# DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



# CITY OF PORTLAND BUILDING PERMIT



This is to certify that <u>DEBLOIS ELECTRIC</u> of PO Box 7899, Lewiston, ME 04243 Located At <u>254 COMMERCIAL ST</u>

Merrill's Wharf – Pierce Atwood Law Offices

Job ID: 2011-05-1135-FAFS

CBL: 041 - - A - 017 - 001 - - - - -

has permission to install a Master box fire alarm system

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

Fire Prevention Officer

Code Enforcement Officer / Plan Reviewer

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY PENALTY FOR REMOVING THIS CARD

Strengthening a Remarkable City, Building a Community for Life . www.portlandmaine.gov

Director of Planning and Urban Development Penny St. Louis

# **Conditions of Approval:**

Job ID: 2011-05-1135-FAFS
Installation of a Master box fire alarm

For installation at: 254 COMMERCIAL ST

CBL: 041 - - A - 017 - 001 - - - -

# Zoning

This property shall remain marine related uses on the first floor with professional offices above (Pierce Attwood Law Offices). Any change of use shall require a separate permit application for review and approval.

### Fire

# Job Specific conditions:

Complete smoke detection is not required for this building by the life safety or fire codes.

Duct detection shall be supervisory and not trip the evacuation signals or master box.

Sprinkler water flow and supervision by floor is required.

A pull station is required from the basement corridor 002 to the exit stair.

AES Zones shall be: 1- Water flow; 2- City Disconnect; 3- pull stations and detectors; 8 AES tamper.

Zones 1 and 3 shall have individual City Disconnect. The FACP and annunciators shall indicate "City Disconnect: Water Flow" or "City Disconnect: Pulls and detectors".

# Standard conditions:

The fire alarm system shall comply with the City of Portland Standard for Signaling Systems for the Protection of Life and Property. All fire alarm installation and servicing companies shall have a Certificate of Fitness from the Fire Department.

In field installation shall be installed per code as conditions dictate.

Records cabinet, FACP, annunciator(s), and pull stations shall be keyed alike.

Central Station monitoring for addressable fire alarm systems shall be by point.

All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP labeled "FIRE ALARM RECORDS".

Installation of a Fire Alarm system requires a Knox Box to be installed per city ordinance.

System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.

Fire Alarm system shall be maintained. If system is to be off line over 4 hours a fire watch shall be in place. Dispatch notification required 874-8576.

Fire alarm system requires a wireless master box connection per city ordinance. Masterbox design and installation shall be as approved be City Electrical Division.

# PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life . www.portlandmaine.gov

Director of Planning and Urban Development Penny St. Louis

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Job ID: <u>2011-05-1135-FAFS</u> <u>Installation of a Master box fire alarm</u> system For installation at: 254 COMMERCIAL ST

CBL: <u>041 - - A - 017 - 001 - - - - -</u>

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# City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No: 2011-05-1135-FAFS	Date Applied: 5/17/2011		CBL: 041 A - 017 - 001					
Location of Construction: 254 COMMERCIAL ST /MERRILL'S WHARF	Owner Name: WATERFRONT MAINE	:	Owner Address: 14 MAINE ST BRUNSWICK, ME	Phone:				
Business Name:	Contractor Name: Michel Deblois – DeBlois	Electric	Contractor Addre 0 PO BOX 7899 L		04243	Phone: (207) 783-6512		
Lessee/Buyer's Name:	Phone:		Permit Type: FIRE ALARM - Fir	e Alarm		Zone: WCZ		
Past Use: First Floor is Marine				Cost of Work: \$25,000.00				
Related Uses with Professional Office above the first floor (Pierce Atwood)	floor with profession	ame: Marine related on first loor with professional office bove – to install a fire alarm				Inspection: Use Group: Type:		
, , , , , , , , , , , , , , , , , , , ,			Signature:			Signature:		
Proposed Project Description 254 Commercial Waterfront Main		t	Pedestrian Activi	ties District (P.A	.D.)			
Permit Taken By: Lannie				Zoning Appr	oval			
1. This permit application of Applicant(s) from meeting Federal Rules.  2. Building Permits do not a septic or electrial work.  3. Building permits are voice within six (6) months of False informatin may investigate permit and stop all work.  hereby certify that I am the owner of recovery to make this application as his application is issued, I certify that the enforce the provision of the code(s) are	ng applicable State and include plumbing, d if work is not started the date of issuance. validate a building	Shoreland Wetland Flood Zo Subdivis Site Plan Maj Date: Of CERTIF or that the prope to conform to	Min _MM  ICATION < 2  Dosed work is authorized all applicable laws of the	nis jurisdiction. In ad-	Not in Dis Does not I Requires I Approved Approved Denied Date:  ord and that I have been a dition, if a permit for wo	st or Landmark Require Review Review  w/Conditions  authorized by rk described in		
		DDRESS		DA	TE	PHONE		
IGNATURE OF APPLICANT	Γ AI	DDRESS		DA	TE	PHONE		

# **Master Box Approval**

Applicant: Waterfront Maine, LP Emergency Contact: Dan Jacques
App Phone #: 207-729-7970 Emergency phone #: 207-522-4133

Building Name: Merrill's Wharf

Date of Application: 6/13/11

Building Address: 254 Commercial St

Billing Address: 14 Maine St

Brunswick, ME 04011

Occupancy: Business High-rise
Assembly OL>300, 20 unit apartment building, etc.

Comments:

# Applicant completes red box and submits with Fire Alarm Permit

1	FIRE PREVENTION:   Appr	roved Denied	20
•	6 / 23 / 11	Gliwall	<i>f</i> .
	Date	Five Prevention	
	Zone 1: Water flow	Zone 2: City disconnect	
	Zone 3: Pulls and detectors	Zone 4: <u>Unassigned</u>	
	Zone 5: Unassigned	Zone 6: Unassigned	
	Zone 7: Unassigned	Zone 8: AES Tamper switch	
	Modify City Box response to alarm sounding	in CAD:  YES  NO	
2	FIRE ALARM: Box #:	_	
3	ELECTRICAL DIVISION:   Box Type: AES Radio Box / New  Test Date:/ In Service AES  Circuit if applicable:	Other	Fire Alarm Technician
	FIRE ALARM: Same Running As	signment As Box:	
4	Notifications: ☐ All Stations ☐ Run Books	□ Digitizer □ Computer	□ Cad Box Test
	□ South Portland □		
	Other		Dispatcher
	DU 1 10 0		
5	BILLING: □ Entered	ancial Officer	

# Benjamin Wallace - RE: Merrill's Wharf - 254 Commercial St

From: Benjamin Wallace

To: Steve Morin; TIM BIRON

Date: 6/7/2011 3:47 PM

Subject: RE: Merrill's Wharf - 254 Commercial St

Attachments: Benjamin Wallace.vcf

### Hi Steve,

Thanks for getting the plans to me. A couple comments:

- 1. Complete smoke detection is not required for this building by the life safety and fire codes. Duct detection (supervisories), elevator detection and the detection for the fire alarm system itself is. Also the plans call for 2 smokes in front of every elevator lobby but as long as there is one within 21' of the centerline of the elevator door its all set. All of the extra detectors are allowed but not required.
- 2. The pull stations and sprinkler water flow and supervision by floor are required.
- 3. The plan doesn't show a pull station from the basement corridor 002 to the exit stair.
- 4. I need the master box approval form for the system.

### Thanks,

Lt. Benjamin Wallace Jr. Fire Prevention Officer Portland Fire Department 380 Congress Street Portland, Maine 04101 (207)756-8096

wallaceb@portlandmaine.gov>>> "Steve Morin" <smorin@debloiselectric.com> 6/7/2011 8:06 AM >>>

Attached please find the PDF drawings for Cumberland Cold Storage.

### Thanks

### Steve Morin

Electrical Superintendent

DeBlois Electric

Phone (207)783-6512 ext.127

Cell (207)240-2908

Fax (207)783-7428

email smorin@debloiselectric.com

From: TIM BIRON [mailto:Timbiron@rballen.com] Sent: Monday, June 06, 2011 4:41 PM To: 'Benjamin Wallace' Cc: Steve Morin Subject: RE: Merrill's Wharf - 254 Commercial St Ben. The system design and layout was done by Bartlett Design. DeBlois Electric is doing the install of all systems. RB Allen is providing the materials and Programming of the systems. We will be the Master for the Radio box review and Install. I will contact Dick Andrews and Den Diaz for final antenna location Steve. Do you have floor plans in PDF that you can forward that show all addendum changes? TIM BIRON R.B. Allen Co. Inc. 24H(603)-964-8140 Phone (207)-657-2457 Fax (207)-657-2457 Cell (207) 939-2134

Timbiron@rballen.com

**From:** Benjamin Wallace [mailto:wallaceb@portlandmaine.gov]

**Sent:** Monday, June 06, 2011 3:26 PM

To: TIM BIRON

Subject: Merrill's Wharf - 254 Commercial St

Hi Tim,

The floor plans I received for the fire alarm permit at the former Cumberland Cold Storage at to small for me to read. Can you send me a larger set of e-mail me a pdf that I can expand so I can review them?

Also I see the contractor listed is DeBlois. Is RB Allen going to be the Master on this job?

