

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



CITY OF PORTLAND

BUILDING PERMIT

This is to certify that
PROTECTION ONE
10 MANUEL DR
PORTLAND, ME 04103

For installation at
60 CASSIDY PT RD

Job ID: 2012-10-5168-FAFS

CBL: 072- A-004-001

has permission to upgrade existing fire alarm system

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

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

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

Bjantel

Fire Prevention Officer

(58)

Code Enforcement Officer / Plan Reviewer

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

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

Final Fire

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



PORTLAND MAINE

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

Director of Planning and Urban Development
Jeff Levine

Job ID: 2012-10-5168-FAFS
upgrade existing fire alarm system

For installation at:
60 CASSIDY PT RD

CBL: 072- A-004-001

Conditions of Approval:

Fire

This is an existing Ademco panel. The FACP shall have a control panel as required by its listing. Each Ademco fire control panel shall be red and have a locked cover. The instructions for operating the control panel shall be on the inside of the cover panel. Standard silence and reset code shall be used: 1 - 2 - 3 - 4 - 1.

The installation shall comply with the following:

- City of Portland Chapter 10, Fire Prevention and Protection;
- NFPA 1, *Fire Code* (2009 edition), as amended by City Code;
- NFPA 101, *Life Safety Code* (2009 edition), as amended by City Code;
- City of Portland Fire Department Rules and Regulations;
- NFPA 72, *National Fire Alarm and Signaling Code* (2010 edition), as amended by Fire Department Rules and Regulations; and
- NFPA 70, *National Electrical Code* (2011 edition) as amended by the State of Maine.

The fire alarm system shall be certified by a master fire alarm company and have a new fire alarm inspection sticker.

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

All smoke detectors shall be photoelectric.

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

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

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

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

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

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

A master box connection is not authorized for this building.

City of Portland, Maine - Building or Use Permit Application

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

| | | | |
|---|--|--|------------------------------------|
| Job No: 2012-10-5168-FAFS | Date Applied: 10/11/2012 | CBL: 072- A-004-001 | |
| Location of Construction: 60 CASSIDY PT RD | Owner Name: CIANBRO CORPORATION | Owner Address: PO BOX 1000 PITTSFILED, ME 04967 | Phone: |
| Business Name: | Contractor Name: Protection One – Jason Gervais | Contractor Address: 10 Manuel Dr., Portland ME 04103 | Phone: (207) 347-5316 |
| Lessee/Buyer's Name: | Phone: | Permit Type: FIRE ALARM - Fire Alarm | Zone: WPDZ |
| Past Use: Warehouse & office | Proposed Use: Same – Warehouse & office – Install fire alarm | Cost of Work: 8000.00 | CEO District: |
| | | Fire Dept: 10/19/12 <input checked="" type="checkbox"/> Approved w/ conditions <input type="checkbox"/> Denied <input type="checkbox"/> N/A | Inspection: Use Group: Type: |
| | | Signature: <i>Jason Gervais</i> (58) | Signature: |
| Proposed Project Description: Install Fire Alarm | | Pedestrian Activities District (P.A.D.) | |
| Permit Taken By: Gayle | | Zoning Approval | |

| Special Zone or Reviews | Zoning Appeal | Historic Preservation |
|---|---|---|
| <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetlands <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan <input type="checkbox"/> Maj <input type="checkbox"/> Min <input type="checkbox"/> MM Date: <i>OK 10/15/12 ABM</i> | <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date: | <input checked="" type="checkbox"/> Not in Dist or Landmark <input type="checkbox"/> Does not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>ABM</i> |

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

| | | | |
|---|---------|------|-------|
| SIGNATURE OF APPLICANT | ADDRESS | DATE | PHONE |
| RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE | | DATE | PHONE |

will email plans 10/15/12
per Jason

WPDZ

2012-10-5128

Gayle



Fire Alarm Permit

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

Installation address: 60 Cassidy Drive CBL: 072 A004

Exact location: (within structure) Panel located in Telcom Equipment Room Middle of Building

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

Building owner: Cianbro Corporation - PO Box 1000, Portland ME 04967

System Designer (point of contact): Robin Russell

Designer phone: (207) 347-5327 E-mail: russell@protectionone.com

Installing contractor: Protection 1 Certificate of Fitness No: M1003

Contractor phone: (207) 347-5316 E-mail: jasongervais@protection1.com

This is a new application: YES NO New AES Master Box: YES NO
(Include Master Box approval form)

Amendment to an existing permit: YES NO Permit no: _____

The following documents shall be provided with this application:

- Floor plans
- Wiring diagram
- Annunciator details
- Input/ Output Matrix
- Equipment data sheets
- Electrical Permit Pulled (check alarm/com)
- Scope of Work
- 11 1/2 x 17s
- pdf copy (may be e-mailed)
- Designer qualifications
- Battery/ voltage drop calcs

Master box approval only: YES NO
(If yes check New AES Master Box above)

COST OF WORK: \$7,470.00

PERMIT FEE: 100.00
(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)

RECEIVED

OCT 11 2012

Dept. of Building Inspections
City of Portland Maine

The designer shall be the responsible party for this application. Download a new copy of this application at www.portlandmaine.gov/fire for every submittal. Submit all plans in electronic PDF in addition to readable 11 1/2 x 17s to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

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

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

Applicant signature: _____ Date: _____



Indoor Selectable-Output Strobes and Horn Strobes for Ceiling Applications

SpectrAlert® Advance audible visible notification products are rich with features guaranteed to cut installation times and maximize profits.



SPECTRAlert
ADVANCE
from System Sensor

Features

- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- Field-selectable candela settings on ceiling units: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185
- Horn rated at 88+ dBA at 16 volts
- Rotary switch for horn tone and three volume selections
- Universal mounting plate for ceiling units
- Mounting plate shorting spring checks wiring continuity before device installation
- Electrically Compatible with legacy SpectrAlert devices
- Compatible with MDL sync module
- Listed for ceiling or wall mounting

The SpectrAlert Advance series offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry. With white and red plastic housings, wall and ceiling mounting options, and plain and FIRE-printed devices, SpectrAlert Advance can meet virtually any application requirement.

Like the entire SpectrAlert Advance product line, ceiling-mount strobes and horn strobes include a variety of features that increase their application versatility while simplifying installation. All devices feature plug-in designs with minimal intrusion into the back box, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults.

To further simplify installation and protect devices from construction damage, SpectrAlert Advance utilizes a universal mounting plate with an onboard shorting spring, so installers can test wiring continuity before the device is installed.

Installers can also easily adapt devices to suit a wide range of application requirements using field-selectable candela settings, automatic selection of 12- or 24-volt operation, and a rotary switch for horn tones with three volume selections.

Agency Listings



7125-1653 186 (indoor strobes)
7125-1653 188 (horn strobes,
chime strobes)
7135-1653 189 (horns, chimes)

SpectrAlert Advance Specifications

Architect/Engineer Specifications

General

SpectrAlert Advance strobes and horn strobes shall mount to a standard 4 × 4 × 1½-inch back box, 4-inch octagon back box, or double-gang back box. Two-wire products shall also mount to a single-gang 2 × 4 × 17/8-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt-rated notification appliance circuit outputs shall operate between 9 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32 and 120 degrees Fahrenheit from a regulated DC or full-wave rectified unfiltered power supply. Strobes and horn strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185.

Strobe

The strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and shall be approved for fire protective service. The strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system.

Horn Strobe Combination

The horn strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and UL 464 and shall be approved for fire protective service. The horn strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The horn shall have three audibility options and an option to switch between a temporal three pattern and a non-temporal (continuous) pattern. These options are set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn on horn strobe models shall operate on a coded or non-coded power supply.

Synchronization Module

The module shall be a System Sensor Sync•Circuit model MDL listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz and horns at temporal three. Also, while operating the strobes, the module shall silence the horns on horn strobe models over a single pair of wires. The module shall mount to a 411/16 × 411/16 × 21/8-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical/Electrical Specifications

| | |
|--|--|
| Standard Operating Temperature | 32°F to 120°F (0°C to 49°C) |
| Humidity Range | 10 to 93% non-condensing |
| Strobe Flash Rate | 1 flash per second |
| Nominal Voltage | Regulated 12 DC/FWR or regulated 24 DC/FWR ¹ |
| Operating Voltage Range² | 8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal) |
| Input Terminal Wire Gauge | 12 to 18 AWG |
| Ceiling-Mount Dimensions (Including lens) | 6.8" diameter × 2.5" high (173 mm diameter × 64 mm high) |
| Ceiling-Mount Back Box Skirt Dimensions (BBSC-2, BBSCW-2) | 7.1" diameter × 2.2" high (180 mm diameter × 57 mm high) |
| Ceiling-Mount Trim Ring Dimensions (sold as a 5 pack) (TRC-HS, TRCW-HS) | 6.9" diameter × 0.35" high (175 mm diameter × 9 mm high) |

Notes:

1. Full Wave Rectified (FWR) voltage is a non-regulated, time-varying power source that is used on some power supply and panel outputs.
2. P, S, PC, and SC products will operate at 12 V nominal only for 15 and 15/75 cd.

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)

| | Candela | 8–17.5 Volts | | 16–33 Volts | |
|------------------------|---------|--------------|-----|-------------|-----|
| | | DC | FWR | DC | FWR |
| Standard Candela Range | 15 | 123 | 128 | 66 | 71 |
| | 15/75 | 142 | 148 | 77 | 81 |
| | 30 | NA | NA | 94 | 96 |
| | 75 | NA | NA | 158 | 153 |
| | 95 | NA | NA | 181 | 176 |
| | 110 | NA | NA | 202 | 195 |
| | 115 | NA | NA | 210 | 205 |
| High Candela Range | 135 | NA | NA | 228 | 207 |
| | 150 | NA | NA | 246 | 220 |
| | 177 | NA | NA | 281 | 251 |
| | 185 | NA | NA | 286 | 258 |

