EST Fire Alarm System
University of New England
Finley Gymnasium
716 Stevens Avenue
Portland, Maine

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Prepared For:
University of New England
Portland Campus
Portland, Maine 04103
ATTN: Peter Donovan

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Prepared By:
Tim Biron
RB Allen Co., Inc.
131 Lafayette Road
North Hampton, NH 03862

Reviewed By:
Tom DuBois
RB Allen Co., Inc.
131 Lafayette Road
North Hampton, NH 03862

EST-EDWARDS SYSTEMS TECHNOLOGY
FIRE ALARM SYSTEM
University of New England
Finely Gymnasium
Portland Maine

Click on a Description to View Data Sheet

ITEM #	QTY.	CAT#	DESCRIPTION	DATA SHEET #
1			***Fire Alarm Control Panel***	
	1	iO500R	FIRE ALARM CONTROL PANEL Includes:	85005-0131
			Surface Mount Enclosure	85005-0131
			Red Door	85005-0131
			Main Power Supply	85005-0131
			Signature Loop Driver Card - Class 'A'	85005-0131
			XAL250 Signature Loop Expansion Card - Class 'A'	85005-0131
			SA-232 Serial Communications Card	85005-0131
			(2) Notification Appliance Circuits - Class 'A'	85005-0131
	2	12V24A	26 AmpHour BATTERIES	85010-0127
	1	SSU00500	Battery Cabinet	ED0089
2			***Audio Notification System***	
	1	ANS100MDR	AUDIO NOTIFICATION PANEL Includes	85001-0587
			Surface Mount Enclosure	85001-0587
			Red Door	85001-0587
			Main Power Supply & Battery Charger	85001-0587
			Digital Message Repeater (DMR	85001-0587
			Temporal Pattern Evacuation Signal	85001-0587
			Main Power Supply & Battery Charger	85001-0587
			Paging Microphone	85001-0587
			100 Watt Amplifier	85001-0587
	2	12V6.5A	7.2 AH BATTERIES	85010-0127
3			***Intiating Devices***	
	10	SIGA-278	ADDRESSABLE PULL STATIONS	85001-0279
	19	SIGA2-PS	ADDRESSABLE SMOKE DETECTOR	85001-0619
	7	SIGA2-HFS	ADDRESSABLE HEAT DETECTOR	85001-0620
	26	SIGA-SB	DETECTOR BASE	85001-0620
	2	SIGA-MCR	ADDRESSABLE CONTROL RELAY (Requires UIO6R Motherboard)	85001-0239
	4	SIGA-MCC1	ADDRESSABLE SIGNAL MODULE (Requires UIO6R Motherboard)	85001-0237
	1	SIGA-UIO6R	UNIVERSAL INPUT/OUTPUT MOTHERBOARD	85001-0365
4			***Indicating / Miscellaneous Devices***	
	15	G4RF-S7VM	SPEAKER/STROBE UNIT - Wall Mount (Adjustable Candela)	85001-0549
	2	G1RF-VM	STROBE UNIT - Wall Mount (Adjustable Candela)	85001-0573
	1	7788	AES RADIO MASTERBOX w/ Accessories	AES
	1	12V6.5A	7.2 AH BATTERIES	85010-0127
	1	495S1280R	EXTERIOR STROBE BEACON	TOMAR
	1	SSU00685	PLANS CABINET	ED0549
	1	3200	KNOX BOX (Key Repository)	KNOX

EST-EDWARDS SYSTEMS TECHNOLOGY
FIRE ALARM SYSTEM
University of New England
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Portland Maine

ITEM #	DESCRIPTION
5	***Supporting Documentation***

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Fire Alarm Permit Application
Radio Masterbox Permit Application

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BATTERY STANDBY CALCULATIONS - Fire Alarm Control Panel

QTY	Model #	Description	Quiescent Current	Alarm Current	Total Quiescent	Total Alarm	
1	iO500R	Base Panel	0.172000	0.267000	0.172000	0.267000	Amp
1	XLA250	Signature Loop Expansion Module	0.060000	0.125000	0.060000	0.125000	Amp
1	SA-232	RS-232 Communications Card	0.013000	0.013000	0.013000	0.013000	Amp
10	SIGA-278	Addressable Manual Pull Station	0.000250	0.000400	0.002500	0.004000	Amp
19	SIGA2-PS	Addressable Smoke Detector	0.000045	0.018000	0.000855	0.342000	Amp
7	SIGA2-HFS	Addressable Heat Detector	0.000045	0.018000	0.000315	0.126000	Amp
2	SIGA-CR/MCR	Addressable Control Module	0.000100	0.000100	0.000200	0.000200	Amp
4	SIGA-MCC1	Addressable Signal Module	0.000045	0.018000	0.000180	0.072000	Amp
15	G4RF-S7VM	Speaker/Strobe Unit (Assume 75 Candela)	0.000000	0.182000	0.000000	2.730000	Amp
2	G1RF-VM	Strobe Unit (15 Candela)	0.000000	0.710000	0.000000	1.420000	Amp
1	495S1280R	Exterior Beacon	0.000000	0.350000	0.000000	0.350000	Amp
				Total	**0.24905**	**5.4492**	Amp

Total Quiescent x Time Required (60 Hours)*:	**14.943**		Ah
Total Alarm x Time Required (15 Minutes):		**1.3623**	Ah
Total Battery Required:		**16.3053**	**Ah**
Total Battery Required (+) 20% Spare Capacity:		**19.56636**	**Ah**
Battery Supplied:		**26**	**Ah**

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NAC Circuit Voltage Drop/Maximum Length Calculations

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Formulas Used:

$R_t = (D) \times (R_w) / 1000'$
$V_d = (R_t) \times (I_t)$
Substitute for (R_t) and solve for D

$D = ((4.0) \times (1000)) / ((R_w) \times (I_t))$

R_t = Total Circuit Resistance
D = Total Circuit Length (Feet)
R_w = Wire Resistance (Ω) per 1000' Pair (Ohms)
V_D = Circuit Voltage Drop (Max allowed is 4.0Vdc)
I_t = Total Circuit Current

Notes:

1. NAC Circuit terminal voltage 24Vdc.
2. A maximum allowable voltage drop of 4Vdc will provide a minimum of 20 Vdc per circuit.
3. Current values listed per device are based on 20Vdc.
4. Calculations assume 75 candela rating for all Speaker/Strobes & 15 candela for Strobe Units.

HORN/STROBE CIRCUIT MAX WIRE LENGTH CALCULATION

	G4RF-S7VM Speaker/Strobe				G1RF-VM		495S	757-8A	Total Circuit Current	Ω per 1000' Pair		
Current (mA)	65	93	182	238	71	188	350	260		12AWG (3.5)	14AWG (5.2)	
Ckt/Cd	15cd	30cd	75cd	110cd	15	75cd		110cd	Amp	Max Length (Ft)	Max Length (Ft)	Volt Drop
iO500 Ckt1			2						0.3640	3139.72	2113.27	4.0
iO500 Ckt2			10		2				1.9620	582.50	392.06	4.0
iO500 Ckt3			3						0.5460	2093.14	1408.85	4.0
iO500 Ckt4							1		0.3500	3265.31	2197.80	4.0

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Audio Notification Panel Standby Battery Calculations

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Audio Notification Panel	Quiescent Current	Alarm Current
Panel	0.0180	
Amplifier - Fully loaded @ 100 Watts		2.5000
	0.0180	**2.5000**
	Total Quiescent	Total Alarm

Remaining % of Ckt Capacity	
0.00 %	
70.00 %*	Remaining % Panel*

Total Quiescent Amp x Time Required (60 Hours)	1.080	AmpHr
Total Alarm Amp x Time Required (15 Minutes)	0.625	AmpHr
Total Battery Required	1.705	AmpHr
Total Battery Required + 20%	**2.046**	AmpHr
Battery Supplied	**7.2**	AmpHr

All currents are expressed as mA.
***Total Watts Estimated = 30 Watts (Based on 2 watts / speaker)**

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Speaker Circuit Loading and Maximum Length Calculations

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$$\text{Max Length} = \frac{59.25 \times \text{Amplifier Output Voltage}^2}{\text{Wire Resistance} \times \text{Circuit Load}}$$

Where:

Amplifier Output is 70Vrms
Wire Resistance is 8.0Ω / 1000 Ft pair (16AWG)
Circuit Load is Total Watts per Circuit
Maximum load per circuit is 35 Watts
Maximum Amplifier output is 100 Watts
(Assume all speakers @ 2 watts)

Fire Command Center (Floor 1)

Flr/Circuit	Speakers @ x Tap			Ckt Total Watts	Ckt Watts from Amp1	Ckt Watts from Amp2	Ckt Watts from Amp3	Max Ckt Length (16AWG) Feet	Remaining % of Ckt Capacity
	0.50	1	2						
Circuit 1			2	**4**	4	n/a	n/a	9073	88.57
Circuit 2			10	**20**	20			1815	42.86
Circuit 13			3	**6**	6			6048	82.86
				Total Watts per Amp	**30**	**0**	**0**		
					70.00	**100.00**	**100.00**		
					% of Amp Remaining	**% of Amp Remaining**	**% of Amp Remaining**		

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System Narrative

In the event of an alarm from an actuated device, the following shall occur: (Devices reporting an alarm: Manual Station, Smoke Detector, or Heat Detector)

1) Notify the Fire Department via the Radio Master Box;
Notify Campus Security via Digital Communicator (DACT) and Central Station

2) Annunciate audibly,visually, and in plain english the active initiating device at the Fire Alarm Control Panel

3) Activate the exerior Strobe/Beacon

4) Flash all strobe appliance circuits in a synchronized manner until the FACP has been reset.

5) Sound an Alert Tone to all Speaker Circuits; followed by a digitally recorded message "Attention Please, there has been a report of an emergency. Proceed calmly to the nearest exit and leave the building. Do not use the elevators, use stairwells where necessary. All handicapped occupants shall use the building evacuation plan." This message shall be broadcast a total of three (3) times, followed by a Code 3 Temporal Pattern evacuation tone. The evacuation tone shall continue until the FACP has been silenced or reset. If silenced, the evacuation tone shall resound.

In the event of a supervisory condition from an actuated device, the following shall occur:

1) Notify Campus Security via Digital Communicator (DACT) and Central Station

2) Annunciate audibly,visually, and in plain english the active initiating device at the Fire Alarm Control Panel

In the event of a system trouble report, the following shall occur:

1) Notify Campus Security via Digital Communicator (DACT) and Central Station

2) Annunciate audibly,visually, and in plain english the active initiating device at the Fire Alarm Control Panel

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SEQUENCE OF OPERATION MATRIX

System Inputs	A	B	C	D	E	F	G	H	J	***System Inputs***
	Alarm Signal to Fire Deparment via Radio Master Box	*Alarm Signal to Campus Security via Digital Communicator (DACT*	*Annunciate at Fire Alarm Control Panel*	*Acivate Audio Evacuation Sequence*	*Activate Strobe Circuits*	*Activate Exterior Strobe Beacon*	*Shutdown Associated HVAC Unit & Associated Mechanical Equipment*	*Supervisory Signal to Campus Security via Digital Dialer (DACT)*	*Trouble Signal to Campus Security via Digital Communicator (DACT)*	
System Waterflow										System Waterflow
System Tamper Switch										System Tamper Switch
Low Water Pressure Switch										Low Water Pressure Switch
Manual Pull Stations	x		x	x	x	x				Manual Pull Stations
Area Smoke Detector	x		x	x	x	x				Area Smoke Detector
Duct Smoke Detector										Duct Smoke Detector
Fire Damper Power Fail										Fire Damper Power Fail
Fire Alarm - AC Failure			x			x			x	Fire Alarm - AC Failure
Fire Alarm - Low Battery			x						x	Fire Alarm - Low Battery
Signal Line Open Circuit			x						x	Signal Line Open Circuit
Signal Line Ground Fault			x						x	Signal Line Ground Fault
Horn/Strobe Circuit Open			x						x	Horn/Strobe Circuit Open
Horn/Strobe Circuit Ground			x						x	Horn/Strobe Circuit Ground
System Ground Fault			x						x	System Ground Fault
	A	B	C	D	E	F	G	H	J	

SINCE 1966

R.B. Allen Co., Inc.

NE 1-800-258-7264
FAX (603) 964-8885

P.O. Box 770
131 Lafayette Rd.
No. Hampton, NH 03862
(603) 964-8140

Service and Warranty

R.B. Allen Co., Inc. is a UL Certified ISO 9001 registered Fire Alarm Distributor since 1966 with offices located in North Hampton, NH and Woonsocket, RI. The service policies of R.B. Allen Company are no charge to the customer for warranty work including parts and labor for one (1) year from the time of final acceptance.

R.B. Allen Company warranty applies only to the equipment it provides and does not cover defective wiring or equipment provided by the Electrical Contractor.

Service calls resulting from acts of nature, acts of vandalism, or acts which are beyond the control of the equipment manufacturer are excluded under the guarantee and shall be considered a billable call.

R.B. Allen Company factory trained and certified technician will provide job site supervision during installation of the system and perform final connections, testing and adjusting of the Fire Alarm System. They also will instruct the owner's personnel on the operation and maintenance of the fire alarm system.

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Fire Alarm Permit

If you or the property owner owes real estate or property taxes or user charges on any property within the city, payment arrangements must be made before permits of any kind are accepted.

Installation address: UNE FINLEY GYM 716 stevens ave CBL: _____

Exact location: (within structure) basement electric room

Type of occupancy(s) (NFPA & ICC): _____

Building owner: UNE

System Designer (point of contact): RB ALLEN (Must be)

Designer phone: 1800-258-7264 E-mail: timbiron@rballen.com

Installing contractor: FAVREAU ELECTRIC Certificate of Fitness No: M1015

Contractor phone: 207-725-2005 E-mail: _____

This is a new application: YES ○ NO ○

This is an amendment to an existing permit: YES ◉ NO ○ Permit no: _____

The following documents shall be provided with this application:

- ☑ Floor plans
- ☑ Wiring diagram
- ☑ Annunciator details
- ☑ Equipment data sheets
- ☑ Battery & voltage drop calculations
- ☑ Input/ Output Matrix
- ☑ Designer qualifications
- ☑ Electrical Permit Pulled (check alarm/com)

COST OF WORK: $9500

PERMIT FEE: $120

($10 PER $1,000 + $30 FOR THE FIRST $1,000)

The designer shall be the responsible party for this application. Download a new copy of this application at www.portlandmaine.gov/fire for every submittal. Submit all plans in electronic PDF in addition to full sized plans to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

Prior to acceptance of any fire alarm system, a complete commissioning and acceptance test must be coordinated with all fire system contractors and the Fire Department, and proper documentation of such test(s) provided.

All installation(s) must comply with the *City of Portland Technical Standard for Signaling Systems for the Protection of Life and Property*, available at www.portlandmaine.gov/fire .

Applicant signature: _____ Date: 6-18-2012

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Master Box Approval

Applicant: RB ALLEN
App Phone #: 1800-258-7264
Building Name: UNE FINLEY
Building Address: 716 stevens ave

Occupancy:
Assembly OL>300, 20 unit apartment building, etc.

Emergency Contact: UNE SECURITY
Emergency phone #: 207-283-0170
Date of Application: 6-18-2012
Billing Address:

Comments: currently mechanical MB

Applicant completes red box and submits with Fire Alarm Permit

1

FIRE PREVENTION: ☐ Approved ☐ Denied

_____/_____/_____ _____
Date Fire Prevention Officer

Comments:

2

FIRE ALARM: Box #:_____

ELECTRICAL DIVISION: ☐ Approved ☐ Denied

3

Box Type: AES Radio Box / _____
New Other

Test Date: _____/_____/_____ In Service Date: _____/_____/_____ _____
Fire Alarm Technician

AES

Circuit if applicable:

FIRE ALARM: Same Running Assignment As Box: _____

4

Notifications: ☐ All Stations ☐ Run Books ☐ Digitizer ☐ Computer ☐ Cad Box Test

☐ South Portland ☐ _____ _____
Other Dispatcher

5

BILLING: ☐ Entered _____
Financial Officer

6

FIRE PREVENTION: ☐ Filed _____/_____/_____
Date

iO500 Intelligent Life Safety System

Overview

The EST iO500 intelligent life safety system offers the power of high-end intelligent processing in a configuration that delivers an uncomplicated solution for small to mid-sized applications. With intelligent detection, electronic addressing, automatic device mapping, optional Ethernet® connectivity, and a full line of easily-configured option cards and modules, this flexible system offers offers versatility that benefits building owners and contractors alike.

The iO500 provides one Class A or Class B analog device loop that supports up to 250 device addresses. A second 250-point loop may be added to the iO500 to expand total system capacity to up to 500 device addresses. The panel includes four NACs that may be wired for either Class A or Class B operation.

The iO500 supports a wide range of accessories and related equipment, including:

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

Features

- Comes standard with one loop (expandable to two) that supports up to 250 (expandable to 500) intelligent devices: each iO500 loop supports up to 125 detectors and up to 125 modules.
- Supports Signature Series intelligent modules and detectors
- Four Class B NACs or two Class A NACs.
- Form C contacts for alarm and trouble, Form A for supervisory
- Electronic addressing with automatic device mapping
- Optional Ethernet port for diagnostics, programming and a variety of system reports
- Two programmable switches with LEDs and custom labeling
- Supports Genesis horn silence over two wires and UL 1971-compliant strobe synchronization
- Supports up to eight serial annunciators, (LCD, LED-only, and graphic interface).
- 1,000 event panel history log
- Can use existing wiring for most retrofit applications
- Upload/download remotely or locally
- Two-level maintenance alert reporting
- Pre-alarm and alarm verification by point
- Adjustable detector sensitivity
- 4 x 20 character backlit LCD display

Application

The iO500 life safety system is a powerful intelligent solution for small to mid-sized buildings. Advanced analog technology delivers the benefits of flexible system installation, while a clean and easy-to-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 allows the designer to customize the system to precisely suit the needs of the building owner.

Flexibility built right in

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

Perfect for retrofits

The iO500 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 iO500 technology without the expense or disruption of rewiring the entire building.

Signals with a difference

iO500 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

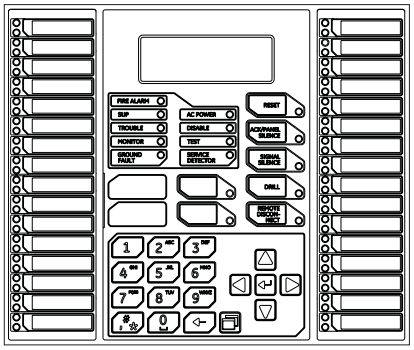
Remote annunciation is a strong suit of the iO500. Up to eight annunciators can be installed on a single system. Compatible annunciators include a range of LED and LCD models that provide zone or point annunciation, as well as common control capabilities.

The iO500 also supports graphic annunciation with optional graphic annunicator interface modules. Each interface provides common control, indicators, and LED drivers. Consult the Ordering Information section for details.

A complete line of accessories

The iO500 life safety system is supported by a complete line of intelligent detectors, modules and related equipment. Consult the Ordering Information section for details.

Operation



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

Control buttons

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

System LEDs

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

Panel Operation Options

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

Programming

iO500 life safety systems are simple to set up, yet also offer advanced programming features that put these small building panels into a class of their own. The auto programming feature quickly gets the panel operational using factory default settings. Basic zone and point settings can be programmed easily through the front panel interface, so the system is up and running in no time.

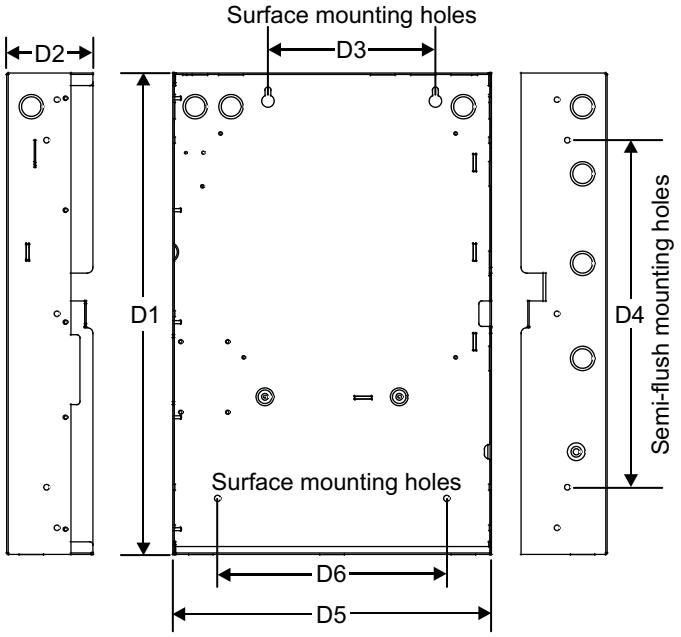
For more advanced system configuration and correlation groups programming, iO500 systems interface to a PC running compatible iO-CU software. This option offers full system configuration in the familiar Windows® operating environment. Connection is typically made to a laptop through the panel's optional RS-232 communications port, which can also be used to connect a system printer.

Among the many innovative features of iO500 control panels is the optional network card. This module provides a standard 10/100 Base T Ethernet® network connection that permits access to the control panel from any remote location with the correct communications protocols. The connection can be used to download to the panel from the iO-CU, or upload and view system reports using the iO-CU.

Available system reports include:

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

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)

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

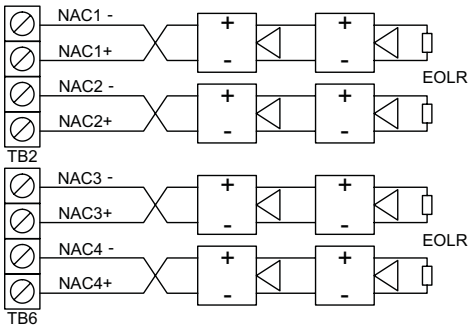
Wiring & Configuration

Notification appliance circuits (TB2)

iO500 control panels come equipped with four notification appliance circuits. Each circuit can be individually configured for continuous, temporal, synchronized, latching, and coded output.

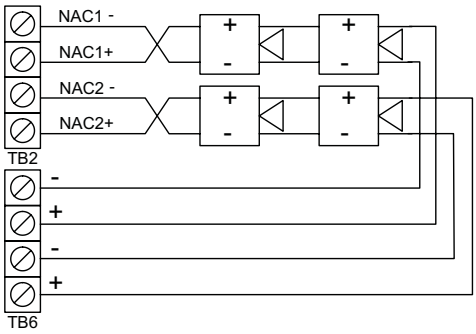
Circuit specifications	
Circuit Type	4 Class B or 2 Class A, 2.5 amps each
Voltage	24 VFWR
Current	6.0 A total, 2.5 A max. per circuit at 120/230 VAC 60 Hz 5.0 A total at 230VAC 50 Hz, 2.5 A max. per circuit
Impedance	26 Ω total, 0.35 µF max
EOLR	15 K Ω, ½ W

Class B wiring



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

Class A wiring



Auxiliary & Smoke power outputs (TB3)

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

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

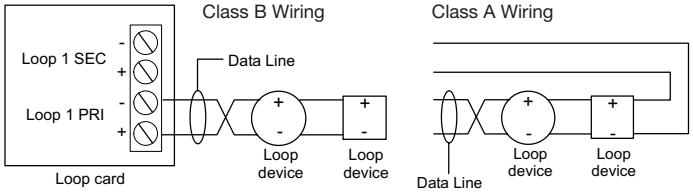
Circuit specifications	
Circuit voltage range	21.9 to 28.3 V
Resettable circuit (Aux power 2)	24 VDC nominal at 500 mA
Continuous circuit (Aux power 1)	24 VDC nominal at 500 mA. Use this circuit for powering two-wire smoke detectors.

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

Signature Device loop

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

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



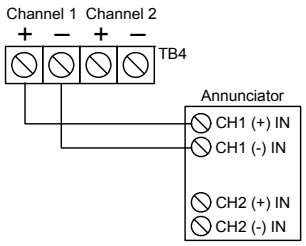
Annunciator loop (TB4)

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

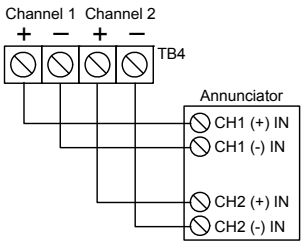
Circuit specifications

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

Class B



Class A



Alarm, trouble, and supervisory relay (TB3)

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

Relay specifications

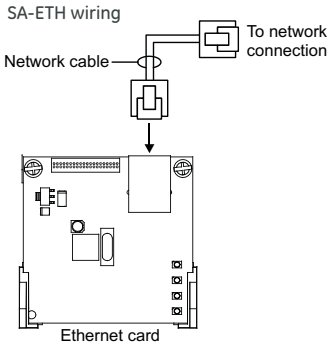
	Alarm	Trouble	Supervisory
Type	Form C		Form A
Voltage	24 VDC at 1 A resistive	24 VDC at 1 A resistive	

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

Option Cards

iO500 panels are supported by a complete line of modules and related equipment that enhance performance and extend system capabilities. Option cards plug directly into the control panel main circuit board or are connected to it with a ribbon cable. After installation, terminals remain accessible. The cabinet provides ample room for wire routing, keeping wiring neat at all times.

SA-ETH Ethernet Interface Card



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

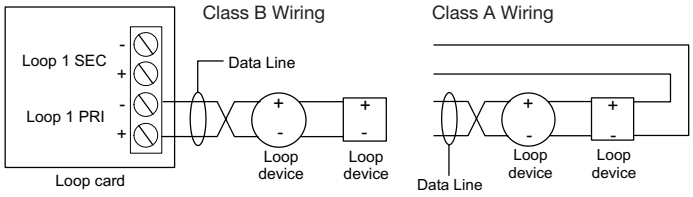
The Ethernet card is installed on the plastic assembly and connects to the main circuit board via a ribbon cable.

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

XAL250 Loop Expander Card

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.

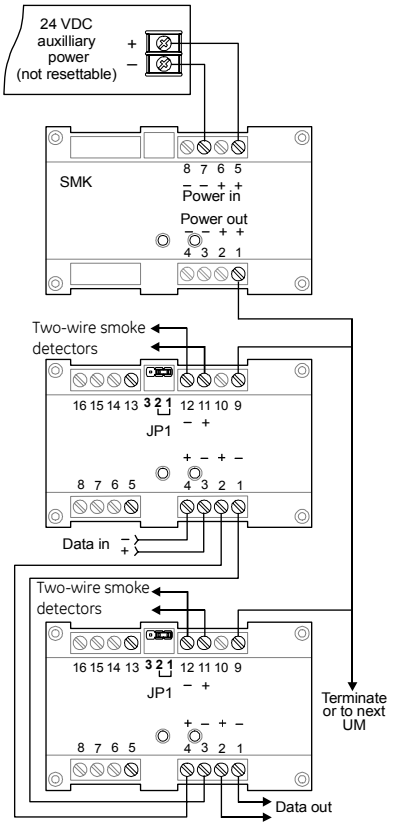
The loop expander card connects to connector J7 on the main circuit board.



XAL250 specifications	
Device addresses on loop	125 detectors and 125 modules
Wiring	Class B (Style Y) or Class A (Style Z)
Operating voltage	20 V peak-to-peak
Operating current	0.5 A total
Circuit impedance	66 Ω, 0.5 µF, max
Terminal rating	12 to 18 AWG (0.75 to 2.5 sq mm)
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Humidity	0 to 93% RH, noncondensing at 90°F (32°C)

SMK Smoke Power Converter

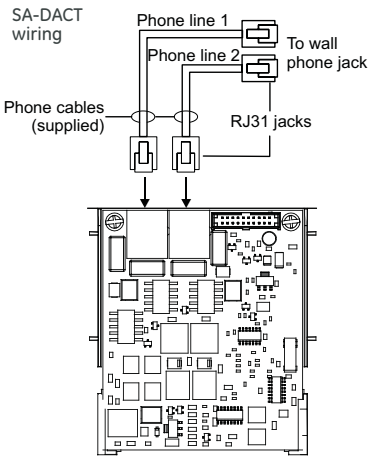
The SMK Smoke Power Converter Module provides a regulated power source for two-wire smoke circuits connected to a Signature data circuit. The SMK monitors the operating power from the power supply. When power begins to degrade, the SMK provides the necessary operating voltage to the two-wire smoke detection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



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

SA-DACT Dialer

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



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

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

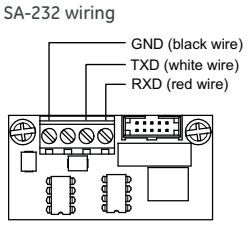
The SA-DACT is installed on the plastic assembly and connects to the main circuit board via a ribbon cable.

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

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

SA-232 RS-232 interface

The SA-232 card provides an RS-232 interface with iO500 panels. It can be used for connecting a printer to the control panel to print system events. The card also can be used for connecting a computer to download a configuration program from the iO-CU to the control panel.



