



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
 GSD096427

PAGE
 1

ADDRESS CORRESPONDENCE TO ATTENTION OF
 KRISTA FERRELL
 304-558-2596

RFQ COPY
 TYPE NAME/ADDRESS HERE

Progressive Electric, Inc.
 P.O. Box 3695
 Charleston, WV 25336

DEPARTMENT OF ADMINISTRATION
 GENERAL SERVICES DIVISION
 JOBSITE
 SEE SPECIFICATIONS

304-558-2317

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
12/03/2008				

BID OPENING DATE: 12/22/2008 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		340-16		\$75,000.00
<p>FURNISH, INSTALL AND PROGRAM FIRE ALARM SYSTEM</p> <p>REQUEST FOR QUOTATION</p> <p>THE WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF GENERAL SERVICES, IS SOLICITING BIDS TO PROVIDE THE AGENCY WITH ALL LABOR AND MATERIALS TO INSTAL AND PROGRAM A FIRE ALARM SYSTEM IN BUILDING #74 (CORNERSTONE BUILDING) LOCATED IN SOUTH CHARLESTON, WEST VIRGINIA PER THE ATTACHED SPECIFICATIONS.</p> <p>THIS IS A FAST TRACK PROJECT. THE SUCCESSFUL VENDOR WILL BE REQUIRED TO PROVIDE ALL APPLICABLE BONDS AND INSURANCE REQUIREMENTS WITHIN 36 HOURS OF REQUEST. BIDDERS ARE EXPECTED TO INCLUDE ALL COSTS TO COMPLETE THIS PROJECT IN THE TIME FRAME STATED IN THIS RFQ. THE SUCCESSFUL VENDOR MUST BE PREPARED TO BEGIN WORK IMMEDIATELY UPON ISSUANCE OF A LETTER OF NOTICE TO PROCEED BY THE OWNER.</p> <p>SITE VISITS MAY BE ARRANGED BY CONTACTING GENERAL SERVICES: DAVID PARSONS AT 304-558-9650 OR SCOTTY PAULEY AT 304-993-8452. ALL TECHNICAL QUESTIONS ARISING AS A RESULT OF THESE SITE VISITS MUST BE SUBMITTED IN ACCORDANCE WITH THE PROVISIONS FOR TECHNICAL QUESTIONS LISTED BELOW. NO TECHNICAL QUESTIONS WILL BE ACCEPTED DURING THE SITE VISITS. NO VERBAL CLARIFICATIONS ARE BINDING.</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE 	TELEPHONE 304/345-1253	DATE 12/22/2008
TITLE Vice President	FEIN 55 058 5404	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
5. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, this Contract may be deemed null and void, and terminated without further order.
14. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
15. **WEST VIRGINIA ALCOHOL & DRUG-FREE WORKPLACE ACT:** If this Contract constitutes a public improvement construction contract as set forth in Article 1D, Chapter 21 of the West Virginia Code ("The West Virginia Alcohol and Drug-Free Workplace Act"), then the following language shall hereby become part of this Contract: "The contractor and its subcontractors shall implement and maintain a written drug-free workplace policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act, as set forth in Article 1D, Chapter 21 of the West Virginia Code. The contractor and its subcontractors shall provide a sworn statement in writing, under the penalties of perjury, that they maintain a valid drug-free work place policy in compliance with the West Virginia and Drug-Free Workplace Act. It is understood and agreed that this Contract shall be cancelled by the awarding authority if the Contractor: 1) Fails to implement its drug-free workplace policy; 2) Fails to provide information regarding implementation of the contractor's drug-free workplace policy at the request of the public authority; or 3) Provides to the public authority false information regarding the contractor's drug-free workplace policy."

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in case of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130



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REVISIONS

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S H I P T O

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<p>TECHNICAL QUESTIONS MUST BE SUBMITTED IN WRITING TO KRISTA FERRELL IN THE WEST VIRGINIA PURCHASING DIVISION VIA FAX AT 304-558-4115 OR VIA EMAIL AT KRISTA.S.FERRELL@WV.GOV. DEADLINE FOR ALL TECHNICAL QUESTIONS IS THURSDAY, DECEMBER 11, 2008 AT THE CLOSE OF BUSINESS. ALL TECHNICAL QUESTIONS RECEIVED, IF ANY, WILL BE ANSWERED BY ADDENDUM AFTER THE DEADLINE HAS LAPSED.</p> <p>THE ACTUAL PROCESS BY WHICH A VENDOR MAY SUBMIT A BID TO THE STATE OF WEST VIRGINIA ARE NOT CONSIDERED TO BE TECHNICAL QUESTIONS AND MAY BE SUBMITTED AT ANY TIME PRIOR TO THE BID OPENING AND IN ANY FORMAT.</p> <p>THE MODEL/BRAND/SPECIFICATIONS NAMED HEREIN ESTABLISH THE ACCEPTABLE LEVEL OF QUALITY ONLY AND ARE NOT INTENDED TO REFLECT A PREFERENCE OR FAVOR ANY PARTICULAR BRAND OR VENDOR. VENDORS WHO ARE BIDDING ALTERNATES SHOULD SO STATE AND INCLUDE PERTINENT LITERATURE AND SPECIFICATIONS. FAILURE TO PROVIDE INFORMATION FOR ANY ALTERNATES MAY BE GROUNDS FOR REJECTION OF THE BID. THE STATE RESERVES THE RIGHT TO WAIVE MINOR IRREGULARITIES IN BIDS OR SPECIFICATIONS IN ACCORDANCE WITH SECTION 148-1-4(F) OF THE WEST VIRGINIA LEGISLATIVE RULES AND REGULATIONS.</p> <p>EXHIBIT 5</p> <p>WEST VIRGINIA CODE 21-LD-5 PROVIDES THAT: ANY SOLICITATION FOR A PUBLIC IMPROVEMENT CONSTRUCTION CONTRACT REQUIRES EACH VENDOR THAT SUBMITS A BID FOR THE WORK TO SUBMIT AT THE SAME TIME AN AFFIDAVIT OF COMPLIANCE WITH THE BID. THE ENCLOSED PURCHASING AFFIDAVIT MUST BE SIGNED AND SUBMITTED WITH THE BID AS EVIDENCE OF THE VENDOR'S COMPLIANCE WITH THE PROVISIONS OF ARTICLE 1D, CHAPTER 21 OF THE WEST VIRGINIA CODE. FAILURE TO SUB-</p>						

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TITLE Vice President	FEIN 55 058 5404	ADDRESS CHANGES TO BE NOTED ABOVE

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PROPOSE

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Progressive Electric, Inc.
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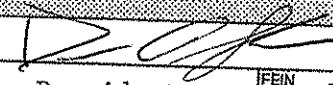
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<p>MIT THE SIGNED PURCHASING AFFIDAVIT WITH THE BID SHALL RESULT IN DISQUALIFICATION OF SUCH BID.</p> <p>NOTICE TO PROCEED: THIS CONTRACT IS TO BE PERFORMED WITHIN 30 CALENDAR DAYS AFTER THE NOTICE TO PROCEED IS RECEIVED. THE AGENCY WILL ISSUE A WRITTEN NOTICE TO PROCEED TO THE SUCCESSFUL VENDOR.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE MATERIALS OR WORKMANSHIP SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM WITH THE SPECIFICATIONS OF THE BID AND CONTRACT HERE IN.</p> <p>WAGE RATES: THE CONTRACTOR OR SUBCONTRACTOR SHALL PAY THE HIGHER OF THE U.S. DEPARTMENT OF LABOR MINIMUM WAGE RATES AS ESTABLISHED FOR KANAWHA COUNTY, PURSUANT TO WEST VIRGINIA CODE 21-5A, ET, SEQ. (PREVAILING WAGE RATES APPLY TO THIS PROJECT)</p> <p>ARBITRATION: ANY REFERENCES MADE TO ARBITRATION OR INTEREST FOR PAYMENTS DUE (EXCEPT FOR ANY INTEREST REQUIRED BY STATE LAW) CONTAINED IN THIS CONTRACT OR IN ANY AMERICAN INSTITUTE OF ARCHITECTS DOCUMENTS PERTAINING TO THIS CONTRACT ARE HEREBY DELETED.</p> <p>WORKERS' COMPENSATION: VENDOR IS REQUIRED TO PROVIDE A CERTIFICATE FROM WORKERS' COMPENSATION IF SUCCESSFUL FOR THE LIFE OF THE CONTRACT.</p> <p>ALL OF THE ITEMS CHECKED BELOW WILL BE A REQUIREMENT OF THIS CONTRACT:</p> <p>(XX) INSURANCE: SUCCESSFUL VENDOR SHALL FURNISH PROOF OF COMMERCIAL GENERAL LIABILITY INSURANCE PRIOR TO</p>						

SIGNATURE: 

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TITLE: Vice President FEIN: 55 058 5404 TELEPHONE: 304/345-1253 DATE: 12/22/2008

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<p>ISSUANCE OF CONTRACT. UNLESS OTHERWISE SPECIFIED IN THE BID DOCUMENTS, THE MINIMUM AMOUNT OF INSURANCE COVERAGE REQUIRED IS \$1,000,000.00.</p> <p>() BUILDERS RISK INSURANCE: SUCCESSFUL VENDOR SHALL FURNISH PROOF OF BUILDERS RISK - ALL RISK INSURANCE IN AN AMOUNT EQUAL TO 100% OF THE AMOUNT OF THE CONTRACT.</p> <p>(XX) BONDS: FIVE PERCENT (5%) OF THE TOTAL AMOUNT OF THE BID PAYABLE TO THE STATE OF WEST VIRGINIA, SHALL BE SUBMITTED WITH EACH BID AS A BID BOND. THE SUCCESSFUL BIDDER SHALL ALSO FURNISH A PERFORMANCE BOND AND LABOR MATERIAL BOND FOR 100% OF THE AMOUNT OF THE CONTRACT. BONDS MAY BE PROVIDED IN THE FORM OF A CERTIFIED CHECK, IRREVOCABLE LETTER OF CREDIT, OR BOND FURNISHED BY A SOLVENT SURETY COMPANY AUTHORIZED TO DO BUSINESS IN THE STATE OF WEST VIRGINIA. A LETTER OF CREDIT SUBMITTED IN LIEU OF A BOND WILL ONLY BE ALLOWED FOR PROJECTS UNDER \$100,000. PERSONAL OR BUSINESS CHECKS ARE NOT ACCEPTABLE IN LIEU OF THE 5% BID BOND, PERFORMANCE BOND, OR LABOR AND MATERIAL BOND.</p> <p>() MAINTENANCE BOND: A TWO (2) YEAR MAINTENANCE BOND COVERING THE ROOFING SYSTEM WILL BE A REQUIREMENT OF THE SUCCESSFUL VENDOR.</p> <p>REV. 11/00</p> <p>EXHIBIT 7</p> <p>DOMESTIC ALUMINUM, GLASS & STEEL IN PUBLIC WORKS PROJECTS</p> <p>IN ACCORDANCE WITH WEST VIRGINIA CODE 5-19-1 ET., SEQ., EVERY CONTRACT FOR CONSTRUCTION, RECONSTRUCTION,</p>						
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<p>ALTERATION, REPAIR, IMPROVEMENT OR MAINTENANCE OF PUBLIC WORKS, WHERE THE COST IS MORE THAN \$50,000 AND, IN THE CASE OF STEEL ONLY, WHERE THE COST OF STEEL IS MORE THAN \$50,000 OR WHERE MORE THAN 10,000 POUNDS OF STEEL ARE REQUIRED, THE STATE WILL ACCEPT ONLY ALUMINUM GLASS, OR STEEL PRODUCTS PRODUCED IN THE UNITED STATES IN ADDITION, ITEMS OF MACHINERY OR EQUIPMENT PURCHASED FOR USE AT THE SITE OF PUBLIC WORKS SHALL BE MADE OF DOMESTIC ALUMINUM, GLASS OR STEEL, UNLESS THE COST OF THE PRODUCT IS LESS THAN \$50,000 OR LESS THAN 10,000 POUNDS OF STEEL ARE USED IN PUBLIC WORKS PROJECTS.</p> <p>FOREIGN MADE ALUMINUM, GLASS OR STEEL PRODUCTS MAY BE ACCEPTED ONLY IF THE COST OF DOMESTIC PRODUCTS IS FOUND TO BE UNREASONABLE. SUCH COST IS UNREASONABLE IF IT IS 20% OR MORE HIGHER THAN THE BID PRICE FOR FOREIGN MADE PRODUCTS. IF THE DOMESTIC ALUMINUM, GLASS OR STEEL PRODUCTS TO BE SUPPLIED OR PRODUCED IN A "SUBSTANTIAL LABOR SURPLUS AREA", AS DEFINED BY THE UNITED STATES DEPARTMENT OF LABOR, FOREIGN PRODUCTS MAY BE SUPPLIED ONLY IF DOMESTIC PRODUCTS ARE 30% OR MORE HIGHER IN PRICE THAN THE FOREIGN MADE PRODUCTS.</p> <p>IF, PRIOR TO THE AWARD OF A CONTRACT UNDER THE ABOVE PROVISIONS, THE SPENDING OFFICER OF THE SPENDING UNIT DETERMINES THAT THERE EXISTS A BID FOR LIKE FOREIGN ALUMINUM, GLASS OR STEEL THAT IS REASONABLE AND LOWER THAN THE LOWEST BID DOMESTIC PRODUCTS, THE SPENDING OFFICE MAY REQUEST, IN WRITING, A REEVALUATION AND REDUCTION IN THE LOWEST BID FOR SUCH DOMESTIC PRODUCTS ALL VENDORS MUST INDICATE IN THEIR BID IF THEY ARE SUPPLYING FOREIGN ALUMINUM, GLASS OR STEEL.</p> <p>REV. 3/88</p>						

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Vice President	55 058 5404	

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EXHIBIT 9						
NOTICE FOR ISSUANCE & ACKNOWLEDGEMENT OF CONSTRUCTION PROJECT ADDENDA THE ARCHITECT/ENGINEER AND/OR AGENCY SHALL BE REQUIRED TO ABIDE BY THE FOLLOWING SCHEDULE IN ISSUING CONSTRUCTION PROJECT ADDENDA FOR STATE AGENCIES: (1) THE ARCHITECT/ENGINEER SHALL PREPARE THE ADDENDUM AND A LIST OF ALL PARTIES THAT HAVE PROCURED DRAWINGS AND SPECIFICATIONS FOR THE PROJECT. THE ADDENDUM AND LIST SHALL BE FORWARDED TO THE BUYER IN THE STATE PURCHASING DIVISION. THE ARCHITECT/ENGINEER SHALL ALSO SEND A COPY OF THE ADDENDUM TO THE STATE AGENCY FOR WHICH THE CONTRACT IS ISSUED. (2) THE BUYER SHALL SEND THE ADDENDUM TO ALL INTERESTED PARTIES AND, IF NECESSARY, EXTEND THE BID OPENING DATE. ANY ADDENDUM SHOULD BE RECEIVED BY THE BUYER WITHIN FOURTEEN (14) DAYS PRIOR TO THE BID OPENING DATE. (3) ALL ADDENDA SHOULD BE FORMALLY ACKNOWLEDGED BY ALL BIDDERS AND SUBMITTED TO THE STATE PURCHASING DIVISION. THE SAME RULES AND REGULATIONS THAT APPLY TO THE ORIGINAL BIDDING DOCUMENT SHALL ALSO APPLY TO AN ADDENDUM DOCUMENT. THE ONLY EXCEPTION MAY BE FOR AN ADDENDUM THAT IS ISSUED FOR THE SOLE PURPOSE OF CHANGING A BID OPENING TIME AND/OR DATE. REV. 11/96 EXHIBIT 10						

SIGNATURE:  SEE REVERSE SIDE FOR TERMS AND CONDITIONS

TITLE: Vice President FEIN: 55 058 5404 TELEPHONE: 304/345-1253 DATE: 12/22/2008

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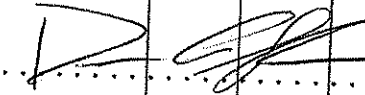
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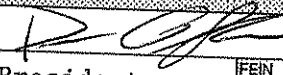
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ADDENDUM ACKNOWLEDGEMENT						
I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.						
ADDENDUM NOS. :						
NO. 1		12/12/2008				
NO. 2						
NO. 3						
NO. 4						
NO. 5						
I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF THE BIDS.						
VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.						
SIGNATURE						
Progressive Electric, Inc.					COMPANY
12/22/2008					DATE

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				REV. 11/96 CONTRACTORS LICENSE WEST VIRGINIA STATE CODE 21-11-2 REQUIRES THAT ALL PERSONS DESIRING TO PERFORM CONTRACTING WORK IN THIS STATE MUST BE LICENSED. THE WEST VIRGINIA CONTRACTORS LICENSING BOARD IS EMPOWERED TO ISSUE THE CONTRACTORS LICENSE. APPLICATIONS FOR A CONTRACTORS LICENSE MAY BE MADE BY CONTACTING THE WEST VIRGINIA DIVISION OF LABOR CAPITOL COMPLEX, BUILDING 3, ROOM 319, CHARLESTON, WV 25305. TELEPHONE: (304) 558-7890. WEST VIRGINIA STATE CODE 21-11-11 REQUIRES ANY PROSPECTIVE BIDDER TO INCLUDE THE CONTRACTORS LICENSE NUMBER ON THEIR BID. BIDDER TO COMPLETE: CONTRACTORS NAME: Progressive Electric, Inc. CONTRACTORS LICENSE NO.: 5 THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FURNISH A COPY OF THEIR CONTRACTORS LICENSE PRIOR TO ISSUANCE OF A PURCHASE ORDER/CONTRACT APPLICABLE LAW THE WEST VIRGINIA STATE CODE, PURCHASING DIVISION RULES AND REGULATIONS, AND THE INFORMATION PROVIDED IN THE "REQUEST FOR QUOTATION" ISSUED BY THE PURCHASING DIVISION IS THE SOLE AUTHORITY GOVERNING THIS PROCUREMENT.		
SEE REVERSE SIDE FOR TERMS AND CONDITIONS						
SIGNATURE		TELEPHONE		DATE		
<i>[Signature]</i>		304/345-1253		12/22/2008		
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Vice President		55 058 5404		ADDRESS CHANGES TO BE NOTED ABOVE		

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BID OPENING DATE: 12/22/2008 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOF	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>ANY INFORMATION PROVIDED IN SPECIFICATION MANUALS, OR ANY OTHER SOURCE, VERBAL OR WRITTEN, WHICH CONTRADICTS OR ALTERS THE INFORMATION PROVIDED FROM THE SOURCES AS DESCRIBED IN THE ABOVE PARAGRAPH IS VOID AND OF NO EFFECT.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER ORDER.</p> <p>REV. 1/2005</p> <p style="text-align: center;">NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p style="text-align: center;">DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: KRISTA FERRELL-FILE 21</p> <p>REQ. NO.: GSD096427</p> <p>BID OPENING DATE: 12/22/2008</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
	304/345-1253	12/22/2008
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Vice President	55 058 5404	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
 GSD096427

PAGE
 10

ADDRESS CORRESPONDENCE TO ATTENTION OF
 KRISTA FERRELL
 304-558-2596

VENDOR

RFQ COPY
 TYPE NAME/ADDRESS HERE
 Progressive Electric, Inc.
 P.O. Box 3695
 Charleston, WV 25336


SHIP TO

DEPARTMENT OF ADMINISTRATION
 GENERAL SERVICES DIVISION
 JOBSITE
 SEE SPECIFICATIONS

304-558-2317

DATE PRINTED 12/03/2008	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
BID OPENING DATE: 12/22/2008				
BID OPENING TIME: 01:30PM				

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
BID OPENING TIME: 1:30 PM PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: ----- 304/345-XXXX 1256 ----- PLEASE PRINT OR TYPE NAME OF PERSON TO CONTACT CONCERNING THIS QUOTE: ----- Duane A. Shurow -----						
***** THIS IS THE END OF RFQ GSD096427 ***** TOTAL:						\$75,000.00

SIGNATURE  SEE REVERSE SIDE FOR TERMS AND CONDITIONS

TITLE Vice President

TELEPHONE 304/345-1253

DATE 12/22/2008

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

ADDRESS CHANGES TO BE NOTED ABOVE

**REQUEST FOR QUOTATIONS#GSD096427
FIRE ALARM/INTEGRATED SECURITY SYSTEM
WEST VIRGINIA STATE OFFICE BUILDING
BUILDING 74 – 318 4th AVENUE
SO. CHARLESTON, WEST VIRGINIA**

Location: State Office Building
(West Virginia Building 74)
318 4th Avenue
So. Charleston, West Virginia

For: State of West Virginia
General Services Division
1900 Kanawha Blvd; East
Charleston, West Virginia 25305

All inquiries for specification clarification shall be addressed to:

Krista Ferrell, Senior Buyer
Purchasing Division
2019 Washington Street East
Charleston, West Virginia 25305-0130
Phone: (304)558-2596
Fax: (304) 558-4115
Krista.S.Ferrell@wv.gov

The Acquisition and Contract Administration Section of the Purchasing Division "State" for the West Virginia General Services Division is soliciting quotations to provide and install a fire alarm integrated security system per the specifications herein.

Site Visits:

Visits to the jobsite can be arranged by contacting either David Parsons, Operations and Maintenance Manager at (304)550-9650, or Scotty Pauley, Building Maintenance Supervisor at (304)993-8452. All technical questions arising from these visits must be submitted in accordance with the provisions of this Request for Quotation (RFQ). No technical questions will be accepted during site visits. No verbal clarifications are binding.

This Request for Quotations includes the following attachments:

- I. BID FORM

Scope:

The work consists of providing all labor, materials, equipment, technical oversight, inspections and a final "as built" print and detailed specification of the Fire Alarm with integrated security system. Provide materials and labor to connect panel (enable protocols) for service to third party verification contractor, whose name will be provided to the successful contractor by the GSD.

The State office building shall remain in full operation during the course of this work. Work should be scheduled with prior coordination with the Owner or designated representative to minimize potential disruption. Contractor will coordinate the schedule around Owner's work requirements.

The successful contractor shall be required keep the work area clean on a daily basis and remove associated debris from the site on a regular (minimum of twice weekly) basis.

Any services contracted for prior to receipt of the signed purchase order and written notice to proceed letter shall be at the Bidder's risk.

Successful Bidder will be given thirty (30) calendar days from the written notice to proceed to complete the project. It is the intent of the agency to **"fast-track"** this project upon award and the vendor should anticipate short timelines and include any costs for express shipping of parts in the respective bid. **The successful vendor will be required to submit all requested bonds, insurance, and other documentation within 36 hours of request.** The successful bidder must be prepared to begin work immediately upon the issuance of the notice to proceed by the agency.

GENERAL SPECIFICATIONS

1. All work will be performed in compliance with all applicable safety regulations. Subject to verification and inspection by GSD safety representatives.
2. Work schedules will be reviewed and approved by GSD. Contractor will be afforded access as required to complete work on schedule.
3. Scheduled work may not begin until successful vendor has received a signed purchase order and notice-to-proceed letter.
4. All work will be performed in accordance with the State of West Virginia Office of Technology Policy WVOT-NT1000 Infrastructure Standards, which will be inspected and approved by GSD prior to approval and payment of invoices.
5. ALL work will be performed in accordance with NFPA 101 and NEC 2008 Standards and subject to final approval by the State of West Virginia Fire Marshall's Office prior to being accepted by GSD.

6. Two copies (one original and one copy) of invoice will be submitted for payment and shall be mailed to the following address:

General Services Division
1900 Kanawha Blvd. E.
Building 1, Room MB-68
Charleston, WV 25305
Attn: Business Manager

7. Contractor will utilize trained technicians in the performance of said work who are licensed by the State of West Virginia as a Master Electrician or who possess a technical license of National standard of training. Documentation of said training or licensure for any technician must be provided to the Owner prior to said technician performing any work at the jobsite.
8. Contractor will includes all charges for permits, fees, travel and associated costs to complete project in its entirety.
9. Contractor will provide minimum 1-year warranty on all labor and parts, including system checkout, control panel terminations and programming for all parts provided to complete the project.

DETAILED SPECIFICATIONS

Provide labor, materials, equipment, technical oversight, inspections and a final "as-built" print and detailed specification of the Fire Alarm and integrated security system. Integrated security system pertains only to those elements necessary for function of fire alarm system, i.e. to allow for opening of doors in the event of a fire alarm. Provide materials and labor to connect panel (enable protocols) for service to third part verification contractor, whose name will be provided to the successful contractor by the GSD.

The successful contractor will:

1. Provide said equipment as listed or equivalent to provide coverage on all floors and areas of the property per NFPA guidelines.
2. Any and all equipment installed to a State of West Virginia facility will become the property of the State of West Virginia.
3. Furnish and install all fire alarm hardware, software, technical installation support, fire alarm engineering package, and State of WV Fire Review for entire system.