Thanks,

Ben

Lt. Benjamin Wallace Jr. Fire Prevention Officer Portland Fire Department 380 Congress Street Portland, Maine 04101 (207)756-8096 wallaceb@portlandmaine.gov

### SURGAN PALSURGAN PALSURGAN

# **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: Merrill's Wharf waterfront Portland CBL:							
Exact location: (within structure) Entire Building							
Type of occupancy(s) (NFPA & ICC): Law Office/ future tena	nt space						
Building owner: waterfront properties							
Must be System Designer (point of contact): Tim Biron, R.B. Allen							
Designer phone: 18002587264	E-mail: timbiron@rballen.com						
Installing contractor: DeBlois Electric	Certificate of Fitness No: W1139						
Contractor phone: 2077836512	E-mail: smorin@debloiselectric.com						
This is a new application:  YES  NO  New AES Master Box: YES  (Include Master Box approval form)							
Amendment to an existing permit: YES NO Perm	nit no:						
The following documents shall be provided with this application:							
Floor plans Scope of Work	COST OF WORK: \$ 24, 400						
✓ Wiring diagram ✓ 11 ½ x 17s	PERMIT FEE: \$\frac{4}{370.00}\$ (\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)						
Annunciator details pdf copy (may be e-mailed)	,						
Input/ Output Matrix  Designer qualifications	.0						
Equipment data sheets  Battery/ voltage drop calcs	W.						
Electrical Permit Pulled (check alarm/com)							
Master box approval only: YES NO (If yes check New AES Master Box above)							
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 read agle 11 ½ x 17s 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: 4/27/11						

Form & POI

# ELECTRICAL PERMIT City of Portland, Me.

City	y O	Portland, N	ie.	(3)						×
To the Chief Electrical The undersigned here	by ap	plies for a permit to n	nake (			D:	atec	2/2	/11	
in accordance with the					rdina	nce, Pe	ermit #	-		
National Electrical Cod								v		
LOCATION: ME CMP ACCOUNT #_ TENANT_PIECE	200	Is What	f	METER M	IAKE	&# <u></u> ,</td><td></td><td></td><td></td><td></td></tr><tr><td>CMP ACCOUNT # _</td><td>·</td><td></td><td></td><td> OWNER</td><td>,</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>TENANT PIECE</td><td>2</td><td>Atwood</td><td></td><td>PHONE #</td><td></td><td>v</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td>TOTAL</td><td>EACH</td><td>FEE</td></tr><tr><td>OUTLETS</td><td>1098</td><td>Receptacles</td><td>318</td><td>Switches</td><td>117</td><td>Smoke Detecto</td><td></td><td>1533</td><td>.20</td><td>306.60</td></tr><tr><td>FIXTURES</td><td>172</td><td>Incandescent</td><td>1042</td><td>Fluorescent</td><td></td><td>Strips</td><td>-</td><td>1214</td><td>.20</td><td>2/</td></tr><tr><td>, betonia</td><td>110</td><td>n rout rougour.</td><td>1049</td><td>T IEST CCCCIT</td><td></td><td>Ottipa</td><td>ļ</td><td>1017</td><td>.20</td><td>08. EK</td></tr><tr><td>SERVICES</td><td>-</td><td>Overhead</td><td>3</td><td>Underground</td><td></td><td>TTL AMPS</td><td><800</td><td>7</td><td>15.00</td><td>45.00</td></tr><tr><td></td><td>+</td><td>Overhead</td><td>1</td><td>Underground</td><td></td><td></td><td>>800</td><td>1</td><td>25.00</td><td>25 00</td></tr><tr><td></td><td>1</td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td>85.00</td></tr><tr><td>Temporary Service</td><td></td><td>Overhead</td><td></td><td>Underground</td><td></td><td>TTL AMPS</td><td></td><td></td><td>25.00</td><td></td></tr><tr><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td>* * .</td><td>25.00</td><td></td></tr><tr><td>METERS</td><td>4</td><td>(number of)</td><td></td><td></td><td></td><td></td><td></td><td>4</td><td>1.00</td><td>4.00</td></tr><tr><td>MOTORS</td><td></td><td>(number of)</td><td></td><td></td><td></td><td></td><td></td><td></td><td>2.00</td><td></td></tr><tr><td>RESID/COM</td><td></td><td>Electric units</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1.00</td><td></td></tr><tr><td>HEATING</td><td>2</td><td>oil/gas units</td><td></td><td>Interior</td><td></td><td>Exterior</td><td></td><td>3</td><td>5,00</td><td>10,00</td></tr><tr><td>APPLIANCES</td><td></td><td>Ranges</td><td></td><td>Cook Tops</td><td></td><td>Wall.Ovens</td><td></td><td></td><td>2.00</td><td></td></tr><tr><td></td><td></td><td>Insta-Hot</td><td></td><td>Water heaters</td><td></td><td>Fans</td><td></td><td></td><td>2.00</td><td>2.00</td></tr><tr><td></td><td></td><td>Dryers</td><td></td><td>Disposals</td><td>1</td><td>Dishwasher</td><td></td><td></td><td>2.00</td><td>2.00</td></tr><tr><td></td><td></td><td>Compactors</td><td></td><td>Spa .</td><td></td><td>Washing Machin</td><td>ne</td><td></td><td>2.00</td><td></td></tr><tr><td>DOUR Access</td><td>)</td><td>Others (denote)</td><td></td><td></td><td></td><td></td><td></td><td></td><td>2.00</td><td>2.00</td></tr><tr><td>MISC. (number of)</td><td></td><td>Air Cond/win</td><td></td><td></td><td></td><td>-</td><td></td><td></td><td>3.00</td><td></td></tr><tr><td></td><td></td><td>Air Cond/cent</td><td></td><td></td><td></td><td>Pools</td><td></td><td></td><td>10.00</td><td></td></tr><tr><td></td><td>-</td><td>HVAC</td><td></td><td>EMS</td><td></td><td>Thermostat</td><td></td><td>113</td><td>5.00</td><td>565.00</td></tr><tr><td></td><td>2</td><td>Signs</td><td></td><td></td><td></td><td></td><td></td><td>. 5</td><td>10.00</td><td>2000</td></tr><tr><td></td><td></td><td>Alarms/res</td><td></td><td></td><td></td><td></td><td>1.</td><td></td><td>5.00</td><td></td></tr><tr><td></td><td>1</td><td>Alarms/com</td><td></td><td></td><td></td><td></td><td></td><td></td><td>15.00 2.00</td><td>15.00</td></tr><tr><td></td><td>-</td><td>Heavy Duty(CRKT)</td><td></td><td></td><td></td><td></td><td></td><td></td><td>25.00</td><td>·</td></tr><tr><td></td><td></td><td>Circus/Carnv Alterations</td><td></td><td></td><td></td><td></td><td></td><td></td><td>5.00</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>15.00</td><td></td></tr><tr><td></td><td></td><td>Fire Repairs .</td><td>-</td><td></td><td></td><td></td><td></td><td></td><td>1.00</td><td></td></tr><tr><td></td><td>112</td><td>E Lights</td><td></td><td></td><td></td><td></td><td></td><td></td><td>20.00</td><td>112.00</td></tr><tr><td></td><td></td><td>E Generators</td><td></td><td></td><td></td><td></td><td></td><td></td><td>20.00</td><td></td></tr><tr><td>PANELS</td><td>5</td><td>Service</td><td>9</td><td>Remote</td><td>4</td><td>Main</td><td>-</td><td>18</td><td>4.00</td><td>72 00</td></tr><tr><td>TRANSFORMER</td><td>2</td><td>0-25 Kva</td><td>7</td><td>ricinote</td><td></td><td></td><td><del>                                     </del></td><td>10</td><td>5.00</td><td>13</td></tr><tr><td>MANDI OTHER</td><td>7</td><td>25-200 Kva</td><td>-</td><td></td><td>-</td><td></td><td></td><td>-> -</td><td>8.00</td><td>56 00</td></tr><tr><td></td><td>-/-</td><td>Over 200 Kva</td><td></td><td></td><td></td><td></td><td><del>                                     </del></td><td></td><td>10.00</td><td>10.00</td></tr><tr><td></td><td>1</td><td></td><td></td><td></td><td></td><td>TOTAL AMOUN</td><td>DUE</td><td></td><td></td><td>1</td></tr><tr><td></td><td></td><td>MINIMUM FEE/CO</td><td>MMF</td><td>RCIAL</td><td></td><td>MINIMUM FEE</td><td></td><td></td><td></td><td>1489,40</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>ONTRACTORS NAM</td><td></td><td></td><td></td><td></td><td>5474</td><td>MASTER LIC. #</td><td>MC</td><td>600</td><td>5169</td><td>58</td></tr></tbody></table>				

ADDRESS 1033 Sabartus A. Lewiston ML organistimited Lic. #
TELEPHONE 783-6512 Contract: Steve MORIN