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, Standard Candela Range (15–115 cd)

| DC Input | 8–17.5 Volts | | 16–33 Volts | | | | | | | |
|---------------------|--------------|-------|-------------|-------|-----|-----|-----|-----|-----|--|
| | 15 | 15/75 | 15 | 15/75 | 30 | 75 | 95 | 110 | 115 | |
| Temporal High | 137 | 147 | 79 | 90 | 107 | 176 | 194 | 212 | 218 | |
| Temporal Medium | 132 | 144 | 69 | 80 | 97 | 157 | 182 | 201 | 210 | |
| Temporal Low | 132 | 143 | 66 | 77 | 93 | 154 | 179 | 198 | 207 | |
| Non-Temporal High | 141 | 152 | 91 | 100 | 116 | 176 | 201 | 221 | 229 | |
| Non-Temporal Medium | 133 | 145 | 75 | 85 | 102 | 163 | 187 | 207 | 216 | |
| Non-Temporal Low | 131 | 144 | 68 | 79 | 96 | 156 | 182 | 201 | 210 | |
| FWR Input | | | | | | | | | | |
| Temporal High | 136 | 155 | 88 | 97 | 112 | 168 | 190 | 210 | 218 | |
| Temporal Medium | 129 | 152 | 78 | 88 | 103 | 160 | 184 | 202 | 206 | |
| Temporal Low | 129 | 151 | 76 | 86 | 101 | 160 | 184 | 194 | 201 | |
| Non-Temporal High | 142 | 161 | 103 | 112 | 126 | 181 | 203 | 221 | 229 | |
| Non-Temporal Medium | 134 | 155 | 85 | 95 | 110 | 166 | 189 | 208 | 216 | |
| Non-Temporal Low | 132 | 154 | 80 | 90 | 105 | 161 | 184 | 202 | 211 | |

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, High Candela Range (135–185 cd)

| DC Input | 16–33 Volts | | | | FWR Input | 16–33 Volts | | | |
|---------------------|-------------|-----|-----|-----|---------------------|-------------|-----|-----|-----|
| | 135 | 150 | 177 | 185 | | 135 | 150 | 177 | 185 |
| Temporal High | 245 | 259 | 290 | 297 | Temporal High | 215 | 231 | 258 | 265 |
| Temporal Medium | 235 | 253 | 288 | 297 | Temporal Medium | 209 | 224 | 250 | 258 |
| Temporal Low | 232 | 251 | 282 | 292 | Temporal Low | 207 | 221 | 248 | 256 |
| Non-Temporal High | 255 | 270 | 303 | 309 | Non-Temporal High | 233 | 248 | 275 | 281 |
| Non-Temporal Medium | 242 | 259 | 293 | 299 | Non-Temporal Medium | 219 | 232 | 262 | 267 |
| Non-Temporal Low | 238 | 254 | 291 | 295 | Non-Temporal Low | 214 | 229 | 256 | 262 |

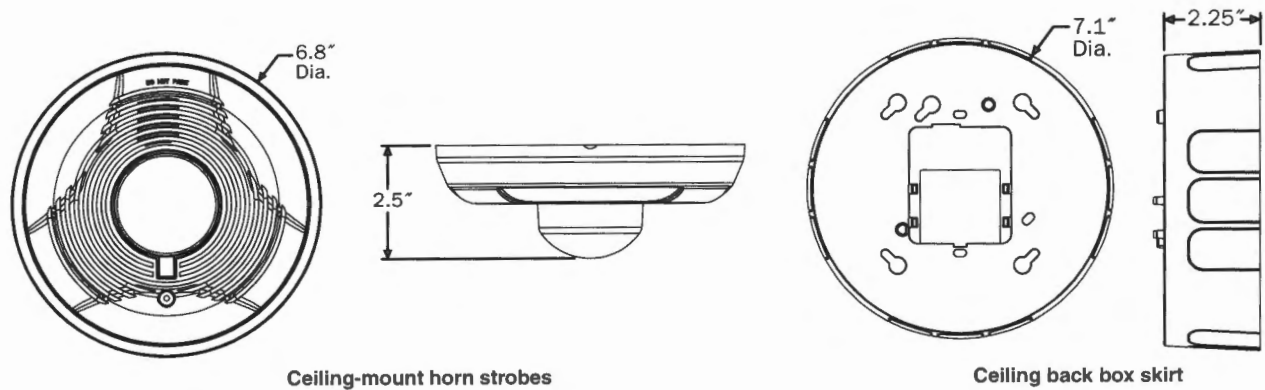
Horn Strobe Tones and Sound Output Data

Horn Strobe Output (dBA)

| Switch Position | Sound Pattern | dB | 8–17.5 Volts | | 16–33 Volts | | 24-Volt Nominal | | | |
|-----------------|---------------|--------|--------------|-----|-------------|-----|-----------------|-----|----------|-----|
| | | | DC | FWR | DC | FWR | Reverberant | | Anechoic | |
| | | | DC | FWR | DC | FWR | DC | FWR | DC | FWR |
| 1 | Temporal | High | 78 | 78 | 84 | 84 | 88 | 88 | 99 | 98 |
| 2 | Temporal | Medium | 74 | 74 | 80 | 80 | 86 | 86 | 96 | 96 |
| 3 | Temporal | Low | 71 | 73 | 76 | 76 | 83 | 80 | 94 | 89 |
| 4 | Non-Temporal | High | 82 | 82 | 88 | 88 | 93 | 92 | 100 | 100 |
| 5 | Non-Temporal | Medium | 78 | 78 | 85 | 85 | 90 | 90 | 98 | 98 |
| 6 | Non-Temporal | Low | 75 | 75 | 81 | 81 | 88 | 84 | 96 | 92 |
| 7† | Coded | High | 82 | 82 | 88 | 88 | 93 | 92 | 101 | 101 |
| 8† | Coded | Medium | 78 | 78 | 85 | 85 | 90 | 90 | 97 | 98 |
| 9† | Coded | Low | 75 | 75 | 81 | 81 | 88 | 85 | 96 | 92 |

†Settings 7, 8, and 9 are not available on 2-wire horn strobes.

SpectrAlert Advance Dimensions



SpectrAlert Advance Ordering Information

| Model | Description |
|-----------------------------|--|
| Ceiling Horn Strobes | |
| PC2R* | 2-Wire Horn Strobe, Standard cd, Red |
| PC2RH | 2-Wire Horn Strobe, High cd, Red |
| PC2W*† | 2-Wire Horn Strobe, Standard cd, White |
| PC2WH* | 2-Wire Horn Strobe, High cd, White |
| PC4R | 4-Wire Horn Strobe, Standard cd, Red |
| PC4RH | 4-Wire Horn Strobe, High cd, Red |
| PC4W | 4-Wire Horn Strobe, Standard cd, White |

| Model | Description |
|------------------------|--------------------------------|
| Ceiling Strobes | |
| SCR | Strobe, Standard cd, Red |
| SCRH | Strobe, High cd, Red |
| SCW* | Strobe, Standard cd, White |
| SCWH | Strobe, High cd, White |
| Accessories | |
| BBSC-2 | Back Box Skirt, Ceiling, Red |
| | Back Box Skirt, Ceiling, White |
| TRC-HS | Trim Ring, Ceiling, Red |
| TRCW-HS | Trim Ring, Ceiling, White |

Notes:

* Add "-P" to model number for plain housing (no "FIRE" marking on cover), e.g., P2R-P.

† Add "-SP" to model number for "FUEGO" marking on cover, e.g., P2R-SP.

‡ "Standard cd" refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings. "High cd" refers to strobes that include 135, 150, 177, and 185 candela settings.



3825 Ohio Avenue • St. Charles, IL 60174
Phone: 800-SENSOR2 • Fax: 630-377-6495

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Product specifications subject to change without notice. Visit systemsensor.com
for current product information, including the latest version of this data sheet.
AVDS00501 • 3/12

Honeywell

GENESIS SERIES

Power Limited Fire Alarm Cable Part No. 4513

Description: 14 AWG 2/C SOL FPLP-CL2P
Compliance: UL Standards 13 & 1424; NEC Articles 725 & 760

Construction:
Conductor 14 AWG Solid Bare Copper
No. of Conductors 2

Insulation
Type Plenum PVC
Color Blk, Red
Thickness 0.007" nom.
Diameter 0.078" nom.
Lay Length 3.0" nom.

Jacket
Type Plenum PVC
Color Red
Thickness 0.015" nom.
Diameter 0.180" nom.
Legend (Ink Print) HONEYWELL P/N 4513 2C14 E175105 (UL) FPLP OR CL2P C(UL)US FT6 75C
(RoHS) W/O# XXXXXX-XXXXXX XXXXFT DEVICE/ZONE A B C D E F 1 2 3 4 5 6
7 8 9

Properties:
Temperature Rating -20 to 75°C
Operating Voltage 300 Volts max.
Capacitance 32 pf/ft nom.
Impedance 59 Ohms nom.
DC Resistance 2.5 Ohms/M' at 20°C
Flame Rating UL 910, NFPA 262, C(UL) FT6

Honeywell

GENESIS SERIES CABLE

Fire Power Limited Cable
Part No. 4512

Description: 16 AWG 4/C SOL FPLP
Compliance: UL Standard 1424; NEC Article 760

Construction:

Conductor 16 AWG Solid Bare Copper
No. of Conductors 4
Assembly Tubed jacket over twisted insulated conductors

Insulation

Type Plenum PVC
Color Blk, Red, Ylw, Grn
Thickness 0.007" nom.
Diameter 0.064" nom.
Lay Length 3.75" nom.

Jacket

Type Plenum PVC
Color Red
Thickness 0.015" nom.
Diameter 0.180" nom.
Legend (Ink Print)

GENESIS CABLE SYSTEMS 16 AWG 4/C (UL)
TYPE FPLP/CL2P E175106 75C WO # _____ C(UL) CMP FT6 XXXXXFT

Properties

Temperature Rating -20 to 75 °C
Operating Voltage 300 Volts max.
Capacitance 27 pf/ft nom
Impedance 60 Ohms nom.
DC Resistance 4.05 Ohms/M' at 20°C
Flame Rating UL 910, CSA FT6



Altronix®

AL602ULADA, AL802ULADA, AL1002ULADA NAC Power Extenders

Rev. AL602/802/1002ULADA- L20E

Overview



- The AL602ULADA, AL802ULADA and AL1002ULADA are extremely cost effective voltage regulated remote NAC Power Extenders. They may be connected to any 12 or 24 volt Fire Alarm Control Panel (FACP). Primary applications include Notification Appliance Circuit (NAC) expansion (supports ADA requirements) and will provide auxiliary power to support system accessories.

AL602ULADA

- 24VDC or 12VDC rated @ 6.5 amp max.
- Two (2) Class A or four (4) Class B outputs.

AL602ULADAJ

- Larger enclosure.

AL802ULADA

- 24VDC or 12VDC rated @ 8 amp max.
- Two (2) Class A or four (4) Class B outputs.

AL802ULADAJ

- Larger enclosure.

AL1002ULADA

- 24VDC rated @ 10 amp max.
- Two (2) Class A or four (4) Class B outputs.

AL1002ULADAJ

- Larger enclosure.

