EST™

Submittal Guide

iO Series Life Safety Systems

Intelligent fire alarm solutions for small buildings

EST BRAND LIFE SAFETY & COMMUNICATIONS FROM EDWARDS

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Thankyou for giving us the opportunity to provide this submittal for an iO Series Life Safety System. iO Series combines analog addressable detection with technologically advanced sensor diagnostic capabilities. Together these innovations offer unsurpassed stability, reliability, and flexibility.

This guide provides a summary of these innovations and includes a comprehensive presentation of related system components and devices. Products we are submitting for your consideration are indicated by a checkmark in the margins of the pages that follow.

More detailed information can be found in individual data sheets dedicated to each product. All these sheets, along with guide specifications and other useful product information, are available electronically on our *LifeLines* CD-ROM. This exhaustive collection of life safety related literature is fully searchable and includes a utility for printing multiple data sheets.

Thank you for giving us the opportunity to provide this submittal. Please do not hesitate to contact us should you require further information.

_____

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Intelligent fire alarm
solutions for small buildings

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8985 Town Center Parkway, Bradenton, FL 34202

85010-0132, Issue 1

Wiring diagrams provided herein are for information and reference only and are not to be used for installation purposes. Consult the appropriate installation documents for wiring and configuration details.

This guidebook is for information only and is not intended as a substitute for verbatim legislated requirements. For authoritative specifications regarding the application of life safety, security, and access control systems, consult current editions of applicable codes and standards. For authoritative interpretation of those codes and standards, consult your local authority having jurisdiction.

While every effort has been made to ensure the accuracy and completeness of this guidebook, the authors and publishers assume no responsibility for errors, inaccuracies, omissions, or any inconsistencies herein.

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Also from Edwards:

85001-0541: Handbook of Visual Notification Appliances for Fire Alarm Applications
A practical guide to regulatory compliance

85001-0542: Glossary of Fire Alarm and Security Terminology
A desk reference for life safety and security professionals

85001-0582: Remote Booster Power Supply Application Guide
A summary of typical wiring and configuration for everyday and advanced applications

85010-0139: Installer's Wire Guide
A concise pocket reference to wire and cable requirements for Edwards products and systems

85005-0115: QuickStart Submittal Guide
Intelligent/conventional life safety for small to mid-sized applications

85005-0105: EST2 Submittal Guide
Networkable intelligent life safety with voice audio

85010-0099: EST3 Submittal Guide
Intelligent control for large and medium sized applications

Cohesive, comprehensive analog addressable fire alarm for small buildings.

With control panels, devices, and accessories all engineered to work in unison, iO Series systems provide reliable performance and the advanced features you need for successful installation and worry-free operation. Best of all, iO Series leaves you in control – not hemmed in by a limited product line. EST's extensive range of fire alarm products gives you the freedom to tailor each system to the particular needs of the building – and the budget of the building owner – while a robust feature set leaves plenty of room for upgrades, expansions, and retrofits long into the future.

But innovative features tell only part of the story: when you specify iO Series you're getting more than outstanding value in a fire alarm panel; you're benefitting from a whole family of control, detection, and notification appliances finely tuned to work together – engineered and tested to function as a single unified system.

Built on the successes of the past, and meeting the needs of the future, iO Series is the changing face of small building fire detection today.

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iO Series Intelligent Control

iO Series life safety systems are 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-operatate 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

iO Series 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

iO Series 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.

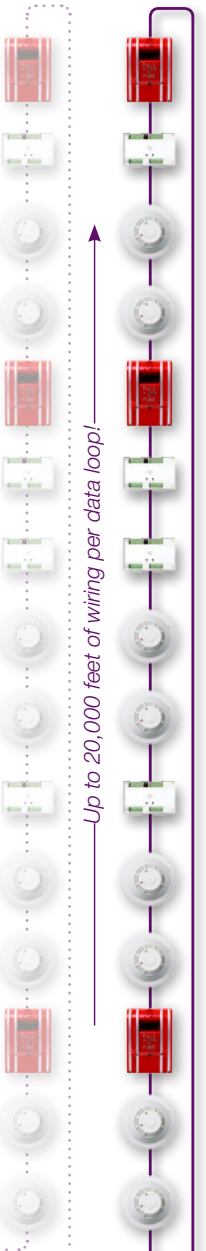
iO Series also supports graphic annunciation with optional RA Graphic Annunicator interface modules. Each interface provides common control, indicators, and 32 LEDS.

A complete line of accessories

iO Series life safety systems are supported by a complete line of intelligent detectors, modules and related equipment, each of which is fully tuned and tested to operate in concert with one another to provide highly reliable service and years of trouble-free operation.

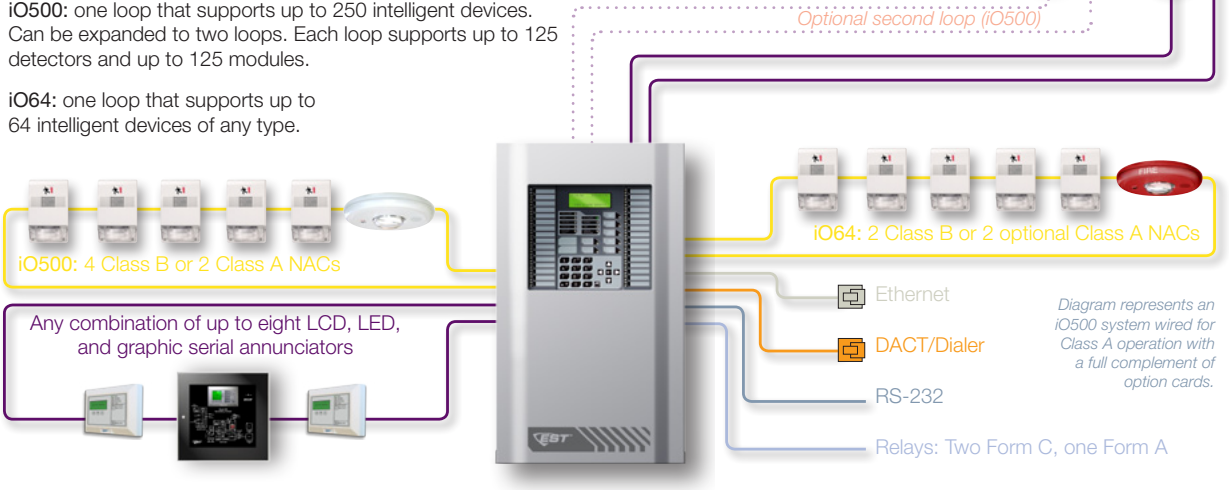
Specifications

Specifications	iO64	iO500
Device loops	1 loop Class B, Class A optional, supports up to 64 devices	1 loop, expandable to 2, Class A or B, each loop supports up to 250 devices
Notification appliance circuits	2 Class B, Class A optional, 2.5 amps each	4 Class B or 2 Class A, 2.5 amps each
Power supply	3.75 A FWR total at 120/230 VAC 60 Hz 3.0 A FWR total at 230 VAC 50 Hz 0.5 amps aux power	6.0 A total, 2.5 A max. per circuit at 120/230 VAC 60 Hz. 5.0 A total at 230VAC 50 Hz, 2.5 A max. per circuit 0.5 amps aux power
NAC Operating	24 VDC. NAC minimum voltage: 19.5 VDC @ 20.4 V battery voltage	
SLC Loop operating	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	Standby: 155 mA Alarm: 204 mA	Standby: 172 mA, Alarm: 267 mA
Battery placement	Accommodates up to 10 A/H batteries. Use external cabinet for larger batteries.	Accommodates up to 18 A/H batteries. Use external cabinet for larger batteries.
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	Maximum loop resistance: 66 Ω. Maximum loop capacitance: 0.5 µF. Style 4, 6, and 7 wiring. 64 isolators maximum.
Loop 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.	32 max.
Agency Listing	UL, CSFM and ULC	



iO500: one loop that supports up to 250 intelligent devices. Can be expanded to two loops. Each loop supports up to 125 detectors and up to 125 modules.

iO64: one loop that supports up to 64 intelligent devices of any type.



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Control Panels

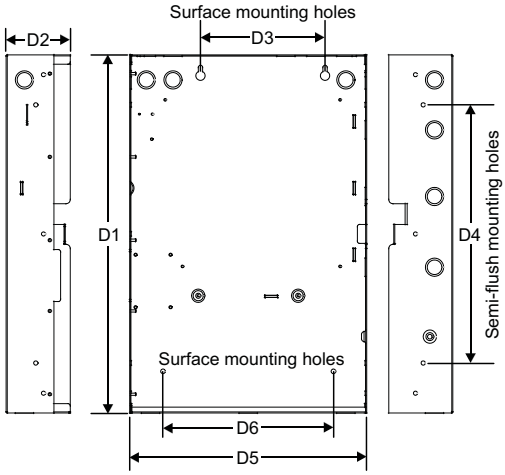
Standard Features

All iO Series life safety systems feature 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.