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

SA-232 specifications	
Operating voltage	Standard EIA-232
Terminal rating	12 to18 AWG (0.75 to 2.5 sq mm)
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Humidity	0 to 93% RH, noncondensing at 90°F (32°C)

Specifications

Device loops	1 loop, expandable to 2, Class A or B, each loop supporting up to 250 device addresses
NAC circuits	4 Class B or 2 Class A, 2.5 amps each
Power supply	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 voltage	24 VDC. NAC minimum voltage: 19.5 VDC @ 20.4 V battery voltage
Loop circuit operating voltage	20 V peak-to-peak
SLC Primary power	120 VAC, 60 Hz, 230 VAC 50-60 Hz
Aux Power 1 (Continuous circuit)	24 VDC nominal at 500 mA. A SMK module is required when using the SIGA-UM module to support two-wire smoke detectors.
Aux Power 2 (Resettable circuit)	24 VDC nominal at 500 mA
Auxiliary output	19 to 25.7 VDC
Base panel current draw	Standby: 172 mA Alarm: 267 mA
Panel History Log	1,000 events

Battery placement	iO500 cabinets accommodate up to 18 A/H batteries. Use a external cabinet for larger battery sizes.
Batteries	Batteries must be sealed lead acid type only. Maximum charging capacity = 26 Ah.
Loop circuit	Maximum loop resistance: 66 Ω. Maximum loop capacitance: 0.5 µF. Style 4, 6, and 7 wiring. 64 isolators maximum.
SIGA-UM/SIGA-MAB	1.5 mA (see the UL and ULC compatibility list for 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 mm^2)
Serial communications	Voltage: 2.55 V. Current: 30 mA max
Remote annunciator	8 drops max, RS-485 Class A or B
Input zones	32 max.
Agency Listing	UL, CSFM and ULC

Ordering Information

Part	Description
iO500 Intelligent Multi-Loop Analog Systems	
iO500G	1 Loop system, 500 point capacity, 4 NACs, gray door, surface mount enclosure, 115 Vac, English.
iO500G-2	1 Loop system, 500 point capacity, 4 NACs, gray door, surface mount enclosure, 230 Vac, English.
iO500GC	***Canada only:*** 1 Loop system, 500 point capacity, 4 NACs, 16-zone LED display, grey door, surface mount, 115 Vac, English.
iO500G-F	***Canada only:*** 1 Loop system, 500 point capacity, 4 NACs, 16-zone LED display, grey door, surface mount, 115VAC, French.
iO500GD	1 Loop system, 500 point capacity, two-line dialer, 4 NACs, Gray door, surface mount enclosure, 115VAC transformer, English.
iO500R	1 Loop system, 500 point capacity, 4 NACs, red Door, surface mount enclosure, 115VAC transformer, English.
iO500R-2	1 Loop system, 500 point capacity, 4 NACs, red door, surface mount enclosure, 230VAC transformer, English.
iO500RD	1 Loop system, 500 point capacity, two-line dialer, 4 NACs, Red Door, surface mount enclosure, 115VAC transformer, English.
iO500G-SP	1 Loop system, 500 point capacity, 4 NACs, gray door, surface mount enclosure, 115vac, Spanish.
iO500G-2-SP	1 Loop system, 500 point capacity, 4 NACs, gray door, surface mount enclosure, 230vac, Spanish.
iO500G-PG	1 Loop system, 500 point capacity, 4 NACs, gray door, surface mount enclosure, 115vac, Portuguese.
iO500G-2-PG	1 Loop system, 500 point capacity, 4 NACs, gray door, surface mount enclosure,, 230vac, Portuguese.
SA-TRIM2	Flush mount trim, black
Replacement Electronics	
500elec-iO	Replacement electronics kit, complete motherboard and user interface, English
500elec-iO-SP	Replacement electronics kit, complete motherboard and user interface, Spanish
500elec-iO-PG	Replacement electronics kit, complete motherboard and user interface, Portuguese
500elec-iO-FR	Replacement electronics kit, complete motherboard and user interface, Canadian French
Option Cards	
SA-DACT	Dual Line Dialer/Modem, supports Contact ID, mounts in cabinet on base plate.
SA-232	Serial Port (RS-232), for connection to printers & computers, mounts in cabinet to base plate
SA-ETH	Ethernet Port, Slave, mounts in cabinet on base plate.
XAL250	Signature Loop Expansion Module. Adds second loop to iO500 systems, 250 point capacity. Mounts in cabinet on main board.
D16L-iO-2	LED Annunciator module, 16 X 2-LED zones (4 programmable for sup). Mounts in cabinet to right of LCD display for zones 17-32.
D16L-iO-1	LED Annunciator module, 16 X 2-LED zones (4 programmable for sup). Mounts in cabinet to left of LCD display for zones 1-16.
D8RY-iO-2	***Canada only:*** LED Annunciator module, two LEDs per zone, 16 zones (4 alarm only, 8 supervisory only, 4 alarm or supervisory). Mounts in cabinet to right of LCD display for zones 17-32.
D8RY-iO-1	***Canada only:*** LED Annunciator module, two LEDs per zone, 16 zones (4 alarm only, 8 supervisory only, 4 alarm or supervisory). Mounts in cabinet to left of LCD display for zones 1-16.
Remote Annunciators (refer to Data Sheet 85005-0128)	
LCD Remote Annunciators (mount to standard 4" square electrical box)	
RLCD	Remote Annunciator, 4X20 LCD & Common Indicators for displaying system status. Gray housing.
RLCD-R	Remote Annunciator, 4X20 LCD & Common Indicators for displaying system status. Red housing.
RLCD-C	Remote Annunciator, 4X20 LCD. Common controls and status indicators. Gray housing.
RLCD-CR	Remote Annunciator, 4X20 LCD. Common controls and status indicators. Red housing.
RLCD-SP	Remote Annunciator, 4X20 LCD. Common system status indicators. White housing. Spanish.
RLCD-PG	Remote Annunciator, 4X20 LCD. Common system status indicators. White housing. Portuguese.
RLCD-C-SP	Remote Annunciator, 4X20 LCD. Common controls and status indicators. White housing. Spanish.
RLCD-C-PG	Remote Annunciator, 4X20 LCD. Common controls and status indicators. White housing. Portuguese.
RLED-C-SP	Remote Annunciator, common controls and status indicators. 16 groups w/2 LEDs each for zone display. White housing. Spanish.
RLED-C-PG	Remote Annunciator, common controls and status indicators. 16 groups w/2 LEDs each for zone display. White housing. Portuguese.
For French common control, add suffix F to model number.	
LED Remote Annunciators & Expander (mount to standard 4" square electrical box)	
RLED-C	Remote Annunciator. Common controls and status indicators with 16 X 2-LED groups for zone display. Gray housing.
RLED-CF	Remote Annunciator. Common controls and status indicators with 16 X 2-LED groups for zone display. Gray housing, French.
RLED-CR	Remote Annunciator. Common controls and status indicators with 16 X 2-LED groups for zone display. Red housing.
RLED24	Remote Annunciator Zone expander. 24 X 2-LED groups with custom label areas for display of alarm and trouble. Gray housing.
RLED24R	Remote Annunciator Zone expander. 24 X 2-LED groups with custom label areas for display of alarm and trouble. Red housing.
Remote Annunciator Cabinets & Accessories	
RA-ENC1	Remote Annunciator Enclosure, key locked with plexiglass window for one RLCD(C) or RLED(C).
RA-ENC2	Remote Annunciator Enclosure, key locked with plexiglass window with space for 2 of either RLCDx, RLEDx or RLED24.
RA-ENC3	Remote Annunciator Enclosure, key locked with plexiglass window with space for 3 of either RLCDx, RLEDx or RLED25.
RKEY	Keyswitch, single gang, provides key operated enable or disable of common controls on RLCD or RLED units.
LSRA-SB	Surface Mount Box - for R Series single units.
Programming Tools	
iO-CU	EST Series configuration and diagnostics utility.
260097	RS232 cable, 4 conductor, DB9 PC interface

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Intelligent Analog Addressable Devices & Accessories

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

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Sealed Lead-Acid Batteries

Overview

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

Standard Features

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

Application

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

Safety Information

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

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Specifications

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

Ordering Information

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

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NO EXCUSES!

BCA

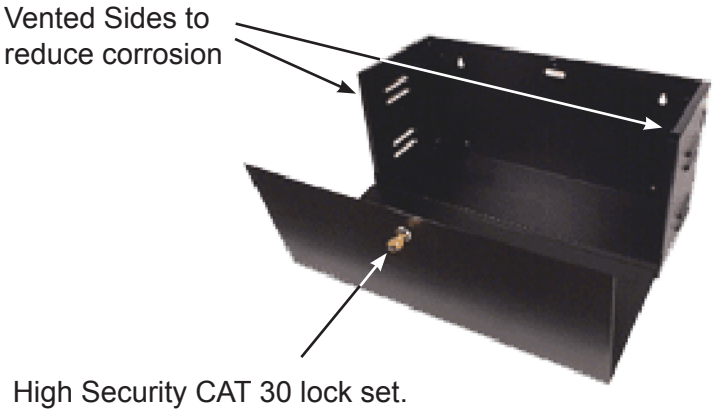
Battery Cabinet Accessory

The BCA Battery Cabinet Accessory is designed for the professional installation of systems requiring battery storage and meets the requirement of NFPA 72 (1-5.2.9) standby battery storage for battery backup. The BCA allows for easy access and maintenance of the batteries while also assisting against unnecessary power drain, interference or degeneration of the battery. The unit can be mounted securely to a wall, preventing mechanical injury or damage to other equipment.

Constructed from heavy duty 16 gauge steel with a full length piano hinged door to allow optimum access to your equipment within the cabinet. Other features include a high security CAT 30 keyed door lock and vented sides. Complete interior and exterior finish is accomplished by a phosphate treatment followed by a durable baked-on textured polyester coating.

Standard Features:

- 16 Gauge (.062 thk.) cold rolled steel
- Stainless steel piano hinge
- Red or black textured finish
- CAT 30 keyed door lock
- Dimensions:
  22” wide x 10” high x 8 1/2” deep
- Four 1/2” and 3/4” EMT conduit knockouts located on both sides and back
- Wall mounting holes



High Security CAT 30 lock set.

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NFPA

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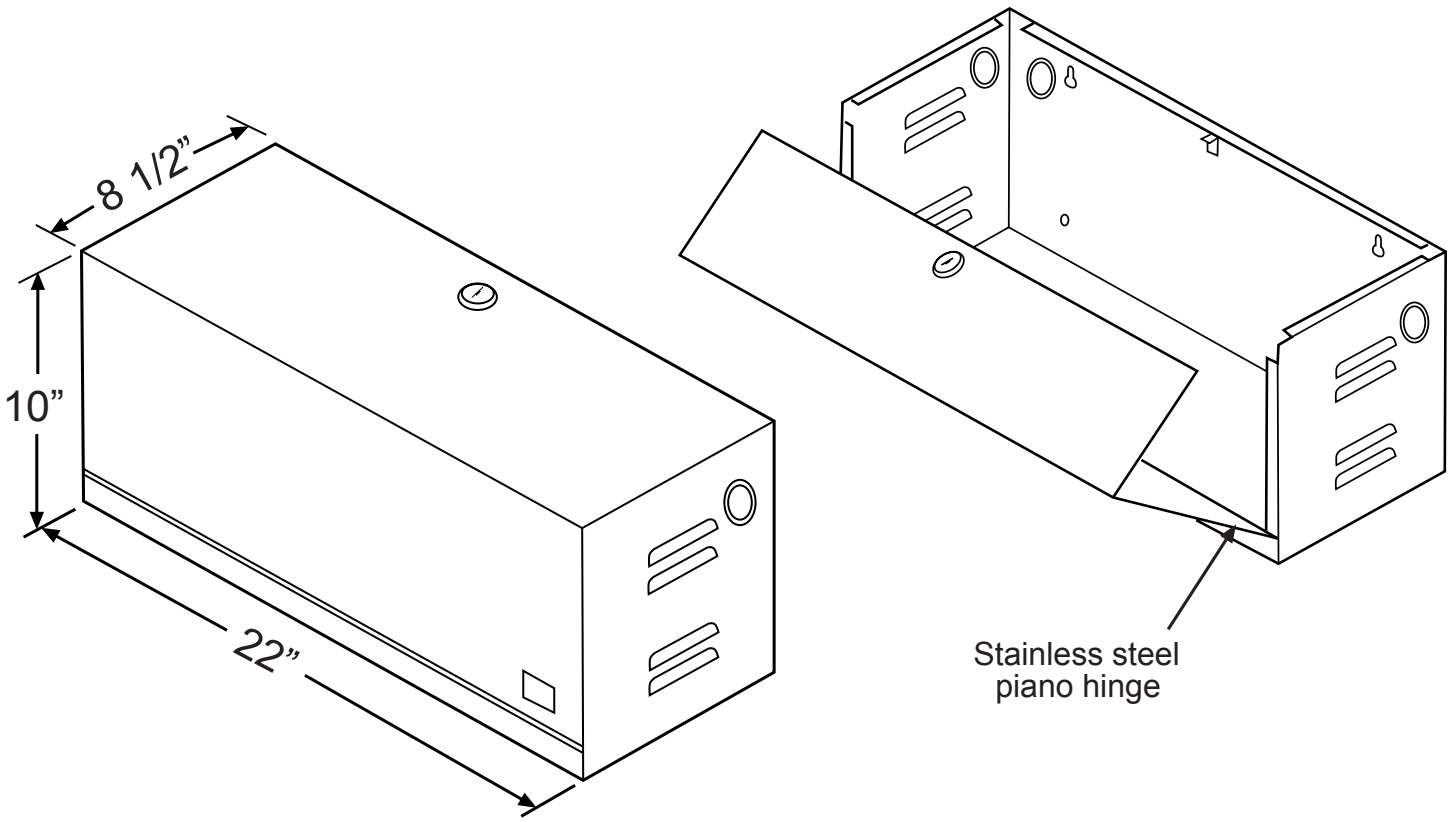
Specifications:

The BCA Battery Cabinet Accessory is constructed of 16 gauge (.062 thk.) cold rolled steel and finished with a complete interior and exterior durable red or black textured, heat-resistant baked-on enamel finish. The front cover features a full length stainless steel piano hinge and includes a high security CAT 30 keyed door lock. Overall dimensions measure 22” wide by 10” high by 8 1/2” deep. Four 1/2” and 3/4” EMT conduit knockouts are located on the sides and back. The battery cabinet meets NFPA 72 (1-5.2.9) and the National Electric Code requirements. Batteries not included.



Ordering Information:

Part #	Description
SSU00500	BCA Battery Cabinet, Red
SSU00501	BCA Battery Cabinet, Black

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Fire Alarm Audio Notification System

ANS Series

Shown with keylock door removed.

MEA

Overview

The ANS series of products from Edwards are high-performance audio notification systems that provide voice evacuation capability that meet the Emergency Voice Alarm requirements of NFPA 72 for UL listed fire alarm applications. ANS panels, which are available in 25, 50, or 100 Watt models, include an amplifier, tone generator, digital message repeater (DMR), and supervisory interface.

These self-contained systems offer robust field-configurable features and are supported by a wide range of accessory equipment that provides application flexibility and reliable performance for new and retrofit installations alike.

Expander panels and modules extend the range of the ANS system to meet the needs of even the most demanding audio applications, while accessory equipment such as zone switchers and remote microphones offer the sophistication of high-end systems for a relatively low cost.

ANS systems are ideal for use with Edwards QuickStart® and FireShield® fire alarm control panels when emergency voice alarm service is required. All ANS systems are compatible with EST's award-winning Genesis® line of field-configurable speakers and speaker-strobes, which provide a clean, attractive appearance for any voice audio application.

Standard Features

- Meets NFPA 72 Emergency Voice Alarm requirements
- Clean dead-front construction
- Integrated digital message repeater
- Four minute message capacity
- 25, 50, or 100 Watt models available
- Field selectable for either 25 or 70 Vrms speakers
- 120 VAC power supply and battery charger included
- Paging microphone overrides message and tone
- High reliability, low maintenance
- Fully supervised, UL listed
- Easy installation, operation, and configuration
- Built-in alarm and alert signals
- Compatible with QuickStart and FireShield control panels
- 24 hour backup with two 12 V, 7 AH batteries

DATA SHEET 85001-0587
Not to be used for installation purposes. Issue 1

Application

National fire codes require voice evacuation systems in places of assembly with over 300-person occupancy, in theatres with more than one screen, and in buildings seven stories or higher. ANS Series Audio Notification Systems represent an effective and efficient solution for meeting these requirements.

ANS systems are ideal for new applications with fire control panels that do not provide integrated audio functions. These audio systems also provide the opportunity to add voice evacuation capability to existing fire alarm applications without replacing existing fire alarm control equipment.

The fire alarm control panel works in concert with the ANS audio system, providing all initiating circuitry and a signaling circuit that connects to the ANS. The ANS provides its own internal supervision as well as supervision for its speaker lines.

Faults are reported back to the fire alarm control panel by means of a supervisory circuit, which is connected to a matching EOLR on the ANS. Internal failures and speaker line faults open a contact, which the fire alarm control panel reports as an open fault on the supervisory circuit.

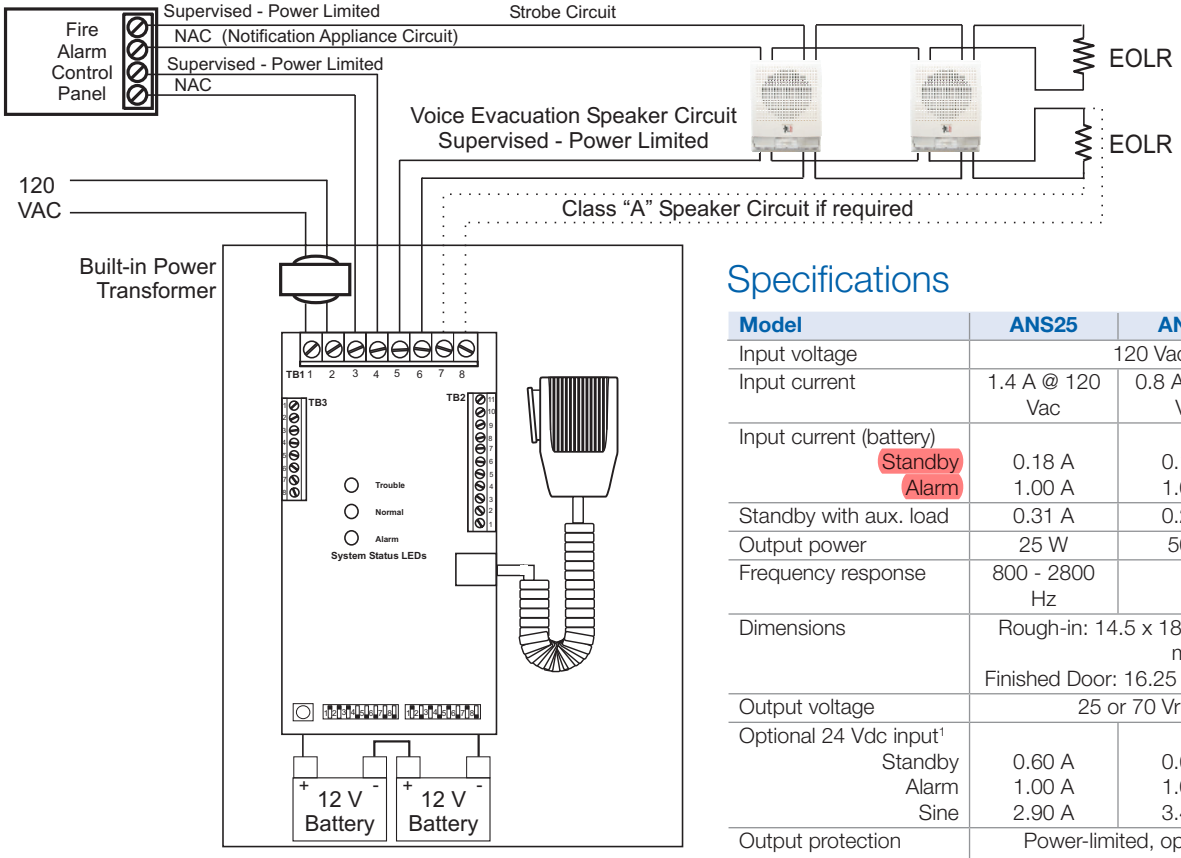
A digital message repeater (DMR) is built into all ANS systems unless ordered without the DMR. The selection from eight available alarm tones, automatic message repeats, AC fault report delay, and connected equipment settings are all field-configurable.

The paging microphone is an integral component of the audio notification system. Removal of the microphone from the panel will cause a Trouble condition. This is reported locally, as well as through the fire alarm control panel.

All ANS panels include a 120 V, 60 Hz supply (standby batteries are required). Optionally, ANS panels can be powered with 24vdc from the fire alarm control panel or a booster power supply. Where speaker-strobes are used, strobe power is provided by the fire alarm control panel or a booster power supply.

Typical Wiring

ANS 25, 50, 100



Standard Message - 15 Seconds

"Attention Please, there has been a report of an emergency. Proceed calmly to the nearest exit and leave the building immediately. Do not use the elevators, use stairwells where necessary. All handicapped occupants shall use the building evacuation plan."

Specifications

Model	ANS25	ANS50	ANS100
Input voltage	120 Vac at 60 Hz		
Input current	1.4 A @ 120 Vac	0.8 A @ 120 Vac	2.0 A @ 120 Vac
Input current (battery)			
Standby	0.18 A	0.13 A	0.18 A
Alarm	1.00 A	1.00 A	2.50 A
Standby with aux. load	0.31 A	0.26 A	0.85 A
Output power	25 W	50 W	100 W
Frequency response	800 - 2800 Hz	400 - 4000 Hz	
Dimensions	Rough-in: 14.5 x 18 x 4" (368 x 457 x 102 mm) Finished Door: 16.25 x 19.5" (413 x 495 mm)		
Output voltage	25 or 70 Vrms selectable		
Optional 24 Vdc input[1]			
Standby	0.60 A	0.60 A	0.60 A
Alarm	1.00 A	1.00 A	2.60 A
Sine	2.90 A	3.40 A	6.50 A
Output protection	Power-limited, open and short circuit protected		
Battery size			
Minimum	24 V, 7 Ah	24 V, 7 Ah	24 V, 7 Ah
Maximum	24 V, 18 Ah	24 V, 18 Ah	24 V, 24 Ah
FACP NAC circuit current	10 mA maximum		

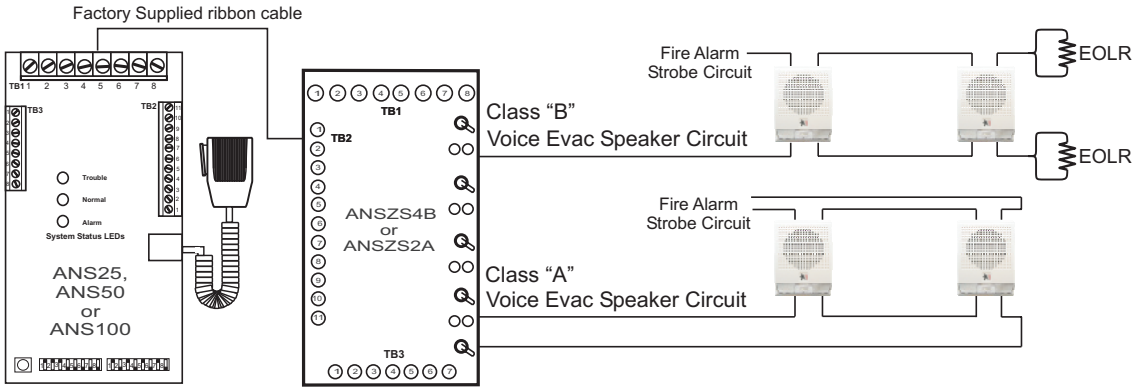
[1] Input current measurements are determined using test conditions specified in UL 1711. Sine represents measurements made while the unit produces a continuous, undistorted sine wave of 1 kHz into the rated load of 25, 50, or 100 W at the rated output voltage. Alarm is the average current the unit experiences delivering an alarm signal, temporal whoop, to the rated load. Standby is the current draw of the unit with all normal power on and auxiliary terminals fully loaded. Battery standby is the current draw from the batteries on loss of power in an otherwise normal standby state.

Accessory Equipment

Zone Splitters

ANSZS4B (4-zone) and ANSZS2A (2-zone) Zone Splitters allow the output of any ANS systems audio amplifier to supervise and drive multiple zones.

Individual Zone Select switches allow the manual selection of any or all voice evacuation zones for emergency paging. Automatic zone selection is also provided with the connection of normally-open contacts from the fire alarm control panel or other auxiliary control system. The ALL-CALL Switch selects all voice evacuation zones for emergency paging. Individual LEDs annunciate zone status, providing Zone Active or Zone Fault indications. All ANS Series Zone Splitters are compatible with 25V and 70V voice evacuation system amplifier outputs.

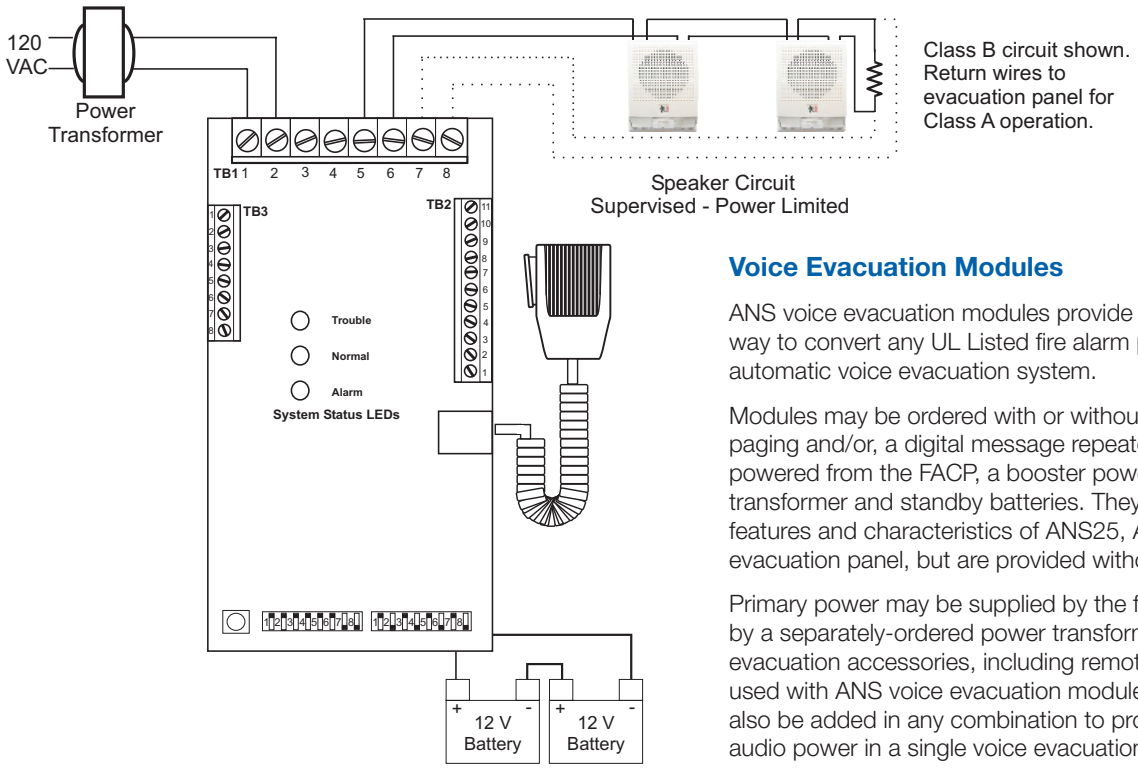


Expander Panels and Modules

Audio Notification System expander panels and modules provide an easy and cost-effective way to increase the output power of ANS25, ANS50 or ANS100 voice evacuation systems.

Audio Notification System panels include an audio amplifier, temporal pattern alarm tone, power supply and battery charger. They can be ordered with or without a paging microphone and/or digital message repeater.

Audio Notification System modules do not include cabinet, and are intended to be mounted in a UL Listed enclosure. The can be ordered with or without a a paging microphone and or digital message repeater. Voice evacuation expanders may be ganged together in any combination to provide up to 2,000 Watts of audio power.



Voice Evacuation Modules

ANS voice evacuation modules provide an easy and cost-effective way to convert any UL Listed fire alarm panel or system to an automatic voice evacuation system.

Modules may be ordered with or without a microphone for manual paging and/or, a digital message repeater (DMR). Modules can be powered from the FACP, a booster power supply or an optional transformer and standby batteries. They provide all the operational features and characteristics of ANS25, ANS50, or ANS100 voice evacuation panel, but are provided without the enclosure.

Primary power may be supplied by the fire alarm control panel or by a separately-ordered power transformer. Any of the ANS voice evacuation accessories, including remote microphones, may be used with ANS voice evacuation modules. Expander modules can also be added in any combination to provide up to 2,000 Watts of audio power in a single voice evacuation system.

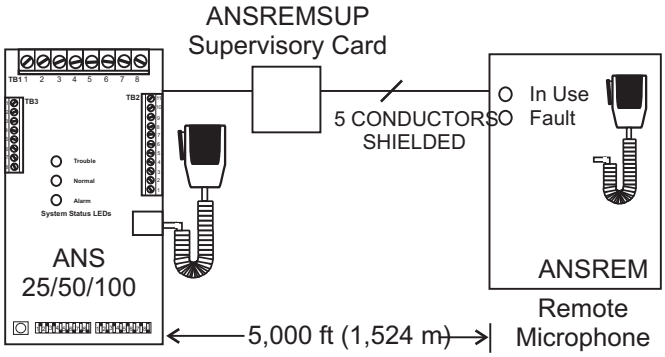
Accessory Equipment

Remote Microphone Panel

The ANSREM is a supervised remote microphone for use with the ANS voice evacuation system. The microphone provides crystal-clear live voice messages over the system speakers.

Up to five ANSREM panels may be connected to a single ANSREMSUP supervisory card. This provides supervision of the wires to the ANSREM and supports wiring distances of up to 5,000 feet (1,524 meters).

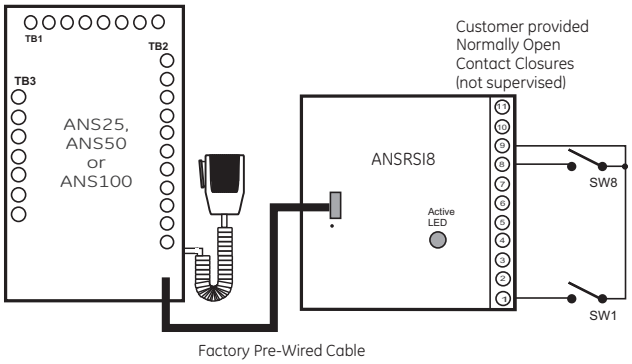
The ANSREM is housed in an attractive surface or semi-flush mounted enclosure, with a hinged locking door. It features dead-front construction, a microphone with a “Press-to-Talk” button, and discreet LEDs that indicate In-Use and Fault status.