Specifications

- | | |
|---|---|
| <ul style="list-style-type: none"> • Two (2) Class A or two (2) Class B FACP inputs. • Two (2) NC dry contact trigger inputs (AL802ULADA and AL1002ULADA only) • Two (2) Class A or four (4) Class B indicating circuits. • Two (2) Class B outputs may be paralleled for more power on an indicating circuit. • One (1) Aux. Power Output @ 1 amp supply current (w/battery back up). • Signal Circuit Trouble Memory - facilitates quickly locating intermittent system trouble and eliminates costly and unnecessary service calls. LED's indicate a prior fault (short, open, ground) has occurred on one or more signaling circuit outputs. • 2-wire Horn/Strobe Sync mode allows audible notification appliances (Horns) to be silenced while visual notification appliances (Strobes) continue to operate. • Horn/Strobe sync protocols include: Gentex®, System Sensor®, Faraday, Amseco. | <ul style="list-style-type: none"> • Temporal Code 3 Mode. • Steady Mode. • Input to Output Follower Mode (maintains synchronization of notification appliance circuits). • March Time. • Compatible with 24VDC or 12VDC fire panels. • Common trouble inputs and outputs. • Ground fault detection. • Input 115VAC. • AC fail supervision (form "C" contacts). • Low battery supervision (form "C" contacts). • Battery presence supervision (form "C" contacts). • Power supply, logic board, red enclosure, cam lock, transformer & battery leads. • Enclosure: <ul style="list-style-type: none"> - Combination knockouts re 1/2" and 3/4" - Accommodates up to two (2) 12VDC/12AH batteries. |
|---|---|

Agency Approvals



UL Listed Control Units and Accessories for Fire Alarm Systems (UL 864), UL Listed Standard for Safety for Fire Protective Signaling Systems (UL 1481).



California State Fire Marshal Approved.



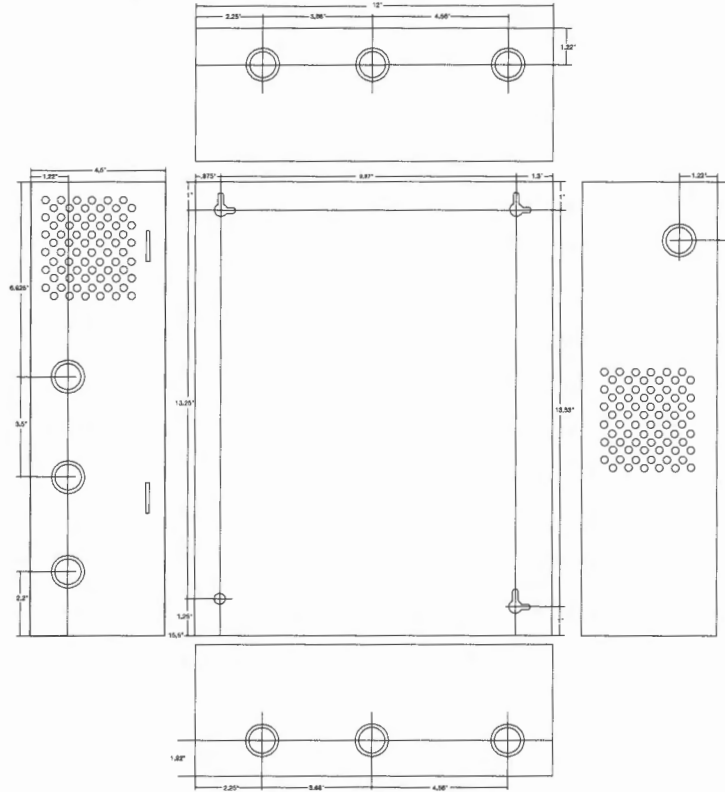
MEAs NYC Department of Buildings Approved.



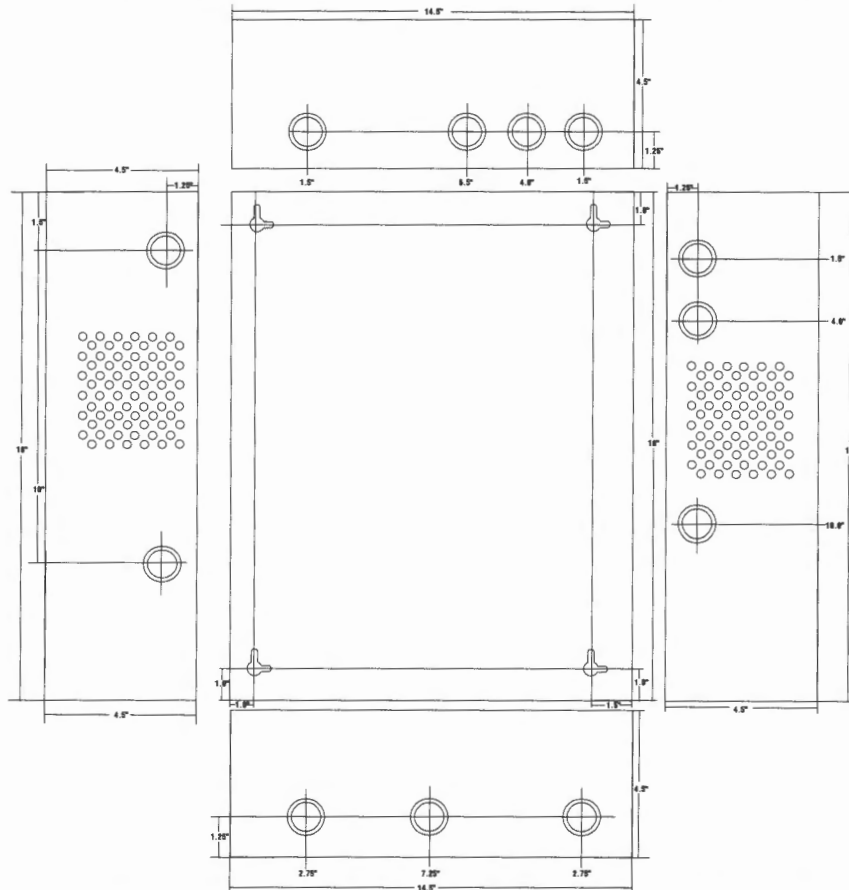
Factory Mutual Approved.

Enclosure Dimensions

AL602ULADA, AL802ULADA and AL1002ULADA: 15.5"H x 12"W x 4.5"D



AL602ULADAJ, AL802ULADAJ and AL1002ULADAJ: 18"H x 14.5"W x 4.625"D



5193SD/5193SDT

V-PLEX® ADDRESSABLE SMOKE DETECTOR



Honeywell's 5193SD/SDT Addressable Photoelectric Smoke Detector is designed to provide open area protection and to be used with compatible UL-listed Honeywell control panels that support V-Plex technology. The detector incorporates a state-of-the-art optical sensing chamber and an advanced microprocessor. Built-in Drift Compensation algorithms automatically maintain proper operation at factory calibrated detection levels, even when sensitivity is altered due to the presence of contaminants settling into the unit's chamber. The 5193SDT also features a restorable, built-in, fixed temperature (135° F/57.2° C) thermal detector.

FEATURES

- **Easy Installation:** Installation of the 5193SD/SDT detector is simplified by the use of a mounting base that may be pre-wired to the system, allowing the detector to be easily installed or removed for maintenance or service. (See Figure 1).
- **LED Status Indicators:** Two LEDs (green and red) provide local visual indication of the detector's status – including normal operation, alarm, out of sensitivity and trouble conditions.
- **Test button:** This button allows the user to perform periodic testing of the detector's circuitry and verify that the detector is within the sensitivity limits.
- **Versatile Mounting:** Mounting is made simple with the included hardware and the large mounting ports, which accommodate drywall anchors for easy surface mounting. (See Figure 1).
- **Tamper Protection and Tamper Resistance:** The detector contains a built-in tamper switch that can communicate back to the control panel in the event the detector is removed from its base. For an added level of security, the detector also includes a tamper resistant element that prevents removal from the base without the use of tools. (See Figure 1).

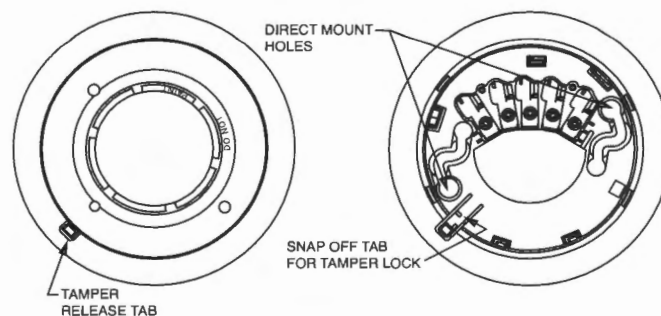


Figure 1: Tamper-Resistant Feature/Wiring

5193SD/5193SDT

V-PLEX® ADDRESSABLE SMOKE DETECTOR

SPECIFICATIONS

- **Heat Sensor:** (Model 5193SDT):
135° F (57.2° C);
Fixed Temperature Electronic Thermistors
- **Operating Ambient Temperature Range:**
32° to 100° F (0° to 38° C)
- **Operating Humidity Range:**
0 to 95% RH non-condensing
- **Storage Temperature Range:**
-4° to 158° F (-20° to 70° C)
- **Diameter (including base):** 5.3 inches
- **Height (including base):** 2.0 inches
- **Weight:** 6.3 oz.
- **Agency Listing:** UL-268
- **System Voltage Range:** 7-14V
- **Standby Current** (maximum @ 12V)
LED off: 1.2mA
LED on: 2.8mA

ACCESSORY (sold separately)

To measure the detector's sensitivity, the SENS-RDR Infrared Sensitivity Reader tool (sold separately) should be used. It reduces testing time, simplifies sensitivity measurements and displays them precisely in terms of percent per foot obscuration. The SENS-RDR eliminates the need for magnets, voltmeters and ladders.

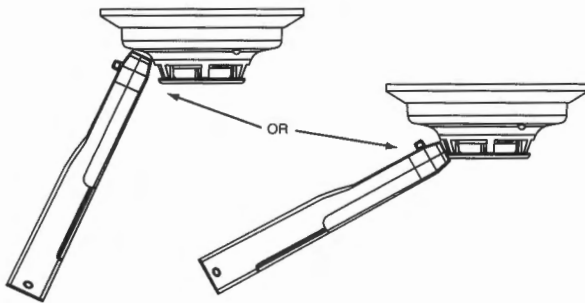


Figure 2: Position of Reader



ORDERING

- | | |
|----------------|--|
| 5193SD | Addressable Photoelectric Smoke Detector |
| 5193SDT | Addressable Photoelectric Smoke Detector with Integral Heat Sensor |

Accessory sold separately:

- | | |
|-----------------|-----------------------------|
| SENS-RDR | Handheld Sensitivity Reader |
|-----------------|-----------------------------|

Automation and Control Solutions
Honeywell Security & Communications
2 Corporate Center Dr. Suite 100
P.O. Box 9040
Melville, NY 11747
www.honeywell.com

L/5193SDT/D
May 2009
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Honeywell

6160CR

The 6160CR is an addressable remote keypad intended for use in commercial fire applications with ADEMCO's control platforms. The keys are continuously backlit for convenience and easy visibility. The LCD display is backlit only when a key is depressed*, or when the system is in alarm or trouble condition.

