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
178 MIDDLE ST & 4 CANAL PLAZA

Job ID: 2012-08-4804-FAFS

CBL: 032- I-001-001

has permission to install fire alarm throughout 178 Middle & 4 Canal
provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.	A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

BJ Landry 58

Fire Prevention Officer

Code Enforcement Officer / Plan Reviewer

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

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

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Director of Planning and Urban Development
Jeff Levine

Job ID: 2012-08-4804-FAFS
install fire alarm throughout 178 Middle & 4 Canal

For installation at:
178 MIDDLE ST & 4 CANAL PLAZA

CBL: 032- I-001-001

Conditions of Approval:

Fire

This fire alarm is being phased in and shall be completed within 12 months.

This fire alarm system design is based upon the installation of a supervised, automatic sprinkler system installed in accordance with NFPA 13 throughout both buildings (178 Middle – 4 Canal Plaza).

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 and smoke alarms 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:	Date Applied:	CBL:	
2012-08-4804-FAFS	8/24/2012	032- I-001-001	
Location of Construction: 178 MIDDLE ST	**Owner Name:** BUCKSTAR LLC	**Owner Address:** 100 SILVER ST PORTLAND, ME 04101	**Phone:** 774-1855
Business Name:	**Contractor Name:** Protection 1	**Contractor Address:** 10 MANUEL DR PORTLAND MAINE 04103	**Phone:** (207) 347-5316
Lessee/Buyer's Name:	**Phone:**	**Permit Type:** FIRE ALARM	**Zone:** B-3
Past Use: Retail/restaurant on 1st floor with offices above	**Proposed Use:** Same: retail/restaurant on 1st floor with offices above – to install fire alarm	**Cost of Work:** $26,000.00	**CEO District:**
		Fire Dept: 10/11/12 ✓ Approved w/ conditions ___ Denied ___ N/A Signature: [signature] (58)	**Inspection:** Use Group: Type: Signature:
Proposed Project Description: fire alarm permit		**Pedestrian Activities District (P.A.D.)**	

Permit Taken By: Gayle

Zoning Approval

Special Zone or Reviews	Zoning Appeal	Historic Preservation
		within
___ Shoreland	___ Variance	___ Not in Dist or Landmark
___ Wetlands	___ Miscellaneous	___ Does not Require Review
___ Flood Zone	___ Conditional Use	___ Requires Review
___ Subdivision	___ Interpretation	___ Approved
___ Site Plan	___ Approved	___ Approved w/Conditions
	___ Denied	___ Denied
___ Maj ___ Min ___ MM		Any exterior work requires a separate review & approval
Date: OK 8/29/12	Date:	Date:

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 electrial work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.

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 appication 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

2012 08 4804

GB

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: 178 Middle Street CBL: 032 I 001

Exact location: (within structure) Panel located in 178 Middle basement near Elevator machine room

Type of occupancy(s) (NFPA & ICC): Business retail/restaurant on 1st floor w/ offices above

Building owner: Buckstar, LLC - 100 Silver St 774-1855

Must be
System Designer (point of contact): Robin Russell

Designer phone: (207) 347-5327 E-mail: rrussell@protection1.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 ½ 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: $25,270.00

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

280.00

RECEIVED

AUG 24 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 Portland 11 ½ x 17s to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

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

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

Applicant signature: Robin Russell Date: 8-23-12

Fire Alarm System Upgrade 178 Middle Street, Portland, Maine 04101

SCOPE of WORK: The submittal for this permit is to upgrade and install a fire alarm system for the entire 178 Middle Street block building ~~(excludes the~~ and 4 Canal Plaza ~~building)~~. The installation will be completed in two phases. 1st Phase will be completed before occupancy of the 5th floor. 2nd Phase will be completed within 1 year of this submittal.

Phase I:

- Replace existing conventional fire panel and existing devices with new addressable control panel.
- Install monitor modules for waterflow and gate valve tamper
- Install notification and pull station in panel basement
- Install necessary devices (smokes on each landing and elevator machine room) and programming for elevator recall.
- Install notification devices in all currently occupied spaces on the upper floors including spaces that will be occupied on the 5th floor that is presently being renovated
- Install pull stations at top of Stair A on each level
- Install pull station at 178 Middle exit on ground level (inside vestibule)
- Install annunciator in vestibule at 178 Middle exit ground level
- Install smoke detector above annunciator in vestibule 178 Middle ground level
- Install 1 door holder and associated smokes detectors on 2nd, 3rd and 4th floors

Phase II:

- Remove existing conventional fire panel and devices (notification and initiation) from the Starbucks space; replace devices with addressable and wire to the addressable panel for the building.
- Install notification devices and pull stations in 3 other retail spaces on the ground level and their associated basement
- Install pull stations and notification devices in remaining unoccupied spaces on the upper floors.

This permit has been expanded to cover 178 Middle and 4 Canal Plza

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Receipts Details:

Tender Information: Check , BusinessName: Proptection One Alarm Monitoring, Inc, Check Number: 4133
Tender Amount: 280.00

Receipt Header:

Cashier Id: gguertin
Receipt Date: 8/24/2012
Receipt Number: 47518

Receipt Details:

Referance ID:	7791	Fee Type:	BP-Constr
Receipt Number:	0	Payment Date:	
Transaction Amount:	280.00	Charge Amount:	280.00
Job ID: Job ID: 2012-08-4804-FAFS - fire alarm permit			
Additional Comments: 178 middle st. Protection One Alarm Monitoring, Inc			

Thank You for your Payment!

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: 178 Middle Street CBL: _____

Exact location: (within structure) Panel located in 178 Middle basement near Elevator machine room

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

Building owner: Buckstar, LLC

System Designer (Must be point of contact): Robin Russell

Designer phone: (207) 347-5327 E-mail: rrussell@protection1.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
- ✓ Scope of Work
- ✓ 11 ½ x 17s
- ✓ pdf copy (may be e-mailed)
- ✓ Designer qualifications
- ✓ Battery/ voltage drop calcs
- ✓ Electrical Permit Pulled (check alarm/com)

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

COST OF WORK: $25,270.00

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

The designer shall be the responsible party for this application. Download a new copy of this application at www.portlandmaine.gov/fire for every submittal. Submit all plans in electronic PDF in addition to readable 11 ½ x 17s to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

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

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

Applicant signature: Robin Russell Date: 8-23-12

SILENT KNIGHT

SK5895XL Calculations

Version 12 30 10

Global Project Values:

Project Name:	178 Middle and 4 Canal	Standby Hours:	24
Project ID:	Buckstar, LLC	Alarm Mins:	5
Prepared By:	Robin Russell	Derating Factor:	1.2
Date:	10/1/2012	Voltage Drop Warning Threshold % :	10

Panel ID: 5895XL
Location: 4 Canal Basement

Model: 5895XL Power Expander
Volts: 24 VDC

Max NAC Current: 3.0 Amps
Max Panel Current: 6.0 Amps

Part.#	Description	Qty	Current Draw Standby	Current Draw Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
5895XL	5895XL Pwr Module	1	0.040	0.160						
SK	Photo, Photo-T	6	0.002	0.002						
SK	Ion		0.000	0.000						
SK	Heat, Heat-HT		0.000	0.000						
SK	Heat ROR		0.000	0.000						
SK	Beam, Beam-T		0.000	0.000						
SK	Duct	2	0.001	0.001						
SK	Acclimate		0.000	0.000						
SK	Control		0.000	0.000						
SK	Relaymon		0.000	0.000						
SK	Control-6		0.000	0.000						
SK	Monitor, Minimon	3	0.001	0.001						
SK	Monitor-2	2	0.002	0.002						
SK	Monitor-10		0.000	0.000						
SK	Pull-SA, Pull-DA	3	0.001	0.001						
SK	Relay		0.000	0.000						
SK	Relay-6		0.000	0.000						
SK	Zone		0.000	0.000						
SK	Zone-6		0.000	0.000						
SK	Isolator		0.000	0.000						
SSB224BI	Isolator Base		0.000	0.000						
B200SR	Sounder Base		0.000	0.000						
SSB224RB	Relay Base		0.000	0.000						
SSRTS151	Magnetic Remote Test		0.000	0.000						
SSRTS151KEY	Key Activated Test		0.000	0.000						
SSRA100Z	Remote LED		0.000	0.000						
5815XL	SLC Expander		0.000	0.000						
5860	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
5895XL	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
PGM-I/O #1	Notification Appl Circuit		0.000	1.548	#14 Solid	2.52		0.00	20.40	0.00%
PGM-I/O #2	Notification Appl Circuit		0.000	1.616	#14 Solid	2.52		0.00	20.40	0.00%
PGM-I/O #3	Notification Appl Circuit		0.000	0.682	#12 Solid	1.59		0.00	20.40	0.00%
PGM-I/O #4	Notification Appl Circuit		0.000	0.000	#12 Solid	1.59		0.00	20.40	0.00%
PGM-I/O #5	Notification Appl Circuit		0.000	0.000	#12 Solid	1.59		0.00	20.40	0.00%
PGM-I/O #6	Notification Appl Circuit		0.000	0.000	Total Alarm Current (Amps)					
	Total Standby Current (Amps)		0.046	4.012	Alarm Time In Minutes / 60		(5 Mins)			
	Standby Time In Hours		24	0.083	Total Alarm AH Required					
	Total Standby AH Required		1.102	0.334						
	Total Combined AH Required		1.44							
	Multiply By The Derating Factor		1.20							
	Minimum Battery AmpHours Required		**1.72**							

N/A

Command Shortcuts

Configure Circuits

Print Page

SILENT KNIGHT

5820XL Calculations

Version 12.30.10

Global Project Values:

Project Name: 178 Middle and 4 Canal
Project ID: Buckstar, LLC
Prepared By: Robin Russell
Date: 10/1/2012

Standby Hours: 24
Alarm Mins: 5
Derating Factor: 1.2
Voltage Drop Warning Threshold % : 10

Panel ID: 5820XL
Location: 178 Middle Street Basement

Model: 5820XL Add. Fire Alarm Control Panel
Volts: 24 VDC

Max NAC Current: 3.0 Amps
Max Panel Current: 6.0 Amps

Ckt.#	Circuit Name	Qty	Current Draw Standby	Current Draw Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
5820XL	5820XL CTRL Panel	1	0.215	0.385						
SK	Photo, Photo-T	22	0.006	0.006						
SK	Ion		0.000	0.000						
SK	Heat, Heat-HT		0.000	0.000						
SK	Heat ROR	1	0.000	0.000						
SK	Beam, Beam-T		0.000	0.000						
SK	Duct	2	0.001	0.001						
SK	Acclimate		0.000	0.000						
SK	Control		0.000	0.000						
SK	Control-6		0.000	0.000						
SK	Relaymon	6	0.008	0.144						
SK	Monitor, Minimon		0.000	0.000						
SK	Monitor-2		0.000	0.000						
SK	Monitor-10		0.000	0.000						
SK	Pull-SA, Pull-DA	6	0.002	0.002						
SK	Relay		0.000	0.000						
SK	Relay-6		0.000	0.000						
SK	Zone		0.000	0.000						
SK	Zone-6		0.000	0.000						
SK	Isolator Module		0.000	0.000						
SSB224BI	Isolator Base		0.000	0.000						
B200SR	Sounder Base		0.000	0.000						
SSB224RB	Relay Base		0.000	0.000						
SSRTS151	Magnetic Remote Test		0.000	0.000						
SSRTS151KEY	Key Activated Test		0.000	0.000						
SSRA100Z	Remote LED		0.000	0.000						
5815XL	SLC Loop Expander	1	0.055	0.055						
5860	LCD Remote Annunc	2	0.040	0.050						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
5895XL	Power Expander	1	0.010	0.010						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module		0.000	0.000						
PGM-I/O #1	Notification Appl Circuit		0.000	1.496	#14 Solid	2.52		0.00	20.40	0.00%
PGM-I/O #2	Notification Appl Circuit		0.000	1.649	#14 Solid	2.52		0.00	20.40	0.00%
PGM-I/O #3	Notification Appl Circuit		0.000	1.210	#14 Solid	2.52		0.00	20.40	0.00%
PGM-I/O #4	Initiating Device Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	N/A
PGM-I/O #5	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
PGM-I/O #6	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%

N/A

Total Standby Current (Amps)	0.337	5.008	Total Alarm Current (Amps)
Standby Time In Hours	24	0.083	Alarm Time In Minutes / 60 (5 Mins)
Total Standby AH Required	8.091	0.417	Total Alarm AH Required
Total Combined AH Required	8.51		
Multiply By The Derating Factor	1.20		
Minimum Battery AmpHours Required	**10.21**		

Command Shortcuts

Configure Circuits | Print Page

SYSTEM SENSOR
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Circuit Information

Panel Name: Silent Knight 5820XL
Circuit Name: NAC #2 Panel 1st Floor
Starting Voltage: Starting Voltage = 20.4

(2) 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 P2R	75	0.176	Temporal, High	20	20	20.269	20.191	20.068	19.872
Horn/Strobe P2R	75	0.176	Temporal, High	20	40	20.151	20.005	19.771	19.400
Horn/Strobe P2R	75	0.176	Temporal, High	20	60	20.048	19.841	19.511	18.985
Horn/Strobe P2R	75	0.176	Temporal, High	20	80	19.959	19.700	19.286	18.628
Strobe SR	95	0.181		20	100	19.884	19.581	19.096	18.327
Horn/Strobe P2R	95	0.194	Temporal, High	25	125	19.809	19.462	18.906	18.024
Strobe SR	95	0.181		25	150	19.753	19.373	18.765	17.799
Strobe SR	95	0.181		25	175	19.715	19.313	18.669	17.648
Horn/Strobe P2R	95	0.194	Temporal, High	25	200	19.696	19.282	18.620	17.569
Total current/amps 1.635	Total Dist: 200				voltage drop	0.704	1.118	1.780	2.831

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

			Load per Device		Total Device Load	
Device Type	**Device Name**	**Quantity**	**Stand-By**	**Alarm**	**Stand-By**	**Alarm**
	AL602ULADA	1			0.09A	0.175A
Notification Appliances						
NAC1						
Notif. Appliance	Strobe	3		.066 A		0.198 A
Notif. Appliance	Horn Strobe	6		.176 A		1.056 A
NAC2						
Notif. Appliance	Strobe	4		.066 A		0.264 A
Notif. Appliance	Horn Strobe	3		.176 A		0.528 A
NAC3						
Notif. Appliance	Strobe	2		.066 A		0.132 A
Notif. Appliance	Horn Strobe	5		.176 A		0.880 A
NAC4						
Notif. Appliance	Strobe	3		.066 A		0.198 A
Notif. Appliance	Horn Strobe	6		.176 A		1.056 A
Auxiliary Devices						
Aux Output (total auxillary current draw must not exceed 1mA)						
Auxiliary Device		0	0.000 A	.00 A	0.000 A	0.000 A
				Total System Load:	0.09A	4.487A
Calculation Results						
				Total Stand-By Amp Hours:	2.160AH	
				Total Alarm Amp Hours:	0.374AH	
				Minimum battery size required:	3.041AH	

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

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

			Load per Device		Total Device Load	
Device Type	**Device Name**	**Quantity**	**Stand-By**	**Alarm**	**Stand-By**	**Alarm**
	AL602ULADA	1			0.09A	0.175A
Notification Appliances						
NAC1						
Notif. Appliance	Strobe	4		.066 A		0.264 A
Notif. Appliance	Horn Strobe	2		.176 A		0.352 A
NAC2						
Notif. Appliance	Strobe	4		.066 A		0.264 A
Notif. Appliance	Horn Strobe	3		.176 A		0.528 A
NAC3						
Notif. Appliance	Strobe	4		.066 A		0.264 A
Notif. Appliance	Horn Strobe	2		.176 A		0.352 A
NAC4						
Notif. Appliance	Strobe	6		.066 A		0.396 A
Notif. Appliance	Horn Strobe	2		.176 A		0.352 A
Auxiliary Devices						
Aux Output (total auxiliary current draw must not exceed 1mA)						
Auxiliary Device		0	0.000 A	.00 A	0.000 A	0.000 A
				Total System Load:	0.09A	2.947A
Calculation Results						
				Total Stand-By Amp Hours:	2.160AH	
				Total Alarm Amp Hours:	0.245AH	
				Minimum battery size required:	2.887AH	

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

SYSTEM SENSOR
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Circuit Information

Panel Name: Silent Knight 5820XL
Circuit Name: NAC #3 Panel 2nd Floor
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
Horn/Strobe P2R	75	0.176	Temporal, High	50	50	20.157	20.014	19.785	19.422
Horn/Strobe P2R	75	0.176	Temporal, High	20	70	20.074	19.882	19.575	19.088
Strobe SR	15	0.066		20	90	20.005	19.773	19.401	18.811
Strobe SR	15	0.066		10	100	19.973	19.722	19.320	18.683
Horn/Strobe P2R	75	0.176	Temporal, High	40	140	19.856	19.537	19.025	18.214
Strobe SR	15	0.066		25	165	19.801	19.449	18.886	17.991
Horn/Strobe P2R	75	0.176	Temporal, High	40	205	19.723	19.326	18.689	17.678
Strobe SR	15	0.066		35	240	19.680	19.257	18.579	17.504
Strobe SR	15	0.066		10	250	19.670	19.241	18.555	17.465
Horn/Strobe P2R	75	0.176	Temporal, High	15	265	19.659	19.224	18.528	17.423
Total current/amps 1.210	Total Dist:265				voltage drop	0.741	1.176	1.872	2.977

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Circuit Information

Panel Name: Silent Knight 5820XL
Circuit Name: NAC #1 602 PS 3rd Floor
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		60	60	20.098	19.920	19.636	19.184
Strobe SR	15	0.066		15	75	20.026	19.806	19.455	18.896
Horn/Strobe P2R	75	0.176	Temporal, High	15	90	19.958	19.699	19.284	18.624
Strobe SR	15	0.066		15	105	19.901	19.608	19.139	18.395
Horn/Strobe P2R	75	0.176	Temporal, High	25	130	19.813	19.468	18.916	18.039
Horn/Strobe P2R	75	0.176	Temporal, High	40	170	19.700	19.288	18.630	17.584
Horn/Strobe P2R	75	0.176	Temporal, High	25	195	19.646	19.204	18.496	17.371
Horn/Strobe P2R	75	0.176	Temporal, High	25	220	19.611	19.148	18.406	17.229
Horn/Strobe P2R	75	0.176	Temporal, High	40	260	19.583	19.103	18.335	17.115
Total current/amps 1.254	Total Dist: 260				voltage drop	0.817	1.297	2.065	3.285

