

Honeywell



Installation and Operation Guide

5895XL

Intelligent Power Module

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Fire Alarm & Emergency Communication System Limitations

While a life safety system may lower insurance rates, it is not a substitute for life and property insurance!

An automatic fire alarm system—typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control panel (FACP) with remote notification capability—can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

An emergency communication system—typically made up of an automatic fire alarm system (as described above) and a life safety communication system that may include an autonomous control unit (ACU), local operating console (LOC), voice communication, and other various inter-operable communication methods—can broadcast a mass notification message. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire or life safety event.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premises following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. This document can be found at <http://www.systemsensor.com/appguides/>. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, chimneys, even wet or humid areas may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets, such as air conditioning vents.
- Smoke particles may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explo-

sions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. Heat detectors are designed to protect property, not life.

IMPORTANT! Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, compromising its ability to report a fire.

Audible warning devices such as bells, horns, strobes, speakers and displays may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol, or medication. Please note that:

- An emergency communication system may take priority over a fire alarm system in the event of a life safety emergency.
- Voice messaging systems must be designed to meet intelligibility requirements as defined by NFPA, local codes, and Authorities Having Jurisdiction (AHJ).
- Language and instructional requirements must be clearly disseminated on any local displays.
- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond to or comprehend the meaning of the signal. Audible devices, such as horns and bells, can have different tonal patterns and frequencies. It is the property owner's responsibility to conduct fire drills and other training exercises to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A life safety system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control panel. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premises to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of life safety system malfunction is inadequate maintenance. To keep the entire life safety system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of NFPA 72 shall be followed. Environments with large amounts of dust, dirt, or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled monthly or as required by National and/or local fire codes and should be performed by authorized professional life safety system installers only. Adequate written records of all inspections

Installation Precautions

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until manuals are read and understood.

CAUTION - System Re-acceptance Test after Software Changes: To ensure proper system operation, this product must be tested in accordance with NFPA 72 after any programming operation or change in site-specific software. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring. All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49° C/32-120° F and at a relative humidity . 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.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interference, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, or printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Overtightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components.

Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

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Documentation Feedback

Your feedback helps us keep our documentation up-to-date and accurate. If you have a question or encounter a problem not covered in this manual, contact Silent Knight Technical Support at 800-446-6444.

Please give the following information:

- Product name and version number (if applicable)
- Printed manual
- Topic Title
- Page number (for printed manual)
- Brief description of content you think should be improved or corrected
- Your suggestion for how to correct/improve documentation

To order parts, contact Silent Knight Sales at 800-328-0103.

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Honeywell Fire Product Warranty and Return Policy

Manufacturer Warranties and Limitation of Liability

Section 1

Overview

1.1 5895XL Description

The Model 5895XL Intelligent Power Module provides additional power and circuits to the 5700, 6700, 5808, 6808, 5820XL, 5820XL-EVS, 6820, or 6820EVS FACP. The 5895XL can power all compatible modules, including SLC devices (via a Model 5815XL or 6815 SLC Expander), remote annunciators (Model 6860, 6855 & 5860); notification appliances, auxiliary power modules, and all other compatible modules.

Note: The 5700, 6700, 5808 and 6808 do not use the 5815XL or 6815 SLC expanders.

The 5895XL has six Flexputs™ and two programmable relays. Outputs are rated 3.0 A (6.0 A total for each 5895XL). Relays are Form C rated at 2.5 A @ 24 VDC. Outputs and relays are fully programmable.

The 5895XL is optically isolated, providing ground loop isolation and transient protection. It functions as an SBUS repeater which conditions the RS-485 signal and allows the module to drive up to 6,000 feet of additional SBUS wiring.

The 5895XL is housed in a metal cabinet that is identical in size to the 5820XL FACP cabinet. This cabinet is large enough to house two 17 AH batteries. Like the 5820XL or 6820 cabinets, the 5895XL cabinet provides mounting studs for two SLC Expander modules.

The 5895XL communicates to the main FACP via the SBUS. Each 5895XL provides an additional 6,000 feet of SBUS wiring length to the main panel. As the drawings on the next pages illustrate, this allows you to distribute modules, SLC devices, and outputs throughout an extremely large facility.

As well as expanding the wiring length capabilities, the 5895XL also expands power capabilities by an additional 6.0 A of current.

1.1.1 Maximum Number of SBUS Modules

The chart below shows the maximum number of compatible modules that can be used in the FACP installation. Modules can be distributed among the main panel SBUS and each additional 5895XL SBUS in virtually any combination.