- Supports Signature Series intelligent modules and detectors
- 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 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

Dimensions



Panel dimensions, in (cm)

Model	D1*	D2	D3	D4	D5*	D6
iO500	28.0 (71.1)	3.85 (9.8)	9.0 (22.8)	22.0 (55.8)	15.75 (40.0)	10.25 (26.0)
iO64	21.50 (54.6)	3.85 (9.8)	7.5 (19.0)	15.5 (39.4)	14.25 (36.2)	10.25 (26.0)

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

iO500 Intelligent Multi-Loop Systems, Data Sheet 85005-0130

iO500G	1 Loop System, 500 analog point capacity, 4 NACs, gray door, surface enclosure, 115VAC, English.	☐
iO500G-2	1 Loop System, 500 analog point capacity, 4 NACs, gray door, surface enclosure, 230VAC, English	☐
iO500GC	1 Loop System, 500 analog point capacity, 4 NACs, gray door, surface enclosure, 115VAC, Canadian English	☐
iO500G-F	1 Loop System, 500 analog point capacity, 4 NACs, gray door, surface enclosure, 115VAC, Canadian French	☐
iO500GD	1 Loop System, 500 analog point capacity, two-line dialer, 4 NACs, Gray door, surface enclosure, 115VAC, English.	☐
iO500R	1 Loop System, 500 analog point capacity, 4 NACs, red Door, surface enclosure, 115VAC, English.	☐
iO500R-2	1 Loop System, 500 analog point capacity, 4 NACs, red door, surface enclosure, 230VAC, English	☐
iO500RD	1 Loop System, 500 analog point capacity, two-line dialer, 4 NACs, Red Door, surface enclosure, 115VAC, English.	☐
D16L-iO-2	LED Annunciator Module, 16 groups, 2 LEDs per group. Mounts in cabinet on iO500 systems. Mounts to right of display.	☐
D16L-iO-1	LED Annunciator Module, 16 groups, 2 LEDs per group. Mounts in cabinet on iO500 systems. Mounts to left of display.	☐
SA-TRIM2	Flush mount trim, black	☐

iO64 Intelligent Single Loop Systems, Data Sheet 85005-0131

iO64G	1 Loop System, 64 analog point capacity, 2 Class B NACs, Gray door, surface enclosure, 115VAC, English.	☐
iO64GD	1 Loop System, 64 analog point capacity, 2 Class B NACs, 2 Line Dialer, Gray door, surface enclosure, 115VAC, English.	☐
iO64R	1 Loop System, 64 analog point capacity, 2 Class B NACs, Red Door, surface enclosure, 115VAC, English.	☐
iO64RD	1 Loop System, 64 analog point capacity, 2 Class B NACs, 2 Line Dialer, Red Door, surface enclosure, 115VAC, English.	☐
iO64G-2	1 Loop System, 64 point capacity, 2 Class B NACs, Gray door, surface enclosure, 230VAC, English.	☐
iO64R-2	1 Loop System, 64 point capacity, 2 Class B NACs, Red door, surface enclosure, 230VAC, English.	☐
iO64GL	1 Loop System, 64 point capacity, 2 Class B NACs, Gray door, surface enclosure, 115VAC, English, Canadian.	☐
iO64GL-F	1 Loop System, 64 point capacity, 2 Class B NACs, Gray door, surface enclosure, 115VAC, French, Canadian.	☐
D16L-iO-1	LED Annunciator Module, 16 groups, 2 LEDs per group. Mounts in cabinet on iO500 systems. Mounts to left of display.	☐
SA-TRIM1	Flush mount trim, black	☐

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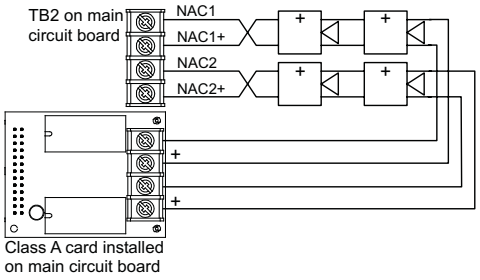
Option Cards

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

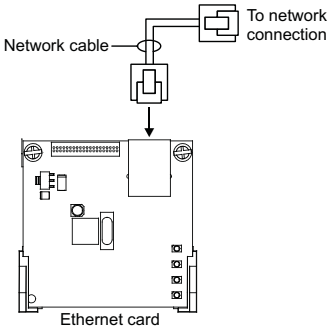
The SA-CLA card provides Class A capability for NAC and annunciator wiring. Its terminal block provides the wiring connection for NAC return wiring. The card is required for annunciator Class A wiring even though this wiring does not return to the SA-CLA card. The SA-CLA is compatible with iO64 control panels only. 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	Class A adapter module. Provides Class A capacity on NACs. Mounts in cabinet on main board.

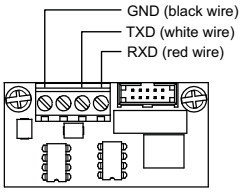
SA-ETH Ethernet Interface Card

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 upload and download panel configuration, history, and current status 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	Ethernet Port, Slave, for Ethernet connection to local area networks. Mounts in cabinet on base plate.

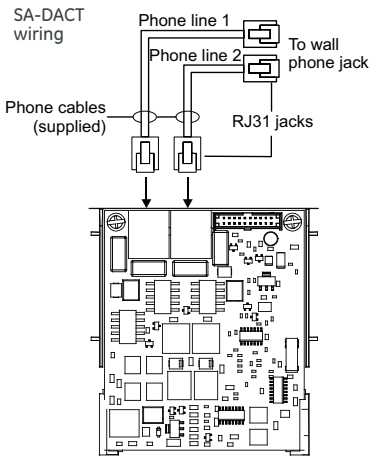


SA-232 RS-232 interface

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	Serial Port (RS-232), for connection to printers & computers, mounts in cabinet to base plate



SA-DACT Dialer

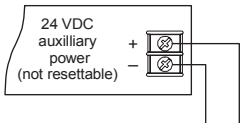
The SA-DACT provides communications between the control panel and the central station over a telephone line system. It transmits system status changes (events) to a compatible digital alarm communicator receiver over the public switched telephone network. The dialer is capable of single, dual, or split 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.

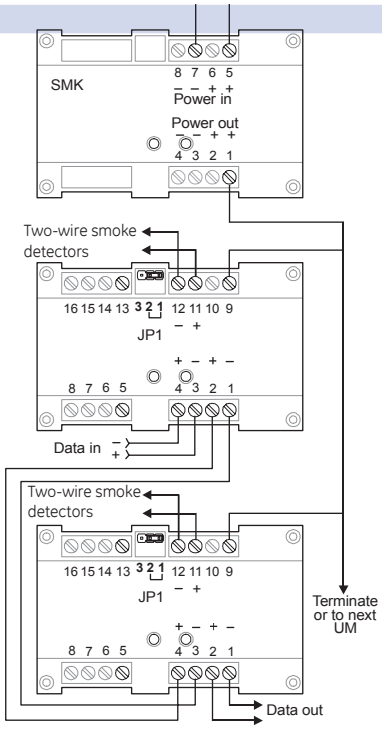
SA-DACT	Dual Line Dialer/Modem, supports Contact ID, mounts in cabinet on base plate

SMK Smoke Power Converter

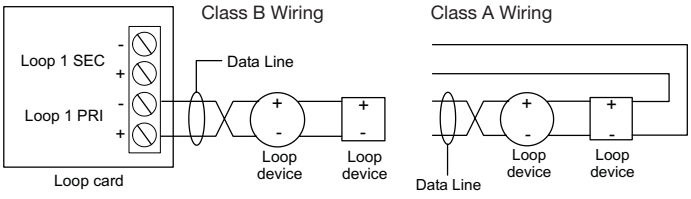
The SMK Smoke Power Converter Module provides a backup power source for two-wire smoke circuits connected to a Signature data circuit. The SMK monitors the operating power from the power supply. When power begins to degrade, the SMK provides the necessary operating voltage to the two-wire smoke detection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



SMK	Smoke Power Converter Module



XAL250 Loop Expander Card (iO500 Systems only)



The XAL250 Loop Expander Card provides an additional Signature Series device loop on the control panel. The card expands the control panel's device capacity to 500 total device addresses, 250 per loop. The card is compatible with Class B or Class A wiring. It is compatible with iO500 control panels only. The loop expander card mounts in the cabinet and connects to connector J7 on the main circuit board.

XAL250	Signature Loop Expansion Module. Adds second loop to iO500 systems, 250 point capacity.