4. Provide technical support for Fire Marshal and Elevator Inspection walk-through.

EQUIPMENT AND PARTS LIST:

All parts listed are to be Simplex, or equal. This is not meant to limit competition but to set a baseline for the type of system to be provided.

<u>Quantity</u>	<u>Part#</u>	<u>Description</u>
1	4100-9111 4100U	PRECONFIG. DOMESTIC 120V
2	4100-0010	FACTORY USE ONLY - WRAP KIT
1	4100-0634	POWER DISTRIBUTION MODULE 120V
8	4100-1279	2" BLANK DISPLAY MODULE
1	4100-2300	EXPANSION BAY (PHASE 10 ONLY)
1	4100-2302	8 SLOT EXP BAY FILLER PANEL
1	4100-3101	DNET MODULE, UP TO 250 POINTS
1	4100-3206	8 POINT 3 AMP AUX RELAY MODULE
1	4100-5101	XPS POWER, 3 NACS, 120VAC
1	4100-6052	EVENT/POINT REPORTING DACT
1	41002153	INDICATOR ONLY 3 BAY GLASS
1	41007905	FACTORY BUILT-MAIN CONFIGURED

Plaza IV Fire Alarm 1st Floor

<u>Quantity</u>	<u>Part#</u>	<u>Description</u>
②	4603-9101	LCD ANNUNCIATOR
1	4100-9835	TERMINATION/ADDRESS LABEL KIT
1	4009-9201	NAC EXTENDER 120VAC, IDNET
2	2081-9296	BATTERY 50AH
②	4099-9003	MANUAL STATION - DOUBLE ACTION
⑤①	4098-9754	PHOTO SMOKE SENSOR W/HEAT
50	4098-9796	SENSOR BASE
①①	4098-9756	DUCT SENSOR HOUSING-4-WIRE
<u>Quantity</u>	<u>Part#</u>	<u>Description</u>
11	2098-9804	SAMPLING TUBE 24"
11	2098-980	REMOTE TEST STATION
①①	4906-9130	HORN/STROBE MC WHITE CEILING
⑥	4906-9104	STROBE MC WHITE CEILING
1	4090-9001	SUPERVISED IAM
④	4090-9002	RELAY IAM
1	RIC-2	RIC-2 RELAY SPUD DPDT RED LED
1	454717ARE	18/2C SOL OAS PLN RED BOX
1	454727ARE	14/2C SOL OAS PLN RED 1000'

1 4100-0650 BATTERY SHELF

Plaza IV Fire Alarm 2nd Floor

<u>Quantity</u>	<u>Part#</u>	<u>Description</u>
1	4100-9835	TERMINATION/ADDRESS LABLE KIT
1	4009-9201	NAC EXTENDER 120VAC, IDNET
2	2081-9288	BATTERY 12.7AH
3	4099-9003	MANUAL STATION - DOUBLE ACTION
58	4098-9754	PHOTO SMOKE SENSOR W/HEAT
58	4098-9796	SENSOR BASE
10	4906-9130	HORN/STROBE MC WHITE CEILING
6	4906-9104	STROBE MC WHITE CEILING
2	454717ARE	18/2C SOL OAS PLN RED BOX
2	454727ARE	14/2C SOL OAS PLN RED 1000'

Plaza IV Fire Alarm 3rd Floor

<u>Quantity</u>	<u>Part#</u>	<u>Description</u>
1	4100-9835	TERMINATION/ADDRESS LABLE KIT
1	4009-9201	NAC EXTENDER 120VAC, IDNET
2	2081-9288	BATTERY 12.7AH
3	4099-9003	MANUAL STATION - DOUBLE ACTION
66	4098-9754	PHOTO SMOKE SENSOR W/HEAT
66	4098-9796	SENSOR BASE
14	4906-9130	HORN/STROBE MC WHITE CEILING
8	4906-9104	STROBE MC WHITE CEILING
2	454717ARE	18/2C SOL OAS PLN RED BOX
2	454727ARE	14/2C SOL OAS PLN RED 1000'

Plaza IV Integrated Fire Alarm Security System

<u>Quantity</u>	<u>Part#</u>	<u>Description</u>
1	E-COR-EN-V4	SOFTWARE KIT-ENTRAPASS
1	EK-302	EXP KIT KT-300; P225XSF
1	USB-485	USB TO 485 CONVERTER
1	LA-UDS1100	NETWORK/CONTROLLER INTERFACE
1	VC-485	MULTI-FUNCTION INTERFACE
2	KT-RM1	RELAY DPDT FOR KT-3
1	TREX-LT2	TREX WITH 2-RELAYS
2	PB2E	2" PBUTTON ECONOMY
2	430223003	READER, T-200, TRANSITION SERIES
2	7025	KEYSWITCH, MOM/MAINT DPDT
2	CYL-KA	KEYSWITCH CYLINDER, KEYED ALIKE
2	2011TJ20-HSM	SGL LOCK-INSWING W/DSM-DYN
1	4485	FILL PLATE 5/8"X1 1/4" X 8.5"

1	5600-12	POWER SUPPLY 10 AMP 12V
1	DB-10	DISTRIBUTION BOARD, 10 ZONES
1	BBU 1-7	BATTERY BACKUP 7AH 12V
1	4090-9002	RELAY IAM
1	2081-9274	BATTERY 10AH
1	SDWI560818	CBL 6PR 22G STRND PLNM BLU, 1K'

****VENDORS SUBMITTING "OR EQUAL" PARTS MUST PROVIDE A PARTS LIST WITH MANUFACTURER, PART NUMBER, AND DESCRIPTION. IT IS PREFERRED THAT IT BE SUBMITTED IN THE ABOVE FORMAT TO HELP EXPEDITE THE EVALUATION PROCESS.**

ADDITIONAL INFORMATION:

Contract will be awarded to the qualified bidder with the lowest overall cost for project. "Qualified bidder" is defined as one that has met all WV licensing or registration requirements to include WV Contractors License as applicable.

1. Vendor must guarantee payment of applicable prevailing wage rates as directed by wage schedule for Kanawha County from the West Virginia Dept. of Labor.
2. Successful bidder must be registered with WVFIMS by submission of W9 request for taxpayer identification. For information on W9 submission contact 558-4587.
3. Successful bidder must possess a valid State of West Virginia Contractor's License or waiver from the West Virginia Division of Labor. Contractor's license number must appear on bid.

State of West Virginia
General Services Division

Building 74 --Fire Alarm System
Project GSD09427

**GENERAL SERVICES DIVISION
FIRE ALARM/INTEGRATED SECURITY SYSTEM**

**WEST VIRGINIA STATE OFFICE BUILDING
BUILDING 74 - 318 4th AVENUE
So. Charleston, West Virginia**

BID FORM

Progressive Electric, Inc.

NAME OF BIDDER

P.O. Box 3695, Charleston, WV 25336

ADRESS OF BIDDER

304/345-1253

PHONE NUMBER

5

WV CONTRACTOR'S LICENSE NO.

We, the undersigned, having examined the site and being familiar with the local conditions affecting the cost of the work and also being familiar with the general conditions to bidders, and specifications, hereby propose to furnish all materials, equipment, and labor to complete all work in a workmanlike manner, as described in the Bidding Documents.

TOTAL CONTRACT BID

Seventy-Five Thousand and 00/100 Dollars

(\$ 75,000.00)

(Total to be written in figures and words.)

The Bidder understands that to the extent allowed by the West Virginia Code, the OWNER reserves the right to waive any informality or irregularity in any Bid, or Bids, and to reject any or all Bids in whole or in part; to reject a bid not accompanied by the required bid security or by other data required by the Bidding Documents; to reject any conditions of the bid by the Bidder that is in any way inconsistent with the requirements, terms, and conditions of the Bidding Documents; or to reject a bid that is in any way incomplete or irregular.

The Bidder, if successful and awarded the contract, agrees that all work is to be complete within Thirty (30) consecutive calendar days following receipt of the OWNER'S written notice to proceed. For each calendar day of delay in achieving completion, the Contractor shall be liable for, and shall pay the OWNER liquidated damages in the amount of \$100.00 per day.

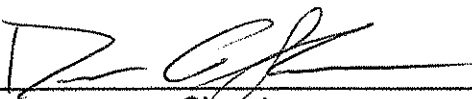
Any work performed or any materials contracted for prior to the receipt of the OWNER'S written notice to proceed shall be at the Bidder's risk.

ADDENDUM ACKNOWLEDGEMENT

I hereby acknowledge receipt of the following checked addendum and have made the necessary revisions to my proposal.

Addendum No.	Date
#1	12/12/2008
_____	_____
_____	_____
_____	_____

I understand that failure to confirm the receipt of the Addendum is cause for rejection of bids.

 _____ Signature	12/22/2008 _____ Date
---	-----------------------------

RESPECTFULLY SUBMITTED:

DATE: 12/22/2008

State of West Virginia
General Services Division

Building 74 -Fire Alarm System
Project GSD09427

WV VENDOR NUMBER: 406110534

BY: 
(Signature in ink)

TITLE: Vice President

FIRM NAME: Progressive Electric, Inc.

ADDRESS: P.O. Box 3695, Charleston, WV 25336

Agency _____
REQ. P. O# _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, _____
of _____, _____, as Principal, and _____
of _____, _____, a corporation organized and existing under the laws of the State of _____
with its principal office in the City of _____, as Surety, are held and firmly bound unto the State
of West Virginia, as Obligee, in the penal sum of _____ (\$ _____) for the payment of which,
well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the
Department of Administration a certain bid or proposal, attached hereto and made a part hereof, to enter into a contract in writing for

NOW THEREFORE,

- (a) If said bid shall be rejected, or
- (b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal attached
hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform the
agreement created by the acceptance of said bid, then this obligation shall be null and void, otherwise this obligation shall remain in full
force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event,
exceed the penal amount of this obligation as herein stated.

The Surety, for the value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no
way impaired or affected by any extension of the time within which the Obligee may accept such bid, and said Surety does hereby
waive notice of any such extension.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations
have caused their corporate seals to be affixed hereunto and these presents to be signed by their proper officers, this
_____ day of _____, 20_____.

Principal Corporate Seal

(Name of Principal)

By _____
(Must be President or
Vice President)

(Title)

Surety Corporate Seal

(Name of Surety)

Attorney-in-Fact

**IMPORTANT – Surety executing bonds must be licensed in West Virginia to transact surety insurance. Raised corporate seals
must be affixed, a power of attorney must be attached.**

BID BOND PREPARATION INSTRUCTIONS

AGENCY (A)
RFQ/RFP# (B)

Bid Bond

- (A) WV State Agency (Stated on Page 1 "Spending Unit") Request for Quotation Number (upper right corner of page #1)
(C) Your Company Name
(D) City, Location of your Company
(E) State, Location of your Company
(F) Surety Corporate Name
(G) City, Location of Surety
(H) State, Location of Surety
(I) State of Surety Incorporation
(J) City of Surety Incorporation
(K) Minimum amount of acceptable bid bond is 5% of total bid. You may state "5% of bid" or a specific amount on this line in words.
(L) Amount of bond in figures
(M) Brief Description of scope of work
(N) Day of the month
(O) Month
(P) Year
(Q) Name of Corporation
(R) Raised Corporate Seal of Principal
(S) Signature of President or Vice President
(T) Title of person signing
(U) Raised Corporate Seal of Surety
(V) Corporate Name of Surety
(W) Signature of Attorney in Fact of the Surety

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, (C) of (D), (E) as Principal, and (F) of (G), (H), a corporation organized and existing under the laws of the State of (I) with its principal office in the City of (J), as Surety, are held and firmly bound unto The State of West Virginia, as Obligee, in the penal sum of (K) (\$ (L)) for the payment of which, well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the Department of Administration a certain bid or proposal, attached hereto and made a part hereof to enter into a contract in writing for (M)

NOW THEREFORE.

(a) If said bid shall be rejected, or
(b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal attached hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform the agreement created by the acceptance of said bid then this obligation shall be null and void, otherwise this obligation shall remain in full force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated

The Surety for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of time within which the Obligee may accept such bid: and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be affixed hereto and these presents to be signed by their proper officers, this (N) day of (O), 20 (P).

Principal Corporate Seal

(R)

(Q)
(Name of Principal)
By (S)
(Must be President or Vice President)
(T)
Title

(U)
Surety Corporate Seal

(V)
(Name of Surety)

(W)
Attorney-in-Fact

NOTE: Dated, Power of Attorney with Raised Surety Seal must accompany this bid bond.

IMPORTANT - Surety executing bonds must be licensed in West Virginia to transact surety insurance. Raised Corporate Seals must be affixed and a Power of Attorney must be attached.

RFQ No. GSD 096427STATE OF WEST VIRGINIA
Purchasing Division**PURCHASING AFFIDAVIT****VENDOR OWING A DEBT TO THE STATE:**

West Virginia Code §5A-3-10a provides that: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:

West Virginia Code §21-1D-5 provides that: Any solicitation for a public improvement construction contract shall require each vendor that submits a bid for the work to submit at the same time an affidavit that the vendor has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code. A public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the West Virginia Code may take place before their work on the public improvement is begun.

ANTITRUST:

In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.


LICENSING:

Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY:

The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendors should visit www.state.wv.us/admin/purchase/privacy for the Notice of Agency Confidentiality Policies.

Under penalty of law for false swearing (West Virginia Code §61-5-3), it is hereby certified that the vendor acknowledges the information in this said affidavit and is in compliance with the requirements as stated.

Vendor's Name: Progressive Electric, Inc.Authorized Signature:  Date: 12/22/2008



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER:
 GSD096427

PAGE:
 1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
 KRISTA FERRELL
 804-558-2596

VENDOR

RFQ COPY
 TYPE NAME/ADDRESS HERE

Progressive Electric, Inc.
 P.O. Box 3695
 Charleston, WV 25336

SHIP TO

DEPARTMENT OF ADMINISTRATION
 GENERAL SERVICES DIVISION
 JOBSITE
 SEE SPECIFICATIONS

304-558-2317

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
12/12/2008				

BID OPENING DATE: 12/22/2008 BID OPENING TIME: 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM NO. 1						
THIS ADDENDUM IS ISSUED TO ANSWER ALL TECHNICAL QUESTIONS RECEIVED PRIOR TO THE DEADLINE FOR TECHNICAL QUESTIONS.						
BID OPENING DATE REMAINS: 12/22/2008						
BID OPENING TIME REMAINS: 1:30 PM						
***** END ADDENDUM NO. 1 *****						
0001	1	JB		340-16		
FURNISH, INSTALL AND PROGRAM FIRE ALARM SYSTEM						
***** THIS IS THE END OF RFQ GSD096427 ***** TOTAL:						\$75,000.00

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE 	TELEPHONE 304/345-1253	DATE 12/22/2008
TITLE Vice President	FEIN 55 058 5404	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

RFQ#GSD096427**Technical Questions and Answers**

These are responses to written technical questions submitted by the deadline listed in the RFQ:

Question#1: Can the bidders be provided with a set of scaled drawings of the floor plans for the three floors of the building?

Answer#1: No drawings are available at this time.

Question#2: Can the bidders be provided with a set of drawings showing the HVAC system in the building, including CFM rating for each unit and the portion(s) of the building it serves?

Answer#2: No drawings of the building systems are available at this time.

Per the RFQ, prospective bidders can arrange site visits.

Question#3: Are card access components a part of this bid package, as the equipment list indicates, and, if so, which doors are to be affected?

Answer#3: Card access components are required to be integrated into the fire alarm system to allow the doors to disengage when the fire alarm is activated. The doors affected are the front and rear main doors (2 sets), plus the stairwell emergency exit doors (total of two single doors).

BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, Progressive Electric, Inc.
of P O Box 3695, Charleston, WV 25336, as Principal, and Ohio Farmers Insurance
Company of One Park Circle Drive, Westfield Center, OH, a corporation organized and existing under the laws of the State of Ohio
with its principal office in the City of Westfield Center, as Surety, are held and firmly bound unto the State
of West Virginia, as Obligee, in the penal sum of (5%) Five percent of amount bid for the payment of which,
well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the
Department of Administration a certain bid or proposal, attached hereto and made a part hereof, to enter into a contract in writing for
Furnish & Install Fire Alarm System - Bldg #74
South Charleston, WV

NOW THEREFORE,

- (a) If said bid shall be rejected, or
- (b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal attached
hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform the
agreement created by the acceptance of said bid, then this obligation shall be null and void, otherwise this obligation shall remain in full
force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event,
exceed the penal amount of this obligation as herein stated.

The Surety, for the value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no
way impaired or affected by any extension of the time within which the Obligee may accept such bid, and said Surety does hereby
waive notice of any such extension.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations
have caused their corporate seals to be affixed hereunto and these presents to be signed by their proper officers, this
22nd day of December, 2008.

Principal Corporate Seal

Progressive Electric, Inc.
(Name of Principal)
By [Signature]
(Must be President or
Vice President)
Vice President
(Title)

Surety Corporate Seal

Ohio Farmers Insurance Company
(Name of Surety)
[Signature]
Attorney-in-Fact
Douglas P. Taylor
Licensed WV Resident Agent.

IMPORTANT -- Surety executing bonds must be licensed in West Virginia to transact surety insurance. Raised corporate seals must be affixed, a power of attorney must be attached.

Ger.
Power
of Attorney

POWER NO. 4750172 01

Westfield Insurance Co.
Westfield National Insurance Co.
Ohio Farmers Insurance Co.
Westfield Center, Ohio

CERTIFIED COPY

Know All Men by These Presents, That WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY, corporations, hereinafter referred to individually as a "Company" and collectively as "Companies," duly organized and existing under the laws of the State of Ohio, and having its principal office in Westfield Center, Medina County, Ohio, do by these presents make, constitute and appoint
ANDREW K. TEETER, KIMBERLY L. MILES, JANIS KAY PEACOCK, DOUGLAS P. TAYLOR, PAMELA D. OBRIEN, DONNA J. PRICE, TRAVIS A. HILL, JR., PAMELA V. LANHAM, JOINTLY OR SEVERALLY

of **CHARLESTON** and State of **WV** its true and lawful Attorney(s)-in-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver **any and all bonds, recognizances, undertakings, or other instruments or contracts of suretyship**.

LIMITATION: THIS POWER OF ATTORNEY CANNOT BE USED TO EXECUTE NOTE GUARANTEE, MORTGAGE DEFICIENCY, MORTGAGE GUARANTEE, OR BANK DEPOSITORY BONDS.

and to bind any of the Companies thereby as fully and to the same extent as if such bonds were signed by the President, sealed with the corporate seal of the applicable Company and duly attested by its Secretary, hereby ratifying and confirming all that the said Attorney(s)-in-Fact may do in the premises. Said appointment is made under and by authority of the following resolution adopted by the Board of Directors of each of the WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY:

"Be It Resolved, that the President, any Senior Executive, any Secretary or any Fidelity & Surety Operations Executive or other Executive shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

The Attorney-in-Fact may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements of indemnity and other conditional or obligatory undertakings and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed by the President and sealed and attested by the Corporate Secretary."

"Be It Further Resolved, that the signature of any such designated person and the seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signatures or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached." (Each adopted at a meeting held on February 8, 2000).

In Witness Whereof, WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY have caused these presents to be signed by their **Senior Executive** and their corporate seals to be hereto affixed this **19th** day of **JUNE** A.D., 2006 .

Corporate
Seals
Affixed



WESTFIELD INSURANCE COMPANY
WESTFIELD NATIONAL INSURANCE COMPANY
OHIO FARMERS INSURANCE COMPANY

Richard L. Kinnaird, Jr.

By:
Richard L. Kinnaird, Jr., Senior Executive

State of Ohio
County of Medina ss.:

On this **19th** day of **JUNE** A.D., 2006 , before me personally came **Richard L. Kinnaird, Jr.** to me known, who, being by me duly sworn, did depose and say, that he resides in **Medina, Ohio**; that he is **Senior Executive** of WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY, the companies described in and which executed the above instrument; that he knows the seals of said Companies; that the seals affixed to said instrument are such corporate seals; that they were so affixed by order of the Boards of Directors of said Companies; and that he signed his name thereto by like order.

Notarial
Seal
Affixed



William J. Kahelin

William J. Kahelin, Attorney at Law, Notary Public
My Commission Does Not Expire (Sec. 147.03 Ohio Revised Code)

State of Ohio
County of Medina ss.:

I, **Frank A. Carrino**, Secretary of WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; and furthermore, the resolutions of the Boards of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Westfield Center, Ohio, this **22nd** day of **December**, A.D., **2008**



Frank A. Carrino
Frank A. Carrino, Secretary



PO Box 400
1325 Dunbar Ave
Dunbar, WV 25064
304-766-6277
800-642-5500
304-766-6270 fax

Cornerstone Bldg
ITEMIZED PARTS LIST

Using Quality Products as Follows:

Qty	Description
FIRE ALARM SYSTEM	
HEADEND	
1	EDWARDS-QS1-1-G-1, FAP w/ 1 Option Card Space, Gray
1	EDWARDS-DLD, Two Line Dialer, Supports Contact ID, 4/2 and 3/1 Formats
2	EDWARDS-12V17A, Battery 17 AH, 12 volt cells
1	EDWARDS-BC-1, Battery Cabinet, for 24 & 40 AH batteries
ANNUNCIATORS	
2	EDWARDS-QS1-CPU-1, CPU/Display with 1 Annunciator Option Space
2	EDWARDS-QSA-1-S, Surface Cabinet, 1 Annunciator Option Space
BOOSTER POWER SUPPLIES	
2	EDWARDS-BPS10A, Remote Booster Power Supply, 10A, 120Vac, Red
4	EDWARDS-12V6A5, 7 AH Battery
FIELD DEVICES	
1ST FLOOR	
4	EDWARDS-SIGA-278, Double Action Fire Alarm Station
6	EDWARDS-SIGA-PS, Photoelectric Smoke Detector
5	EDWARDS-SIGA-HRS, Heat Detector, 15F ROR, 135F Fixed Temperature
11	EDWARDS-SIGA-SB4, Standard Detector Base for 4" square box
13	EDWARDS-G1RF-HDVM, Temporal Horn/Strobe 15, 30, 75, 110 cd
2	EDWARDS-GCFR-HDVM, Temporal Ceiling Horn/Strobe 15, 30, 75, 95 cd
2	EDWARDS-G1RF-VM, Wall Strobe, Switch Select 15, 30, 75, 110 cd, red, /w FIRE
2ND FLOOR	
2	EDWARDS-SIGA-278, Double Action Fire Alarm Station
3	EDWARDS-SIGA-PS, Photoelectric Smoke Detector
8	EDWARDS-SIGA-HRS, Heat Detector, 15F ROR, 135F Fixed Temperature
11	EDWARDS-SIGA-SB4, Standard Detector Base for 4" square box
8	EDWARDS-G1RF-HDVM, Temporal Horn/Strobe 15, 30, 75, 110 cd
6	EDWARDS-G1RF-VM, Wall Strobe, Switch Select 15, 30, 75, 110 cd, red, /w FIRE

3RD FLOOR

- 2 EDWARDS-SIGA-278, Double Action Fire Alarm Station
- 5 EDWARDS-SIGA-PS, Photoelectric Smoke Detector
- 12 EDWARDS-SIGA-HRS, Heat Detector, 15F ROR, 135F Fixed Temperature
- 17 EDWARDS-SIGA-SB4, Standard Detector Base for 4" square box
- 9 EDWARDS-G1RF-HDVM, Temporal Horn/Strobe, 15, 30, 75, 110 cd
- 2 EDWARDS-G1RF-VM, Wall Strobe, Switch Select 15, 30, 75, 110 cd, red, /w FIRE

ELEVATOR RECALL

- 4 EDWARDS-SIGA-CR, Control Relay Module
- 1 EDWARDS-SIGA-CT1, Single Input Module
- 2 SPAAGEELE-SSU-RIC-2, Relay SPUD 24VAC/DC 120 VAC 10 Amp DPDT Red

RELAYS FOR ACCESS CONTROL

- 2 EDWARDS-SIGA-CR, Control Relay Module

DUCT DETECTORS

- 12 EDWARDS-SIGA-SD, SuperDuct Detector
- 12 EDWARDS-SD-T78, SuperDuct, Air sample tube, 78 inch
- 12 EDWARDS-SD-TRK, SuperDuct, Remote test/reset station, keyed
- 6 EDWARDS-SIGA-CR, Control Relay Module

SPARE EQUIPMENT

- 5 EDWARDS-SIGA-PS, Photoelectric Smoke Detector
- 5 EDWARDS-SIGA-HRS, Heat Detector, 15F ROR, 135F Fixed Temperature
- 5 EDWARDS-SIGA-SB4, Standard Detector Base for 4" square box
- 5 EDWARDS-G1RF-HDVM, Temporal Horn/Strobe, 15, 30, 75, 110 cd
- 5 EDWARDS-G1RF-VM, Wall Strobe, Switch Select 15, 30, 75, 110 cd, red, /w FIRE
- 1 LOT CHECKOUT, PROGRAMMING

Overview

GE Security's QS1 life safety control panel brings big-system intelligent control to small applications. Designed for easy setup and simple installation, QuickStart lives up to its name in every respect. QS1's exclusive *QuickStart* auto-learn function, and the option of configuring the panel using convenient front panel programming or from a PC, makes short work of system setup. Devices come on-line in no time as well, thanks to QS1's built-in barcode scanner port. A simple pass of the optional scanner is all it takes to store device information in the QuickStart database. The scanner can also be used for quick and easy text entry when assembling custom messages.