Remote Serial Interface

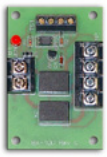
The ANSRSI8 is designed to facilitate access to the RS-232 input capabilities of ANS Series audio panels. Simple contact closures provided by an auxiliary control select one of many available custom messages and tones. This additional control interface allows the ANS 25/50/100 series to operate as a multi-message, complex sequence voice messaging system.

The ANSRSI8 mounts in the voice messaging system enclosure, and connects to the ANS 25/50/100 using a simple plug-in connector. Each ANSRSI8 has eight inputs for the connection of auxiliary normally-open contacts. Multiple serial interfaces may be connected to provide up to 64 separate control points.

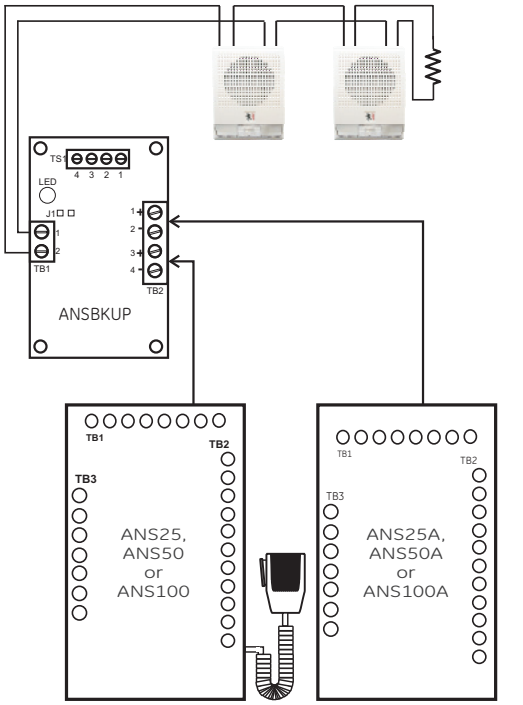


NOTE: *The ANSRSI8 Remote Serial Interface is not UL Listed for fire alarm applications and is suitable for private-mode signaling only.*

Backup Amplifier Switching Card



The ANSBKUP switching card continually monitors the primary amplifier for signs of failure. Should the amplifier fail, the ANSBKUP automatically activates a backup amplifier. A single amplifier can be used to back up one or more amplifiers of equal or lesser wattage. One ANSBKUP is required for each amplifier being backed up. The backup amplifier does not require its own microphone and digital message repeater unless a fully redundant voice evacuation system is required.



Note:Back-up amplifier does not require microphone or DMR.

Engineering Specification

The voice evacuation system shall be Edwards ANS Series or approved equal. The voice evacuation system shall provide <25><50><100> Watts signal power and <25><50><100> Watts voice power, and shall be UL Listed.

All speaker circuits shall be field selectable for 25 or 70 Vrms operation and shall be power limited.vav

The voice evacuation system shall be microprocessor based, and shall contain an integral microphone, <25><50><100> Watt audio amplifier, tone generator, digital message repeater, 120 VAC power supply, and battery charger.

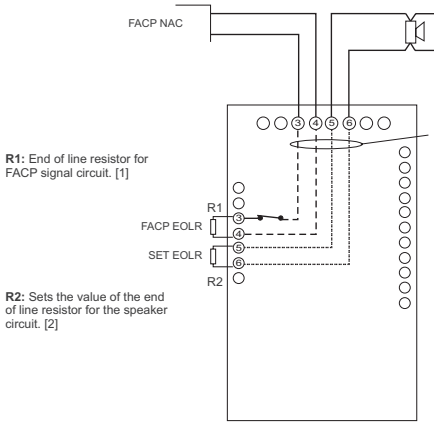
The voice evacuation message/signal shall be broadcast until the Fire Alarm Control Panel (FACP) is reset, or until fire emergency personnel interrupt the broadcast with a manual page. On reset system shall automatically return to standby (normal operating) condition.

A secondary message shall be provided that can be triggered by the closure of a contact from either the FACP or from any normally open contact device.

Remote paging microphone(s) will be supported by the system through a supervised circuit. Remote microphone(s) may be mounted up to 5,000 ft. (1,524 m) away from the voice evacuation panel.

Application Drawings

End of Line Resistors



R1: End of line resistor for FACP signal circuit. [1]

R2: Sets the value of the end of line resistor for the speaker circuit. [2]

R3: End of line resistor for the speaker circuit. [2]

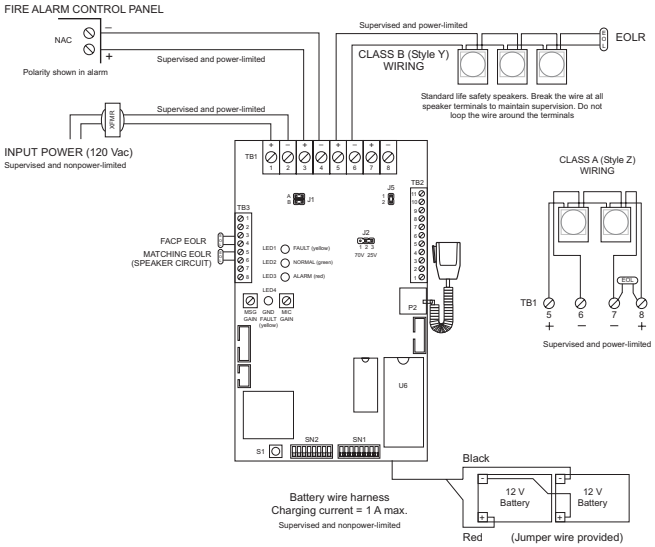
Note: These connections are internal. Do not make these connections.

Notes

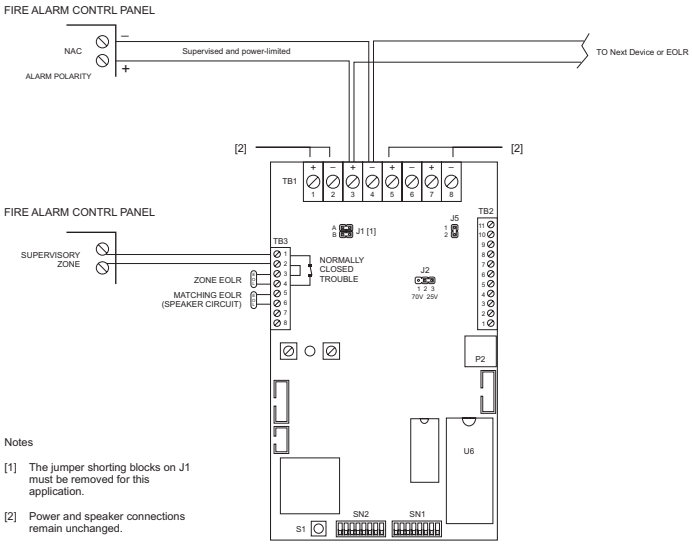
[1] If the Fire Alarm Signal Circuit requires a 4.7K end-of-line resistor, then R1 must be a 4.7K. Normally, this resistor is connected to the Signal Circuit through a closed Trouble contact. When the ANS25/50 goes into Trouble, the contact opens, producing an "Open" on that Signal Circuit, notifying the FACP.

[2] R2 and R3 must match each other. R2 "Sets" what the value of R3 needs to be. R2 tells the ANS25/50 what to expect on the end of the Speaker Circuit. If a Speaker EOLR (R3) already exists, simply match that value for R2.

Dedicated Fire Alarm Control Panel Notification Appliance Circuit



Fire Alarm Control Panel Supervisory Circuit

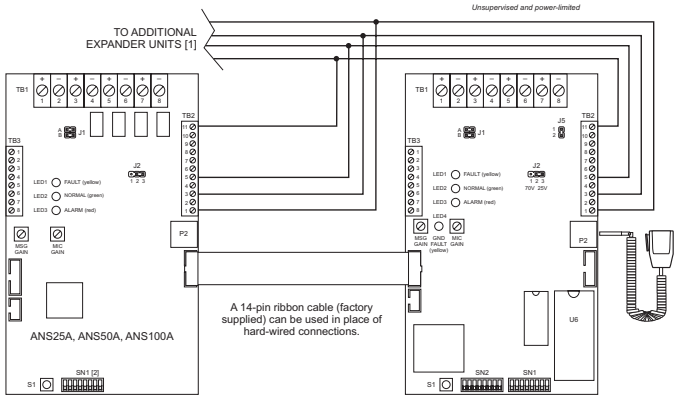


Notes

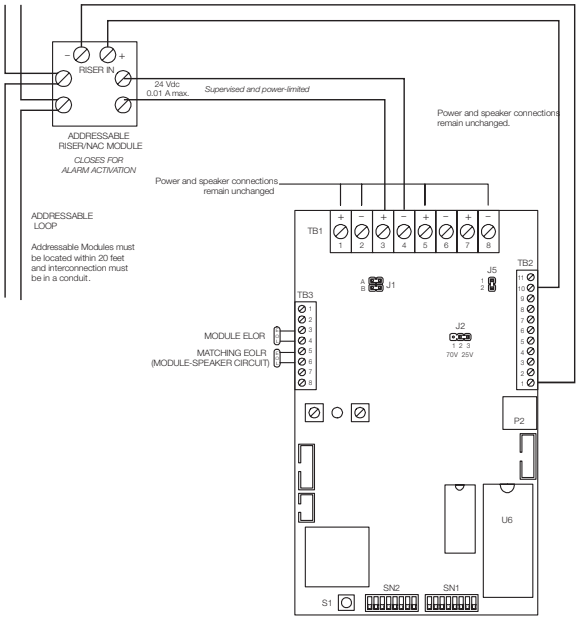
[1] The jumper shorting blocks on J1 must be removed for this application.

[2] Power and speaker connections remain unchanged.

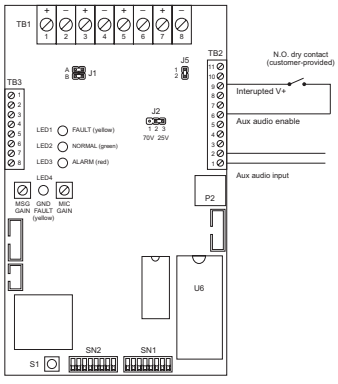
Multiple Unit Connection (15 units max.)



Addressable Systems



Auxiliary Audio



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Ordering Information

Part Number	Description	Wt. lb (kg)
Audio Notification Panels	*Panels include DMR, temporal pattern, standard message, microphone, power supply and battery charger.*	
ANS25MDG	25 Watt Audio Notification Panel. Gray Cabinet.	29 (13.2)
ANS25MDR	25 Watt Audio Notification Panel. Red Cabinet.	29 (13.2)
ANS50MDG	50 Watt Audio Notification Panel. Gray Cabinet.	32 (14.5)
ANS50MDR	50 Watt Audio Notification Panel. Red Cabinet.	32 (14.5)
ANS100MDG	100 Watt Audio Notification Panel. Gray Cabinet.	32 (14.5)
ANS100MDR	100 Watt Audio Notification Panel. Red Cabinet.	32 (14.5)
Audio Expander Panels	*Panels include power supply and battery charger. DMR and microphone ordered separately.*	
ANS25XG	25 Watt Audio Expander Panel. Gray Cabinet.	29 (13.2)
ANS25XR	25 Watt Audio Expander Panel. Red Cabinet.	29 (13.2)
ANS50XG	50 Watt Audio Expander Panel. Gray Cabinet.	32 (14.5)
ANS50XR	50 Watt Audio Expander Panel. Red Cabinet.	32 (14.5)
ANS100XG	100 Watt Audio Expander Panel. Gray Cabinet.	32 (14.5)
ANS100XR	100 Watt Audio Expander Panel. Red Cabinet.	32 (14.5)
Zone Splitters		
ANSZS4B	Zone Splitter, 4 Class B circuits with zone selection switches and All-Call switch.	1 (0.5)
ANSZS2A	Zone Splitter, 2 Class A circuits with zone selection switches and All-Call switch.	1 (0.5)
ANSZSC4A	Class A Converter.	1 (0.5)
ANSZC2B	Zone Adapter, 1 circuit to 2 circuits.	1 (0.5)
Remote Microphones		
ANSREMG	Remote microphone. Requires ANSREMSUP card in ANS panel. Gray surface/semi-flush cabinet. Supervised.	8 (3.6)
ANSREMR	Remote microphone. Requires ANSREMSUP card in ANS panel. Red surface/semi-flush cabinet. Supervised.	8 (3.6)
ANSREMSUP	Remote microphone supervisory card, one per system. Supervises up to 5 remote microphones.	1 (0.5)
ANSZSR	Relay card for supervision/zone splitter to remote microphone.	1 (0.5)
ANSMIKE	Microphone.	1 (0.5)
Backup Amplifier Modules		
ANSBKUP	Backup amplifier switching module.	1 (0.5)
Accessories		
ANSAUX	Audio Matching - line input/output card.	1 (0.5)
ANSRSI8 *(For private mode signaling only.)*	Eight-input remote serial interface module. Accepts dry contact interface to control up to eight messages. Message recording included.	1 (0.5)
Modules & Transformers (cabinets & transformers ordered separately)		
ANS25A	25 Watt expander module.	5 (2.3)
ANS25AM	25 Watt expander module with microphone.	5 (2.3)
ANS25AMD	25 Watt audio notification module with DMR and microphone.	5 (2.3)
ANS50A	50 Watt expander module.	5 (2.3)
ANS50AM	50 Watt expander module with microphone.	5 (2.3)
ANS50AMD	50 Watt audio notification module with DMR and microphone.	5 (2.3)
ANS100A	100 Watt expander module.	5 (2.3)
ANS100AM	100 Watt expander module with microphone.	5 (2.3)
ANS100AMD	100 Watt audio notification module with DMR and microphone.	5 (2.3)
ANST2885	Power transformer, open frame, 28 VAC @ 100 VA. (ANS25)	4 (1.8)
ANST28180	Power transformer, open frame, 28 VAC @ 180 VA. (ANS50/ ANS100)	5 (2.3)
Custom Messages		
ANSMDRALT	Alternate prerecorded DMR message PROM from library.	
ANSDMRCUSTOM	Custom recorded message PROM. Call customer service for quotation and availability.	

Larger systems available upon request. Please contact customer support for more information.

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EST™
Life Safety & Communications

Manual Pull Stations

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

SIGA-270 SERIES

SIGA-278

MEA

Patented

Overview

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

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

Standard Features

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

- **Traditional familiar appearance**
  SIGA-270 models feature our familiar teardrop design with simple positive pull action and sturdy die-cast metal body.
- **One stage (GA), two stage (pre-signal), and double action models**
  SIGA-270 models are available for one or two stage alarm systems. The single stage double action SIGA-278 features a rugged Lexan housing with keyed reset mechanism.
- **Break glass operation**
  An up-front visible glass rod on the SIGA-270 discourages tampering.
- **Intelligent device with integral microprocessor**
  All decisions are made at the station allowing lower communication speed while substantially improving control panel response time. Less sensitive to line noise and loop wiring properties; twisted or shielded wire is not required.
- **ADA Compliant**
  Meets ADA requirements for manual pull stations.
- **Electronic Addressing with Non-volatile memory**
  Permanently stores programmable address, serial number, type of device, and job number. Automatically updates historic information including hours of operation, last maintenance date, number of alarms and troubles, and time and date of last alarm.
- **Automatic device mapping**
  Each station transmits wiring information to the loop controller regarding its location with respect to other devices on the circuit.
- **Stand-alone operation**
  The station inputs an alarm even if the loop controller's polling interrogation stops.
- **Diagnostic LEDs**
  Status LEDs; flashing GREEN shows normal polling; flashing RED shows alarm state.
- **Designed for high ambient temperature operation**
  Install in ambient temperatures up to 120 °F (49 °C).

Application

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

Compatibility

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

Warnings & Cautions

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

Testing & Maintenance

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

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

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

Typical Wiring

The fire alarm station’s terminal block accepts #18 AWG (0.75mm^2) to #12 AWG (2.5mm^2) wire sizes. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.

Wiring Notes

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

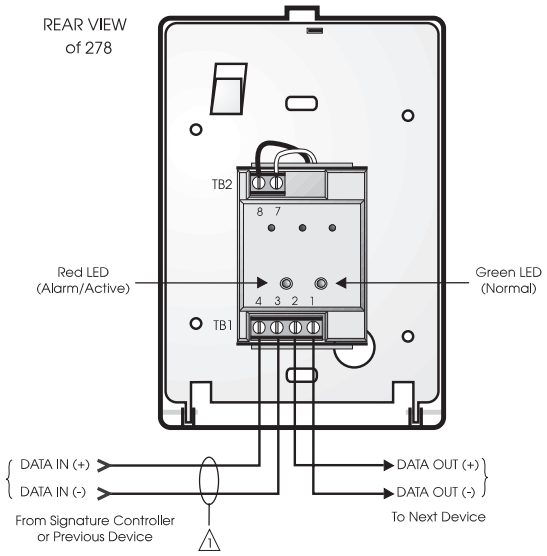

Figure 4. Single Stage Systems

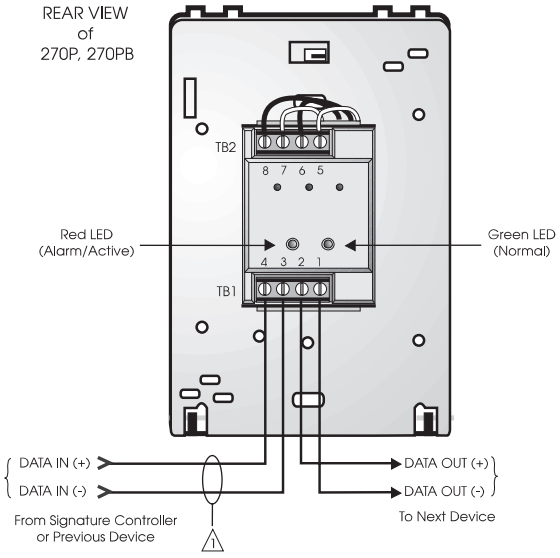

Figure 5. Two Stage Systems

Installation

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

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

All models include terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size. Edwards recommends that these fire alarm stations be installed according to latest recognized edition of national and local fire alarm codes.

Electronic Addressing: The loop controller electronically addresses each manual station, saving valuable time during system commissioning. Setting complicated switches or dials is not required. Each station has its own unique serial number stored in its on-board memory. The loop controller identifies each device on the loop and assigns a "soft" address to each serial number. If desired, the stations can be addressed using the SIGA-PRO Signature Program/Service Tool.

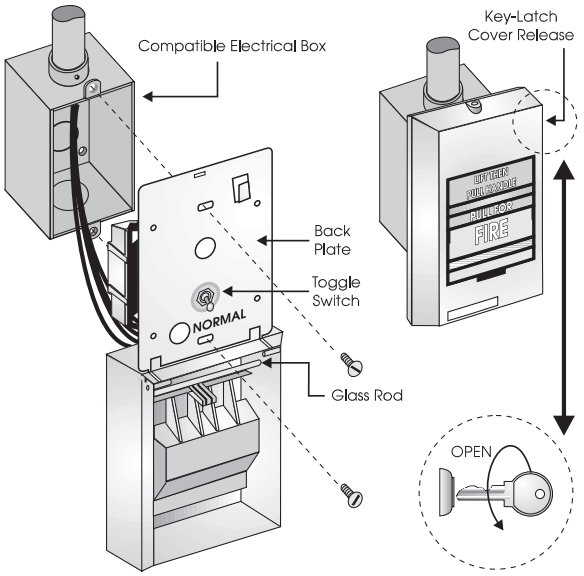

Figure 1. SIGA-278 installation

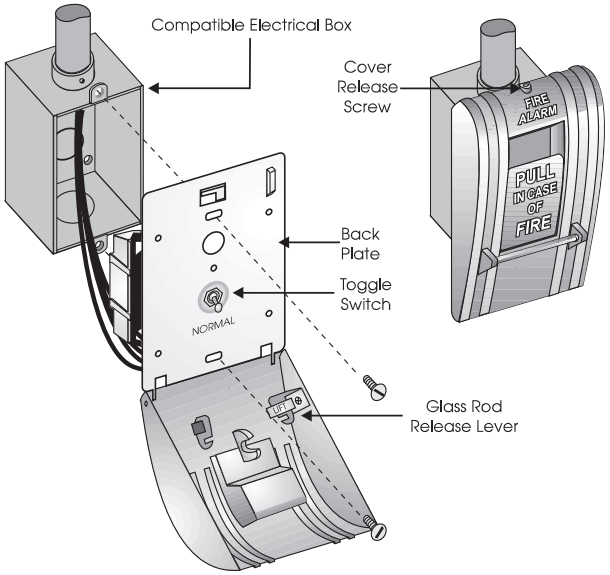

Figure 2. SIGA-270, SIGC-270F, SIGC-270B installation

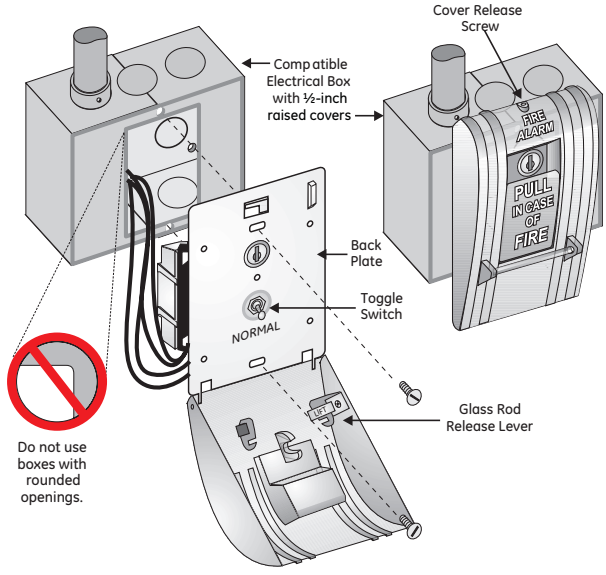

Figure 3. SIGA-270P, SIGC-270PB installation

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Specifications

Catalog Number	SIGA-270, SIGC-270F, SIGC-270B	SIGA-270P, SIGC-270PB	SIGA-278
Description	Single Action - One Stage	Single Action -Two Stage (Presignal)	Double Action - One Stage
Addressing Requirements	Uses 1 Module Address	Uses 2 Module Addresses	Uses 1 Module Address
Operating Current	Standby = 250µA Activated = 400µA	Standby = 396µA Activated = 680µA	Standby = 250µA Activated = 400µA
Construction & Finish	Diecast Zinc - Red Epoxy with aluminum markings		Lexan - Red with white markings
Type Code	Factory Set		
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)		
Storage and Operating Environment	Operating Temperature: 32ºF to 120ºF (0ºC to 49ºC) Storage Temperature: -4ºF to 140ºF (-20ºC to 60ºC) Humidity: 0 to 93% RH		
LED Operation	On-board Green LED - Flashes when polled On-board Red LED - Flashes w hen in alarm Both LEDs - Glow steady when in alarm (stand-alone)		
Compatibility	Use With: Signature Loop Controller		
Agency Listings	UL, ULC (note 1), MEA, CSFM		

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

Ordering Information

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

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

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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

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

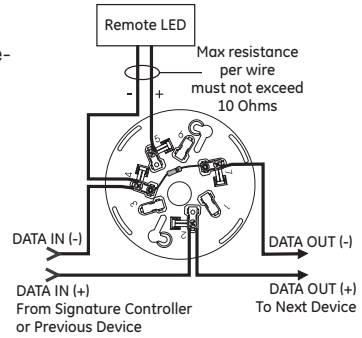
The detector mounting bases accept #18 AWG (0.75mm^2), #16 (1.0mm^2), #14 AWG (1.5mm^2), and #12 AWG (2.5mm^2) wire sizes.

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 (-)



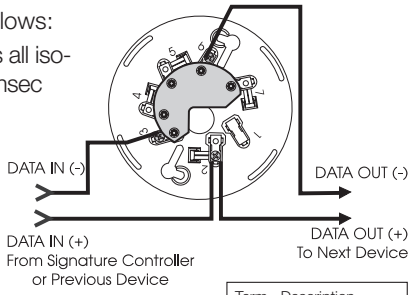
Isolator Detector Base, SIGA-IB, SIGA-IB4

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.

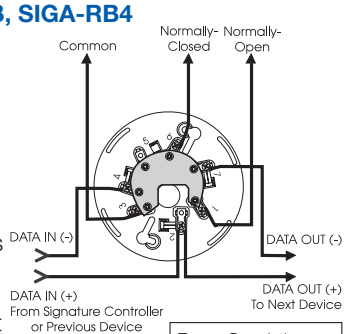
The process repeats beginning on the other side of the loop controller.



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.

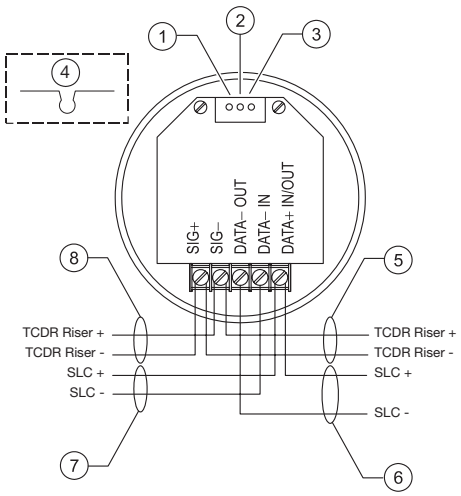


CONTACT RATING
1.0 Amp @ 30 VDC
(Pilot Duty)

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

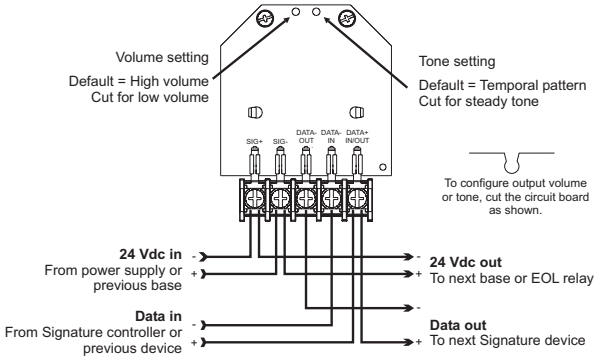
The Signature Series AB4GT sounder base, when used with the SIGA-TCDR Temporal Pattern Generator, adds an audible output function to any Signature Series detector. For more information on this device, refer to *Data Sheet 85001-0623 -- Sounder Base for CO and Fire Detectors*.



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.

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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.

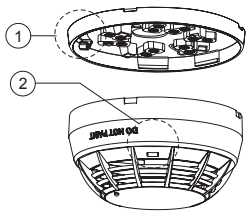
Carbon monoxide detection

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

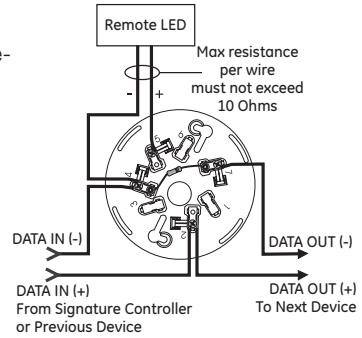
The detector mounting bases accept #18 AWG (0.75mm^2), #16 (1.0mm^2), #14 AWG (1.5mm^2), and #12 AWG (2.5mm^2) wire sizes.

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 (-)



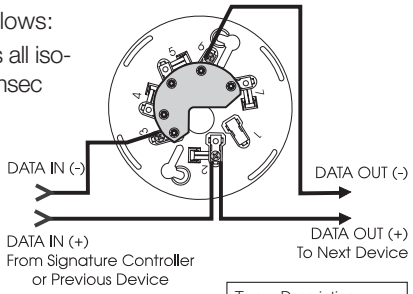
Isolator Detector Base, SIGA-IB, SIGA-IB4

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.

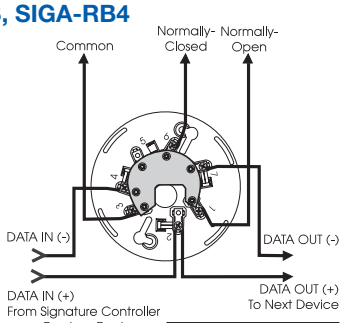
The process repeats beginning on the other side of the loop controller.



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.

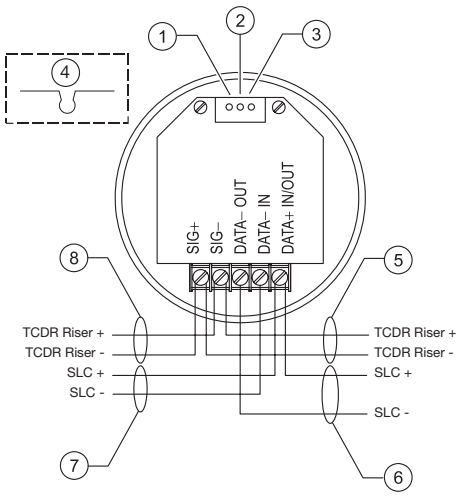


CONTACT RATING
1.0 Amp @ 30 VDC
(Pilot Duty)

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

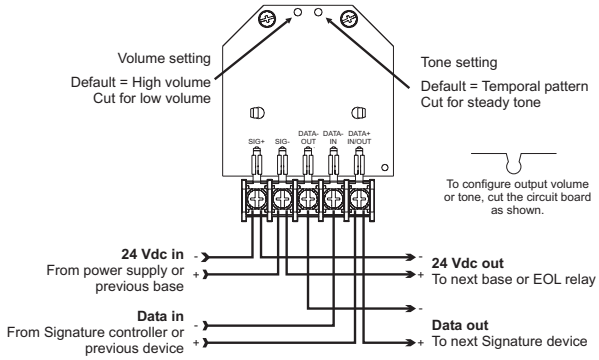
The Signature Series AB4GT sounder base, when used with the SIGA-TCDR Temporal Pattern Generator, adds an audible output function to any Signature Series detector. For more information on this device, refer to *Data Sheet 85001-0623 -- Sounder Base for CO and Fire Detectors*.



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

*Release pending.

