



Application for Plan Review

Application # EMFW1907-0010

Date Received: 7-31-19

Received By: _____

Name of Project:

NEW BREED CHURCH

Physical Address of Project:

3928 US 401

FYQUAY VARIANA, NC 27526

Plans Submitted By:

JACK BAUER

Project Phone:

(919) 337-6051

Contact Person/Address:

JACK BAUER

SOUTHERN SECURITY GROUP, INC.

324 S. WILMINGTON ST #300

RALPHAH NC 27601

JBAUER@SSACOMPANY.COM

Contact Email:

Contact Phone:

(919) 337-6051

Contractor's Name/Info:

SOUTHERN SECURITY GROUP, INC

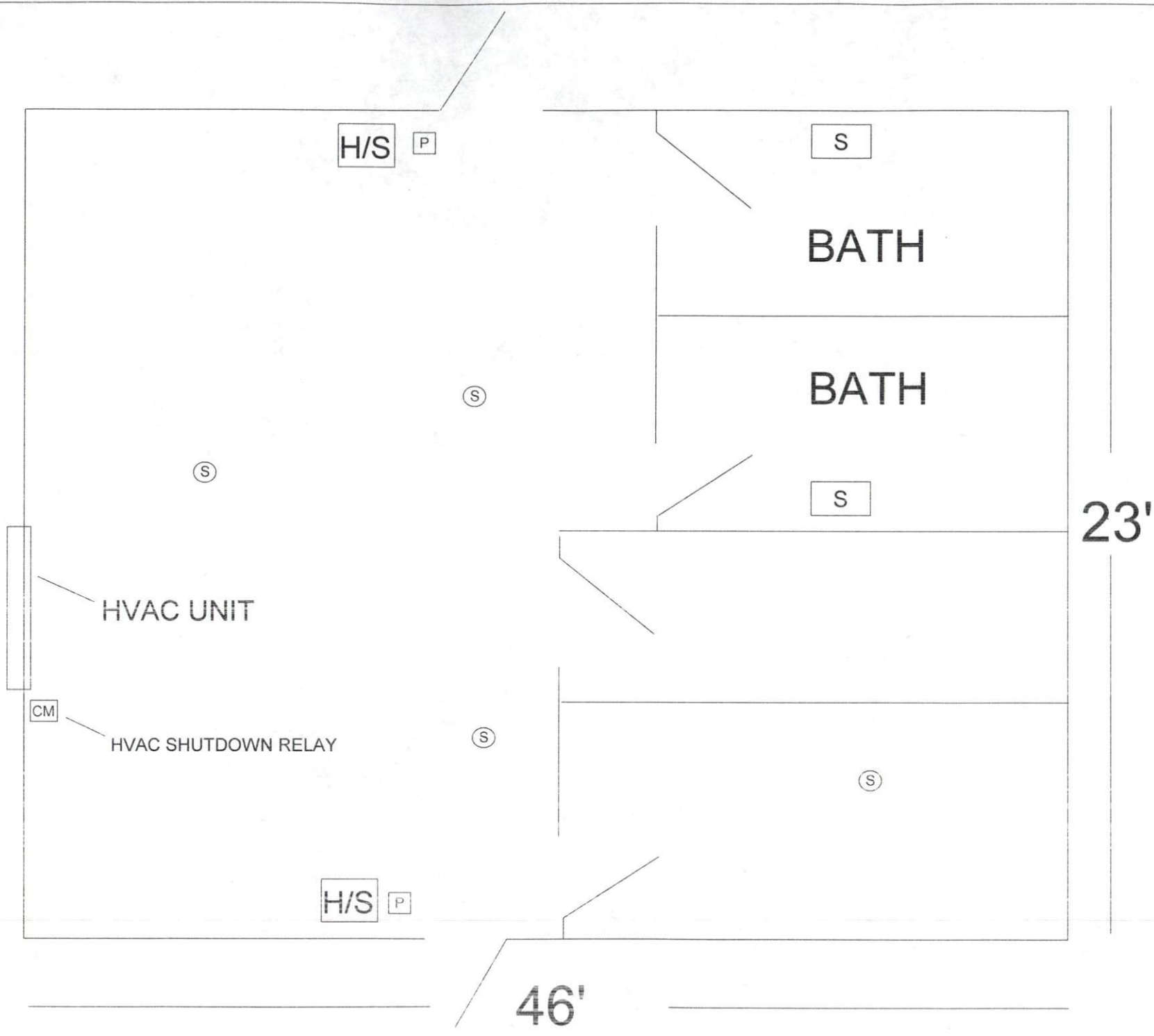
324 S. WILMINGTON ST. #300

RALPHAH NC 27601

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- Plans that are submitted will be reviewed as quickly as possible with an average time of review between 7-10 working days.
- Status checks may be conducted on plan reviews by visiting the website <http://htweb.harnett.org/Click2GovBP/Index.jsp> or by calling the Harnett County Central Permitting Office (910-893-7525, Option #2), or the Harnett County Fire Marshal's Office (910-893-7580).
- Approved plans must be picked up from the Central Permitting Office and all fees paid before any required inspections can be conducted.



- S SMOKE DETECTOR
- P MANUAL PULL STATION
- FACP FIRE ALARM
- CM CONTROL MODULE
- H/S HORN / STROBE
- S STROBE

 Southern Security Group, Inc.
 324 S. Wilmington Street, Suite 300
 Raleigh, NC 27601
 (888) 578-5727

NEW BREED CHURCH
 SCHOOL BUILDING
 3928 US 401
 FUQUAY VARINA NC 27526

Service Location	
Customer:	<u>NEW BREED</u>
Address 1:	<u>3829 US 401</u>
Address 2:	
Address 3:	
City:	<u>FUQUAY VARI</u> State: <u>NC</u> Zip: <u>27526</u>
Phone:	Fax:
Email:	
Attention	PO #:

Billing Address	
Customer:	<u>NEW BREED</u>
Address 1:	<u>3829 US 401</u>
Address 2:	
Address 3:	
City:	<u>FUQUAY VARINA</u> State: <u>NC</u> Zip: <u>27526</u>
Phone:	Fax:

Bill of Materials

<u>Quantity</u>	<u>Part Number</u>	<u>Description</u>
1	MS-5UD-3	Conventional Fire Alarm Control Panel
4	2100D	Two-Wire Low Profile Photoelectric Detector
2	BG-12	Dual Action Pull Station with Hex Lock
2	P2RL	L-Series, Red, Wall-Mountable, Clear Lens, 2-wire, Horn/Strobe
2	SRL	L-Series, Red, Wall-Mounted, Clear Lens, Strobe
2	BAT-1270	12 Volt, 7AH Battery