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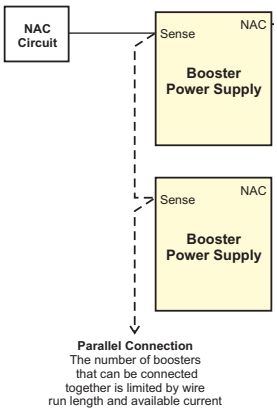
Power Supplies

Remote Booster Power Supply

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.

When used 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.



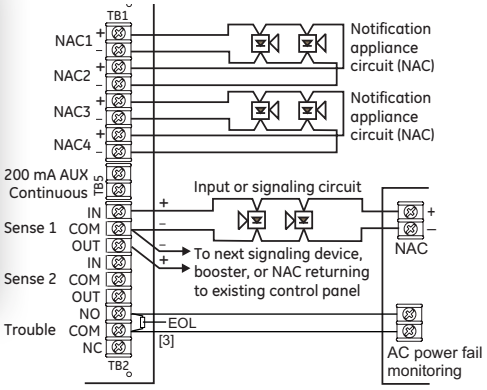
BPS notification appliance circuits easily configure for either of two signaling rates: 3-3-3 temporal or continuous. This makes the BPS ideal for applications requiring signaling rates not available from the main panel. It also allows independent setup of a notification appliance circuit without interfering 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.

For comprehensive configuration and wiring details, refer to the BPS Application Guide, 85001-0582.

☐	BPS6A	6.5 Amp Booster Power Supply	Data Sheet 85005-0125
☐	BPS6A/230	6.5 Amp Booster Power Supply (220V)	Data Sheet 85005-0125
☐	BPS6CAA	6.5 Amp Booster Power Supply with California rate	Data Sheet 85005-0125
☐	BPS10A	10 Amp Booster Power Supply	Data Sheet 85005-0125
☐	BPS10A/230	10 Amp Booster Power Supply (220V)	Data Sheet 85005-0125
☐	BPS10CAA	10 Amp Booster Power Supply with California rate	Data Sheet 85005-0125
☐	3-TAMP	Tamper switch	Data Sheet 85005-0125

SUBMIT

Auxiliary Power Supply (APS)



The Auxiliary Power Supply (APS) is a self-contained 24 Vdc power supply designed to augment fire alarm audible and visual power requirements as well as provide auxiliary power for life safety and security applications. The APS 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.

APS6A	6.5 Amp Auxiliary Power Supply	Data Sheet 85005-0127 ☐
APS6A/230	6.5 Amp Auxiliary Power Supply (220V)	Data Sheet 85005-0127 ☐
APS10A	10 Amp Auxiliary Power Supply	Data Sheet 85005-0127 ☐
APS10A/230	10 Amp Auxiliary Power Supply (220V)	Data Sheet 85005-0127 ☐

Batteries and Battery Cabinets

12 Volt Batteries	☐12V4A (4.5 Ah)	☐12V6A5 (7.2 Ah)	☐12V10A (11 Ah)	Data Sheet 85005-0127 ☐
	☐12V1A2 (1.2 Ah)	☐12V24A (26 Ah)	☐12V17A (18 Ah)	Data Sheet 85005-0127
6 Volt Batteries	☐6V8A (8 Ah)	☐6V10A (12 Ah)		Data Sheet 85005-0127 ☐
Battery Cabinet	☐BC-1 (holds up to two 40 Ah batteries)			Data Sheet 85005-0127 ☐

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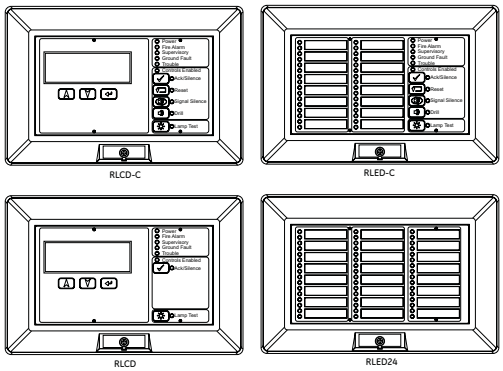
Remote annunciation

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



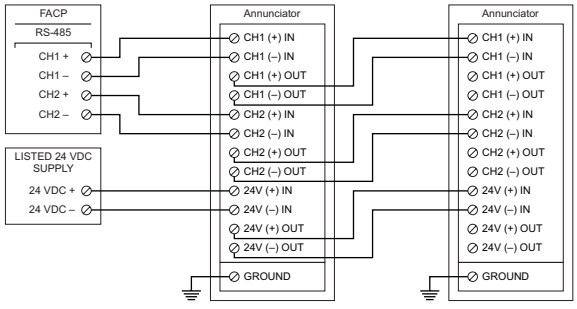
There are three R-Series annunciator models, plus an LED-based expander. Up to two expanders can be connected to any annunciator. The expander includes 24 pairs of LEDs that extend the capabilities of any of the annunciators.

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.

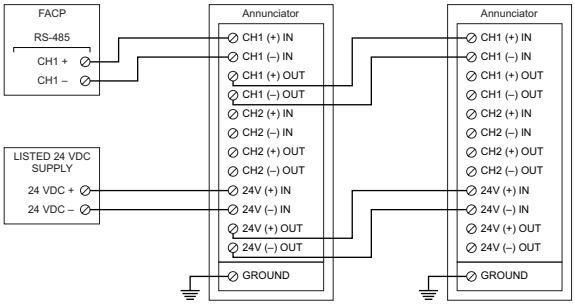
R-Series annunciators and expanders are mounted on a standard 4-inch square electrical box, using the included mounting ring. They can also be surface mounted in locking steel enclosures. Three different enclosures are available.

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

Wiring, Class A



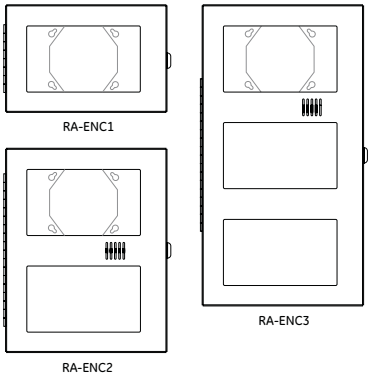
Wiring, Class B



☐	RLCD	LCD text annunciator without common controls. English.	Data Sheet 85005-0128
☐	RLCD-R	LCD text annunciator without common controls. English. Red.	Data Sheet 85005-0128
☐	RLCDF	LCD text annunciator without common controls. French.	Data Sheet 85005-0128
☐	RLCD-C	LCD text annunciator with common controls. English.	Data Sheet 85005-0128
☐	RLCD-CR	LCD text annunciator with common controls. English. Red.	Data Sheet 85005-0128
☐	RLCD-CF	LCD text annunciator with common controls. French.	Data Sheet 85005-0128
☐	RLED-C	16-pair LED zone annunciator with common controls. English.	Data Sheet 85005-0128
☐	RLED-CR	16-pair LED zone annunciator with common controls. English. Red.	Data Sheet 85005-0128
☐	RLED-CF	16-pair LED zone annunciator with common controls. French.	Data Sheet 85005-0128
☐	RLED24	24-pair LED zone expander with expander cable and zone card insert.	Data Sheet 85005-0128
☐	RLED24R	24-pair LED zone expander with expander cable and zone card insert. Red.	Data Sheet 85005-0128
☐	RKEY	Remote key switch on plate for enabling or disabling common controls (Lock/Unlock).	Data Sheet 85005-0128

SUBMIT

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.

RA-ENC1	One-position enclosure for Remote Annunciator.	Data Sheet 85005-0128
RA-ENC2	Two-position enclosure for Remote Annunciator and one Remote Expander.	Data Sheet 85005-0128
RA-ENC3	Three-position enclosure for Remote Annunciator and two Remote Expanders.	Data Sheet 85005-0128

Graphic Annunication

The RA Graphic Annunicator is an interface card that connects the iO Series control panel to the display panel of an LED-based graphic annunciator. The annunciator card supports 32 LEDs 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 control panel 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 control panel or by an approved power supply.

ENVOY graphic annunciators and smoke control panels are designed to present complex status and control information in an easy to understand package. The design of ENVOY products permits users to rapidly determine system status and easily operate associated system controls.