QS1's setup routine is deceptively simple, considering this system's robust features. Supporting up to 250 intelligent detectors and modules, QS1 takes full advantage of GE Security's exclusive Signature Series technology, which provides electronic addressing, automatic device mapping, environmental compensation, and true multisensor detection.

QuickStart's innovative design makes it easy to add a dialer or extra auxiliary relays. Quick-Lok option cards snap onto QS1's easily-accessible DIN mounting rails. QS1 also supports as many as eight remote annunciators and up to 30 programmable front panel switches with dual LEDs for system control and display.

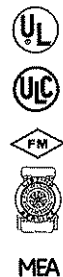
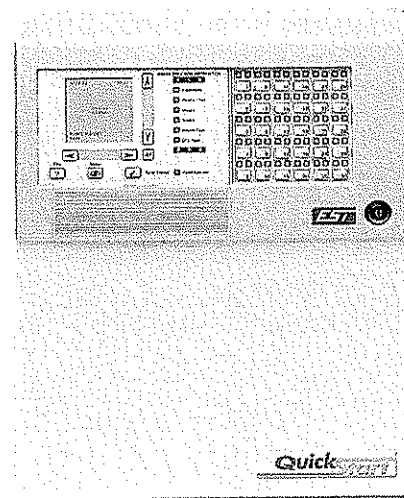
QS1 is as simple to operate as it is to set up. Its large 14-line backlit LCD display provides easy-to-understand details concerning up to 1,000 system events, while bright system status LEDs and large, tactile control buttons present the user with a clean, crystal clear interface. Four password levels limit control and information retrieval to authorized personnel. A priority access keyswitch gives Level 2 access without a password to management and emergency personnel.

Standard Features

- Supports up to 250 Signature Series intelligent devices
- Combines the Signature intelligent releasing module with Signature multisensor detectors for reliable suppression
- Failsafe mode ensures uncompromised reliability
- Class A (Style 7) or Class B (Style 4) wiring options
- Capacity for eight serial annunciators
- Four built-in system relays
- Optional dual line dialer supports Contact ID and 4/2 formats
- Three methods of programming: QuickStart "auto-learn," front panel and personal computer (PC)
- Supports optional barcode scanner for direct device data entry
- Optional bank of 30 front panel switches with dual LEDs
- Up to 20 adjustable pre-alarm settings for Signature smoke detectors
- Wallboxes available in red or gray with optional trim ring for semi-flush mounting.
- Large 14-line (224 character) backlit LCD display
- Four password levels, plus priority access keyswitch
- Message routing by event type or by individual message
- Alarm sensitivity by time of day or manual selection
- 1,000 event history buffer, plus alarm history counter
- 6 amp Power Supply, 4.75 amps available for external use
- Envoy graphics compatible
- Compare utility identifies system changes and simplifies testing

Intelligent Single Loop Life Safety Control Panel

QS1



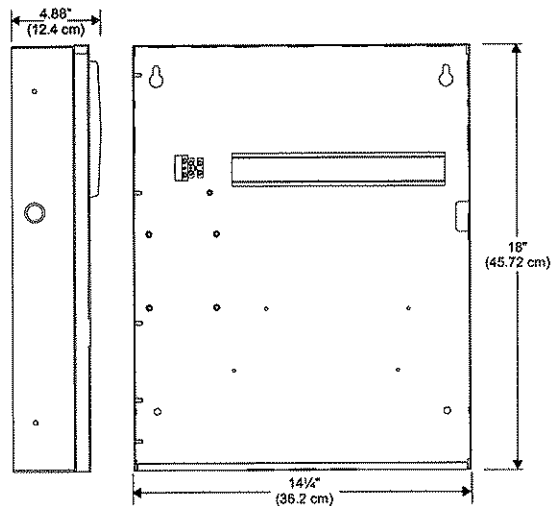
Application

Thanks to its flexibility and simple setup and operation, QS1 is ideal for new installations in schools, apartment buildings, hospitals, office buildings, and retail facilities.

The benefits brought by QS1 to retrofit applications underscores the true potential of this powerful system. As an intelligent panel, QS1 supports Signature Series devices, which can use existing wiring in most retrofit applications. This makes upgrading from a conventional system to analog control a simple operation with minimal disruption to normal operations at the site.

Which Quickstart Panel is right for you?	QSC	QS1	Q54
Signature Series devices supported	0	1 x 250	4 x 250
Conventional Class B circuits supported	3 x 16	0	3 x 16
Conventional Class A circuits supported	5 x 8	0	5 x 8
LCD display (lines x characters)	4 x 20	14 x 16	14 x 16
Optional Zone Switch/LEDs on front panel	2 x 30	1 x 30	2 x 30
Option card spaces	5 or 12	1	5 or 12
For more information, see Data Sheet ...	85005-0112	85005-0113	85005-0114

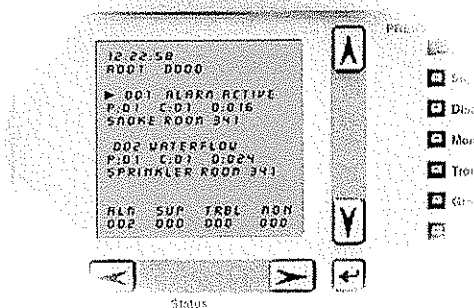
Dimensions



CPU / LCD Display

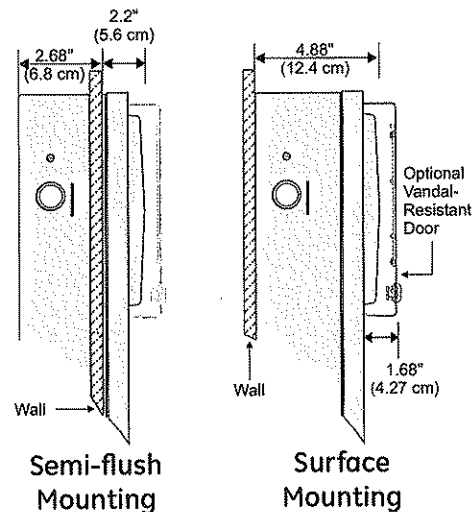
The QS1 front panel display provides 14 lines by 16 characters of text detailing event, device, diagnostic, and programming information. Its large backlit LCD screen is easy to read and always provides at-a-glance indication of the system's state of operation.

The CPU/Display Unit houses the CPU card and mounting space for one optional LED/Switch card.



Display with two alarms shown

Mounting



Semi-flush mounting requires an optional trim ring, which adds 3/4" to all sides of the panel.

Specifications

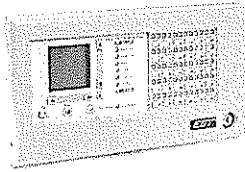
Control Panel	Standby Current: 199 mA Alarm Current: 235 mA
Remote annunciator (Full control versions)	Standby Current: 154 mA Alarm Current: 166 mA
SRA Series	Standby Current: 70 mA Alarm Current: 90 mA
Operating environment	Temperature: 32-120 °F (0-49 °C) Humidity: 93 %RH, non-condensing

Failsafe Mode

If the CPU loses communication with other circuit cards, the power supply card continues to monitor the system for any alarm events. If an alarm occurs on any device or circuit during a communications failure, the power supply activates all alarm outputs and instructs the dialer to transmit a default alarm message to the monitoring station.

Remote Annunciators

QS1 supports up to eight remote annunciators, which provide mirrored or customized annunciation of front panel messages and status indicators. Two models are available: The QSA Series, and the SRA Series.

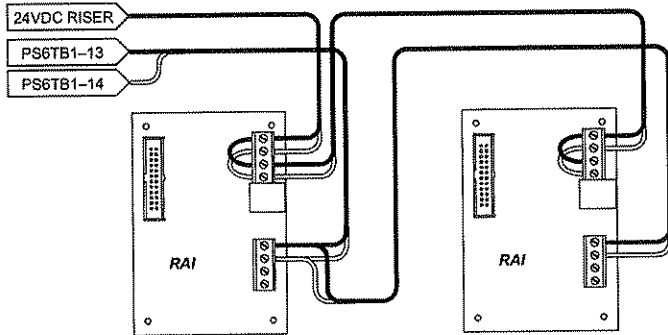


QS1 Annunciator

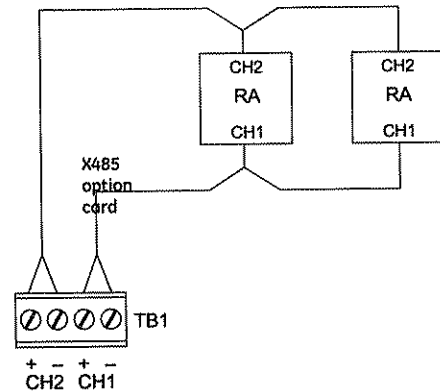
QS1 remote annunciators connect directly to the PS6 Power Supply Card or an external 24 Vdc filtered supply. They are available with wallboxes for flush or surface mounting. Annunciators are available with one annunciator option space for a display card with 30 dedicated switches and LEDs. See the Ordering Table for more information.

Annunciator option space for a display card with 30 dedicated switches and LEDs. See the Ordering Table for more information.

Class B Wiring



Class A Wiring



Dimensions

Model	Height	Width	Depth
QSA-1-S	7.6" (19.46 cm)	14.25" (36.20 cm)	2.9" (7.3 cm)
QSA-1-F (rough in)	6.56" (16.66 cm)	13.25" (33.66 cm)	2.1" (5.33 cm)
QSA-1-F (finished)	7.8" (19.81 cm)	14.42" (36.63 cm)	1.38" (3.49 cm)

Rough-in dimensions reflect the size of the cabinet where it enters the wall.
Finished dimensions reflect the size of the cabinet that protrudes from the wall.

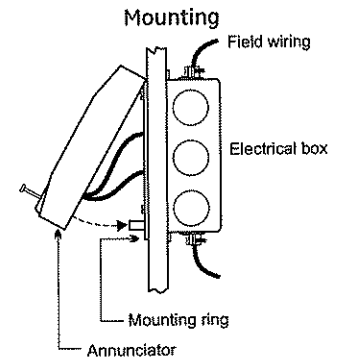
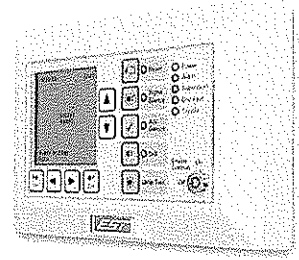
XGD Graphics Driver Card

The XGD Graphics Driver Card is an interface device that connects a QuickStart annunciator to an Envoy Graphic Annunciator. The XGD provides the electronics required to support 24 LEDs and 12 switches on the Envoy display panel. Multiple XGD cards can be chained together in one graphic annunciator cabinet to control larger displays. The QuickStart SRA Series annunciators can support a maximum of six XGD cards.

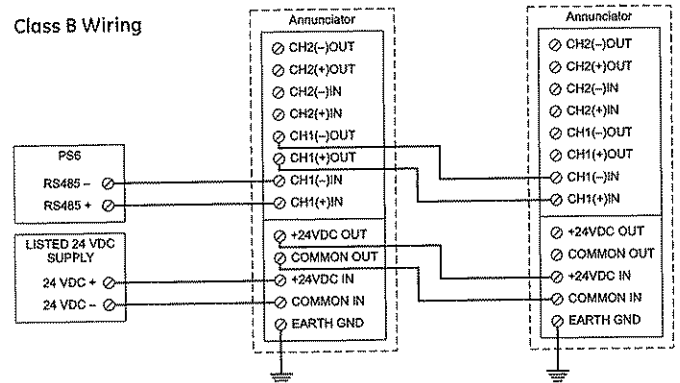
SRA Annunciator

The QuickStart SRA Remote Annunciator is a single-loop standalone unit that can be powered by the control panel or by an approved power supply. Annunciators support Class A or Class B connection to the system RS-485 data line, but do not provide ground fault isolation.

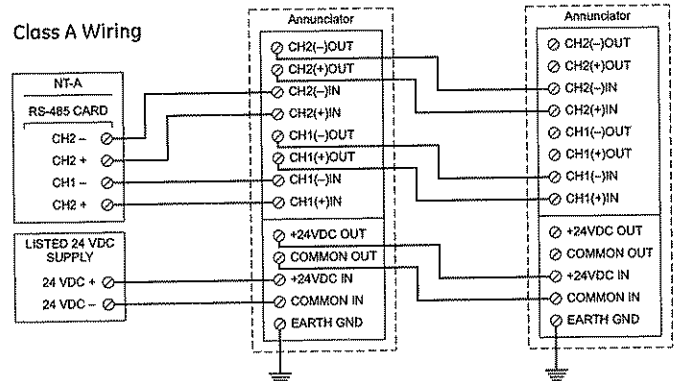
The SRA annunciator includes an RJ-12 modular jack to allow system database downloads from a laptop computer. Connection requires a programming cable (model number PROGCABLE-1, ordered separately). Annunciators are mounted to North American 2-gang or 4-inch square electrical boxes.



Class B Wiring



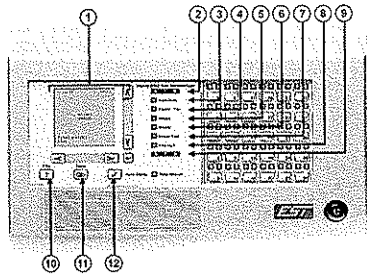
Class A Wiring



Operation

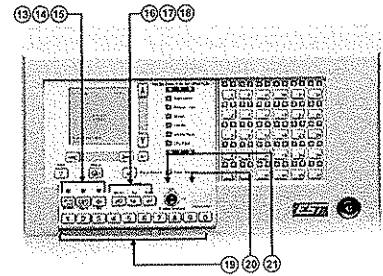
Indicators

1. **Text display and controls:** Displays system messages, status information, and programming menus. Arrow buttons move the display cursor.
2. **Alarm LED:** Indicates a fire or life threatening emergency.
3. **Supervisory LED:** Indicates an off-normal condition with the fire suppression system or related equipment.
4. **Disable/Test LED:** Indicates part of the system is disabled or being tested. Disabled components also signal a system trouble.
5. **Monitor LED:** Indicates the operation of an ancillary system function (door closures, fan pressure switches).
6. **Trouble LED:** Indicates an off-normal condition or wiring fault that compromises the integrity of the system.
7. **Ground Fault LED:** Indicates a ground fault in the system wiring. Ground faults also signal a system trouble.
8. **CPU Fail LED:** Indicates an unexpected reboot or failure with the microprocessor. CPU failures also signal a system trouble.
9. **Power LED:** Indicates the panel has power.
10. **Help button:** Provides additional information about the device selected on the display.
11. **Status button:** Displays the Status Menu from which you can identify active or disabled points in the system.
12. **Panel Silence/Acknowledge button and LED:** Acknowledges all events posted in the display queues and turns off the panel buzzer. The panel silenced LED indicates that off normal events have been acknowledged.



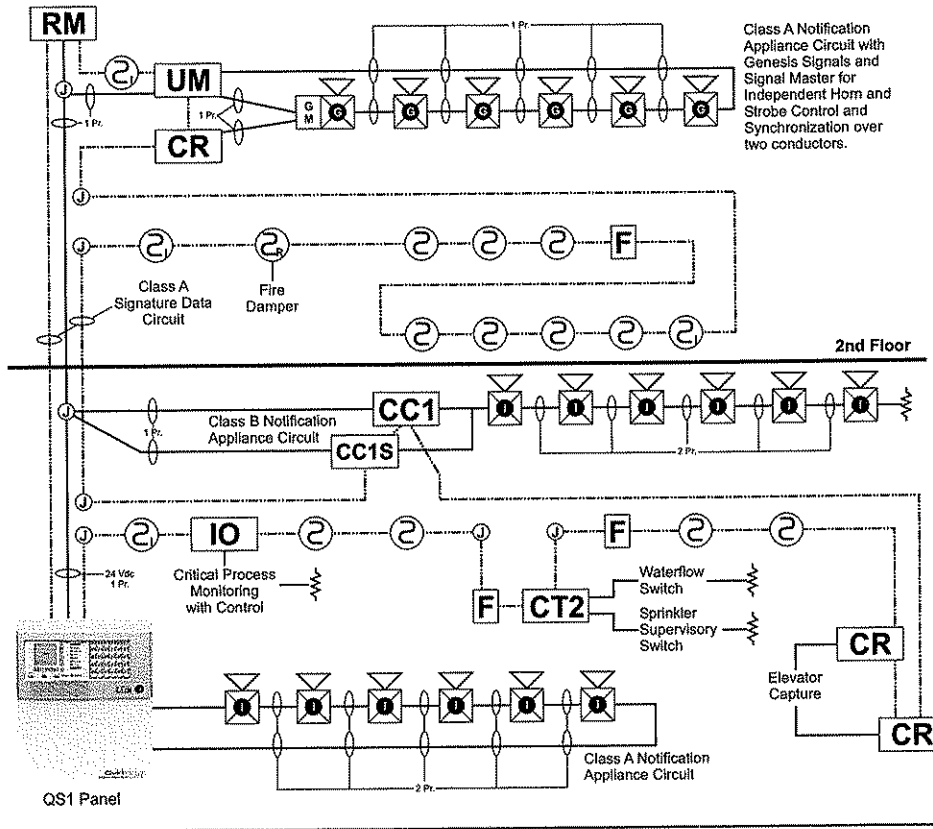
Controls

13. **Reset button:** Allows devices or zones in alarm or trouble to restore to their standby condition. The LED indicates that the panel is resetting.
14. **Alarm Silence button:** Turns active notification appliances off depending on panel programming. Pressing Alarm Silence a second time turns them back on. The LED indicates that the panel is in alarm and operating with notification appliances turned off.
15. **Drill button:** Activates notification appliances depending on panel programming but does not place the panel in alarm. The LED indicates that the panel is in Drill Mode.
16. **Menu button:** Displays the operator menus.
17. **Delete button:** Returns to the previous menu or backspaces the cursor.
18. **Enter button:** Press the Enter button to accept information or continue to the next item.
19. **Numeric keypad:** Numbered buttons for entering values and making menu selections.
20. **Barcode scanner jack:** Input for optional barcode scanner.
21. **Priority Access keyswitch:** Enables control functions reserved for access level 2 and above without requiring a password.



Typical Wiring

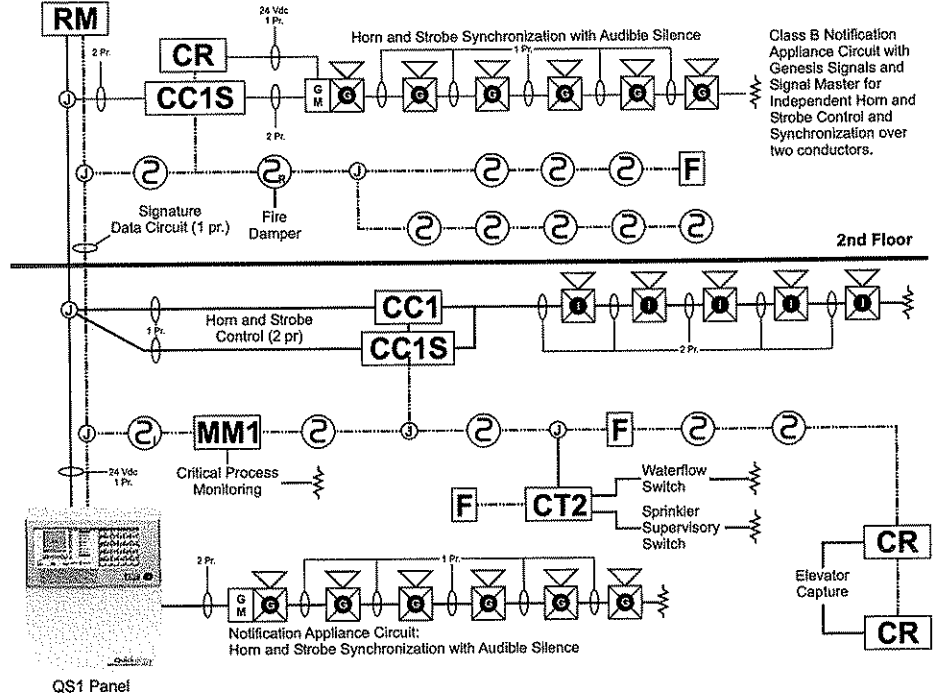
Class A Signature Data Circuit



Class A Notification Appliance Circuit with Genesis Signals and Signal Master for Independent Horn and Strobe Control and Synchronization over two conductors.

QS1 Panel

Class B Signature Data Circuit



Class B Notification Appliance Circuit with Genesis Signals and Signal Master for Independent Horn and Strobe Control and Synchronization over two conductors.

QS1 Panel

LEGEND

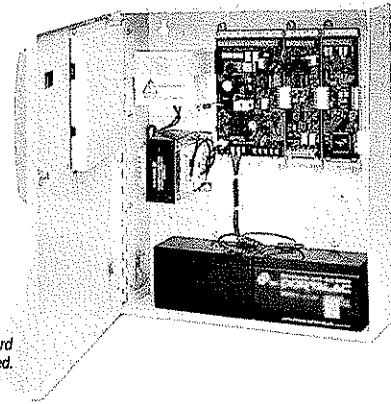
	Enhanced Integrity Horn-Strobe		End-of-Line Resistor
	Genesis Horn-Strobe		Programmable I/O Module
	Genesis Signal Master		Universal I/O Module
	Smoke Detector		Dual Circuit Input Module
	2-Wire Smoke Detector		Control Relay Module
	Smoke Detector with Relay Base		Signal Module
	Smoke Detector with Isolator Base		Signal Module (synchronization)
	Manual Pull Station		Riser Monitor Module
	Junction Box		Monitor Module

More wiring suggestions can be found in the QS1 Fire Alarm Control Panel Installation, Operation, and Maintenance Manual, P/N 3100184.

Standard Components and Option Cards

QS1 panels come standard with a CPU/Display Unit, an SLIC Signature Loop Controller, and a PS6 Power Supply (see ordering information for details).

Available QS1 option cards provide dialing capability or extra relays for ancillary control. Quick-Lok option cards snap onto DIN mounting rails for fast, no-fuss installation. One option card space is available.



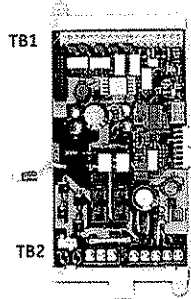
Cabinet with option card and batteries installed.

PS6 Power Supply Card

Standard Component

Description

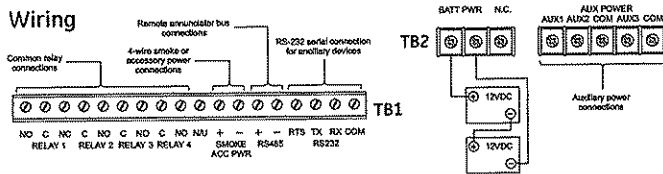
The PS6 provides primary dc power to all the circuit cards installed in the cabinet. There are four 24 Vdc power output circuits – three for powering auxiliary applications, and one for powering four-wire smoke detectors – and a charging circuit for standby batteries. The PS6 also provides common alarm, supervisory, and trouble relays, as well as a fourth relay that is user programmable.



Specifications

Main supply circuit	AC input: 115 or 230 Vac, 50/60 Hertz DC input: 24 Vdc batteries
Battery charging circuit	Charge current: 2 amps Charge capacity: 40 amp hours (UL) 30 amp hours (ULC)
Smoke/Accessory power output circuit	Voltage: 24 Vdc, regulated Current: 250 mA Wire size: 12 to 18 (0.75 to 2.5 mm ²)
Auxiliary power output circuits	Quantity: 3 Voltage: 24 vdc full wave rectified Current: 1.5 amps each
Common alarm relay	Style: Form C Contact rating: 1 amp Wire size: 12 to 18 AWG (0.75 to 2.5 mm ²)
Trouble, Supervisory and programmable relays	Style: Form A (N/O) Contact rating: 1 amp Wire size: 12 to 18 AWG (0.75 to 2.5 mm ²)
Operating environment	Temperature: 32 - 120° F (0 - 49° C) Humidity: 93 %RH, non-condensing
Current requirements	Standby current: 72 mA Alarm current: 96 mA

Wiring



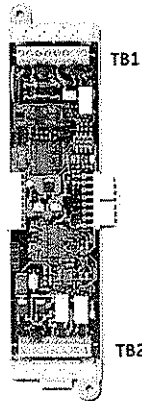
- Relay 1:** Form C. Contacts change position when the control panel processes an alarm signal and remain changed until all active alarm inputs restore and the control panel resets.
 - Relay 2:** Form A. Contacts change position when the panel processes a supervisory signal and remains changed until all active supervisory inputs restore.
 - Relay 3:** Form A. Contacts change position when the panel loses power or processes a trouble signal and remains changed until power returns or the trouble clears.
 - Relay 4:** Form A. Relay closes and opens according to panel programming.
- Smoke/Accessory Power:** Jumper setting determines if the 24 Vdc is constant or resettable.