MS-5UD-3 Battery Calculation

Secondary Power Source Requirements

Device Type	Secondary Non-Alarm Current (amps)				Secondary Alarm Current (amps)					
	Qty		Current Draw	Total	Qty		Current Draw	Total		
1. System										
Main Circuit Board	1	x	0.110000	=	0.110000	1	x	0.214000	=	0.214000
4XTMF	0	x	0.005000	=		0	x	0.011000	=	
CAC-5X	0	x	0.001000	=		0	x	0.001000	=	
IPDACT-2	0	x	0.093000	=		0	x	0.136000	=	
IPDACT-2UD	0	x	0.098000	=		0	x	0.155000	=	
2. Annunciators										
ANN-80	0	x	0.015000	=		0	x	0.040000	=	
ANN-RLY	0	x	0.015000	=		0	x	0.075000	=	
ANN-I/O	0	x	0.035000	=		0	x	0.200000	=	
ANN-I/O LEDs	0	x	0.000000	=		0	x	0.010000	=	
ANN-S/PG	0	x	0.045000	=		0	x	0.045000	=	
ANN-(R)LED	0	x	0.028000	=		0	x	0.068000	=	
3. Conventional Detection										
Two-Wire Detector Heads	4	x	0.010000	=	0.040000					
Four-Wire Detector Heads	0	x	0.000000	=						
Number of IDC's Used Minus 1						0	x	0.040000	=	
4. Other Devices										
EOLR-1	0	x	0.020000	=		0	x	0.020000	=	
Miscellaneous Device 1	0	x	0.000000	=		0	x	0.000000	=	
Miscellaneous Device 2	0	x	0.000000	=		0	x	0.000000	=	
Miscellaneous Device 3	0	x	0.000000	=		0	x	0.000000	=	
Miscellaneous Device 4	0	x	0.000000	=		0	x	0.000000	=	
Miscellaneous Device 5	0	x	0.000000	=		0	x	0.000000	=	
5. Notification Appliances										
NAC 1						2	x	0.430000	=	0.860000
NAC 2						2	x	0.650000	=	1.300000
NAC 3						0	x	0.000000	=	
NAC 4						0	x	0.000000	=	
Current Draw from TB9 (nonalam)	0	x	0.000000	=		0	x	0.000000	=	
Total Standby Load					0.150000	Total Alarm Load				2.374000

MS-5UD-3 Battery Calculation

Calculation in Total Sheet

		Required Standby Time in Hours			
		24 Hours			
Standby Load Current	0.15000 Amps	x	24	=	3.600 AH
		Required Alarm Time in Minutes			
		5 Minutes			
Alarm Load Current (Amps)	2.37400 Amps	x	0.084	=	0.199 AH
Total Current Load					3.799 AH
Multiply by the Derating Factor			1.2	=	x 1.20
Total Ampere Hours Required					4.56 AH

Recommended Batteries:	BAT-1270 - 7AH Batteries
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Battery Check

The batteries can be charged by the MS-5UD-3 Charger.
The batteries can be housed in the MS-5UD-3 Cabinet.

Current Draw Check

NAC#1 current is within the limitations of the circuit.
NAC#2 current is within the limitations of the circuit.
NAC#3 current is within the limitations of the circuit.
NAC#4 current is within the limitations of the circuit.
MS-5UD-3 Control Panel:
The output current is within the panel's limitations.

MS-5UD(E)/MS-10UD(E) Series**Five Zone Fire Alarm Control Panel
Ten Zone Fire Alarm Control Panel**

Fire-LITE Alarms
by Honeywell

Control/Communicators

General

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

Each of these FACP is compatible with System Sensor's microprocessor-based i³ series detectors. These conventional smoke detectors can transmit a maintenance trouble signal to the FACP indicating the need for cleaning and a supervisory "freeze" signal when the ambient temperature falls below the detector rating. Additionally, both the MS-5UD-3 and MS-10UD-7 are compatible with conventional input devices such as two- and four-wire smoke detectors, pull stations, waterflow devices, tamper switches, and other normally-open contact devices. Refer to the *Fire-Lite Device Compatibility Document* for a complete listing of compatible devices.

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

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

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

NOTE: The *MS-5UD-3E* and *MS-10UD-7E* offers the same features as the *MS-5UD-3* and *MS-10UD-7* but allow connection to 240 VAC. Unless otherwise specified, the information in this data sheet applies to both the 120 VAC and the 240 VAC versions of these panels.

NOTE: For ULC-listed models, see DF-60440.

Features

- Listed to UL Standard 864, 9th edition.
- Built-in DACT (Digital Alarm Communicator/Transmitter).
- Style B (Class B) IDC (Initiating Device Circuit)
 - MS-5UD-3 - five IDCs.
 - MS-10UD-7 - ten IDCs.
- Style Y (Class B) NAC (Notification Appliance Circuit) - special application power
 - MS-5UD-3 - four NACs.
 - MS-10UD-7 - four NACs.
- Notification Appliances may be programmed as
 - Silence Inhibit.
 - Auto-Silence.



- Strobe Synchronization for System Sensor, Wheelock, Gentex, Faraday, or Amseco devices.
- Selective Silence (horn-strobe mute).
- Temporal or Steady Signal.
- Silenceable or Nonsilenceable.
- Optional CAC-5X Style Z (Class A) Converter Module for NACs and IDCs (2 required for MS-10UD-7).
- Form-C Relays for Alarm, Trouble and Supervisory - Contact Ratings 2.0 A @ 30 VDC or 0.5 A @ 30 VAC (resistive).
- 3.0 A total system current for MS-5UD-3.
- 7.0 A total system current for MS-10UD-7.
- Optional Dress Panel DP-51050
- Optional Trim Ring TR-CE for semi-flush mounting.
- 24 volt operation.
- Low AC voltage sense.
- Alarm Verification.
- PAS (Positive Alarm Sequence).
- Automatic battery trickle charger.
- Up to eight ANN-BUS annunciators:
 - Optional 8 zone Relay Module ANN-RLY.
 - Optional LED Annunciator Module ANN-LED,
 - Optional Remote Annunciator ANN-80.
 - Optional Remote Printer Gateway ANN-S/PG.
 - Optional LED Annunciator Driver ANN-I/O.
- Optional 4XTMF module (conventional reverse polarity/city box transmitter).