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Circuit Information

Panel Name: Silent Knight 5820XL
Circuit Name: NAC #2 602 PS 4th Floor
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
Horn/Strobe P2R	75	0.176	Temporal, High	100	100	20.082	19.895	19.595	19.120
Horn/Strobe P2R	75	0.176	Temporal, High	20	120	20.032	19.816	19.470	18.921
Horn/Strobe P2R	75	0.176	Temporal, High	20	140	19.997	19.760	19.381	18.779
Strobe SR	15	0.066		20	160	19.975	19.726	19.327	18.694
Strobe SR	15	0.066		20	180	19.960	19.701	19.287	18.630
Strobe SR	15	0.066		20	200	19.949	19.684	19.260	18.587
Strobe SR	15	0.066		20	220	19.944	19.676	19.247	18.566
Total current/amps 0.792	Total Dist: 220				voltage drop	0.456	0.724	1.153	1.834

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Circuit Information

Panel Name: Silent Knight 5820XL
Circuit Name: NAC #3 602 PS 4th Floor
Starting Voltage: Starting Voltage = 20.4

(1.1) 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 P2R	75	0.176	Temporal, High	120	120	19.912	19.625	19.166	18.438
Horn/Strobe P2R	75	0.176	Temporal, High	30	150	19.811	19.465	18.911	18.032
Horn/Strobe P2R	75	0.176	Temporal, High	35	185	19.718	19.318	18.677	17.659
Horn/Strobe P2R	75	0.176	Temporal, High	30	215	19.660	19.225	18.529	17.424
Horn/Strobe P2R	75	0.176	Temporal, High	30	245	19.623	19.166	18.435	17.275
Strobe SR	15	0.066		25	270	19.609	19.145	18.402	17.222
Strobe SR	15	0.066		25	295	19.603	19.135	18.385	17.195
Total current/amps 1.012	Total Dist: 295				voltage drop	0.797	1.265	2.015	3.205

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Circuit Information

Panel Name: Silent Knight 5820XL
Circuit Name: NAC #4 602 PS 5th Floor
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
Horn/Strobe P2R	75	0.176	Temporal, High	130	130	19.745	19.360	18.744	17.766
Strobe SR	15	0.066		25	155	19.636	19.188	18.470	17.330
Strobe SR	15	0.066		25	180	19.535	19.027	18.213	16.921
Strobe SR	15	0.066		25	205	19.440	18.876	17.973	16.539
Horn/Strobe P2R	75	0.176	Temporal, High	20	225	19.369	18.763	17.794	16.255
Horn/Strobe P2R	75	0.176	Temporal, High	40	265	19.256	18.584	17.508	*
Horn/Strobe P2R	75	0.176	Temporal, High	10	275	19.234	18.550	17.454	*
Horn/Strobe P2R	75	0.176	Temporal, High	30	305	19.192	18.483	17.347	*
Horn/Strobe P2R	75	0.176	Temporal, High	30	335	19.171	18.449	17.293	*
Total current/amps 1.254	Total Dist: 335				voltage drop	1.229	1.951	3.107	*

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Circuit Information

Panel Name: Silent Knight 5895XL/...
Circuit Name: 4 Canal Basement 5895...
Starting Voltage: Starting Voltage = 20.4

(2) 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 P2R	75	0.176	Temporal, High	25	25	20.227	20.125	19.962	19.704
Horn/Strobe P2R	75	0.176	Temporal, High	25	50	20.071	19.878	19.569	19.078
Horn/Strobe P2R	75	0.176	Temporal, High	25	75	19.933	19.659	19.220	18.524
Horn/Strobe P2R	75	0.176	Temporal, High	25	100	19.813	19.469	18.917	18.041
Horn/Strobe P2R	75	0.176	Temporal, High	25	125	19.711	19.306	18.658	17.629
Horn/Strobe P2R	75	0.176	Temporal, High	25	150	19.626	19.171	18.443	17.288
Horn/Strobe P2R	75	0.176	Temporal, High	25	175	19.559	19.065	18.274	17.018
Horn/Strobe P2R	75	0.176	Temporal, High	25	200	19.509	18.986	18.149	16.819
Strobe SR	75	0.158		25	225	19.477	18.936	18.068	16.691
Strobe SR	75	0.158		15	240	19.468	18.921	18.044	16.653
Total current/amps 1.724	Total Dist: 240				voltage drop	0.932	1.479	2.356	3.747

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Circuit Information

Panel Name: Silent Knight 5895XL/...
Circuit Name: 4 Canal 1st Floor 5895 ...
Starting Voltage: Starting Voltage = 20.4

(2) 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 P2R	75	0.176	Temporal, High	40	40	20.151	20.004	19.770	19.398
Horn/Strobe P2RH	177	0.290	Temporal, High	40	80	19.930	19.654	19.212	18.510
Horn/Strobe P2RH	177	0.290	Temporal, High	40	120	19.756	19.377	18.771	17.809
Horn/Strobe P2RH	177	0.290	Temporal, High	50	170	19.596	19.124	18.368	17.168
Horn/Strobe P2RH	177	0.290	Temporal, High	50	220	19.495	18.963	18.112	16.760
Horn/Strobe P2R	30	0.107	Temporal, High	20	240	19.477	18.936	18.068	16.691
Horn/Strobe P2R	30	0.107	Temporal, High	20	260	19.469	18.922	18.047	16.657
Total current/amps 1.550	Total Dist:260				voltage drop	0.931	1.478	2.353	3.743

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Circuit Information

Panel Name: Silent Knight 5895XL/...
Circuit Name: 4 Canal 1st Floor 5895 ...
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 P2R	75	0.176	Temporal, High	80	80	20.181	20.052	19.846	19.518
Strobe SR	15	0.066		30	110	20.120	19.955	19.691	19.273
Strobe SR	15	0.066		30	140	20.067	19.871	19.557	19.060
Strobe SR	15	0.066		30	170	20.021	19.799	19.443	18.878
Strobe SR	15	0.066		30	200	19.984	19.740	19.349	18.729
Strobe SR	15	0.066		30	230	19.955	19.694	19.276	18.612
Horn/Strobe P2R	75	0.176	Temporal, High	50	280	19.920	19.638	19.186	18.470
Total current/amps 0.682	Total Dist: 280				voltage drop	0.480	0.762	1.214	1.930

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Circuit Information

Panel Name: Silent Knight 5895XL/...
Circuit Name: 4 Canal 2nd Floor 602 ...
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 P2R	75	0.176	Temporal, High	80	80	20.202	20.086	19.899	19.604
Strobe SR	15	0.066		20	100	20.167	20.029	19.810	19.461
Strobe SR	15	0.066		10	110	20.151	20.006	19.772	19.401
Strobe SR	15	0.066		25	135	20.121	19.956	19.694	19.277
Strobe SR	15	0.066		10	145	20.111	19.941	19.669	19.237
Horn/Strobe P2R	75	0.176	Temporal, High	50	195	20.075	19.885	19.580	19.095
Total current/amps 0.616	Total Dist:195				voltage drop	0.325	0.515	0.820	1.305

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Circuit Information

Panel Name: Silent Knight 5895XL/...
Circuit Name: 4 Canal 3rd Floor 602 #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		130	130	20.078	19.889	19.586	19.106
Strobe SR	15	0.066		35	165	20.001	19.766	19.391	18.795
Strobe SR	15	0.066		10	175	19.981	19.735	19.342	18.717
Strobe SR	15	0.066		25	200	19.939	19.669	19.235	18.548
Horn/Strobe P2R	75	0.176	Temporal, High	10	210	19.925	19.646	19.200	18.491
Horn/Strobe P2R	75	0.176	Temporal, High	35	245	19.900	19.607	19.137	18.391
Total current/amps 0.616	Total Dist: 245				voltage drop	0.500	0.793	1.263	2.009

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Circuit Information

Panel Name: Silent Knight 5895XL/...
Circuit Name: 4 Canal 4th Floor 602 #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
Horn/Strobe P2R	75	0.176	Temporal, High	150	150	19.893	19.596	19.120	18.364
Horn/Strobe P2R	75	0.176	Temporal, High	50	200	19.760	19.384	18.783	17.827
Strobe SR	15	0.066		20	220	19.721	19.322	18.683	17.670
Strobe SR	15	0.066		20	240	19.687	19.268	18.598	17.533
Strobe SR	15	0.066		20	260	19.658	19.223	18.525	17.418
Strobe SR	15	0.066		20	280	19.635	19.186	18.466	17.324
Strobe SR	15	0.066		20	300	19.617	19.157	18.421	17.252
Strobe SR	75	0.158		20	320	19.604	19.137	18.389	17.201
Total current/amps 0.840	Total Dist: 320				voltage drop	0.796	1.263	2.011	3.199

Protection 1 Branch 11660

10 Manual Drive, Portland, ME 04103 PH# 1-800-310-5011

Protection1 SECURITY SOLUTIONS

System Outputs

System Inputs		Control Unit Annunciation: Actuate common alarm signal Indicator	Actuate audible alarm system	Actuate common supervisory signal Indicator	Actuate audible supervisory signal	Actuate common trouble signal Indicator			Actuate Basment floor evacuation signals	Actuate 1st Floor Evacuation Signals	Actuate 2nd Floor Evacuation Signal	Actuate 3rd Floor Evacuation Signals	Actuate 4th Floor Evacuation Signals	Actuate 5th Floor Evacuation Signals			Notification: Transmit fire alarm signal to supervising station	Transmit supervisory signal to supervising	Transmit trouble signal to supervising station	Safety Control
System Pull Stations		X	X						X	X	X	X	X	X			X			
System Smoke Detectors		X	X						X	X	X	X	X	X			X			
System Heat Detectors		X	X						X	X	X	X	X	X			X			
Sprinkler Water Flow		X	X						X	X	X	X	X	X			X			
Sprinkler Gate Valve Tamper				X	X													X		
Sprinkler Air Pressure				X	X													X		
FACP AC Loss						X	X												X	
FACP Low Battery						X	X												X	
FACP Ground Fault						X	X												X	
Phone Line #1 Fail						X	X												X	
Phone Line #2 Fail						X	X												X	
Buckstar, LLC																				
178 Middle Street & 4 Canal																				

SILENT KNIGHT®
by Honeywell

IntelliKnight® Model 5820XL Addressable Fire Alarm Control System

The IntelliKnight System is the easy way to make the most of fire alarm technology.

IntelliKnight 5820XL is the first fire alarm system to provide you with revolutionary value and performance in addressable sensing technology. The 5820XL FACP offers exclusive, built-in digital communication, distributed intelligent power, a modular design and an expanded, easy to use interface. Powerful features such as drift compensation and maintenance alert are delivered in this powerful FACP from Silent Knight.

For more information about the 5820XL system, or to locate your nearest source, please call 800-328-0103.

Description

5820XL is an intelligent addressable fire alarm control panel (FACP). The basic 5820XL system can be expanded by adding modules such as 5860 remote annunciator, 5815XL signalling line circuit expander, 5824 serial/parallel printer interface module (for printing system reports), and 5895XL intelligent power module. 5820XL supports SD or SK devices. 5820XL also features a powerful built-in dual line fire communicator that allows for reporting of all system activity to a remote monitoring location.

Features

- Built in support for 99 SK detectors and 99 SK modules, expandable to 396 SK detectors and 396 SK modules using System Sensor protocol
- Built in support for 127 SD devices, expandable to 508 SD devices using the SD protocol.
- Uses standard wire—no shielded or twisted pair required
- Built-in digital communicator
- Central station reporting by point or by zone
- Built-in synchronization for appliances from AMSECO®, Gentex®, Faraday, System Sensor, and Wheelock®
- Flexput™ I/O circuits
- Supports Class B (Style 4) and Class A (Style 6) configuration for SLC, SBUS, and Flexput circuits
- 13 pre-programmed output cadences (including ANSI-3.41) and 4 programmable outputs
- Built-in annunciator with 80-character LCD display
- RS-485 bus provides communication to system accessories
- Built-in RS-232 and USB interface for programming via PC
- Built-in Form C trouble relay rated at 2.5 amps at 27.4 VDC
- Improvements in SKSS software deliver five times faster uploads/downloads
- Two built-in Form C programmable relays rated at 2.5 amps at 27.4 VDC
- Plex-1 door option combines a dead front cabinet door with a clear window, limiting access to the panel while providing single button operation of the reset and silence functions

Model 5820XL

- 6 amp power supply and maximum charging capacity of 35 amp hours (An additional cabinet enclosure is required for batteries in excess of 18 amp hours)
- Programmable date setting for Daylight Saving Time

Installation

The 5820XL can be surface or flush mounted

Compatibility

The 5820XL signal line circuit (SLC) supports multiple device types of the *same* protocol:

- SK (System Sensor)
- SD

You cannot mix SD and SK SLC devices on a FACP.

IntelliKnight Model 5820XL
Addressable Fire Alarm Control Panel

Indicator Lights

General Alarm (Red): Flashes when in alarm; solid when alarm silenced

Supervisory (Yellow): Flashes when a supervisory condition exists; solid when supervisory silenced

System Troubles (Yellow): Flashes when a trouble condition exists; solid when trouble silenced

System Silenced (Yellow): On when an alarm, trouble or supervisory condition has been silenced but not yet cleared

System Power (Green): Flashes for AC failure; solid when power systems are normal

System Application

5820XL has one built-in signalling line circuit (SLC) which supports multiple devices dependent on protocol being used. Three additional loops can be added using the 5815XL SLC expanders to increase overall capacity.

The 5820XL SLC loops support multiple device types, including:

- Addressable photoelectric smoke detector
- Addressable ionization smoke detector
- Addressable heat sensor
- Addressable duct smoke detector
- Contact module
- Relay output module
- Addressable notification module
- Addressable beam detector (SK protocol only)
- Addressable multi-criteria smoke detector (SK protocol only)
- Addressable multi modules (SK protocol only)

The following advanced sensor capabilities are available with 5820XL:

- Automatic drift compensation
- Maintenance alert
- Built-in sensor test to comply with NFPA 72 calibration testing requirements

5820XL features a 6 amp power supply and maximum battery charging capacity of 35 amp hours. An additional cabinet enclosure (PN RBB) is required for batteries in excess of 18 amp hours.
Flexput circuits on 5820XL control can be individually programmed to function as notification circuits, auxiliary power outputs, or initiation circuits that support both 2- and 4-wire smoke detectors.
The 5820XL system operates on non-twisted, unshielded cable when wired in compliance with standard wiring practices as called out in the National Electric Code 760-51 specifications for power-limited fire protective signalling cables. No special wiring is required.
5820XL provides 13 preset notification cadence patterns (including ANSI 3.41) and four user programmable selections for fire alarm notification.
Two programmable general purpose Form C relay outputs are provided on 5820XL.
Additionally, the IntelliKnight system features a built-in walk test and auto-programming. Its innovative, dead-front cabinet design allows for flush or surface mounting. System maintenance is easy to perform.

User Interface

The 5820XL built-in annunciator with 80 character LCD display and large easy-to-use tactile touchpad can be used for system operation, programming and maintenance. It has five LEDs for alarm, supervisory, system trouble, system silenced and system power. System operations include silencing alarms and troubles, resetting alarms and the display of alarm troubles and memory. The system's non-volatile event history buffer stores 1000 events for viewing from the built-in or remote annunciator. System operation can be initiated with a mechanical firefighter's key or a valid 4- to 7-digit operator's code.

Programming

The IntelliKnight system offers several options to simplify and speed up programming. The JumpStart® feature minimizes programming required to start a new system. The built-in keypad and 5860 remote annunciator give on-site access to all programming. You can also program remotely using the 5660 Silent Knight Software Suite, which is Windows®-based software.