**Note: On some platforms, the LCD may be programmed to remain on at all times (see panel instructions for details).*

FEATURES:

- Four programmable function keys
- Built-in sounder
- Four LED's
 - ARMED
 - READY
 - TROUBLE
 - SUPERVISORY
- Large easy-to-read display
- Red removable door

SPECIFICATIONS:

Physical: 5.250" W x 7.437" H x 1.312" D

Display: Alphanumeric, 32-character (2 lines x 16 characters) LCD back light

LEDs: ARMED (red), READY (green), *TROUBLE (yellow) and *SUPERVISORY (yellow)

- See control panel's instructions for specific applications regarding Trouble and Supervisory LEDs.

Sounder: High-quality speaker

Electrical: 45mA standby

150mA in alarm (sounder, back light and LED on)

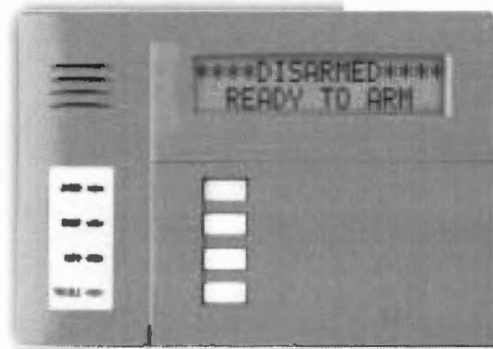
Wiring table (all keypads)

| | |
|-----------|---|
| DI | "Data IN" to control panel from keypad |
| - | Ground (-aux. Power) |
| + | +12VDC (+aux. Power) |
| DO | "Data OUT" from control panel to keypad |

ORDERING:

| Part No. | Description |
|----------|------------------------------|
| 6160CR | Commercial Fire Alpha Keypad |

L/6160CR/D 9/02



**Commercial
Fire
Alpha
Keypad**

Compatibility

Supports Control Platforms:

- VISTA-32FB Rev. 3 and higher
- VISTA-128FB Rev. 4 and higher
- VISTA-128FBP
- VISTA-250FBP
- V128FBP-24
- V250FBP-24

165 Eileen Way, Syosset, NY 11791

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**ADEMCO
GROUP**

**NO
EXCUSES!**



FDB

Fire Alarm Control Unit (FACU) Records & Document Box

The Space Age FDB has been developed to be a code compliant solution to a mandated item specified by the National Fire Code (NFPA 72).

An internal galvanized sleeve holds the documents safely and securely. Access to the documents is via a high security CAT 30 Lock Set.

The galvanized sleeve also contains 2 hooks for key rings or thumb drives, a place for several business cards, a cutout for a 1.4 Oz. can of test gas and a slot where a standard CD "jewel" case can be stored.

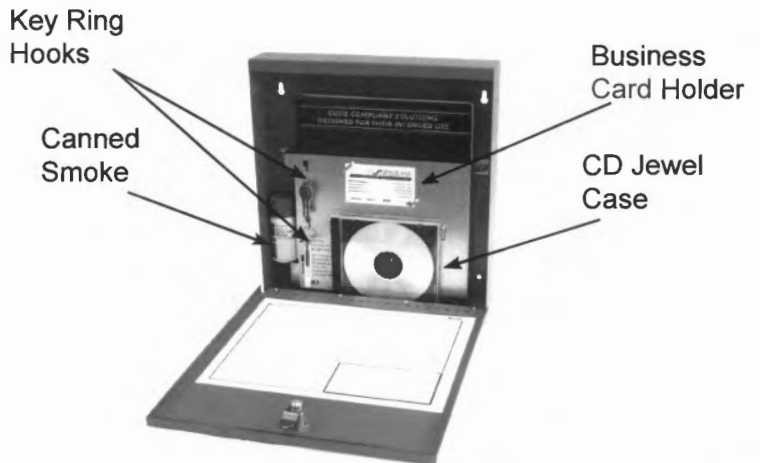
Held in by two "wing nuts" the sleeve is easily removable to allow storage of a 1.5" 3 ring binder.

The door reads "FACU MAINTENANCE RECORDS" in 1" tall white lettering. Custom Logo and Lock Sets are available upon request.

NFPA 72 section 6.2.2.1 states, "A record of installed software and firmware version numbers shall be maintained at the location of the fire alarm control unit." The FDB is large enough to hold Operating Manuals, Permits, Shut-Down Instructions and more.

Standard Features:

- Overall Dimensions are:
12" Wide x 13.1" High x 2.25" Deep
- CAT 30 Secured Locking Door
- Piano Hinged Door w/Notes Sticker
- Removable document holder can hold 1" of 8.5" x 11" paperwork
- Powder Coat Red Finish
- 16 Gauge CRS construction
- Embossed:
Key Ring Hooks
Business Card Holder
CD Case Slot
- 1.4 Oz. can of detector test gas
- Private labeling available



**ISO 9001
REGISTERED
COMPANY**



BOX

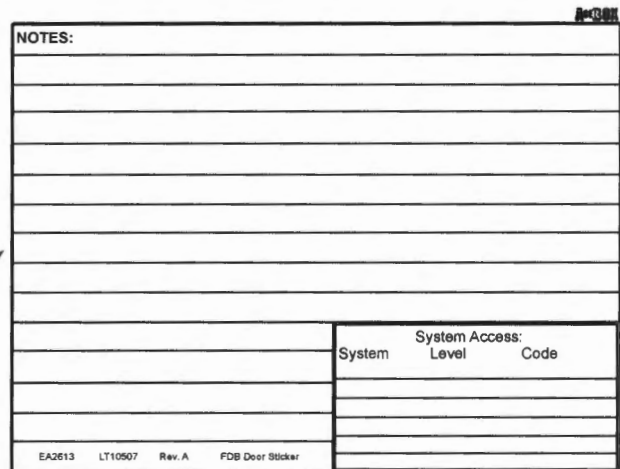
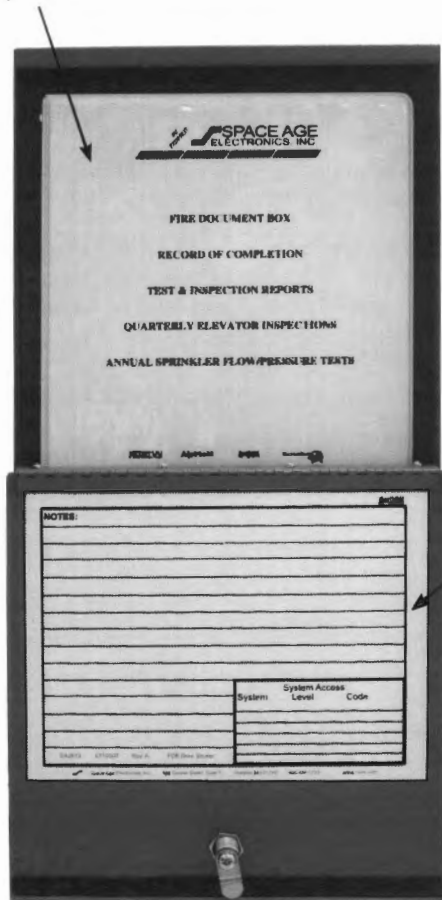
Space Age Electronics, Inc.
www.1sae.com
800.486.1723 Toll Free
508.485.0966 Local
508.485.4740 Fax

Specifications:

The Fire Document Box (FDB) shall be constructed of 16 gauge cold rolled steel (CRS), it shall be painted with a durable red powder coat paint. The front door shall be lettered with the words "FACU MAINTENANCE RECORDS" in White indelible letters 1" in height. The door of the FDB shall be locked with a keyed lock (standard shall be CAT 30, but others shall be available along with Private Labeling).

Inside the cabinet shall contain a 16 gauge galvanized CRS sleeve. This sleeve shall allow for the storage of 1" of paper, test and inspection records, manuals and other important documents. The sleeve shall also facilitate the hanging of key rings and thumb drives (for data storage) along with business cards and space for a CD 'jewel' case. The unit shall also contain a 1.4oz can of smoke detector test gas. Inside the door shall have a "Notes" label for the recording of valuable information such as AHJ approvals, various system codes and the location of hard to find devices.

If so desired, the internal sleeve (held in by 2 wing nuts) may be removed and the space used to insert a 1.5" 3 ring binder.



Notes Sticker inside FDB Door

Ordering Information:

Part # Description

- SSU00672 FDB Fire Document Box**
- SSU00673 FDB Custom Logo/lock**
- (ask for Form FD10498 to order custom box)**
- CK1 Replacement 1.4 Oz Test Gas**

BOX

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

No Excuses, Just Solutions!

This document is subject to change without notice, see doc # ED0479 for legal disclaimer



5140MPS-1 / 5140MPS-2 Manual Pull Stations

PRIMARY FEATURES

- ADA COMPLIANT
- KEY TEST OR ALLEN RESET
- KEYED TO ADEMCO CONTROLS
- STYLIZED HIGH TECH DESIGN
- ALUMINUM DIE CAST HOUSING
- TERMINAL BLOCK OR WIRE LEADS
- GOLD CONTACTS
- UL LISTED

■ GENERAL DESCRIPTION

Ademco's manual fire alarm stations are designed to be non-code single action devices for use in UL listed fire alarm applications. The attractive die-cast aluminum-alloy housing meets ADA pull requirements and has been tested at Underwriter's Laboratory.

For ADA compliance, manual stations must be mounted less than 48" above the floor for front wheelchair access and less than 54" above the floor for side wheelchair access.

A key reset feature on the 5140MPS-1 is designed for positive authorized resetting action. The key is designed to operate and match Ademco controls. The 5140MPS-1 utilizes a terminal block for secure terminations. The 5140MPS-2 is furnished with an Allen hex fitting and is equipped with wire leads.

Two alarm deterrent break tubes are supplied with each manual station; one tube is visible from the front, and the spare is stored in a compartment within the unit.

■ OPERATION

Pulling the handle down causes the manual stations to latch in the down position and to close the normally open switch. The handle is restored manually by using the key to unlock the station and pivot the station forward for resetting the pull handle to its normal position. The crush tube is then inserted in the cavity and the station assembly is then locked in the normal upright position.

■ CONSTRUCTION

The 5140MPS-1 and 5140MPS-2 manual stations are constructed of a durable die-cast aluminum-alloy and



provide a neat and distinctive appearance. The housing is finished in red with white raised lettering and the "T-bar" handle is white with raised red lettering for enhanced visibility. The units are adaptable to both surface and semi-flush mounting configurations.