PROGRAMMING AND SOFTWARE:

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

USER INTERFACE:

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

- SYSTEM RESET (lamp test)
- DRILL

Controls and Indicators

LED INDICATORS

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

CONTROL BUTTONS

- ACKNOWLEDGE
- ALARM SILENCE

Terminal Blocks

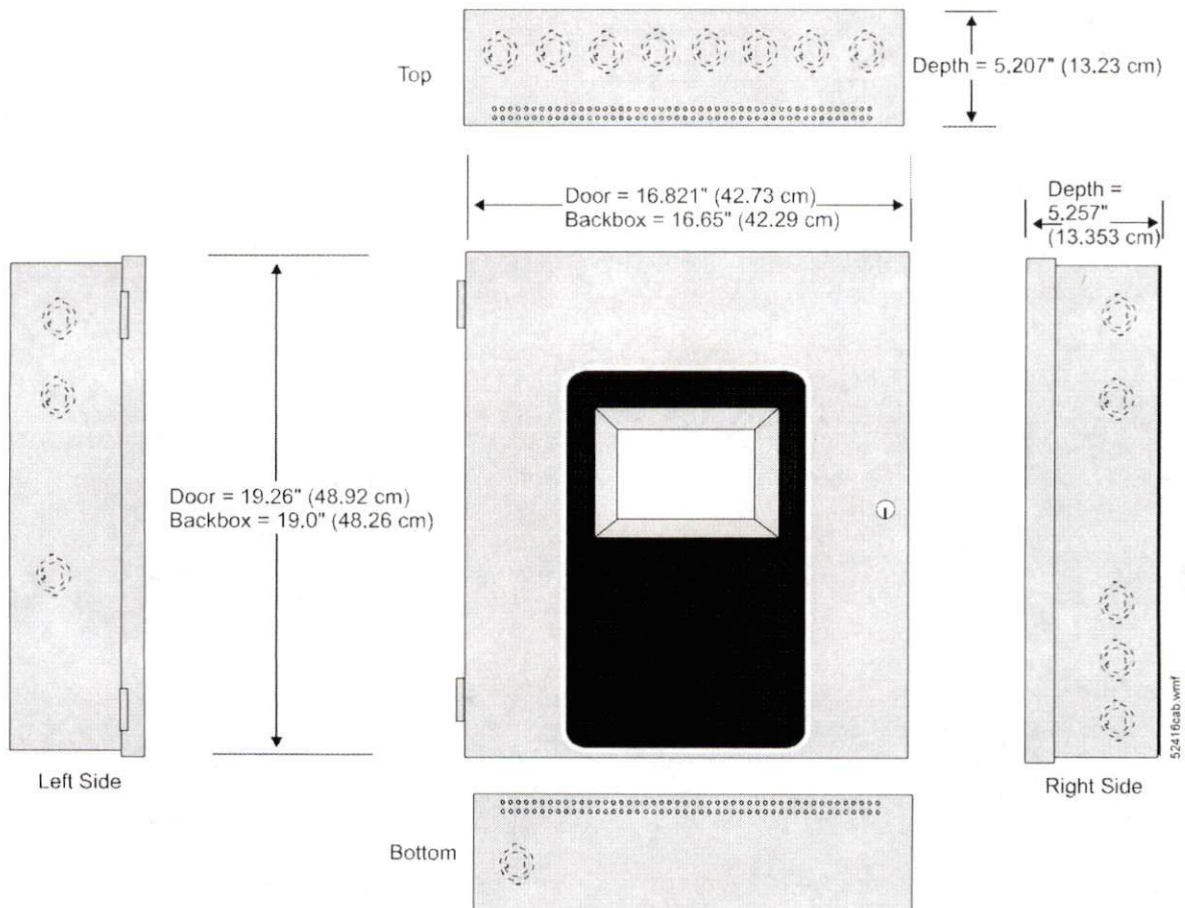
AC Power – TB1:

- MS-5UD-3 (FLPS-3 Power Supply): 120 VAC, 50/60 HZ, 1.00 A.
- MS-5UD-3E (FLPS-3 Power Supply): 240 VAC, 50 HZ, 0.54 A.
- MS-10UD-7 (FLPS-7 Power Supply): 120 VAC, 50/60 HZ, 3.80 A.
- MS-10UD-7E (FLPS-7 Power Supply): 240 VAC, 50/60 HZ, 2.20 A.

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

Battery (sealed lead acid only) – J12:

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



Cabinet Measurements

- Minimum Battery Size: 7 AH.

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

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

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

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

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

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

Form C Relays – TB8:

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

Special Application Resettable Power – TB9:

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

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

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

Product Line Information

MS-5UD-3: Five-zone, 24-volt Fire Alarm Control Panel (includes backbox, FLPS-3 power supply, technical manual, and a frame & post operating instruction sheet). 120 VAC operation.

MS-5UD-3E: Same as MS-5UD-3 except for 240 VAC operation.

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

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

IPDACT, IPDACT-2/2UD Internet Monitoring Module: Mounts in bottom of enclosure with optional mounting kit (PN IPBRKT). Connects to primary and secondary DACT telephone output ports for internet communications over customer provided ethernet internet connection. Requires compatible Teldat Visoralarm Central Station Receiver. Can use DHCP or static IP. (See data sheet DF-60407 for more information.)

IPBRKT: Mounting kit for IPDACT in common enclosure.

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

OPTIONAL MODULES

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

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

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

COMPATIBLE ANNUNCIATORS

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

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

ANN-RLED: LED Annunciator with three alarm (red) indicators for up to 30 input zones or addressable points. (Red. For white, order **ANN-LED-W**.) (See DF-60241).

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

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

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

ACCESSORIES

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

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

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

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

PRN-6F: UL listed printer.

SYSTEM SPECIFICATIONS

System Capacity

- Annunciators 8

Electrical Specifications

- **MS-5UD-3 (FLPS-3 Power Supply):** 120 VAC, 60 HZ, 1.0 A
- **MS-10UD-7 (FLPS-7 Power Supply):** 120 VAC, 60 HZ, 3.90 A
- **MS-5UD-3E (FLPS-3 Power Supply):** 240 VAC, 50 HZ, 0.54 A.
- **MS-10UD-7E (FLPS-7 Power Supply):** 240 VAC, 50 HZ, 2.20 A.
- **Wire size:** minimum 14 AWG (2.0 mm²) with 600 V insulation, supervised, nonpower-limited

Cabinet Specifications

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

Shipping Specifications

Dimensions:

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

Weight: 27 lb (12.20 kg)

Temperature and Humidity Ranges

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

Agency Listings and Approvals

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

- **UL Listed:** File S624
- **FM Approved**
- **CSFM:** 7165-0075:0214
- **MEA:** MEA: 333-07-E

NOTE: For ULC-listed models, see DF-60440.

NFPA Standards

The MS-5UD-3(E) and MS-10UD-7(E) complies with the following NFPA 72 Fire Alarm Systems requirements:

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

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



Made in the U.S.A.

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

BG-12 Series

Manual Fire Alarm Pull Stations

 **FIRE·LITE ALARMS**
by Honeywell

Conventional Initiating Devices

General

The Fire-Lite **BG-12 Series** is a cost-effective, feature-packed series of non-coded manual fire alarm pull stations. It was designed to meet multiple applications with the installer and end-user in mind. The BG-12 Series features a variety of models including single- and dual-action versions.