SLIC Signature Loop Intelligent Controller

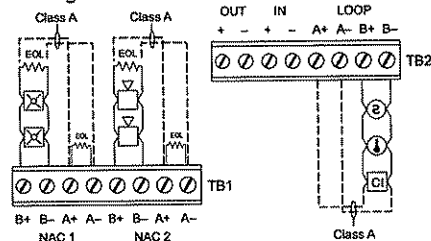
Standard Component

Description

The SLIC provides one Class A or Class B data circuit (loop) for connecting Signature Series detectors and modules. The SLIC also provides two programmable Class A or Class B notification appliance circuits (NACs) for connecting polarized 24 Vdc notification appliances such as horns and strobes. QS1 supports one SLIC.



Wiring



Signaling Line Circuit and NACs are supervised and power-limited.

Specifications

Signaling line circuit	Configuration: Class B (Style 4) or Class A (Style 7) Capacity: 125 Signature detectors 125 Signature modules Wire size: 18 to 12 AWG (0.75 to 2.5 mm ²) Circuit resistance: 65 ohms Circuit capacitance: 0.3 µf
Notification appliance circuits #1 and #2	Configuration: Class B or Class A Output voltage: 24 Vdc, nominal Output current: 2.0 A at 24 Vdc for #1 and 0.8 A at 24 Vdc for #2 Wire size: 18 to 12 AWG (0.75 to 2.5 mm ²) End of line resistor: 10k ohms, ½ W
NAC power input circuit	Voltage: 24 Vdc, nominal Wire size: 18 to 12 AWG (0.75 to 2.5 mm ²)
Operating environment	Temperature: 32 - 120° F (0 - 49° C) Humidity: 93 %RH, non-condensing
Current requirements	Standby current: 33 mA Alarm current: 57 mA (Both NACs on)
Card spaces	Requires one card space.

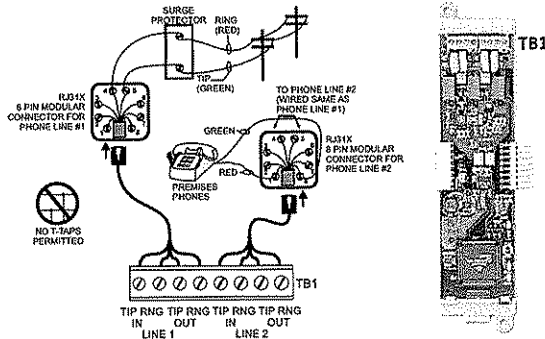
DLD Dialer

Option Card

Description

The DLD is a ULI/ULC listed dual line Digital Alarm Communicating Transmitter (DACT). It provides two phone line connections for sending system messages to a compatible Digital Alarm Communicator Receiver. The DLD supports 4/2 and Contact ID formats. It occupies one card space on the chassis rail.

Wiring



Specifications

Operating environment	Temperature: 32 - 120° F (0 - 49° C) Humidity: 93% RH, non-condensing
Current requirements	Standby: 13 mA Alarm: 20 mA Dialing: 26 mA
Phone Lines	Two loop start lines on switched telephone network. Pulse or DTMF dialing.
Wall Connector	RJ31X/CA31A equiv. or RJ38X/CA38A equiv.
Communications Protocol	Contact ID (SIA DC-05), 4/2 (SIA DC-02 P3).
Programming	Via QuickStart, Front Panel or PC.
Communications Compliance	Communications Canada CS-03FCC/CFR 47 Parts 15 and 68, NFPA 72, ULI 864, ULC S527-M87
Receivers	Signals can be transmitted to either or both of two receivers.
Telephone #s	Two 24-digit numbers per receiver.
Card spaces	Requires one card space.

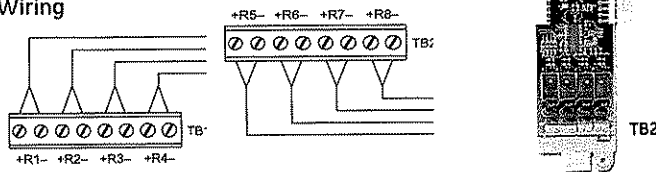
ZR8 Relay Card

Option Card

Description

The ZR8 provides eight dry-contact relays that can be independently configured as Form A or Form B relays. It occupies one card space on the chassis rail.

Wiring



Specifications

Output relays	Style: Form A (N/O) or Form B (N/C) (jumper configurable) Contact rating: 1 amp @ 30 Vdc resistive. Wire size: 18 to 12 AWG (0.75 to 2.5 mm ²)
Operating environment	Temperature: 32 - 120° F (0 - 49° C) Humidity: 93 %RH, non-condensing
Current requirements	Standby current: 11 mA Alarm current: 18 ma per active relay
Card spaces	Requires one card space.

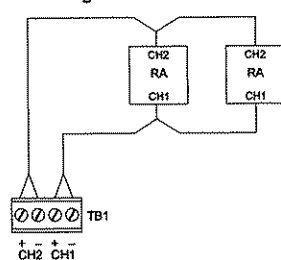
X485 Class A RS-485 Card and QS-232 Port

Option Cards

Description

The NT-A, which includes the X485/RS-485 card and QS-232/UART port, provides one Class A serial remote annunciator bus for connecting remote annunciator panels. Control panels require the X485 card and QS-232 port, which also serves as a laptop or printer port. The X485 occupies one card space on the chassis rail. The QS-232 port plugs into the panel CPU.

Wiring



Specifications

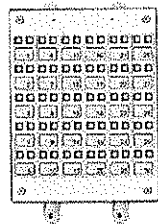
Wire size	12 to 18 AWG (0.75 to 2.5 mm ²) twisted pair (6 twists per foot minimum)
Circuit resistance	100 Ohms
Circuit capacitance	0.4 µF
Operating environment	Temperature: 32 - 120° F (0 - 49° C) Humidity: 93 %RH, noncondensing
Current requirements	Standby: 60 mA Alarm: 60 mA
Card Spaces	Requires one space for the NT-A

SL30, SL30-1, SL20L5S, SL30L LED/Switch Cards

Option Cards

Description

The SL30 and SL30-1 provide thirty circuits for zone annunciation. Each circuit comprises two LEDs and a push button switch. The SL30 push button switches are numbered from 1 to 30 and the SL30-1 push button switches are numbered from 31 to 60. The SL20L5S provides 20 circuits for point annunciation and five circuits for custom control functions. The SL30L provides 30 circuits for point annunciation. SL20L5S and SL30L circuits are labeled using inserts provided with the cards.



Specifications

Operating environment	Temperature: 32 - 120° F (0 - 49° C) Humidity: 93% RH, non-condensing
Current requirements	Standby: 1mA Alarm: 0.75 mA per active LED

GE Security

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Latin America
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Ordering options

(Apply to basic packages and
CPU/displays only)

Languages

No suffix = American English
SP = Spanish (230v or 115v)
PG = Portuguese (230v only)
FR = French Canadian (120v only)

Power Supplies

1 = 115v transformer
2 = 230v transformer

Colors

G = Grey enclosure (230v or 115v)
R = Red enclosure (115v only)

Examples

QS1-1-G-2-SP = QS1 basic package
with one option card space, grey
enclosure, 230v transformer, Span-
ish language.

QS1-CPU-FR = QS1 CPU/display,
French Canadian.

Ordering Information

Part Number	Description	Ship Wt. lb. (kg.)
Basic Package - Enclosure, SLIC, Power Supply, CPU and Display...		
QS1-1-G-1	Single loop system. 1 option card space. Gray enclosure, 115v transformer.	17.0 (7.71)
QS1-1-R-1	Single Loop System. 1 option card space. Red enclosure, 115v transformer.	17.0 (7.71)
<i>Note: SLIC Card includes One Signature Loop Intelligent Controller for up to 250 devices and one Class A or two Class B NACs.</i>		
Enclosure Accessories		
QS-1-VR	Vandal-resistant cabinet door, gray	3.0 (1.36)
QS-1-VR-R	Vandal-resistant cabinet door, red	3.0 (1.36)
TRIM-1	Trim Kit - gray	5.0 (2.27)
TRIM-1R	Trim Kit - red	5.0 (2.27)
Option Cards		
DLD	Dual Line Dialer. Supports 4/2 and Contact ID formats.	1.0 (0.45)
ZR8	Relay Card. 8 programmable Form A contacts.	1.0 (0.45)
Display Options		
SL30	Annunciator module. Numbered 1 to 30. Two LEDs and one switch per zone.	1.0 (0.45)
SL20L5S	Annunciator module. 20 circuits for point or zone annunciation, 5 circuits for custom functions. Circuits labeled with insert card.	1.0 (0.45)
SL30L	Annunciator module. 30 circuits. Circuits labeled with insert card.	1.0 (0.45)
QS1-CPU-1	Single Loop CPU/Display, one annunciator option space	4.0 (1.81)
EST-SRA1	Intelligent/Conventional CPU/Display with integrated LCD and control switches. 4" square box mount.	4.0 (1.81)
NT-A	RS-485 option card. Required for Class A remote annunciation. Includes UART card.	1.0 (0.45)
QS-232	UART option card. Plugs into CPU. Required for PC Programming / printer port. Included in NT-A package	1.0 (0.45)
Remote Annunciator Cabinets (c/w Interface Assembly; Require CPU/Display)...		
QSA-1-S	Surface Remote Annunciator Cabinet. Space for one SL30 display card.	4.0 (1.81)
QSA-1-F	Flush Remote Annunciator Cabinet. Space for one SL30 display card.	4.0 (1.81)
QSA-1-S-VR	Surface Remote Annunciator Cabinet. Vandal Resistant. Space for one SL30 display card.	4.0 (1.81)
QSA-1-F-VR	Flush Remote Annunciator Cabinet. Vandal Resistant. Space for one SL30 display card.	4.0 (1.81)
Programming Tools		
QS-CU	QuickStart Panel Configuration Utility.	1.0 (0.45)
QS-Scan	QuickStart scanner and programming guide.	2.0 (0.91)
Progable-1	Scanner port upload/download cable	1.0 (0.45)
260097	Programming cable (PC to QSC, QS1, QS4)	1.0 (0.45)
Accessories		
PT-1S	SystemPrinter - Desk top Style	14.0 (6.35)
BC-1(R)	Battery Cabinet. Room for one 40 Ah or two 24 Ah batteries.	22.0 (9.98)
MFC-A	MultiFunction Cabinet.	7.0 (3.1)
IOP3A	RS-232 Isolator Module.	3.0 (1.36)
RPM	Reverse Polarity Module.	3.0 (1.36)
2-CTM	City Tie Module.	1.0 (0.45)
API-8/232ME	Alphanumeric Pager Interface.	11.0 (5.0)
BPS6A	6.5 Amp Booster Power Supply, 110 V	13.0 (5.9)
BPS10A	10 Amp Booster Power Supply, 110 V	13.0 (5.9)
CDR3	PSNI Coder Module	1.0 (0.45)



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Overview

The Remote Booster Power Supply is a self-contained 24 Vdc power supply designed to augment fire alarm audible and visual power requirements as well as provide power for auxiliary, access control and security applications. The booster contains all of the necessary circuits to monitor and charge batteries, control and supervise four Class B or two Class A NAC circuits and monitor two controlling inputs from external sources.

Simple switch selection provides a wide variety of operational configurations. Each remote booster power supply is supplied with its own enclosure providing ample space for additional interface modules and battery compartment.

The Remote Booster Power Supply is available in either a 6.5 or 10 amp version @ 24 Vdc.

Standard Features

- Available in 10 amp and 6.5 amp versions.
- Includes four independent 3 amp NACs – each configurable as auxiliary outputs.
- Configurable signal rates.
- Field selectable input-to-output correlation.
- Extends power available to Notification Appliance Circuits (NACs).
- Provides strobe synchronization.
- Use as auxiliary Power Supply.

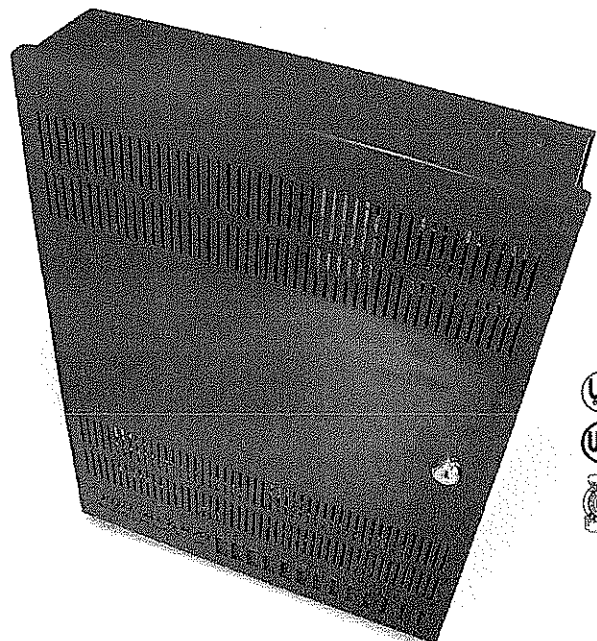
- Extensive UL Listings
(Listed accessory under the following standards)

Standard	CCN	Description
UL864	UOXX	Fire Alarm Systems
UL636	ANET, UEHX7	Holdup Alarm Units and Systems
UL609	AOTX, AOTX7	Local Burglar Alarm Units and Systems
UL294	ALVY, UEHX7	Access Control Systems
UL365	APAW, APAW7	Police Station Connected Burglar Alarm Units and Systems
ULC-S527	UOXXC	Control Units, Fire Alarm (Canada)
ULC-S303	AOTX7	Local Burglar Alarm Units and Systems (Canada)
ULC-S304	AMCX7	Central and Monitoring Station Burglar Alarm Units (Canada)
C22.2 No. 205	Signaling Equipment (Canada)	
UL1076	APOU, APOU7	Proprietary Burglar Alarm System Units
UL1610	AMCX	Central Station Alarm Unit

- Two inputs allow activation by Signature Series modules or existing NACs.
- NACs configure for either four Class B or two Class A circuits.
- 110 Vac and 230 Vac versions
- On-board status LEDs for easy recognition of wiring faults.
- Supports up to 24 Amp hour batteries for fire and security applications, up to 65 Amp hour for access control applications.

Remote Booster Power Supplies

BPS6A, BPS10A



Application

The Remote Booster Power Supply provides additional power for audible and visual devices helping remove system capacity or site application constraints. The booster may also be used to power auxiliary, access control and security devices, in addition to fire devices.

Fault conditions detected by the BPS will open the main panel's NAC. This initiates a trouble condition and eliminates the need to wire a separate trouble contact back to the control panel. During alarm condition, detected faults are overridden and the main panel's default configuration is continuous 24 Vdc on all NACs typically used to drive visual devices. On board trouble contact is supplied for applications requiring trouble contact monitoring.

The booster power supply provides the capability to maximize available power by being able to supply power for multiple services including Access Control, Security and Fire. For security applications, space is provided to mount a tamper switch in the cabinet. When used for Fire Alarm notification with Genesis Notification appliances, the booster provides the ability to synchronize strobes as well as horn signals. The booster flexibility allows synchronization with upstream devices, or, the booster may be used to synchronize downstream devices, as well as other boosters and their connected devices. Up to 10 boosters deep may be configured while maintaining strobe synchronization.

BPS notification appliance circuits easily configure for either of two signaling rates: 3-3-3 temporal or continuous. California rate is also available on certain models. This makes the BPS ideal for applications requiring signaling rates not available from the main panel. It also allows independent setup of a notification appliance circuit without interfering with the main panel and its initiating circuits.

In addition to the generated signal rates, the BPS can also be configured to follow the signal rate of the main panel's notification appliance circuit. This allows seamless expansion of existing NACs.

The BPS includes seven on-board LED indicators: one for each

resident NAC; one for battery supervision; one for ground fault; and, one for ac power. The trouble contact has a sixteen second delay when an ac power failure or brownout condition is detected. This reduces the reporting of troubles during short duration ac brownouts.

NAC configuration options include: ac power fail delay (16 seconds or 6 hours); sensing input to NAC output correlations; and, auxiliary outputs. All NACs are configurable as auxiliary outputs. Auxiliary outputs can be always on, or off after 30 seconds without ac power. As auxiliary output, the booster may power access control and security devices. Should an overcurrent occur, the booster automatically opens the circuit. The booster automatically restores the circuit when the overcurrent is removed. Jumpers configure the BPS for Class A or Class B wiring.

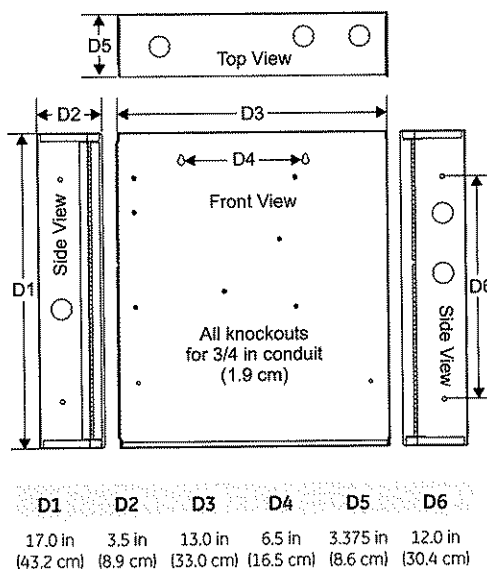
Engineering Specification

Supply where needed GE Security BPS series Booster Power Supplies as an extension of Notification Appliance Circuits. The extension shall be in the form of a stand alone booster power supply. The supply must incorporate its own standby batteries. Batteries must be sized for <24>, <60> hours of standby followed by <5>, <30> minutes of alarm. It must be possible to support up to 24 Amp hour batteries.

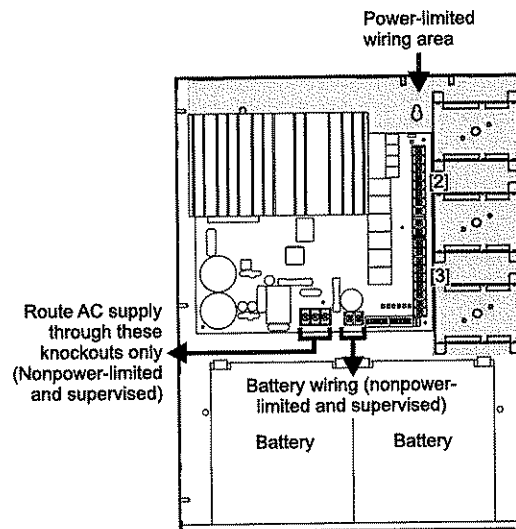
The booster supply must incorporate four independent supervised Notification Appliance Circuits. It shall be possible to configure the NACs to follow the main panel's NAC or activate from intelligent Signature Series modules. The booster NACs must be configurable to operate independently at any one of the following rates: continuous, California Rate, or 3-3-3 temporal. Fault conditions on the booster shall not impede alarm activation of host NAC circuits.

The booster must be able to provide concurrent power for Notification devices, Security devices, Access Control equipment and Auxiliary devices such as door holders. The BPS must provide the ability to synchronize Genesis series strobes and horns.

Dimensions



Wire routing



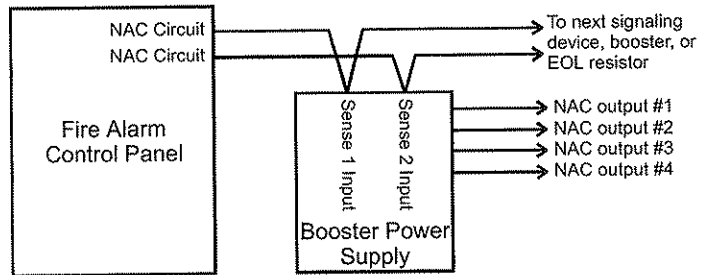
Notes

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

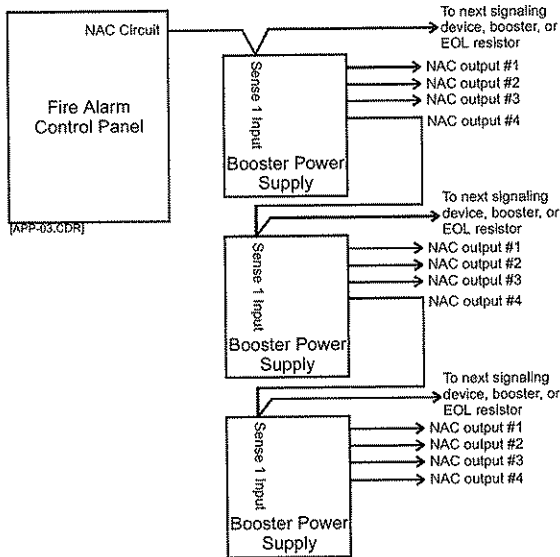
Typical Wiring

Single booster anywhere on a notification appliance circuit

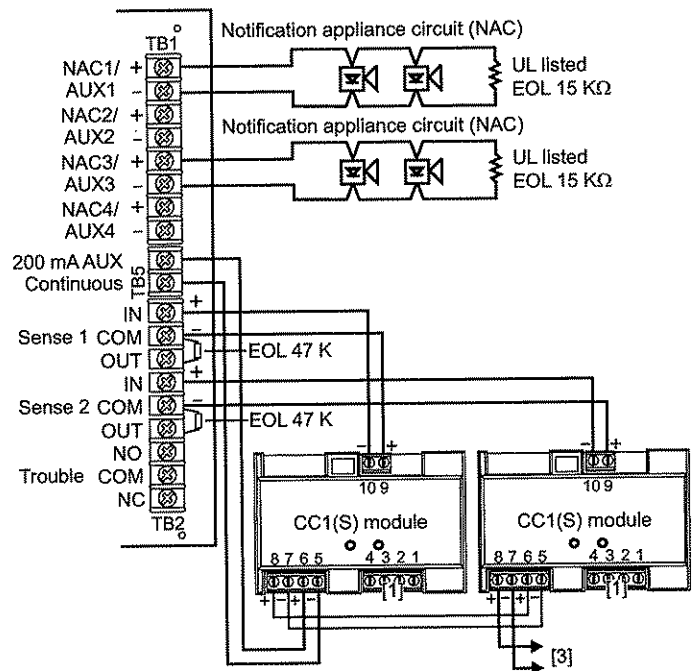
Existing NAC end-of-line resistors are not required to be installed at the booster's terminals. This allows multiple boosters to be driven from a single NAC circuit without the need for special configurations.



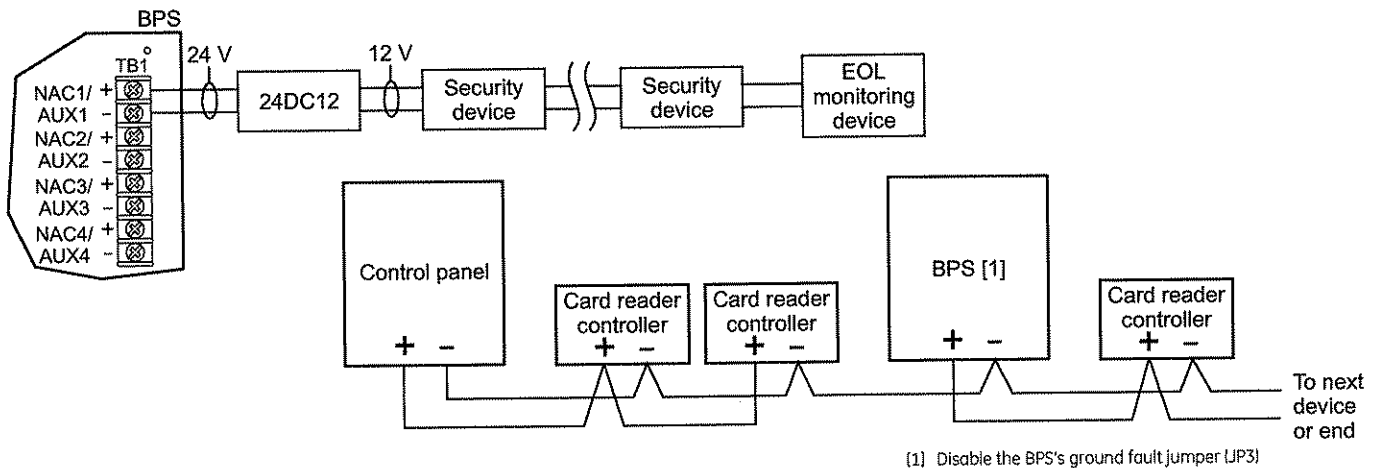
Multiple boosters cascaded from a single notification appliance circuit



Multiple CC1(S) modules using the BPS's sense inputs



Security and access



[1] Disable the BPS's ground fault jumper (JP3)

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Specifications

Model	6.5 amp Booster	10 amp Booster
AC Line Voltage	120VAC or 220-240VAC 50/60Hz 250 watts	120VAC or 220-240VAC 50/60Hz 375 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	Accommodates 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	

Notes

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)
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)
BPS10A/230	10 Amp Booster Power Supply (220V)	13 (5.9)
BPS10CAA	10 Amp Booster Power Supply with California rate	13 (5.9)

Related Equipment

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-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)

Notes

1. Requires installation of separate battery cabinet.
2. BPS supports batteries greater than 24 Amp hours for access control applications only.