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Input Modules

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

SIGA-MCT2

SIGA-CT1/2

MEA

Application Notes Available

Overview

The SIGA-CT1 Single Input Module, SIGA-CT1HT High Temperature Single Input Module and SIGA-CT2/SIGA-MCT2 Dual Input Modules are intelligent analog addressable devices used to connect one or two Class B normally-open Alarm, Supervisory, or Monitor type dry contact Initiating Device Circuits (IDC).

The actual function of these modules is determined by the "personality code" selected by the installer. This code is downloaded to the module from the Signature loop controller during system configuration.

The input modules gather analog information from the initiating devices connected to them and convert it into digital signals. The module's on-board microprocessor analyzes the signal and decides whether or not to input an alarm.

The SIGA-CT1, SIGA-CT1HT and SIGA-CT2 mount to standard North American 1-gang electrical boxes, making them ideal for locations where only one module is required. Separate I/O and data loop connections are made to each module.

The SIGA-CT1HT module operates at an expanded temperature range of 32 ºF to 158 ºF (0 ºC to 70 ºC) for those applications requiring more extreme environmental temperature variation.

The SIGA-MCT2 is part of the UIO family of plug-in Signature Series modules. It functions identically to the SIGA-CT2, but takes advantage of the modular flexibility and easy installation that characterizes all UIO modules. Two- and six-module UIO motherboards are available. All wiring connections are made to terminal blocks on the motherboard. UIO assemblies may be mounted in Edwards enclosures.

Standard Features

- **Multiple applications**
  Including Alarm, Alarm with delayed latching (retard) for waterflow applications, Supervisory, and Monitor. The installer selects one of four "personality codes" to be downloaded to the module through the loop controller.
- **SIGA-CT1HT rated for high temperature environments**
  Suitable for attic installation and monitoring high temperature heat detectors.
- **Plug-in (UIO) or standard 1-gang mount**
  UIO versions allow quick installation where multiple modules are required. The 1-gang mount version is ideal for remote locations that require a single module.
- **Automatic device mapping**
  Signature modules transmit information to the loop controller regarding their circuit locations with respect to other Signature devices on the wire loop.
- **Electronic addressing**
  Programmable addresses are downloaded from the loop controller, a PC, or the SIGA-PRO Signature Program/Service Tool. There are no switches or dials to set.
- **Stand-alone operation**
  The module makes decisions and inputs an alarm from initiating devices connected to it even if the loop controller's polling interrogation stops. (Function availability dependent upon control panel.)
- **Ground fault detection by address**
  Detects ground faults right down to the device level.

DATA SHEET 85001-0241
Not to be used for installation purposes. Issue 8

Signature Series Overview

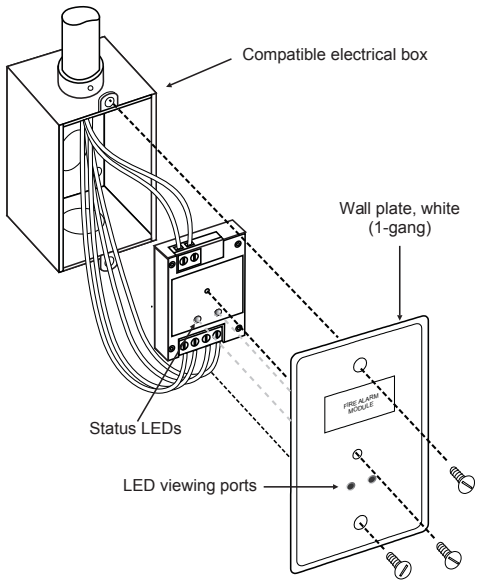
The Signature Series intelligent analog-addressable system from Edwards Security is an entire family of multi-sensor detectors and mounting bases, multiple-function input and output modules, network and non-network control panels, and user-friendly maintenance and service tools. Analog information from equipment connected to Signature devices is gathered and converted into digital signals. An onboard microprocessor in each Signature device measures and analyzes the signal and decides whether or not to input an alarm. The microprocessor in each Signature device provides four additional benefits – Self-diagnostics and History Log, Automatic Device Mapping, Stand-alone Operation and Fast, Stable Communication.

Self-diagnostics and History Log – Each Signature Series device constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in its non-volatile memory. This information is accessible for review any time at the control panel, PC, or using the SIGA-PRO Signature Program/Service Tool.

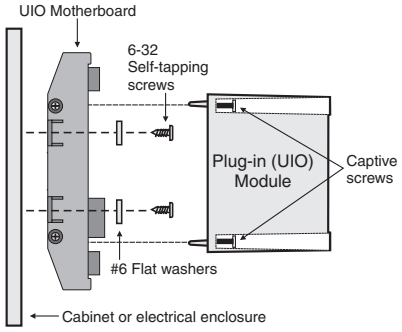
Automatic Device Mapping –The Signature Data Controller (SDC) learns where each device's serial number address is installed relative to other devices on the circuit. The SDC keeps a map of all Signature Series devices connected to it. The Signature Series Data Entry Program also uses the mapping feature. With interactive menus and graphic support, the wired circuits between each device can be examined. Layout or "as-built" drawing information showing branch wiring (T-taps), device types and their address are stored on disk for printing hard copy.

Installation

SIGA-CT1, SIGA-CT1HT and SIGA-CT2: modules mount to North American 2½ inch(64 mm) deep 1-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 1-gang covers and SIGA-MP mounting plates. The terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.



SIGA-MCT2: mount the UIO motherboard inside a suitable Edwards enclosure with screws and washers provided. Plug the SIGA-MCT2 into any available position on the motherboard and secure the module to the motherboard with the captive screws. Wiring connections are made to the terminals on the motherboard (see wiring diagram). UIO motherboard terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.



Electronic Addressing - The loop controller electronically addresses each module, saving valuable time during system commissioning. Setting complicated switches or dials is not required. Each module has its own unique serial number stored in its on-board memory. The loop controller identifies each device on the loop and assigns a "soft" address to each serial number. If desired, the modules can be addressed using the SIGA-PRO Signature Program/Service Tool.

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

Application

The duty performed by the SIGA-CT1 and SIGA-CT2/MCT2 is determined by their sub-type code or "Personality Code". The code is selected by the installer depending upon the desired application and is downloaded from the loop controller.

One personality code can be assigned to the SIGA-CT1. Two personality codes can be assigned to the SIGA-CT2/MCT2. Codes 1, 2, 3 and 4 can be mixed on SIGA-CT2/MCT2 modules only. For example, personality code 1 can be assigned to the first address (circuit A) and code 4 can be assigned to the second address (circuit B).

NORMALLY-OPEN ALARM - LATCHING (Personality Code 1) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally open dry contact initiating devices such as Pull Stations, Heat Detectors, etc. An ALARM signal is sent to the loop controller when the input contact is closed. The alarm condition is latched at the module.

NORMALLY-OPEN ALARM - DELAYED LATCHING (Personality Code 2) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally-open dry contact initiating devices such as Waterflow Alarm Switches. An ALARM signal is sent to the loop controller when the input contact is closed for approximately 16 seconds. The alarm condition is latched at the module.

NORMALLY-OPEN ACTIVE - NON-LATCHING (Personality Code 3) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally-open dry contact monitoring input such as from Fans, Dampers, Doors, etc. An ACTIVE signal is sent to the loop controller when the input contact is closed. The active condition is not latched at the module.

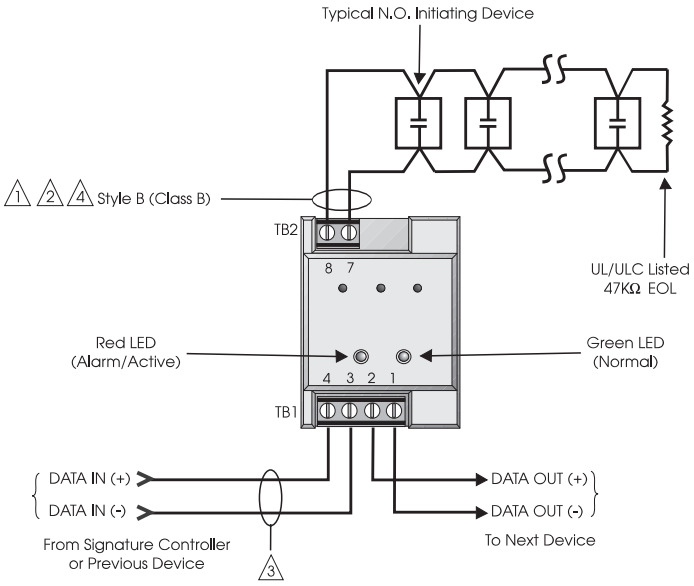
NORMALLY-OPEN ACTIVE - LATCHING (Personality Code 4) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally open dry contact monitoring input such as from Supervisory and Tamper Switches. An ACTIVE signal is sent to the loop controller when the input contact is closed. The active condition is latched at the module.

Typical Wiring

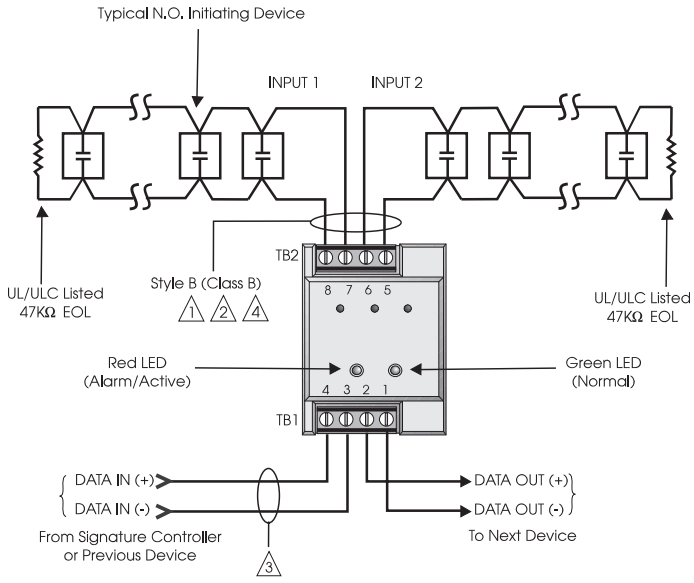
Modules will accept #18 AWG (0.75mm^2), #16 (1.0mm^2), and #14AWG (1.50mm^2), and #12 AWG (2.50mm^2) wire sizes.

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.

Initiating (Slave) Device Circuit Wire Specifications		
Maximum Allowable Wire Resistance	50 ohms (25 ohms per wire) per Circuit	
Maximum Allowable Wire Capacitance	0.1µF per Circuit	
For Design Reference:	**Wire Size**	**Maximum Distance to EOLR**
	#18 AWG (0.75 mm^2)	4,000 ft (1,219 m)
	#16 AWG (1.00 mm^2)	
	#14 AWG (1.50 mm^2)	
	#12 AWG (1.50 mm^2)	



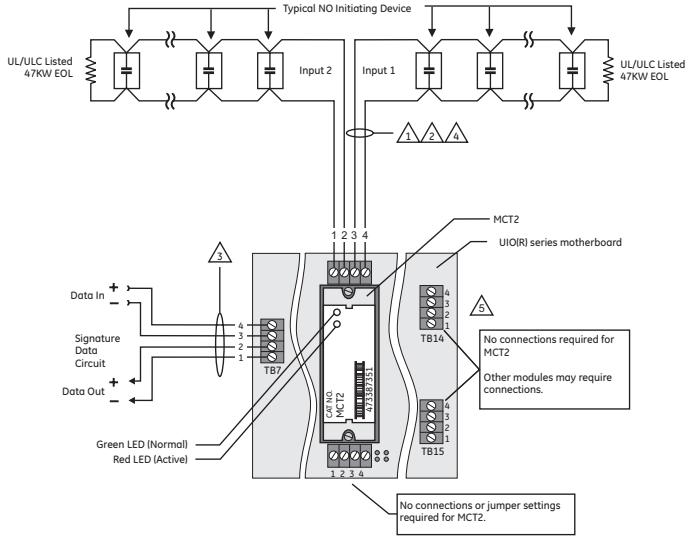
SIGA-CT1, SIGA-CT1HT



SIGA-CT2

NOTES

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



SIGA-MCT2

Warnings & Cautions

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

Compatibility

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

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Specifications

Catalog Number	SIGA-CT1HT	SIGA-CT1	SIGA-CT2	SIGA-MCT2
Description	Single Input Module		Dual Input Module	
Type Code	48 (factory set) Four sub-types (personality codes) are available		49 (factory set) Four sub-types (personality codes) are available	
Address Requirements	Uses One Module Address		Uses Two Module Addresses	
Operating Current	Standby = 250µA; Activated = 400µA		Standby = 396µA; Activated = 680µA	
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)			
Construction	High Impact Engineering Polymer			
Mounting	North American 2½ inch (64 mm) deep one-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with one-gang covers and SIGA-MP mounting plates			UIO2R/6R/6 Motherboard
Operating Environment	32°F to 158°F (0°C to 70°C)	32°F to 120°F (0°C to 49°C)		
Storage Environment	-4°F to 140°F (-20°C to 60°C); Humidity: 0 to 93% RH			
LED Operation	On-board Green LED - Flashes when polled; On-board Red LED - Flashes when in alarm/active. Both LEDs - Glow steady when in alarm (stand-alone)			
Compatibility	Use with Signature Loop Controller			
Agency Listings	UL, ULC, MEA, CSFM			

Ordering Information

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

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

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Control Relay Modules

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

MEA

Overview

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

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

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

Standard-mount versions (SIGA-CR and SIGA-CRR) are installed to standard North American 1-gang electrical boxes, making them ideal for locations where only one module is required. Separate I/O and data loop connections are made to each module.

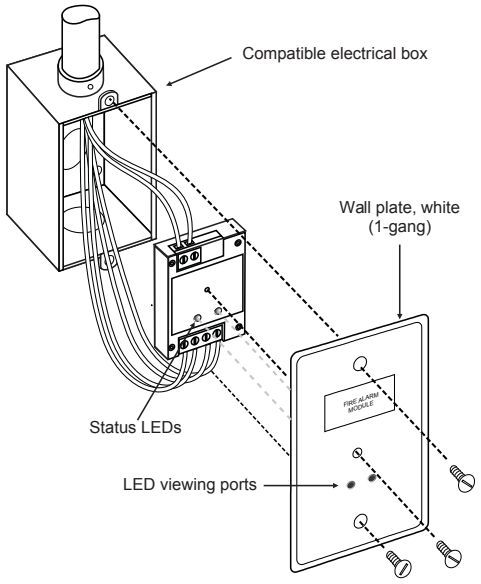
Plug-in UIO versions (SIGA-MCR and SIGA-MCRR) are part of the UIO family of plug-in Signature Series modules. They function identically to the standard mount versions, but take advantage of the modular flexibility and easy installation that characterizes all UIO modules. Two- and six-module UIO motherboards are available. All wiring connections are made to terminal blocks on the motherboard. UIO assemblies may be mounted in Edwards enclosures.

Standard Features

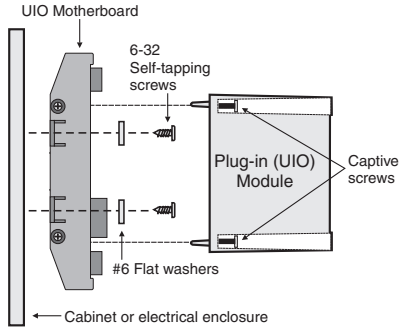
- **Provides one no/nc contact (SIGA-CR/MCR)**
  Form "C" dry relay contact can be used to control external appliances such as door closers, fans, dampers etc.
- **Allows group operation of sounder bases**
  The SIGA-CRR/MCRR reverses the polarity of its 24 Vdc output, thus activating all Sounder Bases on the data loop.
- **Plug-in (UIO) or standard 1-gang mount**
  UIO versions allow quick installation where multiple modules are required. The 1-gang mount version is ideal for remote locations that require a single module.
- **Automatic device mapping**
  Signature modules transmit information to the loop controller regarding their circuit locations with respect to other Signature devices on the wire loop.
- **Electronic addressing**
  Programmable addresses are downloaded from the loop controller, a PC, or the SIGA-PRO Signature Program/Service Tool; there are no switches or dials to set.
- **Intelligent device with microprocessor**
  All decisions are made at the module to allow lower communication speed with substantially improved control panel response time and less sensitivity to line noise and loop wiring properties; twisted or shielded wire is not required.
- **Ground fault detection by address**
  Detects ground faults right down to the device level.

Installation

SIGA-CR and SIGA-CRR: modules mount to North American 2½ inch (64 mm) deep 1-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 1-gang covers and SIGA-MP mounting plates. The terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.



SIGA-MCR and SIGA-MCRR: mount the UIO motherboard inside a suitable Edwards enclosure with screws and washers provided. Plug the module into any available position on the motherboard and secure the module to the motherboard with the captive screws. Wiring connections are made to the terminals on the motherboard (see wiring diagram). UIO motherboard terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.



Electronic Addressing - The loop controller electronically addresses each module, saving valuable time during system commissioning. Setting complicated switches or dials is not required. Each module has its own unique serial number stored in its onboard memory. The loop controller identifies each device on the loop and assigns a "soft" address to each serial number. If desired, the modules can be addressed using the SIGA-PRO Signature Program/Service Tool.

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

Application

The operation of Signature Series control relays is determined by their sub-type code or "Personality Code."

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

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

Compatibility

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

Warnings & Cautions

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

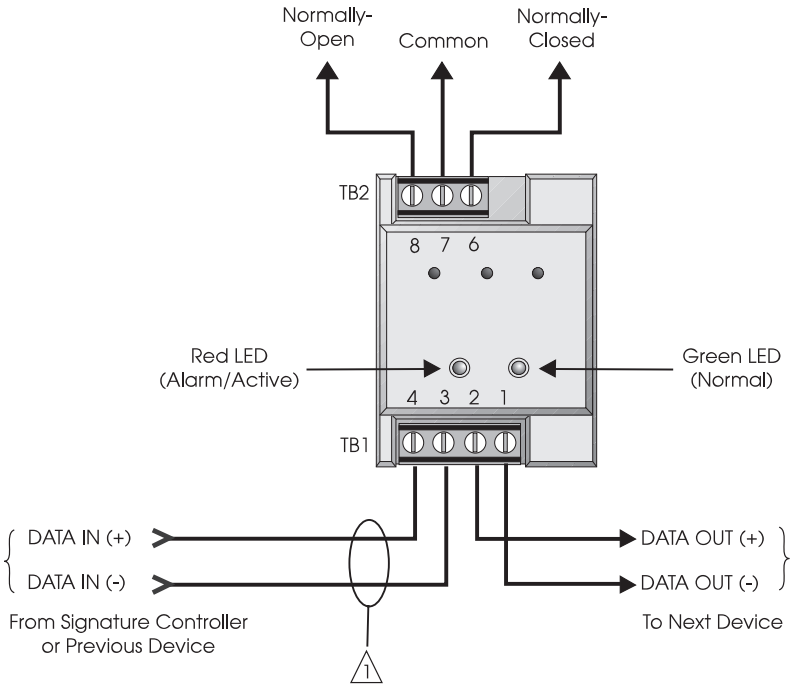
Testing & Maintenance

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

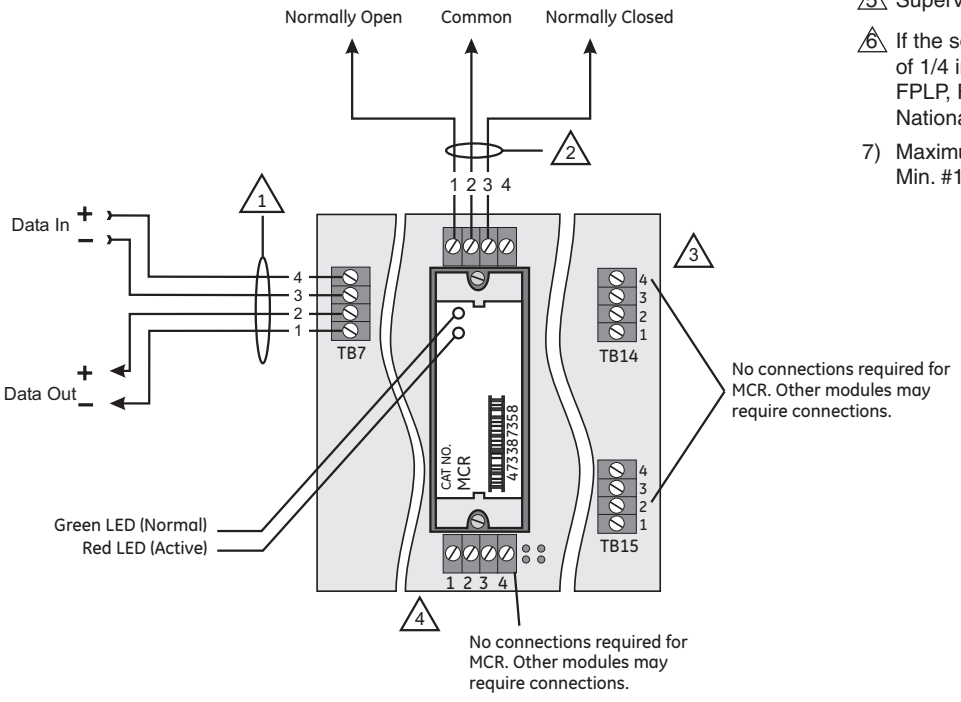
Typical Wiring

Modules will accept #18 AWG (0.75mm^2), #16 (1.0mm^2), #14 AWG (1.50mm^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.



SIGA-CR Control Relay



SIGA-MCR Control Relay

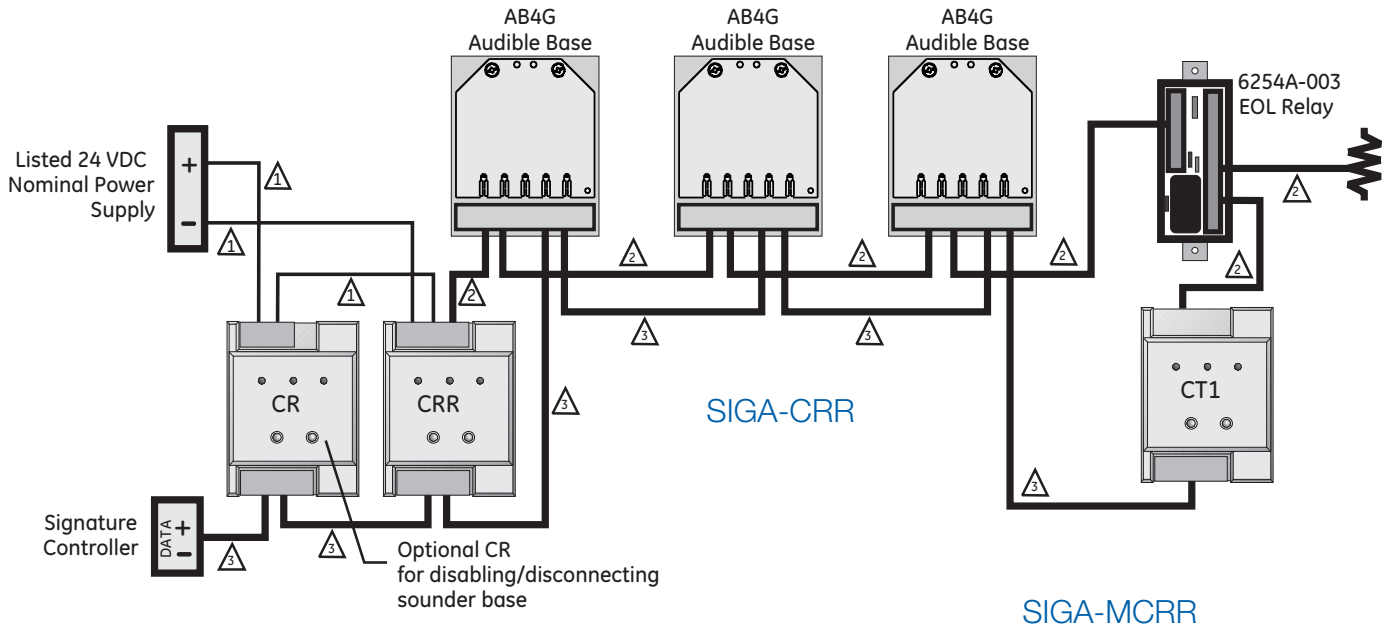
Notes

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

Typical Wiring

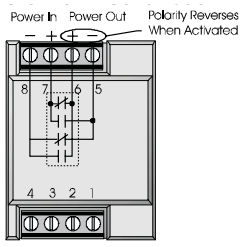
Modules will accept #18 AWG (0.75mm²), #16 (1.0mm²), #14 AWG (1.50mm²) and #12 AWG (2.50mm²) wire sizes.

Note: Sizes #16 AWG (1.0mm²) and #18 AWG (0.75mm²) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.

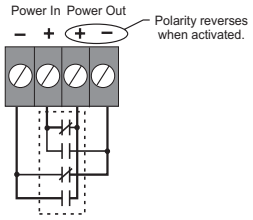


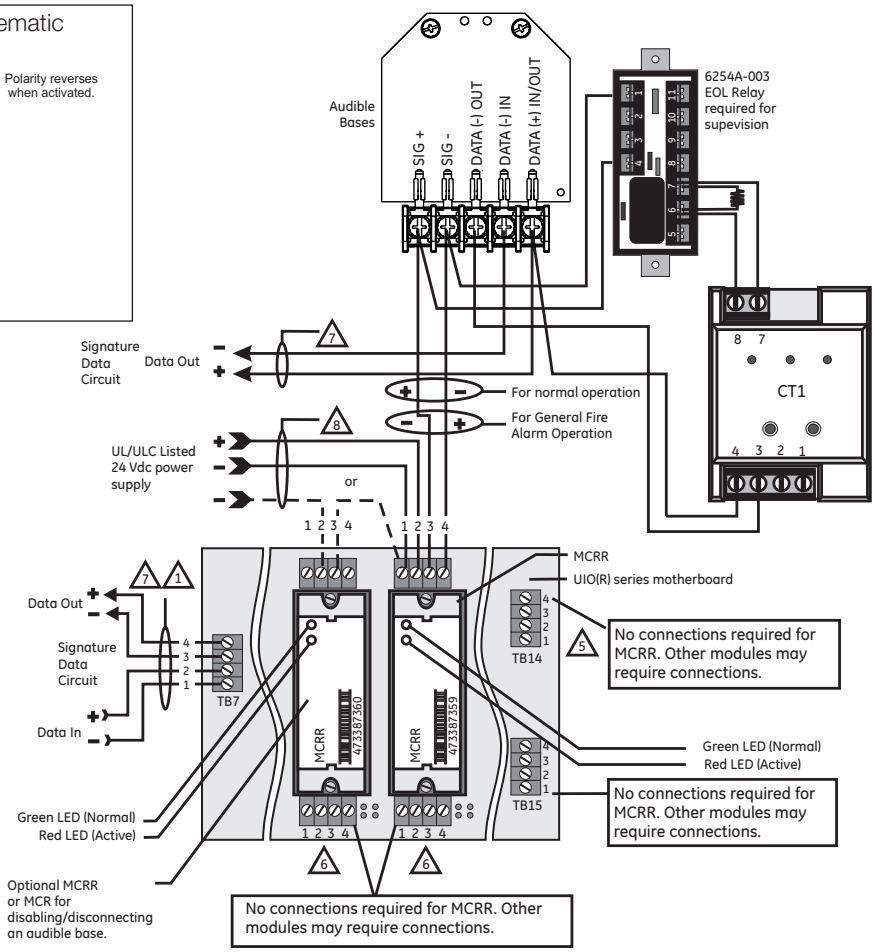
SIGA-MCRR

SIGA-CRR Schematic



SIGA-MCRR Schematic





Notes

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

Specifications

Catalog Number	SIGA-CR	SIGA-MCR	SIGA-CRR	SIGA-MCRR
Description	Control Relay		Polarity Reversal Relay	
Type Code	Personality Code 8 (Factory Set)		Personality Code 8 (Factory Set)	
Address Requirements	Uses 1 Module Address			
Operating Current	Standby = 100µA Activated = 100µA			
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)			
Relay Type and Rating	Form "C" 24 VDC = 2 amps (pilot duty) 120 Vac = 0.5 amps 220 Vac (non-UL) = 0.5 amps			
Mounting	North American 2½ inch (64 mm) deep 1-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 1-gang covers and SIGA-MP mounting plates	Plugs into UIO2R, UIO6R or UIO6 Motherboards	North American 2½ inch (64 mm) deep 1-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 1-gang covers and SIGA-MP mounting plates	Plugs into UIO2R, UIO6R or UIO6 Motherboards
Construction & Finish	High Impact Engineering Polymer			
Storage and Operating Environment	Operating Temperature: 32°F to 120°F (0°C to 49°C) Storage Temperature: -4°F to 140°F (-20°C to 60°C) Humidity: 0 to 93% RH			
LED Operation	On-board Green LED - Flashes when polled On-board Red LED - Flashes when in alarm/active			
Compatibility	Use With: Signature Loop Controller			
Agency Listings	UL, ULC, CSFM, MEA			

Ordering Information

Catalog Number	Description	Ship Weight - lbs (kg)
SIGA-CR	Control Relay Module (Standard Mount)	0.4 (0.15)
SIGA-MCR	Control Relay Module (UIO Mount)	0.18 (0.08)
SIGA-CRR	Polarity Reversal Relay Module (Standard Mount)	0.4 (0.15)
SIGA-MCRR	Polarity Reversal Relay Module (UIO Mount)	0.18 (0.08)
Related Equipment		
27193-11	Surface Mount Box - Red, 1-gang	1 (0.6)
27193-16	Surface Mount Box - White, 1-gang	1 (0.6)
SIGA-UIO2R	Universal Input-Output Module Board w/Riser Inputs - Two Module Positions	0.32 (0.15)
SIGA-UIO6R	Universal Input-Output Module Board w/Riser Inputs - Six Module Positions	0.62 (0.28)
SIGA-UIO6	Universal Input-Output Module Board - Six Module Positions	0.56 (0.25)
SIGA-AB4G	Audible (Sounder) Detector Base	0.3 (0.15)
Accessories		
MFC-A	Multifunction Fire Cabinet - Red, supports Signature Module Mounting Plates	7.0 (3.1)
SIGA-MB4	Transponder Mounting Bracket (allows for mounting two 1-gang modules in a 2-gang box)	0.4 (0.15)
SIGA-MP1	Signature Module Mounting Plate, 1 footprint	1.5 (0.70)
SIGA-MP2	Signature Module Mounting Plate, 1/2 footprint	0.5 (0.23)
SIGA-MP2L	Signature Module Mounting Plate, 1/2 extended footprint	1.02 (0.46)

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Signature Series Overview

The Signature Series intelligent analog-addressable system from Edwards is an entire family of multi-sensor detectors and mounting bases, multiple-function input and output modules, network and non-network control panels, and user-friendly maintenance and service tools. Analog information from equipment connected to Signature devices is gathered and converted into digital signals. An onboard microprocessor in each Signature device measures and analyzes the signal and decides whether or not to input an alarm. The microprocessor in each Signature device provides four additional benefits – Self-diagnostics and History Log, Automatic Device Mapping, Stand-alone Operation and Fast, Stable Communication.