The BG-12 Series provides Fire-Lite Alarm Control Panels (FACPs), as well as other manufacturers' controls, with a manual alarm initiating input signal. Its innovative design, durable construction, and multiple mounting options make the BG-12 Series simple to install, maintain, and operate.

Features

- Aesthetically pleasing, highly visible design and color.
- Attractive contoured shape and light textured finish.
- Meets ADA 5 lb. maximum pull-force.
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Easily operated (single- or dual-action), yet designed to prevent false alarms when bumped, shaken, or jarred.
- PUSH IN/PULL DOWN handle latches in the down position to clearly indicate the station has been operated.
- The word "ACTIVATED" appears on top of the handle in bright yellow, further indicating operation of the station.
- Operation handle features white arrows showing basic operation direction for non-English-speaking persons.
- Braille text included on finger-hold area of operation handle and across top of handle.
- Multiple hex- and key-lock models available.
- U.S. patented hex-lock needs only a quarter-turn to lock/unlock.
- Station can be opened for inspection and maintenance without initiating an alarm.
- Product ID label viewable by simply opening the cover; label is made of a durable long-life material.
- The words "NORMAL" and "ACTIVATED" are molded into the plastic adjacent to the alarm switch (located inside).
- Four-position terminal strip molded into backplate.
- Terminal strip includes Phillips combination-head captive 8/32 screws for easy connection to Initiating Device Circuit (IDC).
- Terminal screws backed-out at factory and shipped ready to accept field wiring (up to 12 AWG/3.1 mm²).
- Terminal numbers are molded into the backplate, eliminating the need for labels.
- Switch contacts are normally open.
- Can be surface-mounted (with **SB-10** or **SB-I/O**) or semi-flush mounted. Semi-flush mount to a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box.
- Backplate is large enough to overlap a single-gang backbox cutout by 1/2" (1.27 cm).
- Optional trim ring (**BG12TR**).
- Spanish versions (*FUEGO*) available (**BG-12LSP**, **BG-12LPSP**).
- Designed to replace the Fire-Lite legacy **BG-10** Series.
- Models packaged in attractive, clear plastic (PVC), clam-shell-style, Point-of-Purchase packages. Packaging includes a cutaway dust/paint cover in shape of pull station.



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Construction

- Cover, backplate and operation handle are all molded of durable polycarbonate material.
- Cover features white lettering and trim.
- Red color matches System Sensor's popular SpectraAlert® Advance horn/strobe series.

Operation

The BG-12 manual pull stations provide a textured finger-hold area that includes Braille text. In addition to PUSH IN and PULL DOWN text, there are arrows indicating how to operate the station, provided for non-English-speaking people.

Pushing in and then pulling down on the handle activates the normally-open alarm switch. Once latched in the down position, the word "ACTIVATED" appears at the top in bright yellow, with a portion of the handle protruding at the bottom as a visible flag. Resetting the station is simple: insert the key, twist one quarter-turn, then open the station's front cover, causing the spring-loaded operation handle to return to its original position. The alarm switch can then be reset to its normal (non-alarm) position manually (by hand) or by closing the station's front cover, which automatically resets the switch.

Specifications

PHYSICAL SPECIFICATIONS:

	pull station	SB-I/O	SB-10
Height	5.5 inches (13.97 cm)	5.601 inches (14.23 cm)	5.5 inches (13.97 cm)
Width	4.121 inches (10.47 cm)	4.222 inches (10.72 cm)	4.121 inches (10.47 cm)
Depth	1.39 inches (3.53 cm)	1.439 inches (3.66 cm)	1.375 inches (3.49 cm)

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ELECTRICAL SPECIFICATIONS:

Switch contact ratings: gold-plated; rating 0.25 A @ 30 VAC or VDC.

ENGINEERING/ARCHITECTURAL SPECIFICATIONS

Manual Fire Alarm Stations shall be non-code, with a key- or hex-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key or hex. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red colored LEXAN (or polycarbonate equivalent) with clearly visible operating instructions provided on the cover. The word **FIRE** shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger. Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box, and shall be installed within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

NOTE: *The words "FIRE/FUEGO" on the BG-12LSP shall appear on the front of the station in white letters, approximately 3/4" (1.905 cm) high.



Agency Listings and Approvals

The listings and approvals below apply to the BG-12 Series pull stations. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- C(UL)US: S711
- FM Approved
- CSFM: 7150-0075:184
- MEA: 67-02-E
- Patented: U.S. Patent No. D428,351; 6,380,846; 6,314,772; 6,632,108.

Product Line Information

BG-12S: Single-action pull station with pigtail connections, hex lock.

BG-12SL: Same as BG-12 with key lock.

BG-12: Dual-action pull station with SPST N/O switch, screw terminal connections, **hex lock**.

BG-12L: Same as BG-12 with key lock.

BG-12LSP: Same as BG-12L with English/Spanish (*FIRE/FUEGO*) labeling.

BG-12LOB: Same as BG-12L with "outdoor use" listing. Includes outdoor listed backbox, and sealing gasket.

BG-12LO: Same as BG-12L with "outdoor use" listing. Does not include backbox.

BG-12LA: Same as BG-12L with auxiliary contacts.

BG-12LPS: Dual-action pull station with pre-signal option.

BG-12LSPS: Same as BG-12LPS with English/Spanish (*FIRE/FUEGO*) labeling.

SB-10: Surface-mount backbox, metal.

SB-I/O: Surface-mount backbox, plastic. (Included with BG-12LOB.)

BG12TR: Optional trim ring for semi-flush mounting.

17003: Keys, set of two. (Included with key-lock pull stations.)

17007: Hex lock, 9/64". (Included with hex-lock pull stations.)

NOTE: For addressable BG-12LX models, see data sheet DF-52013.

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



August 3, 1998

F-495

100 Series™

Low-Profile Direct-Wire Conventional Smoke Detectors

Section: Conventional Initiating Devices

GENERAL

System Sensor 100 Series low-profile detectors use state-of-the-art sensing chambers to meet all applicable UL performance criteria. The backs of the smoke detectors are sealed against back pressure, air flow, and dirt. A fine mesh screen also protects the chamber against the entry of insects. These detectors are intended for open area protection and for use with UL-listed control panels.

Photoelectric/Thermal — The unique design of the optical sensing chamber in 100 Series photoelectric smoke detectors can sense smoke particles from a wide range of combustion sources. These detectors minimize nuisance alarms by using a custom integrated circuit for signal processing.

FEATURES

- Smart-Check™ self-diagnostic maintenance feature to satisfy NFPA 72 sensitivity testing requirements.
- Larger plug-in terminal block with captured SEMS screws decreases wiring and installation time.
- Removable insect screen protects sensor from insects and airborne dust.
- Includes auxiliary Form-C relay ("R" suffix).
- Built-in test switch.
- Visual alarm, power, and maintenance indicator.
- Refined insect screen for a tight seal; simplified, removable for cleaning.
- Thermal models available.
- Ceiling white color.
- 12/24 VDC operation.
- Built-in sounder and temporal tone.
- Three-year warranty.