SINCE 1966

NE 1-800-258-7264 FAX (603) 964-8885 R.B. Allen

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

FIRE ALARM SYSTEM MERRILL WHARF PORTLAND, MAINE

PREPARED FOR: DEBLOIS ELECTRIC INC. 1033 SABATTUS STREET LEWISTON, MAINE 04243

R.B.ALLEN COMPANY

PREPARED BY: AR REVIEWED BY: TB

PHONE: 603-964-8140 FAX: 603-964-8885

# **ALLIANCE SECURITY SYSTEM**

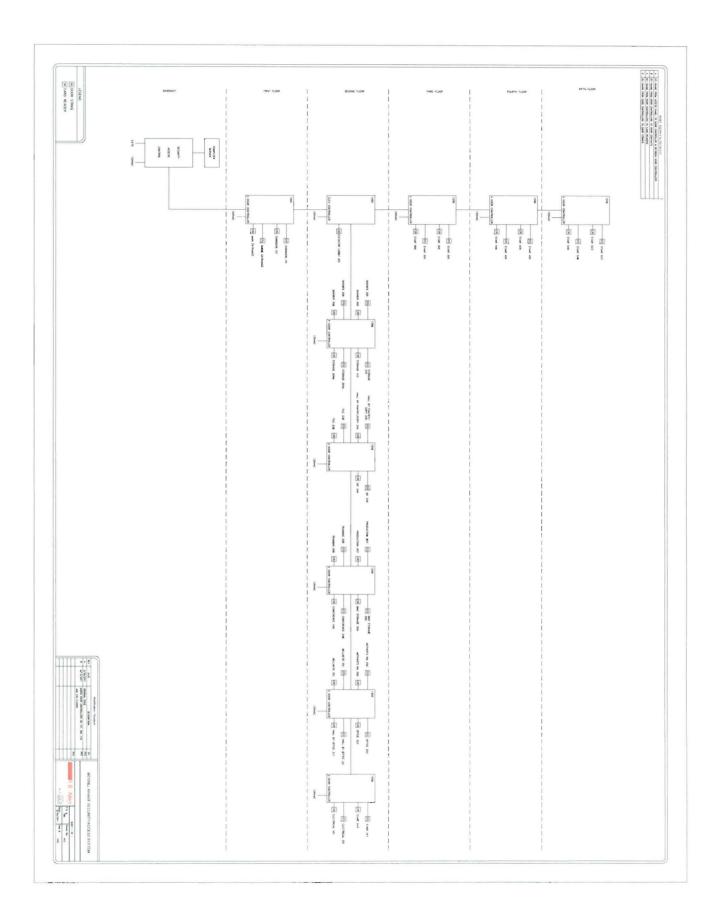
QTY.	CAT#	DESCRIPTION	DATA SHEET#
1	AL4017	SECURITY CONTROL PANEL	GE SECURITY
26	AL1193	WP PROXIMITY READER	GE SECURITY
9	AL1256	DOOR CONTROLLER	GE SECURITY
1	AL1265	ELEVATOR CONTROLLER	GE SECURITY
100	AL1450	PROXIMITY ACCESS CARDS	GE SECURITY

### EST Addressable Fire Alarm System Merrill Wharf

### SEQUENCE OF OPERATION MATRIX

		Activate Common Alas	Transmit Alarm to Coasion	Activate Building Audio	Activate All Visual Cit.	Activate Building Exteri	Activate Elevator Shad	Recall Elevator to Ann	Activate Common S	Transmit Supervisory Indicator at Receiving Supervisory c.	Shut Down Associate.	Activate Common Tech	Transmit Trouble Show Location at FACP	Close Magnetically L.	. reld Fire Doors			
	ystem Inputs	A	С	E	G	Н	- 1	J	J	K	L	M	N	0	Р	Q	R	S
1	Manual Fire Stations	×	×	×	×	х	х							×				
2	System Smoke or Heat Detector	×	×	×	×	×	×							x				
3	Elevator Smoke or Heat Detector	×	×	×	×	x	×	×						×				
4	Duct Smoke Detector								×	×	×			×				
5	System Waterflow	×	×	×	×	×	×							×				
6	System Tamper Switch								x	×								
7	Fire Alarm - AC Failure											×	×					
8	Fire Alarm - Low Battery											×	×					
9	System Open Circuit											×	×					
10	System Ground Fault											×	x					
11	NAC Short Circuit								×	×								
12	NAC Open Circuit											х	×					
13																		
14																		
15																		
16																		

matrix Memill Wharf portland maine



# 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.

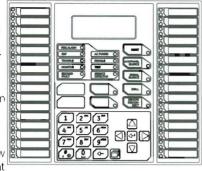
The iO500 also supports graphic annunciation with optional graphic annunicator interface modules. Each interface provides common control, indicators, and LED drivers. Consult the Ordering Information section for details.

### 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.

# Wiring & Configuration

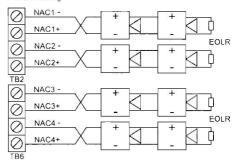
# Notification appliance circuits (TB2)

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

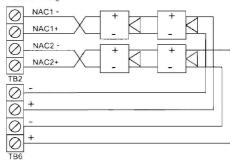
Circuit Type	4 Class B or 2 Class A, 2.5 amps each				
Voltage	24 VFWR				
Current	6.0 A total, 2.5 A max. per circuit at 120/230 VAC 60 Hz 5.0 A total at 230VAC 50 Hz, 2.5 A max. per circuit				
Impedance	26 Ω total, 0.35 μF max				
EOLR	15 K Ω, ½ W				

### 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.

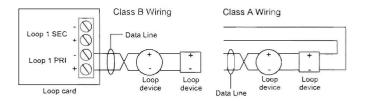
Note: Any current above 0.5 amp connected to both Aux 1 and 2 will reduce the total available NAC power by that amount.

### 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	$66\Omega$ total, 0.5 μF, max
Isolators	64 maximum
isolators	04 MAAIMUM



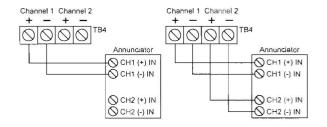
### Annunciator loop (TB4)

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





### 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.

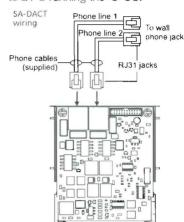
### Relay specifications

	Alarm	Trouble	Supervisory
Туре	Form C		Form A
Voltage	24 VDC at 1 A resistive	24 VDC a	t 1 A resistive

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

### **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 modern 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

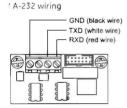
Phone line type	One or two loop-start lines on a public, switched network	
Phone line connector	RJ-31/38X (C31/38X)	
Communication formats	Contact ID (SIA DC-05)	
Operating environment Temperature Humidity	32 to 120°F (0 to 49°C) 0 to 93% RH, noncondensing at 90°F (32°C)	

### **Compatible DACRs**

Companion Driver	3	
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 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)

# Specifications

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  SLC Primary power 120 VAC, 60 Hz, 230 VAC 50-60 Hz Aux Power 1 24 VDC nominal at 500 mA. A SMK module	Device loops	1 loop, expandable to 2, Class A or B, each loop supporting up to 250 device addresses
60 Hz 5.0 A total at 230VAC 50 Hz, 2.5 A max. per circuit 0.5 amps aux power  NAC Operating voltage  Loop circuit 0.5 amps aux power  24 VDC. NAC minimum voltage: 19.5 VDC @ 20.4 V battery voltage  20 V peak-to-peak  20 V peak-to-peak  120 VAC, 60 Hz, 230 VAC 50-60 Hz  Aux Power 1  (Continuous circuit)  120 VAC, 60 Hz, 230 VAC 50-60 Hz  24 VDC nominal at 500 mA. A SMK module to support two-wire smoke detectors.  Aux Power 2  24 VDC nominal at 500 mA	NAC circuits	4 Class B or 2 Class A, 2.5 amps each
voltage 20.4 V battery voltage Loop circuit 20 V peak-to-peak operating voltage SLC Primary power 120 VAC, 60 Hz, 230 VAC 50-60 Hz Aux Power 124 VDC nominal at 500 mA. A SMK module required when using the SIGA-UM module to support two-wire smoke detectors.  Aux Power 224 VDC nominal at 500 mA	Power supply	5.0 A total at 230VAC 50 Hz, 2.5 A max. per circuit
operating voltage 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 required when using the SIGA-UM module to support two-wire smoke detectors.  Aux Power 2 24 VDC nominal at 500 mA		24 VDC. NAC minimum voltage: 19.5 VDC @ 20.4 V battery voltage
Aux Power 1 24 VDC nominal at 500 mA, A SMK module to required when using the SIGA-UM module to support two-wire smoke detectors.  Aux Power 2 24 VDC nominal at 500 mA	The same of the sa	20 V peak-to-peak
(Continuous circuit) required when using the SIGA-UM module to support two-wire smoke detectors.  Aux Power 2 24 VDC nominal at 500 mA	SLC Primary power	120 VAC, 60 Hz, 230 VAC 50-60 Hz
		24 VDC nominal at 500 mA. A SMK module is required when using the SIGA-UM module to support two-wire smoke detectors.
	t section and transition	24 VDC nominal at 500 mA
Auxiliary output 19 to 25.7 VDC	Auxiliary output	19 to 25.7 VDC
Base panel Standby: 172 mA current draw Alarm: 267 mA		

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 mm²)
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



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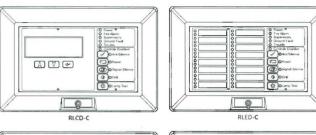
# Intelligent Analog Addressable Devices & Accessories