■ MOUNTING

SEMI-FLUSH MOUNT

Most semi-flush mount installations can be attached to a standard single-gang switch box using two 8-32 screws inserted through the slots that are centered on the unit's metal mounting plate.

SURFACE MOUNT

Use Ademco Backbox model number 5140MPS-BB for surface mount installations. The Backbox has four pre-drilled mounting holes of 0.187 inch diameter and conduit knockouts. Secure the Backbox to a wall with screws of size 8 or smaller. After the Backbox is in place, attach the conduit.

The housing is locked by using a key or Allen wrench lock. Unlock the housing by turning the key clockwise and swinging down the front of the housing to make the sheet metal mounting plate accessible. Mount the metal plate to the Backbox using the four 1/4" long, 8-32 screws (supplied).

■ DIMENSIONS

4.75" H x 3.12" W x 2" D

ADEMCO

The Technology Leader

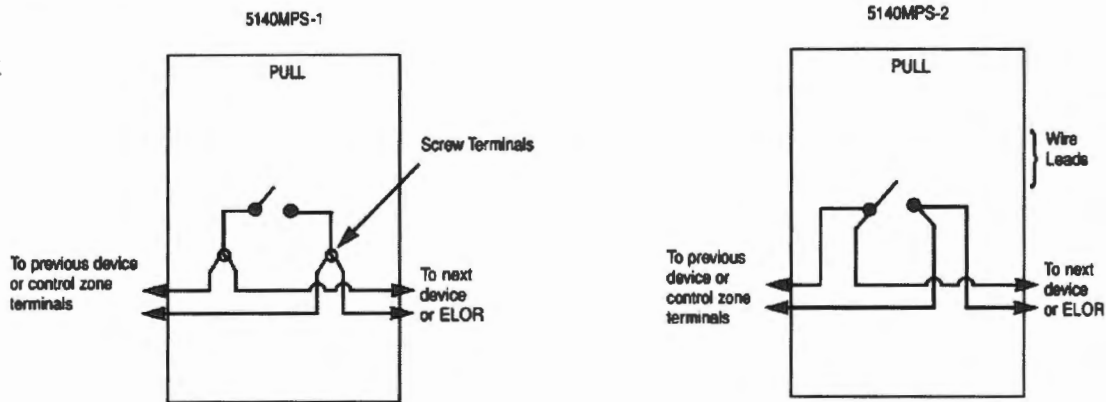
■ ORDERING INFORMATION

5140MPS-1: Manual Station
Key Reset Test
and Terminal Block

5140MPS-2: Manual Station
Hex Allen Reset
Test and Wire Leads

5140MPS-BB: Surface Backbox

■ WIRING DIAGRAM



ARCHITECTURAL/ENGINEERING SPECIFICATIONS

Manual Fire Alarm Station Model 5140MPS-1 [5140MPS-2] shall be non-coded and include a break-type tube operated test-reset lock allowing testing with a key (Allen wrench). They shall be designed so that normal operation cannot be restored after an actual Fire Emergency Operation except by use of a key (Allen wrench). The key shall fit all standard Ademco controls.

An operated station shall automatically condition itself so as to be visually detected, as operated, at a mini-

imum distance of one hundred feet, front or side. Manual Stations shall be constructed of die cast aluminum alloy with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in raised letters. Stations shall be suitable for surface mounting on matching Backbox, or semi-flush mounting on a standard single-gang box. Manual Stations shall be Underwriter's Laboratories Listed.

ADEMCO

The Technology Leader



5600 Series Mechanical Heat Detectors

System Sensor's 5600 series mechanical heat detectors offer a low-cost means for property protection against fire, and for non-life-safety installations where smoke detectors are inappropriate.



Features

- Multiple configurations for installations:
 - Single- and dual-circuit models
 - Fixed temp and combination fixed- temp/rate-of-rise 135°F or 194°F ratings.
- Plain housing for residential installations (Model 5601P)
- Easy-to-use terminal screws
- A broad range of back box mounting options:
 - Single gang
 - 3.5" and 4" Octagonal
 - 4" square with square to round plaster ring
- Reversible mounting bracket

Multiple configurations. The 5600 series offers a full-line of configurations to accommodate a broad range of applications. Both single- and dual-circuit models are available for low- and high-temperature ratings with either fixed temperature or combination fixed temperature/rate-of-rise (ROR) activation. The ROR element of the fixed/ROR models is restorable to accommodate field-testing.

Installation flexibility. To satisfy a variety of installation needs, the 5600 series easily mounts to single-gang and octagonal back boxes. And these models accommodate four-square back boxes, when used with a square to round plaster ring. The reversible mounting bracket permits both flush- and surface-mount back box installations.

Visual identification. The 5600 series provides clear markings on the exterior of the unit to ensure that the proper detector is being used. Alphanumeric characters identify the activation method, as well as the temperature rating, in Fahrenheit and Celsius degrees. Fixed temperature models are identified FX, while combination fixed/rate-of-rise units are marked FX/ROR. The 5600 series also provides a post-activation indicator in the form of a collector. When the detector is activated, the collector drops from the unit, making it easy to identify the unit in alarm.

Agency Listings



Specifications

Architectural/Engineering Specifications

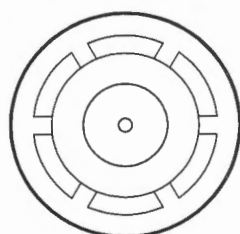
Mechanical heat detector shall be a System Sensor 5600 series model number _____, listed to Underwriters Laboratories UL 521 for Heat Detectors for Fire Protective Signaling Systems. The detector shall be either a single-circuit or a dual-circuit type, normally open. The detector shall be rated for activation at either 135°F (57°C) or 194°F (90°C), and shall activate by means of a fixed temperature thermal sensor, or a combination fixed temperature/rate-of-rise thermal sensor. The rate-of-rise element shall be activated by a rapid rise in temperature, approximately 15°F (8.3°C) per minute. The detector shall include a reversible mounting bracket for mounting to 3½-inch and 4-inch octagonal, single gang, and 4-inch square back boxes with a square to round plaster ring. Wiring connections shall be made by means of SEMS screws that shall accommodate 14–22AWG wire. The detector shall contain alphanumeric markings on the exterior of the housing to identify its temperature rating and activation method. The rate-of-rise element of combination fixed temperature/rate-of-rise models shall be restorable, to allow for field-testing. The detectors shall include an external collector that shall drop upon activation to identify the unit in alarm.

Physical/Operating Specifications

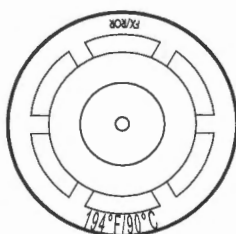
| | |
|---|---|
| Maximum Installation Temperature | 5601P, 5603, 5621, and 5623: 100°F (38°C) 5602, 5604, 5622, and 5624: 150°F (65.6°C) |
| Operating Humidity Range | 5 to 95% RH non-condensing |
| Dimensions with mounting bracket | Diameter: 4.57 inches (11.6cm) Height: 1.69 inches (4.3cm) |
| Alarm Temperature | 5601P, 5603, 5621, and 5623: 135°F (57°C) 5602, 5604, 5622, and 5624: 194°F (90°C) |
| Weight | 6 oz. (170 grams) |
| Rate-of-Rise Threshold | 15°F (8.3°C) rise per minute (models 5601P, 5602, 5621, and 5622 only) |
| Mounting | 3½-inch octagonal back box 4-inch octagonal back box Single gang back box 4-inch square back box with a square to round plaster ring |

Electrical Specifications

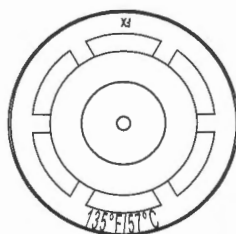
| | |
|--|---|
| Operating Voltage / Contact Ratings | 6–125VAC / 3A 6–28VDC / 1A 125VDC / 0.3A 250VDC / 0.1A |
| Input Terminals | 14–22 AWG |



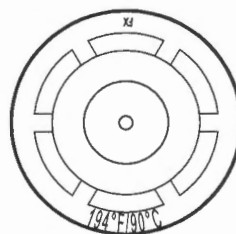
5601P



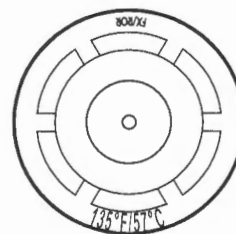
5602, 5622



5603, 5623



5604, 5624



5621

Ordering Information

| Model | Circuit | Identification Method on Exterior | Temperature Rating | Activation | UL Protected Spacing – 10 Foot Ceiling* |
|-------|---------|-----------------------------------|--------------------|----------------------------------|---|
| 5601P | Single | None | 135°F (57°C) | Fixed Temperature / Rate-of-Rise | 50 feet x 50 feet (15.24m x 15.2m) |
| 5602 | Single | Lettering | 194°F (90°C) | Fixed Temperature / Rate-of-Rise | 50 feet x 50 feet (15.24m x 15.2m) |
| 5603 | Single | Lettering | 135°F (57°C) | Fixed Temperature | 25 feet x 25 feet (7.62m x 7.62m) |
| 5604 | Single | Lettering | 194°F (90°C) | Fixed Temperature | 25 feet x 25 feet (7.62m x 7.62m) |
| 5621 | Dual | Lettering | 135°F (57°C) | Fixed Temperature / Rate-of-Rise | 50 feet x 50 feet (15.24m x 15.2m) |
| 5622 | Dual | Lettering | 194°F (90°C) | Fixed Temperature / Rate-of-Rise | 50 feet x 50 feet (15.24m x 15.2m) |
| 5623 | Dual | Lettering | 135°F (57°C) | Fixed Temperature | 25 feet x 25 feet (7.62m x 7.62m) |
| 5624 | Dual | Lettering | 194°F (90°C) | Fixed Temperature | 25 feet x 25 feet (7.62m x 7.62m) |

*NOTE: Refer to NFPA72 guidelines for spacing reductions when ceiling heights exceed 10 feet.