Module or Device	Maximum Number
5895XL Intelligent Power Module	8 per 5700, 6700, 5808, 6808, or 5820XL/ECS installation
	16 per 6820/6820EVS installation
5860/6855 Remote Annunciator	8 per 6700 installation
	12 per 6808 or 5820XL/EVS installation
	16 per 6820/EVS installation
6860 Remote Annunciator	16 per 6820/EVS installation
5815XL SLC Expander	3 per 5820XL/EVS installation
	63 per 6820/EVS installation
6815 SLC Expander	63 per 6820/EVS installation
5824 Serial/Parallel Modules	2 per 5700, 5808, 5820XL/EVS installation
	4 per 6700, 6808, 6820/EVS installation

Outputs	6 per 5820XL, 6820/EVS or 5895XL
Conventional Relays	2 per 5820XL, 6820/EVS or 5895XL

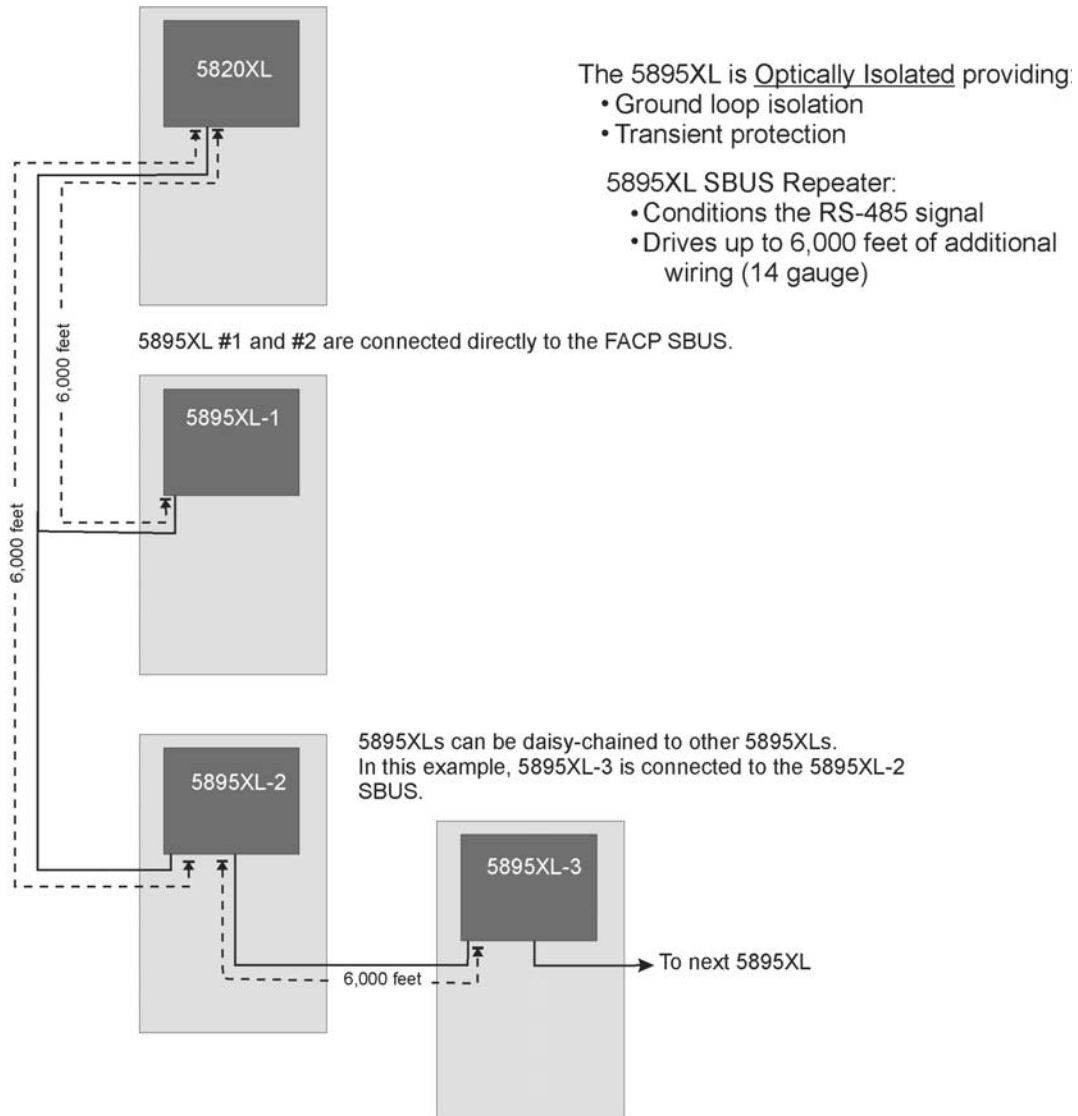


Figure 1-1 Example 5895XL Installation Overview

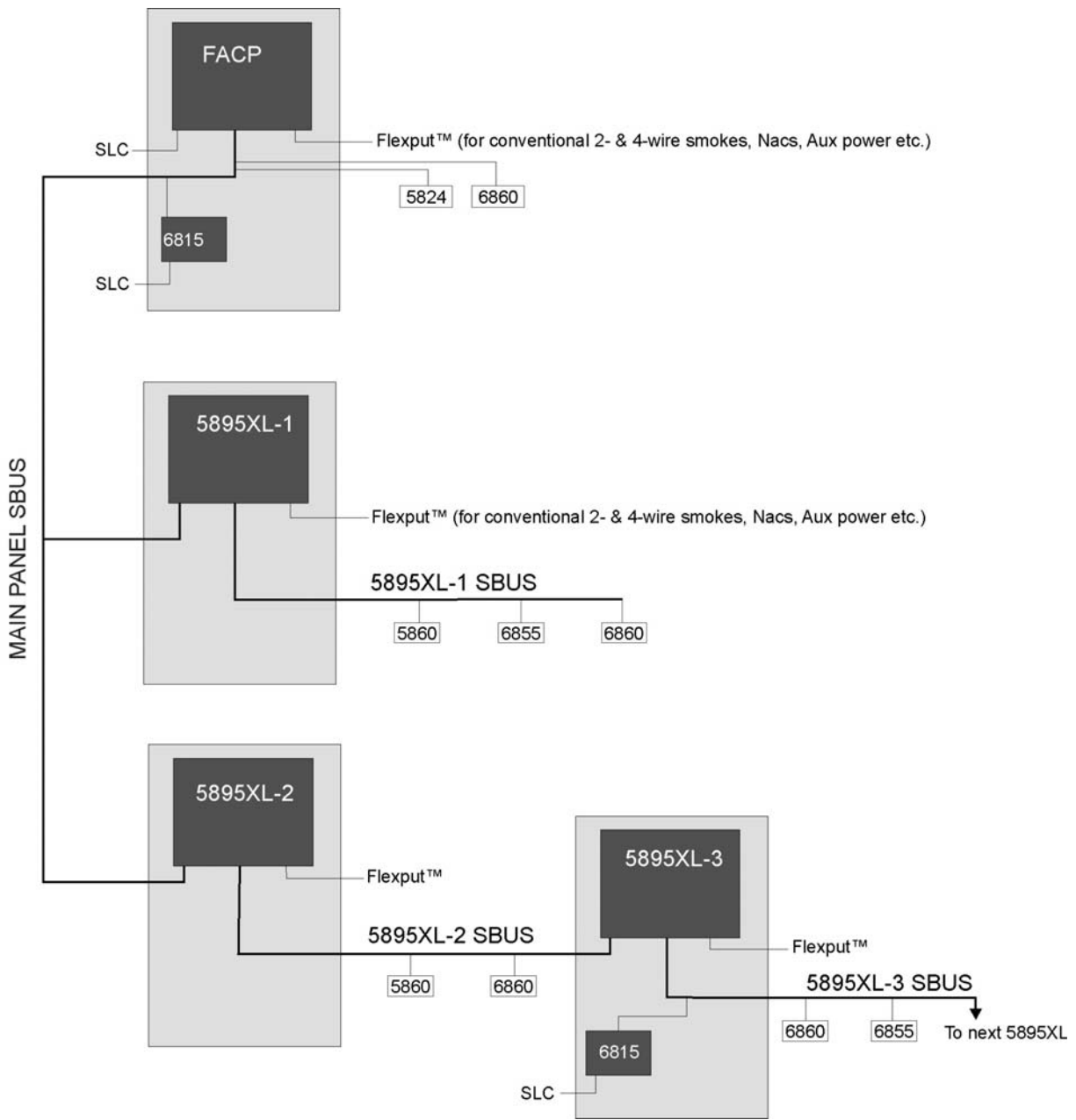


Figure 1-2 Example 5895XL Installation Overview (Details Added)

1.2 Agency Requirements

The 5895XL has the same requirements as the main control panel. These requirements are listed in the FACP Installation Manual.

Model Number	FACP Installation Manual
5820XL/EVS	LS10061-001SK-E
6820/EVS	LS10144-001SK-E
5700	151295
6700	LS10148-001SK-E
5808	151274-L8
6808	LS10146-001SK-E

Section 2

Before You Begin Installing

2.1 Inventory

The Model 5895XL ships with the following hardware:

- A cabinet with all hardware assembled
- Two keys for the front door
- Ten 4.7K ohm end-of-line resistors

Note: For UL installations 4.7k Ω end-of-line resistor (ordered separately) must be used.

- A battery cable for batteries wired in series

2.2 Environmental Specifications

It is important to protect the 5895XL control panel from water. To prevent water damage, the following precautions should be FOLLOWED when installing the units:

- Do not mount directly on exterior walls, especially masonry walls (condensation)
- Do not mount directly on exterior walls below grade (condensation)
- Protect from plumbing leaks
- Protect from splash caused by sprinkler system inspection ports
- Do not mount in areas with humidity-generating equipment (such as dryers, production machinery)

When selecting a location to mount the 5895XL, the unit should be mounted where it will NOT be exposed to temperatures outside the range of 0°C-49°C (32°F-120°F) or humidity outside the range of 10%-93% at 30°C (86°F) non-condensing.