Built-In Digital Communicator

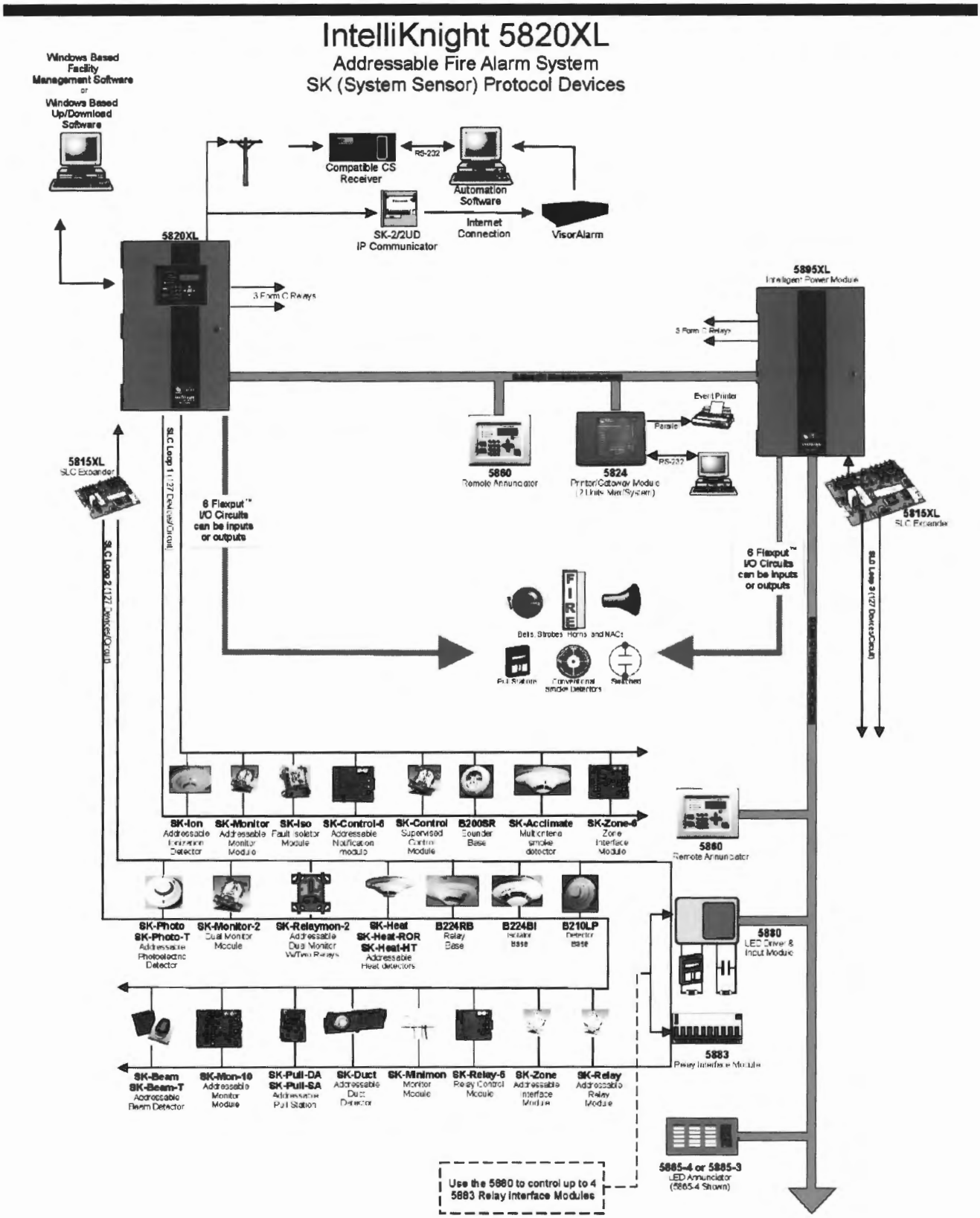
5820XL features a built-in UL listed digital communicator for remote reporting of system activity and system programming. The communicator has the ability to seize two telephone lines to report alarms and troubles to a monitoring facility. The communicator supervises two phone lines and will activate a trouble signal if a line failure is sustained for more than 45 seconds. Other communication features include: retry if communication fails, two phone number capability, download phone number capability and Touch-Tone or rotary dialing. The communicator is compatible with SIA and Ademco Contact ID. The format is selectable by account number.

Approvals

NFPA 13, NFPA 15, NFPA 16, NFPA 72: Central Station; Remote Signalling; Local Protective Signalling Systems; Auxiliary Protected Premises Unit; & Water Deluge Releasing Service. Suitable for automatic, manual, waterflow, sprinkler supervisory (DACT non-coded) signalling services.

Other Approvals: UL Listed; CSFM 7170-0559: 135; MEA 429-92-E Vol. VI; FM Approved

IntelliKnight Model 5820XL
Addressable Fire Alarm Control Panel



IntelliKnight Model 5820XL
Addressable Fire Alarm Control Panel

Specifications

Electrical

Primary AC:
120 VRMS at 50/60 Hz, 2.5A or
240 VRMS at 50/60 Hz, 1.4A

Total Accessory Load: 6A @ 27.4 VDC, power-limited

Standby Current: 215 mA

Alarm Current: 385 mA

Flexput Circuits:

Six programmable circuits which can be programmed individually as:

Notification circuits: 3A @ 27.4 VDC per circuit, power-limited

Auxiliary power circuits: 3A @ 27.4VDC per circuit, power-limited

Initiation Circuits: 100 mA @ 27.4VDC per circuit, power limited

Physical

Flush Mount Dimensions:
14.5"W x 24.75"H x 3.9"D
(36.8 W x 62.9 H x 9.8 D cm)

Overall Dimensions:
16.2"W x 26.4"H x 4.2"D
(40.6 W x 67 H x 11.8 D cm)

Weight: 28 lbs. (12.8 kg)

Color: Red

Battery Charging Capacity: 7.0-35 AH

Battery Size: 18 AH max allowed in control panel cabinet. Larger capacity batteries can be housed in RBB accessory cabinet.

Telephone Requirements:
FCC Part 15 and Part 68 approved
Type of Jack: RJ31X (two required)

S-BUS Accessories

5860/R Remote Fire Annunciator
Features the same 80 character backlit LCD display keypad and firefighter's keyswitch as the 5820XL. 5860 is gray and 5860R is red.

5815XL Signal Line Circuit Expander
The SLC expander is used to add more addressable devices to the IntelliKnight system. 5820XL supports three 5815XL's. Each 5815XL can support 99 SK detectors and 99 SK modules or 127 SD devices.

5895XL Intelligent Power Module
Adds 6 amps of power, 6 Flexput I/O circuits and 2 Form C relay circuits to a 5820XL system.

5496 Intelligent Power Module
A 6 amp notification power expander that provides four power-limited notification appliance circuit outputs.

5880 LED/IO Module
Features 40 LED outputs, 8 normally open dry contact inputs, and one piezo output.

5865-3 and 5865-4 Remote LED Annunciator
Features 30 programmable LED (15 red and 15 yellow) outputs, and a piezo sounder. The 5865-4 adds a silence and reset switch to the package.

5883 Relay Board
Features 10 general purpose Form C relays. Used with 5880 module.

5824 Serial/Parallel Printer Interface Module
Provides one parallel and one RS-232 serial port for connecting a printer to the 5820XL. Use to print a real-time log of system events, detector status reports, and event history. Interfaces with building control system.

Miscellaneous Accessories

5660 Silent Knight Software Suite (SKSS)
User-friendly Windows software for remote programming of 5820XLs using a PC. Upload and view panel account information, event history, and detector status.

5670 Silent Knight Software Suite (SKSS)
Powerful end-user facility management software allows viewing of detector status and event history via modem or direct connection.

Plex-1
Dead front cabinet door with clear window to limit access to the FACP.

RBB
Remote battery box accessory cabinet. Use if backup batteries are too large to fit into FACP cabinet. Dimensions:
16" W x 10" H x 6" D
(406 mm W x 254 mm H x 152 mm D)

SD505-DTS-K
Remote test switch. Used with SD505-DUCTR. Provides remote key operated test function and annunciation of detector alarm.

SD and SK Devices

See the specification sheets listed below for a complete listing of the SD and SK devices.

53624 SD Devices Data Sheet
53623 SK Devices Data Sheet

SILENT KNIGHT
by Honeywell

For more information, contact Silent Knight 12 Clintonville Road, Northford, CT 06472
Phone: (203) 484-7161, Fax: (203) 484-7118. **www.silentknight.com**.

Made in America

PN 350210 Rev H2

SILENT KNIGHT
by Honeywell

5860 Remote Annunciator

Bring the power to control an IntelliKnight fire alarm control panel to every area within your facility.

Now you can operate and program your IntelliKnight system from up to eight locations throughout your facility. The 5860 remote annunciator provides the same advanced, easy-to-use interface found on the IntelliKnight panel's built-in annunciator. The 80-character display and ergonomically designed keypad allow for simple and error-free system operation. All operations—including reset, silence, detector status checking, fire drill, and programming—are identical.

Access to the system is through a firefighter's key or an access code. For security, a special installation code is needed for programming functions. The 5860 connects to the IntelliKnight panel via the RS-485 system bus. Wire runs can be up to 6000 feet from the panel.

For more information about the IntelliKnight system, or to locate your nearest source, please call 1-800-328-0103.

Description
Features include an 80-character backlit LCD providing easy-to-understand system messages. The annunciator is ergonomically designed with over-sized buttons for the most frequently used features, like Reset and Silence.

In addition to status messages displayed on the LCD, there are five LEDs for alarm, supervisory, trouble, silence, and AC power status.

The annunciator is available in gray to match virtually any decor and red for applications where the annunciator must stand out. The annunciator enclosure can be surface or flush mounted. A trim ring kit is available for surface mounting.

Features
- 80-character backlit LCD display (4 lines with 20 characters on each line)
- Tactile and audible feedback
- Accepts user codes or fire fighter's key
- Larger keypad buttons for system reset and silence
- Install up to eight 5860s per FACP
- Available in red or light gray
- Support for simultaneous use of multiple 5860s
- RS-485 interface to panel
- Operation and appearance is identical to 5860 built-in annunciator
- On-board piezo sounder audibly indicates alarms, troubles, and supervisories
- Five status LEDs for alarm, supervisory, trouble, silence and AC power conditions
- Wiring lengths up to 6000 ft. from the FACP (depending on wire gauge and number of devices on SBUS)
- UL listed, complies with NFPA 72
- CSFM approved

Electrical Specifications
Operating Voltage: 24 VDC

Standby Current: 20 mA max

Alarm Current: 25 mA

Wiring Distance: 6,000 max. from FACP (depending on wire gauge and number of devices on the SBUS)

Max Per System: 8

Mechanical Specifications
Physical 9.1" W x 7.4" H x 1.5" D (23.1 W x 18.8 H x 3.8 D cm)

Shipping Weight: 2.8 lbs (1.3 kg)

Color
5860R: Red
5860: Gray

5860

Environmental
Operating Temperature: 32°F – 120°F (0°C – 49°C)

Humidity: 10% – 93% non-condensing

Compatibility
The 5860 is compatible is the following FACP's:
- IntelliKnight 5820XL FACP
- IntelliKnight 5808 FACP
- IntelliKnight 5700 FACP

Approvals/Listings
NFPA 72; UL Listed;
CSFM 7170-0559: 135;
MEA 429-92-E Vol. IX;
FM Approved

5860 Remote Annunciator

Engineering Specifications

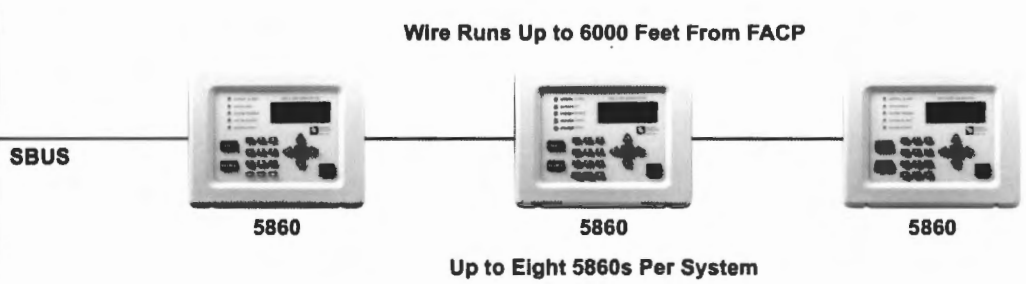
The main control must have a built-in annunciator and must support up to eight remote annunciators. Remote annunciators shall have the same control and display layout so as to match the appearance of the built-in annunciator. Remote annunciators shall be available in two colors, red or light gray.

Remote annunciators shall have identical functionality and operation as the built-in annunciator. All annunciators must have an 80-character LCD display and must feature five LEDs for: General Alarm, Supervisory, System Trouble, System Silence, and System Power.

All controls and programming keys are silicone mechanical type with tactile and audible feedback. Keys have a travel of .040 inches. No membrane style buttons will be permissible.

The annunciator must be able to silence and reset alarms through the use of a code entered on the annunciator keypad or by using a firefighter's key. The annunciator must have two levels of user codes that will limit the operating system programming to authorized individuals. The control panel must allow all annunciators to accommodate multiple user input simultaneously.

Compatible IntelliKnight FACP



Ordering Information

5860R	Remote Annunicator four line LCD annunciator with 20 characters per line. Red.
5860	Remote Annunciator.Four line LCD annunciator with 20 characters per line. Gray.

Accessories

5860TR	Red Trim Ring for surface mounting.
5860TG	Gray Trim Ring for surface mounting.

SILENT KNIGHT
by Honeywell

MADE IN AMERICA

FORM# 350224 Rev E

SILENT KNIGHT
by Honeywell

Model 5895XL
Intelligent Power Module

The intelligent way to distribute power throughout your installation.

With 6.0 amps of output power, six programmable Flexput™ I/O circuits, and two Form C relay contacts, the Model 5895XL Intelligent Power Module allows you to greatly enhance the capabilities of an IntelliKnight system, distributing power where needed throughout a facility.

5895XL modules connect via the RS-485 system bus. Up to eight 5895XL modules can be used per IntelliKnight system. Each 5895XL has its own optically isolated RS-485 bus to which other modules, such as 5860 remote annunciators and 5824 printer interface modules, can be connected. You can also connect 5815XL SLC expansion modules, adding flexibility and wiring distance. Each 5895XL supports its own backup batteries and monitors the AC power.

Description

5895XL adds 6.0 amps of power, six Flexput I/O circuits, and two Form C relay circuits to an IntelliKnight installation. The 5895XL is optically isolated providing ground loop isolation and transient protection. The 5895XL conditions the RS-485 system bus allowing up to an additional 6,000 feet of wiring.

Operation

The green LED on the 5895XL board indicates communication with the IntelliKnight FACP.

The Flexput circuits can be notification appliance circuits, continuous power, resettable power, door holder power or initiation circuits that can support both 2- and 4-wire smoke detectors. All Flexput circuits and relay outputs are individually mappable from the IntelliKnight 5820XL FACP.

Features

- 6.0A output power
- Flexput I/O circuits, 3A each, programmable as notification circuits, auxiliary power circuits, or initiation circuits
- Supports Class A configuration for SBUS & Flexput circuits
- Ground loop isolation
- 2 Form C programmable relays rated at 2.5A at 24 VDC
- Transient protection
- SBUS repeater conditions the RS-485 signal
- Up to 6,000 feet wiring distance from 5895XL (same distance as main FACP)
- Battery charging capacity 35 Ah
- Large cabinet can house two 18 Ah batteries or RBB accessory cabinet can house battery sizes larger than 18 Ah
- Room in FACP cabinet to mount two 5815XL SLC expander's
- Built-in synchronization for appliances from AMSECO®, Gentex®, Faraday, System Sensor®, and Wheelock®

Electrical Specifications

Primary AC:
120 VRMS @ 60 Hz, 2.5A
240 VRMS @ 60 Hz, 1.4A

Total Accessory Load:
6A @ 24 VDC

Current:
Standby: 40 mA
Alarm: 160 mA

I/O Circuit Power:
3A per circuit (6A total per system)

Mechanical Specifications

Flush or surface mount

Dimensions:
14-1/2"W x 24-3/4"H x 3-7/8"D
(36.8 W x 62.9 H x 9.8 D cm)

Overall Dimensions:
16-1/8"W x 26-3/8"H x 4-1/8"D
(40.6 W x 67 H x 11.8 D cm)

Color: Red

Environmental

Operating Temperature:
32°F – 120°F (0° – 49°C

Humidity: 10% – 93%
non-condensing

Model 5895XL

Approvals

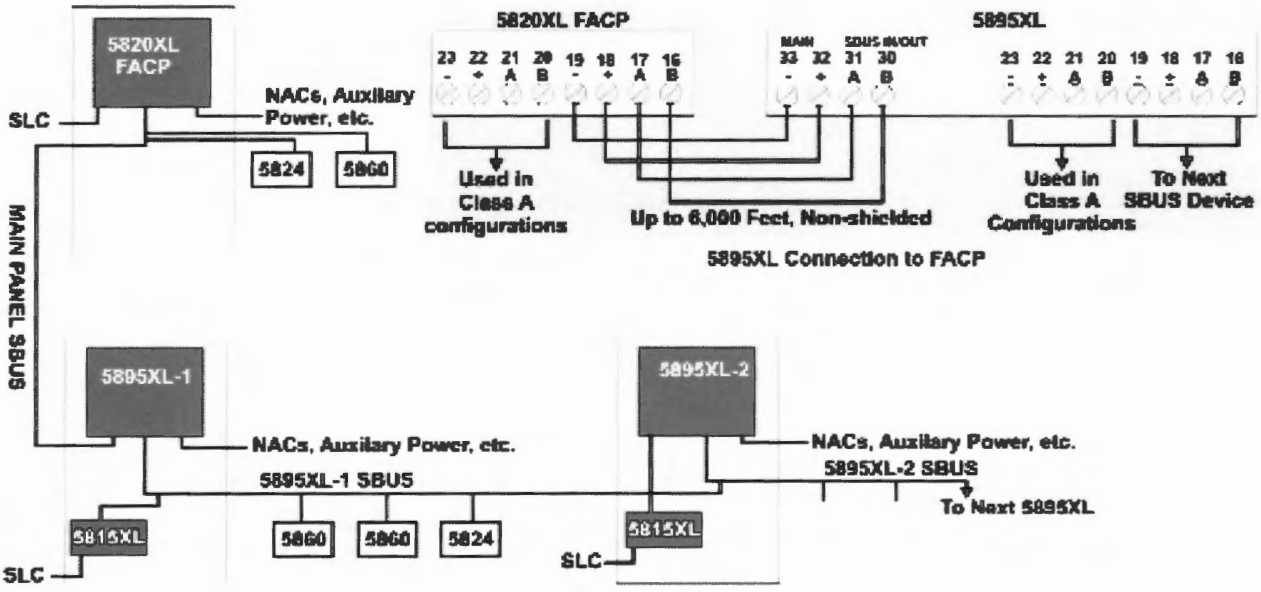
- NFPA 13, NFPA 15, NFPA 16, NFPA 70, NFPA 72 and NFPA 101
- UL 864
- CSFM
- MEA 429-92-E, Vol. IX
- FM approved

Model 5895XL
Intelligent Power Module

Engineering Specifications

The contractor shall supply a power module compatible with the IntelliKnight Model 5820XL FACP. The power module must have 6.0 amps of output power, Flexput I/O circuits rated 3.0 amps each, and two Form C relay contacts rated at 2.5 amps at 24 VDC. The power module shall connect to the main FACP via an RS-485 system bus (SBUS). The power module shall contain an additional RS-485 bus that is completely compatible with all IntelliKnight add-on modules, including 5815XL SLC expander's, 5860 remote annunciators, 5824 serial/parallel printer interface modules.

The power module RS-485 bus shall be optically isolated providing ground loop isolation and transient protection. The unit shall be an SBUS repeater that conditions the signal driving up to 6,000 feet of additional wiring.