3825 Ohio Avenue • St. Charles, IL 60174
Phone: 800-SENSOR2 • Fax: 630-377-6495

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Product specifications subject to change without notice. Visit systemsensorm.com for current product information, including the latest version of this data sheet.
A05-0351-002 • 11/06 • #1676

Honeywell Security

Battery & Power Budget Calculator

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- Apply UL Power Limits? (Required to maintain UL Listing including UL864)
- Commercial Fire Installation
- Commercial Burg Installation

| Facility Information | |
|----------------------|--------------------------------------|
| Location: | Cianbro Corporation 60 Cassidy Drive |
| Account #: | |
| Model: | Vista 128FB |
| Engineer: | Robin Russell |
| Date: | 10/9/2012 |

| Enter Standby and Alarm Times | | Battery Contingency Factor |
|-------------------------------|------|----------------------------|
| Battery Standby (hours): | 24 | 10% ▼ |
| Alarm Duration (minutes): | 5 | |
| Recommended Battery (AH) | 22.3 | |

SELECTED PANEL MAXIMUM OUTPUT RATINGS

| Select Panel from pulldown list: | Polling Loop (mA) | Standby Auxiliary Power (mA) | Alarm Auxiliary Power (mA) | Panel Standby (mA) | Panel Alarm (mA) | Bell #1 Output (mA) | Bell #2 Output (if used; mA) | Maximum Panel Standby Output | Maximum Panel Alarm Output | Max Battery Supported by Panel |
|--|--|------------------------------|----------------------------|-----------------------------|------------------|---------------------|------------------------------|----------------------------------|----------------------------|--------------------------------|
| Vista-128FB | 128 | 1000 | 1700 | 300 | 470 | 1700 | 1700 | 1300 | 2800 | 34.4 |
| Calculated Current Draw | 30.6 | 478 | 475 | Calculated Bell Draw | | 0 | 0 | Total Standby | Total Alarm | |
| Power Budget | 225.3 | 522.0 | 1225.0 | Bell Power Budget | | 1700.0 | 1700.0 | 509 | 506 | |
| <input type="checkbox"/> Remove Unused Devices From List | External Bell Power Req'd (mA): | | | | | | 0.0 | Ext. UL Power Req'd (mA): | | 0.0 |

Grayed-out device(s) are not supported by selected panel

| KEYPADS/INTERFACES | Enter Quantity | How many powered externally? | Standby (aux pwr) | Alarm Current (Aux) | Polling Loop | Total Polling Loop | Total Standby Current | Total Alarm Current | Total External Current Required |
|------------------------------------|----------------|------------------------------|-------------------|---------------------|--------------|--------------------|-----------------------|---------------------|---------------------------------|
| 6128 | 0 | 0 | 30 | 45 | | | 0 | 0 | 0 |
| 6128RF | 0 | 0 | 60 | 120 | | | 0 | 0 | 0 |
| 6137 | 0 | 0 | 40 | 85 | | | 0 | 0 | 0 |
| 6139/6139R | 0 | 0 | 40 | 100 | | | 0 | 0 | 0 |
| 6148 | 0 | 0 | 30 | 55 | | | 0 | 0 | 0 |
| 6149EX | 0 | 0 | 40 | 60 | | | 0 | 0 | 0 |
| 6150 | 0 | 0 | 40 | 70 | | | 0 | 0 | 0 |
| 6150RF | 0 | 0 | 80 | 105 | | | 0 | 0 | 0 |
| 6150V | 0 | 0 | 60 | 160 | | | 0 | 0 | 0 |
| 6150RF | 0 | 0 | 80 | 105 | | | 0 | 0 | 0 |
| 6160/6160CR | 2 | 0 | 45 | 150 | | | 90 | 300 | 0 |
| 6160CR-2 | 1 | 0 | 45 | 160 | | | 45 | 160 | 0 |
| 6160PX | 0 | 0 | 40 | 165 | | | 0 | 0 | 0 |
| 6160RF | 0 | 0 | 60 | 190 | | | 0 | 0 | 0 |
| 6160V | 0 | 0 | 60 | 190 | | | 0 | 0 | 0 |
| 6164US | 0 | 0 | 55 | 210 | | | 0 | 0 | 0 |
| 6165EX | 0 | 0 | 40 | 70 | | | 0 | 0 | 0 |
| 6270 | 0 | 0 | 180 | 280 | | | 0 | 0 | 0 |
| 6271C | 0 | 0 | 150 | 230 | | | 0 | 0 | 0 |
| 6271CV | 0 | 0 | 150 | 230 | | | 0 | 0 | 0 |
| 6271V | 0 | 0 | 137 | 210 | | | 0 | 0 | 0 |
| 6272CV | 0 | 0 | 180 | 305 | | | 0 | 0 | 0 |
| 6272CSV | 0 | 0 | 180 | 305 | | | 0 | 0 | 0 |
| 6272CBV | 0 | 0 | 180 | 305 | | | 0 | 0 | 0 |
| 6460S | 0 | 0 | 40 | 160 | | | 0 | 0 | 0 |
| 6460W | 0 | 0 | 40 | 160 | | | 0 | 0 | 0 |
| 6132iPK (Symphony) | 0 | 0 | 350 | 400 | | | 0 | 0 | 0 |
| FSA-8 Fire Zone Annunciator | 0 | 0 | 35 | 65 | | | 0 | 0 | 0 |
| FSA-24 Fire Zone Annunciator | 0 | 0 | 35 | 130 | | | 0 | 0 | 0 |
| Add'l Keypd (Enter # and Currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| Add'l Keypd (Enter # and Currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |

| 2 WIRE & 4 WIRE SMOKE DETECTORS (except Vplex Polling Loop detectors) | Enter Quantity | How many powered externally? | Standby (aux pwr) | Alarm Current (Aux) | Polling Loop | Total Polling Loop | Total Standby Current | Total Alarm Current | Total External Current Required |
|---|----------------|------------------------------|--|---------------------|--------------|--------------------|-----------------------|---------------------|---------------------------------|
| 2 wire smoke detector (zone powered) | 0 | | Two-wire smoke detector current is built into the panel budgets. These fields are included to help you create a complete equipment list. The line below indicates if number of detectors exceeds panel capacity, or if the selected panel does not support 2-wire smoke detectors. | | | | | | |
| 2 wire smoke detector (zone powered) | 0 | | | | | | | | |
| 2 wire smoke detector (zone powered) | 0 | | | | | | | | |
| 2 wire smoke detector (zone powered) | 0 | | | | | | | | |
| 12V 4 Wire Smoke (Qty & Currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| 12V 4 wire Smoke (Qty & Currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| 12V 4 wire Smoke (Qty & Currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| 12V 4 wire Smoke (Qty & Currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |

| MULTI-POWER DEVICES | Enter Quantity | How many powered externally? | Standby (aux pwr) | Alarm Current (Aux) | Polling Loop | Total Polling Loop | Total Standby Current | Total Alarm Current | Total External Current Required |
|--|----------------|------------------------------|-------------------|---------------------|--------------|--------------------|-----------------------|---------------------|---------------------------------|
| 4208U [powered by polling loop] | 0 | 0 | 0 | 0 | 27.3 | 0 | 0 | 0 | 0 |
| 4208U [powered by panel aux power] | 0 | 0 | 26 | 0 | 0.6 | 0 | 0 | 0 | 0 |
| 4208U [powered externally] | 0 | 0 | 28 | 0 | 0.6 | 0 | 0 | 0 | 0 |
| 4208SN [powered by polling loop] | 0 | 0 | 0 | 0 | 33.6 | 0 | 0 | 0 | 0 |
| 4208SN [powered by panel aux power] | 0 | 0 | 33 | 0 | 0.6 | 0 | 0 | 0 | 0 |
| 4208SN [powered externally] | 0 | 0 | 33 | 0 | 0.6 | 0 | 0 | 0 | 0 |
| 4208SNF [powered by polling loop] | 0 | 0 | 0 | 0 | 33.6 | 0 | 0 | 0 | 0 |
| 4208SNF [powered by panel aux power] | 0 | 0 | 40 | 0 | 0.6 | 0 | 0 | 0 | 0 |
| 4208SNF [powered externally] | 0 | 0 | 40 | 0 | 0.6 | 0 | 0 | 0 | 0 |
| 4208SNF (Class B to A Zone Converter) | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4209U Grouped Zone Mux. Module | 0 | 0 | 110 | 0 | 15.5 | 0 | 0 | 0 | 0 |
| 4209U [powered externally] | 0 | 0 | 110 | 0 | 15.5 | 0 | 0 | 0 | 0 |
| 4297 Polling Loop Extender | 1 | 0 | 178 | 0 | | 127.9 | 178 | 0 | 0 |
| Add'l Device (enter quant. & currents) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Add'l Device (enter quant. & currents) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| AUXILIARY POWERED DEVICES | Enter Quantity | How many powered externally? | Standby (aux pwr) | Alarm Current (Aux) | Polling Loop | Total Polling Loop | Total Standby Current | Total Alarm Current | Total External Current Required |
|--|----------------|------------------------------|-------------------|---------------------|--------------|--------------------|-----------------------|---------------------|---------------------------------|
| PS24 24 volt Power Supply Module | 0 | 0 | 50 | 100 | | | 0 | 0 | 0 |
| 4100SM (no more than one per system) | 0 | 0 | 25 | 0 | | | 0 | 0 | 0 |
| 4204: Enter no. of relays used | 0 | 0 | 40 | 0 | | | 0 | 0 | 0 |
| 4204CF: Enter no. of relays used | 0 | 0 | 80 | 0 | | | 0 | 0 | 0 |
| 4285 Voice Module | 0 | 0 | 160 | 0 | | | 0 | 0 | 0 |
| 4286 with warning speakers | 0 | 0 | 220 | 300 | | | 0 | 0 | 0 |
| 5140DLM Backup Dialer Module | 1 | 0 | 5 | 15 | | | 5 | 15 | 0 |
| 5800RP wireless repeater module | 0 | 0 | 100 | 0 | | | 0 | 0 | 0 |
| 5800TM wireless xmtr module | 0 | 0 | 20 | 0 | | | 0 | 0 | 0 |
| 5881EN receiver | 0 | 0 | 60 | 0 | | | 0 | 0 | 0 |
| 5883 hi-security receiver | 0 | 0 | 80 | 0 | | | 0 | 0 | 0 |
| UVS-QM | 0 | 0 | 75 | 110 | | | 0 | 0 | 0 |
| VA8200 Panel Linking Module | 0 | 0 | 88 | 0 | | | 0 | 0 | 0 |
| VA8201 Alpha Pager Module | 0 | 0 | 165 | 0 | | | 0 | 0 | 0 |
| Add'l Device (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| Add'l Device (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| Communicators | | | | | | | | | |
| 7845GSM/7845i-GSM | 0 | 0 | 10 | 0 | | | 0 | 0 | 0 |
| 7845i/7845i-ENT | 0 | 0 | 10 | 0 | | | 0 | 0 | 0 |
| GSMCF/iGSMCF Fire Communicator | 0 | 0 | 10 | 0 | | | 0 | 0 | 0 |
| Vista-GSM/Vista-GSMCN (Vista-21iP only) | 0 | 0 | 10 | 0 | | | 0 | 0 | 0 |
| 7847i/7847i-E Internet Communicator | 0 | 0 | 75 | 0 | | | 0 | 0 | 0 |
| Add'l Device (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| Add'l Device (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| PIR Motion Detectors (non Vplex) | | | | | | | | | |
| IS215T <input type="checkbox"/> LED Active? | 0 | 0 | 7 | 0 | | | 0 | 0 | 0 |
| IS215TCE | 0 | 0 | 18 | 0 | | | 0 | 0 | 0 |
| IS2260/IS2260T <input type="checkbox"/> LED Active? | 0 | 0 | 4 | 0 | | | 0 | 0 | 0 |
| IS2460 | 0 | 0 | 9 | 0 | | | 0 | 0 | 0 |
| IS2500LT | 0 | 0 | 25 | 0 | | | 0 | 0 | 0 |
| IS2535/IS2535T | 3 | 0 | 20 | 0 | | | 60 | 0 | 0 |
| IS2560/IS2560T | 1 | 0 | 20 | 0 | | | 20 | 0 | 0 |
| IS2560TC | 0 | 0 | 25 | 0 | | | 0 | 0 | 0 |
| IS310/IS320 Request to Exit (RTE) | 0 | 0 | 35 | 0 | | | 0 | 0 | 0 |
| 997 Ceiling Mount PIR <input type="checkbox"/> LED Active? | 0 | 0 | 12 | 0 | | | 0 | 0 | 0 |
| 998 Wall Mount PIR <input type="checkbox"/> LED Active? | 0 | 0 | 13 | 0 | | | 0 | 0 | 0 |
| Motion Detctrs (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| Motion Detctrs (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| Motion Detctrs (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| Motion Detctrs (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| Dual Tech Motion Detectors (non Vplex) | | | | | | | | | |
| DT-515 | 0 | 0 | 20 | 0 | | | 0 | 0 | 0 |
| DT-6100STC | 0 | 0 | 35 | 0 | | | 0 | 0 | 0 |
| DT-7235T | 4 | 0 | 20 | 0 | | | 80 | 0 | 0 |
| DT-7435/DT-7435C | 0 | 0 | 30 | 0 | | | 0 | 0 | 0 |
| DT-7450/DT-7450MIC | 0 | 0 | 35 | 0 | | | 0 | 0 | 0 |
| DT-7550 | 0 | 0 | 40 | 0 | | | 0 | 0 | 0 |
| Motion Detctrs (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| Motion Detctrs (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| Motion Detctrs (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| Motion Detctrs (enter quant. & currents) | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |

PS24 Power Supply

Battery & Power Budget Calculator
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Standby/Alarm Durations (from top)

| | |
|--|------------|
| Battery Standby (hours): | 24 |
| Alarm Duration (minutes): | 5 |
| Required Capacity (AH) | 1.059 |
| Use TWO identical batteries w/ this AH capacity | 7.0 |

PS24 POWER SUPPLY MODULE, MAXIMUM CAPACITIES

| Panel 12V Standby (mA) | Panel 12V Alarm (mA) | Output A Standby (mA) | Output A Alarm (mA) | Output B Standby (mA) | Output B Alarm (mA) | PS24 PC Board (mA) | Maximum Total Standby Output | Maximum Total Alarm Output | Max. Battery Capacity |
|------------------------|----------------------|-----------------------|---------------------|-----------------------|---------------------|--------------------|------------------------------|----------------------------|-----------------------|
| 809 | 978 | 570 | 1700 | 570 | 1700 | 40 | 610 | 4180 | 34.4 |
| 0.0 | 0.0 | 0 | 0 | 0 | 0 | 40 | 40 | 40 | |
| 808.6 | 975.6 | 570.0 | 1700.0 | 570.0 | 1700.0 | | 570.0 | 4140.0 | 34.4 |

Using PS24 to back up Control Panel

Equivalent panel load @ 24V
(converted to 12VDC from 24V full-wave)
Power Budget

| 24V NOTIFICATION APPLIANCES Enter Device Names & Specifications | Enter Quantity | Which PS24 Output? | Device Standby Load (MA) | Device Alarm Load (MA) | | Subtotal A Standby | Subtotal A Alarm | Subtotal B Standby | Subtotal B Alarm |
|--|----------------|--------------------|--------------------------|------------------------|--|--------------------|------------------|--------------------|------------------|
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |
| 24V Notification Appliance | 0 | Output A | 0 | 0 | | 0 | 0 | 0 | 0 |

| 24V BELL CIRCUIT WIRE RUN DATA | Units | Wire Gauge(AWG) | Ohms per 1000 ft | Total Alarm Current Draw (mA) | Run Length | Actual Resistance (twin leads) | Voltage At EOL | Voltage Drop (Percent) |
|------------------------------------|-------|---------------------|------------------|-------------------------------|------------|--------------------------------|----------------|------------------------|
| PS24 Output A Wire Run (twin lead) | Feet | <Select Wire Gauge> | 0.00 | 0.00 | 0 | 0.00 | 24.00 | 0.00 |
| PS24 Output B Wire Run (twin lead) | Feet | <Select Wire Gauge> | 0.00 | 0.00 | 0 | 0.00 | 24.00 | 0.00 |



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Job Name: Voltage Drop Calculations ...

Cianbro Corporation
 60 Cassidy Point
 Portland, ME 04102
 AHJ: City of Portland Fire Department

Prepared By:

Robin Russell
 Protection One
 10 Manuel Drive
 Portland, ME 04103
 (207) 347-5327

NICET # 110826

Circuit Information

Panel Name: Altronix 602 Notificatio...
 Circuit Name: NAC #1
 Starting Voltage: Starting Voltage = 20.4

(1.5) amp circuit
 Class B @ 14 AWG
 DC 24 - volt Supply

| Type and Model | Candela | Current (Amps) | Tone and Volume | Dist from last device | Dist from source (ft) | 12 | 14 | 16 | 18 |
|--------------------------|-----------------|----------------|-----------------|-----------------------|-----------------------|--------|--------|--------|--------|
| Strobe SR | 15 | 0.066 | | 15 | 15 | 20.348 | 20.318 | 20.269 | 20.192 |
| Strobe SR | 15 | 0.066 | | 15 | 30 | 20.301 | 20.242 | 20.149 | 20.000 |
| Horn/Strobe P2R | 75 | 0.176 | Temporal, High | 15 | 45 | 20.257 | 20.173 | 20.038 | 19.824 |
| Strobe SR | 15 | 0.066 | | 35 | 80 | 20.179 | 20.050 | 19.842 | 19.513 |
| Strobe SR | 15 | 0.066 | | 15 | 95 | 20.150 | 20.003 | 19.769 | 19.396 |
| Strobe SR | 15 | 0.066 | | 15 | 110 | 20.125 | 19.963 | 19.705 | 19.294 |
| Horn/Strobe P2R | 75 | 0.176 | Temporal, High | 25 | 135 | 20.090 | 19.907 | 19.615 | 19.152 |
| Horn/Strobe P2R | 75 | 0.176 | Temporal, High | 25 | 160 | 20.072 | 19.879 | 19.571 | 19.081 |
| Total current/amps 0.858 | Total Dist: 160 | | voltage drop | | | 0.328 | 0.521 | 0.829 | 1.319 |



Circuit Information

Panel Name: Altronix 602 Notificatio...
 Circuit Name: NAC #2
 Starting Voltage: Starting Voltage = 20.4

(1) amp circuit
 Class B @ 14 AWG
 DC 24 - volt Supply

| Type and Model | Candela | Current (Amps) | Tone and Volume | Dist from last device | Dist from source (ft) | 12 | 14 | 16 | 18 |
|--------------------------|----------------|----------------|-----------------|-----------------------|-----------------------|--------|--------|--------|--------|
| Strobe SR | 15 | 0.066 | | 30 | 30 | 20.339 | 20.304 | 20.247 | 20.157 |
| Horn/Strobe PC2R | 95 | 0.194 | Temporal, High | 50 | 80 | 20.252 | 20.165 | 20.026 | 19.804 |
| Horn/Strobe P2R | 75 | 0.176 | Temporal, High | 25 | 105 | 20.228 | 20.126 | 19.964 | 19.707 |
| Strobe SR | 15 | 0.066 | | 30 | 135 | 20.220 | 20.114 | 19.944 | 19.675 |
| Total current/amps 0.502 | Total Dist:135 | | voltage drop | | | 0.180 | 0.286 | 0.456 | 0.725 |



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Circuit Information

Panel Name: Altronix 602 Notificatio...
 Circuit Name: NAC #3
 Starting Voltage: Starting Voltage = 20.4

(1) amp circuit
 Class B @ 14 AWG
 DC 24 - volt Supply

| Type and Model | Candela | Current (Amps) | Tone and Volume | Dist from last device | Dist from source (ft) | 12 | 14 | 16 | 18 |
|--------------------------|----------------|----------------|-----------------|-----------------------|-----------------------|--------|--------|--------|--------|
| Strobe SR | 15 | 0.066 | | 30 | 30 | 20.302 | 20.245 | 20.153 | 20.007 |
| Horn/Strobe PC2R | 95 | 0.194 | Temporal, High | 35 | 65 | 20.197 | 20.078 | 19.888 | 19.585 |
| Strobe SCR | 95 | 0.181 | | 35 | 100 | 20.120 | 19.955 | 19.692 | 19.274 |
| Horn/Strobe PC2R | 95 | 0.194 | Temporal, High | 35 | 135 | 20.068 | 19.873 | 19.560 | 19.065 |
| Horn/Strobe P2R | 75 | 0.176 | Temporal, High | 35 | 170 | 20.043 | 19.833 | 19.498 | 18.965 |
| Total current/amps 0.811 | Total Dist:170 | | voltage drop | | | 0.357 | 0.567 | 0.902 | 1.435 |



Circuit Information

Panel Name: Altronix 602 Notificatio...
 Circuit Name: NAC #4
 Starting Voltage: Starting Voltage = 20.4

(1) amp circuit
 Class B @ 14 AWG
 DC 24 - volt Supply

| Type and Model | Candela | Current (Amps) | Tone and Volume | Dist from last device | Dist from source (ft) | 12 | 14 | 16 | 18 |
|--------------------------|-----------------|----------------|-----------------|-----------------------|-----------------------|--------|--------|--------|--------|
| Horn/Strobe PC2R | 95 | 0.194 | Temporal, High | 50 | 50 | 20.210 | 20.099 | 19.920 | 19.637 |
| Strobe SCR | 95 | 0.181 | | 50 | 100 | 20.060 | 19.860 | 19.539 | 19.031 |
| Horn/Strobe PC2R | 95 | 0.194 | Temporal, High | 50 | 150 | 19.945 | 19.678 | 19.250 | 18.571 |
| Strobe SCR | 95 | 0.181 | | 50 | 200 | 19.870 | 19.558 | 19.060 | 18.268 |
| Horn/Strobe PC2R | 95 | 0.194 | Temporal, High | 50 | 250 | 19.831 | 19.497 | 18.961 | 18.112 |
| Total current/amps 0.944 | Total Dist: 250 | | voltage drop | | | 0.569 | 0.903 | 1.439 | 2.288 |