2.3 Software Downloads

In order to supply the latest features and functionality in fire alarm and life safety technology to our customers, we make frequent upgrades to the embedded software in our products. To ensure that you are installing and programming the latest features, we strongly recommend that you download the most current version of software for each product prior to commissioning any system. Contact Honeywell Silent Knight Technical Support with any questions about software and the appropriate version for a specific application. Software updates can be found at www.silentknight.com

2.4 5895XL Board and Terminal Strip Description

Figure 2-1 shows the 5895XL circuit board including location of terminals, the DIP switch for setting module ID, and the LED.

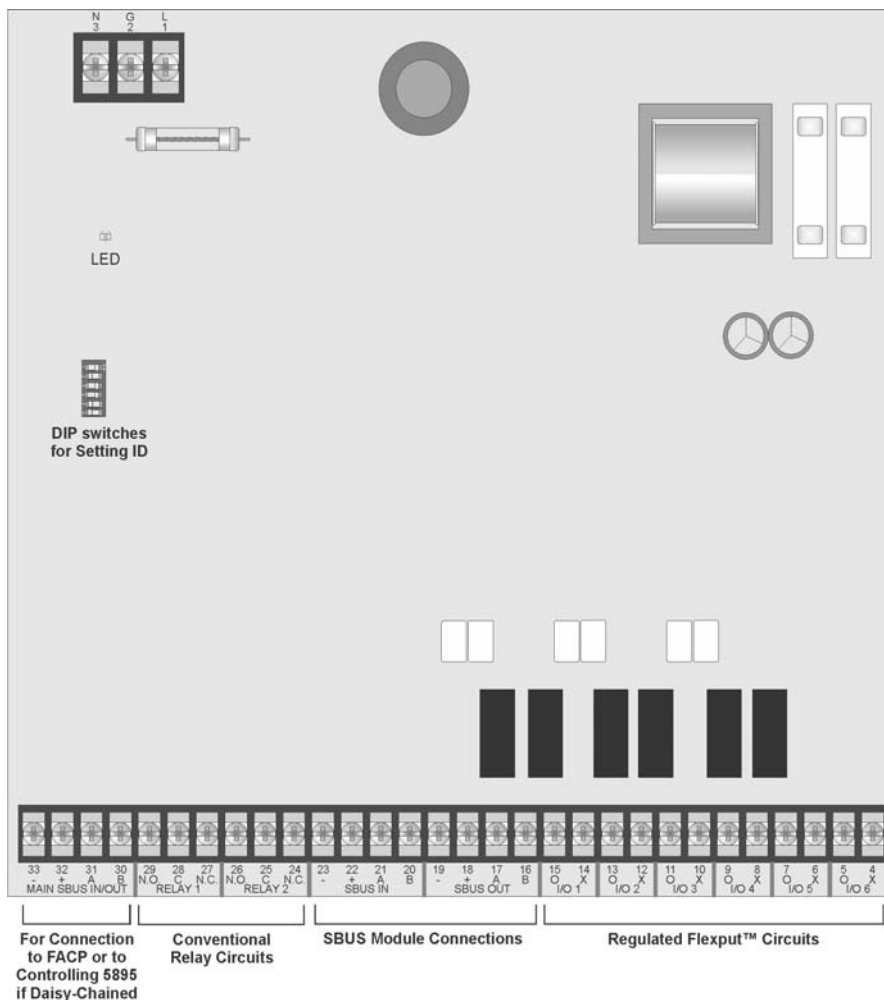


Figure 2-1 The 5895XL Board Layout

Table 2-1: Terminal Strip Description and Electrical Ratings

Terminal # and Label		Description	Rating		
			Voltage	Current	
1	L	AC input (hot)	120/240 VAC, 50/60 Hz	2.7 A 1.4 A	
2	G	Earth ground	N/A	N/A	
3	N	AC input (neutral)	120/240 VAC, 50/60 Hz	2.7 A 1.4 A	
4	X	I/O 6*	Flexput™ Circuit	24 VDC	3.0 A Notification Circuits
5	O				100 mA Initiation Circuits
6	X	I/O 5*	Flexput™ Circuit	24 VDC	3.0 A Notification Circuits
7	O				

Table 2-1: Terminal Strip Description and Electrical Ratings

Terminal # and Label			Description	Rating	
				Voltage	Current
8	X	I/O 4*	Flexput™ Circuit	24 VDC	3.0 A Notification Circuits
9	O				100 mA Initiation Circuits
10	X	I/O 3*	Flexput™ Circuit	24 VDC	3.0 A Notification Circuits
11	O				100 mA Initiation Circuits
12	X	I/O 2*	Flexput™ Circuit	24 VDC	3.0 A Notification Circuits
13	O				100 mA Initiation Circuits
14	X	I/O 1*	Flexput™ Circuit	24 VDC	3.0 A Notification Circuits
15	O				100 mA Initiation Circuits
16	B	SBUS OUT	SBUS communication	5 VDC	100 mA
17	A				
18	+		SBUS power	24 VDC	1.0 A
19	-				
20	B	SBUS IN	Used for Class A installations		
21	A				
22	+				
23	-				
24	N.C.	RELAY 2	General Purpose Relay 2	24 VDC	2.5 A
25	C				
26	N.O.				
27	N.C.	RELAY 1	General Purpose Relay 1	24 VDC	2.5 A
28	C				
29	N.O.				
30	B	SBUS IN/ OUT	5895XL communication with main panel or to controlling 5895XL if daisy-chained	5 VDC	100 mA
31	A				
32	+	MAIN	5895XL SBUS power (from 5820XL)	24 VDC	10 mA
33	-				

* Regulated/special application when used for releasing.