System Sensor 100 Series low-profile, direct-wire detectors pack superb performance and reliability into a small package. Their sleek, 1.7" (43 mm) profile is the lowest in the industry, and the advanced circuitry provides superior false-alarm immunity, while reducing maintenance.

Other key features include:

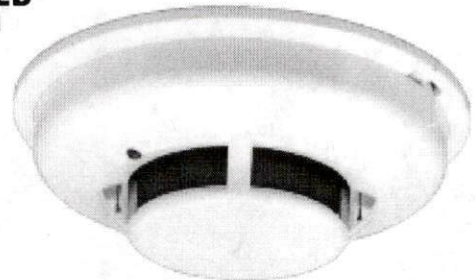
- Low current draw.
- Stable performance in high air velocities.
- Built-in tamper-resistant base design.



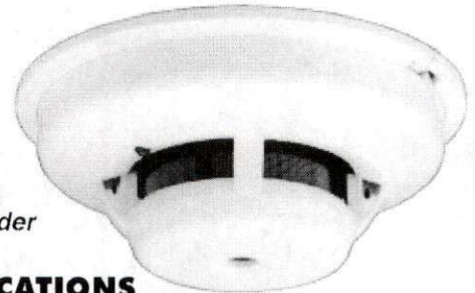
California
State Fire
Marshal
7272-1209:159
(2100D, 2100TD)



2112/24T



100 Series
with Sounder



SPECIFICATIONS

- **Operating voltage:** 12 or 24 VDC (nominal).
- **Contact rating:** 1 Form-C, 1.0 A @ 30 VDC.
- **Standby current:** 50 µA maximum average.
- **Alarm current:** *2-wire models:* 100 mA maximum limited by panel. *4-wire models:* 12 VDC = 35 mA maximum; 24 VDC = 45 mA maximum (**2112/24AITR:** 60 mA maximum and 70 mA maximum respectively).
- **Temperature range:** 32°F to 120°F (0°C to 50°C). *For 2100TD, 2112/24TR models:* 32°F to 100°F (0°C to 39°C).
- **Dimensions:** 5.5" (140 mm) diameter. Height 1.7" (43 mm) including adapter bracket.
- **Shipping weight (approximate):** 5.3 oz. (150 g).
- **Humidity range:** 10% - 93% RH, noncondensing.
- **Smoke detector spacing:** On smooth ceilings (as defined in NFPA 72), spacing of 30 feet (900 sq.ft.) may be used as a guideline. Other spacing may be used depending on ceiling height, high air movements, and other conditions or response requirements. Refer to NFPA 72 and local authority having jurisdiction.
- **Air velocity:** 0 to 3,000 ft./min. (914.4 m/min.) maximum.

100 Series™ and Smart-Check™ are trademarks of System Sensor, a division of Pittway Corporation.

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WEB: www.firelite.com

ISO 9001
CERTIFIED
ENGINEERING & MANUFACTURING

PRODUCT LINE INFORMATION

2100D – Low-profile photoelectric smoke detector, two-wire, 12/24 VDC.

2100TD – Low-profile photoelectric with 135°F (57°C) thermal, two-wire, 12/24 VDC.

2100TR – Low-profile photoelectric with 135°F (57°C) thermal, two-wire, 12/24 VDC, auxiliary Form-C relay.

2100AT – Low-profile photoelectric with sounder and 135°F (57°C) thermal, two-wire, 12/24 VDC.

2112/24R – Low-profile photoelectric smoke detector, four-wire, 12/24 VDC, auxiliary Form-C relay.

2112/24TR – Low-profile photoelectric with 135°F (57°C) thermal, four-wire, 12/24 VDC, auxiliary Form-C relay.

2112/24ATR – Low-profile photoelectric with sounder and 135°F (57°C) thermal, four-wire, 12/24 VDC, auxiliary Form-C relay.

2112/24AITR – Low-profile photoelectric with sounder and isolated 135°F (57°C) thermal, four-wire, 12/24 VDC, auxiliary Form-C relay.

A77-716B – EOL power supervision relay module for 12/24 VDC smoke detectors.

MOD400R – Sensitivity test tool for 100 Series smoke detectors.

RR1 – Polarity-reversal relay module for 2-wire or 4-wire sounder models, activated by panel alarm output.

RA400Z – Remote annunciator, 7 mA, 3.1 - 32 VDC.

