City of Portland, Maine - Building or Use Permit Application
389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No:	Issue Date:	CBL:
09-1388		211 A001001

Location of Construction:	Owner Name:	Owner Address:	Phone:
2002 Congress St	Brooklawn Memorial Pk	2002 Congress St	207-773-5307
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
Brook Lawn Memorial Park	Advanced Detection Systems, Inc.		2077735307
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	**Zone:**
	207-773-5307	Fire Alarm System	R-1

Past Use:	Proposed Use:	Permit Fee:	Cost of Work:	CEO District:
Brooklawn Memorial Cemetary	Brooklawn Memorial Cemetary / Install Fire alarm system.	$50.00	$3,000.00	3

FIRE DEPT: ☑ Approved ☐ Denied
*See Conditions
Signature: KG

INSPECTION:
Use Group: V Type: Alarm
NFPA
Signature:

Proposed Project Description:
Install Fire alarm system.

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)
Action: ☐ Approved ☐ Approved w/Conditions ☐ Denied
Signature: Date:

Permit Taken By:	Date Applied For:
gg	12/04/2009

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
2. Building permits do not include plumbing, septic or electrical work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..

PERMIT ISSUED

- 7

City of Portland

Zoning Approval

Special Zone or Reviews	Zoning Appeal	Historic Preservation
☐ Shoreland	☐ Variance	☑ Not in District or Landmark
☐ Wetland	☐ Miscellaneous	☐ Does Not Require Review
☐ Flood Zone	☐ Conditional Use	☐ Requires Review
☐ Subdivision	☐ Interpretation	☐ Approved
☐ Site Plan	☐ Approved	☐ Approved w/Conditions
Maj ☐ Minor ☐ MM ☐	☐ Denied	☐ Denied
Date: OK - 12/7/09	Date:	Date:

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

City of Portland, Maine - Building or Use Permit

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

Permit No:	Date Applied For:	CBL:
09-1388	12/04/2009	211 A001001

Location of Construction:	Owner Name:	Owner Address:	Phone:
2002 Congress St	Brooklawn Memorial Pk	2002 Congress St	207-773-5307
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
Brook Lawn Memorial Park	Advanced Detection Systems, Inc.		(207) 773-5307
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	
	207-773-5307	Fire Alarm System	

Proposed Use:	Proposed Project Description:
Brooklawn Memorial Cemetary / Install Fire alarm system.	Install Fire alarm system.

Dept: Zoning **Status:** Approved **Reviewer:** Marge Schmuckal **Approval Date:** 12/07/2009

Note: **Ok to Issue:** ☑

Dept: Building **Status:** Approved **Reviewer:** Tammy Munson **Approval Date:** 12/22/2009

Note: **Ok to Issue:** ☑

Dept: Fire **Status:** Approved with Conditions **Reviewer:** Capt Keith Gautreau **Approval Date:** 12/10/2009

Note: **Ok to Issue:** ☑

1) Emergency lights and exit signs are required. Emergency lights and exit signs are required to be labeled in relation to the panel and circuit.
2) Emergancy lights are required to be tested at the electrical panel on the same circuit as the lighting for the area they serve.
3) The fire alarm system shall comply with NFPA 72 and Fire Department Technical Standard. A compliance letter is required.
4) Installation of a Fire Alarm system requires a Knox Box to be installed per city crdinance

PERMIT ISSUED

- 7 -

City of Portland

BUILDING PERMIT INSPECTION PROCEDURES

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

to schedule your inspections as agreed upon

Permits expire in 6 months, if the project is not started or ceases for 6 months.

The Owner or their designee is required to notify the inspections office for the following inspections and provide adequate notice. Notice must be called in 48-72 hours in advance in order to schedule an inspection:

By initializing at each inspection time, you are agreeing that you understand the inspection procedure and additional fees from a "Stop Work Order" and "Stop Work Order Release" will be incurred if the procedure is not followed as stated below.

A Pre-construction Meeting will take place upon receipt of your building permit.

__X__ **Rough Electrical: Prior to Any Insulating or drywalling**

__X__ **Final inspection required at completion of work performed by the Fire Department.**

Certificate of Occupancy is not required for certain projects. Your inspector can advise you if your project requires a Certificate of Occupancy. All projects DO require a final inspection.

If any of the inspections do not occur, the project cannot go on to the next phase, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.

CERIFICATE OF OCCUPANICES MUST BE ISSUED AND PAID FOR, BEFORE THE SPACE MAY BE OCCUPIED.

_____ _____

Signature of Applicant/Designee Date

_____ _____

Signature of Inspections Official Date

PERMIT ISSUED

- 7

City of Portland

CBL: 211 A001001 **Building Permit #:** 09-1388

09-1388

Mail TO: ADS Security
P.O. Box 2116
Scarborough, ME 04070-2116

11/19/2009 12:19 2078748716 PAGE 01/11

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: 2002 Congress St. CBL: 211 A001001

Exact location: (within structure) _____

Type of occupancy(s) (NFPA & ICC): Storage Building

Building owner: Brooklawn Memorial Park

System Designer: James M. Streeter

Designer phone: 797-3093 E-mail: _____

Installing contractor: Advanced Detection Systems, Inc. License No: Stephen L. Anthoine LM50013548

Contractor phone: 207-773-5307 E-mail: santhoine@psouth.net

This is a new application: YES ☑ NO ☐

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

The following documents have been provided with this application:

Floor plans:	YES ☑	NO ☐
Wiring diagram:	YES ☑	NO ☐
Annunciator details- ON FACP	YES ☑	NO ☐
Bid specifications:	YES ☐	NO ☑
Equipment data sheets:	YES ☑	NO ☐
Battery & voltage drop calculations:	YES ☑	NO ☐
Input/ Output Matrix:	YES ☑	NO ☐
Designer/ personnel qualifications:	YES ☑	NO ☐

COST OF WORK: $3,000.00

PERMIT FEE: _____
($10 PER $1.000 + $30 FOR THE FIRST $1.000)

$ 50.00
211 A001

RECEIVED
DEC - 4 2009
Dept. of Building Inspections
City of Portland Maine

Download a new copy of this document from Inspection Division on-line at www.portlandmaine.gov for every submittal. Submit all plans on 11X17 copies or electronic PDF's in addition to full sized plans to the Building Inspection 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 NFPA 70, NFPA 72, and Fire Department Technical Standard(s).

Applicant signature: Stephen L. Anthoine Date: 11-20-2009

City of Portland, Maine - Building or Use Permit

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

Permit No:	Date Applied For:	CBL:
09-1091	10/02/2009	211 A001001

Location of Construction:	Owner Name:	Owner Address:	Phone:
2002 Congress St	Brooklawn Memorial Pk	2002 Congress St	207-773-7679
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
Brooklawn Memorial Park	Biskup Construction, Inc.	16 Danielle Drive Windham	(207) 892-9800
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	
	207-773-7679	Commercial	

Proposed Use:	Proposed Project Description:
Brooklawn Memorial Park / Build new 4,800 square foot storage building.	Build new 4,800 square foot storage building.

Dept: Zoning **Status:** Approved with Conditions **Reviewer:** Marge Schmuckal **Approval Date:** 10/02/2009

Note: **Ok to Issue:** ☑

1) The conditional use standards shall remain during the extent of this extended use.
2) Separate permits shall be required for any new signage.
3) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

Dept: Building **Status:** Approved with Conditions **Reviewer:** Jeanine Bourke **Approval Date:** 10/22/2009

Note: **Ok to Issue:** ☑

1) All penetratios through rated assemblies must be protected by an approved firestop system installed in accordance with ASTM 814 or UL 1479, per IBC 2003 Section 712.
2) Separate permits are required for any electrical, plumbing, sprinkler, fire alarm or HVAC or exhaust systems. Separate plans may need to be submitted for approval as a part of this process.
3) Application approval based upon information provided by applicant. Any deviation from approved plans requires separate review and approrval prior to work.