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Overview

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

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

Standard Features

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

- **Traditional familiar appearance**
SIGA-270 models feature our familiar teardrop design with simple positive pull action and sturdy die-cast metal body.
- **One stage (GA), two stage (pre-signal), and double action models**
SIGA-270 models are available for one or two stage alarm systems. The single stage double action SIGA-278 features a rugged Lexan housing with keyed reset mechanism.

- **Break glass operation**
An up-front visible glass rod on the SIGA-270 discourages tampering.
- **Intelligent device c/w integral microprocessor**
All decisions are made at the station allowing lower communication speed while substantially improving control panel response time. Less sensitive to line noise and loop wiring properties; twisted or shielded wire is not required.
- **Non-volatile memory**
Permanently stores serial number, type of device, and job number. Automatically updates historic information including hours of operation, last maintenance date, number of alarms and troubles, and time and date of last alarm.
- **Automatic device mapping**
Each station transmits wiring information to the loop controller regarding its location with respect to other devices on the circuit.
- **Electronic addressing**
Permanently stores programmable address; there are no switches or dials to set. Addresses are downloaded from a PC, or the SIGA-PRO Signature Program/Service Tool.
- **Stand-alone operation**
The station inputs an alarm even if the loop controller's polling interrogation stops.
- **Diagnostic LEDs**
Status LEDs; flashing GREEN shows normal polling; flashing RED shows alarm state.
- **Designed for high ambient temperature operation**
Install in ambient temperatures up to 120 °F (49 °C).

Manual Pull Stations

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



SIGA-278



SIGA-270 SERIES



MEA

Patented

Application

The operating characteristics of the fire alarm stations are determined by their sub-type code or "Personality Code". NORMALLY-OPEN ALARM - LATCHING (Personality 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 GE Security'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.
- All wiring is power limited and supervised.

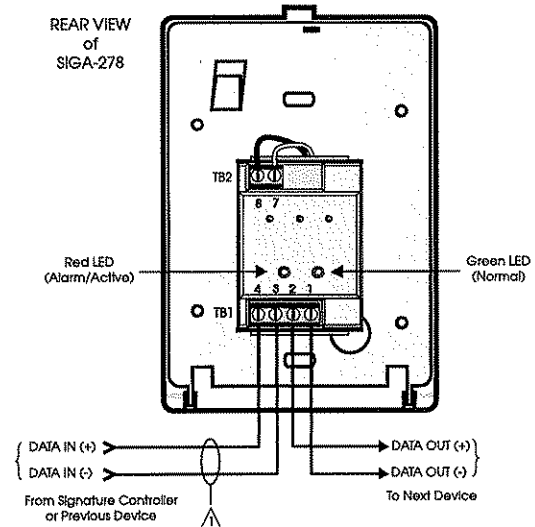


Figure 4. Single Stage Systems

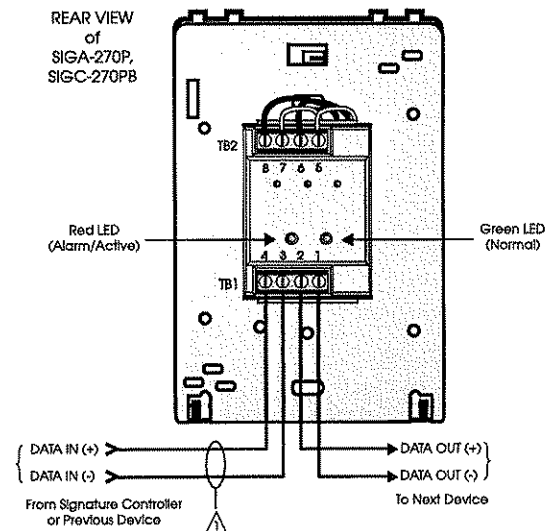


Figure 5. Two Stage Systems

Installation

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

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

All models include terminals are suited for #12 to #18 AWG (2.5 mm² to 0.75 mm²) wire size. GE Security recommends that these fire alarm stations be installed according to latest recognized edition of national and local fire alarm codes.

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

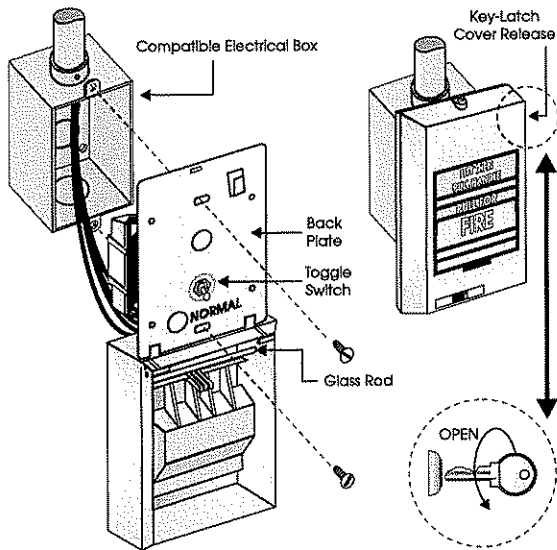


Figure 1. SIGA-278 installation

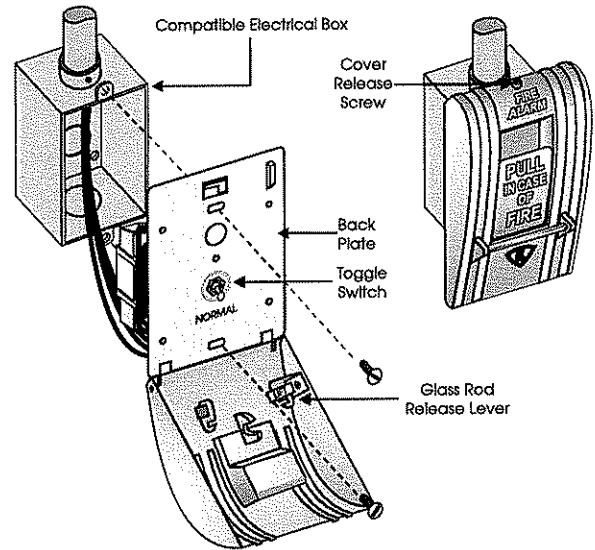


Figure 2. SIGA-270, SIGC-270F, SIGC-270B installation

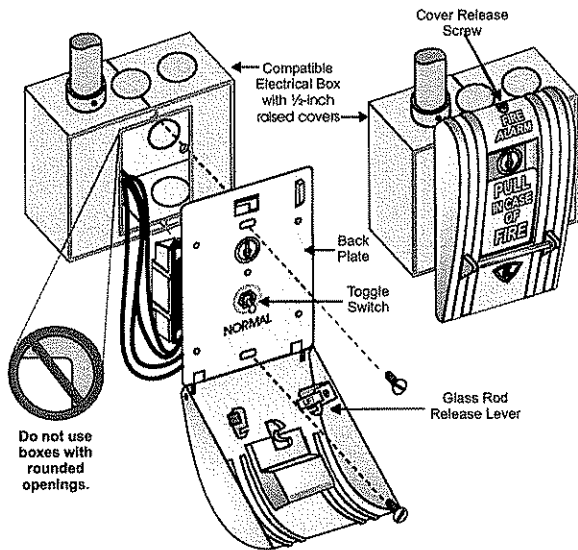


Figure 3. SIGA-270P, SIGC-270PB installation

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F 866-503-3996

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T 519 376 2430
F 519 376 7258

Asia
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

Catalog Number	SIGA-270, SIGC-270F, SIGC-270B	SIGA-270P, SIGC-270PB	SIGA-278
Description	Single Action - One Stage	Single Action -Two Stage (Presignal)	Double Action - One Stage
Addressing Requirements	Uses 1 Module Address	Uses 2 Module Addresses	Uses 1 Module Address
Operating Current	Standby = 250µA Activated = 400µA	Standby = 396µA Activated = 680µA	Standby = 250µA Activated = 400µA
Construction & Finish	Diecast Zinc - Red Epoxy with aluminum markings		Lexan - Red with white markings
Type Code	Factory Set		
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)		
Storage and Operating Environment	Operating Temperature: 32°F to 120°F (0°C to 49°C) Storage Temperature: -4°F to 140°F (-20°C to 60°C) Humidity: 0 to 93% RH		
LED Operation	On-board Green LED - Flashes when polled On-board Red LED - Flashes when in alarm 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 billing ual markings.

Ordering Information

Catalog Number	Description	Ship Wt. lbs (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	Double Action (One Stage) Fire Alarm Station, English Markings - UL/ULC Listed	
Accessories		
32997	GA Key w/Tag - for pre-signal station (CANADA ONLY)	
276-K2	GA Key - for pre-signal station (USA ONLY)	
27165	12 Glass Rods - for SIGA-270 series (CANADA ONLY)	0.1 (0.05)
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)



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Overview

The Signature Series Model SIGA-PS Intelligent Photoelectric Smoke Detector gathers analog information from its smoke sensing element and converts it into digital signals. The detector's on-board microprocessor measures and analyzes these signals. It compares the information to historical readings and time patterns to make an alarm decision. Digital filters remove signal patterns that are not typical of fires. Unwanted alarms are virtually eliminated.

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

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

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

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

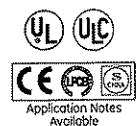
Fast Stable Communication - On-board intelligence means less information needs to be sent between the detector and the loop controller. Other than regular supervisory polling response, the detector only needs to communicate with the loop controller when it has something new to report.

Standard Features

- Integral microprocessor
- Non-volatile memory
- Automatic mapping device
- Electronic addressing
- Environmental compensation
- Intelligent detector
- Wide 0.67% to 3.77%/ft. sensitivity range
- Twenty pre-alarm sensitivity values, set in 5% increments
- Identification of dirty or defective detectors
- Automatic day/night sensitivity adjustment
- Twin RED/GREEN status LEDs
- Standard, relay, fault isolator, and audible mounting bases
- Designed and manufactured to ISO 9001 standards

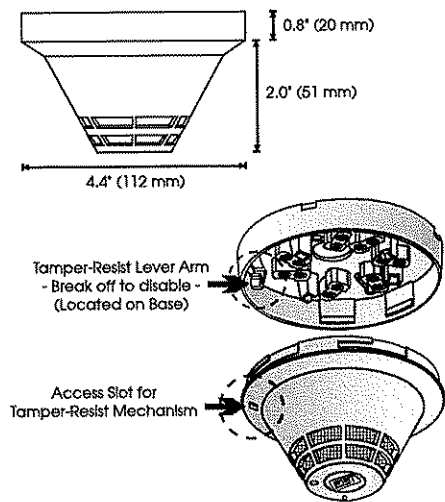
Intelligent Photoelectric Smoke Detector

SIGA-PS



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.

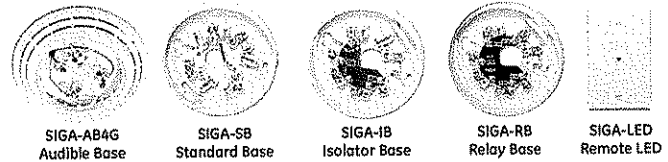
Warnings & Cautions

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

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

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 1/2 inch or 4 inch octagon boxes, 1 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 4 inch sq. electrical boxes in addition to the above boxes. They include the SIGA-TS4 Trim Skirt which is used to cover the "mounting ears" on the base. The SIGA-AB4G mounts to a 4" square box only.



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.

Application

Although photoelectric detectors have a wide range of fire sensing capabilities they are best suited for detecting slow, smoldering fires. The table below shows six standard test fires used to rate the sensitivity of smoke and heat detectors. The table indicates that no single sensing element is suited for all test fires.

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

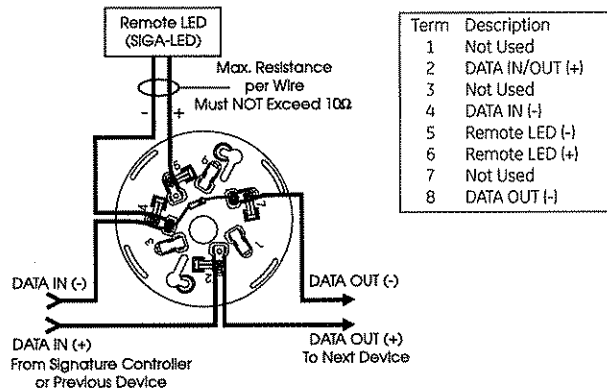
Test Fire	SIGA-IS Ion	SIGA-PS Photo	SIGA-HRS and SIGA-HFS Rate-of-Rise/ Fixed Temp.	SIGA-PHS Photo Heat 3D	SIGA-IPHS Ion/Photo/Heat 4D
Open Wood	optimum	unsuitable	optimum	very suitable	optimum
Wood Pyrolysis	suitable	optimum	unsuitable	optimum	optimum
Smouldering Cotton	very suitable	optimum	unsuitable	optimum	optimum
Poly Urethane Foam	very suitable	very suitable	suitable	very suitable	optimum
n-Heptane	optimum	very suitable	very suitable	optimum	optimum
Liquid Fire without Smoke	unsuitable	unsuitable	optimum	very suitable	very suitable

Typical Wiring

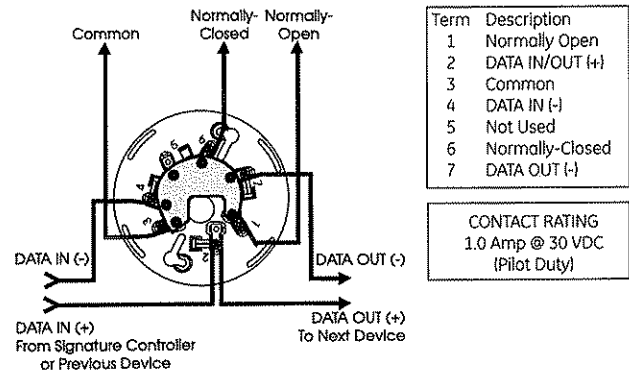
The detector mounting bases accept #18 AWG (0.75mm²), #16 (1.0mm²), #14 AWG (1.5mm²), and #12 AWG (2.5mm²) wire sizes.

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

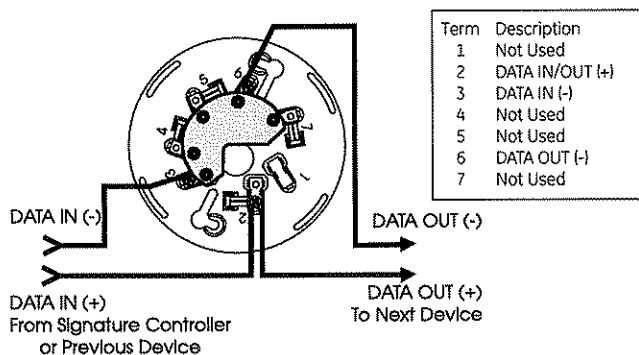
Standard Detector Base, SIGA-SB, SIGA-SB4



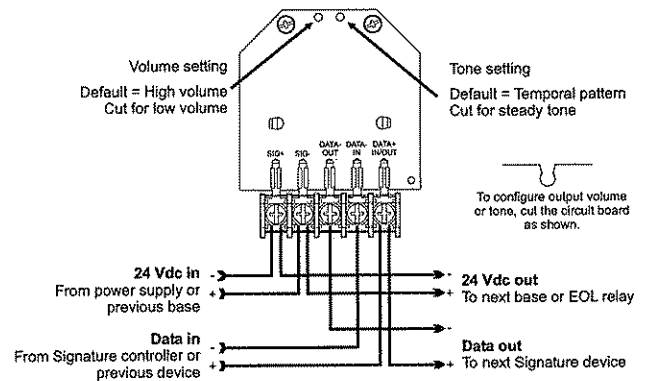
Relay Detector Base, SIGA-RB, SIGA-RB4



Isolator Detector Base, SIGA-IB, SIGA-IB4



Audible Detector Base, SIGA-AB4G



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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°C to 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 Communication: 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

Catalog Number	Description	Ship Wt. 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/Fault Isolator	
SIGA-IB4	4-inch Detector Mounting Base w/ Fault Isolator, c/w SIGA-TS4 Trim Skirt	
SIGA-LED	Remote Alarm LED	
SIGA-AB4G	Audible (Sounder) Base	.3 (.15)
SIGA-TS4	Trim Skirt (supplied with 4-inch bases)	.1 (.04)



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Overview

Signature Series Model SIGA-HFS and SIGA-HRS Intelligent Heat Detectors gather analog information from their fixed temperature and/or rate-of-rise heat sensing elements and converts it into digital signals. The detector's on-board microprocessor measures and analyzes these signals. It compares the information to historical readings and time patterns to make an alarm decision. Digital filters remove signal patterns that are not typical of fires. Unwanted alarms are virtually eliminated.

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

Standard Features

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

- 70 foot (21.3 meter) spacing
- 15° F (9° C)/min rate-of-rise/135° F (57° C) ft. and 135° F (57° C) fixed temperature type
- Intelligent detector c/w integral microprocessor
- Non-volatile memory
- Automatic device mapping
- Electronic addressing
- Identification of defective detectors
- Twin RED/GREEN status LEDs
- Standard, relay, fault isolator, and audible mounting bases
- Designed and manufactured to ISO 9001 standards

Intelligent Heat Detectors

SIGA-HFS & SIGA-HRS



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 "as-built" 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 on-board 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.

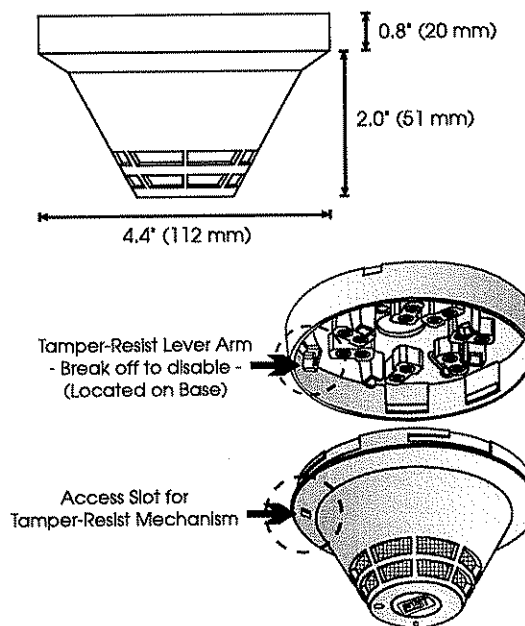
Installation Spacing - The SIGA-HFS (fixed temperature) and the SIGA-HRS (fixed temperature/rate-of-rise combination) intelligent heat detectors are rated for installation at up to 70 foot (21.3 meter) spacing. These detectors may be installed in rooms with ambient temperatures up to 100°F (38°C).

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 - GE Security 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.



Application

The table below shows six standard test fires used to rate the sensitivity of smoke and heat detectors. The table indicates that no single sensing element is suited for all test fires.

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

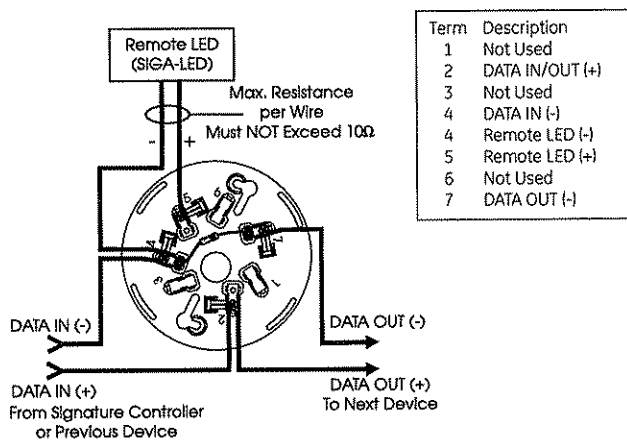
Test Fire	SIGA-IS Ion	SIGA-PS Photo	SIGA-HRS and SIGA-HFS Rate-of-Rise/ Fixed Temp.	SIGA-PHS Photo Heat 3D	SIGA-IPHS Ion/Photo/Heat 4D
Open Wood	optimum	unsuitable	optimum	very suitable	optimum
Wood Pyrolysis	suitable	optimum	unsuitable	optimum	optimum
Smouldering Cotton	very suitable	optimum	unsuitable	optimum	optimum
Poly Urethane Foam	very suitable	very suitable	suitable	very suitable	optimum
n-Heptane	optimum	very suitable	very suitable	optimum	optimum
Liquid Fire without Smoke	unsuitable	unsuitable	optimum	very suitable	very suitable

Typical Wiring

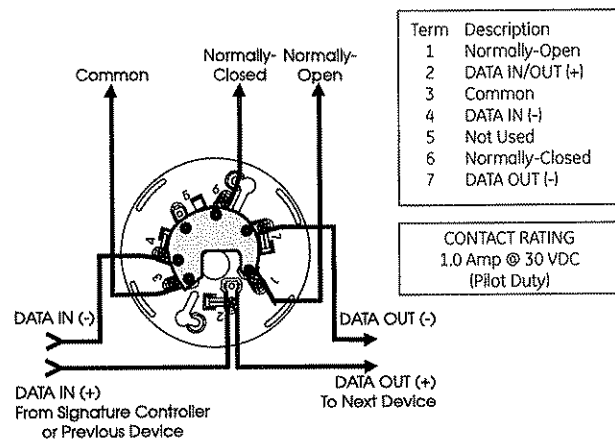
The detector mounting bases will accept #18 AWG (0.75mm²), #16 (1.0mm²), #14 AWG (1.5mm²), and #12 AWG (2.5mm²) wire sizes.

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

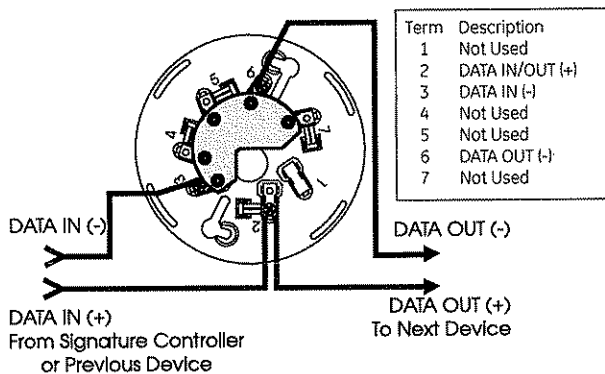
Standard Detector Base, SIGA-SB, SIGA-SB4



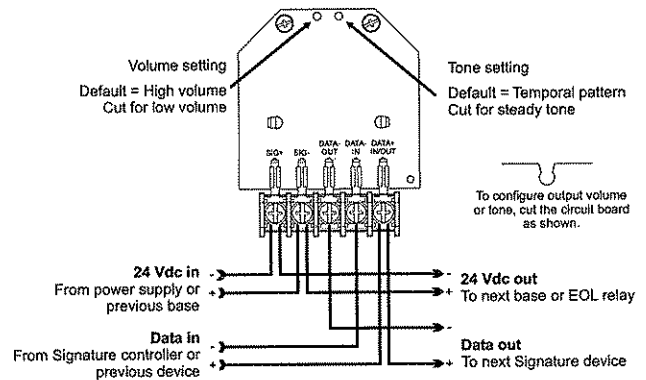
Relay Detector Base, SIGA-RB, SIGA-RB4



Isolator Detector Base, SIGA-IB, SIGA-IB4

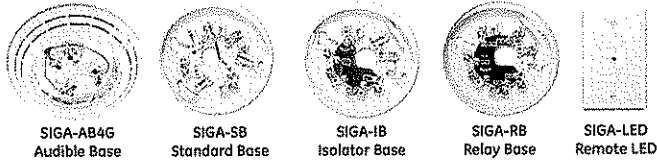


Audible Detector Base, SIGA-AB4G



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 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" square box only.



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
- 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 GE Security's Signature Loop Controller.