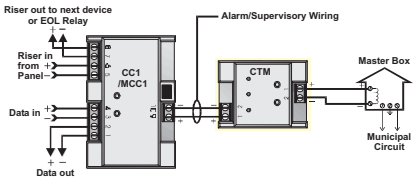
GCI	Graphic Annunciator Driver	Data Sheet 85005-0128
EV1	Envoy Graphic Annunciator (maximum 96 LEDs)	Data Sheet 85006-0037
EV1B	EV1 Wallbox: textured black finish	Data Sheet 85006-0037
EV1T	EV1 Semi-Flush Trim: textured black finish	Data Sheet 85006-0037
EV2	Envoy Graphic Annunciator (maximum 160 LEDs)	Data Sheet 85006-0037
EV2B	EV2 Wallbox: textured black finish	Data Sheet 85006-0037
EV2T	EV2 Semi-Flush Trim: textured black finish	Data Sheet 85006-0037
EV3	Envoy Graphic Annunciator (maximum 256 LEDs)	Data Sheet 85006-0037
EV3B	EV3 Wallbox: textured black finish	Data Sheet 85006-0037
EV3T	EV3 Semi-Flush Trim: textured black finish	Data Sheet 85006-0037

SUBMIT

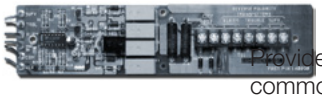
Accessories

City Tie Module

The City Tie Module provides a simple way of connecting iO Series to a local energy fire alarm box or City Master Box. One 2-CTM provides either supervisory or alarm signaling. To configure both supervisory and alarm signaling, two City Tie modules are required.



☐	CTM	City Tie Module	Data Sheet 85005-0097



Reverse Polarity Module

Provides three reverse polarity transmitters: one for system common alarm; one for system common trouble; and, one for system common supervisory.

☐	RPM	Reverse Polarity Module	Data Sheet 85005-0097

Desktop Serial Printer

The PT-1 series printers are high-speed, nine-pin dot matrix type. It is used to permanently record life safety system changes of state. All printed entries contain the date, time, event type and a user-defined message for each printed event. The printer is required in proprietary systems and requires a backup UPS power source. In auxiliary, local, or remote station systems, the printer is optional.

☐	PT-1S	Serial Printer	Data Sheet 270020
☐	PT-1S/220	Serial Printer — 220/240Vac	Data Sheet 270020

Detectors and Bases p. 12
Input/Output Modules p. 14
Manual Pull Stations p. 18
Accessories p. 20

Signature Series

Intelligent Analog Initiating Devices

Signature Series intelligent analog addressable devices represent an entire family of fire alarm and security detectors as well as mounting bases, multiple-function input and output modules, and user-friendly maintenance and service tools.

Analog information from equipment connected to Signature devices is gathered and converted into digital signals. At the heart of each Signature Series device is an on-board microprocessor that analyses these signals and decides whether or not to input an alarm. The power of this approach, known as distributed intelligence, provides four important benefits: self-diagnostics and history logging; automatic device mapping; stand-alone operation; and, fast, stable communication.

Self-diagnostics and History Log – Signature Series devices constantly run self-checks to provide important maintenance information. The results of these checks are automatically updated and permanently stored in the device's non-volatile memory. This information is accessible for review using the System Definition Utility. The information stored in device memory includes:

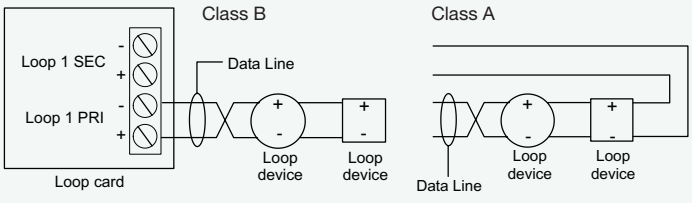
- device serial number, address, and type;
- date of manufacture, hours of operation, and last maintenance date;
- number of recorded alarms and troubles; and,
- up to 32 possible trouble codes which may be used to specifically diagnose faults.

iO Series Signature Device loop

iO Series control panels provide one device loop circuit that can be used with any mix of Signature Series detectors and modules. The iO500 panel can be expanded to provide a second loop. All loop circuits are supervised for opens, shorts, and grounds.

Circuit specifications	
Device loops	1 loop, expandable to 2, Class A or B, each loop supporting up to 250 device addresses
Com. line voltage	Maximum 20 V peek-to-peek
Circuit current	0.5 A max
Circuit impedance	66Ω total, 0.5 µF, max
Isolators	64 maximum

Typical Wiring



Automatic Device Mapping – The Signature Loop Controller learns where each device's serial number address is installed relative to other devices on the circuit. The controller keeps a map of all Signature Series devices connected to it. This allows the Signature Loop Controller to discover:

- unexpected additional device addresses;
- missing device addresses; and,
- 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 controller during system configuration and are indicated during device mapping.

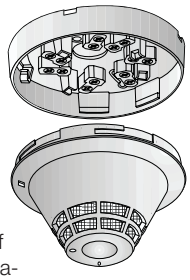
Fast Stable Communication – Built-in intelligence means less information needs to be sent between the device and the Signature Loop Controller. Other than routine supervisory polling responses, Signature devices only need to communicate with the controller when they have something new to report. This provides very fast control panel response and allows a lower baud rate (speed) to be used for communication on the circuit. The lower baud rate offers several advantages including:

- less sensitivity to circuit wire characteristics;
- less sensitivity to noise glitches on the cable;
- less emitted noise from the analog wiring; and,
- twisted or shielded wiring is not required.

SUBMIT

Signature Series

Detectors and Bases



Signature Series products are intelligent devices that have significantly lower communications requirements than those of sensor type devices. Because of the low Signature communications rate there are no special wiring requirements for Signature circuits. This permits Signature devices to use existing wiring, as long as the wiring is in good shape, free of electrical noise, When existing wiring is used, the Signature devices will properly map the circuit, function as designed, and provide overall network response time of less than three seconds. For new installations, twisted-pair wiring is all that is recommended.

Intelligent 4D Multisensor Detector

Integrates three sensing technologies — Ionization, Photoelectric, and Heat — into one detector. Select alarm point for any one of five sensitivity settings between 0.67 to 3.70% per foot. Heat detector alarms when it sees a 65° F (35° C) increase in ambient temperature. Mounts to separate Standard, Relay, Isolator, or Sounder detector base.

SIGA-IPHS	Intelligent 4D Multisensor Detector, White	Data Sheet 85001-0245
SIGA-IPHSB	Intelligent 4D Multisensor Detector, Black	Data Sheet 85001-0245

Intelligent 3D Multisensor Detector

Integrates two sensing technologies — Photoelectric and Heat — into one detector. Select alarm point for any one of five sensitivity settings between 0.67 to 3.77% per foot. Heat detector alarms at 135° F (57° C) ambient temperature. Mounts to separate Standard, Relay, Isolator, or Sounder detector base.

SIGA-PHS	Intelligent 3D Multisensor Detector, White	Data Sheet 85001-0247

Intelligent Photoelectric Detector

Select alarm point for any one of five sensitivity settings between 0.67 to 3.77% per foot. Mounts to separate Standard, Relay, Isolator, or Sounder detector base.

SIGA-PS	Intelligent Photoelectric Detector, White	Data Sheet 85001-0269

Intelligent Ionization Detector

Select alarm point for any one of five sensitivity settings between 0.61 to 1.91% per foot. Mounts to separate Standard, Relay, Isolator, or Sounder detector base.

SIGA-IS	Intelligent Ionization Detector, White	Data Sheet 85001-0291

Intelligent Rate-of-Rise/Fixed Temperature Heat Detector

Includes 15° F (9° C) per minute rate-of-rise and 135° F (57° C) fixed temperature sensor. Mounts to separate Standard, Relay, Isolator, or Sounder detector base.

SIGA-HRS	Intelligent Rate-of-Rise/Fixed Temperature Heat Detector, White	Data Sheet 85001-0243

Intelligent Fixed Temperature Heat Detector

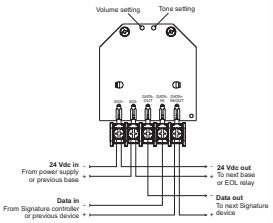
Includes 135° F (57° C) fixed temperature sensor. Mounts to separate Standard, Relay, Isolator, or Sounder base.

SIGA-HFS	Intelligent Fixed Temperature Heat Detector, White	Data Sheet 85001-0243

SUBMIT

Audible (Sounder) Detector Base

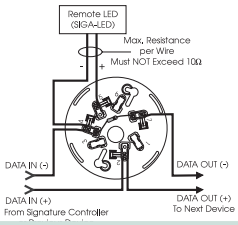
The Signature Series AB4G sounder base adds an audible output function to any Signature Series detector. The base can operate as an independent local alarm, or as part of a zone or system alarm with synchronized audible output. The AB4G may be configured in the field for either steady or temporal output and either high or low dB output.



SIGA-AB4G	Audible (Sounder) Base		Data Sheet 85001-0581 ☐

Standard Detector Base

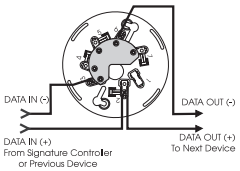
Signature detector base provides roomside wiring terminals. Mounts to North American one-gang box, 3½ or 4-inch octagon boxes, or 4-inch square electric box. Bases for 4-inch square boxes include the SIGA-TS4 Trim Skirt to conceal the electric box and provide a finished appearance.