Dept: Fire **Status:** Approved with Conditions **Reviewer:** Capt Keith Gautreau **Approval Date:** 10/06/2009

Note: **Ok to Issue:** ☑

1) A separate Fire Alarm System Permit is required.
2) The fire alarm system shall comply with NFPA 72 and Fire Department Technical Standard. A compliance letter is required.
3) Installation of a Fire Alarm system requires a Knox Box to be installed per city ordinance
4) All construction shall comply with NFPA 101
5) All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP and keyed alike, labeled "FIRE ALARM RECORDS".

Comments:

10/2/2009-mes: June 18, 2009 The ZBA granted the conditional use appeal for this new structure in the cemetary for 1 year.

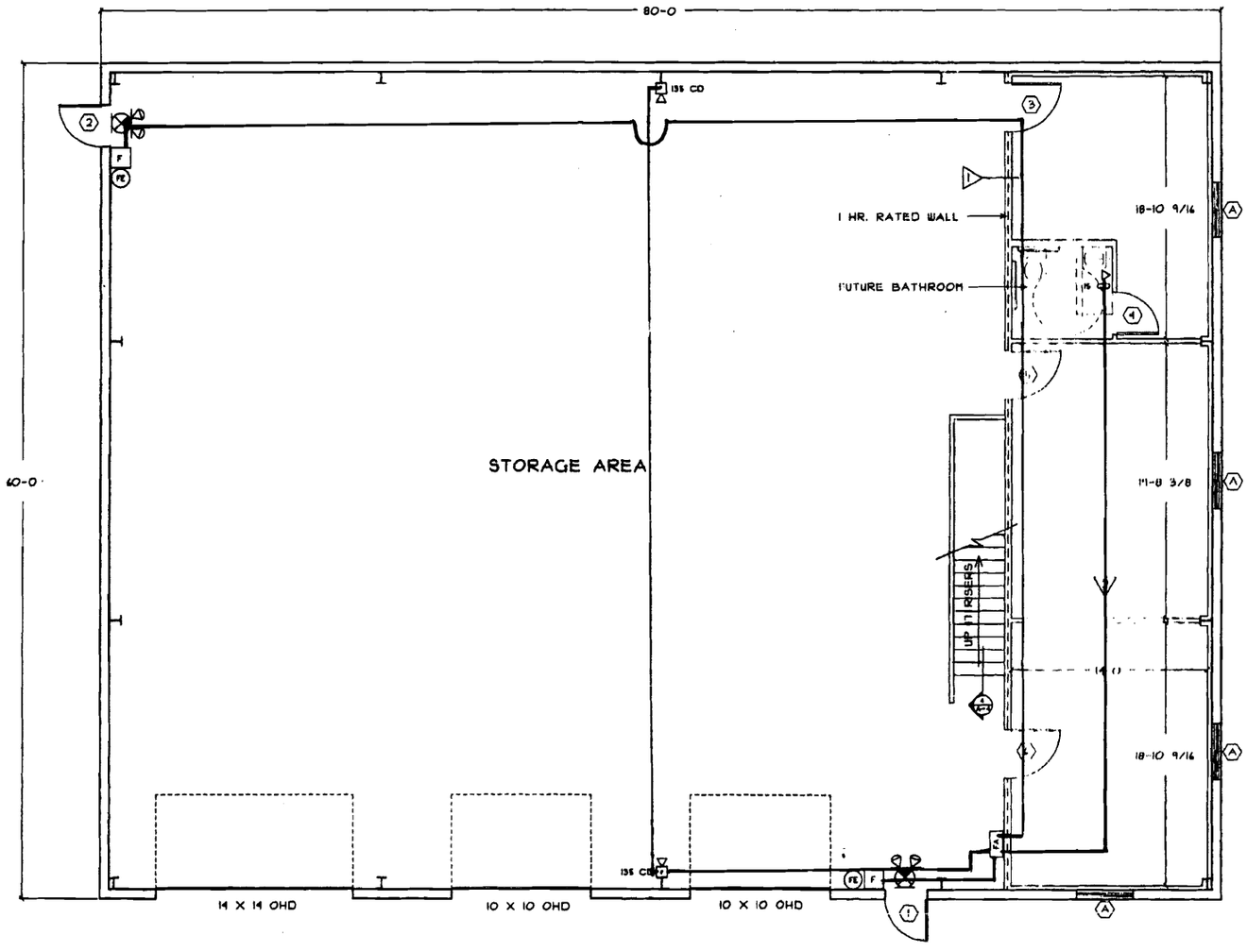
WAIT FOR SITE PLAN APPROVAL BEFORE ISSUING PERMIT

10/7/2009-mes: received stamped approved site plan from Jean F.

10/22/2009-jmb: Spoke to Bob Sanford, this is exactly the same building as previously approved

GENERAL NOTES

WIRING DIAGRAM



FIRST FLOOR PLAN

SE

ANNUNCIATOR IS LOCATED ON FRONT OF FIRE ALARM CONTROL PANEL.

MS-5UD/MS-10UD(E) Series

Five Zone Fire Alarm Control Panel
Ten Zone Fire Alarm Control Panel

FIRE-LITE ALARMS by Honeywell

Control/Communicators

General

The **MS-5UD-3** is a five-zone FACP (Fire Alarm Control Panel) and the **MS-10UD-7(E)** is a ten-zone FACP. These control panels provide reliable fire signaling protection for small to medium-sized commercial, industrial, and institutional buildings. Both panels include built-in communicators for Central Station Service and remote upload/download.

Each of these FACPs is compatible with System Sensor's microprocessor-based i^3 series detectors. These conventional smoke detectors can transmit a maintenance trouble signal to the FACP indicating the need for cleaning and a supervisory "freeze" signal when the ambient temperature falls below the detector rating. Additionally, both the MS-5UD-3 and MS-10UD-7 are compatible with conventional input devices such as two- and four-wire smoke detectors, pull stations, waterflow devices, tamper switches, and other normally-open contact devices. Refer to the *Fire•Lite Device Compatibility Document* for a complete listing of compatible devices.

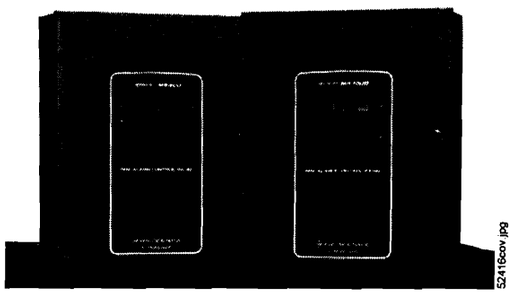
Outputs include four NACs (Notification Appliance Circuits), three programmable Form-C relays (factory programmed for Alarm, Trouble, and Supervisory) and 24 VDC special application resettable and nonresettable power outputs. The FACPs supervise all wiring, AC voltage, battery level and telephone line integrity.

Activation of a compatible smoke detector or any normally-open fire alarm initiating device will activate audible and visual signaling devices, illuminate an indicating LED, sound the piezo sounder at the FACP, activate the communicator and FACP alarm relay, and operate an optional module used to notify a remote station or initiate an auxiliary control function.

New options include a UL listed printer, PRN-6F and FireLite's ACT Internet Monitoring module. The FireWatch Series internet monitoring modules IPDACT-2 and IPDACT-2UD permit monitoring of alarm signals over the Internet saving the monthly cost of two telephone lines. Although not required, the secondary telephone line may be retained providing backup communication over the public switched telephone line.