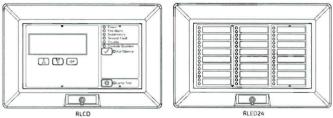
Part #	Description	Ship wt.	
Intelligent D	etectors & Bases		
SIGA-HFS	Intelligent Fixed Temperature Heat Detector		
SIGA-HRS	Intelligent Fixed Temperature/Rate-of-Rise Heat Detector		
SIGA-IPHS	Intelligent 4D Multisensor Detector		
SIGA-IPHSB	Intelligent 4D Multisensor Detector (Black)		
SIGA-PHS	Intelligent 3D Multisensor Detector		
SIGA-PS	Intelligent Photoelectric Detector		
SIGA-IS	Intelligent Ionization Detector		
SIGA-SD	Intelligent Duct Detector		
SIGA-SB	Detector Mounting Base		
SIGA-SB4	4-inch Detector Mounting Base c/w SIGA-TS Trim Skirt		
SIGA-RB	Detector Mounting Base w/Relay		
SIGA-RB4	4-inch Detector Mounting Base /w Relay c/w SIGA-TS Trim Skirt	0.2 (0.09)	
SIGA-IB	Detector Mounting Base w/Fault Isolator	0.2 (0.00)	
SIGA-IB4	4-inch Detector Mounting Base w/ Fault Isolator c/w SIGA-TS Trim Skirt		
SIGA-LED	Remote Alarm LED		
SIGA-LED SIGA-AB4G	Audible (Sounder) Base	0.3 (0.15)	
SIGA-AB4G SIGA-TS4	Trim Skirt (supplied with 4-inch bases)	0.3 (0.13)	
Modules	mm Skirt (supplied with 4-inch bases)	0.1 (.04)	
SIGA-CC1	Single Input Signal Module (Standard Mount)	0 5 (0 00)	
SIGA-CC1	Single Input Signal Module (Standard Modult)  Single Input Signal Module (UIO Mount)	0.5 (0.23)	
SIGA-IVICCT	9 , 9 ,	0.18 (0.08	
	Synchronization Output Module (Standard Mount) Synchronization Output Module (UIO Mount)	0.5 (0.23)	
SIGA-IVICCTS	Dual Input Signal Module (Standard Mount)	0.18 (0.08	
SIGA-CC2	Dual Input Signal Module (Standard Modult)  Dual Input Signal Module (UIO Mount)	0.5 (0.23)	
SIGA-IVICUZ	Control Relay Module (Standard Mount)	0.18 (0.08	
SIGA-UN		0.4 (0.15)	
	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	
	Battery Cabinet - Red. 14.0" x 18.25" x 7.25". Holds 2 12V24A batteries.	111.111///	
BC-1R MFC-A	Battery Cabinet - Red. 14.0" x 18.25" x 7.25". Holds 2 12V24A batteries. Multifunction Fire Cabinet, 8" x 14" x 3.5" - RED.	50.0 (22.7 20.6 (9.4)	

# Application

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

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





Features by model	RLCD	RLCD-C	RLED-C	RLED24
Reset	~	✓	~	-
Ack/Silence	4	1	<b>√</b>	-
Fire Alarm	~	1	1	-
Supervisory	<b>√</b>	V	V	
Ground Fault	1	1	✓	
Trouble	¥	1	1	-
Controls Enabled	✓	1	✓	-
Ack/Silence	1	✓	1	
Reset		✓	✓	-
Signal Silence		✓	1	-
Drill		1	V	-
Lamp Test	~	1	1	-
LCD Display	·	1	-	
Zone Active LEDs	-	-	16 *	24 **
Zone Trouble LEDs	_		16	24

- \*zones 13-16 may be selected as Supervisory on IO64
- "zones 13-16 and 29-32 may be selected as Supervisory on iO500

# Graphic Annunicator Interface

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

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

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

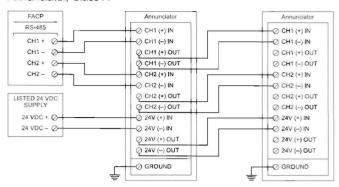
The annunciator communicates with the FACP on the RS-485 data riser. This can be configured for Class A or Class B communication. The annunciator does not provide ground fault isolation. It is a stand-alone unit that can be powered by the FACP or by an approved power supply.

### **Graphic Annunciator Interface Specifications**

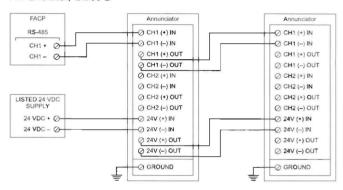
Alarm current 146 mA at 24 Vdc (with 36 LEDs ON)	
Standby current	36 mA at 24 Vdc (with no LEDs ON)
Maximum current	10 mA per LED

# **Annunciator Wiring**

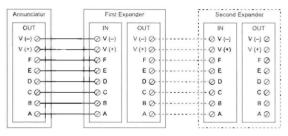
### Annunciator, Class A



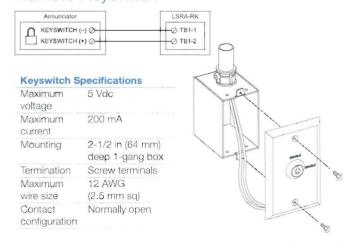
### Annunciator, Class B



# Expander



# Remote Keyswitch





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# Specifications

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

# Ordering Information

Part	Description	
Remote Ar	nunciators	
RLCD	LCD text annunciator without common controls. English.	
RLCD-R	LCD text annunciator without common controls. English. Red.	
RLCDF	LCD text annunciator without common controls. French.	
RLCD-C	LCD text annunciator with common controls. English,	
RLCD-CR	LCD text annunciator with common controls. English. Red.	
RLCD-CF	LCD text annunciator with common controls. French.	
RLED-C	16-pair LED zone annunciator with common controls. English.	
RLED-CR	16-pair LED zone annunciator with common controls. English. Red.	
RLED-CF	16-pair LED zone annunciator with common controls, French.	
Remote Ex	panders	
RLED24	24-pair LED zone expander with expander cable and zone card insert.	
RLED24R	24-pair LED zone expander with expander cable and zone card insert. Red.	
Enclosures		
RA-ENC1	One-position enclosure for Remote Annunciator.	
RA-ENC2	Two-position enclosure for Remote Annunciator and one Remote Expander, including one interconnection cable.	
RA-ENC3	Three-position enclosure for Remote Annunciator and two Remote Expanders, including two interconnection cables.	
LSRA-SB	Surface Mount Box - for single R Series annunciator.	
Graphic Ar	nunciator Drivers	
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.	
Accessorie		
RKEY	Remote key switch on plate for enabling or disabling common controls (Lock/ Unlock).	
27193-16	Electrical box, surface mount, white, single-gang, for RKEY.	



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Asio T 852 2907 8108 F 852 2142 5063

Australia T 61 3 9259 4700 F 61 3 9259 4799

Europe T 32 2 725 11 20 F 32 2 721 86 13

Latin America T 305 593 4301 F 305 593 4300

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# Specifications

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)



# Application

The BPS provides additional power and circuits for notification appliances and other 24 Vdc loads. It is listed for indoor dry locations and can easily be installed where needed.

Fault conditions are indicated on the on-board diagnostic LEDs, opening the BPS input sense circuit and the trouble relay (if programmed). While this provides indication to the host system, the BPS can still be activated upon command. A separate AC Fail contact is available on the BPS circuit board, which can be programmed for trouble or AC Fail. There are seven on-board diagnostic LEDs: one for each NAC fault, one for battery fault, one for ground fault, and one for AC power.

The unique dual-input activation circuits of the BPS can be activated by any voltage from 6 to 45 VDC (filtered-regulated) or 11 to 33 Vdc (full-wave rectified, unfiltered). The first input circuit can be configured to activate 1-4 of the four possible outputs. The second input circuit can be configured to control circuits 3 and 4. When outputs are configured for auxiliary operation, these circuits can be configured to stay on or automatically deactivate 30 seconds after AC power is lost. This feature makes these circuits ideal for door holder applications. The BPS also has a separate 200 mA 24 Vdc output that can be used to power internal activation modules.

BPS NACs can be configured for a 3-3-3 temporal or continuous output. California temporal rate outputs are also available on certain models. This makes the BPS ideal for applications requiring signaling rates that are not available from the main system.

In addition to the internally generated signal rates, the BPS can also be configured to follow the coded signal rate of the main system NACs. This allows for the seamless expansion of existing NACs.

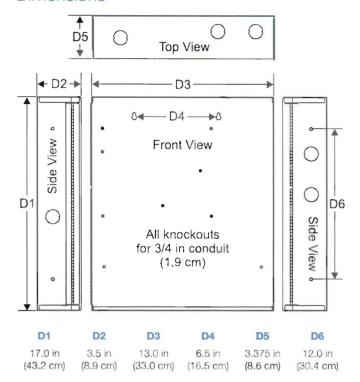
The BPS enclosure has mounting brackets for up to three Signature modules to the right of the circuit board.

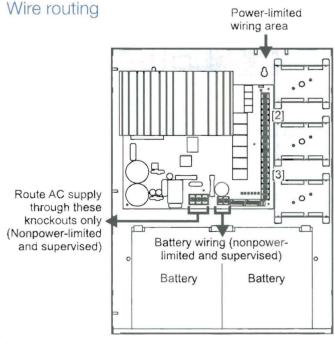
# **Engineering Specification**

Supply, where needed, Edwards BPS Series Booster Power Supplies (BPS) that are interconnected to and supervised by the main system. The BPS shall function as a stand-alone auxiliary power supply with its own fully-supervised battery compliment. The BPS battery compliment shall be sized to match the requirements of the main system. The BPS shall be capable of supervising and charging batteries having the capacity of 24 ampere-hours for Mass Notification/Emergency Communication (MNEC), life safety and security applications, and the capacity of 65 ampere-hours for access control applications.

<<p><<The BPS shall be capable of installation for a seismic component Importance Factor of 1.5.>> The BPS shall provide a minimum of four independent, fully supervised Class B circuits that can be field configurable for notification appliance circuits or auxiliary 24 Vdc power circuits. BPS NACs shall be convertible to a minimum of two Class A NACs. Each BPS output circuit shall be rated at 3 amperes at 24 Vdc. Each output circuit shall be provided with automatically restoring overcurrent protection. The BPS shall be operable from the main system NAC and/or Edwards Signature Series control modules. BPS NACs shall be configurable for continuous, 3-3-3 temporal or optionally, California rate. Fault conditions on the BPS shall not impede operation of main system NAC. The BPS shall be provided with ground fault detection circuitry and a separate AC fail relay.