☐SIGA-SB	☐SIGA-SB4 (with trim skirt)	Standard Detector Base	Data Sheet 85001-0245 ☐

Isolator Detector Base

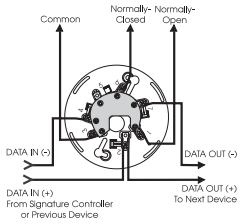
Signature detector base provides room-side wiring terminals and includes a built-in line fault isolator. Models with integral switches allow the detector to be removed from its base without causing the isolator to operate. Mounts to North American one-gang box, 3½ or 4-inch octagon boxes, or 4-inch square electrical boxes. Bases for 4-inch square boxes include the SIGA-TS4 Trim Skirt to conceal the electrical box and provide a finished appearance.



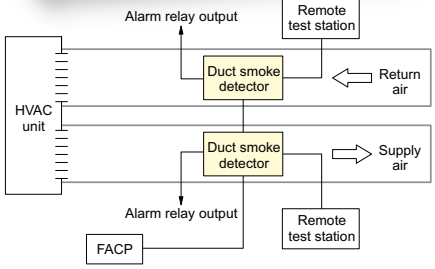
☐SIGA-IB	☐SIGA-IB4 (with trim skirt)	Isolator Detector Base	Data Sheet 85001-0245 ☐

Relay Detector Base

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 relay base does not support the SIGA-LED remote LED. It mounts to North American one-gang boxes, 3½ or 4-inch octagon boxes, or 4-inch square electrical boxes. Bases for 4-inch square boxes include the SIGA-TS4 Trim Skirt to conceal the electrical box and provide a finished appearance.



☐SIGA-RB	☐SIGA-RB4 (with trim skirt)	Relay Detector Base	Data Sheet 85001-0245 ☐



SuperDuct Duct Detectors

Less than two inches deep, SuperDuct intelligent smoke detectors are ideal for installation in ductwork, where space is always at a premium. Offering the most advanced and most reliable performance in its class, SuperDuct represents the perfect balance of practical design and advanced technology.

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

☐	SIGA-SD	Intelligent SuperDuct Detector			Data Sheet 85001-0584
☐	Sampling Tubes	☐SD-T8 (8”)	☐SD-T18 (18”)	☐SD-T24 (24”)	☐SD-T36 (36”)
		☐SD-T42 (42”)	☐SD-T60 (60”)	☐SD-T78 (78”)	☐SD-T120 (120”)
☐	Remote Test Stations	☐SD-TRM (magnetic)	☐SD-TRM (keyed)	☐SIGA-LED (Remote alarm LED)	
☐	Accessories	☐SD-GSK (cover gasket kit)	☐SD-MAG (Test magnet kit)		
		☐SD-VTK (Air velocity test kit, stoppers only)		☐SIGA-SDPCB (PCB/Signature sensor kit)	

Signature Series

Input/Output Modules

Plug-in UIOs with motherboard

Standard two-gang mount

Signature Series input/output modules are extremely flexible and powerful devices that gather analog information from the slave devices connected to them and convert this data into digital signals. They are available in models that mount in standard one- or two-gang electrical boxes, as well as versions that plug into UIO motherboards.

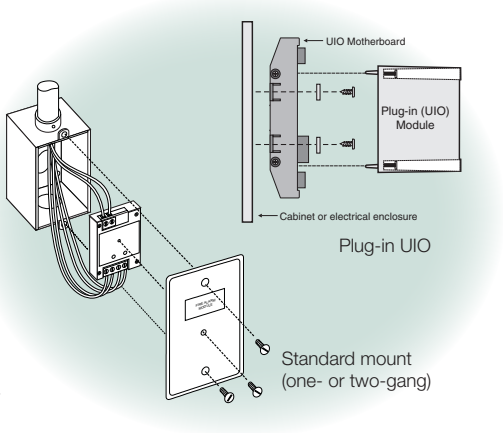
The actual function of each module is determined by its installer-selected personality code. This is downloaded to the module from the Signature Loop Controller during system configuration. Because they are intelligent devices, all decisions are made at the module. This allows lower communication speed but very fast control panel response time and less sensitivity to line noise and loop wiring properties. As a result, twisted or shielded wire is not required.

Module mounting and installation options

Signature Series input/output modules are available in models that feature two mounting options: standard mount and plug-in.

Standard mount models are installed to North American two-gang or one-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 modules mount to UIO motherboards. Two- and six-module UIO motherboards are available, making them ideal for installations where more than one module is required. Motherboards can accommodate individual risers for each on-board module, or shared risers in any combination with their UIO modules. All wiring connections are made to terminal blocks on the motherboard. UIO assemblies may be mounted in either cabinets, or standard electrical enclosures.



SUBMIT

Universal Class A/B Module

The Universal Class A/B Module is used to connect initiating, appliance, or two-wire smoke circuits in either Class A or Class B configurations. The plug-in version can also be used as a Class A dry contact initiating device circuit. The actual function of this module is determined by the "personality code" selected by the installer. Up to fifteen personalities are available.

SIGA-UM	Universal Class A/B Module (Two-gang standard mount)	Data Sheet 85001-0275 ☐
SIGA-MAB	Universal Class A/B UIO (Plug-in) Module	Data Sheet 85001-0275 ☐

Class B Input Module

The Class B Input Module is used to connect Class B normally-open Alarm, Supervisory, or Monitor type dry contact initiating device circuits. The standard-mount version is available with either one or two input connections. The plug-in version accepts two input connections. The actual function of this module is determined by the "personality code" selected by the installer. A total of four personalities are available.

SIGA-CT1	Single Input Module (One-gang standard mount)	Data Sheet 85001-0241 ☐
SIGA-CT2	Dual Input Module (One-gang standard mount)	Data Sheet 85001-0241 ☐
SIGA-MCT2	Dual Input UIO (Plug-in) Module	Data Sheet 85001-0241 ☐

Waterflow/Tamper Module

The SIGA-WTM Waterflow/Tamper Module is a two circuit intelligent module. Circuit 1 is for Class B normally-open waterflow alarm switches. When the input contact is closed for approximately 16 seconds, an "alarm" signal is sent to the loop controller. Circuit 2 is for Class B normally open dry contact supervisory and tamper switches. When the input contact is closed, an "active" signal is sent to the loop controller. Conditions on both circuits are latched at the module.

SIGA-WTM	Waterflow/Tamper Module (One-gang standard mount)	Data Sheet 85001-0297 ☐

Isolator Module

The SIGA-IM Isolator Module is an intelligent device that allows part of the Signature data loop to continue operating in the event of a short circuit. The module can be wired into a Class A data loop at any point. A maximum of 96 isolator modules can be installed on one circuit. If a fault occurs, the isolator cuts power to all devices beyond the isolator on the loop. Once activated, the line fault isolator continuously checks the faulted side of the loop to determine if the short still exists. When the fault is cleared, the module automatically restores the entire data loop to its normal condition.

SIGA-IM	Fault Isolator Module (Two-gang standard mount)	Data Sheet 85001-0271 ☐

Monitor Module

The SIGA-MM1 is a single-circuit intelligent module that includes a Class B normally-open dry contact. This is used for monitoring input from devices such as fans, dampers, and doors. When the input contact is closed, an "active" signal is sent to the loop controller. The active condition is not latched at the module.

SIGA-MM1	Monitor Module (One-gang standard mount)	Data Sheet 85001-0297 ☐

SUBMIT

Signal Module

The Signal Module is used to connect, upon command from the loop controller, supervised Class B signal or telephone circuits to their respective power inputs. Models are available with one or two power inputs. These may be either polarized 24 Vdc to operate audible and visual signal appliances, or 25 and 70VRMS to operate audio evacuation speakers and firefighter's telephones. The actual function of this module is determined by the "personality code" selected by the installer. A total of three personalities are available.

☐	SIGA-CC1	Single Input Signal Module (Two-gang standard mount)	Data Sheet 85001-0237
☐	SIGA-MCC1	Single Input Signal UIO (Plug-in) Module	Data Sheet 85001-0237
☐	SIGA-CC2	Dual Input Signal Module (Two-gang standard mount)	Data Sheet 85001-0237
☐	SIGA-MCC2	Dual Input Signal UIO (Plug-in) Module	Data Sheet 85001-0237

Control Relay Module

The 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 relay activates the normally open or normally-closed contact. This module supports only one personality: no user configuration is required.

☐	SIGA-CR	Control Relay Module (One-gang standard mount)	Data Sheet 85001-0239
☐	SIGA-MCR	Control Relay UIO (Plug-in) Module	Data Sheet 85001-0239

Polarity Reversal Relay Module

The Polarity Reversal Relay Module provides a Form C dry relay contact to power and activate a series of SIGA-AB4 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. This module supports only one personality: no user configuration is required.