Altronix NAC Power Extender Battery Calculator

NAC Power Extender: AL602ULADA

Output Voltage: 24VDC
 Maximum Available Current: 6.5A
 Maximum Available NAC Current Per Circuit: 2.5A
 Maximum Available Aux Current: 1A

| Device Type | Device Name | Quantity | Load per Device | | Total Device Load | |
|--|-------------|----------|-----------------|---------|-------------------|--------------------|
| | | | Stand-By | Alarm | Stand-By | Alarm |
| | AL602ULADA | 1 | | | 0.09A | 0.175A |
| Notification Appliances | | | | | | |
| NAC1 | | | | | | |
| Notif. Appliance | Strobe | 5 | | .066 A | | 0.330 A |
| Notif. Appliance | Horn Strobe | 3 | | .176 A | | 0.528 A |
| NAC2 | | | | | | |
| Notif. Appliance | Strobe | 2 | | .066 A | | 0.132 A |
| Notif. Appliance | Horn Strobe | 1 | | .194 A | | 0.194 A |
| Notif. Appliance | Horn Strobe | 1 | | .176 A | | 0.176 A |
| NAC3 | | | | | | |
| Notif. Appliance | Strobe | 1 | | .066 A | | 0.066 A |
| Notif. Appliance | Horn Strobe | 3 | | .194 A | | 0.582 A |
| Notif. Appliance | Horn Strobe | 1 | | .176 A | | 0.176 A |
| NAC4 | | | | | | |
| Notif. Appliance | Horn Strobe | 5 | | .194 A | | 0.970 A |
| Auxiliary Devices | | | | | | |
| Aux Output (total auxiliary current draw must not exceed 1mA) | | | | | | |
| Auxiliary Device | | 0 | 0.000 A | 0.000 A | 0 A | 0 A |
| Total System Load: | | | | | 0.09A | 3.328999999999997A |
| Calculation Results | | | | | | |
| Total Stand-By Amp Hours: | | | | | 2.160AH | |
| Total Alarm Amp Hours: | | | | | 0.277AH | |
| Minimum battery size required: | | | | | 2.925AH | |

Minimum allowable battery power rating is 7 AH

Units are capable of recharging 40AH battery max. If total ampere - hour required exceeds 40AH, decrease AUX current to provide enough stand-by time for the application.

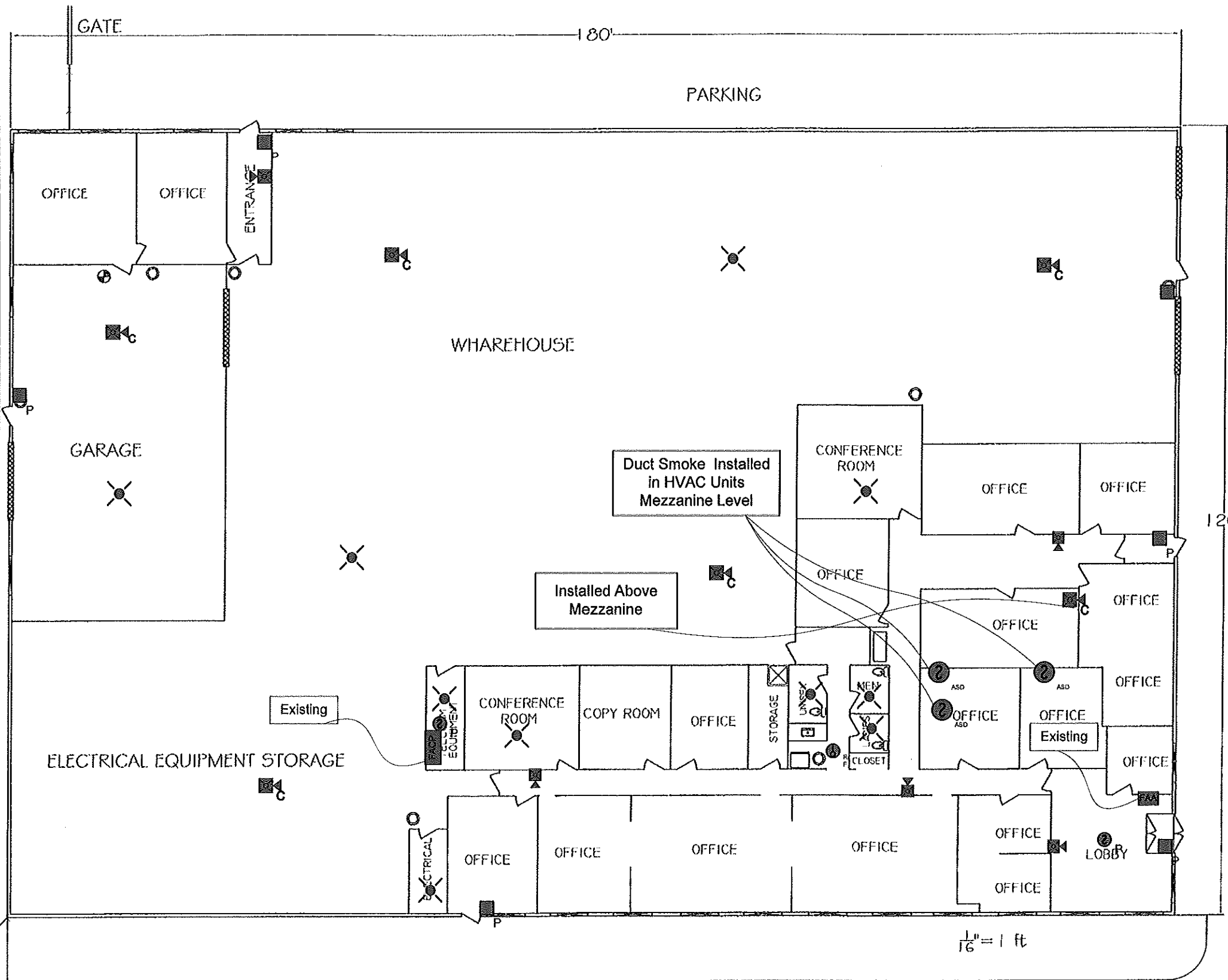
[Back to Calculator](#)

Cianbro Corporation
60 Cassidy Point Drive
Portland, Maine 04102

Fire Alarm Legend

| Symbol | Count | Description |
|--------|-------|--------------------------|
| | 1 | Fire Alarm Control Panel |
| | 1 | Annunciator Panel |
| | 5 | Smoke Detector |
| | 6 | Manual Station |
| | 4 | Ceiling Horn w/ Light |
| | 11 | Light |
| | 4 | Horn w/ Light |
| | 1 | Heat Detector |

- WINDOW
- FIRE EXTINGUISHER
- SPILL KIT



GATE

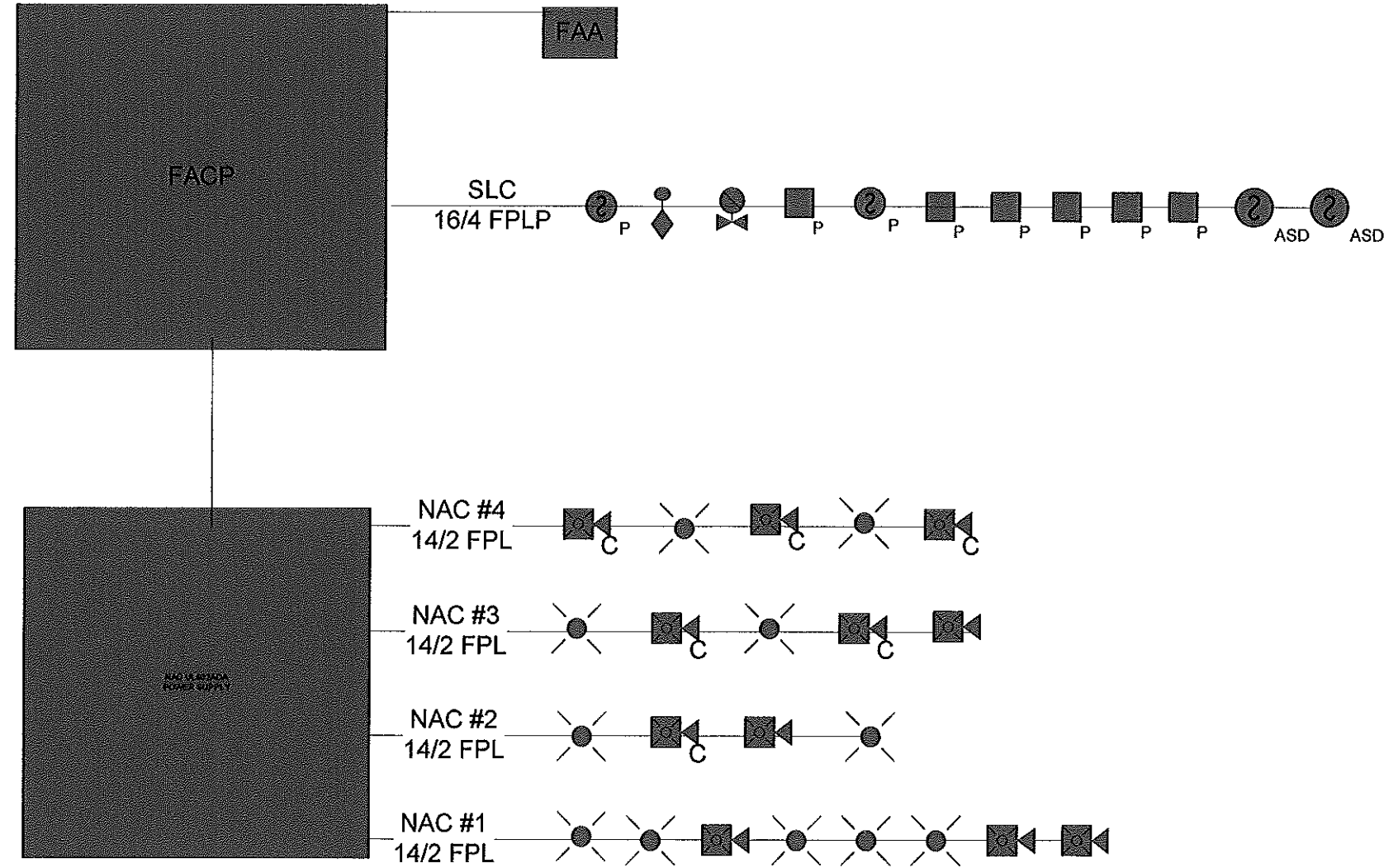


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6/14/12

Cianbro Corporation
 60 Cassidy Point Drive, Portland Maine 04101
 Fire Alarm Riser



| | | | |
|---|---|---------|---|
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