Self-diagnostics and History Log – Each Signature Series device constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in its non-volatile memory. This information is accessible for review any time at the control panel, PC, or using the SIGA-PRO Signature Program/Service Tool. The information stored in device memory includes:

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

Automatic Device Mapping –The Signature Data Controller (SDC) learns where each device's serial number address is installed relative to other devices on the circuit. The SDC keeps a map of all Signature Series devices connected to it. The Signature Series Data Entry Program also uses the mapping feature. With interactive menus and graphic support, the wired circuits between each device can be examined. Layout or "as-built" drawing information showing branch wiring (T-taps), device types and their address are stored on disk for printing hard copy. This takes the mystery out of the installation. The preparation of as-built drawings is fast and efficient.

Device mapping allows the Signature Data Controller to discover:

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

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

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

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Signal Modules

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

SIGA-MCC

SIGA-CC

MEA

Application Notes Available

Overview

SIGA-CC1/MCC1 Single Input Signal Modules and SIGA-CC2/MCC2 Dual Input Signal Modules are part of EST's Signature Series system. They are intelligent analog addressable devices used for connecting, upon command from the loop controller, supervised Class B signal or telephone circuits to their respective power inputs. The power inputs may be polarized 24 Vdc to operate audible and visible signal appliances or 25 and 70 VRMS to operate audio evacuation speakers and firefighter's telephones.

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

The SIGA-CC1 and SIGA-CC2 mount to standard North American two-gang electrical boxes, making them ideal for locations where only one module is required. Separate I/O and data loop connections are made to each module.

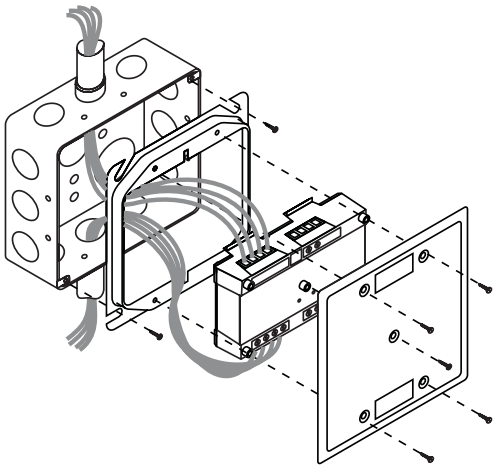
The SIGA-MCC1 and SIGA-MCC2 are part of the UIO family of plug-in Signature Series modules. They function identically to the SIGA-CC1 and SIGA-CC2, but take advantage of the modular flexibility and easy installation that characterize all UIO modules. Two- and six-module UIO motherboards are available. These can accommodate individual risers for each on-board module, or risers that are shared by any combination of its UIO modules. All wiring connections are made to terminal blocks on the motherboard. UIO assemblies may be mounted in Edwards enclosures.

Standard Features

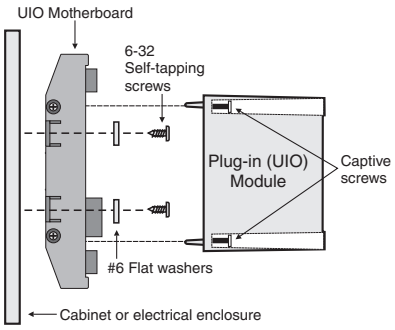
- **Single and Dual input (riser) select**
  Use for connecting supervised 24 Vdc Audible/Visible signal circuits, or 25 and 70 VRMS Audio Evacuation and Telephone circuits to their power inputs.
- **Ring-tone generator**
  When configured for telephone circuits, the SIGA-CC1 generates its own ring-tone signal eliminating the need for a separate ring-tone circuit.
- **Plug-in (UIO) or standard 2-gang mount**
  UIO versions allow quick installation where multiple modules are required. The 2-gang mount version is ideal for remote locations that require a single module.
- **Automatic device mapping**
  Signature modules transmit information to the loop controller regarding their circuit locations with respect to other Signature devices on the wire loop.
- **Electronic addressing**
  Programmable addresses are downloaded from the loop controller, a PC, or the SIGA-PRO Signature Program/Service Tool; there are no switches or dials to set.
- **Intelligent device with microprocessor**
  All decisions are made at the module to allow lower communication speed with substantially improved control panel response time and less sensitivity to line noise and loop wiring properties; twisted or shielded wire is not required.
- **Ground fault detection by address**
  Detects ground faults right down to the device level.

Installation

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



SIGA-MCC1 and SIGA-MCC2: mount the UIO motherboard inside a suitable Edwards enclosure with screws and washers provided. Plug the SIGA-MCC1 or SIGA-MCC2 into any available position on the motherboard and secure the module to the motherboard with the captive screws. Wiring connections are made to the terminals on the motherboard (see wiring diagram). UIO motherboard terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.



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

Electronic Addressing - The loop controller electronically addresses each module saving valuable time during system commissioning. Setting complicated switches or dials is not required. Each module has its own unique serial number stored in its onboard memory. The loop controller identifies each device on the loop and assigns a "soft" address to each serial number. If desired, the modules can be addressed using the SIGA-PRO Signature Program/Service Tool.

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

Application

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

Personality Code 5: SIGNAL POWER or AUDIO EVACUATION (SINGLE RISER). Valid for the SIGA-CC1/MCC1 only. Configures the module for use as a Class B Audible/Visible Signal power (24 Vdc polarized) or Audio Evacuation (25 or 70 VRMS) power selector. The ring-tone generator is disabled. The output circuit is monitored for open or shorted wiring. If a short exists, the control panel inhibits the activation of the audible/visible signal circuit to prevent connection to the power circuit.

Personality Code 6: TELEPHONE w/RING-TONE (SINGLE RISER). Valid for the SIGA-CC1/MCC1 only. Configures the module for use as a Telephone power selector. When a telephone handset is plugged into its jack or lifted from its hook, the module generates its own Ring-Tone signal. A separate ring-tone circuit is not needed. The module sends this signal to the control panel to indicate that an off-hook condition is present. When the system operator responds to the call, the ring-tone signal is disabled.

Personality Code 7: SIGNAL POWER or AUDIO EVACUATION (DUAL RISER). Valid for the SIGA-CC2/MCC2 only. Configures the module for use as a two circuit Class B Audible/Visible Signal power (24 Vdc polarized) or Audio Evacuation (25 or 70 VRMS) power selector. The single output circuit is monitored for open or shorted wiring. If a short exists, the control panel inhibits the activation of the audible/visible signal circuit to prevent connection to the power circuit.

Warnings & Cautions

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

Compatibility

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

Testing & Maintenance

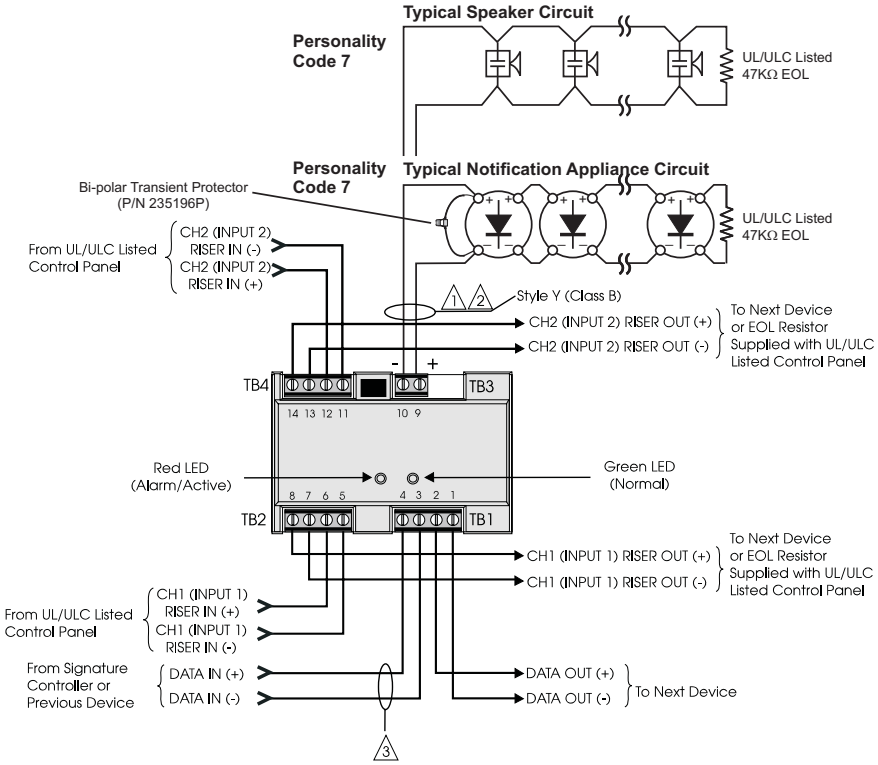
The module's automatic self-diagnosis identifies when it is defective and causes a trouble message. The user-friendly maintenance program shows the current state of each module and other pertinent messages. Single modules may be turned off (de-activated) temporarily, from the control panel.

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

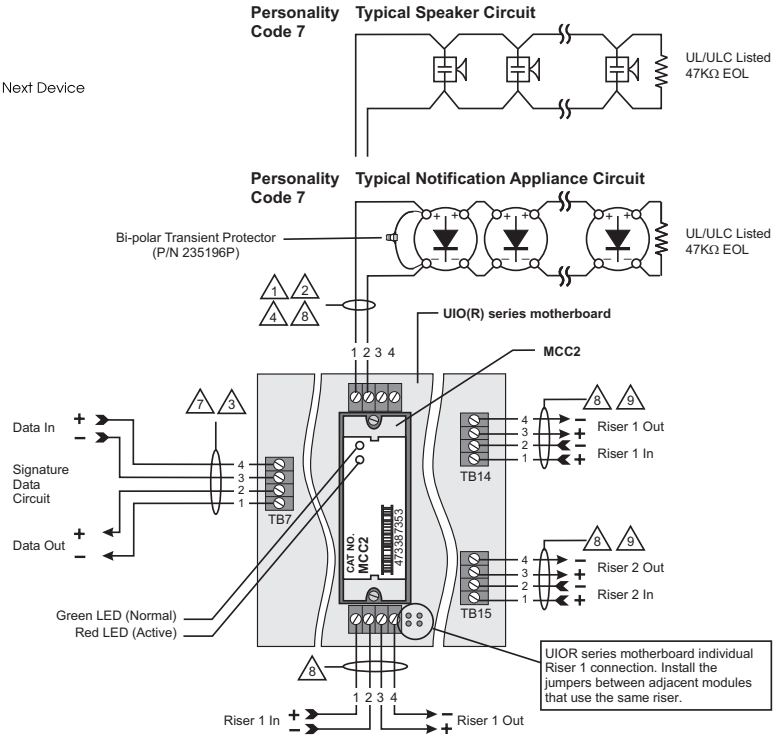
Typical Wiring (SIGA-CC2/MCC2)

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

Note: Sizes #16 AWG (1.0mm²) and #18 AWG (0.75mm²) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.



SIGA-CC2



SIGA-MCC2

Notes

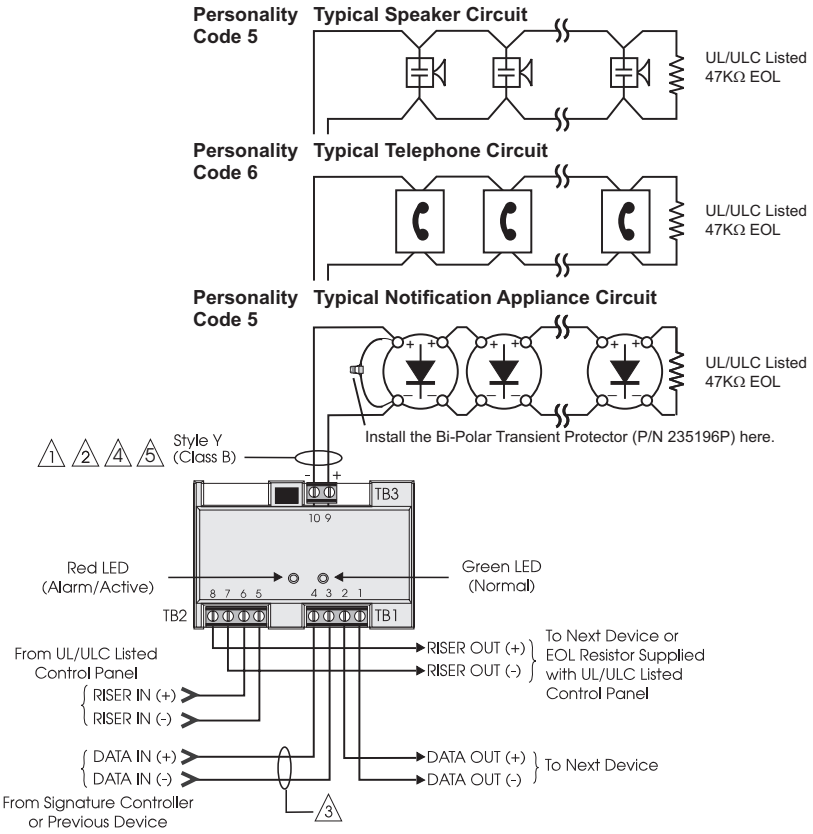
1. For maximum wire resistance and maximum wire distances, refer to IOMC Manual (P/N 270144).
2. Maximum #12 AWG (2.5mm²) wire. Min. #18 (0.75mm²).
3. Refer to Signature Loop Controller Installation Sheet for wiring specifications.
4. These modules will NOT support two-wire smoke detectors.
5. All wiring power limited and supervised. If the input source is non-power limited, then maintain spacing of 1/4 inch or use FPL, FPLP, FPLR or equivalent in accordance with NEC.
6. The SIGA-UIO6 does not come with TB8 through TB13.
7. Supervised and power-limited.
8. Supervised and power-limited when connected to a power-limited source. If the source is nonpower-limited, maintain a space of 1/4 inch from power-limited wiring or use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electrical Code.
9. The input for this riser is common to all modules.

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

Typical Wiring (SIGA-CC1/MCC1)

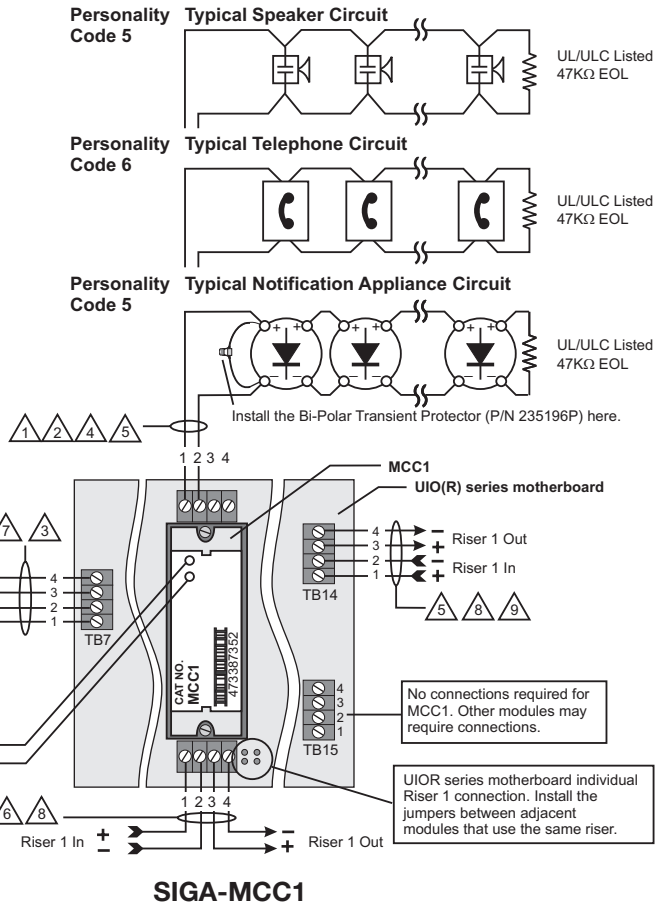
Modules will accept #18 AWG (0.75mm²), #16 (1.0mm²), #14 AWG (1.50mm²) and #12 (2.5mm²) wire sizes.

Note: Sizes #16 AWG (1.0mm²) and #18 AWG (0.75mm²) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.



SIGA-CC1

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



SIGA-MCC1

Notes

2. Maximum #12 AWG (2.5mm²) wire. Min. #18 (0.75mm²).
3. Refer to Signature Loop Controller Installation Sheet for wiring specifications.
4. These modules will NOT support two-wire smoke detectors.
5. All wiring power limited and supervised. If the input source is non-power limited, then maintain spacing of 1/4 inch or use FPL, FPLP, FPLR or equivalent in accordance with NEC.
6. The SIGA-UIO6 does not come with TB8 through TB13.
7. Supervised and power-limited.
8. If the source is nonpower-limited, maintain a space of 1/4 inch from power-limited wiring or use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electrical Code.
9. The input for this riser is common to all modules.

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The Signature Series intelligent analog-addressable system from Edwards is an entire family of multi-sensor detectors and mounting bases, multiple-function input and output modules, network and non-network control panels, and user-friendly maintenance and service tools. Analog information from equipment connected to Signature devices is gathered and converted into digital signals. An onboard microprocessor in each Signature device measures and analyzes the signal and decides whether or not to input an alarm. The microprocessor in each Signature device provides four additional benefits – Self-diagnostics and History Log, Automatic Device Mapping, Stand-alone Operation and Fast, Stable Communication.

Self-diagnostics and History Log – Each Signature Series device constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in its non-volatile memory. This information is accessible for review any time at the control panel, PC, or using the SIGA-PRO Signature Program/Service Tool. The information stored in device memory includes:

- Device serial number, address, and type
- Time and date of last alarm (EST3 V 2 only.)
- Most recent trouble code logged by the detector — 32 possible trouble codes may be used to diagnose faults.

Automatic Device Mapping –The Signature Data Controller (SDC) learns where each device's serial number address is installed relative to other devices on the circuit. The SDC keeps a map of all Signature Series devices connected to it. The Signature Series Data Entry Program also uses the mapping feature. With interactive menus and graphic support, the wired circuits between each device can be examined. Layout or "as-built" drawing information showing branch wiring (T-taps), device types and their address are stored on disk for printing hard copy. This takes the mystery out of the installation. The preparation of as-built drawings is fast and efficient.

Device mapping allows the Signature Data Controller to discover:

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

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

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Specifications

Catalog Number	SIGA-CC1	SIGA-MCC1	SIGA-CC2	SIGA-MCC2
Description	Single Input (Riser) Signal Module		Dual Input (Riser) Signal Module	
Type Code	50 (factory set) Two sub-types (personality codes) are available		51 (factory set) One sub-type (personality code) is available (factory set)	
Address Requirements	Uses one module address		Uses two module addresses	
Wiring Terminations	Suitable for #12 to #18 AWG (2.5 mm² to 0.75mm²)			
Mounting	North American 2½ inch (64 mm) deep two-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 2-gang covers and SIGA-MP mounting plates	Plugs into UIO2R, UIO6R or UIO6 Motherboards	North American 2½ inch (64 mm) deep two-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 2-gang covers and SIGA-MP mounting plates	Plugs into UIO2R, UIO6R or UIO6 Motherboards
Operating Current	Standby = 223µA Activated = 100µA			
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)			
Output Rating	24 Vdc = 2 amps 25 V Audio = 50 watts 70 V Audio = 35 watts			
Construction	High Impact Engineering Polymer			
Storage & Operating Environment	Operating Temperature: 32°F to 120°F (0°C to 49°C) Storage Temperature: -4°F to 140°F (-20°C to 60°C) Humidity: 0 to 93% RH			
LED Operation	On-board Green LED - Flashes when polled On-board Red LED - Flashes when in alarm/active			
Compatibility	Use with: Signature Loop Controller			
Agency Listings	UL, ULC, CSFM, MEA			

Ordering Information

Catalog Number	Description	Ship Wt. lbs (kg)
SIGA-CC1	Single Input Signal Module (Standard Mount) - UL/ULC Listed	0.5 (0.23)
SIGA-MCC1	Single Input Signal Module (UIO Mount) - UL/ULC Listed	0.18 (0.08)
SIGA-CC2	Dual Input Signal Module (Standard Mount) - UL/ULC Listed	0.5 (0.23)
SIGA-MCC2	Dual Input Signal Module (UIO Mount) - UL/ULC Listed	0.18 (0.08)
Related Equipment		
27193-21	Surface Mount Box - Red, 2-gang	2 (1.2)
27193-26	Surface Mount Box - White, 2-gang	2 (1.2)
SIGA-UIO2R	Universal Input-Output Module Board w/Riser Inputs - Two Module Positions	0.32 (0.15)
SIGA-UIO6R	Universal Input-Output Module Board w/Riser Inputs - Six Module Positions	0.62 (0.28)
SIGA-UIO6	Universal Input-Output Module Board - Six Module Positions	0.56 (0.25)
235196P	Bi-polar Transient Protector	0.01 (0.05)
Accessories		
MFC-A	Multifunction Fire Cabinet - Red, supports Signature Module Mounting Plates	7.0 (3.1)
SIGA-MP1	Signature Module Mounting Plate, 1 footprint	1.5 (0.70)
SIGA-MP2	Signature Module Mounting Plate, 1/2 footprint	0.5 (0.23)
SIGA-MP2L	Signature Module Mounting Plate, 1/2 extended footprint	1.02 (0.46)

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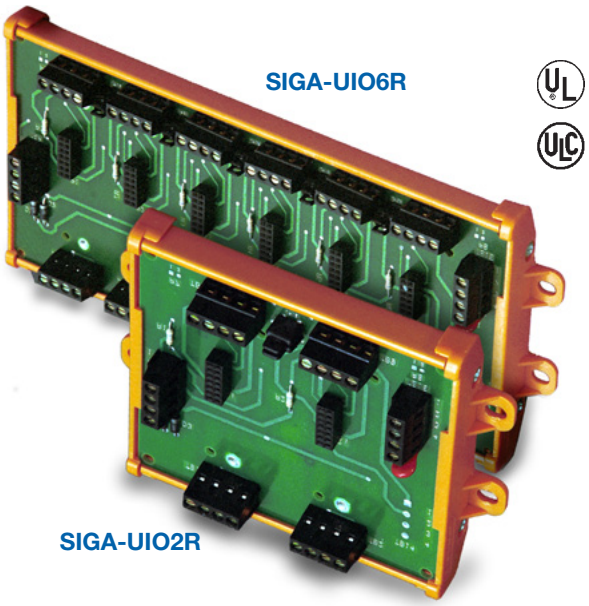
Universal Input/ Output Module Motherboards

SIGA-UIO2R, SIGA-UIO6R,



Overview

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 slide 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 mother-boards 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 provide separate riser inputs to each adjacent module. Riser #2 input is fixed to each module position and cannot be split.

The **SIGA-UIO6** provides mounting and wiring terminations for up to six UIO modules. This motherboard provides two riser inputs that are common to all modules.

Standard Features

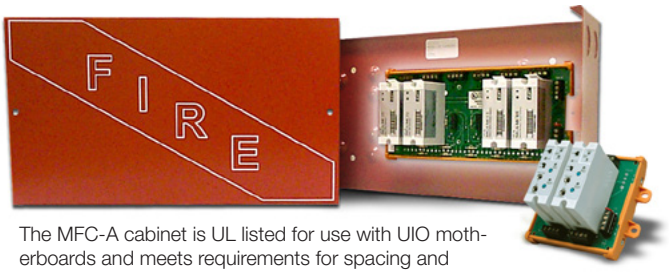
- **Modular flexibility**
  Wide assortment of multi-function plug-in modules provides total flexibility.
- **Minimum wiring requirements**
  Integral jumpers between modules allow sharing of risers to reduce installation wiring.
- **Easy installation**
  #12 AWG (2.5 mm2) terminal blocks and sturdy mounting pads ensure quick installation into Edwards enclosures.
- **Supports automatic device mapping**
  All compatible UIO modules transmit information to the loop controller regarding their circuit locations with respect to other Signature devices on the wire loop.
- **Supports intelligent devices**
  On-board modules make decisions and input an alarm from initiating devices connected to them even if the loop controller's polling interrogation stops.
- **Twisted or shielded wire not required**
  Because all decisions are made at the on-board modules, lower communication speeds are possible. This results in substantially improved control panel response time and less sensitivity to line noise and loop wiring properties.
- **Supports electronic addressing**
  Programmable addresses are downloaded to compatible UIO modules from the loop controller, a PC, or the SIGA-PRO Signature Program/Service Tool. There are no switches or dials to set.

Mounting and Installation

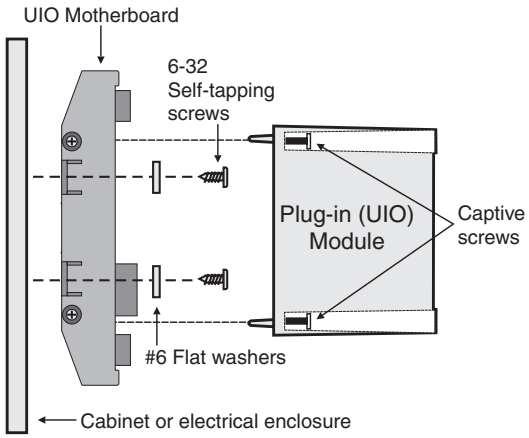
Mount the UIO motherboard inside a Edwards MFC-A cabinet or other suitable electrical enclosure with screws and washers provided. Each MFC-A will hold one UIO2R motherboard or one UIO6 or UIO6R motherboard complete with their full complement of modules.

Plug a Signature Series UIO module into any available position on the motherboard and secure the module to the motherboard with the captive screws. Wiring connections are made to the terminals on the motherboard (see wiring diagram). UIO motherboard terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.

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



The MFC-A cabinet is UL listed for use with UIO motherboards and meets requirements for spacing and clearance around the components.



Testing & Maintenance

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

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

Compatibility

Signature Series Universal Input/Output Module Boards are compatible only with SIGA-"M" Series I/O Modules, which require a Signature Data Controller.

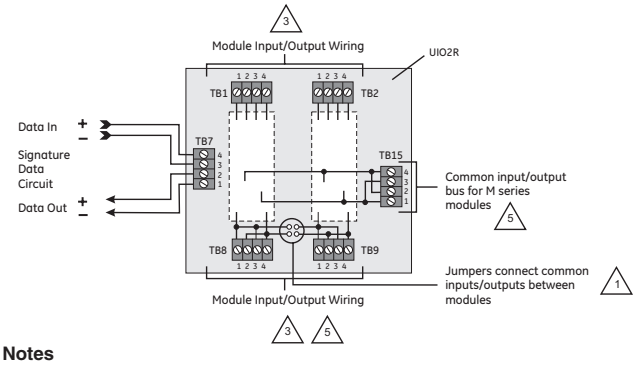
Warnings & Cautions

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

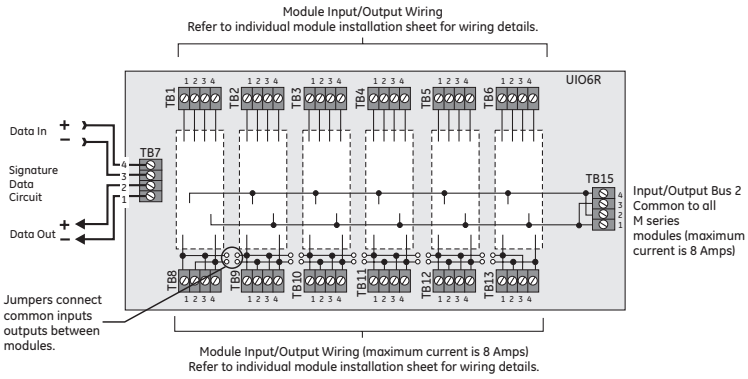
Typical Wiring

Signature Series Universal Input/Output Motherboards have terminal blocks to accept #18 AWG (0.75mm^2), #16 AWG (1.0mm^2), #14 AWG (1.5mm^2), and #12 AWG (2.5mm^2) wire sizes. See Signature Data Controller catalog sheets for detailed wiring requirements and specifications.

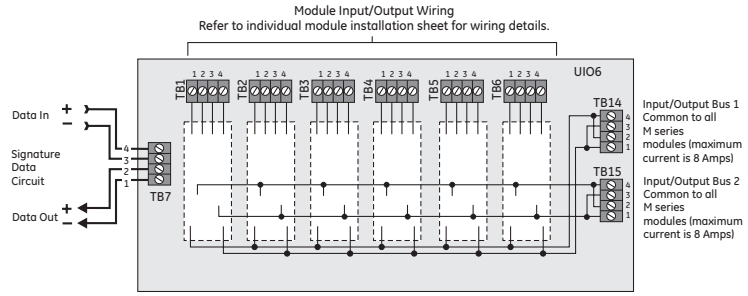
SIGA-UIO2R



SIGA-UIO6R



SIGA-UIO6



Notes

1. Jumpers may be used to make the inputs/outputs between modules common.
2) Not all modules use the SIGA-UIO2R terminals for the same functions.
3. Refer to individual SIGA-M series installation sheets for jumper settings and wiring information. Installations with multiple SIGA-UIO motherboards or enclosures (which include other wiring) require FPL, FPLR, FPLP, or equivalent NEC-approved wire for all power limited wiring. Observe the details of supervision and power limited versus non-power limited circuits. Refer to the SIGA-M series installation sheets.
4) Do not mix incompatible signals.
5. Maximum current is 8 Amps.
7) Refer to Signature Data Controller Installation Sheets for wiring specifications.