☐	SIGA-CRR	Polarity Reversal Relay Module (One-gang standard mount)	Data Sheet 85001-0239
☐	SIGA-MCRR	Polarity Reversal Relay UIO (Plug-in) Module	Data Sheet 85001-0239

Synchronization Output Module

The Synchronization Output Module is an intelligent device that connects a supervised output circuit to a 24 Vdc riser. The output wiring is monitored for open circuits and short circuits. A short circuit will cause the fire alarm control panel to inhibit the activation of the audible/visual signal circuit so the riser is not connected to the wiring fault. Upon command from the Signature loop controller, the Auto-Sync Output Module connects the output circuit to the riser input.

☐	SIGA-CC1S	Synchronization Output Module (One-gang standard mount)	Data Sheet 85001-0543
☐	SIGA-MCC1S	Synchronization Output UIO (Plug-in) Module	Data Sheet 85001-0543

Input/Output Module

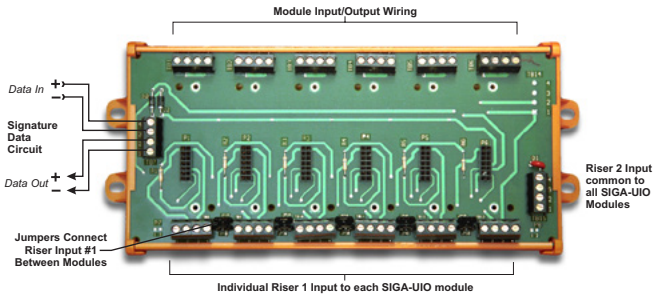
The Input/Output Module is an intelligent device that provides

- Output with monitor input
- Input/programmable output
- Input/direct output

☐	SIGA-IO	Input/Output Module (One-gang standard mount)	Data Sheet 85001-0533
☐	SIGA-MIO	Input/Output UIO (Plug-in) Module	Data Sheet 85001-0533

SUBMIT

Universal Input/Output (UIO) Motherboards



Signature Series Universal Input/Output Module Motherboards provide mounting and wiring terminations for up to six Signature Series plug-in UIO (SIGA-"M" series) modules. UIO motherboards snap into a rigid extruded track (included) with mounting pads for convenient mounting into a variety of equipment enclosures. UIO modules plug into the board and are held securely in place with captive machine screws. All field wiring connects to terminal blocks on the motherboard, which permits rapid removal and replacement of modules for troubleshooting.

The SIGA-UIO2R provides mounting and wiring terminations for up to two UIO modules, and the SIGA-UIO6R provides mounting and wiring terminations for up to six UIO modules. Both motherboards feature a riser #1 input and a riser #2 input bus. Jumpers on riser #1 input (between modules), facilitate sharing a single riser among more than one module. This significantly reduces wiring requirements. Removing the jumpers provides separate riser inputs to each adjacent module. Riser #2 input is fixed to each module position and cannot be split. UIO motherboards mount inside the MFC-A cabinet or other suitable UL-listed electrical enclosure. Each MFC-A will hold one UIO2R motherboard or one UIO6 or UIO6R motherboard complete with their full complement of modules.

SIGA-UIO2R	Universal Input/Output Module Board with Riser Inputs — 2 Module Positions	Data Sheet 85001-0365
SIGA-UIO6R	Universal Input/Output Module Board with Riser Inputs — 6 Module Positions	Data Sheet 85001-0365
SIGA-UIO6	Universal Input/Output Module Board — 6 Module Positions	Data Sheet 85001-0365

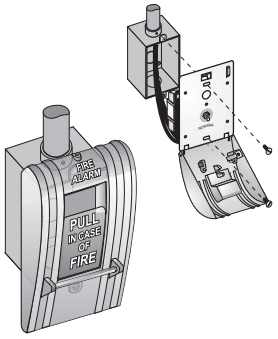
Related Equipment

MFC-A	Multi-function Cabinet (for UIO and Releasing modules)
27193-11	Surface Mount Box - Red, One-gang
27193-16	Surface Mount Box - White, One-gang
27193-21	Surface Mount Box - Red, Two-gang
27193-26	Surface Mount Box - White, Two-gang
235196P	Bi-polar Transient Protector (use with all Signal Modules)
SIGA-MP1	Signature Module Mounting Plate, 1 footprint
SIGA-MP2	Signature Module Mounting Plate, 1/2 footprint
SIGA-MP2L	Signature Module Mounting Plate, 1/2 extended footprint

SUBMIT

Signature Series

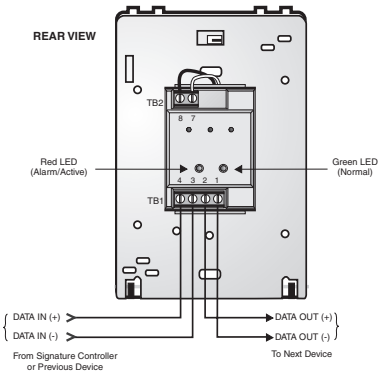
Manual Pull Stations



Signature Series manual pull stations are configured for Class B IDC operation. When the station's pull lever is operated, an alarm signal is sent to the loop controller. The alarm condition is latched at the station.

Single Action Pull Stations

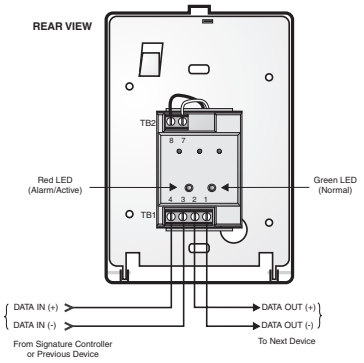
SIGA-270 series manual pull stations are made from die-cast zinc and finished with red epoxy powder-coat paint. With positive pull-lever operation, one pull on the station handle breaks the rod and turns in a positive alarm. Where two-stage operation is required, SIGA-270P pre-signal models are equipped with a general alarm (GA) keyswitch.



☐	SIGA-270	One Stage Fire Alarm Station, English Markings	Data Sheet 85001-0279
☐	SIGA-270P	Two Stage (Pre-signal) Fire Alarm Station, English Markings	Data Sheet 85001-0279
☐	276-K2	GA Key — for pre-signal station	Data Sheet 85001-0279
☐	270-GLR	20 Break-rods — for SIGA-270 series	Data Sheet 85001-0279
☐	276B-RSB	Surface Mount Box, Red — for SIGA-270 series	Data Sheet 85001-0279

Double Action Pull Stations

The double action, single stage SIGA-278 station is a contemporary style manual station made from durable red LEXAN. To initiate an alarm, first lift the upper door, then pull the alarm handle.



☐	SIGA-278	Double Action (One Stage) Fire Alarm Station, English Markings	Data Sheet 85001-0279
☐	276B-RSB	Surface Mount Box, Red — for SIGA-278 series	Data Sheet 85001-0279
☐	276-GLR	20 Break-rods — for SIGA-278 series	Data Sheet 85001-0279

SUBMIT

Manual Station Relocator

The Manual Station Relocator is designed to lower the height of a fire alarm pull station to meet ADA requirements. Most existing pull stations are mounted 60 inches (1524mm) or higher above the floor. The Relocator lowers the height to 48 inches (1220mm) without the need for pulling new wires or moving the existing electrical box.

RR-32RL	Pull Station Relocator		Data Sheet 85001-0351 ☐

Stopper II

This unique device helps prevent false alarms without restricting legitimate ones. It consists of a tamper-proof clear LEXAN polycarbonate shield and frame that fits easily over manual pull stations. When lifted, it sounds a piercing warning horn.

☐ STI-1100 (Flush)	☐ STI-1130 (Surface)	Stopper II with Horn	Data Sheet 85001-0491 ☐
☐ STI-1200 (Flush)	☐ STI-1230 (Surface)	Stopper II without Horn	Data Sheet 85001-0491 ☐
☐ STI-3100 (2" Spacer)	☐ STI-3004 (Conduit Insert)	Spacers	Data Sheet 85001-0491 ☐
☐ STI-3002 (Gasket)	☐ STI-3003 (Conduit Gasket)	Weatherproofing	Data Sheet 85001-0491 ☐

SUBMIT

Signature Series

Accessories

Signature Detector Guard

Constructed of sturdy 16-guage steel, the SIGA-DG Smoke Detector Guard is designed to protect SIGA-IPHS 4D and SIGA-PS smoke detectors from damage or tampering. The advanced computer-designed louver system allows smoke detectors to be installed at their listed spacing and has no effect on operating sensitivity.

☐	SIGA-DG	Smoke Detector Guard	Data Sheet 85001-0359
☐	SIGA-DGSB	Detector Guard Surface Mount Accessory	Data Sheet 85001-0359

Detector Mounting Plate

The SIGA-DMP Detector Mounting Plate is a 7-inch (178mm) square mounting plate designed to provide convenient mounting of Signature Series intelligent smoke detectors in raised floor or plenum applications. The detector mounting plate may also be installed in low velocity ducts that have a maximum width of up to 36-inches (915mm) and a maximum height of up to 36-inches (915mm).