NOTE: *The MS-10UD-7E offers the same features as the MS-10UD-7 but allows connection to 240 VAC. Unless otherwise specified, the information in this data sheet applies to both the 120 VAC and the 240 VAC versions of these panels.*

NOTE: *For ULC-listed models, see df-60440.*



Features

- Listed to UL Standard 864, 9th edition.
- Built-in DACT (Digital Alarm Communicator/Transmitter).
- Style B (Class B) IDC (Initiating Device Circuit)
  - MS-5UD-3 - five IDCs.
  - MS-10UD-7 - ten IDCs.
- Style Y (Class B) NAC (Notification Appliance Circuit) - special application power
  - MS-5UD-3 - four NACs.
  - MS-10UD-7 - four NACs.
- Notification Appliances may be programmed as
  - Silence Inhibit.
  - Auto-Silence.
  - Strobe Synchronization for System Sensor, Wheelock, Gentex, Faraday, or Amseco devices.
  - Selective Silence (horn-strobe mute).
  - Temporal or Steady Signal.
  - Silenceable or Nonsilenceable.
- Optional CAC-5X Style Z (Class A) Converter Module for NACs and IDCs (2 required for MS-10UD-7).
- Form-C Relays for Alarm, Trouble and Supervisory - Contact Ratings 2.0 A@ 30 VDC or 30 VAC (resistive).
- 3.0 A total system current for MS-5UD-3.
- 7.0 A total system current for MS-10UD-7.
- Optional Dress Panel DP-51050
- Optional Trim Ring TR-CE for semi-flush mounting.
- 24 volt operation.
- Low AC voltage sense.
- Alarm Verification.
- PAS (Positive Alarm Sequence).
- Automatic battery trickle charger.
- Up to eight ANN-BUS annunciators:
  - Optional 8 zone Relay Module ANN-RLY.
  - Optional LED Annunciator Module ANN-LED,
  - Optional Remote Annunciator ANN-80.
  - Optional Remote Printer Gateway ANN-S/PG.
  - Optional LED Annunciator Driver ANN-I/O.
- Optional 4XTMF module (conventional reverse polarity/city box transmitter).

PROGRAMMING AND SOFTWARE:

- Can be programmed at the panel with no special software or additional equipment.
- Programmable Make/Break Ratio.
- Upload/Download (local or remote) of program and data via integral DACT.

USER INTERFACE:

- Built-in DACT (Digital Alarm Communicator/Transmitter).
- Integral 80-character LCD display with backlighting and keypad.
- Real-time clock/calendar with automatic daylight savings adjustments.
- ANN-BUS for connection to remote annunciators.
- Audible or silent walk test capabilities.
- Piezo sounder for alarm, trouble, and supervisory.

Controls and Indicators

LED INDICATORS

- FIRE ALARM (red)
- SUPERVISORY (yellow)
- TROUBLE (yellow)
- AC POWER (green)
- ALARM SILENCED (yellow)

CONTROL BUTTONS

- ACKNOWLEDGE
- ALARM SILENCE
- SYSTEM RESET (lamp test)
- DRILL

Terminal Blocks

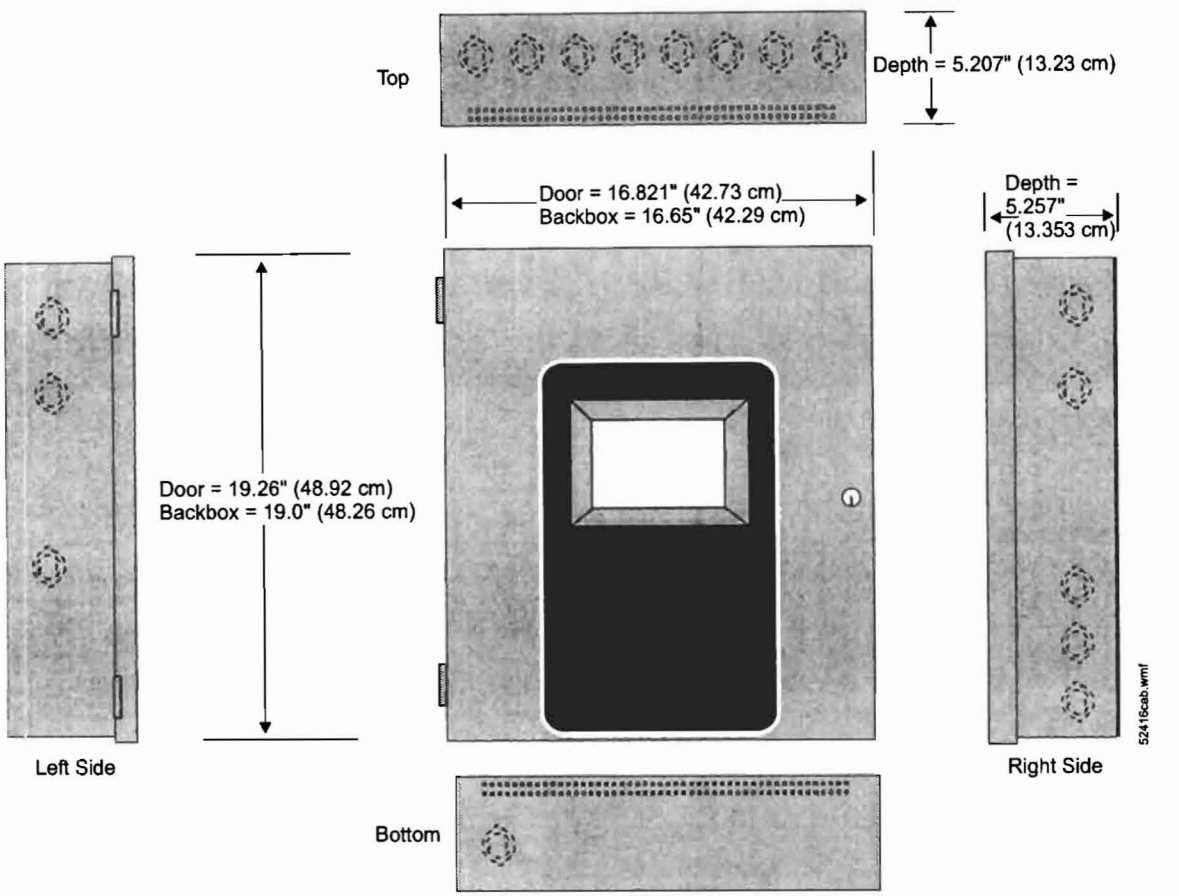
AC Power – TB1:

- MS-5UD-3 (FLPS-3 Power Supply): 120 VAC, 50/60 HZ, 1.00 A.
- MS-10UD-7 (FLPS-7 Power Supply): 120 VAC, 50/60 HZ, 3.80 A.
- MS-10UD-7E (FLPS-7 Power Supply): 240 VAC, 50 HZ, 2.20 A.

Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation. Supervised, nonpower-limited.

Battery (sealed lead acid only) – J12:

- Maximum Charging Circuit - Normal Flat Charge: 27.6 VDC @ 1.4 A. Supervised, nonpower-limited.
- Maximum Charger Capacity: 18 AH battery for MS-5UD-3, and 26 AH battery for MS-10UD-7(E). [Two 18 Ah batteries can be housed in the FACP cabinet. Larger batteries require separate battery box such as the BB-26 or BB-55.]
- Minimum Battery Size: 7 AH.



Cabinet Measurements

Initiating Device Circuits – TB4 (and TB 6 on MS-10UD-7 only):

- Alarm Zones 1 - 5 on TB 4 (MS-5UD-3 and MS-10UD-7).
- Alarm Zones 6 - 10 on TB6 (MS-10UD-7 only).
- Supervised and power-limited circuitry.
- Operation: All zones Style B (Class B).
- Normal Operating Voltage: Nominal 20 VDC.
- Alarm Current: 15 mA minimum.
- Short Circuit Current: 40 mA max.
- Maximum Loop Resistance: 100 ohms.
- End-of-Line Resistor: 4.7K ohm, 1/2 watt (P/N 71252 UL-listed).
- Standby Current: 2 mA.

Refer to the *Fire•Lite Device Compatibility Document* for listed compatible devices.

Notification Appliance Circuits – TB5 (and TB 7 on MS-10UD-7 only):

- Four NACs
- Operation: Style Y (Class B)
- Special Application power
- Supervised and power-limited circuitry
- Normal Operating Voltage: Nominal 24 VDC
- Maximum Signaling Current: 3.0 A for MS-5UD-3, 2.5 A maximum per NAC; 7.0 A for MS-10UD-7(E), 3.0 A maximum per NAC.
- End-of-Line Resistor: 4.7K ohm, 1/2 watt (Part #71252)
- Max. Wiring Voltage Drop: 2 VDC

Refer to the *Fire•Lite Device Compatibility Document* for compatible listed devices.