# Dimensions





### Notes

- Maintain 1/4-inch (6 mm) spacing between power-limited and nonpower-limited wiring or use type FPL, FPLR, or FPLP cable per NEC.
- Power-limited and supervised when not configured as auxiliary power. Nonsupervised when configured as auxiliary power.
- [3] Source must be power-limited. Source determines supervision.
- When using larger batteries, make sure to position the battery terminals towards the door.



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Specifications

Model	6.5 amp Booster	10 amp Booster	
AC Line Voltage	120VAC or 220-240VAC 50/60Hz 390 watts	120VAC or 220-240VAC 50/60Hz 580 watts	
Notification Appliance Circuit Ratings	3.0A max. per circuit @ 24Vdc nominal 6.5A max total all NACs	3.0A max. per circuit @ 24Vdc nominal 10A max total all NACs	
Trouble Relay	2 Amps	@ 30Vdc	
Auxiliary Outputs	Four configurable outputs replace NACs 1, 2, 3 or 4. as auxiliary outputs and 200 mA dedicated auxiliary. (See note 2.)		
Input Current (from an existing NAC)	3mA @ 12Vdc,	6mA @ 24Vdc	
Booster Internal Supervisory Current	70mA		
Signature Mounting Space	Accomodates three two-gang modules.		
Maximum Battery Size	10 Amp Hours (2 of 12V10A) in cabinet up to 24 Amp hours with external battery cabinet for fire and security applications; up to 65 Amp hours for access control applications in external battery box.		
Terminal Wire Gauge	18-12 AWG		
Relative Humidity	0 to 93% non condensing @ 32°C		
Temperature Rating	32° to 120°F (0° to 49°C)		
NAC Wiring Styles	Class A or Class B		
Output Signal Rates	Continuous, California rate, 3-3-3 temporal, or follow installed panel's NAC. (See note 1.)		
Ground Fault Detection	Enable or Disable via jumper		
Agency Listings	UL, ULC, CSFM		

- 1. Model BPS\*CAA provides selection for California rate, in place of temporal.
- 2. Maximum of 8 Amps can be used for auxiliary output.

# Ordering Information

Catalog Number	Description	Shipping Wt. lb (kg)
BPS6A	6.5 Amp Booster Power Supply	13 (5.9)
BPS6AC	6.5 Amp Booster Power Supply (ULC)	13 (5.9)
BPS6A/230	6.5 Amp Booster Power Supply (220V)	13 (5.9)
BPS6CAA	6.5 Amp Booster Power Supply with California rate	13 (5.9)
BPS10A	10 Amp Booster Power Supply	13 (5.9)
BPS10AC	10 Amp Booster Power Supply (ULC)	13 ( 5.9)
BPS10A/230	10 Amp Booster Power Supply (220V)	13 (5.9)
BPS10CAA	10 Amp Booster Power Supply with California rate	13 (5.9)

Related Equ	uipment	
12V6A5	7.2 Amp Hour Battery, two required	3.4 (1.6)
12V10A	10 Amp Hour Battery, two required	9.5 (4.3)
3-TAMP	Tamper switch	
BC-1EQ	Seismic Kit for BC-1, Order BC-1 separately. See note 3.	
BPSEQ	Seismic kit for BPS6A or BPS10 Booster Power Supplies, See note 3	
BC-1	Battery Cabinet (up to 2 - 40 Amp Hour Batteries)	58 (26.4)
BC-2	Battery Cabinet (up to 2 - 17 Amp Hour Batteries)	19 (8.6)
12V17A	18 Amp Hour Battery, two required (see note 1)	13 (5.9)
12V24A	24 Amp Hour Battery, two required (see note 1)	20 (9.07)
12V40A	40 Amp Hour Battery, two required (see notes 1, 2)	32 (14.5)
12V50A	50 Amp Hour Battery, two required (see notes 1, 2)	40 (18.14)
12V65A	65 Amp Hour Battery, two required (see notes 1, 2)	49 (22.2)

<sup>1.</sup> Requires installation of separate battery cabinet.

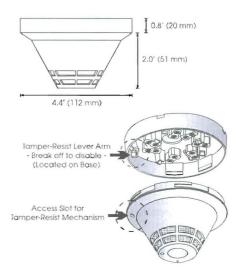
BPS supports batteries greater than 24 Amp hours for access control applications only.

3. For earthquake anchorage, including detailed mounting weights and center of gravity detail, refer to Seismic Application Guide 3101676. Approval of panel anchorage to site structure may require local AHJ, structural or civil engineer review.

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### 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.



# 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. 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 and ULC CAN/ULC 536 standards,

# Compatibility

The SIGA-PS 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 safequards 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.

### Accessories

All 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" sqare box only.











SIGA-AB4G Audible Base

SIGA-SB Standard Base

SIGA-IB Isolator Base

SIGA-RB

SIGA-LED

**Standard Base SIGA-SB, SIGA-SB4** - This is the basic mounting base for GE Security Signature Series detectors. The SIGA-LED Remote LED is supported by the Standard Base.

Relay 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.

Audible 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.

Isolator 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

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.

# 6

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# Specifications

Sensing Element	Photoelectric - Light Scattering Principle
Storage & Operating Environment	Air Velocity Range: 0 to 5,000 ft/min (0 to 25,39 m/s); Humidity: 0 to 93% RH, Non-Condensing Operating Temp: 32°F to 120°F (0°C to 49°C); Storage Temp: -4°F to 140°F (-20°Cto 60°C)
Sensitivity Range	ULI/ULC - 0.67% to 3.77% obscuration/foot
User Selected Alarm Sensitivity Settings	Most Sensitive: 1.0%/ft.; More Sensitive: 2.0%/ft.; Normal: 2.5%/ft.; Less Sensitive: 3.0%/ft.; Least Sensitive: 3.5%/ft.
Pre-alarm Sensitivity	5% increments, allowing up to 20 pre-alarm settings
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)
Operating Current	Quiescent: 45µA @ 19 V; Alarm: 45µA @ 19 V Emergency Stand-alone Alarm Mode: 18mA Pulse Current: 100 µA (100 msec); During Communi- cation: 9 mA max.
Construction & Finish	High Impact Engineering Polymer - White
Compatible Mounting Bases	SIGA-SB Standard Base, SIGA-RB Relay Base, SIGA-IB Isolator Base, SIGA-AB4, SIGA-AB4G Audible Bases
LED Operation	On-board Green LED - Flashes when polled: On-board Red LED - Flashes when in alarm Both LEDs - Glow steady when in alarm (stand-alone) Compatible Remote Red LED (model SIGA-LED) Flashes when in alarm
Compatibility	Use With: SIGNATURE Loop Controller
Address Requirements	Uses one Device Address
Agency Listings	UL, ULC, MEA, CSFM
UL Listed Spacing	30 ft

# Ordering Information

Description

SIGA-AB4G Audible (Sounder) Base

Trim Skirt (supplied with 4-inch bases)

Catalog

SIGA-TS4

Number		lbs (kg)
SIGA-PS	Intelligent Photoelectric Detector - UL/ULC Listed	0.5 (.23)
Accessories		
SIGA-SB	Detector Mounting Base - Standard	
SIGA-SB4	4-inch Detector Mounting Base c/w SIGA-TS4 Trim Skirt	
SIGA-RB	Detector Mounting Base w/Relay	
SIGA-RB4	4-inch Detector Mounting Base w/Relay, c/w SIGA-TS4 Trim Skirt	0.2 (.09)
SIGA-IB	Detector Mounting Base w/Foult Isolator	
SIGA-IB4	4-inch Detector Mounting Base w/ Fault Isolator, c/w SIGA-TS4 Trim Skirt	
SIGA-LED	Remote Alarm LED	



Ship Wt.

3 (0.15)

1 (.04)

# Signature Series Overview

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. This information is accessible for review any time at the control panel, PC, or by using the SIGA-PRO Signature Program/Service Tool.

In the unlikely event that an unwanted alarm does take place, the control panel's history file can be called up to help isolate the problem and prevent it from happening again.

**Automatic Device Mapping** - The loop controller learns where each device's serial number address is installed relative to other devices on the circuit. This 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. The history log for the detector remains relevant and intact regardless of its new location.

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 "asbuilt" drawing information showing wire branches (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.

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. Each detector on the circuit continues to collect and analyze information from its surroundings. Both the SIGA-HRS and SIGA-HFS detectors alarm if the ambient temperature increases to 135°F (57°C) or for the SIGA-HRS only, the temperature increases at a rate exceeding 15°F (9°C)/minute. If the detector is mounted to a relay base, the relay operates. Similarly, if it is mounted to an audible base, the on-board horn sounds.

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 control panel when it has something new to report. This provides very fast control panel response time and allows a lower baud rate (speed) to be used for communication on the circuit. The lower baud rate offers several advantages including:

- less sensitivity to circuit wire characteristics
- less sensitivity to noise glitches on the cable
- less emitted noise from the data wiring
- twisted or shielded wiring is not required

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

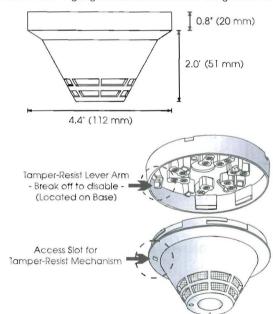
Installation Spacing - The SIGA-HFS (fixed temperature) and the SIGA-HRS (fixed temperature/rate-of-rise combination) intelligent heat detectors are rated for installation at up to 70 foot (21.3 meter) spacing. These detectors may be installed in rooms with ambient temperatures up to 100°F (38°C).

Status LEDs - Twin LEDs are visible from any direction. A flashing GREEN LED shows normal system polling from the loop controller. A flashing RED LED means the detector is in alarm state. Both LEDs on steady shows alarm state - stand-alone mode. Normal GREEN LED activity is not distracting to building occupants, but can be quickly spotted by a maintenance technician.