5895XL Installation Example

SILENT KNIGHT
by Honeywell

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. For more information, contact Silent Knight 12 Clintonville Road Northford, CT 06472-1610 Phone: (800) 328-0103, Fax: (203) 484-7118. www.silentknight.com

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Flexput is a Trademark of Silent Knight

MADE IN AMERICA

FORM# 350212 Rev. D

SILENT KNIGHT
by Honeywell

Model 5815XL
Signaling Line Circuit Expander

Add flexibility to IntelliKnight® applications with the 5815XL SLC Expander

The Model 5815XL SLC Expander is a signaling line circuit controller for Silent Knight's IntelliKnight 5820XL addressable fire control panel. It allows you to add 99 SK modules and 99 SK devices or 127 Hochiki (SD) addressable devices to the IntelliKnight system. Add up to three 5815XLs to a system to achieve the maximum number of devices on the system.

5815XL signaling circuits have the same functionality as the SLC that is built into the IntelliKnight panel and support the same addressable devices as the main panel. The 5815XL connects to the panel via the RS 485 bus and is housed in the IntelliKnight 5820XL or 5895XL cabinet.

Model 5815XL
Signaling Line Circuit Expander

The 5815XL expands the capabilities of the IntelliKnight fire control panel by allowing an additional 99 SK modules and 99 SK detectors or 127 SD addressable devices to be attached to the system.

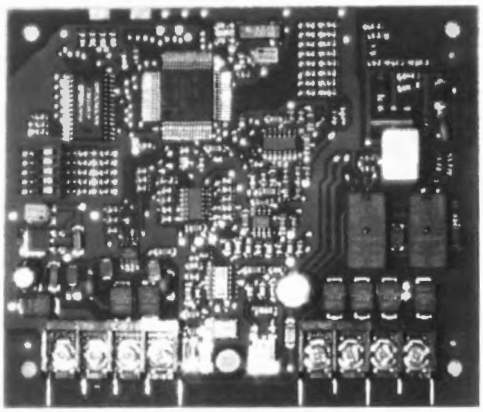
All functionality of the built-in SLC is provided with the 5815XL. Three 5815XLs can be added to an 5820XL IntelliKnight system for a total of 396 SK detectors and 396 SK modules or 508 SD addressable devices per system.

Operation

The 5815XL communicates with the IntelliKnight FACP via an RS 485 system bus. A green LED on the 5815XL board blinks to indicate good communication. If an addressable device on a 5815XL fails, the loop communicates the failure to the panel and continues to operate normally.

Features

- Adds 99 SK modules and 99 SK detectors or 127 SD addressable devices to an 5820XL IntelliKnight system
- Three 5815XLs per system
- 5815XL SLCs have same functionality as the 5820XL, including Style 6 (Class A) configuration
- Communicates with the IntelliKnight panel via RS 485 system bus
- LED indicates good communication
- House two inside the 5820XL cabinet, remotely mounted in the 5895XL cabinet, or mounted in the 5815RMK cabinet
- UL 864 listed, complies with NFPA 72 and 101
- Communicates on most standard wiring systems (ideal for retrofits)
- FM approved; CSFM approved; MEA



5815XL

Specifications

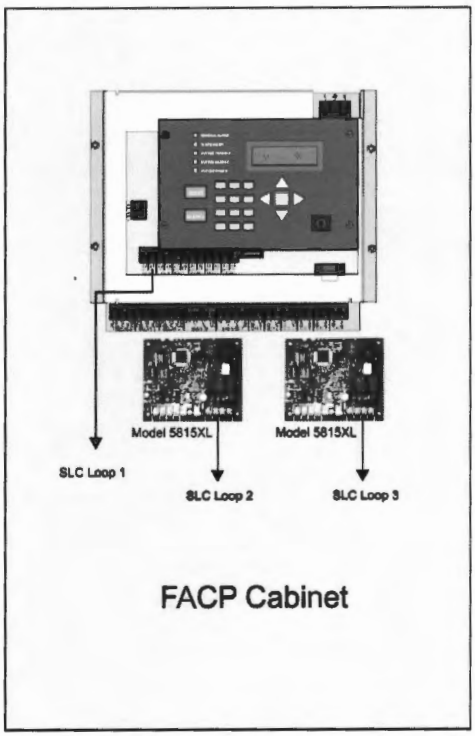
System Capacity	5820XL FACP supports three 5815XL SLC Expanders. Each expander supports 99 SK detectors and 99 SK modules or 127 SD addressable devices.
Operating Voltage	24 VDC
Current Draw	55 mA minimum - 125mA max.
Ambient Temp.	32°F to 120°F (0°C to 49°C)
Mounting	Inside 5820XL FACP, 5895XL cabinet, or 5815RMK cabinet

Model 5815XL

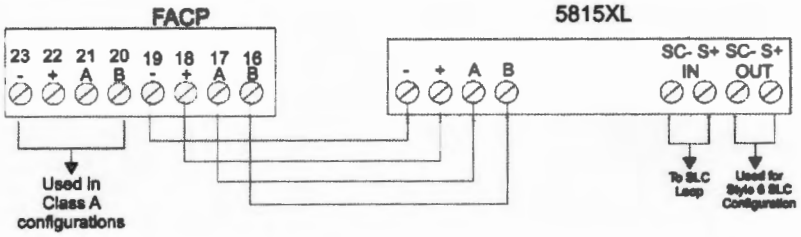
SLC Expander

Engineering Specifications

The contractor shall provide a signaling circuit expander compatible with the IntelliKnight 5820XL fire control panel that allows 99 SK Modules and 99 SK Detectors or 127 SD addressable devices to be added to the system. The IntelliKnight panel shall support three expanders per system. The expanders shall mount inside an IntelliKnight system cabinet, the FACP, the 5895XL, or the 5815RMK. The expanders shall provide signaling line circuits that have the same installation and functionality as built-in SLCs and shall communicate to the main panel via an RS 485 system bus. A green LED on the expander board shall blink to indicate communication with the main panel.



FACP Cabinet



5815XL Block Diagram

SILENT KNIGHT
by Honeywell

MADE IN AMERICA

FORM# 350098 Rev F

SILENT KNIGHT®
by Honeywell

SK-Monitor

Intelligent Monitor Module

The SK-Monitor module provides an interface to contact devices, such as security contacts, waterflow switches, or pull stations.

For more information about the IntelliKnight system, or to locate you nearest source, please call 1-800-328-0103.

Description

The SK-Monitor is an addressable monitor module for use with Silent Knight IntelliKnight series fire alarm control panels (FACPs). The SK-Monitor is intended for use in intelligent, two-wire systems, where individual address of each module is selected using the built-in rotary switches.

The SK-Monitor supports Class A supervised or Class B supervised wiring to the load device. Conventional 4-wire smoke detectors can be monitored for alarm and trouble conditions.

Features

- Single contact monitor
- Support for Class A and Class B wiring
- Fully supervised
- Panel controlled status LED that flashes green in normal state and is solid red in alarm
- Attractive ivory cover plate
- Rotary address switches for fast installation
- SEMS screws for easy wiring
- UL Listed

Installation

The SK-Monitor mounts directly into a 4" square electrical box. The box must have a minimum depth of 2-1/8". A surface mount electrical box (System Sensor® PN SMB500) is available from Silent Knight.

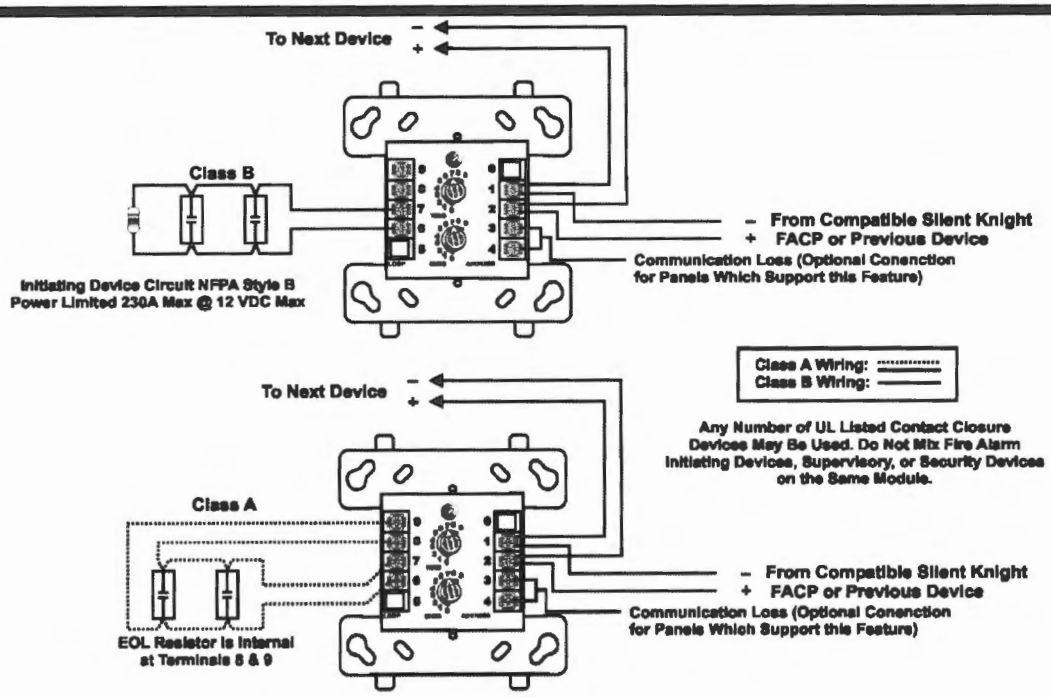
SK-Monitor

Compatibility

The SK-Monitor is compatible with the following IntelliKnight FACP's:

5700
5808
5820XL

Model SK-Monitor
Intelligent Monitor Module



Wiring IDP-Monitor Modules

Specifications

Physical

Height: 4.5" (11.4 cm)

Width: 4" (10.2 cm)

Depth: 1.25" (3 cm)

Shipping Weight: 6.3 oz (196 g)

Electrical

Operating Voltage: 15 – 32 VDC

Current Draw (LED on): 5.0 mA max

Operating Current (LED flashing): 375 µA

Standby Current:

400 µA max @ 24 VDC (one communication every 5 sec with 47K EOL)

550 µA max @ 24 VDC (one communication every 5 sec with EOL <1K)

5.5 mA (with LED latched on)

LED Current: 5.5 mA (with LED latched on)End-of-Line Resistance: 47K

Initiating Device Circuit Wiring Resistance: 1,500 max

SLC Loop Resistance: 40 max.

Environmental

Operating Temperature: 32°F – 120°F (0°C – 49°C)

Humidity: 10% – 93% non-condensing

Ordering Information

SK-Monitor	Monitoring Module

Accessories

SMB500	4" Square Surface Mount Electrical Box

SILENT KNIGHT
by Honeywell

MADE IN AMERICA

FORM# 350131 Rev B

FIRE-LITE® ALARMS

www.firelite.com

July 15, 2004 DF-51131 • I-300

MR Series
Control Relays

Section: Miscellaneous

GENERAL

The Air Products & Controls **MR Series Multivoltage Control Relays** offer SPDT or DPDT 10-amp contacts which may be operated by one of four input control voltages. A single relay may be energized from a voltage source of 24 VDC, 24 VAC, 115 VAC, or 230 VAC by wiring to appropriate input terminals.

Each relay contains a red light-emitting diode (LED) which indicates the relay coil is energized. Relays may be "snapped apart" from a standard four-module assembly and used independently.

These devices are ideal for applications where local contacts are required for system status, remote contacts for control of electrical loads and general purpose switching. They are suitable for use with HVAC, Temperature Control, Fire Alarm, Security, Energy Management, and Lighting Control Systems.

The Air Products & Controls **MR-199 Heavy Duty Power Relays** are designed for control applications where 30-amp DPDT contacts are required. The 24 VDC and 120 VAC relays are mounted in a rugged steel enclosure.

MR SERIES FEATURES (Excluding MR-199 Series)

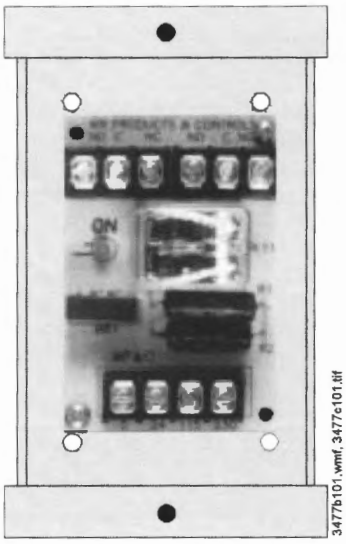
- Each relay position may be energized from one of four input control voltages.
- Each relay position contains a red LED which illuminates when the coil is energized. This provides a timesaving convenience when checking an installed system, no metering is required.
- Single, dual, or triple relay modules may be "snapped apart" from a standard four-position master.
- SPDT or DPDT relays available.
- Available in dust-proof metal enclosures (with gray plastic cover on MR-101/CR and MR-201/CR) with LED viewing port.
- Red enclosure available on some models.
- Track mounting hardware to facilitate installation in standard cabinets.
- UL recognized relays rated at 10,000,000 mechanical operations.

UL LISTED
S3403
(MR-101/CR, MR-104/CR, MR-201/CR, MR-204/CR)

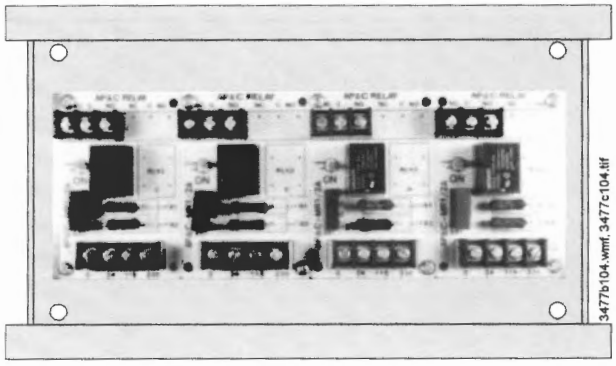
ULC
CS118/ CS733
(MR-104 and MR-204 Series *ONLY*)

MEA
73-92-E (MR-101/C or CR, MR-104/C or CR)
73-92-E, Vol. III (MR-201/C or CR, MR-204/C or CR)

California State Fire
7300-1004:101
(MR-101/CR, MR-104/CR, MR-201/CR, MR-204/CR)



The MR-101/CR



The MR-104/CR

PRODUCT SPECIFICATIONS FOR MULTIVOLTAGE CONTROL RELAYS

Power requirements:

MR-101 Position is rated at 0.015 amps (15 milliamps) @ 24 VAC, 24 VDC, 115 VAC, 230 VAC.

MR-201 Position is rated at 0.035 amps (35 milliamps) @ 24 VAC, 24 VDC, 115 VAC, 230 VAC.

Relays: All relays are UL ***recognized*** components. ***NOTE:*** *Only models with enclosures ("C" suffix) are UL* ***listed*** *assemblies (excludes MR-199X-13C and MR-199X-14C).*

Enclosure: 18 gauge CRS, plated with 1/2" conduit knockouts (top and bottom). The ***MR-101/CR and MR-201/CR*** include a metal backbox with durable plastic cover.

Contact rating: 10.0 A @ 115 VAC resistive.

Ambient temperature: -50°C to +85°C (-50°F to +185°F).

Dimensions:

MR-101/T and MR-201/T are 3.0" (82 mm) H x 2.125" (54 mm) W x 1.5" (38.1 mm) D.

MR-104/T and MR-204/T are 3.0" (82 mm) H x 8.5" (215 mm) W x 1.5" (38.1 mm) D.

MR-101/CR and MR-201/CR are 6.125" (130.2 mm) H x 3.25" (82 mm) W x 2.5" (63.5 mm) D.

MR-104/CR and MR-204/CR are 6.125" (130.2 mm) H x 9.5" (241.3 mm) W x 2.5" (63.5 mm) D.

PRODUCT SPECIFICATIONS FOR HEAVY-DUTY POWER RELAYS

Contact arrangement: DPDT standard.

Contact rating: 30 Amps @ 240 VAC; 20 Amps @ 277 VAC; 2 HP @ 250 VAC.

Coil power: ***MR-199X-13*** is rated at 24 VDC @ 85 mA. ***MR-199X-14*** is rated at 120 VAC @ 85 mA.

Temperature range: -30°C to +50°C (-22°F to +122°F). ***For MR-199X-13:*** -55°C to +80°C (-67°F to +176°F). ***For MR-199X-14:*** -55°C to +45°C (-67°F to +113°F).

Dimensions: ***MR-199X-13*** *and* ***MR-199X-14*** is 3.13" (79.4 mm) high x 2.5" (63.5 mm) wide x 2.31" (58.7 mm) deep. ***MR-199X-13C*** *and* ***MR-199X-14C*** is 5.31" (134.9 mm) high x 3.38" (85.9 mm) wide x 3.13" (96.8 mm) deep.

PRODUCT LINE INFORMATION

Model	*Description*
MR-101/T	Single SPDT Relay with LED and track-mounting hardware (UL recognized).
MR-101/CR	Single SPDT Relay with LED, mounted in metal backbox with ***red*** plastic cover (UL listed).
MR-104/T	Four-Position SPDT Relay with LEDs and track-mounting hardware (UL recognized).
MR-104/CR	Four-Position SPDT Relay with LEDs, mounted in a metal backbox with a ***red*** cover (UL listed).
MR-201/T	Single DPDT Relay with LED and track-mounting hardware (UL recognized).
MR-201/CR	Single DPDT Relay with LED, mounted in metal backbox with ***red*** plastic cover (UL listed).
MR-204/T	Four-Position DPDT Relay with LEDs and track-mounting hardware (UL recognized).
MR-204/CR	Four-Position DPDT Relay with LEDs, mounted in a metal enclosure with red cover (UL listed).
MR-199X-13	Heavy-duty DPDT Relay only, 24 VDC coil input (UL recognized).
MR-199X-13C	Heavy-duty DPDT Relay, 24 VDC coil input, mounted in enclosure (UL recognized).
MR-199X-14	Heavy-duty DPDT Relay only, 120 VAC coil input (UL recognized).
MR-199X-14C	Heavy-duty DPDT Relay, 120 VAC coil input, mounted in enclosure (UL recognized).