Specifications

Catalog Number	SIGA-HFS	SIGA-HRS
Heat Sensing Element	Fixed Temperature	Fixed & Temperature/ Rate-of-Rise
Alarm Point	Alarms at 135°F (57°C) Ambient	Alarms at 135°F (57°C) Ambient or Temp. increase above 15°F (9°C) per min.
UL Listed Detector Spacing	70 feet (21.3 meters) center to center spacing	
Operating and Storage Environment	Operating Temp: 32°F to 100°F (0°C to 38°C) Storage Temp: -4°F to 140°F (-20°C to 60°C) Humidity: 0 to 93% RH, Non-Condensing	
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)	
Operating Current	Quiescent: 45µA @ 19 V Alarm: 45µA @ 19V Emergency Stand-alone Alarm Mode: 18mA Pulse Current: 100 µA (100 msec)	
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	

Ordering Information

Catalog Number	Description	Ship Wt. lbs (kg)
SIGA-HFS	Intelligent Fixed Temperature Heat Detector - UL/ULC Listed	0.5 (0.23)
SIGA-HRS	Intelligent Fixed Temperature/Rate-of-Rise Heat Detector - UL/ULC Listed	
Accessories		
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	0.2 (.09)
SIGA-RB4	4-inch Detector Mounting Base /w Relay c/w SIGA-TS Trim Skirt	
SIGA-IB	Detector Mounting Base w/Fault Isolator	
SIGA-IB4	4-inch Detector Mounting Base w/ Fault Isolator c/w SIGA-TS Trim Skirt	
SIGA-LED	Remote Alarm LED	
SIGA-AB4G	Audible (Sounder) Base	0.3 (0.15)
SIGA-TS4	Trim Skirt (supplied with 4-inch bases)	0.1 (.04)

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F 866-503-3996

Canada
T 519 376 2430
F 519 376 7258

Asia
T 852 2907 8108
F 852 2142 5063

Australia
T 61 3 9259 4700
F 61 3 9259 4799

Europe
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F 32 2 721 86 13

Latin America
T 305 593 4301
F 305 593 4300

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imagination at work

Overview

The Genesis line of signals are among the smallest, most compact audible-visible emergency signaling devices in the world. About the size of a deck of playing cards, these devices are designed to blend with any decor.

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

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

Genesis strobes and horn-strobes offer 15 to 110 candela output, which is selectable with a conveniently-located switch on the side of the device. Models are also available that offer fixed 15/75 cd output. The candela output setting remains clearly visible even after final installation, yet it stays locked in place to prevent unauthorized tampering.

Genesis signals feature textured housings in architecturally neutral white or traditional fire red. An ingenious iconographic symbol indicates the purpose of the device. This universal symbol is code-compliant and is easily recognized by all building occupants regardless of what language they speak. Models with “FIRE” markings are also available.

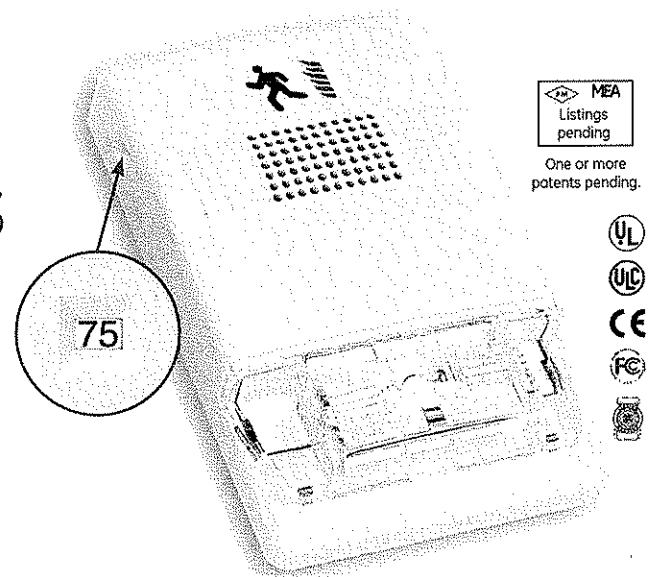
Field Configurable Horns and Strobes

Genesis Series



Standard Features

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



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.

Strobes

Although all Genesis strobes are self-synchronizing, when installed with an optional synchronization module, strobe flashes from devices on the same circuit synchronize to within 10 milliseconds of each other *indefinitely*. This exceeds the two-hour minimum specified in the UL standards. Only one synchronization module is required per circuit.

The following guidelines are based on ANSI/NFPA 72 *National Fire Alarm Code* (1999). When applied and installed in accordance with that code, GE Security strobes meet or exceed the illumination produced by the ADA-specified 75 candela (cd) strobe at 50 feet.*

Non-Sleeping Rooms and Corridors: GE Security strobes rated at less than 110 cd per UL 1971 are intended for use in non-sleeping areas only. Install with the bottom of the device at least 80 inches (2.0 m) and no more than 96 inches (2.4 m) above the finished floor. No point in any space (including corridors) required to have strobes should be more than 50 feet (15.2 m) from the signal (in the horizontal plane).

Non-Sleeping Rooms	Use One Wall Mounted Model:
Up to 20' x 20' (6.1 x 6.1m)	One 15 cd strobe
Up to 30' x 30' (9.1 x 9.1m)	One 30 cd or two 15 cd strobes
Up to 40' x 40' (12.2 m x 12.2 m)	One 75 cd or two 30 cd strobes
Up to 50' x 50' (15.2 x 15.2m)	One 110 cd or two 75 cd strobes

Corridors	Wall Mounted - Model:
Any Length x Max. 20' (6.1m) Wide	15 cd strobes spaced at 100' (30.5 m) max. Strobes must be placed within 15' (4.5m) of each end of the corridor.

* ADA suggests using 75 cd strobes throughout an area, with spacing that never exceeds 50 ft from the strobe to any point in the protected space.

Sleeping rooms: GE Security 110 cd strobes are intended for use in sleeping rooms and should be installed along with a smoke detector. It must be wall mounted at least 80" (2.03 m) above floor level, but no closer than 24" (610 mm) to the ceiling. The distance from the strobe to the pillow must not exceed 16' (4.8 m).

Sleeping Rooms	Use One Wall Mounted Model:
Any Size	110 cd within 16 feet of pillow

For 177 cd ceiling horn-strobes, please refer to data sheet 85001-0559.

Horns

Genesis horn output reaches as high as 99 dB and features a unique multiple frequency tone that results in excellent wall 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.

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.

Application Notes - USA

Audible signals in the public mode should never have a sound level less than 75 dBA at 10' (3 m) per NFPA 72. Signals cannot exceed 120 dBA per ADA and NFPA 72 at the minimum hearing distance to audible appliance.

Strobe and combination horn/strobe devices should be installed with the bottom of the device at least 80 inches (2.0 m) and no more than 96 inches (2.4 m) above the finished floor. Horns should be installed with their tops not less than 6 inches (152 mm) below the ceiling and not less than 90 inches (2.3 m) above the finished floor.

Strobes must be used to supplement audible signals wherever the average ambient sound level exceeds 105 dBA. Combination audible/visual signals must be installed in accordance with NFPA guidelines established for strobes.

ADA requires visible signals in the following areas:

- rest rooms, meeting rooms, and other common use areas.
- sleeping rooms intended for use by persons with hearing impairment (in accordance with Title 1 of ADA).
- work areas used by a person with a hearing impairment (per Title 1 of ADA).

Application Notes - Canada

(Based in part on 1995 Canada National Building Code)

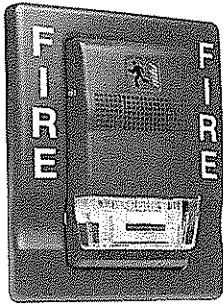
The fire alarm signal sound pressure level shall not exceed 110 dBA in any normally occupied area. The sound pressure level from an audible signal in a floor area used for occupancies other than residential occupancies shall not be less than 10 dBA above ambient levels, and never less than 65 dBA. In sleeping rooms the sound pressure level from an audible signal shall not be less than 75 dBA when any intervening doors between the device and the sleeping room are closed. Audible signal devices shall be installed not less than 1.8 m to the center of the device above the floor (per CAN/ULC S524).

The fire alarm audible signal shall be supplemented by fire alarm strobes in any floor area where the ambient noise level exceeds 87 dBA, or where the occupants of the floor area use ear protective devices, are located within an audiometric booth, or are located within sound insulating enclosures. This also applies to assembly occupancies in which music and other sounds associated with performances could exceed 100 dBA

Strobes shall be installed in a building so that the flash from one device is visible throughout the floor area or portion thereof in which they are installed. For maximum safety, GE Security recommends that strobes be installed as per the guidelines shown here under Strobe Spacing.

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 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.

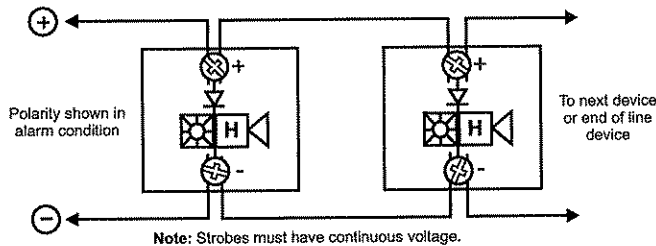
Genesis strobes and horn-strobes may be set for **15, 30, 75, or 110 candlea output**. The output setting is changed by simply opening the device and sliding the switch to the desired setting. The device does not have to be removed to change the output setting. The setting remains visible through a small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



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

These visual signal appliances' flash intensity 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 110 cd minimum.

Current Draw

Strobes, Horn-Strobes

Multi-cd Wall Strobes (G1-VM)

UL Rating	15 cd*	30 cd*	15/75 cd**	75 cd*	110 cd*
	RMS	RMS	RMS	RMS	RMS
16 Vdc	103	141	106	255	311
16 Vfwr	125	179	170	346	392

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

Typical Current	15 cd		30 cd		15/75		75 cd		110 cd	
	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
16 Vdc	85	79	127	124	150	140	245	243	285	283
20 Vdc	71	66	98	96	123	114	188	186	240	238
24 Vdc	59	55	82	80	104	97	152	150	191	190
33 Vdc	46	44	64	63	84	77	112	111	137	136
16 Vfwr	119	64	169	97	223	126	332	203	376	240
20 Vfwr	103	51	143	76	189	100	253	150	331	198
24 Vfwr	94	44	129	65	169	85	218	121	262	152
33 Vfwr	87	37	112	52	148	68	179	89	205	106

Wall Temporal Horn-strobes - High dB Setting

UL Rating	15 cd*	30 cd*	75 cd*	110 cd*	15/75 cd**	
	RMS	RMS	RMS	RMS	RMS	
16 Vdc	129	167	281	337	172	*G1-HDVM multi-cd
16 Vfwr	176	230	397	443	269	**G1F-HDV1575 fixed 15/75 cd

Typical Current	15 cd		30 cd		15/75		75 cd		110 cd	
	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
16 Vdc	102	89	135	129	160	152	246	242	309	305
20 Vdc	88	77	109	104	137	129	193	190	248	243
24 Vdc	81	71	94	90	122	114	161	158	203	200
33 Vdc	74	64	72	74	106	98	124	121	154	151
16 Vfwr	144	77	182	106	247	143	352	212	393	249
20 Vfwr	141	68	162	87	220	120	274	158	362	210
24 Vfwr	136	65	152	76	203	106	235	133	282	165
33 Vfwr	125	54	144	65	196	94	201	101	232	123

Wall Temporal Horn-strobes - Low dB Setting

UL Rating	15 cd*	30 cd*	75 cd*	110 cd*	15/75 cd**	
	RMS	RMS	RMS	RMS	RMS	
16 Vdc	122	160	274	330	146	*G1-HDVM multi-cd
16 Vfwr	162	216	383	429	231	**G1F-HDV1575 fixed 15/75 cd

Typical Current	15 cd		30 cd		15/75		75 cd		110 cd	
	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
16 Vdc	96	84	130	124	158	149	243	240	302	297
20 Vdc	79	70	104	99	133	124	189	186	241	237
24 Vdc	68	61	88	84	119	110	156	154	197	193
33 Vdc	56	52	71	68	100	93	118	116	146	143
16 Vfwr	128	69	180	104	241	139	344	204	389	244
20 Vfwr	118	60	157	84	213	115	266	156	343	200
24 Vfwr	113	54	144	74	195	101	230	128	279	161
33 Vfwr	112	48	137	64	182	87	197	99	226	117

Horns

Wall Temporal Horns (G1-HD)

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

Typical Current	High dB		Low dB	
	RMS	Mean	RMS	Mean
16 Vdc	22	17	17	14
20 Vdc	24	19	19	16
24 Vdc	27	21	22	18
33 Vdc	32	25	26	22
16 Vfwr	34	15	30	14
20 Vfwr	40	19	34	16
24 Vfwr	45	21	38	18
33 Vfwr	52	24	47	22

Wall Horns (G1-P)

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

Typical Current	RMS	Mean
24 Vdc	10	10
24 Vdc	11	11
31 Vdc	12	12
20 Vfwr	9	8
24 Vfwr	10	9

Notes and Comments

1. Current values are shown in mA.
2. UL Nameplate Rating can vary from Typical Current due to measurement methods and instruments used.
3. GE Security recommends using the Typical Current for system design including NAC and Power Supply loading and voltage drop calculations.
4. Use the Vdc RMS current ratings for filtered power supply and battery AH calculations. Use the Vfwr RMS current ratings for unfiltered power supply calculations.
5. Fuses, circuit breakers and other overcurrent protection devices are typically rated for current in RMS values. Most of these devices operate based upon the heating affect of the current flowing through the device. The RMS current (not the mean current) determines the heating affect and therefore, the trip and hold threshold for those devices.
6. Our industry has used 'mean' currents over the years. However, UL will direct the industry to use the 2004 RMS values in the future.

dBA output

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

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

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

Steady Tone Horns (G1-P series)

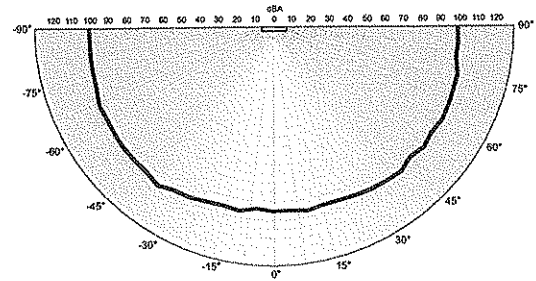
	UL464	Average	Peak
16 Vdc	77 dBA, min	85 dBA	91 dBA
16 Vfwr	77 dBA, min	85 dBA	91 dBA

Notes

- All values shown are dBA measured at 10 feet (3.01m).
- UL464 values measured in reverberation room.
- Average and Peak values are measured in anechoic chamber.

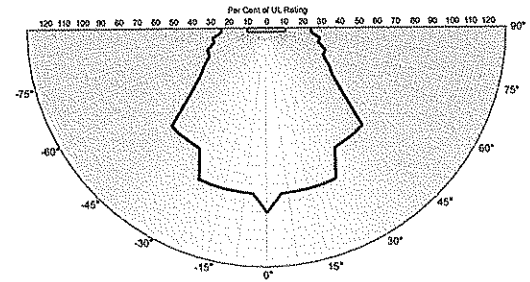
Average Sound Output (dBA)

(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 wall mount only)	Flush mount: 2½ inch (64 mm) deep one-gang box Surface mount: Model 27193 surface mount box, wiremold box, or equivalent surface-mount box With optional trim plate: One-gang, two-gang, four-inch square, octagonal, or European single-gang box
Wire connections	Screw terminals: single input for both horn and strobe. #18 to #12 AWG (0.75 mm ² to 2.5 mm ²) wire size
Operating environment	Indoor only: 32-120°F (0-49°C) ambient temperature. 93% relative humidity
Agency listings/approvals	UL 1971, UL 1638, UL 464, ULC S525, ULC S526, CSFM, CE, FCC, (MEA, FM pending). (All models comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule.)
Dimensions (HxWxD)	Signal: 4-1/2" x 2-3/4" x 13/16" (113 mm x 68 mm x 21 mm) Trimplate: 5" (127 mm); Height - 5-7/8" (149 mm); Depth - ½" (13 mm)
Operating voltage	G1-HD series temporal-tone horns: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR (or coded when horn set to steady tone) G1-HDVM series temporal-tone horn-strobes: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR (or coded (audible NAC only) when used with optional G1M Genesis Signal Master) G1-VM series strobes: non-coded, filtered 16 - 33 Vdc or unfiltered 16-33 Vdc FWR G1-P series steady-tone horns: coded or non-coded, filtered 20-31 Vdc or unfiltered 20-27 Vfwr
Strobe output rating	UL 1971, UL 1638, ULC S526: selectable 15 cd, 30 cd, 75 cd, or 110 cd output UL 1971: 15 cd (fixed 15/75 cd models) UL 1638, ULCS526: 75 cd (fixed 15/75 cd models)
Strobe flash rate	G1-VM strobes and G1-HDVM series temporal-tone horn-strobes: one flash per second synchronized with optional G1M Genesis Signal Master indefinitely within 10 milliseconds (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
Compatible synchronization modules*	G1M, G1M-RM, SIGA-CC1S, SIGA-MCC1S
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

* Not compatible with G1-P Series horns.

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F 32 2 721 86 13

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Ordering Information

Catalog Number		Description	Ship Wt. lbs (kg)
White Finish	Red Finish		
G1-HDVM	G1R- HDVM	Genesis Horn-Strobe (selectable 15, 30, 75, or 110 cd output, selectable high/low dB output)	0.25 (0.11)
G1-VM	G1R-VM	Genesis Strobe (selectable 15, 30, 75, or 110 cd output)	
G1-HD	G1R-HD	Genesis Temporal Horn (selectable high/low dB output)	
G1-P	G1R-P	Genesis Steady Horn (not compatible with Genesis Signal Master)	
G1F- HDVM	G1RF- HDVM	Genesis Horn-Strobe (selectable 15, 30, 75, or 110 cd output, selectable high/low dB output) - with "FIRE" marking	
G1F-VM	G1RF-VM	Genesis Strobe (selectable 15, 30, 75, or 110 cd output) - with "FIRE" marking	
G1F-HD	G1RF-HD	Genesis Temporal Horn (selectable high/low dB output) - with "FIRE" marking	
G1F-P	G1RF-P	Genesis Steady Horn with "FIRE" marking (not compatible with Genesis Signal Master)	
G1F- HDV1575	G1RF- HDV1575	15/75 cd temporal horn-strobe, hi/lo dB-24V - with "FIRE" marking (see note 1)	
G1F- V1575	G1RF- V1575	15/75 cd strobe - with "FIRE" marking (see note 1)	

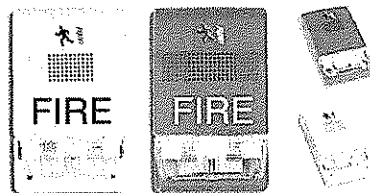
Mounting Accessories

G1T	G1RT	Genesis Trim Plate (for two-gang or 4" square boxes)	0.15 (0.7)
G1T-FIRE	G1RT- FIRE	Genesis Trim Plate (for two-gang or 4" square boxes) with "FIRE" markings	0.15 (0.7)
27193-16	27193-11	One-gang surface mount box	1 (0.4)

Synchronization Modules

G1M	Genesis Signal Master - Snap-on Mount		0.2 (0.1)
G1M-RM	Genesis Signal Master - Remote Mount (1-gang)		
SIGA-CC1S	Intelligent Synchronization Output Module (2-gang)		0.5 (0.23)
SIGA-MCC1S	Intelligent Synchronization Output Module (Plug-in UIO)		0.18 (0.08)

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



Genesis Horn-Strobes may be ordered in red or white, with or without 'FIRE' marking. Order matching trim plates separately.



imagination at work

Overview

Genesis ceiling speaker-strobes are small, compact, and attractive audible-visible emergency signaling devices. Protruding no more than 1.6" (41 mm) from the ceiling, Genesis speaker-strobes blend with any decor.

Signals feature textured housings in architecturally neutral white or eye-catching fire alarm red. An ingenious iconographic symbol indicates the purpose of the device. This universal symbol is code-compliant and is easily recognized by all building occupants regardless of what language they speak. Models with "FIRE" markings are also available.

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

FullLight strobe technology produces a smooth light distribution pattern without the spikes and voids characteristic of specular reflectors. This ensures the entire coverage area receives consistent illumination from the strobe flash.

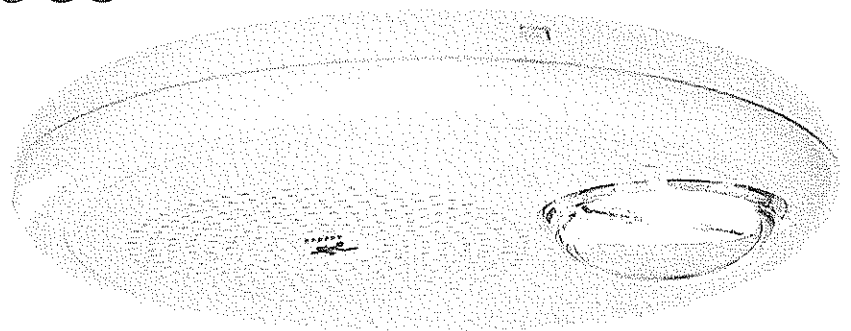
Depending on the model, Genesis speaker-strobes feature 15 to 95, or 95 to 177 candela output (see ordering information), which is selectable with a conveniently-located switch. The candela output setting remains clearly visible even after final installation, yet it is locked in place to prevent unauthorized movement after installation.

Standard Features

- **Field configurable – no need to remove the device!**
 - Select ¼, ½, 1, or 2 watt operation
 - 15/30/75/95 cd and 95/115/150/177 cd models available
 - Switch settings remain visible *even after the unit is installed*
- **Unique low-profile design**
 - 30 per cent slimmer profile than comparable signals
 - Attractive appearance
 - No visible mounting screws
 - Available with white or red housings
- **Unparalleled performance**
 - loud 90 dBA output ensures clear, crisp audio
 - Precision timing electronics meet tough synchronizing standards for strobes when used with compatible modules
 - Highly regulated in-rush current allows the maximum number of strobes on a circuit
 - 25 V_{RMS} and 70 V_{RMS} models available, all supplied with a DC blocking capacitor for audio circuit supervision
- **Easy to install**
 - Fits all standard 4" square electrical boxes with plenty of room behind the signal for extra wire – *no extension ring or trim plate needed*
 - #18 - #12 AWG terminals – ideal for long runs, existing wiring
- **Approved for public and private mode applications**
 - UL 1971-listed as signaling devices for the hearing impaired
 - UL 1638-listed as protective visual signaling appliances
 - UL 1480-listed as fire alarm speaker
 - UL/ULC listed for ceiling or wall use

Field Configurable Ceiling Speaker-strobes

Genesis Series



Strobe Application

Genesis speaker-strobes include a DC blocking capacitor to allow electrical supervision of the audio distribution circuit. Models for 25 V_{RMS} and 70 V_{RMS} audio circuits are available. The mylar speaker with its sealed back construction is extra durable, is impervious to moisture, and provides improved audibility. ¼ W to 2 W operation is selectable with a conveniently-located switch on the front of the device. The wattage tap setting remains clearly visible even after final installation.

All Genesis speaker-strobes are fully compatible with Enhanced Integrity signals. The two product lines may be mixed on the same circuit.

Genesis speaker-strobes are UL 1971-listed for use indoors as wall or ceiling 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*, which requires visible signals in the following areas:

- rest rooms, meeting rooms, and other common use areas.
- sleeping rooms intended for use by persons with hearing impairment (in accordance with Title 1 of ADA).
- work areas used by a person with a hearing impairment (per Title 1 of ADA).

Although all Genesis strobes are self-synchronizing, when installed with an optional synchronization module, strobe flashes from devices on the same circuit synchronize to within 10 milliseconds of each other *indefinitely*. This exceeds the two-hour minimum specified in the UL standards. Only one synchronization module is required per circuit.

Genesis speaker-strobes are synchronized and UL-listed for use in sleeping or non-sleeping areas. They are intended for indoor use only and are approved for wall or ceiling mount applications.

Recommended Strobes: The following guidelines are based on ANSI/NFPA 72 *National Fire Alarm Code* (2002). When applied and installed in accordance with that code, GE Security strobes meet or exceed the illumination produced by the ADA-specified 75 candela (cd) strobe at 50 feet. (ADA suggests using 75 cd strobes throughout an area, with spacing that never exceeds 50 ft. from the strobe to any point in the protected space.)

WARNING: These devices will not operate without electrical power. As fires frequently cause power interruptions, we suggest you discuss further safeguards with your local fire protection specialist. 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 set to 110 cd minimum.

Non-Sleeping Areas and Corridors: GE Security strobes rated at less than 110 cd per UL 1971 are intended for use in non-sleeping areas only. Install with the bottom of the device at least 80 inches (2.0 m) and no more than 96 inches (2.4 m) above the finished floor. No point in any space (including corridors) required to have strobes should be more than 50 feet (15.2 m) from the signal (in the horizontal plane).