Quality and Reliability - Edwards detectors are manufactured in North America to strict international ISO 9001 standards. All electronics utilize surface mount technology (SMT) for smaller size and greater immunity to RF noise. A conformal coating is used for humidity and corrosion resistance. All critical contacts are gold plated.

# 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.



# Accessories

All 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  $3\frac{1}{2}$  inch or 4 inch octagon boxes,  $1\frac{1}{2}$  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 four inch square 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" sgare box only.









Relay Base



audible Base Star

Standard Base

Isolator Base

SIGA-LED Remote LED

**Standard 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.

Relay 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.

**Audible 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.

Isolator 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
- if the isolator next to the short closes, it reopens within 10 msec.

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

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.

# 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 heat cannot reach the detector. Heat from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector to alarm it.

The heat sensor in this device only provides a source of information to supplement the information provided by photoelectric or ionization smoke detectors which may be located nearby. The heat detector by itself does NOT provide life safety protection. Under no circumstances should heat detectors be relied on as the sole means of fire protection.

# Compatibility

The SIGA-HFS and SIGA-HRS detectors are compatible only with the Edwards Signature Loop Controller.



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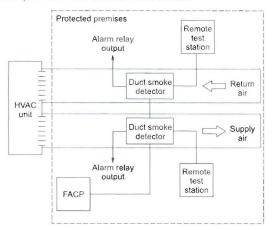
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# Application

SuperDuct detectors are ideally suited to duct smoke detection applications where early indication of combustion is required within the confined space of ventilation ductwork. Its primary purpose is to provide early warning of an impending fire and to prevent smoke from circulating throughout the building. It is typically used to detect smoke in the supply side of the HVAC system but can provide supervision of the return side as well.



SuperDuct detectors continually sample air flow in the HVAC duct and initiate an alarm condition whenever smoke is detected. An alarm is activated when the quantity (percent obscuration) of combustion products in that air sample exceeds the detector's sensitivity setting.

### Signature Series Intelligence

Like all Signature detectors, the SIGA-SD features electronic addressing and issues a dirty sensor warning when it reaches its preset limit. The dirty sensor warning indicates the sensor is operating within its specified limits but is in need of servicing. When the detector's ability to compensate for environmental changes has reached its limit, the duct smoke detector signals a trouble condition.

The SIGA-SD also uses differential sensing to prevent gradual environmental changes from triggering unwanted alarms. A rapid change in environmental conditions, such as smoke from a fire, causes the detector to signal an alarm state, but dust and debris accumulated over time does not change alarm sensitivity.

Each Signature Series SuperDuct detector contains a microprocessor that performs comprehensive self-diagnostics and stores the results in nonvolatile memory. Stored results include details such as hours of operation, last maintenance date, and number of alarms and troubles. This information can be retrieved and reviewed when desired.

### **Detector Configuration**

The detector assembly cover provides easy access to the smoke sensor, its wiring connections, sample and exhaust tubes, and the smoke chamber itself.

Air enters the detector's sensing chamber through a sampling tube (ordered separately) that extends into the duct and is directed back into the ventilation system through an exhaust tube (included). The difference in air pressure between the two tubes pulls the sampled air through the sensing chamber. When a sufficient amount of smoke is detected in the sensing chamber, the detector initiates an alarm.

The sampling tube may be installed from either the duct side of the assembly or from inside the sensor compartment, as preferred by the installer. (The exhaust tube must be installed from the duct side.) Sampling tubes may be rotated in 45-degree increments so that air-holes can be aligned to allow the unit to be mounted at virtually any angle relative to the air flow.

In installations where the duct smoke detector's controls and indicators are hidden from view, a remote test station or an LED indicator can be connected to the detector to provide these functions.

### **Remote Test Stations**

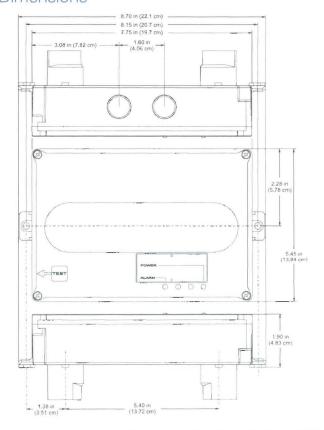


Labor-saving Remote Test/Reset stations provide alarm testing from the convenience of a remote location. Tests can be performed quickly and safely – without having to climb to the roof. Magnetically-operated and key-operated one-gang models are available. Signature SuperDuct detectors are also compatible with SIGA-LED remote alarm LED.

Air velocity in the duct as low as 100 ft/min. maintains adequate air flow into the sensor smoke chamber through air holes in the air sampling tube and discharges through the exhaust tube. SuperDuct air sampling tubes must be installed with the inlet holes facing the airstream. Sampling tubes may be rotated in 45-degree increments so that air-holes can be aligned to allow the unit to be mounted in virtually any angle relative to the airflow.

SuperDuct sensors are engineered to operate optimally under the harsh environmental conditions frequently found in HVAC ductwork. Nonetheless, before installing the detector, test the duct air velocity, temperature, and humidity to verify that it is within the operating range of the SuperDuct detector. Consult the SuperDuct installation sheet for details.

# **Dimensions**



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# Specifications, detector

Dimensions	8.70 x 5.45 x 1.90 inches (221 x 138 x 48 mm)
Wire size	14 to 22 AWG
Detection method	Photoelectric (light scattering principle)
Air velocity rating	100 to 4,000 ft/min and meets the required minimum air pressure differential
Air pressure differential	0.005 to 1.00 inches of water
Sensitivity	0.79 to 2.46 %/ft obscuration
Alarm test response time	5 seconds
LED indicators	Alarm (red), Power (green)
Common alarm relay	Unsupervised and power- limited Quantity: 1 Type: Form C Ratings: 2.0 A at 30 Vdc (resistive)
Operating voltage	15.2 to 19.95 Vdc
Operating current	Standby: 45 µA Alarm: 45 µA Inrush: 1 mA Standalone alarm: 18 mA
Operating environment	Temperature (UL): -4 to 158 °F (-29 to 70 °C). Temperature (ULC): -4 to 120 °F (-29 to 49 °C) Relative humidity: 10 to 93%, noncondensing
Agency listings	UL, ULC, CSFM, FM, MEA

# Specifications, test stations

Remote Test/Reset Stations provide alarm test, trouble indication, and reset capability from a remote location. They include a one-gang plate, momentary SPST switch, red alarm LED, and terminal block. Magneticallyoperated models (TRM) or key-operated models (TRK)

are available: Compatible electrical boxes	North American 1-gang box Standard 4-in square box, 1-1/2 inches deep, with 1-gang cover
LED indicators	Alarm (red)
LED type	Clear lens
Wire size	14 to 22 AWG
Resistance per wire	10 Ohms, max.
Current requirements	See controller specifications
LED circuit ratings	Voltage: 3 Vdc, max. Current: 30 mA, max.
Switch ratings (SD-TRK)	Voltage: 125 Vdc, max. Current: 4 A, max.
Switch ratings (SD-TRM)	Voltage: 200 Vdc, max. Current: 0.5 A, max.
Compatible detectors	SuperDuct conventional two-wire and Signature duct smoke detectors
Operating environment	-4°F to 158°F (-20°C to 70°C) Humidity: 93% RH, noncondensing
Storage temperature	-4 to 140 °F (-20 to 60 °C)
Agency listings	UL, ULC, CSFM

# Ordering Information

Catalog Number	Description	Ship Wt., lb. (kg)
SIGA-SD	Intelligent SuperDuct Detector	2.4 (1.1)
Accessories		
SD-T8	8-inch sampling tube	0.5 (0.2)
SD-T18	18-inch sampling tube	1.5 (0.7)
SD-T24	24-inch sampling tube	2.7 (1.2)
SD-T36	36-inch sampling tube	3.0 (1.4)
SD-T42	42-inch sampling tube	3.5 (1.6)
SD-T60	60-inch sampling tube	5.8 (2.6)
SD-T78	78-inch sampling tube	7.5 (3.4)
SD-T120	120-inch sampling tube	11.5 (5.2)
SIGA-LED	Remote alarm LED	1.0 (0.5)
SD-TRM	Remote test station, magnetic	1.0 (0.5)
SD-TRK	Remote test station, keyed	1.0 (0.5)
SD-VTK	Air velocity test kit (stoppers only, etc)	1.0 (0.5)
SD-GSK	Cover gasket kit	0.5 (0.2)
SD-MAG	Test magnet kit	0.5 (0.2)
SIGA-SDPCB	Replacement PCB/Signature sensor kit	1.0 (0.5)

# **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 (0.75mm²) to #12 AWG (2.5mm²) wire sizes. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.