MR SERIES RELAYS

MODEL NUMBER	COIL VOLTAGE				CONTACTS			MOUNTING			LISTINGS	
	24 VDC	24 VAC	120 VAC	230 VAC	SPDT (10A)	DPDT (10A)	DPDT (30A)	Track	Spacer	Enclosure	UL, CSFM, & MEA	ULC
MR-101/T	X	X	X	X	1			X				
MR-101/CR	X	X	X	X	1					X	X	
MR-104/T	X	X	X	X	4			X				X
MR-104/CR	X	X	X	X	4					X	X	X
MR-201/T	X	X	X	X		1		X				
MR-201/CR	X	X	X	X		1				X	X	
MR-204/T	X	X	X	X		4		X				X
MR-204/CR	X	X	X	X		4				X	X	X
MR-199X-13	X						1		X			
MR-199X-13C	X						1			X		
MR-199X-14			X				1					
MR-199X-14C			X				1			X		

511311.tbl

SILENT KNIGHT
by Honeywell

SK-Heat, SK-Heat-HT and SK-Heat-ROR

Addressable thermal heat and rate-of-rise detectors

The SK-Heat, SK-Heat-HT, and SK-Heat-ROR are plug in thermal detectors, with integral communication, that provide features that surpass conventional detectors. These thermal detectors are for use with Silent Knight IntelliKnight series Fire Alarm Control Panels (FACPs).

IntelliKnight heat detectors are an essential component in virtually any IntelliKnight installation. The IntelliKnight panel recognizes each detector by its specific address, so precious seconds are not wasted in determining location of an alarm.

Description

SK-Heat, SK-Heat-HT and SK-Heat-ROR are intelligent sensors that utilize a state-of-the art thermistor sensing circuit for fast response. Sensitivity is continuously monitored and reported to the FACP. Point ID capability allows each detector's address to be set with rotary address switches, providing exact detector locations for selective maintenance when chamber contamination reaches unacceptable levels.

SK-Heat is a fixed temperature sensor that uses a thermistor sensing circuit to produce 135ºF (57ºC) fixed temperature alarm.

SK-Heat-HT is a variable high temperature detector that provides high temperature detection at 135°F - 190ºF. (57°C - 88°C)

SK-Heat-ROR is a rate-of-rise temperature sensor with 135ºF (57ºC) fixed temperature alarm.

Features

- Reliable analog communications for trouble-free operation
- Age resistant polymer housing
- Innovative thermistor sensing circuit
- Superior EMI resistance for reliability
- Variety of mounting options to meet any application
- Dual LED indicators for 360º visibility
- Detector transmits signal to indicate maintenance is required
- Plug-in mounting provides ease of installation
- Optional remote LED annunciator (System Sensor® PN RA100Z)
- Tamper-proof feature available on mounting bases
- Rotary address switches for fast installation
- UL Listed

Specifications

Physical
Height: 2.0" (51 mm)
Diameter: 6.1" (155 mm)installed in B210LP base
Shipping Weight: 4.8 oz (137 g)

Electrical
Operating Voltage: 15 to 32 Volts DC Peak

Standby Current: 300µA @ 24 VDC

LED Current: 6.5 mA@ 24 VDC

Environmental

Operating Temperature
SK-Heat & SK-Heat-ROR: -4º – 100ºF (-20ºC– 38ºC)

SK-Heat-HT: -4º – 150ºF (-20ºC – 66ºC)

Humidity: 10% – 93% noncondensing

SK-Heat (base included)

Thermal Ratings
SK-Heat: Fixed temperature alarm 135ºF (57ºC)

SK-Heat-HT: High temperature heat sensor 135°F - 190ºF (57°C - 88ºC)

SK-Heat-ROR: Rate-of-rise detection 15ºF/min (8.3ºC/min)

Compatibility

The SK-Heat, SK-Heat-HT and SK-Heat-ROR are compatible with the following IntelliKnight FACP's:

5700
5808
5820XL

The SK-Heat, SK-Heat-HT and SK-Heat-ROR are compatible with the following detector bases:

B210LP	(included) 6" base
B501	2 wire base
B224BI	Isolator base
B224RB	Relay base
B200SR	Sounder base

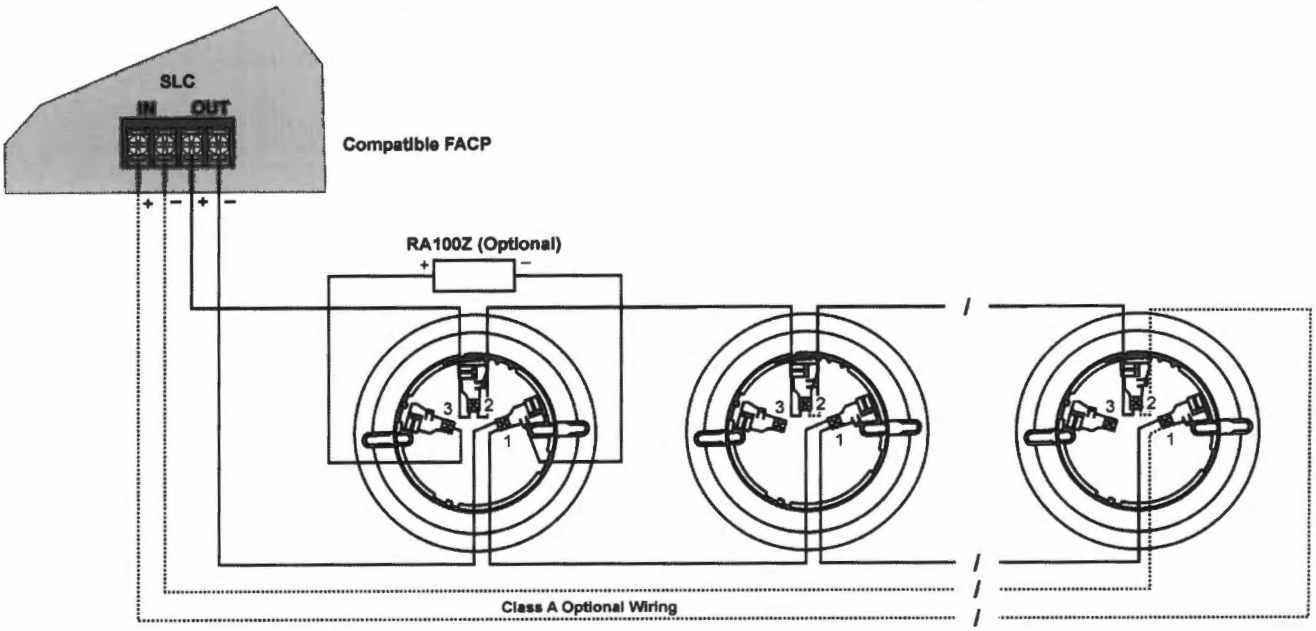
Model SK-Heat, SK-Heat-HT, SK-Heat ROR Addressable Thermal and Rate-of-Rise Thermal Detectors

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, Intelligent Thermal Sensor Silent Knight Model SK-Heat, SK-Heat-HT or SK-Heat-ROR. The base included shall be B210LP.

The Heat detector shall have a flashing status LED for visual supervision. When the detector is activated, the flashing LED will latch on steady at full brilliance. The detector may be reset by actuating the control panel reset switch.

The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be field removable when not required.Voltage and RF/transient suppression techniques shall be employed to minimize false alarm potential.



Wiring SK-Series Detector Mounting Bases

Accessories

RA100Z - Remote LED Annunciator.

RMK400 - Recessed Mounting Kit. Provides low profile for use with B501.

XR2B - Detector Removal Tool. A removal and re- placement tool for SK plug-in detectors. Includes the T55-127-000.

M02-04-01 - Replacement Test Magnet.

M02-09-00 - Test Magnet with Telescoping Handle.

XP-4 - Extension Pole for XR2B. Extends from 5 – 15 ft.

T55-127-000 - Detector Removal Head.

BCK-200B - Black Detector Kit. For SK-series detectors.

* Unless otherwise noted, specifications apply to all SK thermal detectors.

SILENT KNIGHT by Honeywell

MADE IN AMERICA

FORM# 350120 Rev. C

SK-Photo and SK-Photo-T

Intelligent Photoelectric Smoke Sensors

The SK-Photo is a photoelectric smoke detector and the SK-Photo-T is a photoelectric smoke detector with thermal. These plug in smoke detectors, with integral communication, provide features that surpass conventional detectors and are for use with Silent Knight IntelliKnight Fire Alarm Control Panels (FACPs).

For more information about the IntelliKnight system, or to locate your nearest source, please call 800-328-0103 or in Connecticut, call (203) 484-7161.

Description

SK-Photo and SK-Photo-T are plug-in type smoke sensors that combine a photoelectric sensing chamber with addressable analog communications. Point ID capability allows each detector's address to be set with rotary address switches, providing exact detector locations for selective maintenance when chamber contamination reaches unacceptable levels.

SK-Photo and SK-Photo-T have a unique optical sensing chamber that is engineered to sense smoke produced by a wide range of combustion sources. In the SK-Photo-T, dual electronic thermistors add 135°F (57°C) thermal technology to maximize detection.

Features

- Sleek, low-profile design
- Base included
- Reliable analog communications for trouble-free operation
- Age resistant polymer housing
- Dual electronic thermistor design on the SK-Photo-T
- Superior EMI resistance for reliability
- Simple field cleaning for code compliance
- Variety of mounting options to meet any application
- Dual LED indicators for 360° visibility
- Detector transmits signal to indicate maintenance is required
- Optional remote LED annunciator (System Sensor® PN RA100Z)
- Plug-in mounting provides ease of installation
- Tamper-proof feature available on mounting bases
- Listed for use in duct applications
- Rotary address switches for fast installation
- UL Listed
- FM Approved

Specifications

Physical

Height: 2.0" (5.0 cm)

Diameter: 4.1" (10.4 cm)

Shipping Weight: 5.2 oz. (147 g)

Electrical

Operating Voltage: 15–32 VDC

Standby Current:

300 µA @ 24 VDC Maximum

Alarm Current: 6.5 mA @ 24 VDC max (with LED on)

Environmental

Operating Temperature

SK-Photo: 32° – 120°F (0°C – 49°C)

SK-Photo-T: 32° – 100°F (0°C – 38°C)

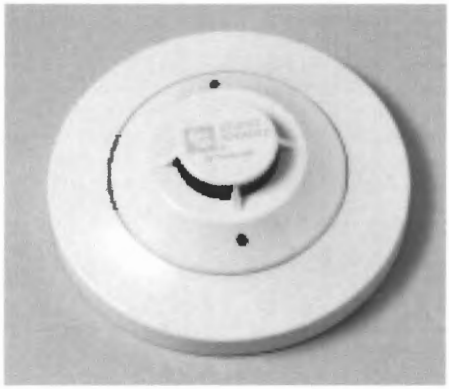
Humidity: 10% – 93% non-condensing

Other Ratings

SK-Photo-T Thermal: Fixed temperature set point 135°F (57°C)

Velocity: 0 – 4000 fpm (0 – 20 m/sec)

SK-Photo Insect Screen Hole Size: 0.016" (0.41 mm) nominal



SK-Photo (Base included)

Compatibility

The SK-Photo and SK-Photo-T are compatible with the following IntelliKnight FACPs:

5700
5808
5820XL

SK-Photo and SK-Photo-T are compatible with the following detector bases:

B210LP	(included) 6" base
B501	2 wire base
B501BHT-2	Temporal base
B224RB	Relay base
B224BI	Isolator base
B501BH-2	Sounder base

SILENT KNIGHT
by Honeywell

Model SK-Photo and SK-Photo-T Intelligent Photoelectric Smoke Sensors

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, Intelligent photoelectric smoke sensors Silent Knight SK-Photo or SK-Photo-T with thermal. The combination detector head, and twist-lock base, shall be UL listed and compatible with Silent Knight's IntelliKnight fire control panels.

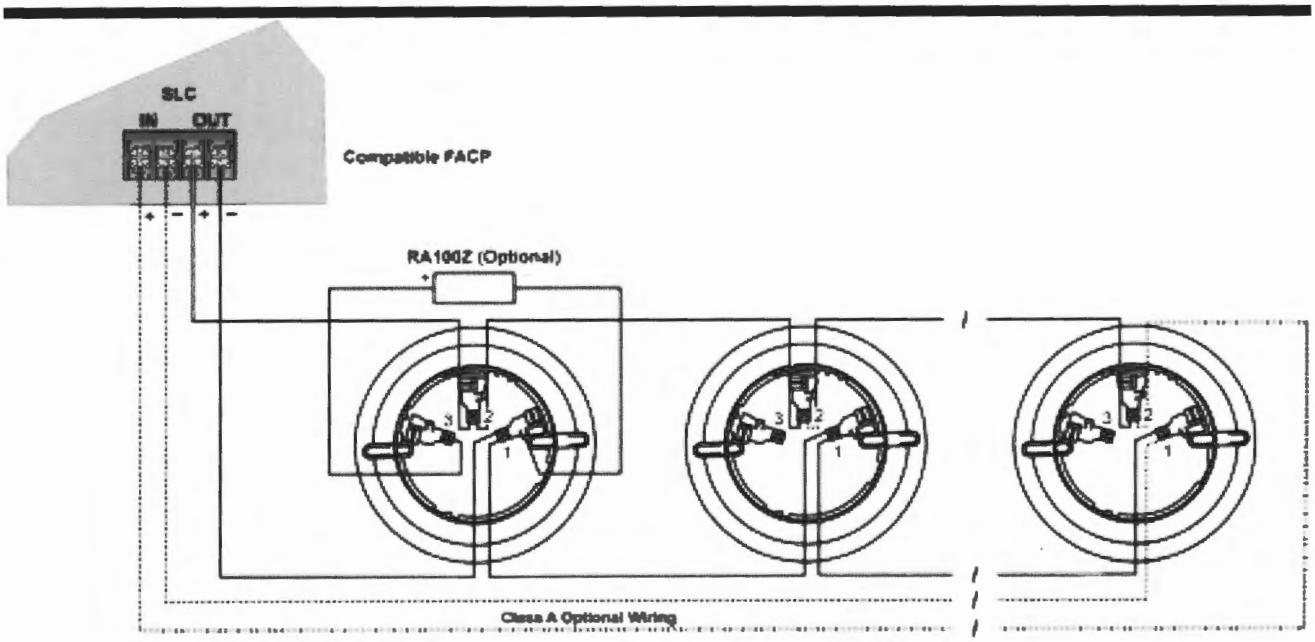
The base shall permit direct interchange with SK-Photo or SK-Photo-T. Base shall be the appropriate twist-lock base part number B210LP (included).

The smoke detector shall have a flashing status LED for visual supervision. When the detector is actuated, the flashing LED will latch on steady. The detector may be reset by actuating the control panel reset switch.

The calibration of the detector shall be capable of being selected and measured by the control panel without the need for external test apparatus.

The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be field selectable as required.

The SK-Photo shall automatically perform a functional test of the detector. The test method shall simulate effects of products of combustion in the chamber to ensure testing of detector circuits.



Wiring SK-Series Detector Mounting Bases

SILENT KNIGHT by Honeywell

MADE IN AMERICA

FORM# 350118 Rev A,

SILENT KNIGHT
by Honeywell

SK-Pull-SA and SK-Pull-DA

Intelligent Pull Stations

The SK-Pull-SA and SK-Pull-DA are a single action or dual action addressable fire alarm pull station for use with Silent Knight's IntelliKnight fire control panel. Extremely easy to operate, the SK-Pull-DA and SK-Pull-SA provide a fast and practical means of manually initiating a fire alarm signal. The IntelliKnight panel recognizes each manual pull station by its specific address saving precious seconds in determining the location of an alarm.

For more information about the IntelliKnight system, or to locate you nearest source, please call 1-800-328-0103.

Description

The SK-Pull-SA is a single action pull station requiring only one motion to activate the station. The SK-Pull-DA is a dual action pull station requiring two motions to active the station. Both pull stations are designed to work with Silent Knight Intelliknight series fire alarm control panels (FACPs).

Features

- Installer can open station without causing an alarm condition
- Dual-color LED is visible through handle of station blinks green to indicate normal operation and remains steady red in an alarm condition
- Key operated test and reset lock using lock plate actuator
- Key matches compatible FACP locks
- Meets the Americans with Disabilities Act Accessibility Guidelines (ADAAG) controls and operating mechanisms guidelines (Section 4.1.3[13])
- Meets ADA requirement for 5 lbs maximum pull force to active
- Shell, door, and handle molded from durable LEXAN®
- Reliable analog communications for trouble-free operation
- Braille text on station handle
- Handle latches in down position and the word *Activated* appears, clearly indicating the station has been pulled
- Rotary address switches for fast installation
- UL Listed, including UL 38, Standard of Manually Actuated Signaling System

SK-Pull-SA

SK-Pull-DA

Compatibility

The SK-Pull-SA and SK-Pull-DA are compatible with the following IntelliKnight FACP's:

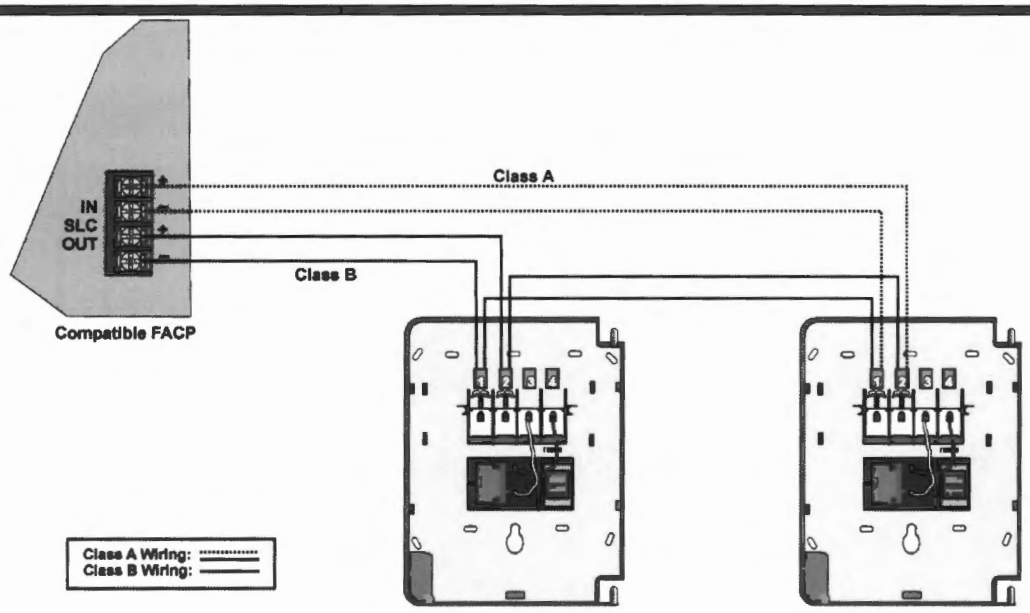
5600
5700
5808
5820XL

Model SK-Pull-DA and SK-Pull-SA

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, Addressable Pull Stations, Silent Knight model SK-Pull-SA single action pull station or SK-Pull-DA, dual action pull station.