2.5 Earth Fault Resistance

Table 2-2 lists the earth fault resistance detection for each applicable terminal on the FACP.

Table 2-2: Earth Fault Resistance Values by Terminal

Function	Terminal Number	Terminal Label		Low Biased		High Biased	
		(Values in kohms)		High Trip	High Restore	Low Trip	Low Restore
Flexput™ Notification Circuits	4	X	I/O 6	-	-	0	0
	5	O		0	0	-	-
	6	X	I/O 5	-	-	0	0
	7	O		0	0	-	-
	8	X	I/O 4	-	-	0	0
	9	O		0	0	-	-
	10	X	I/O 3	-	-	0	0
	11	O		0	0	-	-
	12	X	I/O 2	-	-	0	0
	13	O		0	0	-	-
	14	X	I/O 1	-	-	0	0
	15	O		0	0	-	-
SBUS Communication	16	B	SBUS OUT	-	-	0	0
	17	A		-	-	0	0
SBUS Power	18	+		0	0	-	-
	19	-		-	-	0	0
Used for Class A Installations	20	B	SBUS IN	-	-	0	0
	21	A		-	-	0	0
	22	+		0	0	-	-
	23	-		-	-	0	0

2.6 Calculating Current Draw and Standby Battery

This section is for helping you determine the current draw and standby battery needs for your installation.

2.6.1 Worksheet Requirements

The following steps must be taken when determining 5895XL current draw and standby battery requirements.

Filling in the Current Draw Worksheet, Table 2-4 (Section 2.6.2)

1. For the 5895XL, the worst case current draw is listed for the panel, addressable devices, and SLC expanders. Fill in the number of addressable devices and expanders that will be used in the system and compute the current draw requirements for alarm and standby. Record this information in Table 2-4 at Line A.
2. Add up the current draw for all auxiliary devices and record in the table at Line B.
3. Add up all notification appliance loads and record in the table at Line C.
4. For notification appliances and auxiliary devices not mentioned in the manual, refer to the device manual for the current ratings.
5. Make sure that the total alarm current you calculated, including current for the panel itself, does not exceed 6.0 A. This is the maximum alarm current allowable.
6. Complete the remaining instructions in Table 2-4 for determining battery size requirements.

2.6.1.1 Maximum Battery Standby Load

Table 2-3 shows the maximum battery standby load for the 5895XL based on 24 and 60 hours of standby. The standby load calculations of line G in the Current Draw Calculation Worksheet (Table 2-4) must be less than the number shown in Table 2-3 for the battery size used and standby hours required.

Table 2-3: Maximum Battery Standby Load

Rechargeable Battery Size	Max. Load for 24 hrs. Standby, 5 mins. Alarm	*Max. Load for 60 hrs. Standby, 5 mins. Alarm
7 AH	270 mA	105 mA
12 AH	475 mA	190 mA
17 AH	685 mA	270 mA
33 AH	1370 mA	540 mA

* Required for NFPA 72 Auxiliary Protected Fire Alarm systems for Fire Alarm Service (City Box) and Remote Station Protected Fire Alarm systems (Polarity Reversal) and Digital Alarm Communicator/Transmitter (DACT).

Note: 33AH max battery size for FM (Factory Mutual) installations

2.6.2 Current Draw Worksheet

For *each 5895XL in the installation, use Table 2-5 to determine current requirements during alarm battery standby operation when SK SLC devices are installed.⁶