Form C Relays – TB8:

- *Relay 1* (factory default programmed as Alarm Relay)
- *Relay 2* (factory default programmed as fail-safe Trouble Relay)
- *Relay 3* (factory default programmed as Supervisory Relay)

Special Application Resettable Power – TB9:

- Jumper selectable by JP31 for resettable or nonresettable power.
- Operating voltage: 24 VDC nominal.
- Maximum available current: 500 mA - appropriate for powering four-wire smoke detectors.
- Power-limited circuit.

Refer to the *Fire•Lite Device Compatibility Document* for listed compatible devices.

Remote Sync Output - TB2: Remote power supply synchronization output, only required for the MS-5UD-3. 24 VDC nominal special application power. Maximum current is 40 mA. End-of-Line Resistor: 4.7K ohm. Supervised and power-limited circuit.

Product Line Information

MS-5UD-3: Five-zone, 24-volt Fire Alarm Control Panel (includes backbox, FLPS-3 power supply, technical manual, and a frame & post operating instruction sheet).

MS-10UD-7: Ten-zone, 24-volt Fire Alarm Control Panel (includes backbox, FLPS-7 power supply, technical manual, and a frame & post operating instruction sheet).

MS-10UD-7E: Same as above with 240 VAC FLPS-7.

IPDACT, IPDACT-2/2UD Internet Monitoring Module: Mounts in bottom of enclosure with optional mounting kit (PN IPBRKT). Connects to primary and secondary DACT telephone output ports for internet communications over customer provided ethernet internet connection. Requires compatible Teldat Visoralarm Central Station Receiver. Can use DHCP or static IP. *(See data sheet df-52424 for more information.)*

IPBRKT: Mounting kit for IPDACT in common enclosure.

IPSPLT: Y Adaptor option to allow connection of both panel dialer outputs to one cable input to IPDACT (sold separately).

OPTIONAL MODULES

CAC-5X: Optional (Class A) Converter Module. Converts Style B (Class B) Initiating Device Circuits to Style D (Class A); and Style Y (Class B) Notification Appliance Circuits to Style Z (Class A). Connects to J2 on the MS-5UD-3 and MS-10UD-7(E) main circuit board and to J7 on the MS-10UD-7(E).

***NOTE:** Two Class A Converter Modules are required for the ten-zone panel.*

4XTMF: Transmitter module. Provides a supervised output for local energy municipal box transmitter and alarm and trouble reverse polarity. Includes a disable switch and disable trouble LED. A module jumper option allows the reverse polarity circuit to open with a system trouble condition if no alarm conditions exists. Mounts to the main circuit board connectors J4 and J5.

COMPATIBLE ANNUNCIATORS

ANN-80: Remote LCD Annunciator. Mimics the information displayed on the FACP's LCD. Red. (For white, order: **ANN-80-W.**)

ANN-LED: LED Annunciator with three LEDs for each zone: Alarm, Trouble, and Supervisory. Mounts in the DP-51050(B) dress panel. (For white, order: **ANN-80-W.**)

ANN-RLED: LED Annunciator with three alarm (red) indicators for up to 30 input zones or addressable points. (See DF-60241).

ANN-RLY: Relay module. Mounts inside the cabinet. Provides ten Form C relays.

ANN-S/PG: Serial/parallel printer gateway. Provides a connection for a serial or parallel printer.

ANN-I/O: Driver module. Provides connections to a user-supplied graphic annunciator.

ACCESSORIES

DP-51050: Optional dress panel. Restricts access to the system wiring while allowing access to the membrane switch panel.

BB-26: Battery backbox, holds up to two 25 AH batteries and CHG-75.

BB-55: Battery backbox, holds up to two 25 AH batteries.

TR-CE: Optional trim-ring for semi-flush mounted cabinets.

PRN-6F: UL listed printer.

SYSTEM SPECIFICATIONS

System Capacity

- Annunciators 8

Electrical Specifications

- **MS-5UD-3 (FLPS-3 Power Supply):** 120 VAC, 60 HZ, 1.0 A
- **MS-10UD-7 (FLPS-7 Power Supply):** 120 VAC, 60 HZ, 3.90 A
- **MS-10UD-7E (FLPS-7 Power Supply):** 240 VAC, 50 HZ, 2.20 A.
- **Wire size:** minimum 14 AWG (2.0 mm^2) with 600 V insulation, supervised, nonpower-limited

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.72" (1.82 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x 16.65" (42.29 cm.) wide x 5.25" (13.34 cm.) deep. **Trim Ring (TR-CE):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

Dimensions:

- 20.00" (50.80 cm.) high
- 22.5" (57.15 cm.) wide
- 8.5" (21.59 cm.) deep.

Weight: 27 lb (12.20 kg)

Temperature and Humidity Ranges

This system meets NFPA requirements for operation at 0 – 49°C/32 – 120°F and at a relative humidity 93% ± 2% RH (noncondensing) at 32°C ± 2°C (90°F ± 3°F). However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15 – 27°C/60 – 80°F.

Agency Listings and Approvals

The listings and approvals below apply to the basic MS-5UD-3 and MS-10UD-7 control panels. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** File S624
- **FM Approved**
- **CSFM:** 7165-0075:214
- **MEA:** MEA: 333-07-E

***NOTE:** For ULC-listed models, see df-60440.*

NFPA Standards

The MS-5UD/MS-10UD(E) Series complies with the following NFPA 72 Fire Alarm Systems requirements:

- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires 4XTMF).
- **REMOTE STATION** (Automatic, Manual and Waterflow) (Where a DACT is not accepted, the alarm, trouble and supervisory relays may be connected to UL 864 listed transmitters. For reverse polarity signaling of alarm and trouble, 4XTMF is required.)
- **PROPRIETARY** (Automatic, Manual and Waterflow).
- **CENTRAL STATION** (Automatic, Manual and Waterflow, and Sprinkler Supervised).
- **OT, PSDN** (Other Technologies, Packet-switched Data Network)

ISO 9001 CERTIFIED ENGINEERING & MANUFACTURING QUALITY SYSTEMS

This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

Made in the U.S. A.

For more information, contact Fire•Lite Alarms. Phone: (800) 627-3473, FAX: (877) 699-4105.
www.firelite.com

FIRE·LITE ALARMS
by Honeywell

BG-12L Manual Pull Station

Patented, U.S. Patent No. Des. 428,351; 6,380,846; Other Patents Pending

Document 50964 I56-2263-004

Description

The BG-12L pull station is a non-coded, dual-action manual pull station with a key-lock reset feature. It provides Fire•Lite control panels with one normally open (N/O) alarm initiating input. The BG-12L meets the ADAAG controls and operating mechanisms guidelines (section 4.1.3[13]), and the ADA requirement for a 5 lb. maximum pull force to activate the pull station. Operating instructions are molded into the pull station handle along with Braille text. Molded Terminal numbers are also present.

Ratings

Switch contact (N/O) is gold plated for reliability and rated at 0.25 A at 30 volts (AC or DC).

Installation

The BG-12L pull station can be surface mounted to an SB-10 or SB-I/O surface backbox or semi-flush mounted on a standard single-gang, double-gang or 4" (10.16 cm) square electrical box. The optional BG-TR trim ring can be used if the BG-12L is to be semi-flush mounted.

Operation

To activate the dual-action pull station, push in and pull down on the handle. The word 'ACTIVATED' appears after the handle is pulled down. This will remain until the pull station is reset.

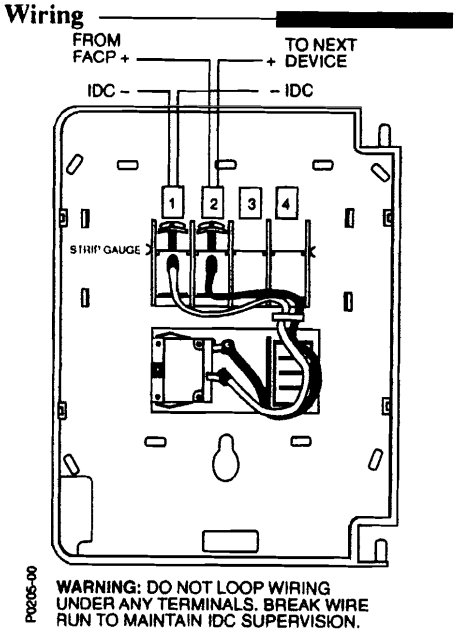
The pull station includes one Single Pole, Single Throw (SPST) Normally Open (N/O) switch which closes upon activation of the pull station.