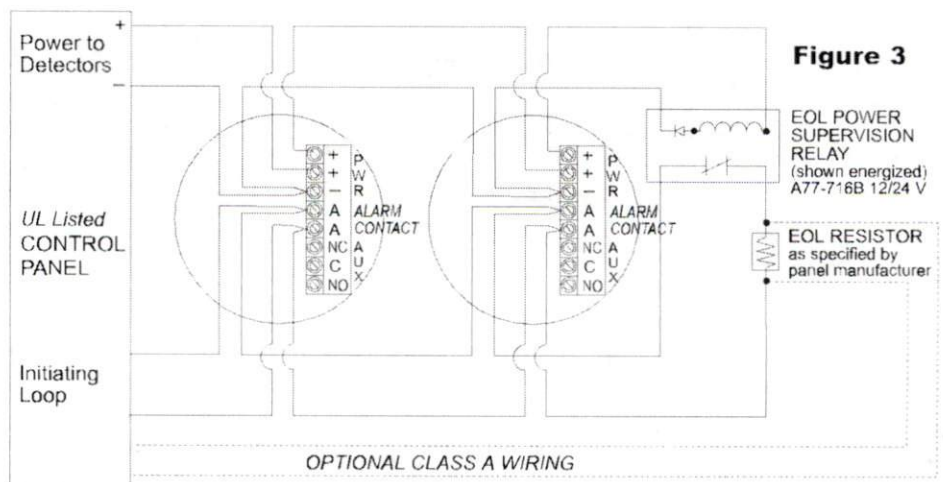
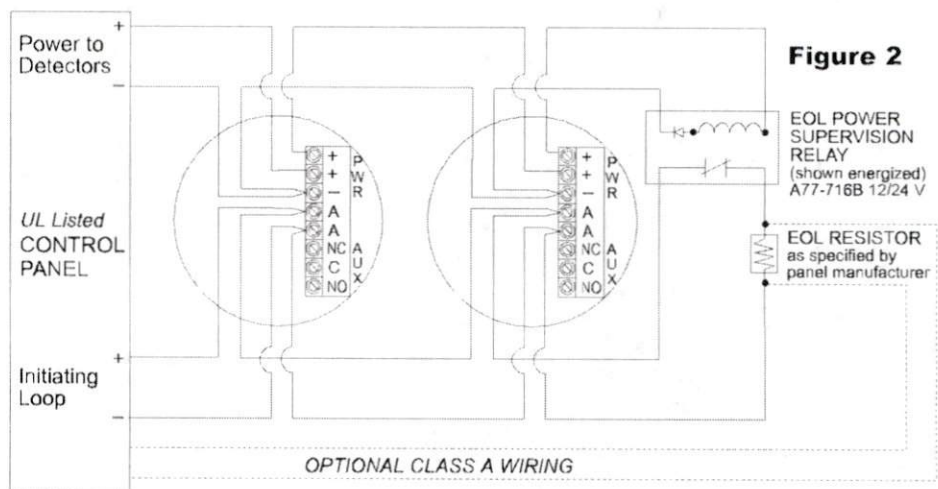
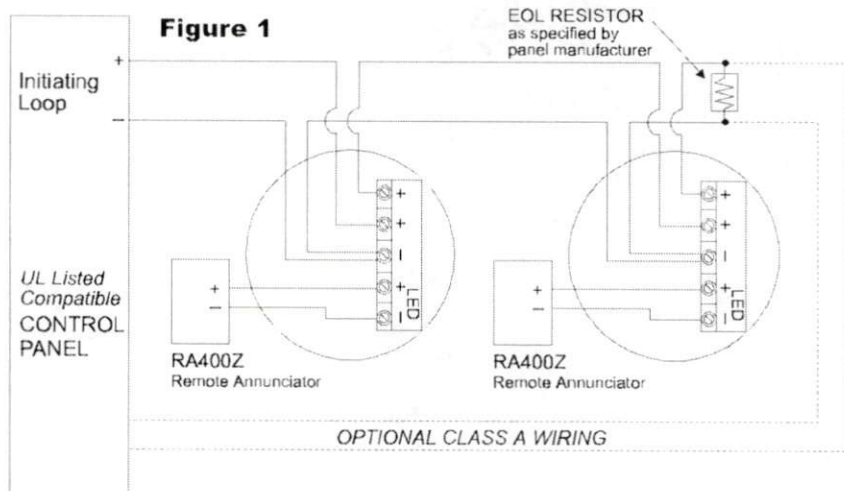
WIRING DIAGRAMS

(TOP TO BOTTOM)

Figure 1:
2100D, 2100TD.

Figure 2:
2112/24R, 2112/24TR.

Figure 3: 2112/24ATR,
2112/24AITR.





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

System Sensor L-Series audible visible notification products are rich with features guaranteed to cut installation times and maximize profits with lower current draw and modern aesthetics.

Features

- Updated Modern Aesthetics
- Small profile devices for Horns and Horn Strobes
- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Automatic selection of 12- or 24-volt operation at 15 and 30 candela
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185
- Horn rated at 88+ dBA at 16 volts
- Rotary switch for horn tone and two volume selections
- Mounting plate for all standard and all compact wall units
- Mounting plate shorting spring checks wiring continuity before device installation
- Electrically Compatible with legacy SpectrAlert and SpectAlert Advance devices
- Compatible with MDL3 sync module
- Listed for wall mounting only

Agency Listings

SIGNALING



55512
56011



FM approved except
for ALERT models
3057263, 3057072



7125, 10510904
7130, 10510901



The System Sensor L-Series offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draws and modern aesthetics. With white and red plastic housings, standard and compact devices, and plain, FIRE, and FUEGO-printed devices, System Sensor L-Series can meet virtually any application requirement.

The L-Series line of 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, the L-Series utilizes a universal mounting plate for all models 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 two volume selections.

L-Series Specifications

Architect/Engineer Specifications

General

L-Series standard horns, strobes, and horn strobes shall mount to a standard 2 x 4 x 1 7/8-inch back box, 4 x 4 x 1 1/2-inch back box, 4-inch octagon back box, or double-gang back box. L-Series compact products shall mount to a single-gang 2 x 4 x 1 7/8-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products for all standard models and a separate universal mounting plate shall be used for mounting wall compact models. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, L-Series 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 8.5 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Indoor L-Series 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, 30, 75, 95, 110, 135, and 185.

Strobe

The strobe shall be a System Sensor L-Series 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 L-Series 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 two 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. 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 MDL3 listed to UL 464 and shall be approved for fire protective service. The module shall synchronize 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 4 1/16 x 4 1/16 x 2 1/8-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 or regulated 24 DC/FWR ^{1,2}
Operating Voltage Range	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Operating Voltage Range MDL3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 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 1.91" D (143 mm L x 119 mm W x 49 mm D)
Compact Wall-Mount Dimensions (including lens)	5.26" L x 3.46" W x 1.91" D (133 mm L x 88 mm W x 49 mm D)
Horn Dimensions	5.6" L x 4.7" W x 1.25" D (143 mm L x 119 mm W x 32 mm D)
Compact Horn Dimensions	5.25" L x 3.45" W x 1.25" D (133mm L x 88mm W x 32mm D)

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. Strobe products will operate at 12 V nominal only for 15 cd and 30 cd.

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)

Candela Range	Candela	8-17.5 Volts		16-33 Volts	
		DC	DC	FWR	FWR
Candela Range	15	88	43	60	
	30	143	63	83	
	75	N/A	107	136	
	95	N/A	121	155	
	110	N/A	148	179	
	135	N/A	172	209	
	185	N/A	222	257	

UL Max. Horn Current Draw (mA RMS)

Sound Pattern	dB	8-17.5 Volts			16-33 Volts		
		DC	DC	FWR	DC	DC	FWR
Temporal	High	39	44	54			
Temporal	Low	28	32	54			
Non-Temporal	High	43	47	54			
Non-Temporal	Low	29	32	54			
3.1 KHz Temporal	High	39	41	54			
3.1 KHz Temporal	Low	29	32	54			
3.1 KHz Non-Temporal	High	42	43	54			
3.1 KHz Non-Temporal	Low	28	29	54			
Coded	High	43	47	54			
3.1 KHz Coded	High	42	43	54			

UL Max. Current Draw (mA RMS), Wall Horn Strobe, Candela Range (15-185 cd)

DC Input	8-17.5 Volts			16-33 Volts					
	15cd	30cd	15cd	30cd	75cd	95cd	110cd	135cd	185cd
Temporal High	98	158	54	74	121	142	162	196	245
Temporal Low	93	154	44	65	111	133	157	184	235
Non-Temporal High	106	166	73	94	139	160	182	211	262
Non-Temporal Low	93	156	51	71	119	139	162	190	239
3.1K Temporal High	93	156	53	73	119	140	164	190	242
3.1K Temporal Low	91	154	45	66	112	133	160	185	235
3.1K Non-Temporal High	99	162	69	90	135	157	175	208	261
3.1K Non-Temporal Low	93	156	52	72	119	138	162	192	242