Table 2-4 Current Draw Worksheet for SK SLC Devices

Device	# of Devices	Current per Device	Standby Current	Alarm Current	
For each device use this formula: This column X This column = Current per number of devices.					
5895XL Intelligent Power Module (Current draw from battery)	1*	Standby 40 mA	40 mA		
		Alarm: 160 mA		160 mA	
Additional 5895XL (Daisy-chained to this module)	(7 max.)	Standby 10 mA	mA		
		Alarm: 10 mA		mA	
Addressable SLC Detectors					
SK-PHOTO		Standby/Alarm: .30 mA ¹	mA	mA	
SK-PHOTO-T			mA	mA	
SK-HEAT			mA	mA	
SK-HEAT-HT			mA	mA	
SK-ACCLIMATE			mA	mA	
SK-HEAT-ROR			mA	mA	
SK-DUCT ² (includes PhotoR)			mA	mA	
SK-BEAM (without integral test)		SLC	Standby/Alarm: 2 mA		
		Aux. Pwr	Standby: 2 mA	mA	
			Alarm: 8.5 mA		mA
SK-BEAM-T ³ (with integral test)	SLC	Standby/Alarm: 2 mA	mA	mA	
	Aux. Pwr	Standby: 2 mA	mA		
		Alarm: 8.5 mA		mA	
SK-FIRE-CO	SLC	Standby: .30 mA	mA		
		Alarm: 7.2 mA		mA	
Addressable SLC Module					
SK-MONITOR		Standby/Alarm: .375 mA	mA	mA	
SK-MINIMON			mA	mA	
SK-PULL-SA			mA	mA	
SK-PULL-DA			mA	mA	
SK-MONITOR-2		Standby/Alarm: .75 mA	mA	mA	
SK-MONITOR-10		Standby/Alarm: 3.5 mA	mA	mA	
SK-CONTROL		SLC	Standby: .375 mA	mA	
			Alarm: .375 mA		mA
		Aux Pwr	Standby: 1.7 mA	mA	
			Alarm: 7 mA		mA
SK-CONTROL-6	SLC	Standby: 2.25 mA	mA		
		Alarm: 2.25 mA		mA	
	Aux Pwr	Standby: 8 mA	mA		
		Alarm: 20 mA		mA	
SK-RELAY		Standby/Alarm: .255 mA	mA	mA	
SK-RELAY-6		Standby/Alarm: 1.45 mA	mA	mA	
SK-RELAYMON-2		Standby: 1.3 mA	mA		
		Alarm: 24 mA		mA	

Table 2-4 Current Draw Worksheet for SK SLC Devices

Device	# of Devices	Current per Device		Standby Current	Alarm Current	
SK-ZONE		Aux Pwr	Standby	12 mA	mA	
			Alarm	90 mA		mA
		SLC	Standby/Alarm	.27 mA	mA	mA
SK-ZONE-6		Aux Pwr	Standby	50 mA	mA	
			Alarm	270 mA		mA
		SLC	Standby/Alarm	2 mA	mA	mA
SLC Modules						
B200SR Sounder Base		Aux Pwr	Standby:	.5 mA	mA	
			Alarm:	35 mA		mA
		SLC	Standby	.3 mA	mA	
B200S Intelligent Sounder Base		Aux Pwr	Standby:	5 mA	mA	
			Alarm: (high vol)	35 mA		mA
		SLC	Standby	.3 mA	mA	
B200SR-LF Low Frequency Sounder Base		Aux Pwr	Standby:	1 mA	mA	
			Alarm:	125 mA		mA
B200S-LF Low Frequency Sounder Base		Aux Pwr	Standby	.55 mA	mA	
			Alarm (high vol)	140 mA		mA
		SLC	Standby	.30 mA	mA	
B224RB Relay Base		Standby/Alarm:		0.5 mA	mA	mA
RTS151/151 KEY		Alarm:		7.5 mA		mA
RA100Z		Alarm:		10 mA		mA
SLC Isolator Devices						
SK-ISO (Isolator Module)	(100 max/loop)	Standby/Alarm:		.45 mA	mA	mA
B224BI Isolator Base		Standby/Alarm:		.5 mA	mA	mA
Accessories Modules						
6815 SLC Expander	(63 max.)	Standby/Alarm:		78 mA	mA	mA
6860 Remote LCD Annunciator		Standby:		25 mA	mA	
		Alarm:		50 mA		mA
5860 Remote LCD Annunciator	(16 max.)	Standby:		20 mA	mA	
		Alarm:		25 mA		mA
6855 Remote LCD Annunciator		Standby:		20 mA	mA	
		Alarm:		25 mA		mA
5824 Serial/Parallel I/O Module	(4 max.)	Standby/Alarm:		45 mA	mA	mA
5895XL Power Supply	(16 max.)	Standby/Alarm:		10 mA	mA	mA
5496 NAC Expander		Standby/Alarm:		10 mA	mA	mA
5865-4 LED Annunciator (with reset and silence switches)		Standby:		35 mA	mA	
		Alarm:		145 mA		mA
5865-3 LED Annunciator	(8 max.)	Standby:		35 mA	mA	
		Alarm:		145 mA		mA
5880 I/O Module		Standby:		35 mA	mA	
		Alarm:		200 mA		mA
5883 Relay Interface	(32 max.)	Standby:		0 mA	mA	
		Alarm:		220 mA (22 mA per relay)		mA
EVS-50W or EVS-125W Audio Amplifier with/without EVS-CE4	(4 max.)	Standby:		10 mA	mA	
		Alarm:		10 mA		mA