SK-Pull-DA or SK-Pull-SA meet the ADAAG controls and operating mechanisms guidelines, and the ADA requirements for a 5 lb. maximum pull force to activate the pull station.



Wiring SK-Pull-SA & SK-Pull-DA Pull Stations

Specifications

Physical

Height: 5.5" (14 cm)

Width: 4" (10.2 cm)

Depth: 5.4 oz. (3.7 cm)

Housing Material: LEXAN polycarbonate resin

Bi-Colored LED:
Blinking Green: Normal

Steady Red: Alarm

Switch: Single pole, single throw (SPST) normally open (N/O) switch which closes upon activation of the pull station

Electrical

Operating Voltage: 15–32 VDC

Average Operating Current (LED flashing): 300 µA

Wire Gauge: Up to 12 AWG (3.1 mm^2)

Environmental

Operating Temperature 32° – 120°F (0°C – 49°C)

Humidity: 10% – 93% non-condensing

Accessories

BG-TR	Optional trim ring.
SB-I/O	Surface backbox

SILENT KNIGHT by Honeywell

MADE IN AMERICA

FORM# 350135 Rev A

SK-Relay

Intelligent Relay Module

The SK-Relay Module is intended for use in intelligent, two-wire systems where the individual address of each module is selected using the built in rotary switches.

For more information about the Intelliknight system, or to locate you nearest source, please call 800-328-0103 or in Connecticut, call (203) 484-7161.

Description

The SK-Relay is an addressable relay module for use with Silent Knight IntelliKnight series fire alarm control panels (FACPs).

The SK-Relay allows a Silent Knight FACP to switch discrete contacts by code command. The relay contains two isolated sets of Form C contacts, which operate as a DPDT switch. No supervision is provided for the notification appliance circuit.

The SK-Relay contacts can be used for virtually any normally open or normally closed application. Each SK-Relay is programmed with a unique signaling line circuit (SLC) loop address. When an event occurs that controls the SK-Relay, the relay is triggered by the FACP.

Features

- Two sets of Form C contacts
- Rotary address switches for fast installation
- Contacts are rated for a variety of amps (see Specifications)
- Panel controlled status LED that flashes green in normal state and is solid red in alarm
- Relay programming is completely flexible–can be mapped to zone conditions
- Polling LED visible through the cover plate
- Attractive ivory cover plate
- SEMS screws for easy wiring
- UL Listed

SK-Relay

Installation

The SK-Relay mounts directly into a 4" square electrical box. The box must have a minimum depth of 2-1/8". A surface mount electrical box (System Sensor® PN SMB500) is available from Silent Knight

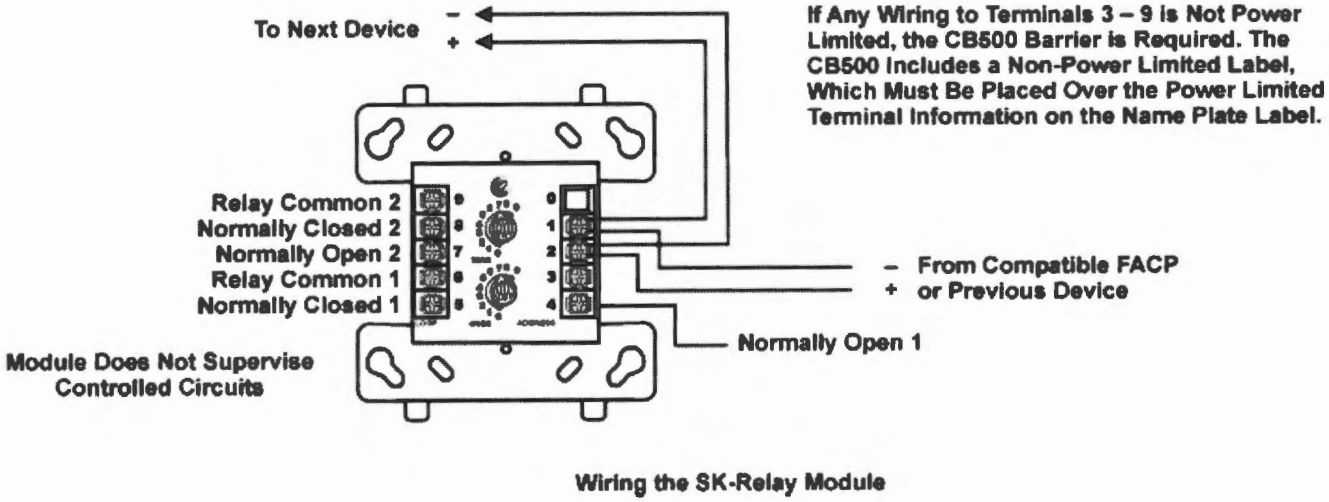
Compatibility

The SK-Relay is compatible with the following IntelliKnight FACP's:

5700
5808
5820XL

SILENT KNIGHT
by Honeywell

Model SK-Relay



Wiring the SK-Relay Module

Specifications

Physical

Height: 4.65"

Width: 4.25"

Depth: 1.1"

Shipping Weight: 6.3 oz (196 g)

Electrical

Operating Voltage: 15 – 32 VDC

Current Draw: 6.5 mA max (LED on)

Operating Current:

230 µA (LED flashing) direct poll

255 µA (LED flashing) group poll

End-of-Line Resistance: not used

Standby Current: 300 µA max @ 24 VDC (one communication every 5 sec with LED enabled)

LED Current: 5.5 mA (with LED latched on)

SLC Loop Resistance: 40Ω max.

Relay Contact Ratings

3.0A @ 30 VDC resistive

0.9A @ 110 VDC resistive

0.9A @ 125 VAC resistive

0.5A @ 125 VAC inductive (PF = .35)

0.7A @ 75 VAC inductive (PF = .35)

SILENT KNIGHT by Honeywell

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. For more information, contact Silent Knight 12 Clintonville Road, Northford, CT 06472-1610 Phone: (800) 328-0103, Fax: (203) 484-7118. www.silentknight.com

MADE IN AMERICA

FORM# 350127 Rev A

SYSTEM SENSOR

Indoor Selectable-Output Horns, Strobes, and Horn Strobes for Wall Applications

SPECTRAlert ADVANCE from System Sensor

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

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 wall 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 wall 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, wall-mount horns, 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 a 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

SIGNALING UL LISTED
S4011 (chimes, horn strobes, horns)
S5512 (strobes)

FM APPROVED
3023572

MEA approved
MEA452-05-E

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 horns, strobes, and horn strobes shall mount to a standard 4 x 4 x 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 x 4 x 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 8 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16 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 x 411/16 x 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 Range[2]	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	5.6˝L x 4.7˝W x 2.5˝D (142 mm L x 119 mm W x 64 mm D)
Horn Dimensions	5.6˝L x 4.7˝W x 1.3˝D (142 mm L x 119 mm W x 33 mm D)
Wall-Mount Back Box Skirt Dimensions (BBS-2, BBSW-2)	5.9˝L x 5.0˝W x 2.2˝D (151 mm L x 128 mm W x 56 mm D)
Wall-Mount Trim Ring Dimensions (sold as a 5 pack) (TR-HS, TRW-HS)	5.7˝L x 4.8˝W x 0.35˝D (145 mm L x 122 mm W x 9 mm D)

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)

		8–17.5 Volts		16–33 Volts	
	Candela	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. Horn Current Draw (mA RMS)

		8–17.5 Volts		16–33 Volts	
Sound Pattern	dB	DC	FWR	DC	FWR
Temporal	High	57	55	69	75
Temporal	Medium	44	49	58	69
Temporal	Low	38	44	44	48
Non-temporal	High	57	56	69	75
Non-temporal	Medium	42	50	60	69
Non-temporal	Low	41	44	50	50
Coded	High	57	55	69	75
Coded	Medium	44	51	56	69
Coded	Low	40	46	52	50

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

	8–17.5 Volts		16–33 Volts						
DC Input	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)

	16–33 Volts					16–33 Volts			
DC Input	135	150	177	185	FWR Input	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 Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)

			8–17.5 Volts		16–33 Volts		24-Volt Nominal			
							Reverberant		Anechoic	
Switch Position	Sound Pattern	dB	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.

BOSCH
Invented for life

D371 Series Floor-mount Door Holders

- **Attractive design, sturdy cast construction with brass (B) or metallic powder-coat (C) finish**
- **24 VAC, 24 VDC, or 120 VAC**
- **12 AWG (2.3 mm) to 22 AWG (0.8 mm) terminals**
- **Holding force between 35 lb and 110 lb**
- **A variety of available extension rods allow mounting in difficult locations**
- **Floor-mounted model supplied with back box, mounting bracket, and hardware**

The D371 Series electromagnetic door holders are rugged die-cast devices for holding doors. These electromagnetic door holders allow control of doorways in alarm conditions. Typical applications are in stairways or other exit pathways where it is desirable to restrict airflow yet allow free emergency access.

Functions

Power and Holding Force

The D371 Series door holders accept power from 24 VAC, 24 VDC, or 120 VAC sources. Depending on how they are wired and the amount of current, they can supply from 35 lb to 110 lb of holding force.

Certifications and Approvals

Region	Certification	
USA	UL	SZNT: Releasing Devices, Ordinary Locations (UL864)
	CSFM	3550-1615: 164
Hong Kong	HKFSD	

Installation/Configuration Notes

Mounting Considerations

The D371B (brass) and D371C (metallic powder-coat) holders are floor-mounted units, complete with back box and bracket and all fasteners needed for standard installation.

Extension rods are available in lengths from 1 in. (2.5 cm) to 4 in. (10 cm) to allow installation in applications where the door does not swing to within 3 in. (7.5 cm) of the back box.

Wiring Considerations

Wire the D371B (brass) and D371C (metallic powder-coat) door holders through knockouts in the bottom or the sides of the back boxes. The D371 back box also has knockouts for conduit installation other than from the bottom. The terminals accept wires from 12 AWG (2.3 mm) to 22 AWG (0.8 mm).

Parts Included

Quant.	Component
1	Back box bracket
1	Door magnet
1	Catch plate
1	Nut plate
1	Mounting template
2	Drill bits
2	Black plastic caps
1	Hardware pack
1	Literature pack

Technical Specifications

Environmental Considerations

Relative Humidity:	Up to 95%, non-condensing
Temperature (operating):	+32°F to +120°F (0°C to +49°C)

Mechanical Properties

Dimensions

Catch Plate (diameter x depth)[1]:	2.25 in. x 2.25 in. (5.7 cm x 5.7 cm)
Electromagnet (H x W x D)[2]:	2.75 in. x 4.625 in. x 2 in. (7 cm x 11.7 cm x 5.1 cm)
Floor Bracket (H x W x D):	3.875 in. x 4.75 in. x 2.75 in. (9.8 cm x 12.1 cm x 7 cm)
D372 Back Box (H x W x D):	2.75 in. x 4.75 in. x 1.5 in. (7 cm x 12.1 cm x 3.8 cm)

[1] The diameter of the magnet plate is 1.75 in. (4.4 cm).

[2] The electromagnet component extends 0.875 in (2.2 cm) from the mounting surface when surface mounted. It extends 1.125 in. (2.9 cm) into the back box.

Power Requirements

Current Draw (24 V installations)	
24 VAC:	19 mA
24 VDC:	20 mA
Current Draw (120 V installations)	
Common and High Voltage Terminals:	20 mA
Common and Low Voltage Terminals:	100 mA
Voltage (supply):	24 VAC, 24 VDC, or 120 VAC

Ordering Information

D371B Floor-Mount Door Holder with Brass Finish Door holder with brass finish accepts power from 24 VAC, 24 VDC, or 120 VAC sources and, depending on wiring and current, can supply from 35 lb to 110 lb of holding force	**D371B**
D371C Floor-Mount Door Holder with Metallic Powder-coat Finish Door holder with metallic powder-coat finish accepts power from 24 VAC, 24 VDC, or 120 VAC sources and, depending on wiring and current, can supply from 35 lb to 110 lb of holding force	**D371C**
D373B Extension Rod (brass, 2.5 cm [1 in.]) 2.5 cm (1 in.) extension rod with brass finish; package of five	**D373B**
D373C Extension Rod (metallic powder-coat, 2.5 cm [1 in.]) 2.5 cm (1 in.) extension rod with metallic powder-coat finish; package of five	**D373C**
D374B Extension Rod (brass, 3.8 cm [1.5 in.]) 3.8 cm (1.5 in.) extension rod with brass finish; package of five	**D374B**
D374C Extension Rod (metallic powder-coat, 3.8 cm [1.5 in.]) 3.8 cm (1.5 in.) extension rod with metalliic powder-coat finish.; package of five	**D374C**
D375B Extension Rod (brass, 5.1 cm [2 in.]) 5.1 cm (2 in.) extension rod with brass finish; package of five	**D375B**
D375C Extension Rod (metallic powder-coat, 5.1 cm [2 in.]) 5.1 cm (2 in.) extension rod with metallic powder-coat finish; package of five	**D375C**
D376B Extension Rod (brass, 7.6 cm [3 in.]) 7.6 cm (3 in.) extension rod with brass finish; package of five	**D376B**
D376C Extension Rod (metallic powder-coat, 7.6 cm [3 in.]) 7.6 cm (3 in.) extension rod with metallic powder-coat finish; package of five	**D376C**
D377B Extension Rod (brass, 10.2 cm [4 in.]) 10.2 cm (4 in.) extension rod with brass finish; package of five	**D377B**
D377C Extension Rod (metallic powder-coat, 10.2 cm [4 in.]) 10.2 cm (4 in.) extension rod with metallic powder-coat finish; package of five	**D377C**
D378 Extension Rod Wrench Kit Wrench kit for installing extension rods and door holders	**D378**

Americas:
Bosch Security Systems, Inc.
130 Perinton Parkway
Fairport, New York, 14450, USA
Phone: +1 800 289 0096
Fax: +1 585 223 9180
security.sales@us.bosch.com
www.boschsecurity.us

Europe, Middle East, Africa:
Bosch Security Systems B.V.
P.O. Box 80002
5600 JB Eindhoven, The Netherlands
Phone: + 31 40 2577 284
Fax: +31 40 2577 330
emea.securitysystems@bosch.com
www.boschsecurity.com

Asia-Pacific: **Represented by**
Robert Bosch (SEA) Pte Ltd, Security Systems
11 Bishan Street 21
Singapore 573943
Phone: +65 6258 5511
Fax: +65 6571 2698
apr.securitysystems@bosch.com
www.boschsecurity.com

T2878262027 | Cur: en-US, V5, 4 Jul 2010

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

- 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.
- 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:
  - 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).

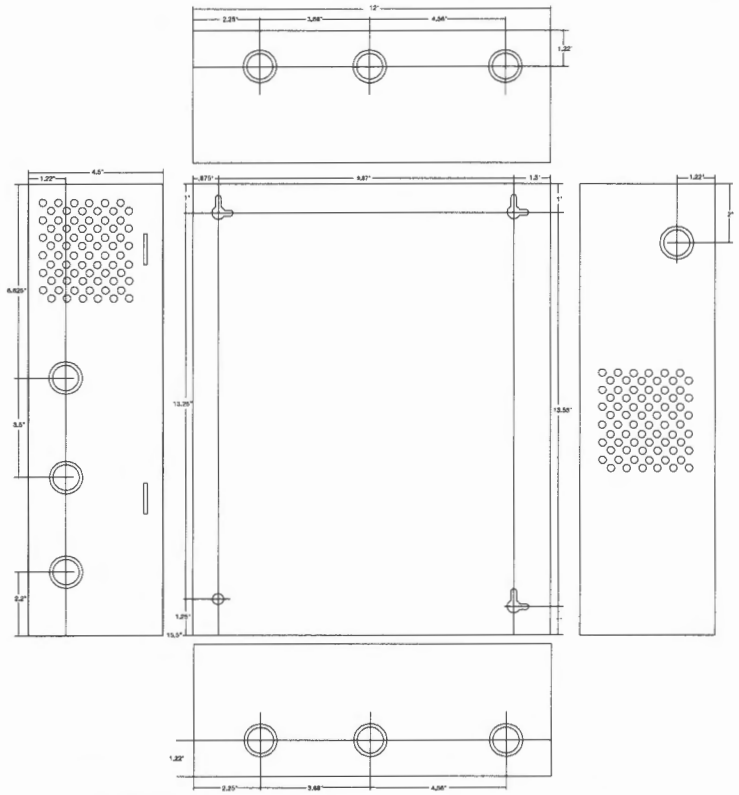
MEA Approved — NYC Department of Buildings Approved.

California State Fire Marshal Approved.