Resetting the Pull Station

1. Insert the key into the lock and rotate 1/4 turn counterclockwise.
2. Open the door until the handle returns to normal.
3. Close and lock the door.

Note: Closing the door automatically resets the switch to the 'Normal' position. Opening the door will not activate or deactivate the alarm switch.

Wiring



WARNING! Do not loop wiring under any terminals. Break wire run to maintain IDC supervision.

BG-12L
Manual Pull Station

Document 50964 I56-2263-004

CAUTION! Do not detach the door of the pull station during installation. The door of the pull station cannot be reattached to the backplate after the backplate has already been installed onto an electrical box.

CAUTION!

Install the Fire•Lite BG-12L pull station in accordance with these instructions, applicable NFPA standards, national and local Fire and Electrical codes and the requirements of the AHJ (Authority Having Jurisdiction). Regular testing of the devices should be conducted in accordance with the appropriate NFPA standards. Failure to follow these directions may result in failure of the device to report an alarm condition. Fire•Lite is not responsible for devices that have been improperly installed, tested or maintained.

ADA Compliance

For ADA compliance, if the clear floor space only allows forward approach to an object, the maximum forward reach height allowed is 48 inches (121.92 cm). If the clear floor space allows parallel approach by a person in a wheelchair, the maximum side reach allowed is 54 inches (137.16 cm).

SpectrAlert Ceiling Mount Series Strobes and Horn/Strobes

SYSTEM SENSOR®
[illegible] Ohio Avenue, St. Charles, Illinois 60174
1-800-SENSOR2, FAX: 630-377-6495
www.systemsensor.com

SPECTRAlert

For use with the following models:

Strobes: 24 volt: SC2415W, SC241575W, [illegible] SC2475W, SC2495W, SC24115W, SC24177W

Horn Strobes: 24 volt: PC2415W, PC241575W, [illegible] PC2475W, PC2495W, PC24115W, PC24177W

[illegible] models.

[illegible] with plain housing.

The [illegible] this manual applies may be covered [illegible] of the following U.S. Patents: [illegible] 5,850,178; 5,598,139; 6,049,446; 6,057,778; [illegible] 243

Specifications

Mechanical

Input Terminals:	12 to [illegible]
Overall Dimensions:	6.8" diameter (173 mm)
Operating Temperature:	32° F to 120° F (0° C to 49° C)

Electrical

Voltage:	Regulated 24 DC/FWR
Operational Voltage Range:	16–33 Volts
Synchronous Applications with MDL Module:	17–33 Volts

NOTE: Horn units will operate on walk tests with on-time durations of .25 sec. or greater.

Flash Rate:	1 Flash Per Second
Light Output:	Models with 15 only in the model number are listed at 15 candela. Models with 1575 in the model number are listed at 15 candela per UL 1971 but will provide 75 candela on axis (straight down). Models with 30, 75, 95, 115, 177 are for that candela.
Sound Output:	Sound output levels are established at Underwriters Laboratories in their reverberant room. Always use the sound output specified as UL Reverberant Room when comparing products.
Listings:	UL S5512 Strobe, UL S4011 (Combo)

Note for Strobes – Do not exceed: 1) 16-33 Voltage range limit; 2) Maximum number of 70 strobe lights when connecting the MDL Sync module with a maximum line impedance of 4 Ohms per loop and: 3) Maximum line impedance as required by the fire alarm control manufacturer.

General Description

The SpectrAlert ceiling mount series notification appliances are designed to meet the requirements of most agencies governing these devices, including: NFPA, The National Fire Alarm Code, UL, FM, CSFM, MEA. Also, check with your local Authority Having Jurisdiction for other codes or standards that may apply.

The SpectrAlert ceiling mount series can be installed in systems using 24-volt panels having DC or full-wave rectified (FWR) power supplies. The series can also be installed in systems requiring synchronization (module MDL required) or systems that do not require synchronization (no module required).

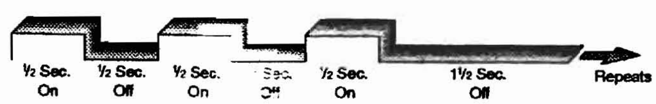
NOTICE: This manual shall be left with the owner/user of this equipment.

Fire Alarm System Considerations

Temporal and Non-Temporal Coded Signals:

The American National Standards Institute and the National Fire Alarm Code require that all horns used for building evacuation installed after July 1, [illegible], must produce Temporal Coded Signals.

Signals other than those used for evacuation purposes do not have to produce the Temporal Coded Signal. Temporal coding is accomplished by interrupting a steady sound in the following manner:



Power Supply Considerations

Panels typically supply DC filtered voltage or FWR (full-wave rectified) voltage. The system design engineer must calculate the number of units used in a zone based on the type of panel supply. Be certain the sum of all the device currents do not exceed the current capability of the panel. Calculations are based on using the device current found in the subsequent charts and must be the current specified for the type of panel power supply used.

SYSTEM SENSOR
advanced ideas. advanced solutions.

Job Name: Brooklawn Memorial

Prepared By:

ADVANCED DETECTION SYSTEMS, INC.
P.O. Box 2116
Scarborough, Maine 04070-2116

2002 Congress St.

Portland, ME

AHJ: Portland F.D.

Circuit Information

Panel Name: Firelite MS5UD-3
Circuit Name: NAC#1
Starting Voltage: Starting Voltage = 20.4

(3) amp circuit
Class B @ 16 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 PC2RH	135	0.245	Temporal, High	50	50	20.302	20.244	20.151	20.004
Horn/Strobe PC2RH	135	0.245	Temporal, High	50	100	20.252	20.166	20.027	19.806
					voltage drop	0.148	0.234	0.373	0.594

SYSTEM SENSOR
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Circuit Information

Panel Name: Firelite MS5UD-3
Circuit Name: NAC#2
Starting Voltage: Starting Voltage = 20.4

(3) amp circuit
Class B @ 16 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 P2R	15	0.079	Temporal, High	50	50	20.384	20.375	20.360	20.336
					voltage drop	0.016	0.025	0.040	0.064

7.4 Calculating the Battery Size

Use Table 7-4 to calculate the total Standby and Alarm load in ampere hours (AH). This total load determines the battery size (in AH), required to support the control panel under the loss of AC power. Complete Table 7-4 as follows:

1. Enter the totals from Table 7-3 on page 136, Calculation Columns 2 and 3 where shown
2. Enter the NFPA Standby and Alarm times (refer to 'NFPA Requirements' below)
3. Calculate the ampere hours for Standby and Alarm, then sum the Standby and Alarm ampere hours
4. Multiply the sum by the derating factor of 1.2 to calculate the proper battery size (in AH)
5. Write the ampere hour requirements on the Protected Premises label located inside the cabinet door

TABLE 7-4:Total Secondary Power Requirements at 24 VDC

Secondary Standby Load (total from Table 7-3 Calculation Column 3) [0.1]	Required Standby Time (24 hours) X[24]	= 2.4 AH
Secondary Alarm Load (total from Table 7-3 Calculation Column 2) [0.903]	Required Alarm Time (for 5 min., enter 0.084, for 10 min., enter 0.168) X[0.084]	=0.0758AH
Sum of Standby and Alarm Ampere Hours		= 2.475AH
Multiply by the Derating Factor		X 1.2
Battery Size, Total Ampere Hours Required		= 2.970AH

7.4.1 NFPA Battery Requirements

NFPA 72 Local, Central and Proprietary Fire Alarm Systems require 24 hours of standby power followed by 5 minutes in alarm

7.4.2 Selecting and Locating Batteries

Select batteries that meet or exceed the total ampere hours calculated in Table 7-4 . The control panel can charge batteries in the 7 AH to 26 AH range. The control panel cabinet is capable of housing batteries up to 18 AH. Batteries larger than 18 AH require the BB-26, BB-55 or other UL listed external battery cabinet.