FWR Input	16-33 Volts						
	15cd	30cd	75cd	95cd	110cd	135cd	185cd
Temporal High	83	107	156	177	198	234	287
Temporal Low	68	91	145	165	185	223	271
Non-Temporal High	111	135	185	207	230	264	316
Non-Temporal Low	79	104	157	175	197	235	283
3.1K Temporal High	81	105	155	177	196	234	284
3.1K Temporal Low	68	90	145	166	186	222	276
3.1K Non-Temporal High	104	131	177	204	230	264	326
3.1K Non-Temporal Low	77	102	156	177	199	234	291

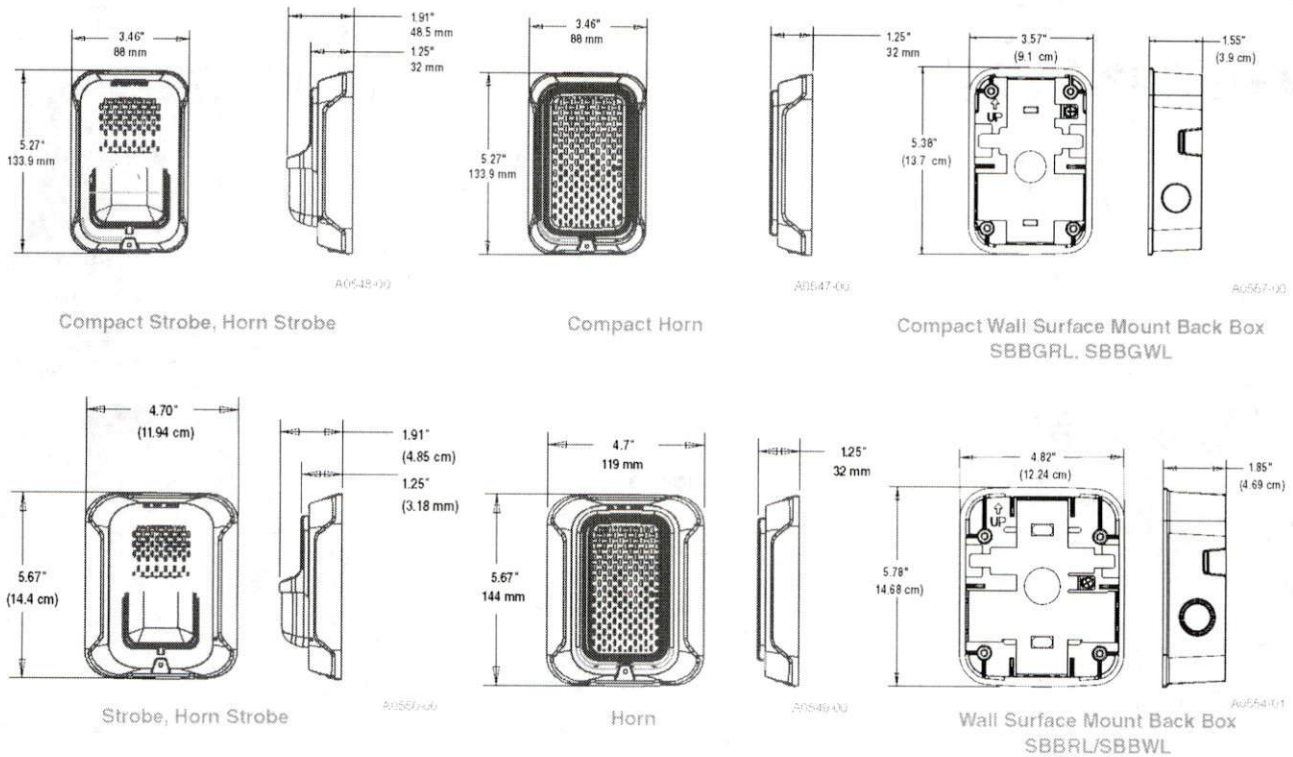
Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)

Switch Position	Sound Pattern	dB	8-17.5 Volts		16-33 Volts	
			DC	DC	FWR	FWR
1	Temporal	High	84	89	89	
2	Temporal	Low	75	83	83	
3	Non-Temporal	High	85	90	90	
4	Non-Temporal	Low	76	84	84	
5	3.1 KHz Temporal	High	83	88	88	
6	3.1 KHz Temporal	Low	76	82	82	
7	3.1 KHz Non-Temporal	High	84	89	89	
8	3.1 KHz Non-Temporal	Low	77	83	83	
9*	Coded	High	85	90	90	
10*	3.1 KHz Coded	High	84	89	89	

* Settings 9 and 10 are not available on 2-wire horn strobes. Temporal coding must be provided by the NAC. If the NAC voltage is held constant, the horn output remains constantly on.

L-Series Dimensions



L-Series Ordering Information

Model	Description
Wall Horn Strobes	
P2RL	2-Wire, Horn Strobe, Red
P2WL	2-Wire, Horn Strobe, White
P2GRL	2-Wire, Compact Horn Strobe, Red
P2GWL	2-Wire, Compact Horn Strobe, White
P2RL-P	2-Wire, Horn Strobe, Red, Plain
P2WL-P	2-Wire, Horn Strobe, White, Plain
P2RL-SP	2-Wire, Horn Strobe, Red, FUEGO
P2WL-SP	2-Wire, Horn Strobe, White, FUEGO
P4RL	4-Wire, Horn Strobe, Red
P4RW	4-Wire, Horn Strobe, White
Wall Strobes	
SRL	Strobe, Red
SWL	Strobe, White
SGRL	Compact Strobe, Red
SGWL	Compact Strobe, White
SRL-P	Strobe, Red, Plain
SWL-P	Strobe, White, Plain
SRL-SP	Strobe, Red, FUEGO
SWL-CLR-ALERT	Strobe, White, ALERT

Model	Description
Horns	
HRL	Horn, Red
HWL	Horn, White
HGRL	Compact Horn, Red
HGWL	Compact Horn, White
Accessories	
TR-2	Universal Wall Trim Ring Red
TR-2W	Universal Wall Trim Ring White
SBBRL	Wall Surface Mount Back Box, Red
SBBWL	Wall Surface Mount Back Box, White
SBBGRL	Compact Wall Surface Mount Back Box, Red
SBBGWL	Compact Wall Surface Mount Back Box, White

Notes:
 All -P models have a plain housing (no "FIRE" marking on cover)
 All -SP models have "FUEGO" marking on cover
 All -ALERT models have "ALERT" marking on cover



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

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 for current product information, including the latest version of this data sheet.
 AVS2865-04 • 11/17/2017

BAT Series Batteries

Sealed Lead-Acid



Power Supplies/Accessories

General

BAT Series Batteries are Power Sonic brand batteries. BAT Series (or Power Sonic brand) batteries are recommended for secondary power or backup power for all Fire-Lite fire alarm control equipment.

