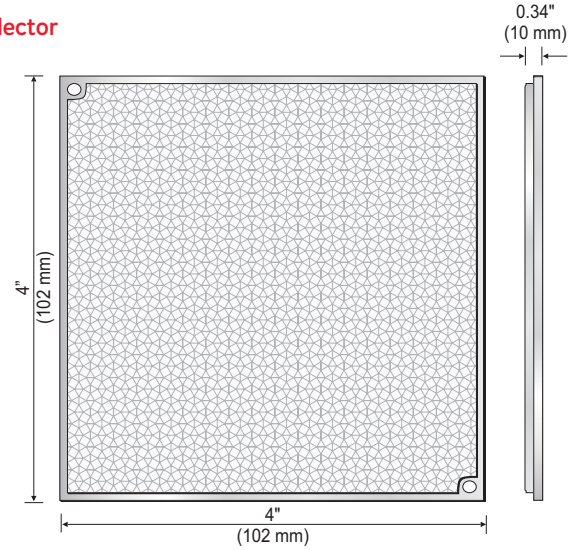
Detector



Test Station



Reflector



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Engineering Specifications

EC-50R

The projected beam type smoke detector shall be a 4-wire 12/24 Vdc device to be used with UL listed 4-wire control panels. The unit shall be listed to UL 268 and shall consist of an integrated transmitter and receiver. The beam detector shall operate between a range of 15 and 160 feet (4.57 and 48.77 m). It shall feature automatic gain control, which will compensate for gradual signal deterioration due to dirt accumulation on the lenses. The unit shall include a wall mounting bracket. Testing shall be carried out using a calibrated test filter. It shall be possible to test the detector without direct access to it by means of a remotely installed key-operated test station.

EC-100R

The projected beam type smoke detector shall be a 4-wire 12/24 Vdc device to be used with UL listed 4-wire control panels. The unit shall be listed to UL 268 and shall consist of an integrated transmitter and receiver. The beam detector shall operate between a range of 160 and 330 feet (48.77 and 100 m). It shall feature automatic gain control, which will compensate for gradual signal deterioration due to dirt accumulation on the lenses. The unit shall include a wall mounting bracket. Testing shall be carried out using a calibrated test filter. It shall be possible to test the detector without direct access to it by means of a remotely installed key-operated test station.

Ordering Information

P/N	Description	Ship Wt lb (kg)
EC-50R	EC-50R Reflective Beam Smoke Detector c/w test filter and one reflector	2.0 (0.90)
EC-100R	EC-100R Reflective Beam Smoke Detector c/w test filter and four reflectors	2.0 (0.90)
EC-LLT	Ground Level Test Station	1.0 (0.45)
23901-01	Replacement Reflector for EC-50R/-100R	1.0 (0.45)

Technical Specifications

Beam Detector

Power Supply	10.2 Vdc to 30 Vdc (continuous power)
Current	*Standby:* Less than 4 mA *Alarm/Trouble:* Less than 14 mA
Contacts	*Alarm:* Normally Open, rated 2A, 30 Vdc, resistive *Trouble:* Normally Closed, rated 2A, 30 Vdc, resistive
Signal Delay	Alarm and trouble: 10 seconds
Reset Time	>5 seconds (power down)
Dimensions (HxWxD)	8.25 in x 5.1 in x 4.7 in (21 cm x 13 cm x 12 cm)
Weight	1.5 lb (0.68 kg)
Operating Environment	*Temperature:* 32° F to 100° F (0° C to 37° C) *Humidity:* 93%RH, Non-condensing
Beam Coverage	*Width:* 30 ft (9.14 m) either side of beam *Length, EC-50R:* 15 ft to 160 ft (4.57 m to 48.77 m) *Length, EC-100R:* 160 ft to 330 ft (48.77 m to 100 m)
Alarm Thresholds	2.50dB (25%), 3.74dB (35%), 6.02dB (50%) obscuration
Optical Wavelength	880nm
Agency Listings	UL, ULC, CE