Room Type	Maximum Area (square room size)	Maximum Ceiling Height	Recommended Ceiling mount Genesis Strobe	
Non-sleeping Rooms (ceiling mounted)	20 x 20 ft. (6.1 x 6.1 m)	10 feet (3.05 m)	15 cd	
	30 x 30 ft. (9.1 x 9.1 m)		30 cd	
	40 x 40 ft. (12.2 x 12.2 m)		75 cd	
	50 x 50 ft. (15.2 x 15.2 m)		95 cd	
	20 x 20 ft. (6.1 x 6.1 m)	20 feet (6.10 m)	30 cd	
	30 x 30 ft. (9.1 x 9.1 m)		75 cd	
	40 x 40 ft. (12.2 x 12.2 m)		95 cd	
	50 x 50 ft. (15.2 x 15.2 m)		115 cd	
	20 x 20 ft. (6.1 x 6.1 m)		30 feet (9.14 m)	75 cd
	30 x 30 ft. (9.1 x 9.1 m)			75 cd
40 x 40 ft. (12.2 x 12.2 m)	115 cd			
50 x 50 ft. (15.2 x 15.2 m)	150 cd			

Note: Recommendations in the table above assume the strobe is placed in the center of the room. If not, the maximum room size is determined by doubling the distance from the strobe to the farthest wall.

Sleeping areas: In sleeping areas, ceiling mounted strobes (and wall mounted strobes installed less than 24 inches from the ceiling) must be rated at a minimum of 177 cd. Wall mounted strobes installed more than 24 inches (610 mm) from the ceiling must be rated at a minimum of 110 cd. In all cases, the distance from the strobe to the pillow must not exceed 16' (4.8 m).

For detailed spacing requirements, consult *The Handbook of Visible Notification Appliances for Fire Alarm Applications* published by GE Security Press, or contact your local GE Security representative.

Speaker Application

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

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

Combination audible/visual signals must be installed in accordance with guidelines established for strobes.

Application Notes - Canada

(Based in part on 1995 Canada National Building Code)

The fire alarm signal sound pressure level shall not exceed 110 dBA in any normally occupied area. The sound pressure level from an audible signal in a floor area used for occupancies other than residential occupancies shall not be less than 10 dBA above ambient levels, and never less than 65 dBA. In sleeping rooms the sound pressure level from an audible signal shall not be less than 75 dBA when any intervening doors between the device and the sleeping room are closed.

The fire alarm audible signal shall be supplemented by fire alarm strobes in any floor area where the ambient noise level exceeds 87 dBA, or where the occupants of the floor area use ear protective devices, are located within an audiometric booth, or are located within sound insulating enclosures. This also applies to assembly occupancies in which music and other sounds associated with performances could exceed 100 dBA. Strobes shall be installed in a building so that the flash from one device is visible throughout the floor area or portion thereof in which they are installed.

Current Draw

UL Nameplate Rating

	15 cd	30 cd	75 cd	95 cd
	RMS	RMS	RMS	RMS
16 Vdc	109	151	281	318
16 Vfwr	131	194	379	437

Typical Current

	15 cd		30 cd		75 cd		95 cd	
	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
16 Vdc	94	87	140	135	273	268	325	323
20 Vdc	74	68	108	105	205	203	244	242
24 Vdc	63	59	90	88	168	166	194	192
33 Vdc	48	46	70	68	124	123	139	138
16 Vfwr	126	67	187	108	368	231	403	260
20 Vfwr	108	54	156	84	281	168	333	199
24 Vfwr	97	47	139	71	240	135	270	156
33 Vfwr	89	39	119	56	197	100	214	111

UL Nameplate Rating (high cd output models)

	95 cd	115 cd	150 cd	177 cd
	RMS	RMS	RMS	RMS
	330	392	502	565
	432	518	643	693

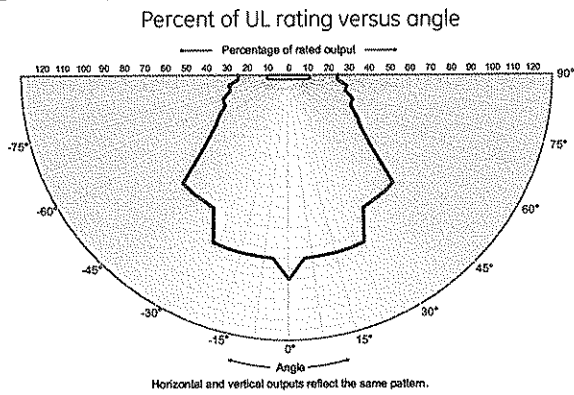
Typical Current (high cd output models)

	95 cd		115 cd		150 cd		177 cd	
	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
	333	330	392	390	499	496	551	545
	259	257	303	301	378	375	429	426
	212	210	245	243	306	304	342	340
	155	153	180	174	211	209	236	234
	484	283	570	339	673	411	724	446
	380	212	438	248	537	312	604	352
	318	172	361	198	434	243	484	273
	245	123	269	137	308	160	338	176

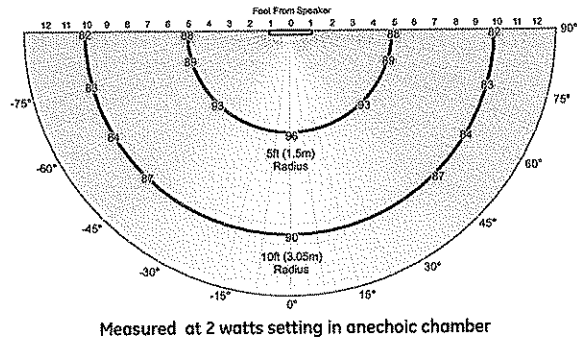
Notes and Comments

1. Current values are shown in mA.
2. UL nameplate rating is higher than typical current due to measurement methods and instruments used.
3. GE Security recommends using the typical current for system design including NAC and Power Supply loading and voltage drop calculations.
4. Use the Vdc RMS current ratings for filtered power supply and battery AH calculations. Use the Vfwr RMS current ratings for unfiltered power supply calculations.
5. Fuses, circuit breakers and other overcurrent protection devices are typically rated for current in RMS values. Most of these devices operate based upon the heating affect of the current flowing through the device. The RMS current (not the mean current) determines the heating affect and therefore, the trip and hold threshold for those devices.
6. Our industry has used 'mean' currents over the years. However, UL will direct the industry to use the 2004 RMS values in the future.

Light output - (effective cd)

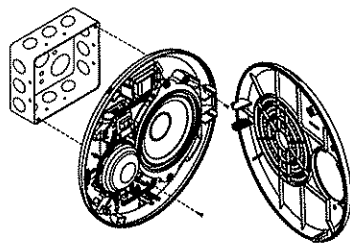


Typical Sound Output (dBA)

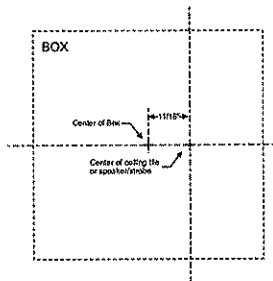


Installation and Mounting

All models are intended for indoor ceiling or wall applications only. Speaker-strobes are mounted to a flush North-American 4" square electrical box, 2¹/₈" (54 mm) deep.



Genesis ceiling speaker-strobes simply unlatch and hinge down to open. This gains access to mounting screws and the selectable candela wattage tap switches. 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.

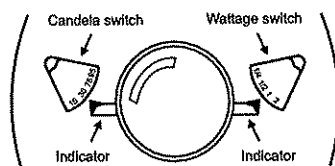


Caution:

When installed, these devices are not centered on the electrical box. Make sure boxes are mounted to compensate for this difference. Use the mounting template provided with installation sheet 3100614.

Field Configuration

Genesis ceiling speaker-strobes may be set for 1/4, 1/2, 1, or 2 watt operation. Depending on the model, Genesis ceiling speaker-strobes may also be set for 15/30/75/95 or 96/115/150/177 candela output (see ordering information). Output settings are changed by simply opening the device and sliding the switches to the desired settings. The speaker-strobe does not have to be removed to change the output settings. The settings remain visible through small windows on the front of the device after the cover is closed.

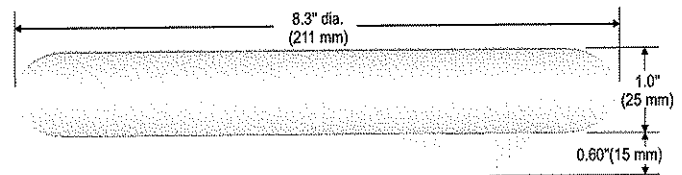


Sound Level Output

Wattage	25V		70V	
	UL Rated*	Typical	UL Rated*	Typical
1/4 W	80 dBA	80.7 dBA	80 dBA	81.1 dBA
1/2 W	84 dBA	83.7 dBA	84 dBA	83.5 dBA
1 W	87 dBA	87.1 dBA	87 dBA	87.2 dBA
2 W	90 dBA	90.1 dBA	91 dBA	90.2 dBA

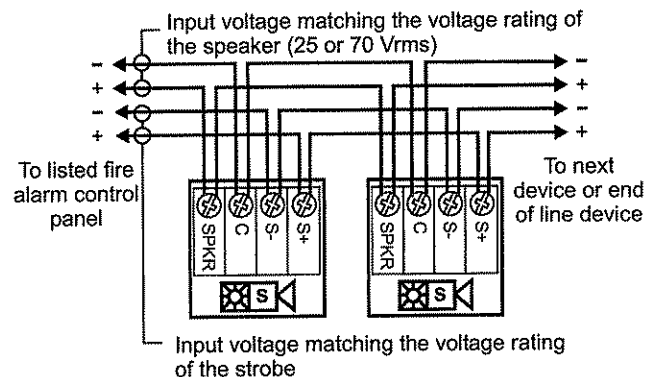
*Sound level output notes: dBA = Decibels, A-weighted. **UL1480:** Sound level output at 10 ft (3.05 m) measured in a reverberant room using 400 to 4,000 Hz band limited pink noise. **ULC-S541:** Meets or exceeds 85 dBA in an anechoic chamber at 10 ft (3.05 m). **Directional characteristics:** Within 6 dB of on-axis sound level when measured 90° off-axis (horizontal).

Dimensions



Wiring

Field wiring terminals accommodate #18 to #12 AWG (0.75 mm² to 2.5 mm²) wiring.



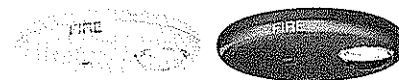
Specifications

Housing	Textured UV stabilized, color impregnated engineered plastic. Exceeds 94V-0 UL flammability rating. Red and white models available.
Mounting	Flush mount to North American 4-inch square electrical box, 2-1/8 (54 mm) inches deep, or 960A-4RF round flush box. No extension ring required. Suitable for indoor wall or ceiling applications.
Wire connections	Screw terminals: polarized inputs for speaker, #18 to #12 AWG (0.75 mm ² to 2.5 mm ²) wire size
Operating environment	Indoor: 32-120° F (0-49° C) ambient temperature; 0-93% relative humidity.
Agency listings/approvals	Meets ULC-S541, year 2004 UL requirements for standards UL1638 and UL1971, CSFM, and complies with UL1480 Fifth Edition. All speaker-strobes comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule. FM and MEA pending.
Speaker	
Input/Operating Volts	25 Vrms (Model GC-S2VM) or 70 Vrms (Model GC-S7VM).
Speaker Cone	Speaker frequency response: 250 - 13,000 Hz. Optimized for voice intelligibility. 4-inch (102mm) mylar cone, sealed back construction, rated for 8 watts, 8 ohm voice coil.
Strobe	
Strobe output rating	UL 1971, UL 1638, ULC S526: selectable 15/30/75/95 cd (VM models) and 95/115/150/177 cd (VMH models)
Strobe operating voltage	GC-S2VM/-S7VM series speaker-strobes: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR
Strobe flash rate	GC-S2VM/-S7VM series speaker-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 Genesis audible signals on same circuit
Synchronization	Meets or exceeds UL 1971 requirements. Maximum allowed resistance between any two devices is 20 Ohms. Refer to specifications for the synchronization control module, this strobe, and the control panel to determine allowed wire resistance.
Compatible synchronization modules	G1M-RM, SIGA-CC1S, SIGA-MCC1S
Lens	Optical grade polycarbonate (clear)

Ordering Information

All speaker-strobes include field-selectable ¼, ½, 1, or 2 watt taps

Catalog Number	Housing Color	Marking	Description	Ship Wt. lbs (kg)
GC- S2VM	White	None	25 Volt Speaker-strobe with selectable 15, 30, 75, or 95 cd output	2.25 (1.0)
GCF- S2VM	White	"Fire"		
GCFR- S2VM	Red	"Fire"		
GC- S2VMH	White	None	25 Volt Speaker-strobe with selectable 95, 115, 150, or 177 cd output	2.25 (1.0)
GCF- S2VMH	White	"Fire"		
GCFR- S2VMH	Red	"Fire"		
GC- S7VM	White	None	70 Volt Speaker-strobe with selectable 15, 30, 75, or 95 cd output	2.25 (1.0)
GCF- S7VM	White	"Fire"		
GCFR- S7VM	Red	"Fire"		
GC- S7VMH	White	None	70 Volt Speaker-strobe with selectable 95, 115, 150, or 177 cd output	2.25 (1.0)
GCF- S7VMH	White	"Fire"		
GCFR- S7VMH	Red	"Fire"		



White Field configurable Speaker-Strobes may be ordered with or without 'FIRE' marking. Red Speaker-Strobes come with 'FIRE' marking.

Accessories		
G1M-RM	Genesis Signal Master Module (1-gang)	0.2 (0.1)
SIGA-CC1S	Intelligent Synchronization Output Module (2-gang)	0.5 (0.23)
SIGA-MCC1S	Intelligent Synchronization Output Module (Plug-in UIO)	0.18 (0.08)

GE Security recommends that these fire alarm speaker-strobes always be installed in accordance with the latest recognized edition of national and local fire alarm codes.

GE Security

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Australia
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Overview

The GE Security *SuperDuct* Signature Series smoke detector is the most advanced and most reliable device in its class. Designed for easy installation and superb reliability, *SuperDuct* represents the perfect balance of practical design and advanced technology.

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

A Signature Series photoelectric sensor is incorporated into the design of each SIGA-SD duct smoke detector. This sensor inherits the power and benefits of this exceptional line of intelligent devices.

Signature Series sensors gather analog information from their smoke sensing elements and convert it into digital signals. The sensor measures and analyses these signals and compares the information to historical readings and time patterns to make an alarm decision. Digital filters remove signal patterns that are not typical of fires, which virtually eliminates unwanted alarms.

WARNING: Duct detectors have specific limitations. Duct detectors are not a substitute for an open area smoke detector. Duct detectors are not a substitute for early warning detection or a replacement for a building's regular fire detection system. Smoke detectors are not designed to detect toxic gases which can build up to hazardous levels in some fires. These devices will not operate without electrical power. As fires frequently cause power interruptions, GE Security suggests you discuss further safeguards with your local fire protection specialist.

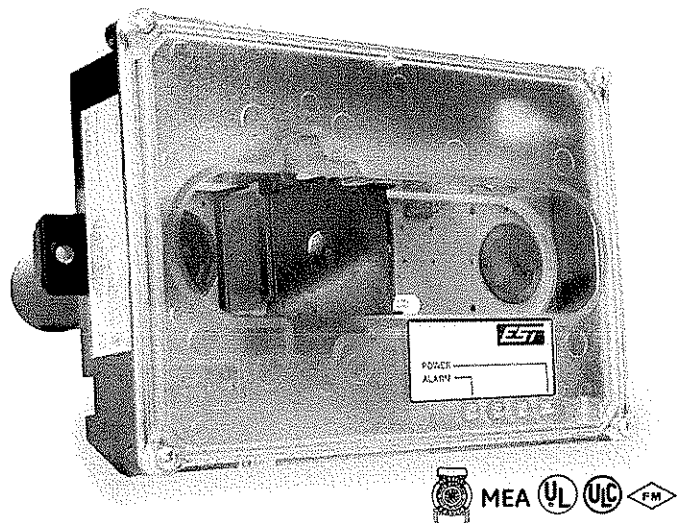
Intelligent Duct Smoke Detector

SIGA-SD



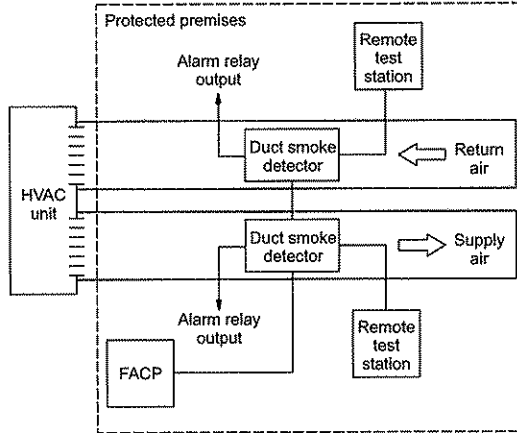
Standard Features

- Less than 2" deep for easy installation and applications where space is tight
- -20 to 158 °F (-29 to 70 °C) operating range with 100 ft/min. to 4,000 ft/min air velocity rating assures reliability under harsh environmental conditions
- Status LEDs remain visible through clear assembly cover
- Cover monitor switch for added security
- Standard sampling tube spacing for easy drop-in migration from other detectors
- Sampling tube can be installed with or without the cover in place and can be rotated in 45-degree increments to ensure proper alignment with duct airflow
- 15.2 to 19.95 Vdc operation
- Magnet-activated test switch
- One Form C auxiliary alarm relay for controlling ancillary equipment (e.g., HVAC controls)
- No special tools required for easy access to field connections
- Signature Series intelligence
- Environmental compensation with differential sensing for reliable, stable, and drift-free sensitivity
- Wide 0.79% to 2.46% obscuration/ft. smoke sensitivity
- Identification of dirty or defective detectors



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

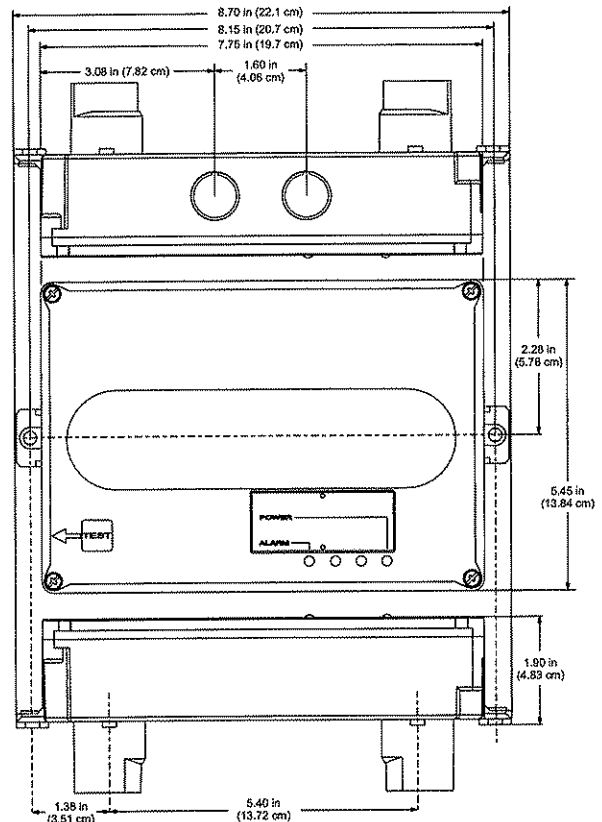


Labor-saving Remote Test/Reset stations provide alarm testing from the convenience of a remote location. Tests can be performed quickly and safely - without having to climb to the roof. Magnetically-operated and key-operated one-gang models are available. Signature *SuperDuct* detectors are also compatible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

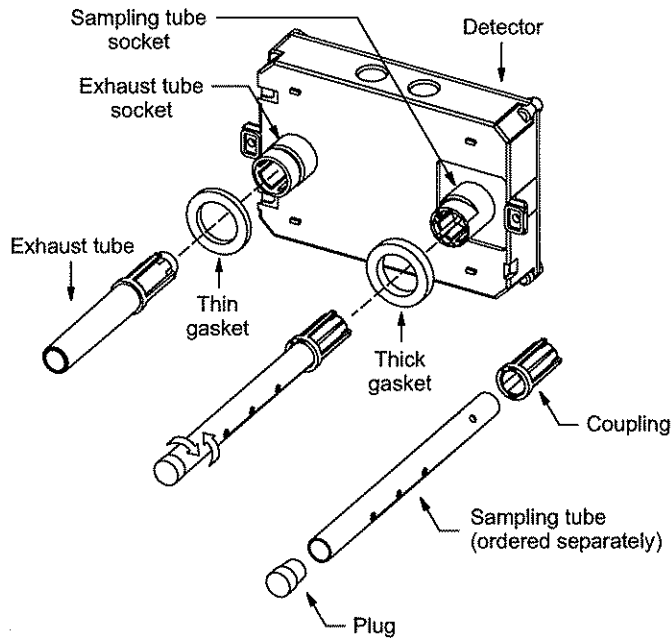
Air velocity in the duct as low as 100 ft/min. maintains adequate air flow into the sensor smoke chamber through air holes in the air sampling tube and discharges through the exhaust tube. *SuperDuct* air sampling tubes must be installed with the inlet holes facing the airstream. Sampling tubes may be 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.

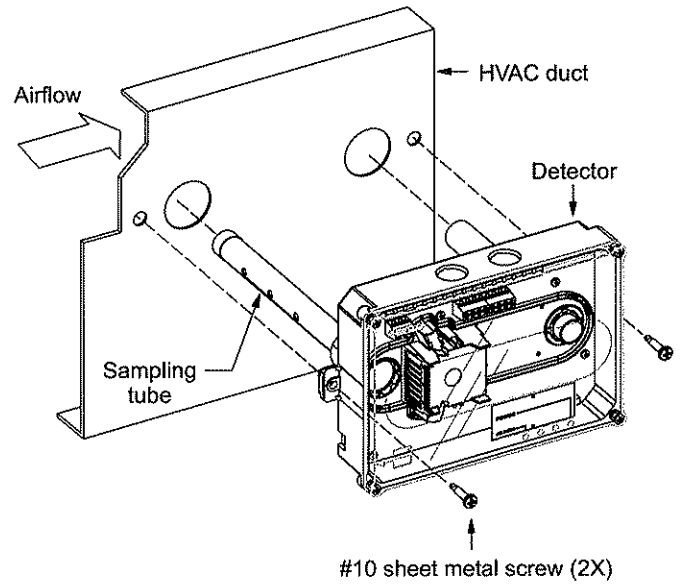
Dimensions



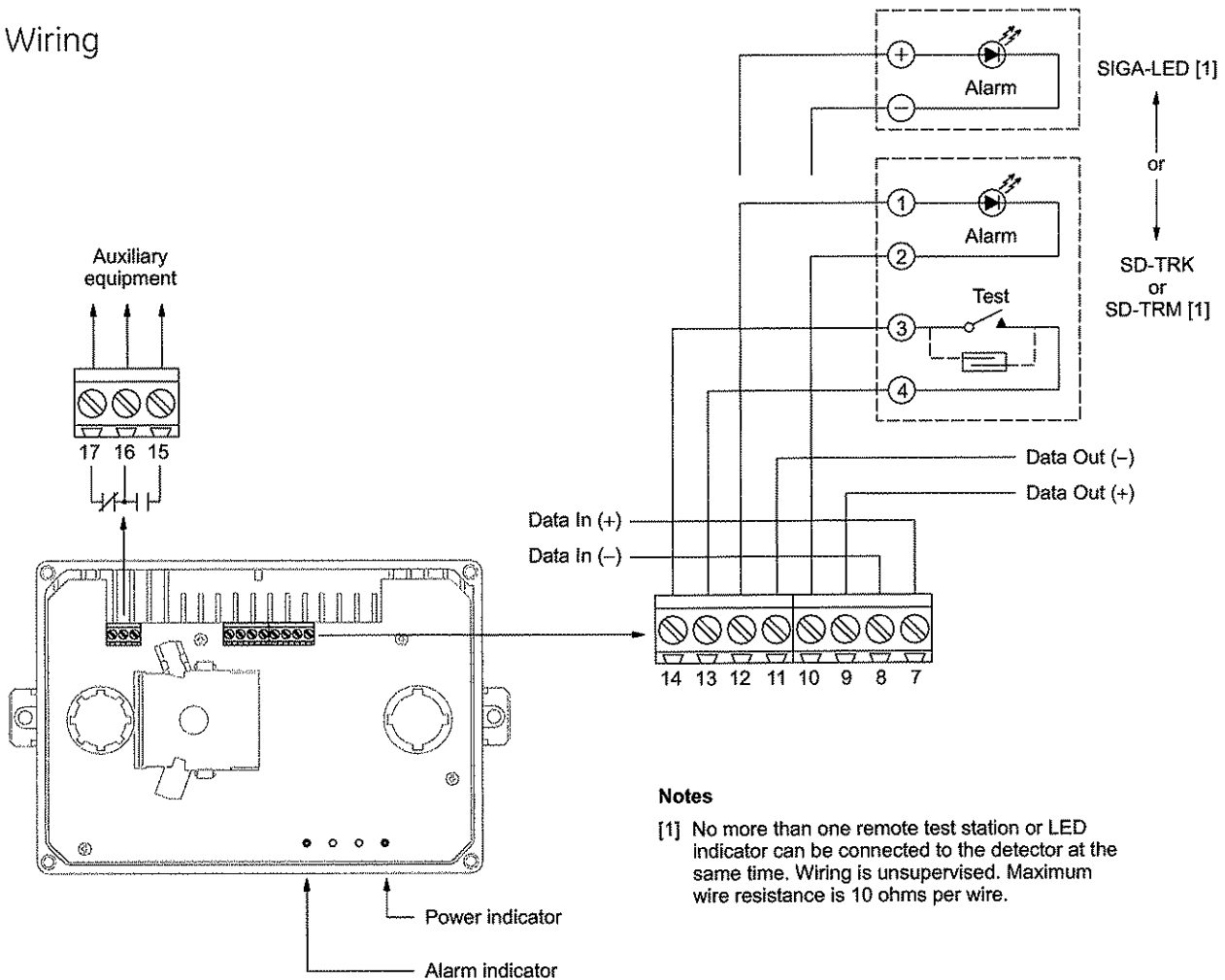
Assembly



Mounting



Wiring



Notes

- [1] No more than one remote test station or LED indicator can be connected to the detector at the same time. Wiring is unsupervised. Maximum wire resistance is 10 ohms per wire.