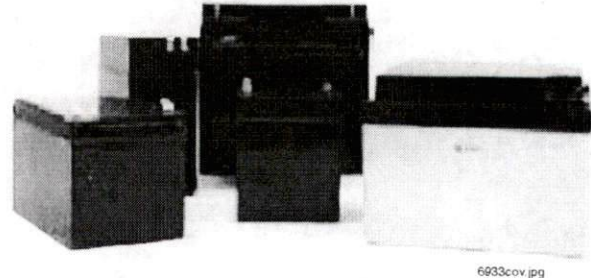
Features

- Provide secondary power for control panels.
- Sealed and maintenance-free.
- Overcharge protected.
- Easy handling with leakproof construction.
- Ruggedly constructed, high-impact case (ABS, polystyrene, or polypropylene, depending on models).
- Long service life.
- Compact design.

Agency Listings and Approvals

The listings and approvals below apply to BAT Series Batteries. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Recognized Components:** MH20845 (*Power-Sonic*)



6933cov.jpg

Ordering Information

BAT-1250-BP: 10-unit bulk pack of BAT-1250 (12 V 5 AH)

BAT-1270-BP: 5-unit bulk pack of BAT-1270 (12 V 7 AH)

BAT-12120-BP: 4-unit bulk pack of BAT-12120 (12V 12 AH)

BAT-12180-BP: 2-unit bulk pack of BAT-12180 (12 V 18 AH)

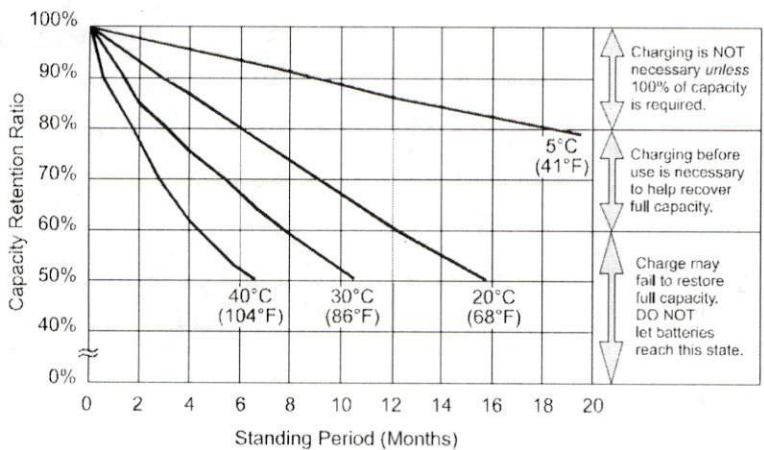
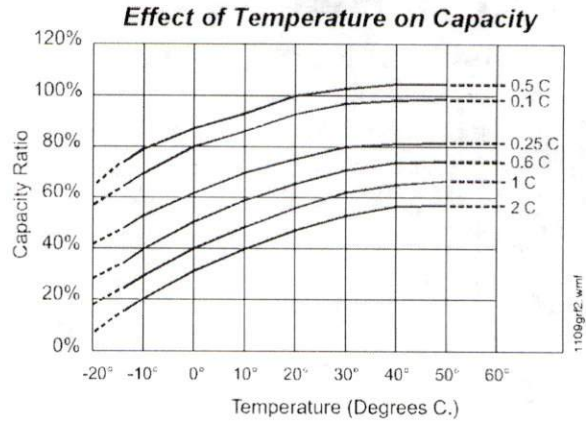
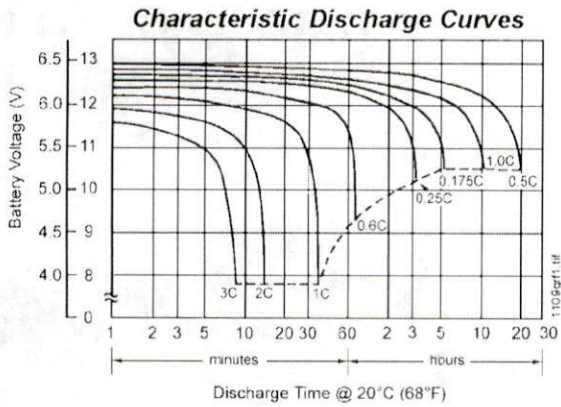
BAT-12260-BP: 2-unit bulk pack of BAT-12260 (12 V 26 AH)

BAT-12550: single battery (12 V 55 AH)

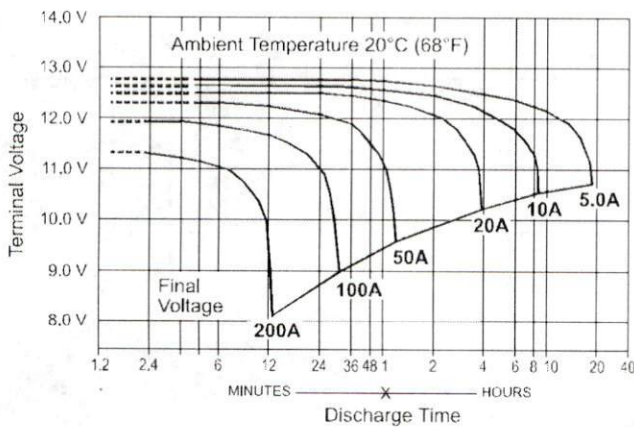
BAT-121000: single battery (12 V 100 AH)

Part Number Reference & Specifications

Part Number	Power Sonic Part Number	Battery Description			DIMENSIONS									
		Nominal Voltage V	Nominal Capacity @ 20 hr. rate A.H.		Width		Depth		Height		Height over terminal		Weight	
					in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg.
BAT-1250	PS-1250	12	5	sealed	3.54	90	2.76	70	4.02	102	4.21	107	4.1	1.9
BAT-1270	PS-1270	12	7	sealed	5.95	151	2.56	65	3.7	94	3.86	98	4.8	2.18
BAT-12120	PS-12120	12	12	sealed	5.95	151	3.86	98	3.7	94	3.94	100	7.92	3.59
BAT-12180	PS-12180	12	18	sealed	7.13	181	2.99	76	6.57	167	6.57	167	12.6	5.8
BAT-12260	PS-12260	12	26	sealed	6.56	167	6.97	177	4.92	125	4.92	125	17	7.71
BAT-12550	PS-12250	12	55	sealed	9.04	230	6.54	138	8.2	208	8.98	228	36	16.33
BAT-121000	PS-121000	12	100	sealed	12	305	6.6	168	8.2	208	8.98	228	68	30.84



at left:
PS-121000
Shelf-Life
and Storage



at left:
PS-121000
Discharge
Characteristics

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