☐	SIGA-DMP	Detector Mounting Plate	Data Sheet 85001-0255

Remote LED

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

☐	SIGA-LED	Remote Alarm LED	Data Sheet 85001-0245

Trim Skirt

Use the SIGA-TS Trim Skirt to give Signature detectors a finished look and hide surface imperfections around the detector's base. Supplied with all four-inch detector bases, the SIGA-TS4 can also be ordered separately. Use the black model with SIGA-IPHSB.

☐	SIGA-TS	Detector Trim Skirt (white)	Data Sheet 85001-0245
☐	SIGA-TSB	Detector Trim Skirt (black)	Data Sheet 85001-0245
☐	SIGA-TS4	Detector Trim Skirt (white) – for 4-inch box	Data Sheet 85001-0245

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Hazardous Location Devices

Edwards hazardous location devices provide reliable life safety protection and emergency signaling in areas where atmospheres could become harsh or explosive. All hazardous location devices are UL rated under the full range of classifications set out in the National Electrical Code.

The following classification definitions are an interpretive summary based on the 1996 edition of the National Electrical Code (NEC, NFPA 70). Refer to the latest editions of NFPA 497M, NFPA 70 and the UL Hazardous Location Equipment Directory for current and more detailed information. For more information on NEMA classifications, refer to NEMA Standards Publication No. 250.

Hazardous Location Classifications

Classes

Class I - Hazardous Gases. Class I locations are areas in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.

Typical Class I Hazardous Areas
- Spray painting and finishing areas
- Utility gas plants
- Petroleum refining production plants
- Petroleum dispensing locations
- Dry cleaning facilities
- Dip tanks containing combustibles or flammable liquids
- Plant facilities extracting solvents
- Inhalation anesthetics areas
- Process facilities manufacturing pyroxylin type plastics

Class II - Hazardous Dusts. Class II locations represent areas that are hazardous due to the presence of combustible dust.

Typical Class II Hazardous Areas
- Flour mills
- Feed mills
- Grain elevators and grain handling facilities
- Aluminum manufacturing and storage areas
- Magnesium manufacturing and storage areas
- Coal preparation and handling facilities
- Starch manufacturing and storage areas
- Confectionery plants
- Pulverizer sugar and cocoa manufacturing, and storage plants
- Spice grinding and storage plants

Class III - Hazardous Fibers. Class III locations have easily ignitable fibers or flyings present, but not likely to be suspended in air in quantities sufficient to produce ignitable mixtures in the atmosphere.

Typical Class III Hazardous Areas
- Textile mills
- Woodworking plants*
- Furniture manufacturers*
- Cotton gins
- Cotton seed milling plants
- Flax plants
- Carpet manufacturers

** Except if wood flour (dust), which is Class II Group G, is present*

Divisions

The Location Classes are broken down by the NFPA into Divisions 1 and 2, defining different levels of risk. In general, the risk of there being a hazardous presence of flammable/combustible/ignitable materials is higher for Division 1 than for Division 2. The specifics differ between the three classes (I, II and III). Equipment suitable for Division 1 is also suitable for Division 2 locations.

Groups

Class I and II locations are divided by the NFPA into Group designations identifying specific gases, vapors and dusts by characteristic similarities that relate to specific equipment construction requirements. Class III locations are not divided into separate group designations.

Class I Groups

Group A. Atmospheres containing acetylene.

Group B. Atmospheres containing hydrogen, fuel and combustible process gases containing more than 30 percent hydrogen by volume, or gases or vapors of equivalent hazard such as butadiene, ethylene oxide, propylene oxide, and acrolein.

Group C. Atmospheres such as ethyl ether, ethylene, or other gases or vapors of equivalent hazard.

Group D. Atmospheres containing acetone, ammonia, benzene, butane, cyclopropane, ethanol, gasoline, hexane, methanol, methane, natural gas, naphtha (petroleum), propane, or gases or vapors of equivalent hazard.

Class II Groups

Group E. Atmospheres containing combustible metal dusts, including aluminum, magnesium, and their commercial alloys, or other combustible dusts whose particle size, abrasiveness and conductivity present similar hazards in the use of electrical equipment.

Group F. Atmospheres containing combustible carbonaceous dusts, including carbon black, charcoal, coal, or dusts that have been sensitized by other materials so that they present an explosion hazard.

Group G. Atmospheres containing combustible dusts not included in Group E or F, including flour, grain, wood, plastic, and chemicals.

SUBMIT

Initiating Devices

Rate Compensation Heat Detectors

Surface Mount

Box mount

Series 302 heat detectors are designed for use in normal environments as well as environments where the detectors are subject to weather, moisture (internal condensation), and explosive atmospheres. They are normally-open devices designed to close an electrical circuit upon activation. All models feature rate compensation and are available with either 135 °F (57.2 °C) or 194 °F (90 °C) ratings. They are self restoring, hermetically sealed, shock and corrosion resistant, and are tamperproof.

Sensors rated at 135 °F (57.2 °C) will not respond to momentary temperature fluctuations less than 30 °F/minute between 60 °F (16 °C) and 100 °F (38 °C). Sensors rated at 194°F (90 °C) will not respond to momentary temperature fluctuations less than 50 °F/minute between 60 °F (16 °C) and 150 °F (66 °C). 302 Series sensors should not be used in environments where conditions exceed these parameters. Do not install them in hot air ducts, in front of heaters, in paint booths that use heat to cure paint, or any other location subject to temperature fluctuation.

Sensor's Rated Temperature	Minimum Ambient Air Temperature	Maximum Ceiling Temperature
135 °F (57.2 °C)	-40 °F (-40 °C)	100 °F (38 °C)
194 °F (90 °C)	-40 °F (-40 °C)	150 °F (66 °C)

The sensor's aluminum tube acts as a heat collector when sources of heat radiate directly on the tube. Install these sensors out of direct sunlight and away from radiating heat sources including the direct flow from heaters and heat ducts.

☐	302-AW-135	All-weather Heat Detector - Vertical Mounting FM & UL, 135 °F (57.2 °C)	Data Sheet 85001-0589
☐	302-AW-194	All-weather Heat Detector - Vertical Mounting FM & UL, 194°F (90 °C)	Data Sheet 85001-0589
☐	302-ET-135	All-weather Heat Detector - Vertical, Box Mount (½" NPT), FM & UL, 135 °F (57.2 °C)	Data Sheet 85001-0589
☐	302-ET-194	All-weather Heat Detector - Vertical, Box Mount (½" NPT), FM & UL, 194°F (90 °C)	Data Sheet 85001-0589
☐	302-EPM-135	Heat Detector - Explosionproof Mounting UL (Not FM approved), 135 °F (57.2 °C)	Data Sheet 85001-0589
☐	302-EPM-194	Heat Detector - Explosionproof Mounting UL (not FM approved), 194°F (90 °C)	Data Sheet 85001-0589
☐	AP-P	Adaptor plate for mounting 302 and 302-AW to any 3" box or 4" octagon outlet box	Data Sheet 85001-0589
☐	STONCO27	3 ½" Weatherproof, round backbox and cover	Data Sheet 85001-0589
☐	JALX11	Explosion proof outlet body with cover - Killark	Data Sheet 85001-0589

Hazardous location fire alarm station

The XAL-53 is an extremely rugged double-action fire alarm station suitable for hazardous locations. The device is activated by lifting the front cover and pulling down the ring. This two-step process prevents unintentional operation.

☐	XAL-53	Hazardous Location Fire Alarm Station	Data Sheet 85001-0371

SUBMIT

Notification Appliances

Hazardous Location Strobes

- Class I, II, or III locations

116DEXSTC-FJ hazardous location strobes are in-rush current limited life safety signaling appliances designed for installation in hazardous environments. Rigid specifications and state-of-the-art technology provide for high visual output and low maintenance. When pendant, wall or ceiling mounted, the 116DEXSTC-FJ meets or exceeds the requirements of UL 1971 Signaling Appliance for the Hearing Impaired. Stanchion mount models are UL 1638 Listed for private mode emergency signaling. All models are CSFM Listed.

116DEXSTC-FJ	Explosionproof Strobe, Diode Polarized				Data Sheet 85001-0586 ☐
☐ Wall Mount Elbow	☐ Ceiling/wall Module	☐ Pendant Module	☐ Stanchion Module		Data Sheet 85001-0586 ☐

Hazardous Location Bells

- Class I groups B, C and D locations
- Class II groups E, F and G locations
- Class III hazardous locations, for Divisions 1 and 2

430D series of hazardous location bells are diode-polarized, heavy duty fire bells for use in life safety applications where a diode supervised signal is required. They can be mounted to any solid surface using two 3/8 inch (10 mm) bolts and the supplied mounting brackets or to a rigid conduit. The integral explosion-proof housing is mechanically terminated to accept a standard 3/4 inch -14 National Pipe Taper (NPT) nipple.