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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
Smoke detection method	Photoelectric (light scattering principle)
Air velocity rating	100 to 4,000 ft/min
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) Unsupervised and power-limited
Common alarm relay	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: -20 to 158 °F (-29 to 70 °C) Humidity 93% RH, 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. Magnetically-operated 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	Temperature: 32 to 131 °F (0 to 55 °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)



imagination at work

Overview

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

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

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

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

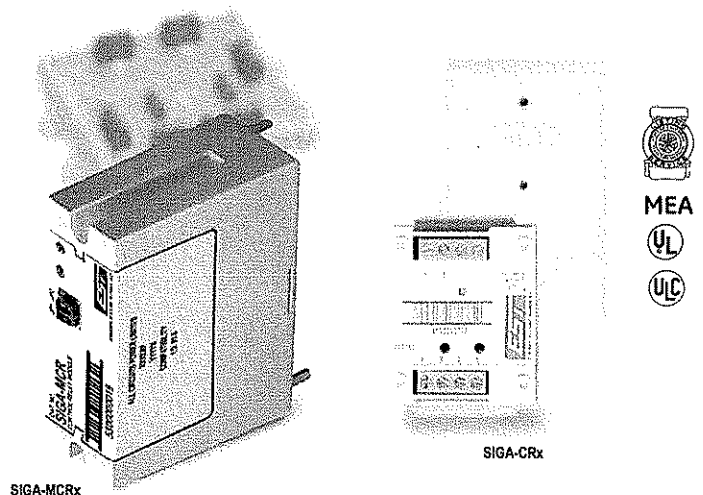
Plug-in UIO versions (SIGA-MCR and SIGA-MCRR) are part of the UIO family of plug-in Signature Series modules. They function identically to the standard mount versions, but take advantage of the modular flexibility and easy installation that characterizes all UIO modules. Two- and six-module UIO motherboards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

Standard Features

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

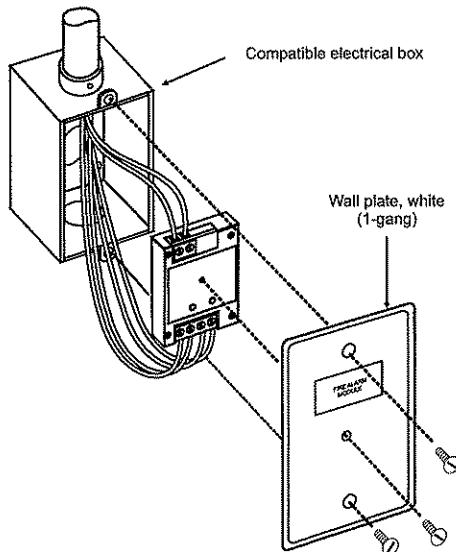
Control Relay Modules

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

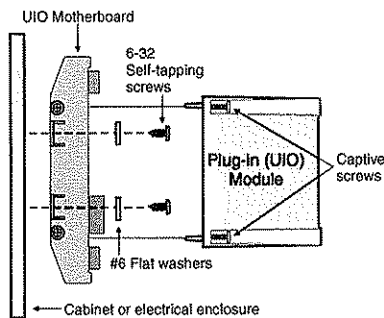


Installation

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 for 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.

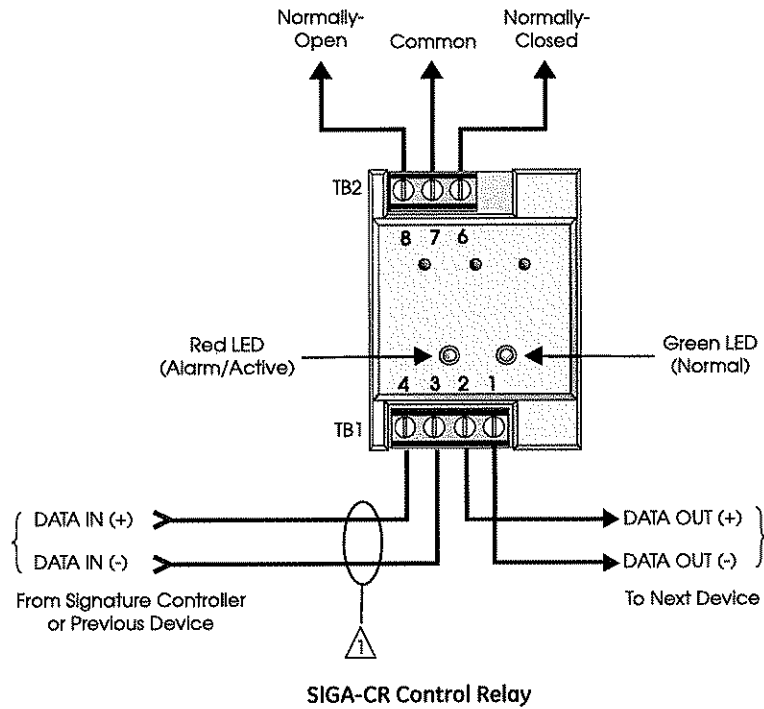
Testing & Maintenance

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

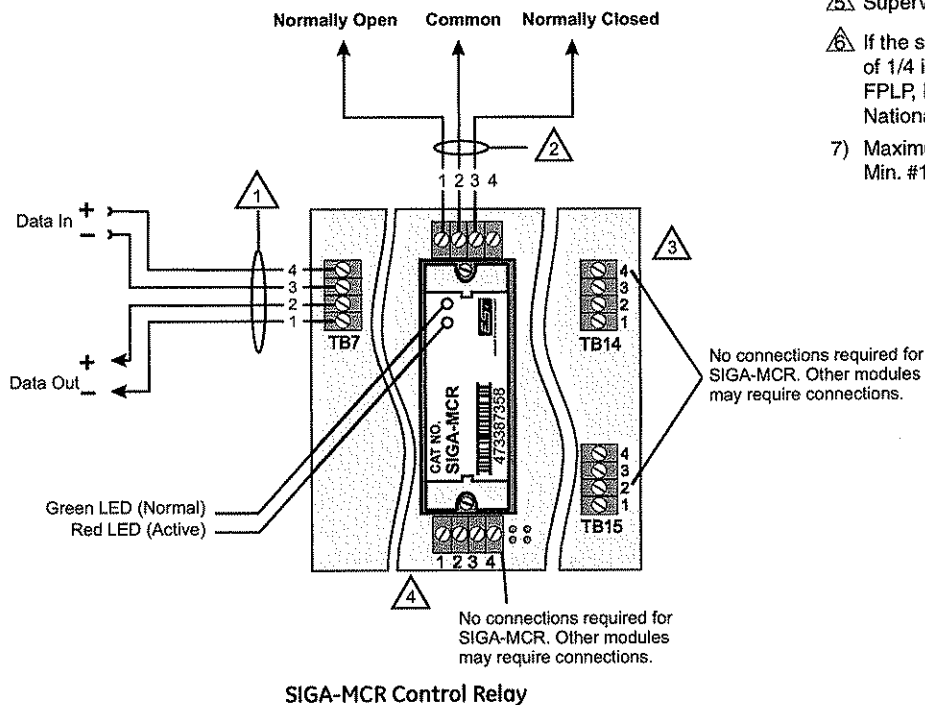
Modules will accept #18 AWG (0.75mm²), #16 (1.0mm²), #14 AWG (1.50mm²) and #12 AWG (2.5mm²) wire sizes.

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



Notes

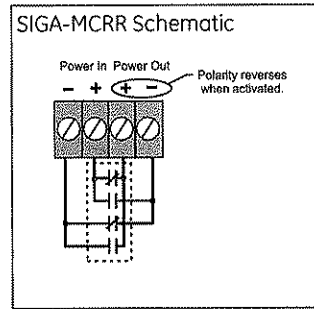
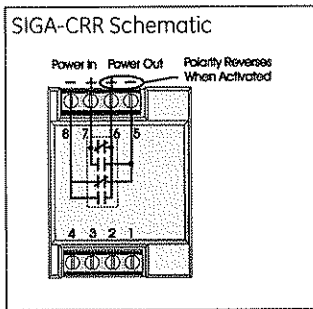
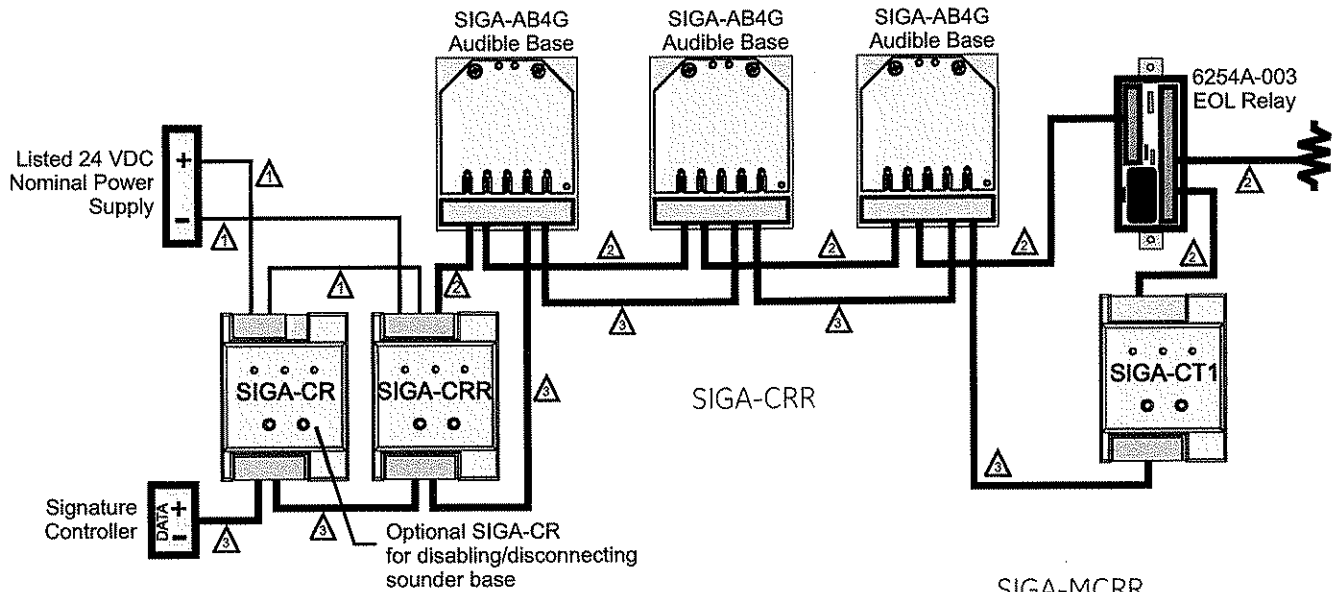
- ⚠ Refer to Signature Loop Controller Installation Sheet for wiring specifications.
- ⚠ NFPA 72 requires that the SIGA-CR/SIGA-MCR be installed in the same room as the device it is controlling. This requirement may not apply in all markets. Check with your local AHJ for details.
- ⚠ The SIGA-UIO6R and the SIGA-UIO2R do not come with TB14.
- ⚠ The SIGA-UIO6 does not come with TB8 through TB13.
- ⚠ Supervised and power-limited.
- ⚠ If the source is nonpower-limited, maintain a space of 1/4 inch from power-limited wiring or use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electrical Code.
- 7) Maximum #12 AWG (2.5mm²) wire. Min. #18 (0.75mm²).



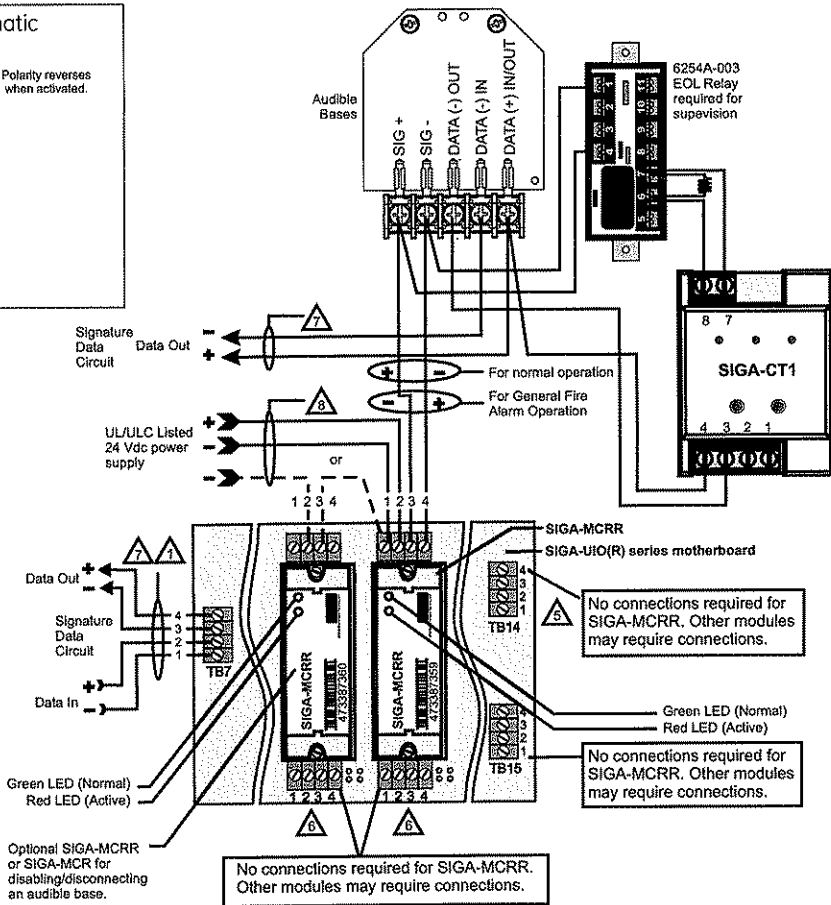
Typical Wiring

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

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



SIGA-MCRR



Notes

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

Specifications

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

Ordering Information

Catalog Number	Description	Ship Weight - lbs (kg)
SIGA-CR	Control Relay Module (Standard Mount) - UL/ULC Listed	0.4 (0.15)
SIGA-MCR	Control Relay Module (UIO Mount) - UL Listed	0.18 (0.08)
SIGA-CRR	Polarity Reversal Relay Module (Standard Mount) - UL/ULC Listed	0.4 (0.15)
SIGA-MCRR	Polarity Reversal Relay Module (UIO Mount) - UL Listed	0.18 (0.08)

Related Equipment		
27193-11	Surface Mount Box - Red, 1-gang	1 (0.6)
27193-16	Surface Mount Box - White, 1-gang	1 (0.6)
SIGA-UIO2R	Universal Input-Output Module Board w/Riser Inputs - Two Module Positions	0.32 (0.15)
SIGA-UIO6R	Universal Input-Output Module Board w/Riser Inputs - Six Module Positions	0.62 (0.28)
SIGA-UIO6	Universal Input-Output Module Board - Six Module Positions	0.56 (0.25)
SIGA-AB4G	Audible (Sounder) Detector Base	0.3 (0.15)

Accessories		
MFC-A	Multifunction Fire Cabinet - Red, supports Signature Module Mounting Plates	7.0 (3.1)
SIGA-MP1	Signature Module Mounting Plate, 1 footprint	1.5 (0.70)
SIGA-MP2	Signature Module Mounting Plate, 1/2 footprint	0.5 (0.23)
SIGA-MP2L	Signature Module Mounting Plate, 1/2 extended footprint	1.02 (0.46)

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Signature Series Overview

The Signature Series intelligent analog-addressable system from 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
- Date of manufacture, hours of operation, and last maintenance date²
- Number of recorded alarms and troubles²
- Time and date of last alarm¹
- 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

¹EST3 V.2 only.

²Retrievable with SIGA-PRO programming tool.



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Overview

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

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

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

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

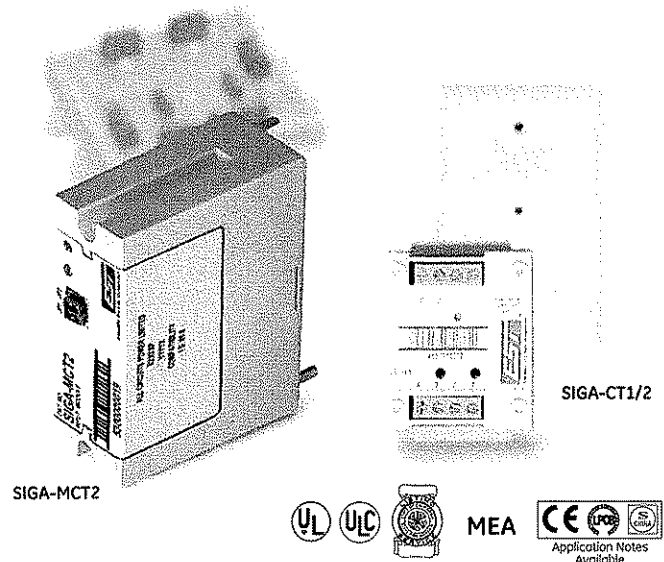
The SIGA-MCT2 is part of the UIO family of plug-in Signature Series modules. It functions identically to the SIGA-CT2, but takes advantage of the modular flexibility and easy installation that characterizes all UIO modules. Two- and six-module UIO motherboards are available. All wiring connections are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

Standard Features

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

Input Modules

SIGA-CT1, SIGA-CT2 & SIGA-MCT2



Signature Series Overview

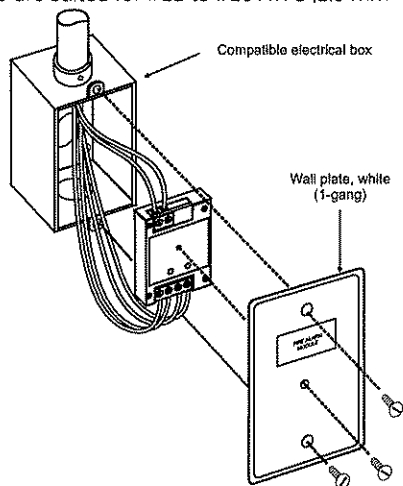
The Signature Series intelligent analog-addressable system from GE Security is an entire family of multi-sensor detectors and mounting bases, multiple-function input and output modules, network and non-network control panels, and user-friendly maintenance and service tools. Analog information from equipment 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.

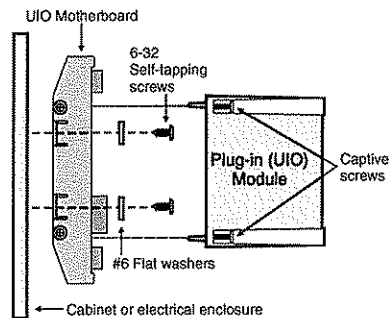
Automatic Device Mapping – The Signature Data Controller (SDC) learns where each device's serial number address is installed relative to other devices on the circuit. The SDC keeps a map of all Signature Series devices connected to it. The Signature Series Data Entry Program also uses the mapping feature. 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 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-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

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

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

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

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

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

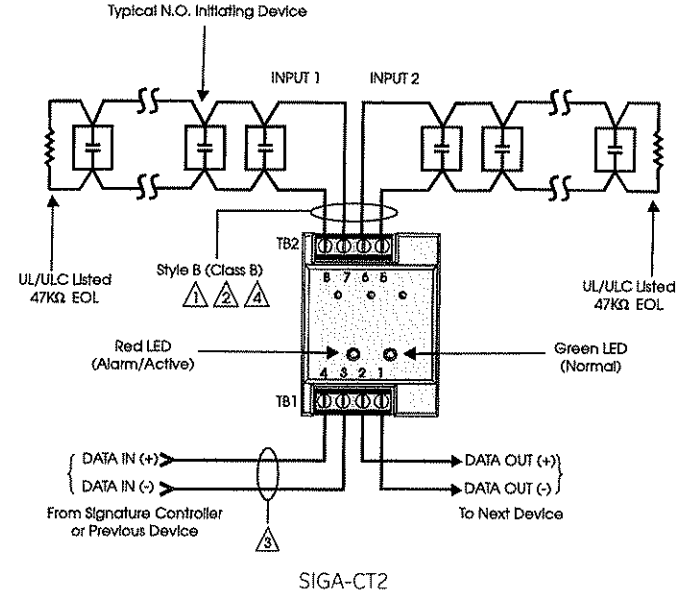
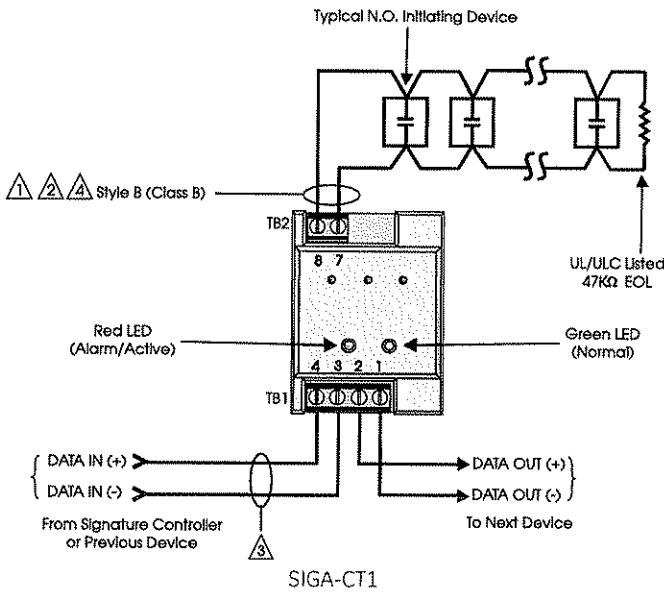
NORMALLY-OPEN ACTIVE - LATCHING (Personality Code 4) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally open dry contact monitoring input such as from Supervisory and Tamper Switches. An ACTIVE signal is sent to the loop controller when the input contact is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

Typical Wiring

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

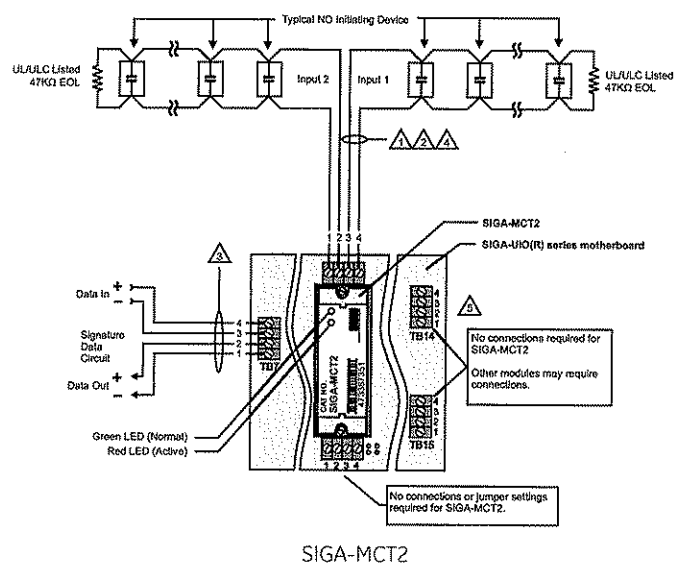
Note: Sizes #16 AWG (1.0mm²) and #18 AWG (0.75mm²) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.

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



NOTES

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



Warnings & Cautions

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

Compatibility

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

GE Security

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

Ordering Information

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

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



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