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Specifications

Catalog Number	SIGA-UIO2R	SIGA-UIO6R	SIGA-UIO6
Module Capacity	Two	Six	Six
Dimensions (with module installed)	5.4 inch L (across mounting feet) x 4.3 inch W x 3.2 inch H	9.56 inch L (across mounting feet) x 4.3 inch W x 3.2 inch H	
Address Requirements	no address required		
Type Code	none		
Compatible Modules	All SIGA-Mxxx Signature Series		
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)		
Mounting (cabinets)	Directly into suitable enclosures (e.g.: MFC-A) - Notes 1, 2, 3.		
Wiring Terminals	#12 AWG (2.5mm²) to #18 AWG (0.75mm²)		
Storage and Operating Environment	Operating Temperature: 32°F to 120°F (0°C to 49°C) Storage Temperature: -4°F to 140°F (-20°C to 60°C) Operating and Storage Humidity: 0 to 93% RH		
Agency Listing	UL, ULC, MEA, CSFM		

Notes:

1. Allow a minimum clearance of one inch around all sides of the UIO motherboard.
2. On-site drilling of mounting holes may be required. Self-tapping mounting screws are provided.
3. Suitable cabinets: MFC-A, 2-WB, 2-WB3, 2-WB7, CAB2, 3-CAB5, 3-CAB7, 3-CAB14, 3-CAB21, 3-RCC series, RACC series.

Ordering Information

Catalog Number	Description	Ship Wt. - lb (kg)
SIGA-UIO2R	Universal Input-Output Module Board w/Riser Inputs - Two Module Positions	0.32 (0.15)
SIGA-UIO6R	Universal Input-Output Module Board w/Riser Inputs - Six Module Positions	0.62 (0.28)
SIGA-UIO6	Universal Input-Output Module Board - Six Module Positions	0.56 (0.25)
MFC-A	UL listed cabinet for mounting UIO motherboards, red with white “FIRE” 8 inch H X 14 inch W X 3.5 inch D (203 mmH X 356 mm W X 89 mm D)	7.0 (3.1)

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Genesis Speakers and Strobes

Genesis G4 Series

PENDING

Patents pending

Overview

The Genesis line of life safety and mass notification/emergency communications (ECS/MNS) signals are the smallest, most compact audible-visible emergency signaling devices in the world. Protruding no more than one inch from the wall, Genesis speakers and speaker-strobes blend with any decor.

Life safety appliances feature textured housings in architecturally neutral white or traditional life safety red.

ECS/MNS appliances offer emergency signaling with clear or amber lenses, white housings, and optional ALERT housing labels. They are ideal for applications that require differentiation between life safety and mass notification signals.

Thanks to patented breakthrough technology, Genesis strobes do not require bulky specular reflectors. Instead, an exclusive design channels and conditions light to produce a highly controllable distribution pattern.

Speaker-strobes feature selectable candela output with a conveniently-located switch on the bottom of the device. The candela setting remains clearly visible even after final installation.

All Genesis speakers include a DC blocking capacitor to allow electrical supervision of the audio distribution circuit. The speaker with its sealed back construction provides extra durability and improved audibility.

Standard Features

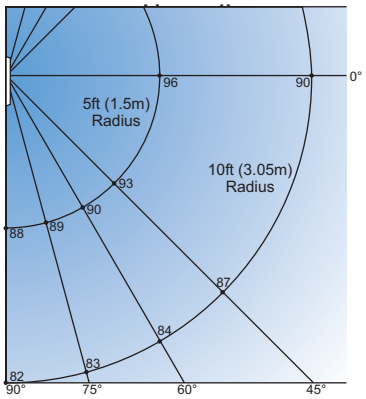
- **Unique low-profile design**
  - The most compact UL/ULC listed speaker-strobe available
  - Ultra-slim, protrudes a mere one inch from the wall
  - Attractive appearance, no visible mounting screws
- **Field configurable – no need to remove the device!**
  - ¼, ½, 1, or 2 watt operation and selectable candela output with convenient switches that remain visible even after the unit is installed
- **ECS/MNS models available**
- **Unparalleled performance**
  - loud 90 dBA output ensures clear, crisp audio
  - Exclusive FullLight strobe technology produces the industry's most even light distribution
  - Precision timing electronics meet tough new synchronizing standards for strobes when used with compatibile modules
  - Optional field-configurable temporal strobe output
  - 25 Vrms and 70 Vrms models available, all supplied with a DC blocking capacitor for audio circuit supervision
- **Easy to install**
  - Fits all standard 4" square electrical boxes with plenty of room behind the signal for extra wire – no extension ring or trim plate needed
  - #18 - #12 AWG terminals – ideal for long runs or using existing wiring

Speaker Application

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

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

Typical Sound Output Distribution dBA Measured in anechoic chamber

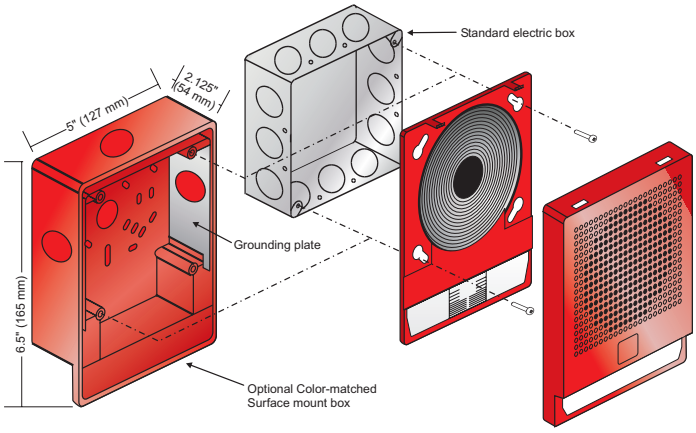


Genesis Series Cone Speaker/strobe

Installation and Mounting

All models are intended for indoor wall mounted applications only. Speakers and speaker-strobes are flush mounted to a North-American 4" square electrical box, 2 1/8" (54 mm) deep or a European 100 mm square box. Signals may be surface mounted to a Genesis surface-mount box (see ordering information for details).

Two tabs at the top of the signal unlock the cover to facilitate mounting. The shallow depth of Genesis devices leaves room behind the signal for extra wiring. Once installed with the cover in place, no mounting screws are visible.



Edwards recommends that these speaker-strobes always be installed in accordance with the latest recognized edition of national and local codes. Refer to installation sheet for mounting height information.

WARNING: These devices will not operate without electrical power. As fires frequently cause power interruptions, we suggest you discuss further safeguards with your local fire protection specialist.

Strobe Application

Genesis clear-lensed strobes are UL 1971-listed for use indoors as wall-mounted public-mode notification appliances for the hearing impaired. Prevailing codes require strobes to be used where ambient noise conditions exceed specified levels, where occupants use hearing protection, and in areas of public accommodation. UL 1638-listed colored-lensed strobe lights are available for ECS/MNS applications. Consult with your Authority Having Jurisdiction for details.

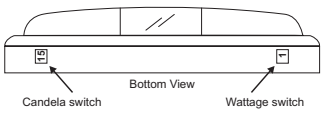
All Genesis strobes meet UL synchronization requirements (within 10 milliseconds over a two-hour period) when used with a synchronization source. Synchronization is important in order to avoid epileptic sensitivity.

Field Configuration

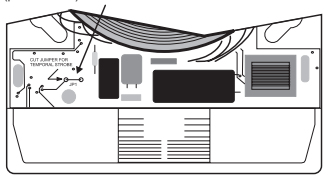
Genesis speakers may be set for ¼, ½, 1, or 2 watt operation. The wattage setting is visible through a small window on the bottom of the device and is changed by simply sliding the switch until the desired setting appears in the window. The speaker does not have to be removed to change the wattage.

Genesis speaker-strobes feature selectable candela output. The output setting is visible through a small window on the bottom of the device and is changed by simply sliding the switch until the desired setting appears in the window. The speaker-strobe does not have to be removed to change the output.

Use the Candela Switch and the Wattage switch to set desired operation.



To change strobe to temporal (private mode) cut JP1



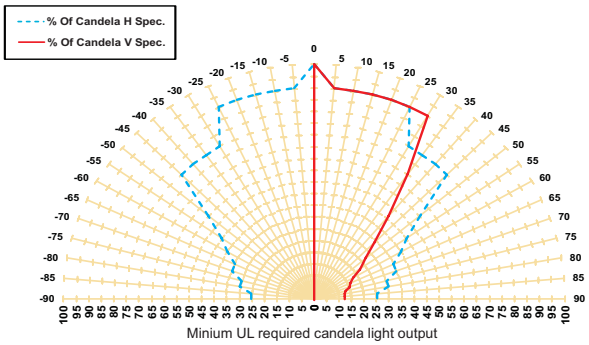
Genesis speaker-strobes may also be configured for temporal flash. This battery-saving feature is intended for private mode signaling only. To set the device for temporal flash, snip the circuit board as shown in the Jumper Locations diagram above.

ECS/MNS Applications

Genesis ECS/MNS appliances bring the same high-performance life safety features and unobtrusive design to mass notification applications. Standard models are available with clear or amber lenses and optional ALERT housing labels, they are ideal for applications that require differentiation between life safety and mass notification alerts. Appliances with red, green or blue lenses are available. Contact Edwards Customer Service for details.

Light output

Per cent of UL rating versus angle



Minium UL required candela light output

UL name plate maximum operating current (RMS-mA)

Cd rating	"15" or "A"	"30" or "B"	"75" or "C"	"110" or "D"
16 Vdc	96	130	239	294
16 Vfwr	120	169	329	375

Typical current, milliamps - average (RMS)

Cd rating	"15" or "A"	"30" or "B"	"75" or "C"	"110" or "D"
20 Vdc	65 (78)	93 (101)	182 (188)	238 (245)
24 Vdc	55 (65)	78 (86)	153 (159)	196 (203)
31 Vdc	45 (53)	63 (69)	120 (124)	151 (157)
20 Vfwr	56 (106)	79 (147)	147 (264)	197 (342)
24 Vfwr	50 (95)	68 (130)	121 (225)	155 (283)
27 Vfwr	44 (84)	60 (115)	107 (200)	137 (251)

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

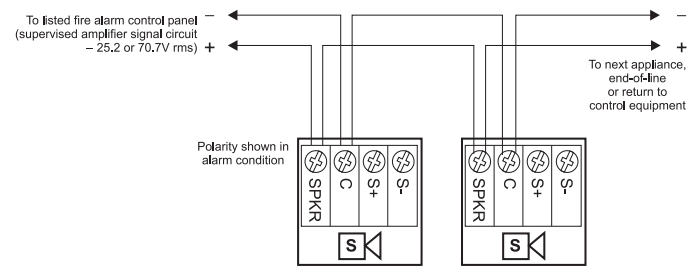
Lens Color	Rating	Switch Position A	Switch Position B	Switch Position C	Switch Position D
Amber	UL 1638	110 cd	75 cd	30 cd	15 cd
Amber	UL 1971*	88 cd	60 cd	24 cd	12 cd
Clear	UL 1971	110 cd	75 cd	30 cd	15 cd

** Equivalent Rating*

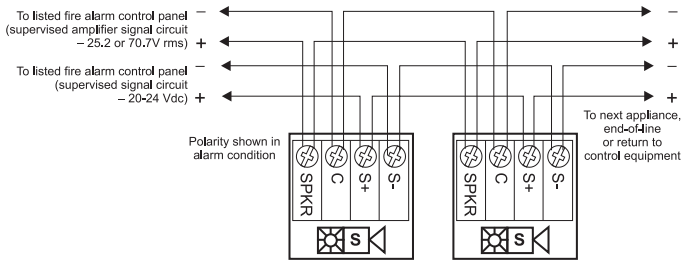
Wiring

Field wiring is connected to Genesis signals with terminals that accommodate #18 to #12 AWG (0.75 mm² to 2.5 mm²) wiring.

Speaker-only Wiriing



Speaker-Strobe Wiring



Specifications

Genesis Speakers and Speaker-Strobes	
Housing	Red or white textured UV stabilized, color impregnated engineered plastic.
Dimensions	Height: 6.5" (165 mm). Width: 5" (127 mm). Depth to wall: 1" (25 mm).
Mounting (indoor wall mount only)	Flush: North-American 4" square box, 2 1/8" (54 mm) deep. Surface: model G4B (white) or G4RB (red) surface mount box.
Wire Connections	Screw terminals: separate polarized inputs for speaker and strobe, #18 to #12 AWG (0.75 mm² to 2.5 mm²) wire size
Operating environment	32-120° F (0-49° C) ambient temperature; 0-93% relative humidity.
Agency Listings	UL 1971, UL 1638, UL 1480, ULC S526, ULC S541, CSFM, MEA (FM pending) (All models comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule.)

Speakers	
Input/Operating Volts	25 VRMS or 70 VRMS. See ordering information.
Speaker Taps/Output*	2 W = 89 dBA; 1 W = 86 dBA; ½ W = 83 dBA; ¼ W = 80 dBA
Speaker Cone	Speaker frequency response: 250 to 5,000 Hz. Optimized for voice intelligibility. 4-inch (102mm) mylar cone, sealed back construction.

Strobes	
Clear Strobe Output Rating	UL 1971, ULC S526: selectable 15 cd, 30 cd, 75 cd, or 110 cd output UL 1971: 15 cd (fixed 15/75 cd models) UL 1638, ULCS526: 75 cd (fixed 15/75 cd models)
Amber Strobe Output Rating	UL 1638: 13 (D), 26 (C), 65 (B), 95 (A)
Strobe Operating Voltage	16 - 33 Vdc Regulated, 16-33 V Full wave rectified (UL Voltage Designations "Regulated 24" and "24 fwr")
Strobe Flash Rate	One flash per second.
Strobe Flash Synchronization	All strobes: one flash per second (fps) within 200 milliseconds over 30 minutes on common circuit. All strobes: Synchronization source required to comply with UL 1971 synchronization standard. Temporal setting (private mode only): synchronized to temporal output on the same circuit.
Synchronization Sources	SIGA-CC1S, SIGA-MCC1S, SIGA-CC2A, SIGA-MCC2A, G1M-RM BPS6A, BPS10A, APS6A, APS10A, iO64, iO500, Fireshield Plus 3, 5 and 10 zone.
Strobe Lens Material	Polycarbonate

** Measured in reverberant room using 400-4,000 Hz band limited pink noise per UL 1480.*

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Ordering Information

Light output switch settings for UL 1971 listed models are selectable by numeric candela value.
ECS/MNS appliances are selectable by A, B, C, or D designations.
All speaker-strobes include field-selectable ¼, ½, 1, or 2 watt taps

Model	Housing	Marking	Lens	Strobe	Speaker	Ship Wt.
Life safety Appliances (c/w running man icon screen printed on housing)						
G4-S2	White	None	Clear	Selectable 15, 30, 75, or 110 cd	25 Volt	1.5 lbs. (0.68 kg)
G4R-S2	Red	None				
G4F-S2	White	FIRE				
G4RF-S2	Red	FIRE				
G4-S2VM	White	None				
G4R-S2VM	Red	None				
G4F-S2VM	White	FIRE				
G4RF-S2VM	Red	FIRE				
G4-S7	White	None		Selectable 15, 30, 75, or 110 cd	70 Volt	
G4R-S7	Red	None				
G4F-S7	White	FIRE				
G4RF-S7	Red	FIRE				
G4-S7VM	White	None				
G4R-S7VM	Red	None				
G4F-S7VM	White	FIRE				
G4RF-S7VM	Red	FIRE				
G4F-S7V1575	White	FIRE		15/75 cd[1]		
G4RF-S7V1575	Red	FIRE				
ECS/MNS Appliances (no running man icon on housing)						
G4WA-S2VMA	White	Alert	Amber	Selectable A, B, C or D	25 Volt	1.5 lbs. (0.68 kg)
G4WA-S2VMC		Alert	Clear			
G4WN-S2VMA		None	Amber			
G4WN-S2VMC		None	Clear			
G4WA-S2		Alert	None	Speaker only		
G4WN-S2		None	None			
G4WA-S7VMA		Alert	Amber	Selectable A, B, C or D	70 Volt	
G4WA-S7VMC		Alert	Clear			
G4WN-S7VMA		None	Amber			
G4WN-S7VMC		None	Clear			
G4WA-S7		Alert	None	Speaker only		
G4WN-S7		None	None			

Accessories

G1M-RM	Synchronization Output Module (1-gang)	0.2 (0.1)
SIGA-CC1S	Intelligent Synchronization Output Module (2-gang)	0.5 (0.23)
SIGA-MCC1S	Synchronization Output Module (Plug-in UIO)	0.18 (0.08)
G4B	Surface mount box, white	0.7 (0.32)
G4RB	Surface mount box, red	0.7 (0.32)

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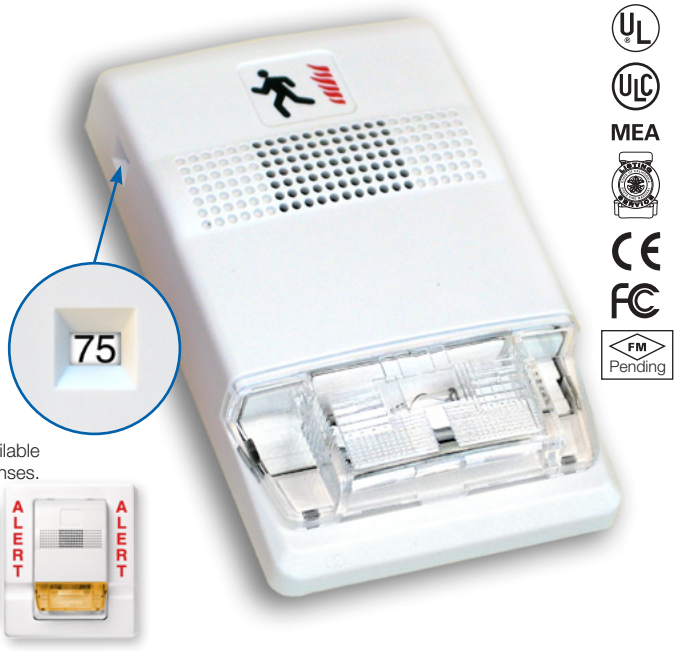
Field Configurable Horns and Strobes

Genesis Series



ECS/MNS appliances available with clear or amber lenses.

Overview

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

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

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

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

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

Standard Features

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

DATA SHEET 85001-0573
Not to be used for installation purposes. Issue 11

Application

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

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

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

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

Horns

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

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

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

ECS/MNS Applications

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

Installation

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

Genesis Horn/Strobe with optional trim plate

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

Field Configuration

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

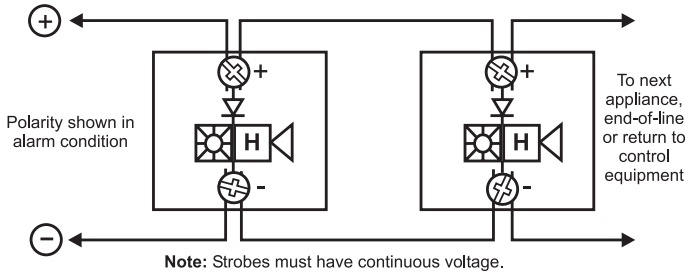
Genesis clear strobes and horn-strobes are shipped from the factory ready for use as **UL 1971 compliant** signals for public mode operation. These signals may be configured for **temporal flash** by cutting a jumper on the circuit board. This battery-saving feature is intended for private mode signaling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

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

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

Wiring

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



Note: Strobes must have continuous voltage.

Current Draw

Strobes, Horn-Strobes

Multi-cd Wall Strobes (G1-VM)

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

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

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

Wall Temporal Horn-strobes – High dB Setting

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

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

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

Wall Temporal Horn-strobes – Low dB Setting

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

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

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

Horns

Wall or Ceiling Mounted Temporal Horns (G1-HD)

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

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

Wall or Ceiling Mounted Horns (G1-P)

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

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

Current values are shown in mA.

dBA output

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

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

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

Steady Tone Horns (G1-P series)

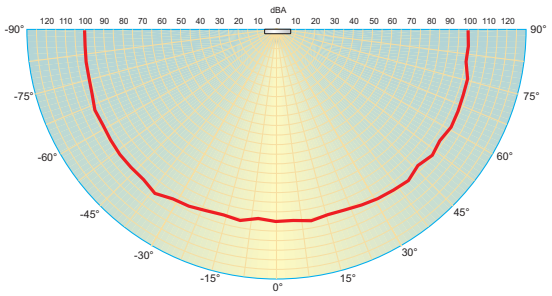
	UL464	Average	Peak
16 Vdc	77 dBA, min	85 dBA	91 dBA
16 Vfwr	77 dBA, min	85 dBA	91 dBA

Notes

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

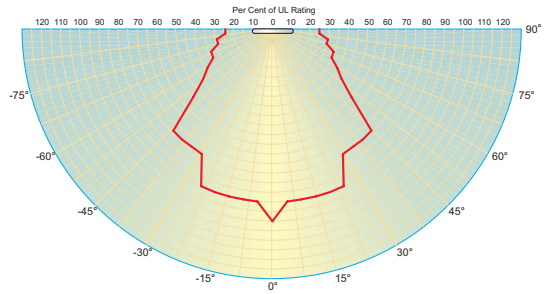
Average Sound Output (dBA)

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



Light output - (effective cd)

Percent of UL rating versus angle



Specifications

Housing	Red or white textured UV stabilized, color impregnated engineered plastic. Exceeds 94V-0 UL flammability rating.
Lens	Optical grade polycarbonate (clear)
Mounting (indoor only)	Strobes and horn-strobes are for wall-mount installation only. Horn-only models may be ceiling- or wall-mounted. Flush mount: 2½ inch (64 mm) deep one-gang box Surface mount: Model 27193 surface mount box, wiremold box, or equivalent surface-mount box With optional trim plate: One-gang, two-gang, four-inch square, octagonal, or European single-gang box
Wire connections	Screw terminals: single input for both horn and strobe. #18 to #12 AWG (0.75 mm^2 to 2.5 mm^2) wire size
Operating environment	Indoor only: 32-120°F (0-49°C) ambient temperature. 93% relative humidity
Agency listings/approvals	UL 1971, UL 1638, UL 464, ULC S525, ULC S526, CSFM, CE, FCC, MEA. (All models comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule.)
Dimensions (HxWxD)	Signal: 4-1/2" x 2-3/4" x 13/16" (113 mm x 68 mm x 21 mm) Trimplate: 5" (127 mm); Height – 5-7/8" (149 mm); Depth – ½" (13 mm)
Operating voltage	G1-HD series temporal-tone horns: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR (or coded when horn set to steady tone) G1-HDVM series temporal-tone horn-strobes: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR (or coded (audible NAC only) when used with optional G1M Genesis Signal Master) G1-VM series strobes: non-coded, filtered 16 - 33 Vdc or unfiltered 16-33 Vdc FWR G1-P series steady-tone horns: coded or non-coded, filtered 20-31 Vdc or unfiltered 20-27 Vfwr
Strobe output rating	UL 1971, UL 1638, ULC S526: selectable 15 cd, 30 cd, 75 cd, or 110 cd output UL 1971: 15 cd (fixed 15/75 cd models) UL 1638, ULCS526: 75 cd (fixed 15/75 cd models)
Strobe flash rate	G1-VM strobes and G1-HDVM series temporal-tone horn-strobes: one flash per second synchronized with optional G1M Genesis Signal Master indefinitely within 10 milliseconds. Temporal setting (private mode only): synchronized to temporal output of horns on same circuit
Synchronization Sources	SIGA-CC1S, SIGA-MCC1S, SIGA-CC2A, SIGA-MCC2A, G1M-RM BPS6A, BPS10A, APS6A, APS10A, iO64, iO500, Fireshield Plus 3, 5 and 10 zone. Add G1M for G1-CVM &G1-HDVM devices only.
Horn pulse rate	G1-HD temporal-tone horns and G1-HDVM series temporal-tone horn-strobes: temporal rate synchronized with optional G1M Genesis Signal Master indefinitely within 10 milliseconds. G1-P steady-tone horns: continuous, steady tone only
Temporal audible pattern	½ sec ON, ½ sec OFF, ½ sec ON, ½ sec OFF, ½ sec ON, 1½ sec OFF, then repeat cycle

Candela Output

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

** Equivalent Rating*

Fire appliances available with white or red housings.

ECS/MNS appliances available with clear or amber lenses.

Ordering Information

Model	Housing	Marking	Lens	Strobe	Horn	Ship Wt. lbs (kg)
Fire Alarm Appliances (c/w running man icon screen printed on housing)						
G1-VM	White	None	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)
G1F-HD	White	FIRE	Clear	Horn only	Selectable high/low dB	0.25 (0.11)
G1F-HDV1575	White	FIRE	Clear	15/75 cd[1]	Temporal hi/lo dB-24V	0.25 (0.11)
G1F-HDVM	White	FIRE	Clear	Selectable 15, 30, 75, or 110 cd	Selectable high/low dB	0.25 (0.11)
G1F-P	White	FIRE	Clear	Steady Horn (not compatible with Genesis Signal Master)		0.25 (0.11)
G1F-V1575	White	FIRE	Clear	15/75 cd[1]	Strobe only	0.25 (0.11)
G1F-VM	White	FIRE	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)
G1-HD	White	None	Clear	Horn only	Selectable high/low dB	0.25 (0.11)
G1-HDVM	White	None	Clear	Selectable 15, 30, 75, or 110 cd	Selectable high/low dB	0.25 (0.11)
G1-P	White	None	Clear	Steady Horn (not compatible with Genesis Signal Master)		0.25 (0.11)
G1RF-HD	Red	FIRE	Clear	Horn only	Selectable high/low dB	0.25 (0.11)
G1RF-HDV1575	Red	FIRE	Clear	15/75 cd[1]	Temporal hi/lo dB-24V	0.25 (0.11)
G1RF-HDVM	Red	FIRE	Clear	Selectable 15, 30, 75, or 110 cd	Selectable high/low dB	0.25 (0.11)
G1RF-P	Red	FIRE	Clear	Steady Horn (not compatible with Genesis Signal Master)		0.25 (0.11)
G1RF-V1575	Red	FIRE	Clear	15/75 cd[1]	Strobe only	0.25 (0.11)
G1RF-VM	Red	FIRE	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)
G1R-HD	Red	None	Clear	Horn only	Selectable high/low dB	0.25 (0.11)
G1R-HDVM	Red	None	Clear	Selectable 15, 30, 75, or 110 cd	Selectable high/low dB	0.25 (0.11)
G1R-P	Red	None	Clear	Steady Horn (not compatible with Genesis Signal Master)		0.25 (0.11)
G1R-VM	Red	None	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)
ECS/MNS Appliances (no running man icon on housing)						
G1WA-VMA	White	ALERT	Amber	Selectable A, B, C or D	Strobe only	0.25 (0.11)
G1WA-VMC	White	ALERT	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)
G1WN-VMA	White	None	Amber	Selectable A, B, C or D	Strobe only	0.25 (0.11)
G1WN-VMC	White	None	Clear	Selectable 15, 30, 75, or 110 cd	Strobe only	0.25 (0.11)
Trim Plates						
G1T	White	None	Genesis Trim Plate (for two-gang or 4" square boxes)			0.15 (0.7)
G1RT	Red	None	Genesis Trim Plate (for two-gang or 4" square boxes)			0.15 (0.7)
G1T-FIRE	White	FIRE	Genesis Trim Plate (for two-gang or 4" square boxes)			0.15 (0.7)
G1RT-FIRE	Red	FIRE	Genesis Trim Plate (for two-gang or 4" square boxes)			0.15 (0.7)
G1WT-ALERT	White	ALERT	Genesis Trim Plate (for two-gang or 4" square boxes)			0.15 (0.7)
Surface Boxes						
27193-16	White	N/A	One-gang surface mount box			1 (0.4)
27193-11	Red	N/A	One-gang surface mount box			1 (0.4)

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

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Detection & alarm since 1872

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UL Listed

7744/7788

AES CORPORATION | IntelliNet For Alarm Monitoring

NEW!

RF Subscriber Unit

UL Fire, AA Burglary and NFPA-72 Compliant

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UL Listed

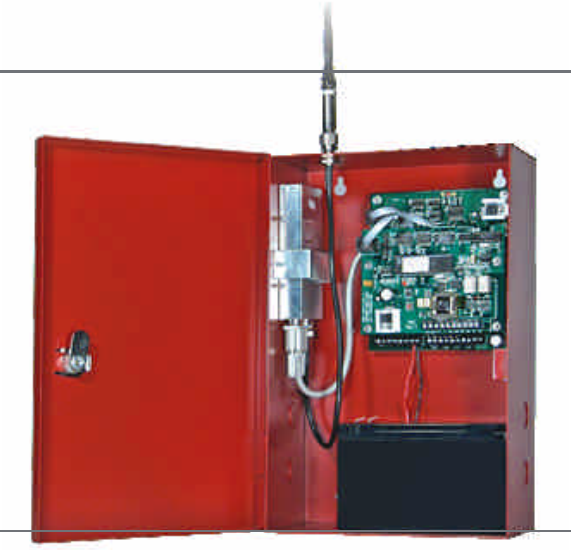
UL Listed Central Station

Remote Station

864 Ed. 9, 827, 1610, 365, 681

CSFM

NFPA RF Section 8.6.3.5



- **Options for Full Data for Fire and Burglary**
- **Available in 7744 & 7788 Zone Configurations**
- **Built-in Power Supply and Battery Charger**
- **Local Annunciation Options on Board**

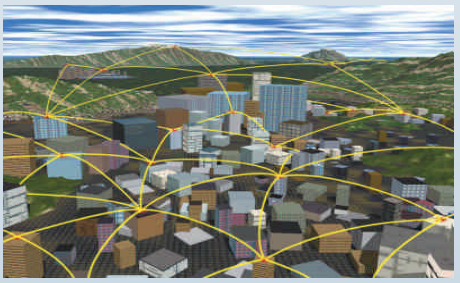
Advanced Wireless Alarm Monitoring

The 7744/7788 smart subscriber unit links an alarm panel to an alarm monitoring central station. This 2-way transceiver and repeater in one is housed in a full size locking steel cabinet for superior performance. The 7744/7788 supports a wide range of inputs such as NO/NC/EOL and direct voltage. It automatically senses wire and antenna cuts, and monitors battery and AC power status. Advanced status reporting, self-diagnostics and a built-in power supply make the 7744/7788 the first choice for all wireless alarm communication needs.