☐ 439DEX-6AW (6”)	☐ 439DEX-8AW (8”)	☐ 439DEX-10AW (10”)	Bell – 24 Vdc	Data Sheet 85001-0399 ☐
☐ 438DEX-6N5 (6")	☐ 438DEX-8N5 (8")	☐ 438DEX-10N5 (10")	Bell – 120 Vac	Data Sheet 85001-0399 ☐

Hazardous Location Horns

- Class I groups B, C and D locations
- Class II groups E, F and G locations
- Class III hazardous locations, for Divisions 1 and 2

888D and 889D hazardous location horns are diode-polarized, heavy duty, high decibel vibrating horns intended for use in life safety systems in hazardous (classified) locations. These horns may be mounted to any solid surface using two bolts. Each unit is supplied with a sealing fitting for a 3/4 inch -14 National Pipe Taper (NPT) nipple, and wire leads for the electrical connection to the life safety system notification appliance circuit.

☐ 888D-N5 (120 Vac)	☐ 889D-AW (24 Vdc)	Horn – 120 Vac	Data Sheet 85001-0397 ☐

SUBMIT

Door Holders

24 Vac 60 Hz
24 Vdc
120 Vac 60 Hz

Electromagnetic Door Holders

Edwards electromagnetic door holders keep doors open until signaled by the fire alarm system, a heat detector, a smoke detector, or an electrical switch. Door holders should be installed wherever doors may be effectively used to confine smoke and fire, or where the release of a self-closing door from a remote location is required. Fail-safe operation is an inherent feature of these door holders. If power fails, doors are released automatically, but may be opened or closed manually at any time. All units are free of moving parts, are self-contained, and require no maintenance. Door holders have a holding force of approximately 15-25 Lbf (66-111N).

☐	☐1501-AQN5 (Single Door)	☐1502-AQN5 (Double Door)	Floor Mounted	Data Sheet 85001-0421
☐	☐1504-AQN5 (Long Catch Plate)	☐1505-AQN5 (Short Catch Plate)	Flush Wall Mounted	Data Sheet 85001-0421
☐	☐1508-AQN5 (Surface)	☐1505-AQN9 (Completely flush)	Wall Mounted	Data Sheet 85001-0421
☐	☐1500-1 (1.5” Extension)	☐1500-2 (2.5” Extension)	Catch Plate	Data Sheet 85001-0421
☐	☐1500-7 (5.25 to 7.5” Extension)	☐1500-12 (7.5 to 12” Extension)	Catch Plate	Data Sheet 85001-0421
☐	☐CS2595-5 (short)	☐CS2598-5 (long)	Replacement Armature	Data Sheet 85001-0421

Relays

Four-Voltage SPDT/DPDT Control Relays

MR Series multi-voltage control relays are ideal for applications where local contacts are required for system status, remote contacts, or for control of electrical loads and general purpose switching. They are suitable for use with HVAC temperature control, fire alarm, security, energy management, and lighting control systems. Relays provide 10-Amp contacts, which may be operated by one of four input control voltages. Each relay position contains a red LED that indicates the relay coil is energized. Relays may be snapped apart from a standard four-module assembly and used independently.

☐	☐MR-101/T (with mounting hardware)	☐MR-101/C (in metal enclosure)	Single SPDT relay	Data Sheet 270062
☐	☐MR-104/T (with mounting hardware)	☐MR-104/C (in metal enclosure)	4-position SPDT relay	Data Sheet 270062
☐	☐MR-201/T (with mounting hardware)	☐MR-201/C (in metal enclosure)	Single DPDT relay	Data Sheet 270062
☐	☐MR-204/T (with mounting hardware)	☐MR-204/C (in metal enclosure)	4-position DPDT relay	Data Sheet 270062

Heavy Duty DPDT Power Relays

MR-199 heavy duty power relays are designed for control applications where 30-Amp DPDT contacts are required. Two models are available: a 115Vac coil and a 24Vdc coil, each of which may be mounted in a rugged steel enclosure.

☐	☐MR-199X-13 (relay only)	☐MR-199X-13/C (in metal enclosure)	Power Relay — 24 VDC	Data Sheet 270065
☐	☐MR-199AX-14 (relay only)	☐MR-199AX-14/C (in metal enclosure)	Power Relay — 120 VDC	Data Sheet 270065

SUBMIT

SPDT Relays

Single-pull/double-throw relays are ideal for applications where local or remote contacts are required for control of electrical loads. They are suitable for use with HVAC, temperature control, fire alarm, security, energy management, and lighting control systems. Each relay position contains a high-intensity LED which, when illuminated, indicates the relay coil is energized. Individual relay circuits may be snapped apart from standard four- or eight-position modules, and are also available in a single-circuit configuration. The common power to each relay position is bussed on the printed wiring board, which permits power to be connected only once per multi-position module.

Single-Voltage Manual Override Relays

MR-600 series relays provide SPDT, 10-Amp contacts with manual override capability by means of an ON-AUTO-OFF switch. The relay requires a 24Vac or 24Vdc power source supplied by the controlling system. With the switch in the ON position the power relay is energized. With the switch in the AUTO position the relay is allowed to operate as signaled by the controlling system. With the switch in the OFF position the relay cannot be energized.

☐MR-601/T (with mounting track)	☐MR-601/S (with mounting spacers)	Single SPDT relay	Data Sheet 270061 ☐
☐MR-604/T (with mounting track)	☐MR-604/S (with mounting spacers)	4-position SPDT relay	Data Sheet 270061 ☐
☐MR-608/T (with mounting track)	☐MR-608/S (with mounting spacers)	8-position SPDT relay	Data Sheet 270061 ☐

Three-Voltage Control Relays

MR-800 Series relays provide SPDT 10-Amp contacts that may be operated by one of three input control voltages: 24Vdc, 24Vac or 115Vac.

☐MR-801/T (with mounting track)	☐MR-801/S (with mounting spacers)	Single SPDT relay	Data Sheet 270063 ☐
☐MR-804/T (with mounting track)	☐MR-804/S (with mounting spacers)	4-position SPDT relay	Data Sheet 270063 ☐
☐MR-808/T (with mounting track)	☐MR-808/S (with mounting spacers)	8-position SPDT relay	Data Sheet 270063 ☐

Four-Voltage Control Relays

MR-700 Series relays provide SPDT 10-Amp contacts that may be operated by one of four input control voltages: 12Vdc, 12Vac, 24Vdc, or 24Vac.

☐MR-701/T (with mounting track)	☐MR-701/S (with mounting spacers)	Single SPDT relay	Data Sheet 270064 ☐
☐MR-704/T (with mounting track)	☐MR-704/S (with mounting spacers)	4-position SPDT relay	Data Sheet 270064 ☐
☐MR-708/T (with mounting track)	☐MR-708/S (with mounting spacers)	8-position SPDT relay	Data Sheet 270064 ☐

Three-Voltage Encapsulated Control Relays

PAM-1 relays provide 10-Amp Form C contacts. The relay may be energized by one of three input voltages: 24Vac, 24Vdc, or 115Vac. The PAM-1 may be mounted with double-sided adhesive tape, a self-tapping screw, or loosely placed in a backbox.

PAM-1	Encapsulated SPDT relay	Data Sheet 270066 ☐

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Innovation, leadership, and a rich tradition of excellence

Whether EST life safety systems are protecting the lives and livelihoods of the people who make businesses run, or the lives entrusted to the care of public institutions; whether they're charged with protecting the guests of the world's finest hotels, or preserving irreplaceable artifacts that bring history to life; EST stands alone as the brand closely associated with some of the most important and far-reaching developments in the life safety industry today.

Our strength is in our Strategic Partners — the people and organizations we entrust with the technology that has charted the course of life safety protection for decades. Strategic Partners are not middlemen or go-betweens. They are independent contractors that form an integral part of the Edwards marketing and support organization. As insiders, they enjoy exclusive access to products, custom design innovations, specialized training, and pricing privileges. Yet as successful independent contractors, they are adept at ensuring that each submittal is strong and competitive, and that each bid is locally relevant to your installation. As local businesses they not only have to earn your trust — they have to keep it.

Together these strengths set EST installations apart, and have earned this brand a special place among life safety and security solutions available today. Perhaps that's why EST products and systems have become the choice of building owners, architects and engineers around the globe. And why many of the world's most cherished landmarks are protected by Edwards products that bear the EST mark. From the Bibliotheca Alexandrina Museum in Egypt, to the modern-day sphinx at the Luxor Hotel in Las Vegas, professionals who design, own and occupy the world's most impressive structures have come to know that the safest and most survivable solution today is an EST solution.

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