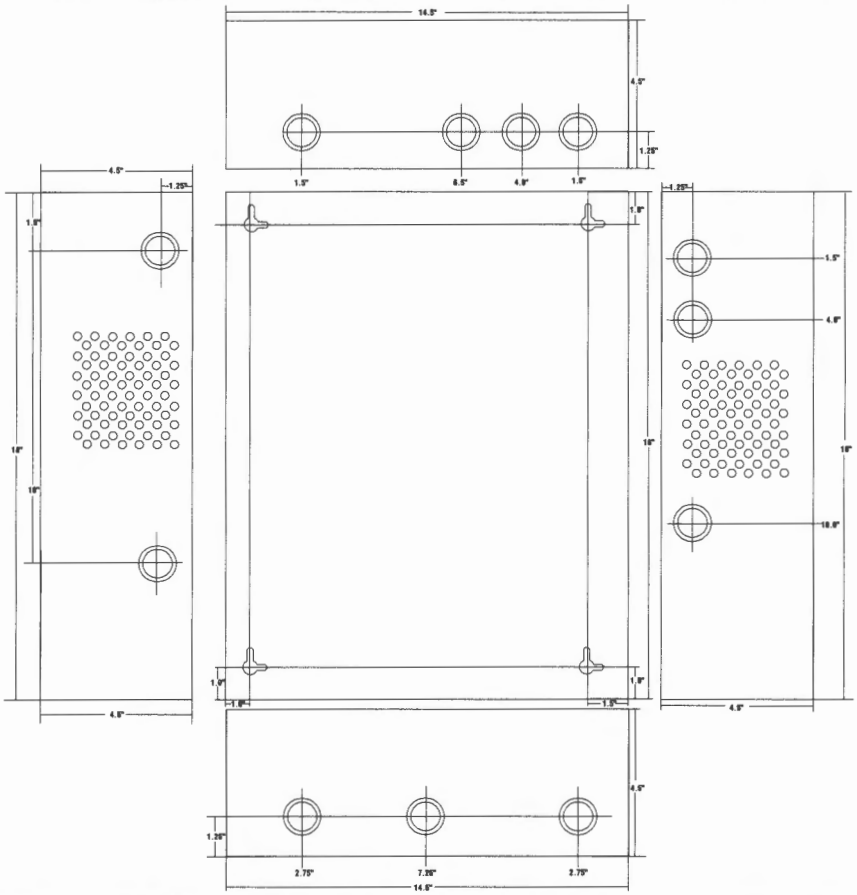
FM APPROVED — Factory Mutual Approved.

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



Honeywell

GENESIS SERIES

Power Limited Fire Alarm Cable
Part No. 4512

Description:	16 AWG 4/C SOL FPLP-CL2P
Compliance:	UL Standards 13 & 1424; NEC Articles 725 & 760

Construction:

Conductor	16 AWG Solid Bare Copper
No. of Conductors	4

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)	**HONEYWELL P/N 4512 4C16 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	29 pf/ft nom.
Impedance	66 Ohms nom.
DC Resistance	4.05 Ohms/M' at 20°C
Flame Rating	UL 910, NFPA 262, C(UL) FT6

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

NO EXCUSES!

FDB

Fire Alarm Control Unit (FACU) Records & Document Box

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.

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.

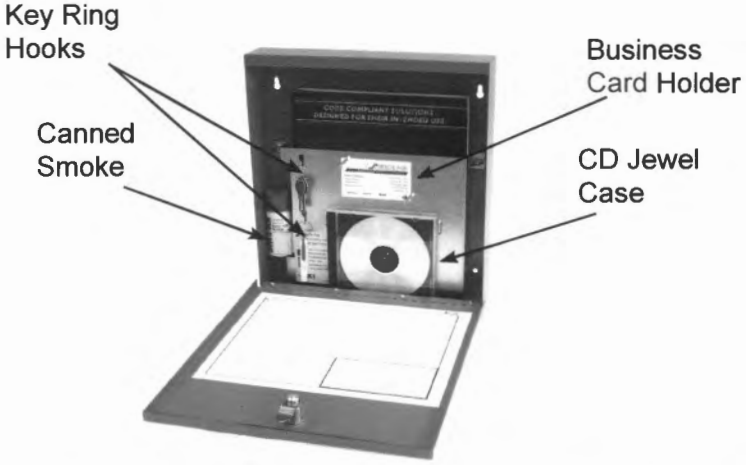
The galvanized sleeve also contains 2 hooks for key rings or thumb drives, a place for several business cards, a cutout for a 1.4 Oz. can of test gas and a slot where a standard CD "jewel" case can be stored.

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.

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



NEMA

NFPA

Made In U.S.A.

ISO 9001 REGISTERED COMPANY

ADA

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

No Excuses, Just Solutions!

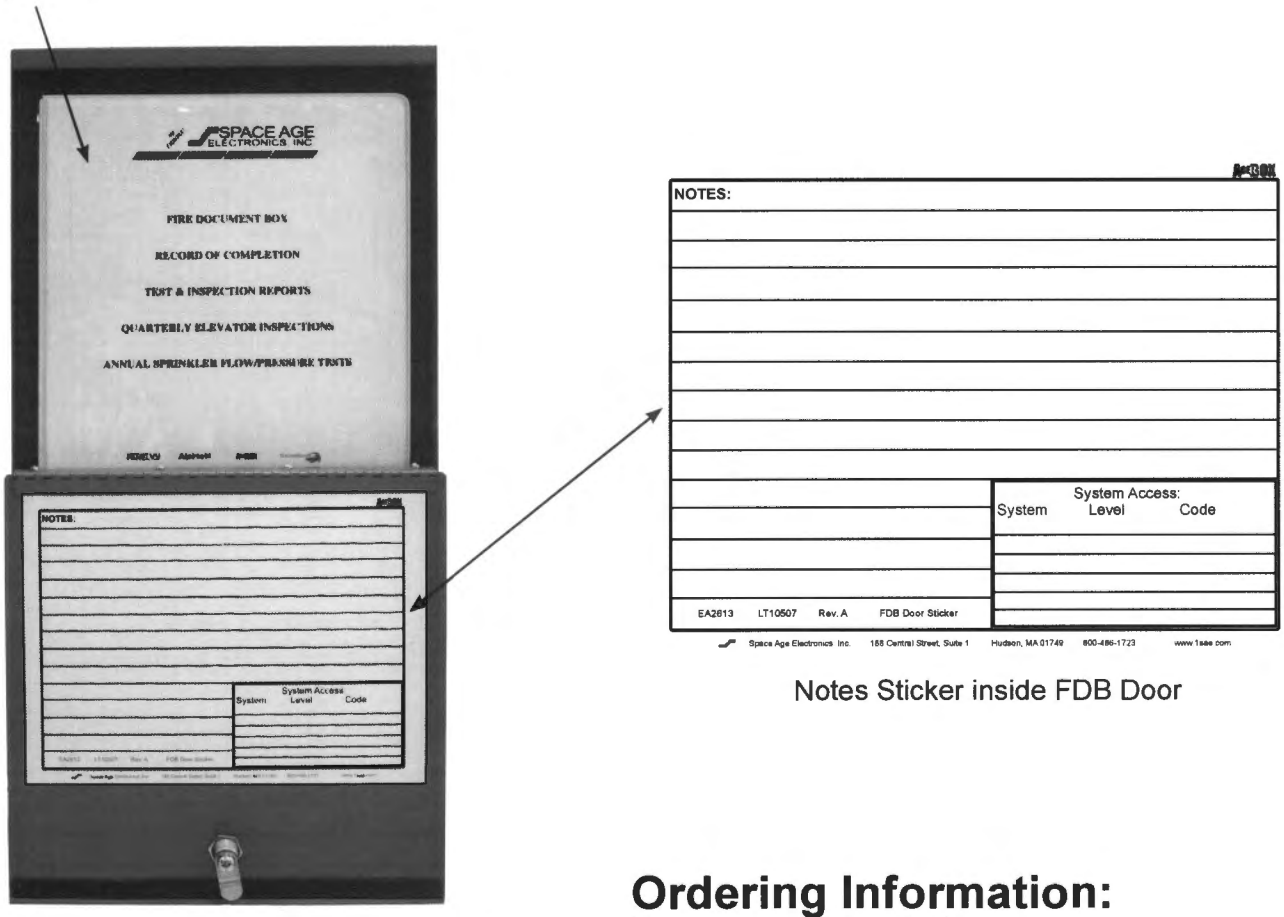
SPACE AGE ELECTRONICS, INC.

Specifications:

The Fire 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 a16 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

ACCESS 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!

178 Middle Street and 4 Canal Plaza Riser

178 Middle Street

NAC#1 Panel
Basement
14/2 FPLP

NAC #2 Panel
First Floor
14/2 FPLP

NAC #3 Panel
Second Floor
14/2 FPLP

Fifth Floor 178

Fourth Floor 178

Third Floor 178

Second Floor 178

First Floor 178

Basement 178

SLC
16/4 FPLP

14/2 FPLP

NAC#1 602
Third Floor

NAC#2 602
Fourth Floor

NAC#3 602
Fourth Floor

NAC#4 602
Fifth Floor

4 Canal Plaza

SLC
16/4 FPLP

Fourth Floor 4 Canal

Third Floor 4 Canal

Second Floor 4 Canal

First Floor 4 Canal

Basement 4 Canal

14/2 FPLP

First Floor 4 Canal

First Floor 4 Canal

Basement 4 Canal

14/2 FPLP

Fourth Floor 4 Canal

Third Floor 4 Canal

Second Floor 4 Canal

Protection 1 SECURITY SOLUTIONS	Robin Russell, Certified Engineering Technician, NICET Cert. # 110826		
-	10 Manuel Drive, Portland, Maine 04103 (207) 347-5327	10/1/12	-


EXCHANGE STREET
LEGEND
MIDDLE STREET
4 Canal
BASEMENT FLOOR PLAN
DOOR SCHEDULE
PLAN SUBMISSION NOTES
EXCHANGE STREET
UNIT #1-1
UNIT #1-2
UNIT #1-3
UNIT #1-4
MIDDLE STREET
4 Canal
FIRST FLOOR PLAN
E.S. COFFIN
ENGINEERING
SURVEYING
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E.S. COFFIN ENGINEERING & SURVEYING, INC.
432 Cony Road P.O. Box 4687 Augusta, Maine 04330
Ph. (207) 623-9475 Fax (207) 623-0016 Toll Free 1-800-244-9475
FIFTH FLOOR RENOVATION
BUCKSTAR, LLC
BASEMENT & FIRST
FLOOR PLANS
AUGUST 1, 2012
PORTLAND
CUMBERLAND
MAINE
2012 170
A-1

LEGEND

EXCHANGE STREET

MIDDLE STREET

UNIT #2-1

UNIT #3-1

UNIT #3-2

4 Canal

SECOND FLOOR PLAN

THIRD FLOOR PLAN

DOOR SCHEDULE

PLAN SUBMISSION NOTES

E.S. COFFIN ENGINEERING & SURVEYING, INC.
432 Cony Road P.O. Box 4607 Augusta, Maine 04330
Ph. (207) 623-4475 Fax (207) 623-8016 Toll Free 1-800-244-4475

SECOND & THIRD FLOOR PLANS

FIFTH FLOOR RENOVATION
BUCKSPAR LLC

AUGUST 2012

A-2

LEGEND

DOOR SCHEDULE

1				
2				
3				
4				

PLAN SUBMISSION NOTES

EXCHANGE STREET

MIDDLE STREET

UNIT #4-1
1,886 SQ. FT.

COMMON
920 SQ. FT.

UNIT #4-3
370 SQ. FT.

UNIT #4-2
2,208 SQ. FT.

I Canal

FOURTH FLOOR PLAN

1-HR. FIRE RATED WALL DETAIL
CL DES U419

EXCHANGE STREET

MIDDLE STREET

UNIT #5-3

OFFICE

UNIT #5-4

COMMON HALL

UNIT #5-2

OFFICE

RECEPTION

OFFICE

OFFICE

UNIT #5-1

OFFICE

OFFICE

OFFICE

OFFICE

I Canal

FIFTH FLOOR PLAN

ENGINEERING
E.S. COFFIN
SURVEYING
© 2008
E.S. COFFIN ENGINEERING & SURVEYING, INC.
437 Cony Road P.O. Box 4607 Augusta, Maine 04330
Ph. (207) 623-8475 Fax (207) 623-8010 Toll Free 1-800-244-8475

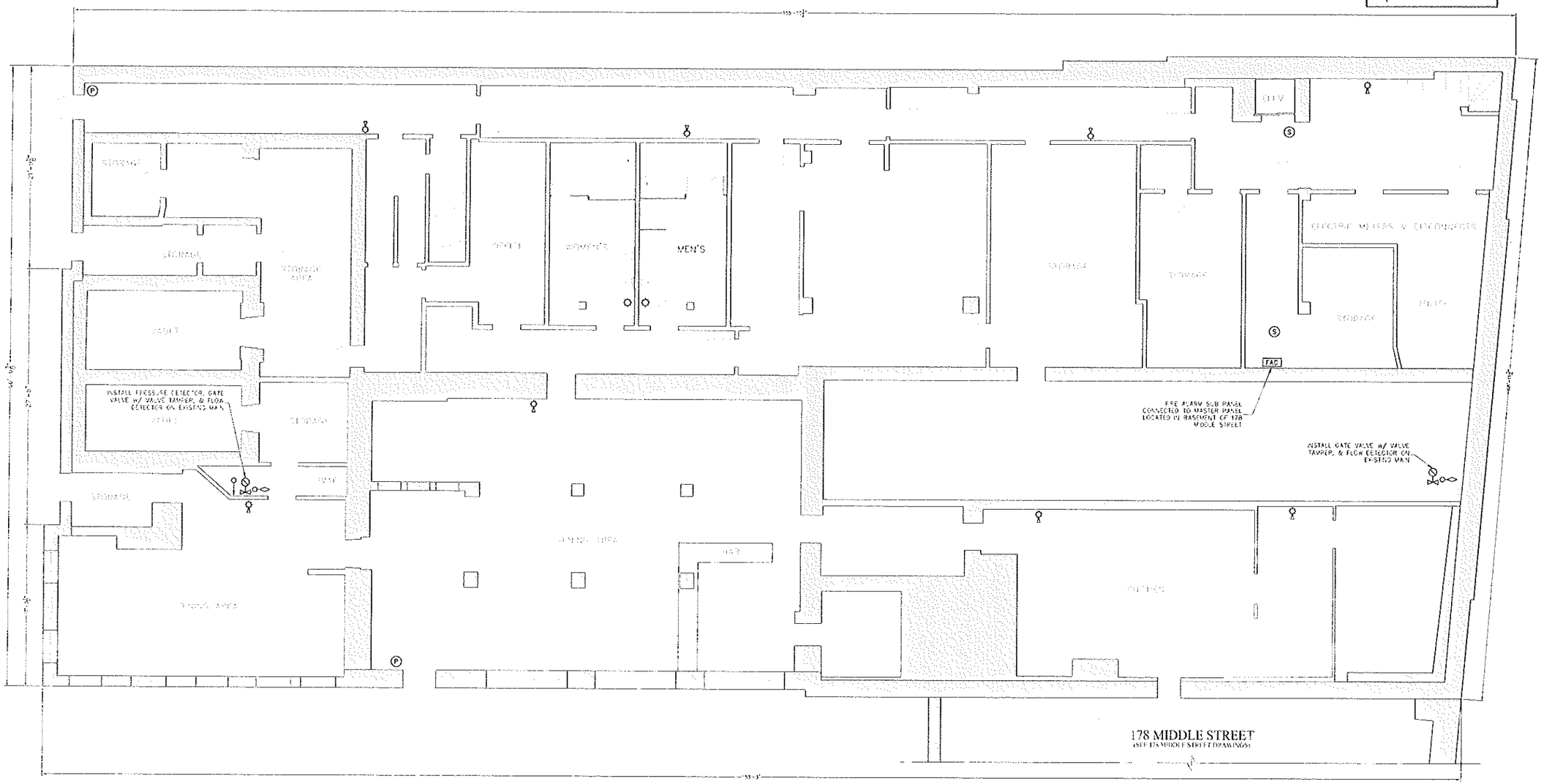
FOURTH & FIFTH
FLOOR PLANS

FIFTH FLOOR RENOVATION
BUCKSTAR, LLC

A-3

LEGEND

- EXISTING WALL
- PROPOSED WALL
- PROPOSED 1-HR FIRE RATED WALL
- EXISTING 1-HR FIRE RATED WALL
- EXIT SIGN
- EMERGENCY LIGHTING
- FIRE EXTINGUISHER
- STAIR SIGNAGE
- SMOKE DETECTOR
- HEAT DETECTOR
- HORN & STROBE LIGHT
- STROBE LIGHT ONLY
- FIRE ALARM PULL HANDLE
- FLOW DETECTOR
- GATE VALVE W/ VALVE TAMPER
- PRESSURE DETECTOR



BASEMENT PROPOSED FLOOR PLAN
SCALE: 3/16" = 1'-0"

STATE OF MAINE
BENJAMIN E. MURRAY
No. 10128
REGISTERED PROFESSIONAL ENGINEER

E.S. COFFIN ENGINEERING & SURVEYING, INC.
432 Corey Road P.O. Box 6607 Augusta, Maine 04330
Ph. (207) 623-4475 Fax (207) 623-4476 Toll Free 1-800-244-4475