Full Data for Fire and Burglary

Use with the optional Firetap for full fire data or the IntelliTap for full fire and burglary data.

Available Configurations	Available Options
7744 – 4 reversing polarity inputs plus 4 programmable EOL inputs	FireTap 7770
7788 – Programmable EOL inputs with 8 zones	IntelliTap 7067
	NEMA 4 Enclosure
	High Gain Antenna
	Additional Back Up Battery
	Available in Burglary Beige or Fire Red



Wireless mesh networking is an innovative technology adopted by many industries with applications that need to communicate data over a large geographic area with a high level of reliability at a low total cost of ownership.

The advanced design and 2-way communications capability provides easy installation, expansion, and management when compared to alternative communication methods, both wired and wireless.

RF Subscriber Unit

Technical Specifications

Radio
Standard CSAA frequency ranges: 450-470 MHz and 130-174 MHz, VHF and UHF. Others available

Standard Output Power
2 watts (requires FCC license)

Power Input
16.5 VAC, 40VA UL listed
Class II transformer required

Voltage
12 VDC nominal

Current
175mA standby; 800mA transmit

Alarm Signal Inputs
- 4 individually programmable Zones: NO/NC/EOL, trouble restore
- RS-232
- Reversing voltage (7744 only) 12 or 24 VDC

Operating Temperature Range
0° to 50°C, 32° to 122°F

Storage Temperature Range
-10° to 60°C, 14° to 140°F

Relative Humidity Range
0-85% RHC non-condensing

Back up Battery
12V, 7 AH

Low Battery Reporting
22.5-minute test cycle

AC Status
Reports to central station after approximately 60 minutes without AC power, reports power restored after approximately 60 minutes of restored power. programmable from 60 to 180 minutes

Antenna Cut (local reporting)
Form 'C' Contact 1 AMP

Size
13.25"H x 8.5"W x 4.3"D
34cm x 21.5cm x 11cm

Weight
6.4 lbs, 2.9 Kilograms (excluding battery)

Colors
Available in standard Burglary Beige or Fire Red
Please specify when ordering

Available Options
- 7788 RF subscriber unit with 8 EOL inputs
- 7744 RF subscriber unit with 4 EOL inputs and 4 reverse polarity inputs
- 7770 - FireTap
- 7067 - IntelliTap
- NEMA 4 Enclosure

Please specify when ordering

AES-IntelliNet™ is the industry leader in delivering high quality wireless mesh networks to the fire and security industry in commercial, corporate, government, and educational applications with its broad line of products and advanced network management tools. Users of AES-IntelliNet networks have gained significant revenue, communications, and cost advantages while meeting the high standards of reliability required for the fire and security industry. AES-IntelliNet alarm monitoring systems are deployed at hundreds of thousands of locations in over 130 countries.

AES CORPORATION | IntelliNet For Alarm Monitoring

For more information
Call 800-AES-NETS (800-237-6387)

AES Corporation | 285 Newbury Street | Peabody, MA 01960 USA
Tel. +1 978-535-7310 | Fax +1 978-535-7313 | Email info@aes-intellinet.com
Web www.aes-intellinet.com

Available configurations

- 7788, 8 EOL inputs
- 7744, 4 EOL inputs w/4 reverse polarity inputs

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7744/7788/02/08

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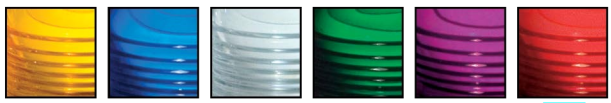
MICRO IV™

Low Profile - Single Flash Strobe

- wide input voltage range
- universal mounting
- built-in RFI filters
- 10,000 hour strobe lamp
- ten year warranty on power supply
- one year warranty on lamp
- available in six lens colors
- UL recognized (all models)
- lens has hermetic o-ring seal
- NEMA 4X

The MICRO IV strobe family is an enhanced version of the MICROSTROBE featuring a power supply which operates over a wide input voltage range of 12–80VDC or 16–24VAC. The supply has a regulated output so that the lamp brightness and flash remain constant when operated over the rated input voltage range. The power supply is potted in polyurethane for the ultimate in protection from moisture, vibration and exposure to high voltage. The enclosure is all Lexan®, and the plug-in lamp is field replaceable. All units are polarity protected and have built-in filters to protect against radio interference and spike voltages. The MICRO IV is covered by a 10 year warranty. The MICRO IV and its guard are UL component recognized for type E, EE, and ES electric industrial trucks covered by UL standard #583.

Lens Colors



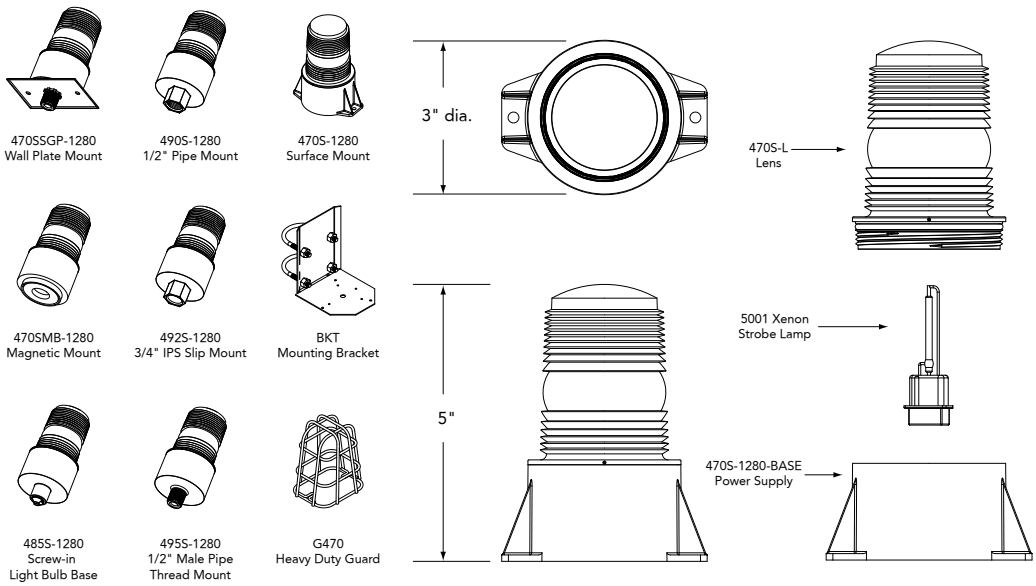
Amber Blue Clear Green Purple Red

Ordering Information

Please specify lens colors and model number when ordering. Available colors are Amber, Blue, Clear, Green, Purple and Red.

Model No.	Description	Voltage
470SSGP–1280	DC strobe, wall plate mount	12 – 80VDC
470S–1280	DC strobe, surface mount	12 – 80VDC
470SMB–1280	DC strobe, magnetic mount and 6' straight cord	12 – 80VDC
470SMB–1280/CC	DC strobe, magnetic mount and coil cord	12 – 80VDC
485S–1280	DC strobe, screw-in light bulb base	12 – 80VDC
490S–1280	DC strobe, 1/2" female pipe mount	12 – 80VDC
492S–1280	DC strobe, 3/4" IPS slip mount	12 – 80VDC
495S–1280	DC strobe, 1/2" male thread mount	12 – 80VDC

TOMAR Electronics, Inc. 2100 W. Obispo Ave. Gilbert, AZ 85233 USA (800) 338-3133 tel (800) 688-6627 fax www.tomar.com



Specifications

Item	Description
Flash Rate	60 to 80 flashes per minute
Light Output	50 candela eff.
Voltage and Amperage	12-80VDC draws 0.4A average @ 12VDC tapering to 0.05A average @ 80VDC 16-24VAC draws 0.35A average
Power Supply Output 2.7 Watts	1.9 joules per flash
Size and Weight	5" tall x 3" dia. x 0.6 lbs (127mm x 76mm x 0.27kg)
Encapsulation	Fully potted in urethane material with no exposure to High Voltage possible

Available Options

NOTE: All "/" options are factory installed only.

Model No.	Description
G470	Heavy duty guard
BKT	Mounting bracket
LBO–MINI	Lens blackout segment 180°
MICROSHIELD	Vinyl, 180° lens blackout

Replacement Parts

Model No.	Description
5001	Xenon strobe lamp
470S–L	Colored lens (please specify color)
470S–1280–PSA	12 – 80VDC power supply, surface mount
470SMB–1280–PSA	12 – 80VDC power supply, magnetic mount and 6' straight cord
470SMB–1280/CCB	12 – 80VDC power supply, magnetic mount and coil cord
485S–1280–PSA	12 – 80VDC power supply, screw-in light bulb base
490S–1280–PSA	12 – 80VDC power supply, 1/2" female pipe mount
492S–1280–PSA	12 – 80VDC power supply, 3/4" IPS slip mount
495S–1280–PSA	12 – 80VDC power supply, 1/2" male thread mount

Architect and Engineer Specifications

The strobe light shall be Tomar model number series 470, 480, 485, 490, 492, 495 or approved equal. The light source shall be a plug-in field replaceable single-flash xenon strobe tube. The strobe light must have built-in RFI filters to protect against radio interference and spike voltages. It shall be polarity protected, and have a power supply fully potted in polyurethane. Voltage ranges shall be 12-80VDC or 16-24VAC, 120 VAC, and 240VAC. The strobe light shall be UL listed and of NEMA 4X type weatherproof design with screw-on Lexan® lens.

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NO EXCUSES!

FAD

Fire Alarm Documents

The FAD is the perfect fit to meet the demanding code requirements today. NFPA 72 10.18.2.2.1.8 states that a cabinet must be “prominently labeled ‘FIRE ALARM DOCUMENTS’.”

This durable 16 gauge steel enclosure with a solid piano hinge and key lock will keep all of your code required documents in one safe place. With a 2GB USB flash drive it stores your fire alarm software safely and securely eliminating the occurrences of the software not being on site when technicians arrive to service the system. Along with your fire alarm software you can store your test & inspection documents, service records, manuals & as built drawings for the system. Using a standard USB B connector it allows you to plug in with any standard USB printer cable to upload or download information.

The FAD is designed to hold critical manuals and documents with a durable steel sleeve. It has designated hooks to organize key rings and hold important business cards for easy access and reference. Inside the cover it has a organized note table that allows for documentation for passwords and other critical system information. The steel sleeve can be easily removed to hold a 1.5” three ring binder.

The innovation of a single gang cutout inside the box to implement the Infinity line products with conduit knockout access enables you to provide other system functions for test and inspection. See the complete Infinity product line from Space Age Electronics for single gang electrical product solutions.

Standard Features:

- Installed with a 2 gig digital flash drive with USB B connector
- 2 Key ring hooks to hold system keys
- Business card holder for key contacts
- Overall Dimensions are 12” x 13” tall and 2 ¼ deep
- 16 gauge steel box and cover for security
- Durable powercoat baked on finish other colors available
- Standard ¾”cat 30 key lock other lock assemblies available
- Solid stainless steel piano hinge
- Permanently screened white ink 1” high “Fire Alarm Documents”
- Legend sheet for passwords and system information

NEMA NFPA Made In U.S.A.

ISO 9001 REGISTERED COMPANY

ADA

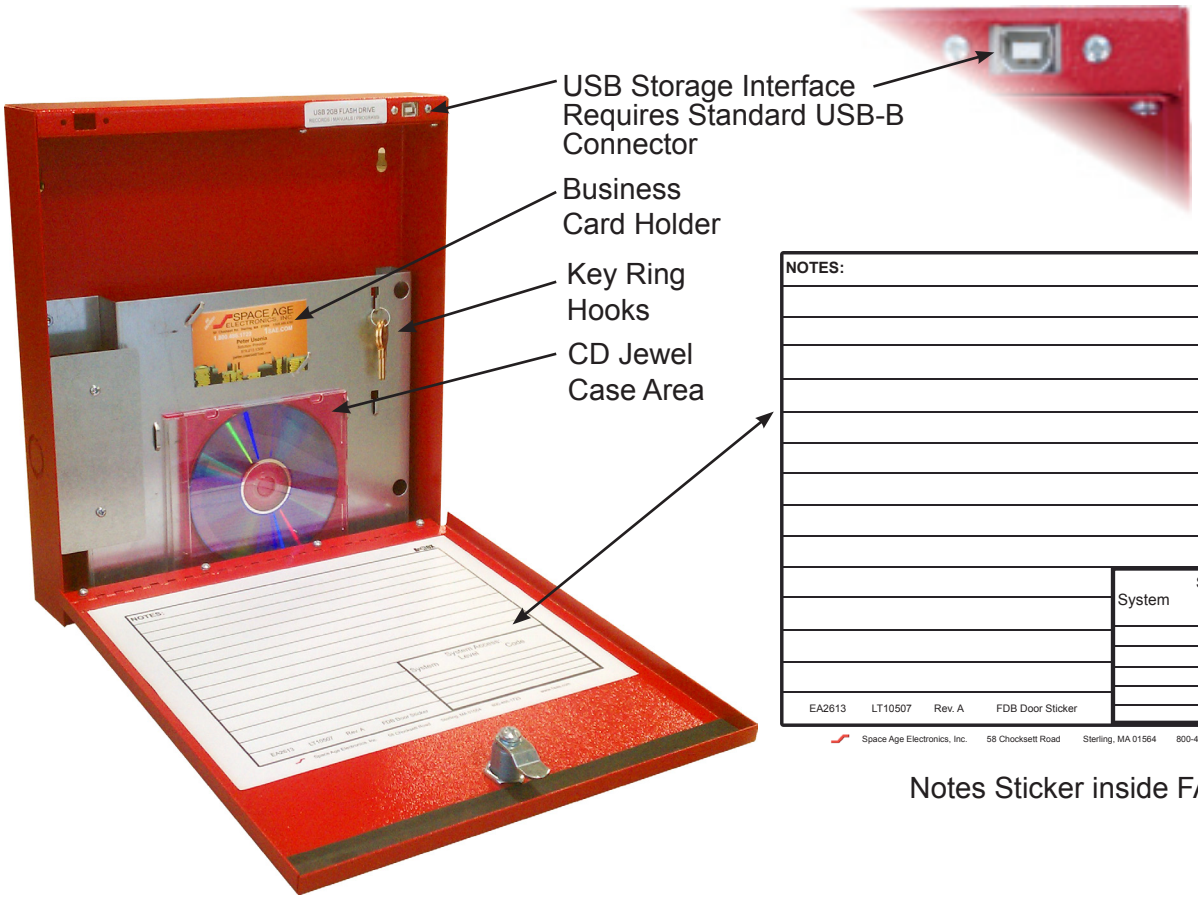
ACEBOX
Space Age Electronics, Inc.
www.1sae.com
800.486.1723 Toll Free
508.485.0966 Local
508.485.4740 Fax

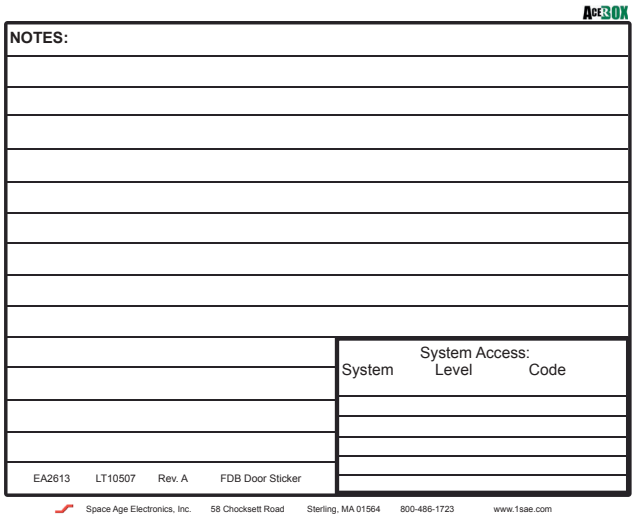
No Excuses, Just Solutions!

SPACE AGE ELECTRONICS, INC.

Specifications:

The Fire Alarm Document Box (FAD) shall be constructed of 16 gauge cold rolled steel, it shall have a red powder coat epoxy finish. The cover shall be permanently screened with 1" high lettering "FIRE ALARM DOCUMENTS" with indelible ink. The access door shall be locked with a ¾" barrel lock and the hinge shall be a solid width 12" stainless steel piano hinge. The FAD enclosure will supply 4 wall mounting holes inside. Inside the enclosure a removable steel sleeve that will accommodate standard 8 ½ x 11 manuals and loose document records that will be protected within the enclosure. A legend sheet permanently attached to the door for system passwords and critical information and inspection notes. The FAD will have permanently and securely mounted inside a minimum of 2GB's digital flash memory drive with a standard USB B connector for uploading and downloading information. The drive shall not be accessible without tools to any person whom gains access to the records. The enclosure shall also provide 2 key ring holders with a location to mount standard business type cards for key contact personell.





Notes Sticker inside FAD Door

Click Here to Return to Bill of Material/Index

Ordering Information:

Part #	Description
SSU00685	**Fire Alarm Storage Cabinet RED**
SSU00686	**Custom screening with your Logo**

Check out our Infinity line eFAD single gang 2 Gig digital storage solutions (IAMEFAD)

ACEBOX
Space Age Electronics, Inc.
www.1sae.com
800.486.1723 Toll Free
508.485.0966 Local
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No Excuses, Just Solutions!

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KNOX®
Serving Fire Departments Since 1975

Knox-Box® 3200 Series
LIFT-OFF DOOR MODEL

High Security Industrial/Government Key Box


Recessed Mount with Face Flange


Surface Mount

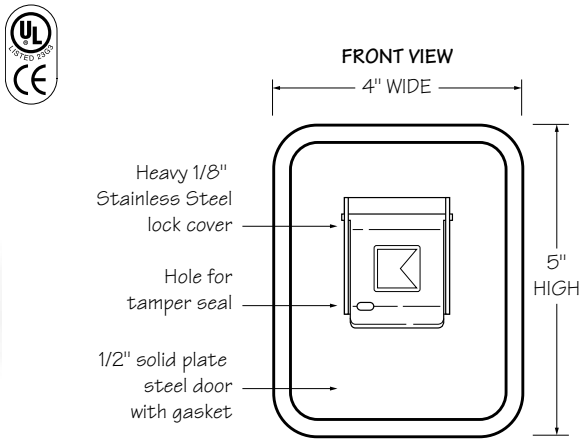
The number one high-security KNOX-BOX® is used for most commercial applications including businesses, schools, government and public buildings, community associations and apartment complexes. The 3200 Series KNOX-BOX with lift-off door holds keys, access cards and other small items necessary for emergency access.

Features and Benefits

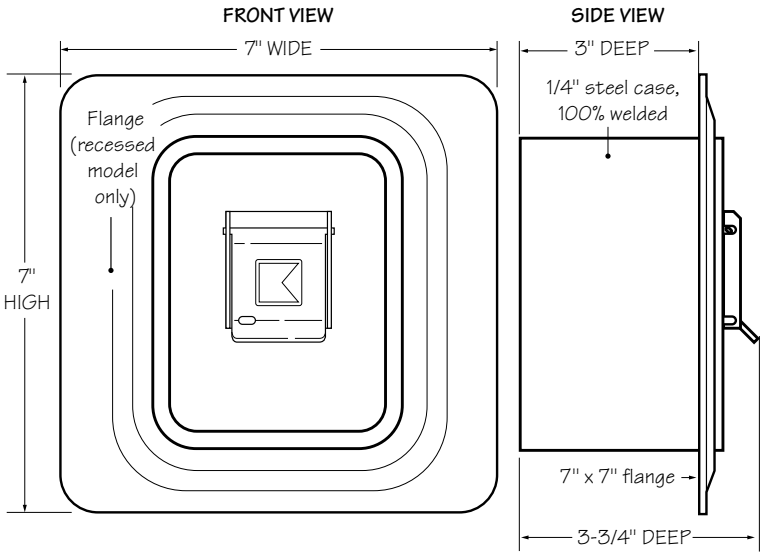
- Holds up to 10 keys and access cards in interior compartment
- Ensures high security. Box and lock are UL® Listed
- Includes a Knox-Coat® proprietary finishing process that protects Knox products up to four times better than standard powder coat
- Resists moist conditions with a weather resistant door gasket
- Colors: Black, Dark Bronze or Aluminum
  Weight: Surface mount - 8 lbs.
  Recessed mount - 9 lbs.

Options

- Alarm tamper switches (UL Listed)
- Recessed Mounting Kit (RMK) for recessed models only
- Inside switch for use on electrical doors, gates and other electrical equipment



3200 Surface Mount



3200 Recessed Mount

Ordering Specifications

To insure procurement and delivery of the 3200 Series KNOX-BOX, it is suggested that the following specification paragraph be used:

KNOX-BOX surface/recessed mount with lift-off door, with/without UL Listed tamper switches. 1/4" plate steel housing, 1/2" thick steel door with interior gasket seal. Box and lock UL Listed. Lock has 1/8" thick stainless steel dust cover with tamper seal mounting capability.

Exterior Dimensions:	Surface mount body - 5"H x 4"W x 3-3/4"D Recessed mount flange- 7"H x 7"W
Lock:	UL Listed. Double-action rotating tumblers and hardened steel pins accessed by a biased cut key.
Finish:	Knox-Coat® proprietary finishing process
Colors:	Black, Dark Bronze or Aluminum
P/N:	3200 Series KNOX-BOX (mfr's cat. ID)
Mfr's Name:	**KNOX COMPANY**

KNOX COMPANY • 1601 W. Deer Valley Road, Phoenix, AZ 85027 • (800) 552-5669 • (623) 687-2300 • Fax (623) 687-2299 • Web: www.knoxbox.com • E-mail: info@knoxbox.com

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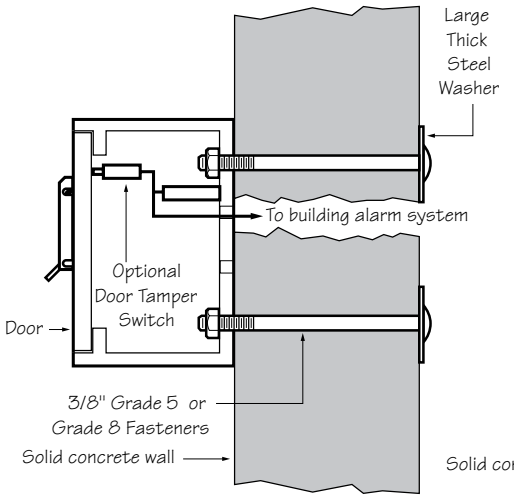
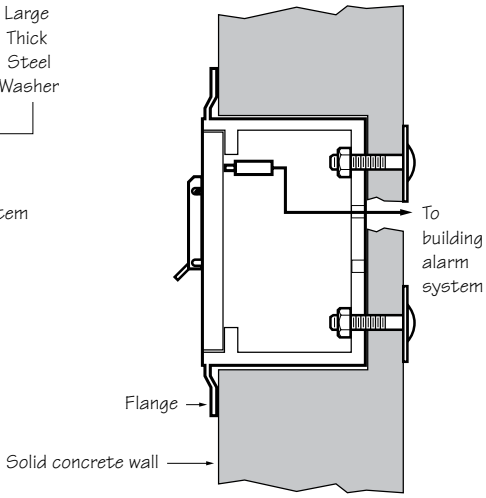
Knox-Box® 3200 Series
LIFT-OFF DOOR MODEL - MOUNTING DIAGRAM

Suggested minimum mounting height
6 feet above ground

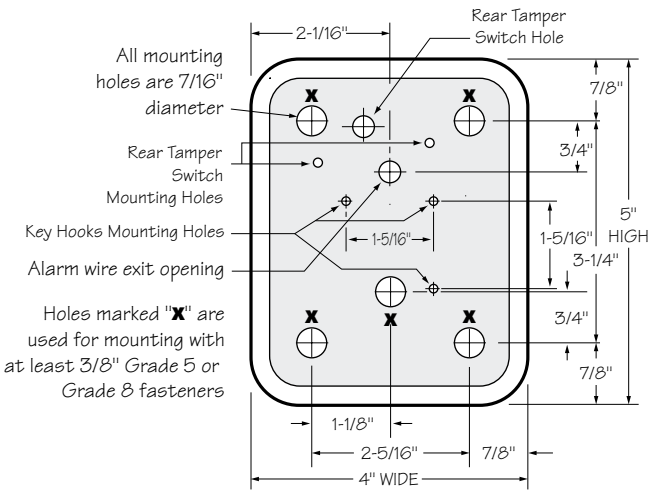


3200 Series Lift-off Door
Surface Mount



3200 Series Lift-off Door
Recessed Mount

Inside View



Attention: KNOX-BOX® is a very strong device that MUST be mounted properly to ensure maximum security and resist physical attack.

Knox® Rapid Entry System
The Knox Company manufacturers a complete line of high security products including Knox-Box key boxes, key vaults, cabinets, key switches, padlocks, locking FDC caps, plugs and electronic master key security systems. For more information or technical assistance, please call Customer Service at 1-800-552-5669.

Recessed Mounting Kit

The 3200 Recessed Mounting Kit (RMK) is used for recessed models only. It contains a shell housing and mounting hardware to be cast-in-place in new concrete or masonry construction. After construction is completed, the KNOX-BOX mounts inside the recessed shell housing. The RMK may only be used in new concrete or masonry construction.

Installation In Cast Concrete

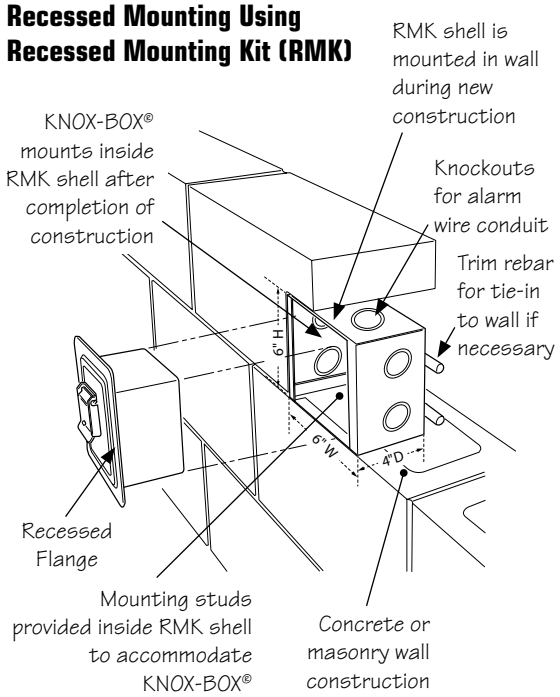
The optional Recessed Mounting Kit is for use in new concrete or masonry construction only. The kit includes a shell housing and mounting hardware to be cast-in-place. The KNOX-BOX is mounted into the shell housing after construction is completed.

Dimensions

Rough-in Dimensions: 6-1/2"H x 6-1/2"W x 5"D

IMPORTANT: Care should be taken to insure that the front of the RMK shell housing, including the cover plate and screw heads, is flush with the finish wall. The RMK must be plumbed to insure vertical alignment of the vault.

Recessed Mounting Using Recessed Mounting Kit (RMK)



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Recessed Mounting Kit (RMK)

The optional Recessed Mounting Kit is for use in new concrete or masonry construction only. The kit includes a shell housing and mounting hardware to be cast-in-place. The KNOX-BOX is mounted into the shell housing after construction is completed.

Rough-in Dimensions: 6-1/2"H x 6-1/2"W x 5"D

Installation: Mounting kit may be fastened to inside wall of a concrete form or set in place during masonry wall construction. Wiring conduit may be connected through knock-out hole(s) in the shell housing.

IMPORTANT: Take care to make sure that the front of the shell housing, including the cover plate and screw heads, are flush with the finish wall. Leave cover and screws in place until the KNOX-BOX is ready for mounting inside. The four (4) mounting studs may be replaced with Grade 5 or Grade 8 bolts or longer studs if required. Two (2) long sheet metal screws are provided for attachment of shell housing to the inside of a concrete form. With the housing held firmly in place, drill two (2) 1/8" holes through the form wall and the housing front cover. Insert screws and pull housing tight against form wall. Remove screws before removing form.

Recessed Mounting Using Recessed Mounting Kit (RMK)

MOUNTING INSTRUCTIONS

KNOX-BOX® 3200 Series

Lift-Off Door Models

Surface and Recess Mounted

Issue Date: July 2006

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E-mail: info@knoxbox.com

MOUNTING INSTRUCTIONS
KNOX-BOX® 3200 Series
Lift-Off Door Models
Surface and Recess Mounted
Issue Date: July 2006
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Knox® Rapid Entry System

The Knox Company manufactures a complete line of high security products including Knox-Box® key boxes, key vaults, armored cabinets, key switches, padlocks and electronic master key retention devices.

For information and technical assistance, call:

800-552-5669

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MOUNTING INSTRUCTIONS
KNOX-BOX® 3200 Series
Lift-Off Door Models

Series 3200 Recessed

Series 3200 Surface

Read instructions carefully before mounting.

The 3200 Series KNOX-BOX® is a heavy-duty, high-security key box that stores keys, access cards and other small items. Each key box is coated with the Knox-Coat® proprietary finishing process* and includes a 1/8" thick stainless steel dust cover to protect the lock. For maximum security, mount the unit properly in an area sheltered from excessive moisture. All keys stored in the unit must be hung on the key hooks supplied inside.