For Canadian applications, the minimum battery size is 12 AH and the maximum battery size is 18AH.

7amp hour batteries

Table 7-3 contains three columns for calculating current draws. For each column, calculate the current and enter the total (in amperes) in the bottom row. When finished, copy the totals from Calculation Column 2 and Calculation Column 3 to Table 7-4 on page 137.

TABLE 7-3:System Current Draw Calculations

Device Type	Calculation Column 1 Primary, Non-Fire Alarm Current (amps)			Calculation Column 2 Secondary, Fire Alarm Current (amps)			Calculation Column 3 Secondary, Non-Fire Alarm Current (amps)		
	Qty	X[current draw]=	Total	Qty	X [current draw] =	Total	Qty	X[current draw]=	Total
Main Circuit Board MS-5UD or MS-10UD	1	X[0.080]= X[0.085]=	0.080	1	X[0.235][1,8]= X[0.265][1,8]=	0.235	1	X[0.100]= X[0.127]=	0.1
CAC-5X	[0]	X[0.001]=		[0]	X[0.001]=		[0]	X[0.001]=	
4XTMF	[0] 1 max.	X[0.005]=		[ ] 1 max.	X[0.011][1]=		[0] 1 max.	X[0.005]=	
ANN-80	[0]	X[0.037]=		[0]	X[0.040]=		[0]	X[0.015]=	
ANN-I/O	[0]	X[0.035]=		[0]	X[0.200]=		[0]	X[0.035]=	
ANN-RLY	[0]	X[0.015]=		[0]	X[0.075]=		[0]	X[0.015]=	
ANN-(R)LED[2]	[0]	X[0.028]=		[0]	X[0.068]=		[0]	X[0.028]=	
ANN-S/PG	[0]	X[0.045]=		[0]	X[0.045]=		[0]	X[0.045]=	
2-wire Detector Heads	[0]	X[ ][3]=		[0][9]	X[0.040]=		[0]	X[ ][3]=	
4-wire Detector Heads	[0]	X[ ][3]=		[0][9]	X[0.040]=		[0]	X[ ][3]=	
Power Supervision Relays[4]	[0]	X[0.025]=		[0]	X[0.025]=		[0]	X[0.025]=	
NAC #1[5]				[2]	X[0.3]=	0.6			
NAC #2				[1]	X[.068]=	0.068			
NAC #3									
NAC #4									
Current Draw from TB9 (nonalarm[6])	[0]=			[0]=			[0]=		
Sum each column[7] for totals	Primary Non-Alarm =		0.080	Secondary Alarm =		0.903	Secondary Non-Alarm =		0.1

1. If using the Reverse Polarity Alarm output, add 0.005 amps; if using the Reverse Polarity Trouble output, add another 0.005 amps.
2. ANN-LED is supplied standard with the MS-5UDC and MS-10UDC
3. Refer to the Device Compatibility Document for standby current.
4. Must use compatible listed Power Supervision Relay.
5. Current limitation of Terminal TB5 circuits is 2.5 amps per NAC for the MS-5UD-3(E), MS-10UD-3(E) and 3.0 amps per NAC for the MS-5UD-7(C/E), MS-10UD-7(C/E)
6. The total standby current must include both the resettable (TB9 Terminals 3 & 4) and nonresettable/ resettable (TB9 Terminals 1 & 2) power. Caution must be taken to ensure that current drawn from these outputs during alarm does not exceed maximum ratings specified. Current limitations of TB9, Terminals 1 & 2 = 0.500 amps, filtered, 24 VDC +/-5%, 120 Hz ripple @ 10 mV_{RMS}, nonresettable power and TB9, Terminals 3 & 4 = 0.500 amps, filtered, 24 VDC +/-5%, 120 Hz ripple @ 10mV_{RMS}, resettable power.
7. Total current draw listed above cannot exceed 3.0 amps for MS-5UD-3(E), MS-10UD-3(E) or, 7.0 amps for MS-5UD-7(C/E), MS-10UD-7(C/E).
8. The current draw shown represents one zone (IDC) on the main circuit board in alarm. One zone consumes 0.040 amps
9. Enter the number of IDCs used minus one

SECTION 7 Power Supply Calculations

7.1 Overview

This section contains instructions and tables for calculating power supply currents in alarm and standby conditions. This is a four-step process, consisting of the following:

1. Calculating the total amount of AC branch circuit current required to operate the system
2. Calculating the power supply load current for non-fire and fire alarm conditions and calculating the secondary (battery) load
3. Calculating the size of batteries required to support the system if an AC power loss occurs
4. Selecting the proper batteries for your system

7.2 Calculating the AC Branch Circuit

The control panel requires connection to a separate, dedicated AC branch circuit, which must be labeled **FIRE ALARM**. This branch circuit must connect to the line side of the main power feed of the protected premises. No other non-fire alarm equipment may be powered from the fire alarm branch circuit. The branch circuit wire must run continuously, without any disconnect devices, from the power source to the control panel. Overcurrent protection for this circuit must comply with Article 760 of the National Electrical Codes as well as local codes. Use 14 AWG (2.00 mm^2) wire with 600 volt insulation for this branch circuit.

Use Table 7-1 , to determine the total amount of current, in AC amperes (A), that must be supplied to the system.

TABLE 7-1:AC Branch Circuit Requirements

Device Type	Number of Devices		Current Draw (AC amps)		Total Current per Device
MS-5UD-3/MS-10UD-3 or MS-5UD-7(C)/MS-10UD-7(C) or MS-5UD-3E/MS-10UD-3E or MS-5UD-7E/MS-10UD-7E	1	X	(1.00) 3.90 0.54 2.20	=	1.00
	[/]	X	1.00	=	1.00
	[/]	X	[1.00]	=	1.00
	Sum Column for AC Branch Current Required			=	2.00

2.3 Input Circuits

The MS-5UD has five IDCs (Initiating Device Circuits) and the MS-10UD has ten IDCs. Each circuit is compatible with System Sensor's i³ smoke detectors which generate a maintenance signal when the detector becomes dirty and a separate supervisory 'freeze' signal when ambient temperature falls below the detector rating of approximately 45°F. The maximum loop resistance limit for each IDC is 100 ohms (2,000 ohms per zone for linear heat detection). The field wiring for each zone is supervised for opens, shorts and ground faults. All conditions are visually and audibly annunciated.

Each circuit is configured for Style B (Class B) operation and will accept i³ smoke detectors, any normally-open contact devices as well as conventional 2-wire or 4-wire, 24 VDC smoke detectors. Refer to the Fire•Lite Device Compatibility Document for a list of compatible devices.

Initiating Device Circuits can be converted to Style D (Class A) by installing the optional Class A Converter module. Refer to "CAC-5X Class A Converter Module" on page 33.