### Wiring Notes

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

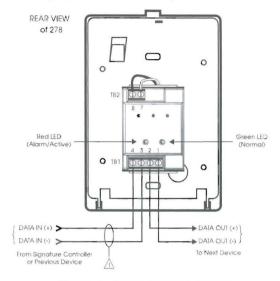


Figure 4. Single Stage Systems

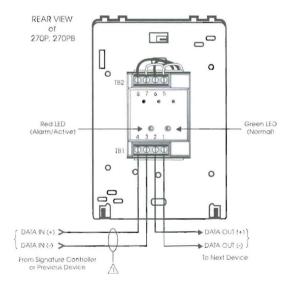


Figure 5. Two Stage Systems



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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		- Red Epoxy um markings	Lexan - Red with white markings
Type Code	Factory Set		
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)		
Storage and Operating Environment	Operating Temperature: 32°F to 120°F (0°C to 49°C) 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 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. Ibs (kg)
SIGA-270	One Stage Fire Alarm Station, English Markings - UL/ULC Listed	
SIGC-270F	One Stage Fire Alarm Station, French Markings - ULC Listed	
SIGC-270B	One Stage Fire Alarm Station, French/English Markings - ULC Listed	
SIGA-270P	Two Stage (Presignal) Fire Alarm Station, English Markings - UL/ULC Listed	1 (0.5)
SIGC- 270PB	Two Stage (Presignal) Fire Alarm Station, French/English Markings - ULC Listed	
SIGA-278	Dou <b>ble Actio</b> n (One Stage) Fire Alarm Station, English Markings - UL/ULC Listed	
Accessories	S	
32997	GA Key w/Tag - for pre-signal station (CANADA ONLY)	
276-K2	GA Key - for pre-signal station (USA ONLY)	
276-K1	Station Reset Key, Supplied with all Key Reset Stations	0.1 (00)
27165	12 Glass Rods - for SIGA-270 series (CANADA ONLY)	0.1 (.05)
270-GLR	20 Glass Rods - for SIGA-270 series (USA ONLY)	
276-GLR	20 Glass Rods - for SIGA-278 series	
276B-RSB	Surface Mount Box, Red - for SIGA pull stations	1 (0.6)

# Signature Series Overview

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

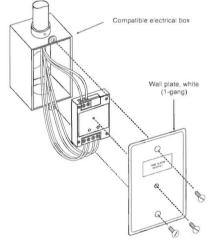
Self-diagnostics and History Log – Each Signature Series device constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in its non-volatile memory. This information is accessible for review any time at the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

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.

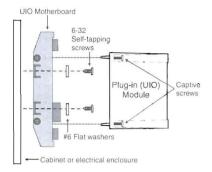
# Installation

SIGA-CT1 and SIGA-CT2: modules mount to North American  $2\frac{1}{2}$  inch(64 mm) deep 1-gang boxes and  $1\frac{1}{2}$  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 mm² to 0.75 mm²)

wire size.



SIGA-MCT2: mount the UIO motherboard inside a suitable GE Security 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 mm² to 0.75 mm²) wire size.



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

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

# **Application**

not latched at the module.

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

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.



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# Specifications

Catalog Number	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 (personal codes) are available		
Address Requirements	Uses One Module Ad- dress	Uses Two Module Addresses		
Operating Current	Standby = 250µA; Activated = 400µA	Standby = $396\mu$ A; Activated = $680\mu$ A		
Operating Voltage	15.2 to	o 19.95 Vdc (19 Vdc nom	inal)	
Construction	High I	h Impact Engineering Polymer		
Mounting	North American 2½ inch (6 boxes and 1½ inch (38 m boxes with one-gang c mounting	mm) deep 4 inch square board covers and SIGA-MP		
Storage and Operating Environment	Operating Tempera- ture: 32°F to 158°F (0°C to 70°C)	Operating Temperature: 32°F to 120°F (0°C to 49°C)		
	Storage Temperature: -4°F to 140°F	Storage Temperature: -4°F to 140°F (-20°C to 60°C)		
	(-20°C to 60°C); Humidity: 0 to 93% RH	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-alon			
Compatibility	Use w	Use with Signature Loop Controller		
Agency Listings	UL, ULC, MEA, CSFM			

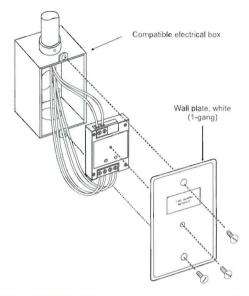
# Ordering Information

Catalog Number	Description	Ship Wt. lbs (kg)
SIGA-CT1	Single Input Module — UL/ULC Listed	0.4 (0.15)
SIGA-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 Equip	oment	
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)

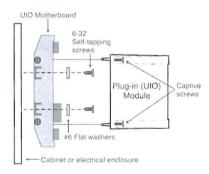


### Installation

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 mm² to 0.75 mm²) wire size.



SIGA-MCR and SIGA-MCRR: mount the UIO motherboard inside a suitable GE Security enclosure with screws and washers provided. Plug the module into any available position on the motherboard and secure the module to the motherboard with the captive screws. Wiring connections are made to the terminals on the motherboard (see wiring diagram). UIO motherboard terminals are suited for #12 to #18 AWG (2.5 mm² to 0.75 mm²) wire size.



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

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

# **Application**

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

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

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

# Compatibility

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

# Warnings & Cautions

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

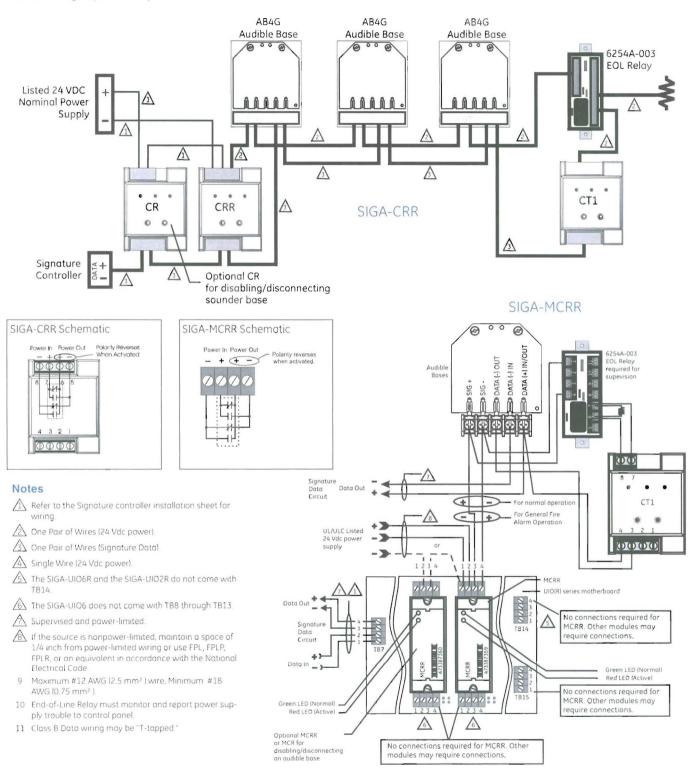
# Testing & Maintenance

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

# Typical Wiring

Modules will accept #18 AWG (0.75mm²), #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.



### (++

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### Signature Series Overview

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

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

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

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

Device mapping allows the Signature Data Controller to discover

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

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

Standalone Operation – A decentralized alarm decision by the device is guaranteed. On-board intelligence permits the device to operate in 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.



### 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.

NOTE: The flash intensity of some visible signals may not be adequate to alert or waken occupants in the protected area. Research indicates that the intensity of strobe needed to awaken 90% of sleeping persons is approximately 100 cd. GE Security recommends that strobes in sleeping rooms be rated at at least 110 cd.

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

#### 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 alert or 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.

#### **MNEC Applications**

Genesis MNEC 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 config-

ured 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.

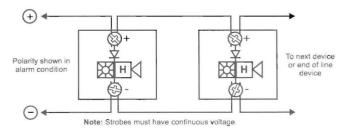
Genesis clear strobes and horn-strobes are shipped from the factory ready for use as **UL 1971 compliant** signals for public mode operation. These signals may be configured for **temporal flash** by cutting a jumper on the circuit board. This battery-saving feature is intended for private mode signaling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



## dBA output

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

High dB	UL464		Average	Peak		
Setting	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)

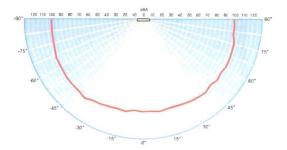
	UL464	Average	Peak
16 Vdc	77 dBA, min	85 dBA	91 dBA
16 Vfwr	77 dBA, min	85 dBA	91 dBA

#### 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.

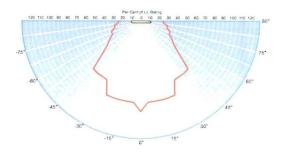
# Average Sound Output (dBA)

(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 mm² to 2.5 mm²) 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: $4-1/2" \times 2-3/4" \times 13/16"$ (113 mm × 68 mm × 21 mm) Trimplate: 5" (127 mm); Height – 5-7/8" (149 mm); Depth – $\frac{1}{2}$ " (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 (or self-synchronized within 200 milliseconds over thirty minutes on a common circuit without G1M Genesis Signal Master) 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, i064, i0500, 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 (or self-synchronized within 200 milliseconds over thirty minutes on a common circuit without G1M Genesis Signal Master) 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

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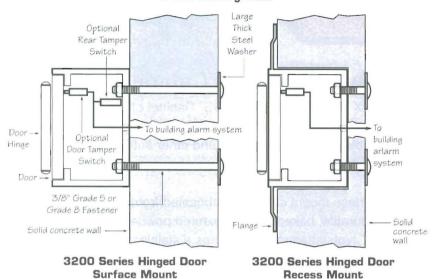
Genesis Series is a trademark of GE Security





# Knox-Box 3200 Series

### Suggested minimum mounting height 6 feet above ground



#### Inside View 7/8" 3-1/4 7/8 3/4" 3/4" -Rear Tamper 7/8 Switch Hole ey Hook Hole X X 4 2-5/16 X 0 1-1/8 2-1/16 X Alarm Wire All mounting Holes marked "X" are Exit Opening holes are 7/16' used for mounting with diameter. For at least 3/8" Grade 5 or Rear Tamper mounting use Switch Grade 8 fasteners at least 3/8" Mounting Holes Grade 5 or Grade 8 fasteners

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 RMK. The RMK may only be used in new concrete or masonry construction.