Table 2-4 Current Draw Worksheet for SK SLC Devices

Device	# of Devices	Current per Device	Standby Current	Alarm Current
EVS-INT50W Internal Amplifier	(4 max.)	Standby: 52 mA	mA	
		Alarm @ 25V: 275 mA		mA
		Alarm @ 70V: 310 mA		mA
EVS-VCM Voice Control Module	(1 max.)	Standby: 70 mA	mA	
		Alarm: 100 mA		mA
EVS-SW24 Switch Expander	(5 max.)	Standby: 10 mA	mA	
		Alarm: 25 mA		mA
EVS-RPU Remote Paging Unit	(4 max.)	Standby: 70 mA	mA	
		Alarm: 100 mA		mA
EVS-LOC Local Operating Console (includes 6860, RVM & SW-24)	(4 max.)	Standby: 100 mA	mA	
		Alarm: 150 mA		mA
EVS-100W 100W amplifier	(4 max.)	Standby/Alarm: 10 mA	mA	mA
EVS-100WBU backup daughter card	(4 max.)	Standby/Alarm: 10 mA	mA	mA
Total System Current				
Network Cards				
SK-NIC Network Interface Card	(1 Max.)	Standby/Alarm: 21 mA	mA	mA
SK-FML Fiber Optic Multi Mode	(1 Max.)	Standby/Alarm: 53 mA	mA	mA
SK-FSL Fiber Optic Single Mode	(1 Max.)	Standby/Alarm: 79 mA	mA	mA
Wireless Modules				
WSK-WGI Wireless Gateway		Max current using ext supply 40 mA	mA	mA
		Max current SLC Power 24 mA	mA	mA
Auxiliary Devices ⁴	Refer to devices manual for current rating.			
IPDACT-2 IP Communicator	(1 max.)	Standby: 93 mA	mA	
		Alarm: 136 mA		mA
IPDACT-2UD IP Communicator	(1 max.)	Standby: 98 mA	mA	
		Alarm: 155 mA		mA
CELL-MOD/CELL-CAB-SK		Standby: 55 mA	mA	
		Alarm: 100 mA		mA
		Alarm/Standby: mA	mA	mA
		Alarm/Standby: mA	mA	mA
		Alarm/Standby: mA	mA	mA
		Alarm/Standby: mA	mA	mA
Auxiliary Devices Current				
Notification Appliance Circuits				
Refer to device manual for current rating.				
5495/5499 Power Supply		24 VDC	One input circuit: 15 mA	mA
			Both input circuits: 30 mA	mA
		Alarm: mA		mA
		Alarm: mA		mA
		Alarm: mA		mA
		Alarm: mA		mA
Notification Appliances Current				mA
Total current ratings of all devices in system (line A + line B + C)			mA	mA
Total current ratings converted to amperes (line D x .001):			A	A
Number of standby hours:			H	
Multiply lines E and F.			Total standby AH	AH
Alarm sounding period in hours. (For example, 5 minutes = .0833 hours)				H

Table 2-4 Current Draw Worksheet for SK SLC Devices

Device	# of Devices	Current per Device	Standby Current	Alarm Current
Multiply lines E and H.		Total alarm AH		AH
Add lines G and I. ⁵		Total ampere hours required	AH	

1. The FACP can only support 5 devices w/LED's on. This current draw has been added to the panels alarm current.
2. The SK-DUCT housing contains a vacant mount for a SK-RELAY (sold separately). Current draw for the SK-RELAY is calculated by increasing the SK-RELAY row of the calculation sheet by one for each SK-RELAY used with a SK-DUCT.
3. SK-BEAM-T draws a maximum of 500mA from Auxiliary power only when the test feature is used. this should be considered when determining auxiliary power capacity but not calculated into current requirements for day to day operation.
4. If using door holders, you do not need to consider door holder current for alarm/battery standby, because power is removed during that time. However, during normal operation, door holders draw current and must be included in the 6.0A total current that can be drawn from the panel.
5. Use next size battery with capacity greater than required.
6. Total does not include isolator devices or accessory bases.

2.6.3 Current Draw Worksheet for SD SLC Devices

Use Table 2-5 to determine current requirements during alarm/battery standby operation when SD SLC devices are installed.⁵

Table 2-5: Current Draw Worksheet for SD SLC Devices

Device	# of Devices	Current per Device	Standby Current	Alarm Current
For each device use this formula: This column X This column = Current per number of devices.				
5895XL Intelligent Power Module (Current draw from battery)	1*	Standby	40 mA	40 mA
		Alarm:	160 mA	160 mA
Additional 5895XL (Daisy-chained to this module)	(7 max.)	Standby	10 mA	mA
		Alarm:	10 mA	mA
Addressable SLC Devices				
SD500-AIM		Standby/Alarm:	.55 mA ¹	mA
SD500-MIM				mA
SD500-PS				mA
SD500-ARM				mA
SD505-HEAT				mA
SD505-PHOTO				mA
SD500-ANM		Aux. Pwr	Standby: 8 mA	mA
			Alarm: 60 mA	mA
SD500-SDM		SLC	Standby/Alarm: .55 mA	mA
		Aux. Pwr	Standby: 20 mA	mA
			Alarm: 106 mA	mA
SLC Accessory Bases				
SD505-6RB		Standby/Alarm:	.082 mA	mA
SD505-6SB		Aux. Pwr	Standby: 1 mA	mA
			Alarm: 32 mA	mA
		SLC	Standby/Alarm .082 mA	mA
SD505-DUCTR		Aux. Pwr	Standby: 20 mA ²	mA
			Alarm: 62 mA ²	mA
		SLC	Standby/Alarm: .5 mA	mA