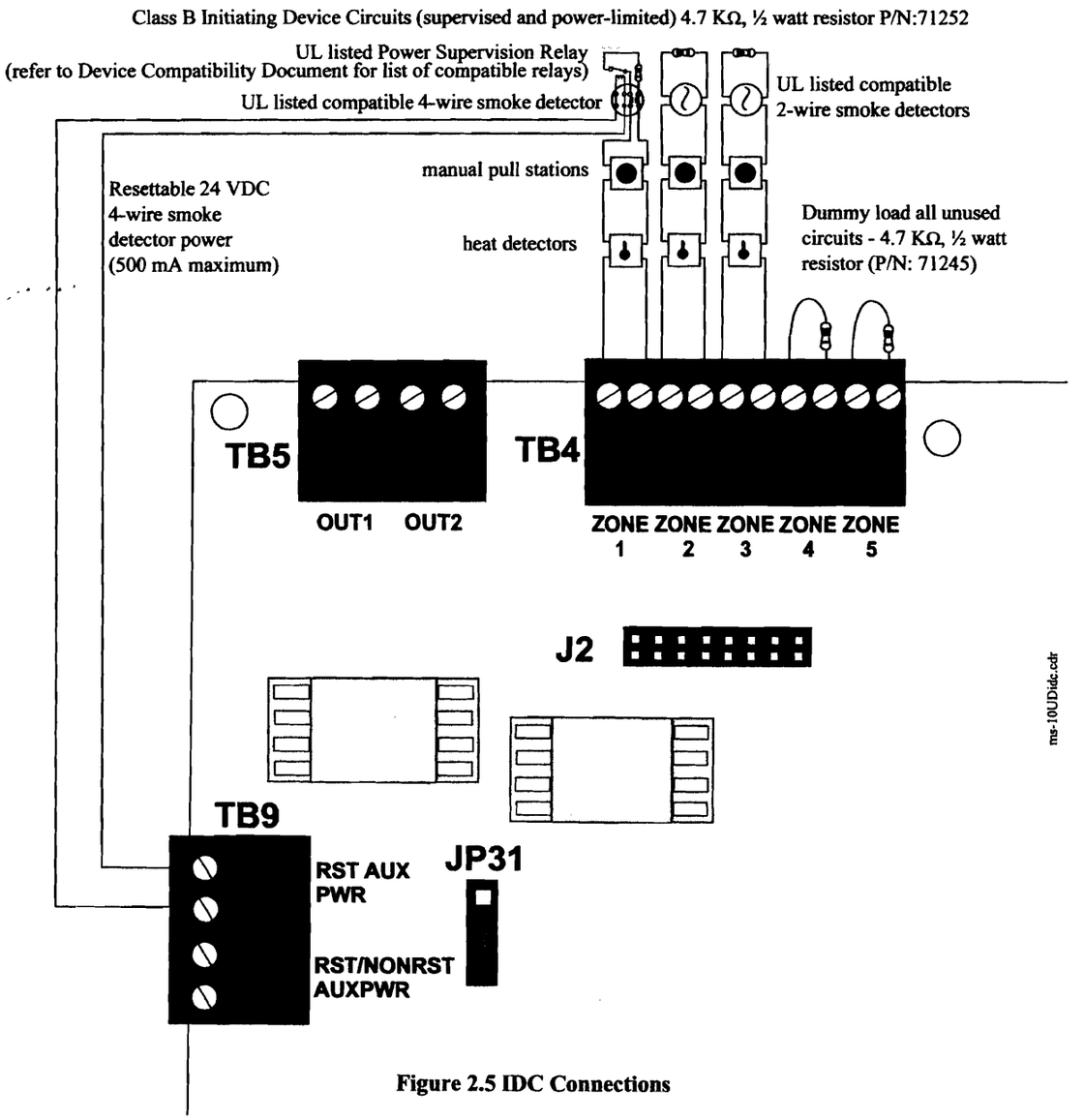


Figure 2.5 IDC Connections

2.4 Output Circuits

2.4.1 Notification Appliance Circuits

Total current drawn from the four Style Y (Class B) Notification Appliance Circuits as well as other DC power outputs cannot exceed 3.0 amps for the MS-5UD-3(E), MS-10UD-3(E) [2.5 amp maximum per NAC] powered by the FLPS-3 power supply or 7.0 amps for the MS-5UD-7(C/E), MS-10UD-7(C/E) [3.0 amps maximum per NAC] powered by the FLPS-7 power supply (refer to "Power Supply Calculations" on page 134). Each circuit is supervised, power-limited and provides special application power. Refer to the Fire•Lite Device Compatibility Document for a listing of compatible notification appliances.

The NACs can be converted to Style Z (Class A) by installing the optional Class A Converter module. Refer to "CAC-5X Class A Converter Module" on page 33.

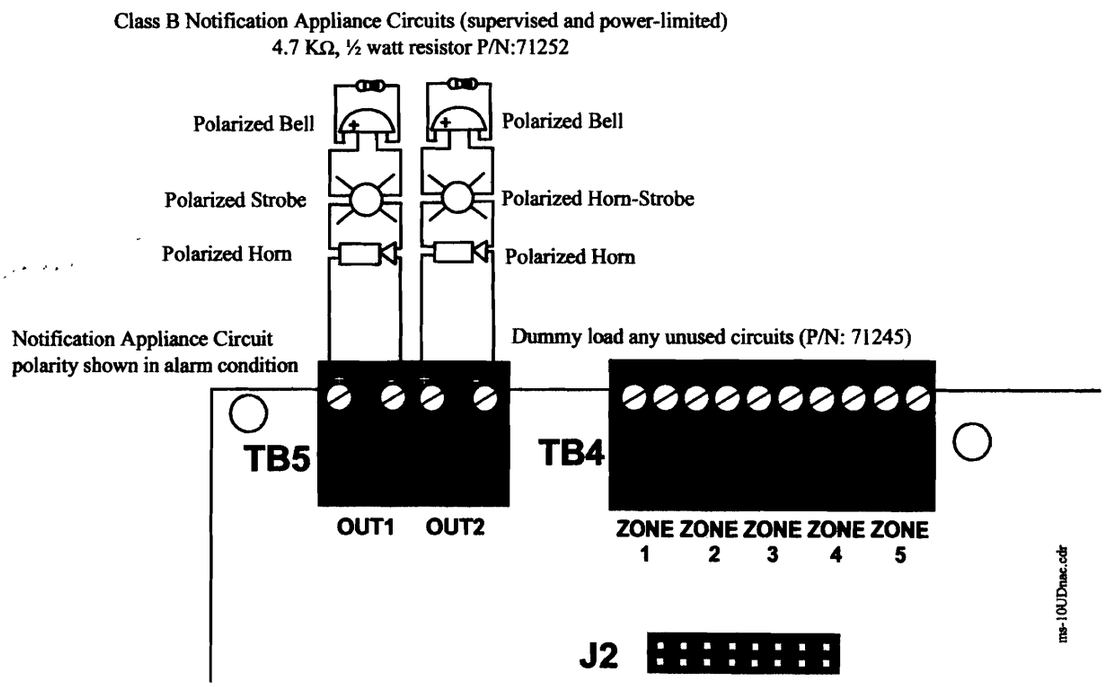


Figure 2.7 NAC Connections

IBC 2003: CODE DATA

OCCUPANT LOAD - TABLE 1004.1.2	10
USE GROUP CLASSIFICATION - SECTION 304.1	S-1
TYPE OF CONSTRUCTION - TABLE 601	VB
ACTUAL BUILDING AREA	4,800
BUILDING AREA LIMITATION - TABLE 503	9,000 S.F.
STREET FRONTAGE INCREASE - 506.2	NA
AUTOMATIC SPRINKLER SYS. INCREASE - 506.3	NONE
ALLOWABLE BUILDING AREA	9,000 S.F.
BUILDING HEIGHT LIMITATION	1 STORIES
FIRE SUPPRESSION:	NA
FIRE WALLS & PARTY WALLS	NA
STAIR ENCLOSURES	NA
SHAFTS	NA
EXIT ACCESS CORRIDORS	NA
INTERIOR LOAD BEARING WALLS	NA
STRUCTURAL MEMBER SUPPORTING WALLS	NA
FLOOR CONSTRUCTION	NA
ROOF CONSTRUCTION	NA
INCIDENTAL SPACES	NA
ACCESSORY USE	NA
FIRE EXTINGUISHERS	SEE FLOOR PLAN
GENERAL NOTES	

NFPA 101: CODE DATA - 2006 EDITION

OCCUPANT LOAD - SECTION 7.3.1.2	10
USE GROUP CLASSIFICATION	STORAGE
TYPE OF CONSTRUCTION- NFPA 220	V(000)
ACTUAL BUILDING AREA	4,800 S.F.
BUILDING HEIGHT	1 STORY
FIRE SUPPRESSION:	NONE
FIRE WALLS & PARTY WALLS	NA
STAIR ENCLOSURES	NA
SHAFTS	NA
EXIT ACCESS CORRIDORS	NA
INTERIOR LOAD BEARING WALLS	NA
STRUCTURAL MEMBER SUPPORTING WALLS	NA
FLOOR CONSTRUCTION	NA
ROOF CONSTRUCTION	NA
INCIDENTAL SPACES 6.1.14.1.3	OFFICES
ACCESSORY USE	NA
FIRE EXTINGUISHERS	SEE FLOOR PLAN
GENERAL NOTES	