Test Station

Operating voltage	10.2 to 30 Vdc
Off current	0 mA
On current	8 mA max (alarm)
Wiring Terminations	Suitable for #12 to #18 AWG (2.5 mm² to 0.75 mm²) wire size. Shielded twisted pair recommended.
Operating temperature	32 °F to 100 °F
Key reference	A126
Humidity	max 93% RH (non condensing)
Agency Listings	UL, MEA, CSFM

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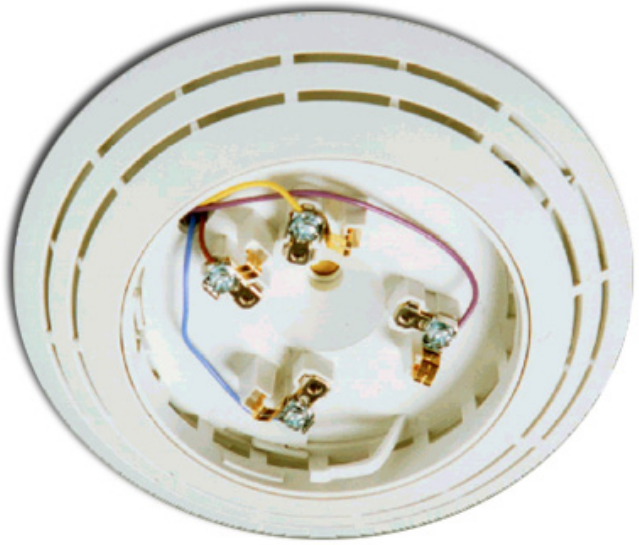
Sounder Base

Model SIGA-AB4G



UL
ULC
MEA
Pending

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 conjuction 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.

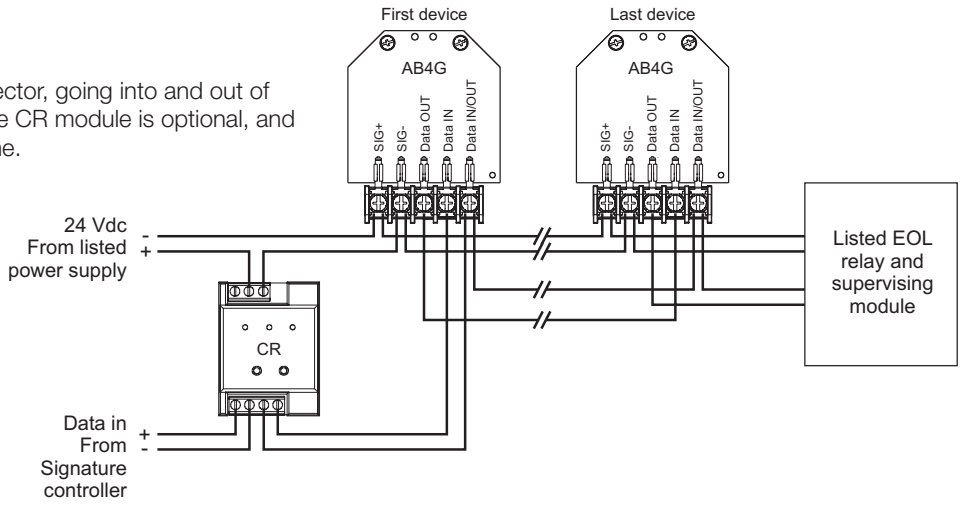
The base is listed by Underwriters Laboratories under the UL268 and UL464 standards, allowing its application where both smoke alarms and/or notification appliances are required. This makes the AB4G ideal for hotels, dormitories, and other residential occupancies where supplementary audible output is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