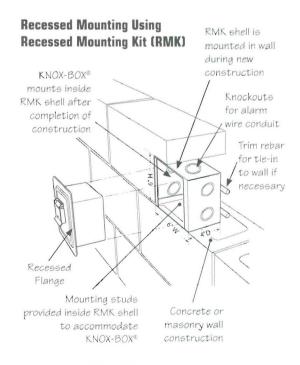
### Installation In Cast Concrete

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.

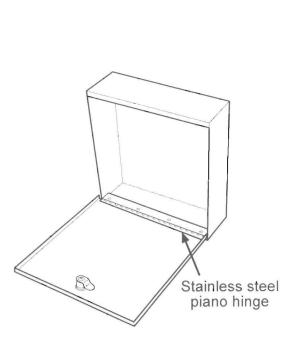


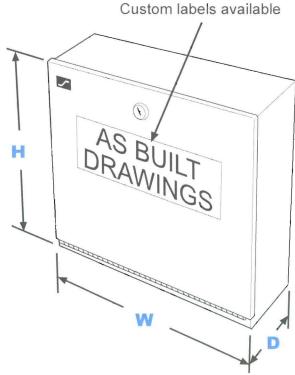


# Specifications:

The DBX As Built Drawings Cabinet is constructed of 16 gauge (.062 thk.) cold rolled steel and finished with a durable red textured, heat-resistant baked-on enamel finish. The front cover includes a durable label displaying "AS BUILT DRAWINGS" in 1" white indelible lettering, applied to the cover relative to the orientation of the installed back box. The front cover features a high security CAT 30 keyed door lock. Custom finish, legend and lock available. Back box universal surface mount design and wall mounting holes.

Size	Dimensions of Cabinet			
	W	Н	D	
AA	12 1/4"	14 1/4"	4"	
Α	26 1/4"	14 1/4"	4"	
D	26 1/4"	23 5/8"	4"	





# Ordering Information:

Part #	Description
SSU00674	DBXAA As Built Drawings Cabinet, Red
SSU00677	DBXA As Built Drawings Cabinet, Red
SSU00678	DBXD As Built Drawings Cabinet, Red
SSU00680	DBXA Semi Flush Flange, Red
SSU00681	DBXD Semi Flush Flange, Red

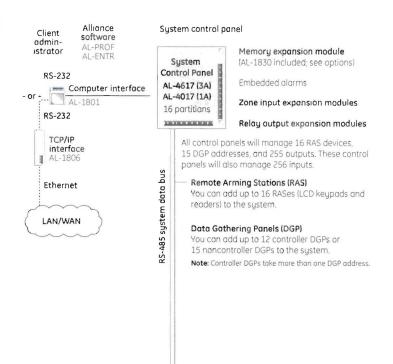
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Space Age Electronics, Inc. www.1sac.com 800.486.1723 Toll Free 508.485.0966 Local 508.485.4740 Fax

No Excuses, Just Solutions!

This document is subject to change without notice, see doc # ED0479 for legal disclaimer ED0132 LT10045 Rev.F 2/2

## System Block Diagram



Note: See the specifications of individual components for details.

## Specifications

-1832 (8ME

### GF

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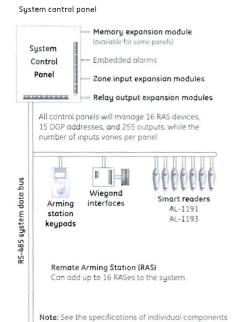
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### System Block Diagram



## Specifications

Electrical		
Supply voltage	9 to 14 VDC	
Current consumption	25 mA in standby; 80 mA during card read	
Open collector output	1 (25 mA max.)	
Features		
Addressing	By keypad, Alliance Manager, or configuration card	
Request-to-exit input Physical	Yes	
Color	AL-1191: 5 colors available AL-1193: Dark gray	
Dimensions (LxWxD)	AL-1191: 1.3 x 4.3 x 0.67 in. (34 x 110 x 17 mm) AL-1193: 1.65 x 5.85 x 0.6 in. (42 x 149 x 15 mm)	
Environmental		
Operating temperature	-31 to 150°F (-35 to 66°C)	

for details.

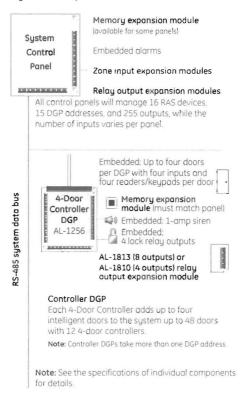
## Ordering information

AL-1191	Alliance smart card reader with white snap-on cover and 8 ft. (2 44 m) cable
AL-1193	Heavy-duty Alliance smart card reader with 8 ft. (2.44 m) cable
AL-1660	Card Reader cover is white (10 pack)
AL-1661	Card Reader cover is red (10 pack)
AL-1662	Card Reader cover is gray (10 pack)
AL-1663	Card Reader cover is beige (10 pack)
AL-1664	Card Reader cover is black (10 pack)
AL-1665	Card Reader cover is light gray (10 pack)
AL-1450	Smart Cards (50 pack)
AL-1470	Smart Cards - Slim Line (individual cards)
AL-1472	Smart Cards - Mag Stripe (individual cards)
AL-1473	Smart Cards - Smart Tag (individual cards)



### System Block Diagram





### Specifications

System capacity Maximum 240 devices on Alliance system (32 max per DGP) Physical Distance from panel: Up to 5,000 ft. (1,500 m) Length of local bus: 5,000 ft. 32 to 122°F (0 to 50°C) Operating temperature Electrical Auxiliary power supply 12 VDC/3 A Dynamic battery testing Up to 2 with 17.2 Ah each Batteries 120 VAC at 60 Hz/24 to 100 VAC Transformer Capacity and inputs/outputs Cardholders 11,466; expandable to 65,535 with intelligent user module (IUM) PIN codes 1,000 expandable to 65,535 Door groups 10; expandable to 128 with IUM 24/64 Time zones/holidays 16 (free programmable inputs) Zones 4, expandable to 16 with AL-1813 relay expansion card Relays on board Up to 48 output events programmable with macro logic equations Programmable events Continuous data bus monitoring for offl ine conditions of all devices on bus Data bus monitoring Individual addressing with DIP switches Yes 1MB RAM expansion (standard) Yes 4MB and 8MB RAM expansion optional - must match control panel HID and Smart Card Reader Card formats Wiegand and Indala 26 and 27 bits Alliance system magstripe Any Wiegand format up to 48 bits with IUM Regulatory FCC UL: UL294, UL365, UL609, UL1610, UL1635

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Latin America tel 305-593-4301 fax 305-267-4300

# Specifications

#### System capacity

Maximum 240 devices on Alliance system (32 maximum per DGP)

### Physical

- Distance from panel: Up to 5,000 ft. (1,500 m)
- . Length of local bus: 5,000 ft.

### Environmental

• Operating temperature: 32 to 122°F (0 to 50°C)

- Auxiliary power supply, AL-1265: 12 VDC/3 A
- · Dynamic battery testing
- · Batteries: Up to 2 with 17.2 Ah each
- Transformer: 120 VAC at 60 Hz/24 to 100 VAC

#### Capacity and inputs/outputs

- Cardholders: 11,466; expandable to 65,535 with intelligent user module (IUM)
- PIN codes: 50; expandable to 1,000 with IUM
- . Door groups: 10; expandable to 128 with IUM
- Time zones/holidays: 24/24
- · Zones: 16 (free programmable inputs)
- Relays on board: 4, expandable to 16 with AL-1813 relay expansion card
- Up to 48 output events programmable with macro logic equations

- Continuous data bus monitoring for offline conditions of all devices on bus
- · Individual addressing with DIP switches
- 1MB RAM expansion (standard)
- 4MB and 8MB RAM expansion optional must match control panel

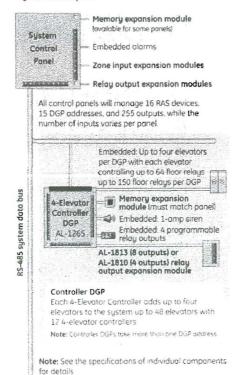
#### Card formats

- HID and Smart Card Reader
- Wiegand and Indala 26 and 27 bits
- Alliance system magstripe
- Any Wiegand format up to 48 bits with IUM

### Regulatory

- FCC
- UL: UL294, UL365, UL609, UL1610, UL1635

### System control panel



#### Ordering information

	gathering panel, na enclosure, 3 A, 1 MB
AL-1682	Large metal housing, 21.1 in, $H \times 14.6$ in.
	W x 5.0 in. D (536 x 371 x 127 mm), 13.84 lb. (6.28 kg)
41 4600	3.
AL-1680	Large metal housing, UL listed, 21.4 in. H
	x 14.9 in. W x 4.8 in. D (544 x 379 x 122
	mm), 17.64 lb. (8.0 kg)
AL-1672	Transformer, 18 V, 100 VA, Class I
AL-1831	4MB RAM memory expansion (optional;
	must match control panel)
AL-1832	8MB RAM memory expansion (optional;
	must match control panell

AL-1265 Intelligent elevator controller and data

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> Sycamer Building Fee:

> > 6

Construction

n of Work

AUTHORIZED SIGNATURE

MP SECURITY FEATURES INCLUDED DETAILS ON BACK

Site Fee:

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CITY OF PORTLAND, MAINE Department of Building Inspections

Original Receipt

Plumbing (I5)

Site Plan (U2)

Electrical (I2)

Total:

Certificate of Occupancy Fee:

issued No work is to be gour records.

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