IECC - 2003 CLIMATE ZONE 15

WINDOW TO WALL RATIO (WWR)	8.05%
SLAB OR BELOW GRADE WALL REQUIRED "R" VALUE	0
SLAB OR BELOW GRADE WALL ACTUAL "R" VALUE	10
ROOF ASSEMBLIES REQUIRED "R" VALUE	20
ROOF ASSEMBLIES ACTUAL "R" VALUE	20
FLOORS OVER UNCOND. SPACE REQUIRED "R" VALUE	NA
FLOORS OVER UNCOND. SPACE ACTUAL "R" VALUE	NA
ABOVE GRADE WALLS REQUIRED "R" VALUE	13
ABOVE GRADE WALLS ACTUAL "R" VALUE	13
CMU OR MASONRY WALLS REQUIRED "R" VALUE	5
CMU OR MASONRY WALLS ACTUAL "R" VALUE	5
WINDOWS & GLASS DOORS REQUIRED SHGC	ANY
WINDOWS & GLASS DOORS REQUIRED "U" VALUE	.7
PASS DOORS ACTUAL "U" VALUE	.41
OVERHEAD DOORS ACTUAL "U" VALUE	.04
WINDOWS ACTUAL "U" VALUE	.43

GENERAL NOTES

THIS BUILDING DOES NOT HAVE A SPRINKLER SYSTEM

THE BUILDING IS A PRE-ENGINEERED METAL BUILDING BY PACKAGE INDUSTRIES OF SUTTON, MA. BUILDING MANUFACTURER TO PROVIDE STRUCTURAL DESIGN, BUILDING ENVELOPE DETAILS, AND LETTER OF CERTIFICATION.

FOUNDATION DESIGN TO BE BY ASSOCIATED DESIGN PROFESSIONALS

ALL DOORS SHALL BE 3'-0" WIDE AND HAVE HANDICAPPED LEVER TYPE HARDWARE

5 LB ABC FIRE EXTINGUISHERS SHALL BE MOUNTED AT EVERY EXIT

HANDICAPPED SIGNAGE SHALL BE MOUNTED AT 5'-0" A.F.F. AT ALL BATHROOMS AND EXITS

F — MANUAL PULL STATION

F — ADA HORN/STROBE

ADA STROBE ONLY

FA — ALARM PANEL

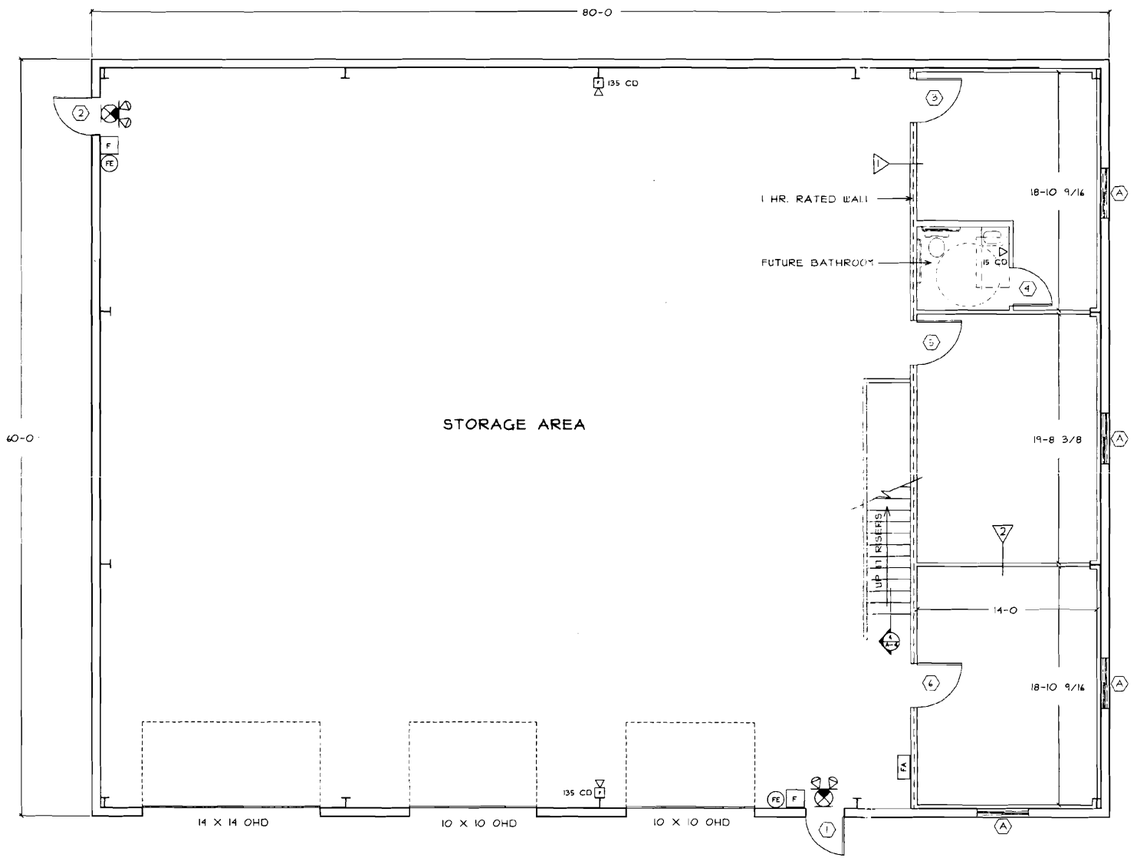
S — SMOKE DETECTOR

EXIT SIGN

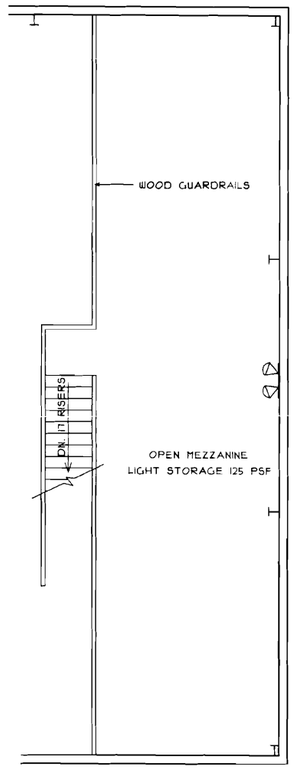
EMERGENCY LIGHT PACK

K — KEY BOX

FE — FIRE EXTINGUISHER



FIRST FLOOR PLAN



SECOND FLOOR MEZZANINE

REVISIONS	DATE
1 PERMITTING	9/14/09

BISKUP CONSTRUCTION, INC.
16 DANIELLE DRIVE
WINDHAM, MAINE 04062
TEL: (207) 892-9800
FAX: (207) 892-9895
WWW.BISKUPCONSTRUCTION.COM

STAMP

STATE OF MAINE — JAMES M. STREETER — NO. 11182 — 9/11/09 — LICENSED PROFESSIONAL ENGINEER

J. M. STREETER ARCHITECTURAL ENGINEER
66 GASCOE DRIVE
PORTLAND, MAINE 04103 (207) 797-9095

DRAWING TITLE: FLOOR PLANS, NOTES, LEGEND & CODE TABLES

CHARGE NUMBER: 0980003

JOB TITLE: PROPOSED STORAGE BUILDING, BROOKLAWN MEMORIAL PARK PORTLAND, MAINE

BUILDING/FLOOR: B./01

DRAWING FILE NAME: .DWG

SCALE: 3/16" = 1'-0" | DRAWN BY: JD | CHECK: JMS | DATE: 9/1/2009

Drawing Number: A-1

Sheet 1 of 4