

Intelligent Photoelectric Smoke Detector

SIGA-PDI



Overview

The Signature Series SIGA-PDI 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-PDI is an intelligent device that gathers analogue information from its optical sensor, converting this data into digital signals. To make an alarm decision, the detector's on-board microprocessor measures and analyses 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
- 0.05 db/m to 0.30 db/m obscuration (Band 1)
- 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
- Bicolour (green/red) status LED
- Standard, relay, fault isolator, and audible mounting bases
- Sensor markings provide easy testing identification.

Application

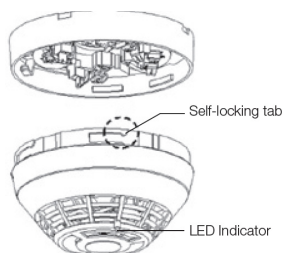
The SIGA-PDI detects extremely small particles of combustion and triggers an alarm immediately when these particles reach the detector. Thanks to its forward-scattering reflective response technology, the photoelectric smoke sensor responds quickly and reliably to a wide range of fire types. This is especially true of slow burning fires fuelled by combustibles, such as those typically found in modern multi-use buildings.

Compatibility

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

Installation

Signature Series detectors mount to European BESA and 1-gang boxes with 60.3 mm fixing centres. See mounting base installation and wiring for more information. Loop controller.



Sensing and reporting technology

The microprocessor in each detector provides additional benefits - self-diagnostics, 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.

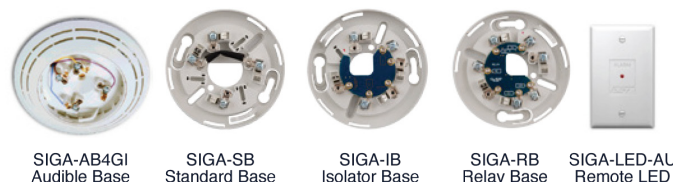
Testing and maintenance

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 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 European BESA and 1-gang boxes with 60.3 mm fixing centres. 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-AB4GI mounts to a 4 inch square box only.



Remote LED SIGA-LED-AU - 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 (non-EN54 applications only).

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.

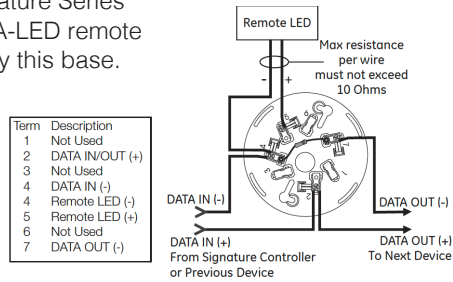
Sounder base - The Signature Series SIGA-AB4GI sounder base provides sounder capability to Signature Series to heat and smoke detectors. It is designed for use where localised or group alarm signaling is required. The base is not intended for use with combination carbon monoxide detectors in Fire-plus-CO mode.

Typical wiring

The detector mounting bases accept 0.75mm², 1.0mm², 1.5mm², and 2.5mm² wire sizes. Sizes 1.0mm² and 0.75mm² 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.

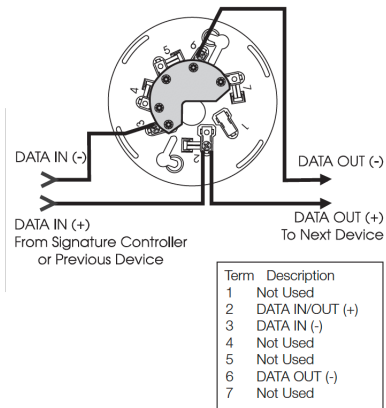


Isolator Detector Base, SIGA-IB, SIGA-IB4

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:

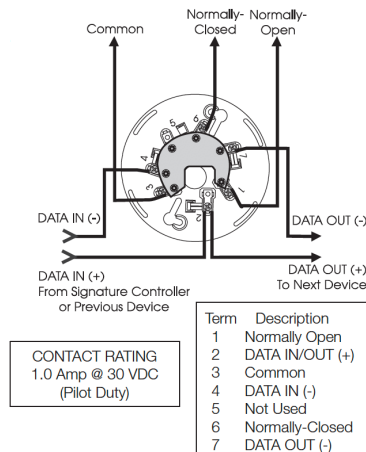
- a short on the line causes all isolators to open within 23 msec
- at 10 msec intervals, beginning on one side of the Class A circuit nearest the loop controller, the isolators close to provide the next isolator down the line with power
- when the isolator next to the short closes, it reopens within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



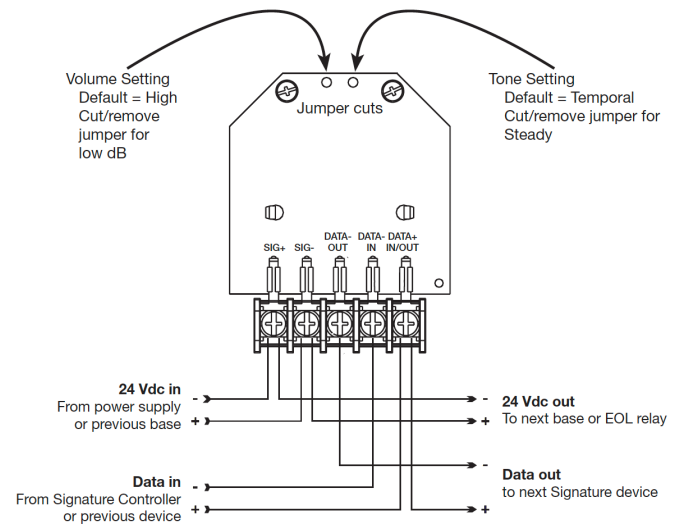
The process repeats beginning on the other side of the loop controller.

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.



SIGA-AB4GI Audible Sounter Base, Fire Mode Only



Warning and 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.



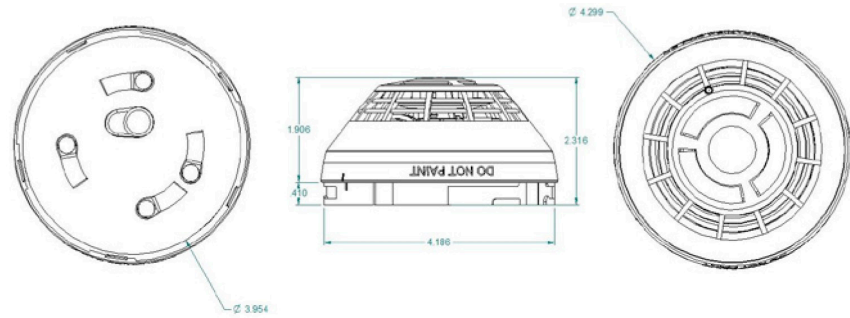
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REF: E85001-0646-AU Siga-X

Dimensions



Specifications

Operating voltage	15.20 to 19.95 VDC
Normal operating current	51
Alarm current	68
Smoke Sensitivity Range	0.05 db/m to 0.30 db/m obscuration (Band 1)
Vibration level	10 to 35 Hz, with an amplitude of 0.01in.
Air velocity	0 to 20 m/s (0 to 4,000 ft./min)
Wall mounting	305 mm max. from ceiling
Compatible bases	See ordering information
Compatible detector testers	Testifire 1000, Testifire 2000
Operating environment	-10° C to 55° C, 0 to 93% RH, noncondensing
Construction	High impact engineering polymer, white
Storage temperature	-20 to 60°
Environmental compensation	Automatic
Agency listings	EN54-7:2000, AS 7240.7

Ordering Information

Catalogue Number	Description	Ship Wt. (lbs) kg
SIGA-PDI	Intelligent Optical Smoke Detector, EN54, Activfire	(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-AU	Remote Alarm LED (not for EN54 applications)	
SIGA-AB4GI	Audible (Sounder) base for fire detectors, EN54	(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	