DATA SHEET 85001-0581
Not to be used for installation purposes. Issue 2

Applications

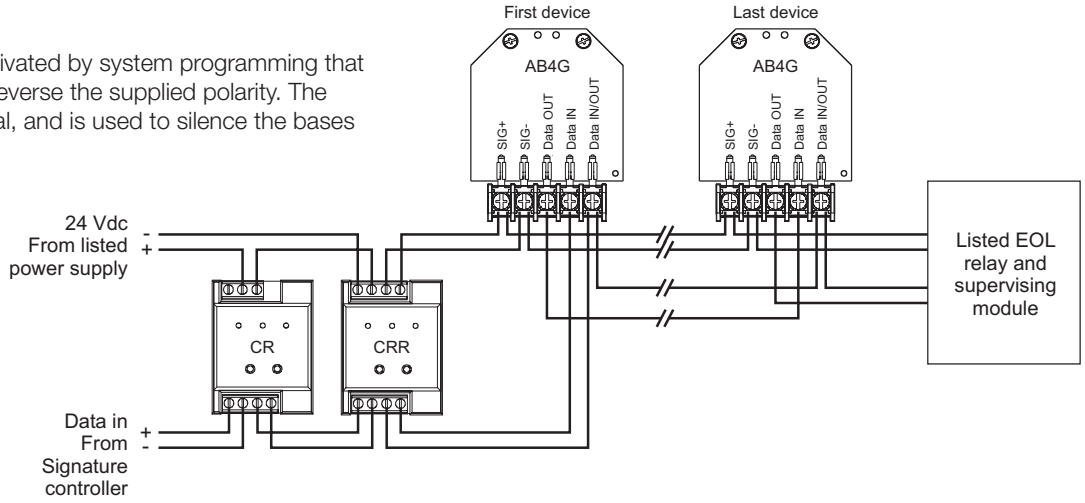
Detector operates the base

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.



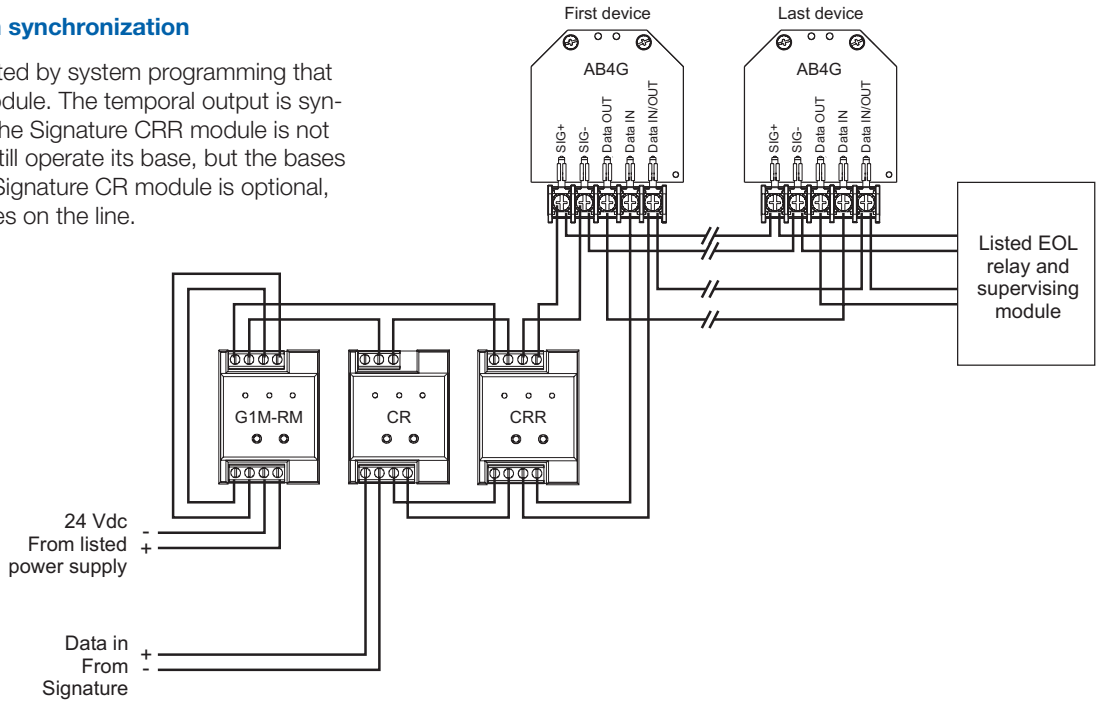
System turns on all bases

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)