All 3200 Series Knox-Boxes are fully tested and listed by Underwriters Laboratories as anti-theft devices. Alarm tamper switches are UL listed as Central Station Alarm Units. UL Electrical Range: Max Voltage of 24 VDC at 50 mA.

Surface Mounted Models

Surface models are designed for mounting on a flat wall. Do not mount face down from ceiling or overhang area. When the surface mounted KNOX-BOX includes tamper switches, install the tamper switch assembly after the box is mounted and check to see that the "box to wall" plunger is properly depressed. A qualified alarm installer should perform alarm wiring, testing and adjusting.

Recess Mounted Models

Recess models are designed for flush mounting. Do not mount face down from ceiling or overhang area. Units can be adapted to fit a variety of solid walls cored to a 6" diameter approximately 3 1/2" deep. A Recessed Mounting Kit (RMK) is recommended for new concrete or masonry walls under construction. Do not over tighten mounting bolts as this will distort the flange.

When the recess mounted KNOX-BOX includes a door tamper switch, install the tamper switch assembly after the box is mounted. Pull wiring tight so that any attempts to force the box out of the wall will break the wire or pull the terminals loose. A qualified alarm installer should perform alarm wiring and testing.

If installing the box on a thin or hollow wall, use a solid backing (like 3/8" steel plate fastened to solid studs on both sides) for secure mounting. Mounting to solid beams or steel support is best. Use of a professional installer is highly recommended.

General Mounting Instructions

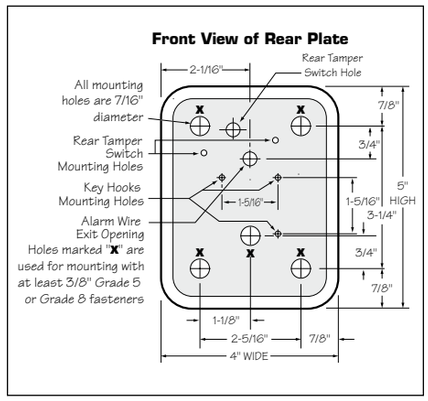
1. Remove door assembly from shipping box and set aside.
2. For units with tamper switches, remove the tamper switch assembly and set aside for installation after the box is mounted.
3. Always mount your KNOX-BOX to a secure, solid wall, beam or post. A six foot height level is recommended to resist vandalism.
4. Use a small level to plumb the box square.
5. Mount the KNOX-BOX with the green mounting markers pointed up so the small moisture drain hole is on the bottom. Remove green markers after installation.
6. Use at least four (4) Grade 5 or Grade 8 fasteners (carriage bolts, etc.) of 3/8" diameter. Units may also be welded into place. Mounting to solid studs or steel supports is required. Mounting face down from ceiling or overhang area may cause contents to jam lock.
7. For proper weatherproofing, caulk the back of box across top and down each side. Leave the bottom open for drainage.
8. Use of a professional locksmith or alarm products installer is highly recommended.

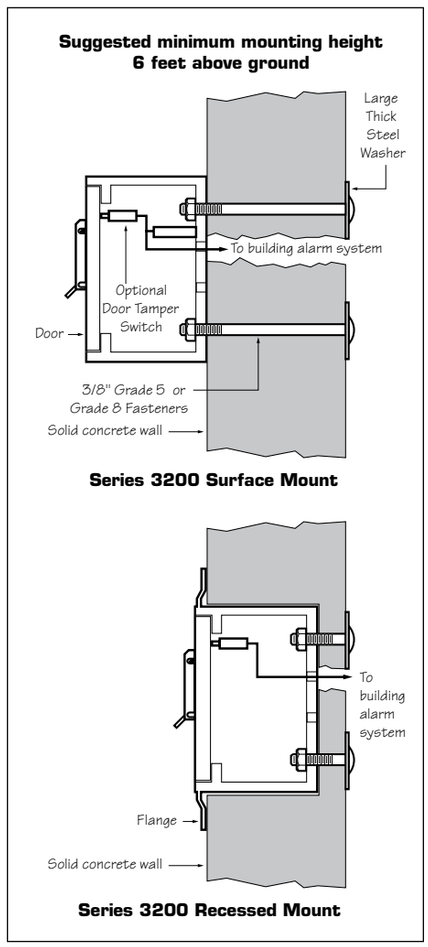
Securing the Door

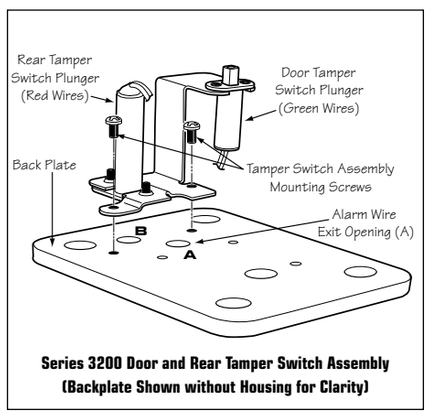
1. Attach the retaining chain through the hole in the chain tab on the back side of the door and close the link with pliers.
2. Insert key into lock and turn to the left to unlock the door.
3. Insert door, bottom side first, so that the tail piece fits over the bottom of the door frame. The top of the door will now swing shut.
4. Lock the door and remove the key.

IMPORTANT: When your KNOX-BOX is for fire department use, put the door in a secure location until requested by the fire department. When mounting of the KNOX-BOX is complete, contact your local fire department to inform them the box is ready for lock up. They have the only key.

For private, industrial or commercial use: keys will be sent separately to address requested.







Series 3200 Door and Rear Tamper Switch Assembly
(Backplate Shown without Housing for Clarity)

* Knox-Coat is a proprietary finishing process that protects Knox products up to four times better than standard powder coat.

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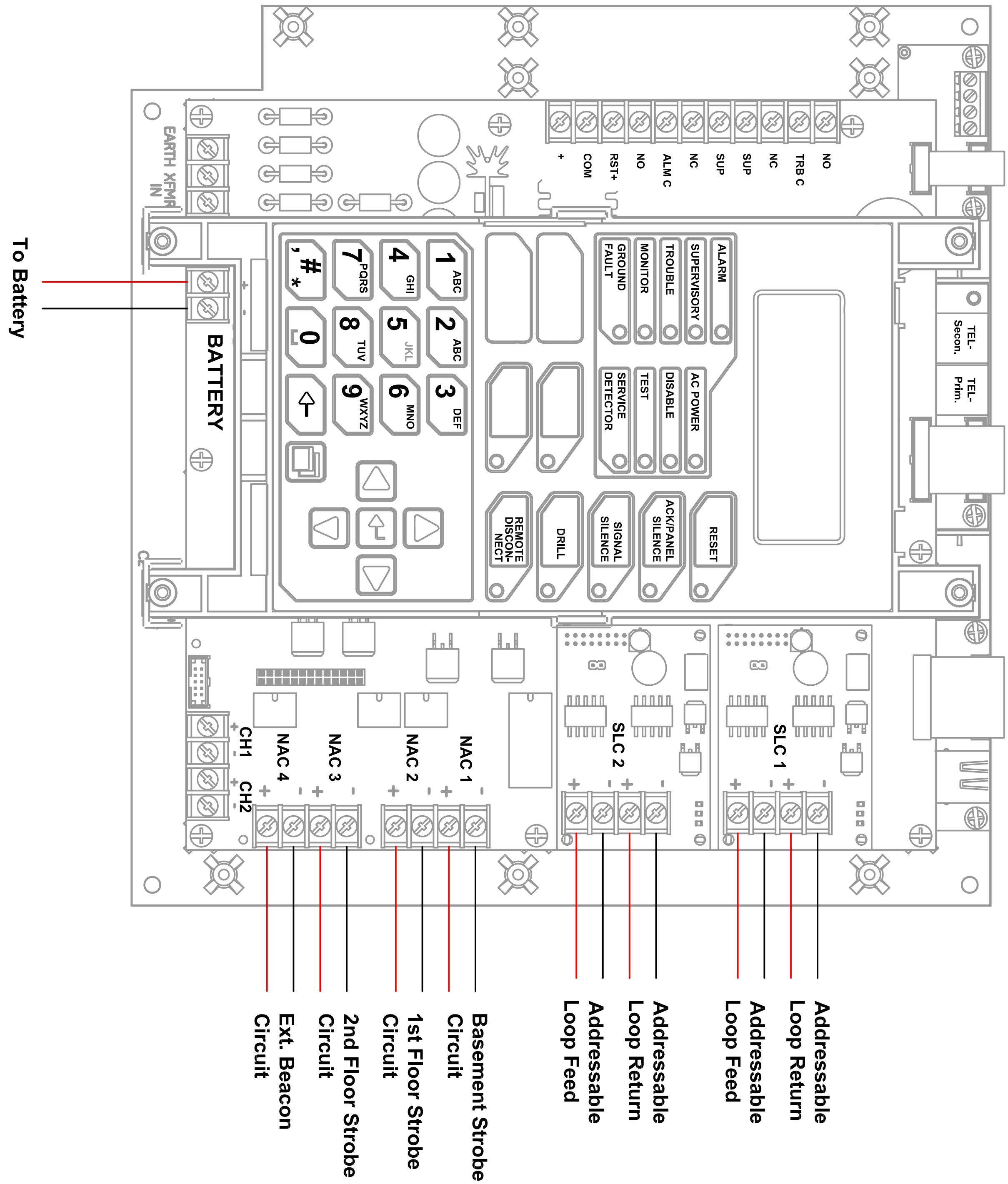

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REV.	DESCRIPTION	DATE	DRWN:	RVW'D:
0	Original Issue	7/12	DH	TD

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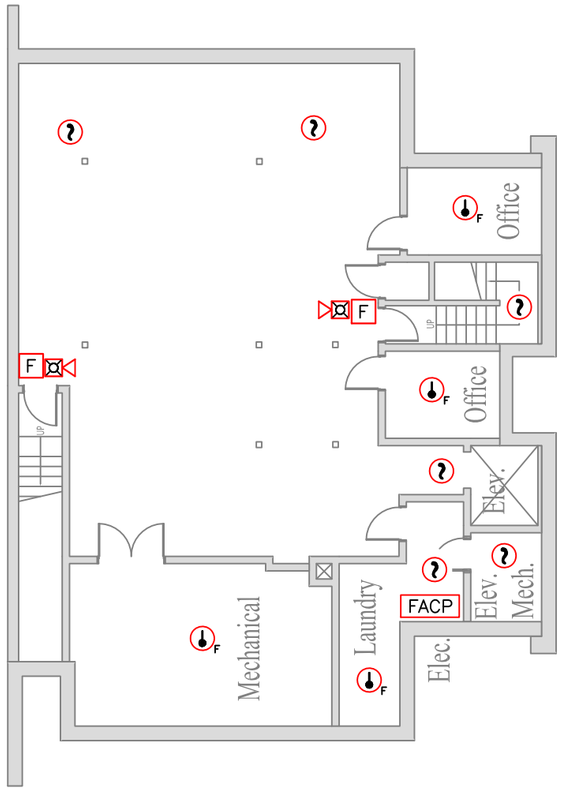
131 LAFAYETTE RD
NO. HAMPTON, NH 03862
1-800-258-7264

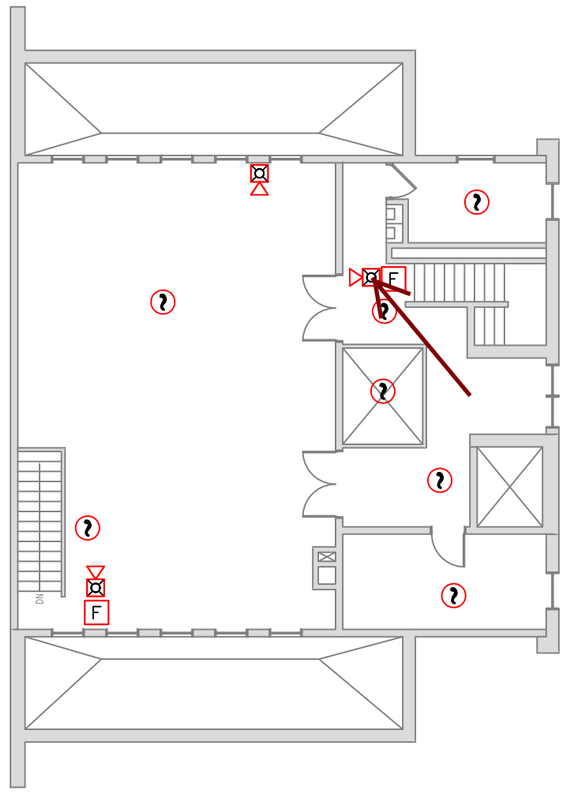
EDWARDS SYSTEM TECHNOLOGY

DWG NAME:
UNE - Finley Gymnasium
Portland, Maine
Fire Alarm Panel Layout

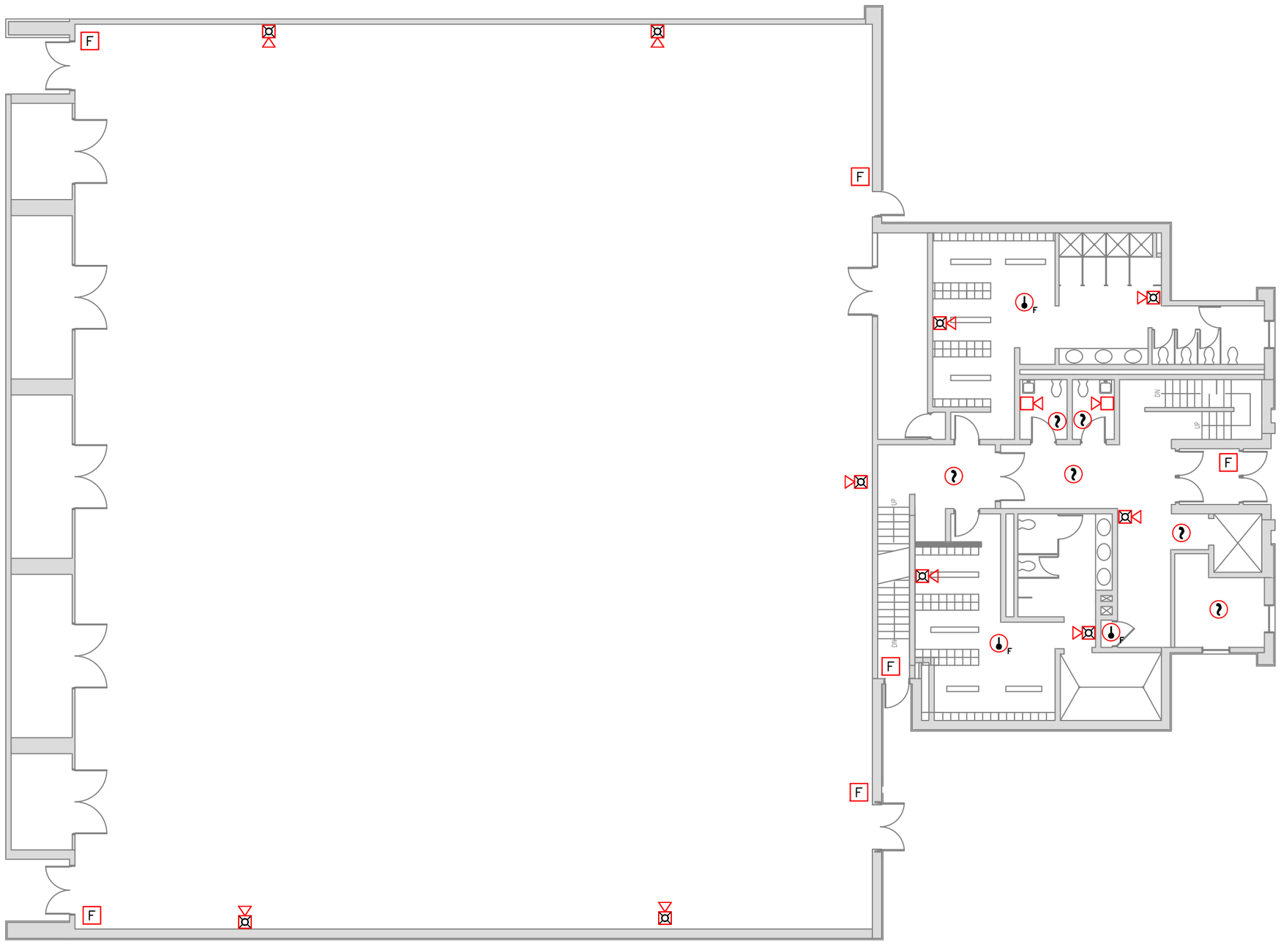
DWG No: 80529_LAYOUT



Basement Plan



2nd Floor Plan



1st Floor Plan

LEGEND:

RISER DIAG SYM	CONTRACT DWG SYM	NFPA SYMBOL*	DESCRIPTION	CATALOG #
FACP	FACP	FACP	Fire Alarm Control Panel	i0500R
FATC	FTC	FATC	Fire Alarm Terminal Cabinet	FBO
FAA	ANN	FAA	Fire Alarm Annunciator	EST
BPS	NPE	FACU	Notification Power Extender (Fire Alarm Control Unit)	BPS10A
F	F	P	Manual Pull Station	SIGA-278
			Smoke Detector w/Base	SIGA2-PS SIGA-SB
F			Heat Detector w/Base (F Denotes Fixed Temperature)	SIGA2-HFS SIGA-SB
RI		RI	Remote Alarm Indicator	SIGA-LED
D	D		Duct Smoke Detector w/Sampling Tube	SIGA-SD SD-Txx
RTS	RTS		Remote Alarm Indicator & Key Test Station	SD-TRK
CTx	MCT2	MM	Addressable Input Module (x Denotes 1 or 2 Inputs; M Denotes Motherboard Required)	SIGA-CT1, -CT2 SIGA-MCT2, UIO Board
CR	MCR	CM	Addressable Relay Module (M Denotes Motherboard Required)	SIGA-CR Siga-MCR, UIO Board
CC1	MCC1	CM	Addressable Class B Output Control Module (M Denotes Motherboard Required)	SIGA-CC1 SIGA-MCC1, UIO Board
CC1S	MCC1S	CM	Addressable Synchronization Module (M Denotes Motherboard Required)	SIGA-CC1S SIGA-MCC1S, UIO Bd
WF	WF	WF	Waterflow Switch	FBO
VS	TS	VS	Tamper Switch (Valve Supervisory)	FBO
PS	PS	PS	Pressure Switch (Dry Sprinkler Alarm)	FBO
LS	LA	LS	Low Air Pressure Switch (Level Switch)	FBO
DMPR	FSD		Smoke Damper	FBO
P1R	R		Intermediate Control Relay	EST
xxxC	S		Strobe Unit (xxx Denotes Candela Setting; C Denotes Ceiling Mount)	G1RF-VM
xxx	H		Horn/Strobe Unit - Wall Mount (xxx Denotes Candela Setting)	G1RF-HDVM
xxxC	P		Horn/Strobe Unit (xxx Denotes Candela Setting; C Denotes Ceiling Mount)	G1RF-VM
V	H	V	Sprinkler Bell (V Indicates Vibrating)	439D-6AWR
B	B	SL	Exterior Beacon (SL Indicates Signal Lamp)	4955-1280
MB	MB	MB	Radio Master Box w/ Accessories	AES
KB	KB		Key Repository Box Surface Mount	3200

GENERAL NOTES:

1. ALL WIRING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, STATE OF MAINE BUILDING CODE, LOCAL AUTHORITY HAVING JURISDICTION, AND MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.

WIRING NOTES:

1. ALL ADRESSABLE DEVICES MUST BE INSTALLED IN A HEATED LOCATION.
2. Addressable Loop consists of: (1) 2c #16 Twisted Non-shielded from FACP to 1st device; (1) 2c #16 Twisted Non-shielded through remaning devices on circuit and return to FACP. Maintain proper separation between feeds and returns.
3. Horn/Strobe circuits consist of a minimum: 2c #14 from FACP/BPS to 1st device; 2c #14 through remaining devices on circuit and return to FACP/BPS. Maintain proper separation between feeds and returns.

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DWG NAME: University of New England
Finley Gymnasium
Portland, Maine
FIRE ALARM PLAN
DWG No: 80529_Plan

R.B. Allen Co., Inc.
P.O. BOX 779
131 LAFAYETTE RD
NO. HAMPTON, NH 03862
1-800-258-7264
EDWARDS SYSTEM TECHNOLOGY

University of New England
Finley Gymnasium
Portland, Maine
FIRE ALARM PLAN

JOB NAME:
Contractor:

REV.	DESCRIPTION	DATE	DRWN:	RVW'D:
0	Original Issue	07/12	DHH	TRD

SCALE: NTS

PO No. 80529

University of New England - Finley Gym
Portland, Maine
FIRE ALARM PLAN
DWG NO. 80529_Plan

LEGEND:

RISER DIAG SYM	CONTRACT DWG SYM	NFPA SYMBOL*	DESCRIPTION	CATALOG #
FACP	FACP	FACP	Fire Alarm Control Panel	iO500R
FATC	FTC	FATC	Fire Alarm Terminal Cabinet	FBO
FAA	ANN	FAA	Fire Alarm Annunciator	EST
BPS	NPE	FACU	Notification Power Extender (Fire Alarm Control Unit)	BPS10A
F	F	P	Manual Pull Station	SIGA-278
			Smoke Detector w/Base	SIGA2-PS SIGA-SB
F			Heat Detector w/Base (F Denotes Fixed Temperature)	SIGA2-HFS SIGA-SB
RI		RI	Remote Alarm Indicator	SIGA-LED
D	D		Duct Smoke Detector w/Sampling Tube	SIGA-SD SD-Txx
RTS	RTS		Remote Alarm Indicator & Key Test Station	SD-TRK
CT x MCT2	MM	AIM	Addressable Input Module (x Denotes 1 or 2 Inputs; M Denotes Motherboard Required)	SIGA-CT1, -CT2 SIGA-MCT2, UIO Board
CR MCR	CM	AOM	Addressable Relay Module (M Denotes Motherboard Required)	SIGA-CR Siga-MCR, UIO Board
CC1 MCC1	CM	AOM	Addressable Class B Output Control Module (M Denotes Motherboard Required)	SIGA-CC1 SIGA-MCC1, UIO Board
CC1S MCC1S	CM	AOM	Addressable Synchronization Module (M Denotes Motherboard Required)	SIGA-CC1S SIGA-MCC1S, UIO Bd
WF	WF	WF	Waterflow Switch	FBO
VS	TS	VS	Tamper Switch (Valve Supervisory)	FBO
PS	PS	PS	Pressure Switch (Dry Sprinkler Alarm)	FBO
LS	LA	LS	Low Air Pressure Switch (Level Switch)	FBO
DMPR	FSD		Smoke Damper	FBO
P1R	R		Intermediate Control Relay	EST
xxx C	S		Strobe Unit (xxx Denotes Candela Setting; C Denotes Ceiling Mount)	G1RF-VM
xxx	H		Horn/Strobe Unit – Wall Mount (xxx Denotes Candela Setting)	G1RF-HDVM
xxx C	F		Horn/Strobe Unit (xxx Denotes Candela Setting; C Denotes Ceiling Mount)	G1RF-VM
V	H	V	Sprinkler Bell (V Indicates Vibrating)	439D-6AWR
B	B	SL	Exterior Beacon (SL Indicates Signal Lamp)	4955-1280
MB	MB	MB	Radio Master Box w/ Accessories	AES
KB	KB		Key Repository Box Surface Mount	3200

GENERAL NOTES:

1. ALL WIRING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, STATE OF MAINE BUILDING CODE, LOCAL AUTHORITY HAVING JURISDICTION, AND MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.

WIRING NOTES:

1. ALL ADRESSABLE DEVICES MUST BE INSTALLED IN A HEATED LOCATION.
2. Addressable Loop consists of: (1) 2c #16 Twisted Non-shielded from FACP to 1st device; (1) 2c #16 Twisted Non-shielded through remaning devices on circuit and return to FACP. Maintain proper separation between feeds and returns.
3. Strobe circuits consist of a minimum: 2c #14 from FACP to 1st device; 2c #14 through remaining devices on circuit and terminate w/ an End of Line resistor (EOL). Location of End of Line device shall be clearly marked on outside of device.
4. Speaker circuits consist of a minimum: 2c #16 from FACP to 1st device; 2c #16 through remaining devices on circuit and terminate w/ an End of Line resistor (EOL). Location of End of Line device shall be clearly marked on outside of device.

RISER DIAGRAM

EST Addressable Fire Alarm System
UNE - Finley Dym
Portland, Maine

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BATTERY STANDBY CALCULATIONS - Fire Alarm Control Panel

QTY	Model #	Description	Quiescent Current	Alarm Current	Total Quiescent	Total Alarm	
1	iO500R	Base Panel	0.172000	0.267000	0.172000	0.267000	Amp
1	XLA250	Signature Loop Expansion Module	0.060000	0.125000	0.060000	0.125000	Amp
1	SA-232	RS-232 Communications Card	0.013000	0.013000	0.013000	0.013000	Amp
10	SIGA-278	Addressable Manual Pull Station	0.000250	0.000400	0.002500	0.004000	Amp
19	SIGA2-PS	Addressable Smoke Detector	0.000045	0.018000	0.000855	0.342000	Amp
7	SIGA2-HFS	Addressable Heat Detector	0.000045	0.018000	0.000315	0.126000	Amp
2	SIGA-CR/MCR	Addressable Control Module	0.000100	0.000100	0.000200	0.000200	Amp
4	SIGA-MCC1	Addressable Signal Module	0.000045	0.018000	0.000180	0.072000	Amp
15	G4RF-S7VM	Speaker/Strobe Unit (Assume 75 Candela)	0.000000	0.182000	0.000000	2.730000	Amp
2	G1RF-VM	Strobe Unit (15 Candela)	0.000000	0.710000	0.000000	1.420000	Amp
1	495S1280R	Exterior Beaoon	0.000000	0.350000	0.000000	0.350000	Amp
					Total	0.24905	5.4492 Amp

Total Quiescent x Time Required (60 Hours)*:	14.943	Ah
Total Alarm x Time Required (15 Minutes):	1.3623	Ah
Total Battery Required:	**16.3053**	**Ah**
Total Battery Required (+) 20% Spare Capacity:	**19.56636**	**Ah**
Battery Supplied:	**26**	**Ah**

UNE - Finley Gym
Portland, Maine
NAC Circuit Voltage Drop/Maximum Length Calculations

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Formulas Used:

Rt = (D) x (Rw) / 1000'
Vd = (Rt) x (It)
Substitute for (Rt) and solve for D

D = ((4.0) x (1000)) / ((Rw) x (It))

Rt = Total Circuit Resistance
D = Total Circuit Length (Feet)
Rw = Wire Resistance (Ω) per 1000' Pair (Ohms)
Vd = Circuit Voltage Drop (Max allowed is 4.0Vdc)
It = Total Circuit Current

Notes:

1 NAC Circuit terminal voltage 24Vdc.
2 A maximum allowable voltage drop of 4Vdc will provide a minimum of 20 Vdc per circuit.
3 Current values listed per device are based on 20Vdc.
4 Calculations assume 75 candela rating for all Speaker/Strobes & 15 candela for Strobe Units.

HORN/STROBE CIRCUIT MAX WIRE LENGTH CALCULATION

	G4RF-S7VM Speaker/Strobe				G1RF-VM		495S	757-8A	Total Circuit Current	Ω per 1000' Pair		
Current (mA)	65	93	182	238	71	188	350	260		12AWG (3.5)	14AWG (5.2)	
Ckt/Cd	15cd	30cd	75cd	110cd	15	75cd		110cd	Amp	Max Length (Ft)	Max Length (Ft)	Volt Drop
iO500 Ckt1			2						0.3640	3139.72	2113.27	4.0
iO500 Ckt2			10		2				1.9620	582.50	392.06	4.0
iO500 Ckt3			3						0.5460	2093.14	1408.85	4.0
iO500 Ckt4							1		0.3500	3265.31	2197.80	4.0

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Audio Notification Panel Standby Battery Calculations

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Audio Notification Panel	Quiescent Current	Alarm Current
Panel	0.0180	
Amplifier - Fully loaded @ 100 Watts		2.5000
	0.0180	**2.5000**
	Total Quiescent	Total Alarm

Remaining % of Ckt Capacity	
0.00 %	
70.00 %*	Remaining % Panel*

Total Quiescent Amp x Time Required (60 Hours)	1.080 AmpHr
Total Alarm Amp x Time Required (15 Minutes)	0.625 AmpHr
Total Battery Required	1.705 AmpHr
Total Battery Required + 20%	**2.046** AmpHr
Battery Supplied	**7.2** AmpHr

All currents are expressed as mA.
*Total Watts Estimated = 30 Watts (Based on 2 watts / speaker)

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Speaker Circuit Loading and Maximum Length Calculations

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Max Length = $\frac{59.25 \times \text{Amplifier Output Voltage}^2}{\text{Resistance} \times \text{Circuit Load}}$ Wire

Where:
Amplifier Output is 70Vrms
Wire Resistance is 8.0Ω / 1000 Ft pair (16AWG)
Circuit Load is Total Watts per Circuit
Maximum load per circuit is 35 Watts
Maximum Amplifier output is 100 Watts
(Assume all speakers @ 2 watts)

Fire Command Center (Floor 1)

Flr/Circuit	Speakers @ x Tap			Ckt Total Watts	Ckt Watts from Amp1	Ckt Watts from Amp2	Ckt Watts from Amp3	Max Ckt Length (16AWG) Feet	Remaining % of Ckt Capacity
	0.50	1	2						
Circuit 1			2	4	4	n/a	n/a	9073	88.57
Circuit 2			10	20	20			1815	42.86
Circuit 13			3	6	6			8048	82.86
Total Watts per Amp					30	0	0		
					70.00	100.00	100.00		
					% of Amp Remaining	% of Amp Remaining	% of Amp Remaining		

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Finley Gymnasium
Portland , Maine
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DWG No: 80529_Rsr

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University of New England - Finley Gym
Portland, Maine
FIRE ALARM RISER
DWG NO. 80529_Rsr