NO.	REVISIONS	DATE

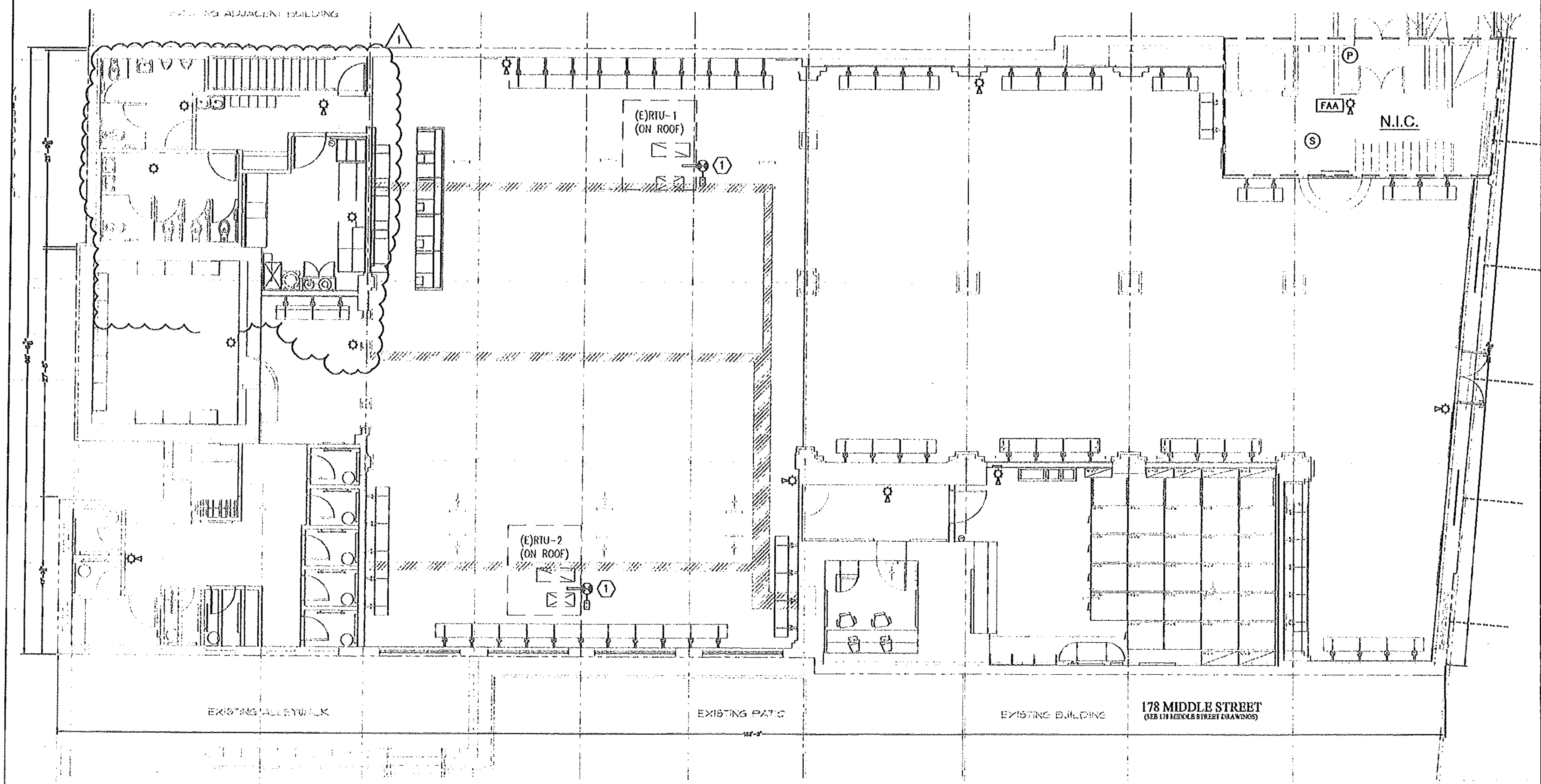
SHEET TITLE: BASEMENT PROPOSED FLOOR PLAN

SCALE: 3/16" = 1'-0"
DATE: SEPTEMBER 27, 2012
DRAWN BY: JPK
CHECKED BY: BEM

CLIENT & PROJECT: COMMERCIAL PROPERTIES BUILDING RENOVATIONS
LOCATION: 4 CANAL STREET
TOWN: PORTLAND
COUNTY: CUMBERLAND
STATE: MAINE

PROJ. NO. 2011-216

A-10



FIRST FLOOR PROPOSED FLOOR PLAN
SCALE 3/16" = 1'-0"

LEGEND

- EXISTING WALL
- PROPOSED WALL
- PROPOSED 1-HR. FIRE RATED WALL
- EXISTING 1-HR. FIRE RATED WALL
- EXIT SIGN
- EMERGENCY LIGHTING
- FIRE EXTINGUISHER
- STAIR SIGNAGE
- SMOKE DETECTOR
- HEAT DETECTOR
- HORN & STROBE LIGHT
- STROBE LIGHT ONLY
- FIRE ALARM PULL HANDLE
- FLOW DETECTOR
- GATE VALVE W/ VALVE TAMPER
- PRESSURE DETECTOR

STATE OF MAINE
BENJAMIN E. MURRAY
NO. 10128
LICENSED
PROFESSIONAL ENGINEER

E.S. COFFIN
ENGINEERING
SURVEYING
E.S. COFFIN ENGINEERING & SURVEYING, INC.

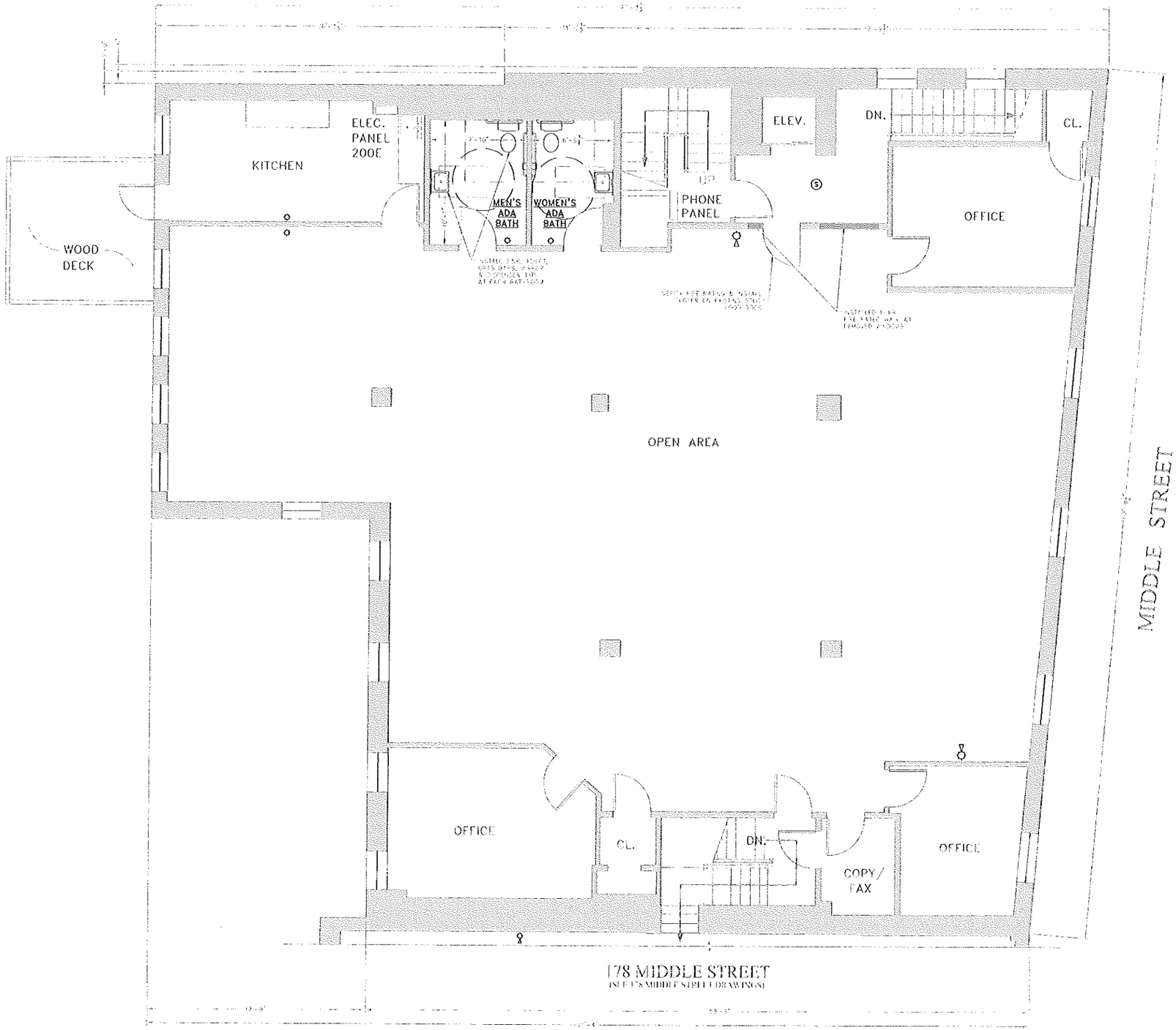
REVISIONS | NO. | DATE

SHEET TITLE: FIRST FLOOR PROPOSED PLAN
SCALE: 3/16" = 1'-0"
DATE: SEPTEMBER 21, 2012
DRAWN BY: JPK
CHECKED BY: BEM

CLIENT & PROJECT: COMMERCIAL PROPERTIES BUILDING RENOVATIONS
LOCATION: 4 CANAL STREET
TOWN: PORTLAND COUNTY: CUMBERLAND STATE: MAINE

PROJ. NO. 2011-216

A-11



SECOND FLOOR PROPOSED PLAN

LEGEND

E.S. COFFIN ENGINEERING & SURVEYING, INC.
432 Canco Road P.O. Box 4607 Augusta, Maine 04330
Ph. (207) 622-4475 Fax (207) 622-4976 Toll Free 1-800-244-4475

COMMERCIAL PROPERTIES
BUILDING RENOVATIONS

178 MIDDLE STREET
PORTLAND CUMBERLAND COUNTY, MAINE

SECOND FLOOR PROPOSED PLAN

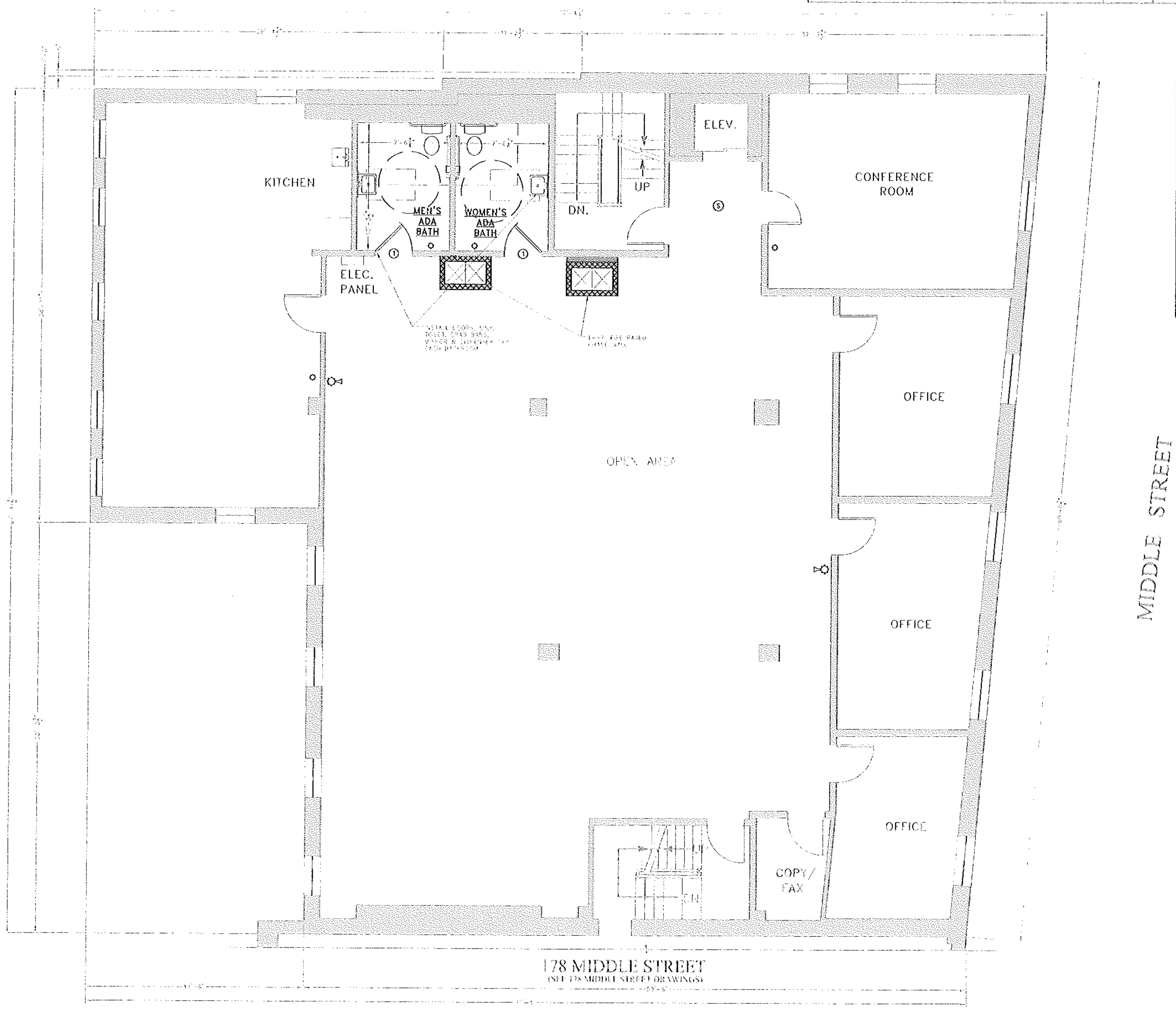
SCALE: 1/4" = 1'-0"
DATE: FEBRUARY 10, 2012
DRAWN BY: JPK
CHECKED BY: BENT

JOB NO. 2011.216

A-5

DOOR SCHEDULE

NO.					
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



THIRD FLOOR PROPOSED PLAN

LEGEND

E.S. COFFIN ENGINEERING & SURVEYING, INC.
432 Cony Road P.O. Box 4687 Augusta, Maine 04330

COMMERCIAL PROPERTIES BUILDING RENOVATIONS

4 CANAL STREET

PORTLAND CUMBERLAND MAINE

THIRD FLOOR PROPOSED PLAN

SCALE 1/4" = 1'-0"

DATE FEBRUARY 10, 2012

DRAWN BY JPK

CHECKED BY BGM

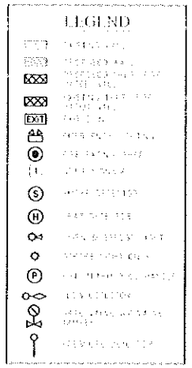
PROJ. NO. 2011 216

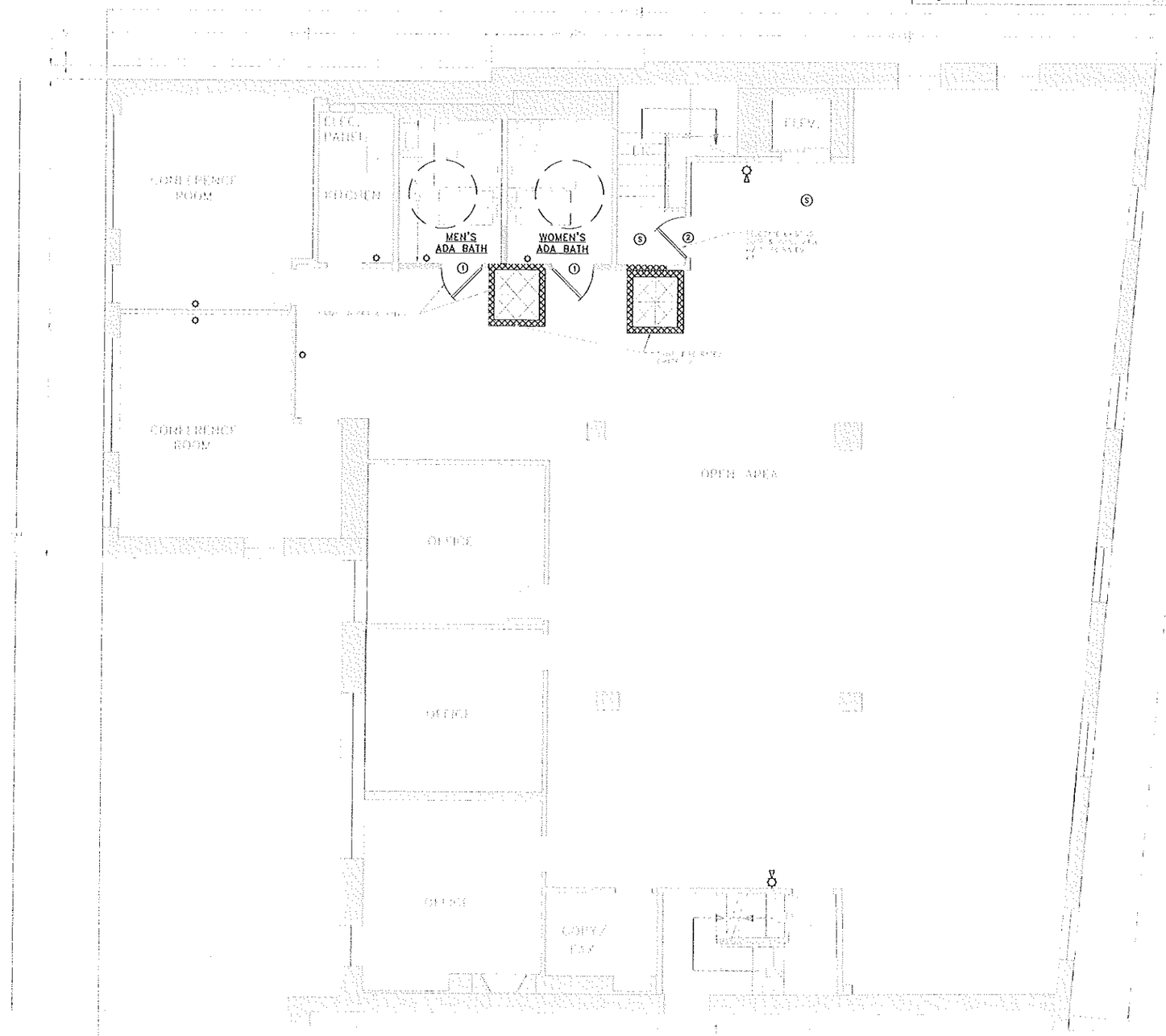
A-6

DOOR SCHEDULE

①				
②				

LEGEND





178 MIDDLE STREET
(SEE UNMIDDLE STREET DRAWINGS)

FOURTH FLOOR PROPOSED PLAN

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E.S. COFFIN
SURVEYING © 2008
E.S. COFFIN ENGINEERING & SURVEYING, INC.
432 Cony Road P.O. Box 3697 Augusta, Maine 04330
Ph. (207) 623-4525 Fax (207) 623-8016 Toll Free 1-800-244-4525

COMMERCIAL PROPERTIES
BUILDING RENOVATIONS

FOURTH FLOOR PROPOSED PLAN

PORTLAND, MAINE — FEBRUARY 10, 2012

Job No. 2011-216

A-7