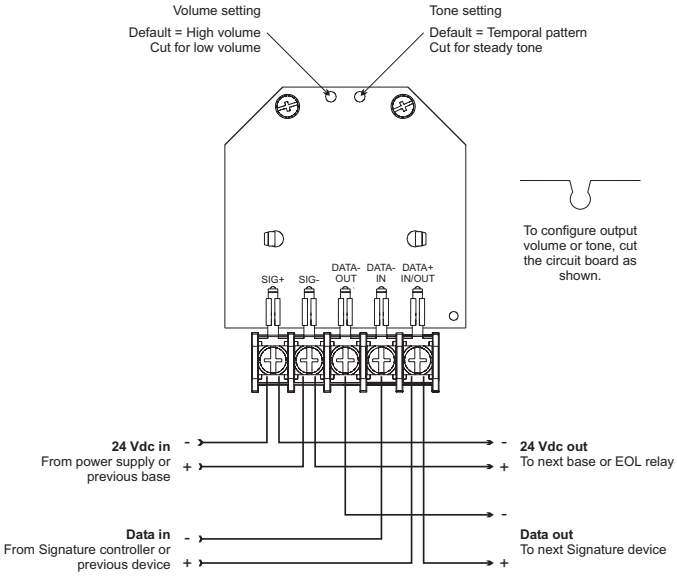
7.4.2 Public Mode Audible Requirements.

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.

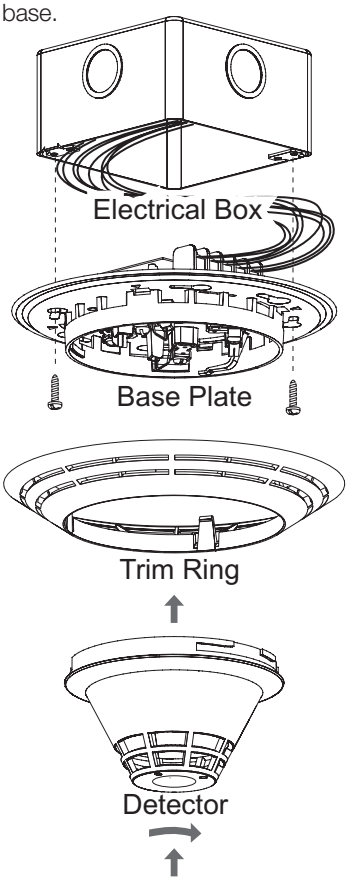
7.4.4.1 *Where audible appliances are installed to provide signals for sleeping areas, they shall have a sound level of at least 15 dB above the average ambient sound level or 5 dB above the maximum sound level having a duration of at least 60 seconds or a sound level of at least 75 dBA, whichever is 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.



AB4G-SB
Optional Surface Box
(6.8” diameter x 1.8” deep)

Edwards 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
Reverberant room per UL 464*			
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
Reverberant room per UL 268			
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.

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Specifications

Operating Voltage	16-33 Vdc, 16-33 Vfwr (continuous voltage required for temporal output)
Supervisory Current	DC=1.46mA; FWR=2.15mA

Operating Current in mA (RMS)	16 Vdc	24 Vdc	33 Vdc	16 Vfwr	24 Vfwr	33 Vfwr
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) Operating Humidity: 0 to 93% RH Storage Temperature: -4 to 140 °F (-20 to 60 °C)
Wire Size	12 to 18 AWG (2.5 to 0.75 mm^2)
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). 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		
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)