Table 2-5: Current Draw Worksheet for SD SLC Devices

Device	# of Devices	Current per Device	Standby Current	Alarm Current
SD505-DTS-K		None, included with SD505-DUCTR worst case.		
SD505-DUCT		None, included with detector current.		
SLC Isolator Devices				
SD500-LIM	(100 max/loop)	Standby/Alarm	.092 mA	mA
SD505-6IB				
Accessories Modules				
5815XL SLC Loop Expander	(63 max.)	Standby/Alarm:	55 mA	mA
6860 Remote LCD Annunciator.	(16 max.)	Standby:	25 mA	mA
		Alarm:	50 mA	mA
5860 Remote LCD Annunciator.		Standby:	20 mA	mA
		Alarm:	25 mA	mA
6855 Remote LCD Annunciator		Standby:	20 mA	mA
		Alarm:	25 mA	mA
5824 Serial/Parallel Printer Interface	(4 max.)	Standby/Alarm:	45 mA	mA
5895XL Power Supply	(16 max.)	Standby/Alarm:	10 mA	mA
5496 NAC Expander		Standby/Alarm:	10 mA	mA
5865-4 LED Annunciator Module (with reset and silence switches)	(8 max.)	Standby:	35 mA	mA
		Alarm:	145 mA	mA
5865-3 LED Annunciator Module		Standby:	35 mA	mA
		Alarm:	145 mA	mA
5880 LED I/O Module		Standby:	35 mA	mA
		Alarm:	200 mA	mA
5883 Relay Interface	(32 max.)	Standby:	0 mA	mA
		Alarm:	220 mA (22 mA per relay)	mA
EVS-50W or EVS-125W Audio Amplifier with/without EVS-CE4	(4 max.)	Standby:	10 mA	mA
		Alarm:	10 mA	mA
EVS-INT50W Internal Amplifier	(4 max.)	Standby:	52 mA	mA
		Alarm @ 25V:	275 mA	mA
		Alarm @ 70V:	310 mA	mA
EVS-VCM Voice Control Module	(1max.)	Standby:	70 mA	mA
		Alarm:	100 mA	mA
EVS-SW24 Switch Expander	(5 max.)	Standby:	10 mA	mA
		Alarm:	25 mA	mA
EVS-RPU Remote Paging Unit	(4 max.)	Standby:	70 mA	mA
		Alarm:	100 mA	mA
EVS-LOC Remote Command Unit (includes 6860, RVM & SW-24)	(4 max.)	Standby:	100 mA	mA
		Alarm:	150 mA	mA
EVS-100W 100W Amplifier	(4 max.)	Standby/Alarm:	10 mA	mA
EVS-100WBU backup daughter card	(4 max.)	Standby/Alarm:	10 mA	mA
Total System Current				
Network Cards				
SK-NIC Network Interface Card	(1 Max.)	Standby/Alarm:	21 mA	mA
SK-FML Fiber Optic Multi Mode	(1 Max.)	Standby/Alarm:	53 mA	mA
SK-FSL Fiber Optic Single Mode	(1 Max.)	Standby/Alarm:	79 mA	mA
Auxiliary Devices³ Refer to devices manual for current rating.				
IPDACT-2 IP Communicator	(1 max.)	Standby:	93 mA	mA
		Alarm:	136 mA	mA
IPDACT-2UD IP Communicator	(1 max.)	Standby:	98 mA	mA
		Alarm:	155 mA	mA
CELL-MOD/CELL-CAB-SK		Standby:	55 mA	mA
		Alarm:	100 mA	mA
		Alarm/Standby:	mA	mA
		Alarm/Standby:	mA	mA
		Alarm/Standby:	mA	mA

A

Table 2-5: Current Draw Worksheet for SD SLC Devices

	Device	# of Devices	Current per Device		Standby Current	Alarm Current
			Alarm/Standby: mA		mA	mA
B	Auxiliary Devices Current					
	Notification Appliance Circuits	Refer to device manual for current rating.				
	5495/5499 Power Supply	24 VDC	One input circuit: 15 mA			mA
			Both input circuits: 30 mA			mA
			Alarm: mA			mA
			Alarm: mA			mA
			Alarm: mA			mA
			Alarm: mA			mA
C	Notification Appliances Current					mA
D	Total current ratings of all devices in system (line A + line B + C)				mA	mA
E	Total current ratings converted to amperes (line D x .001):				A	A
F	Number of standby hours:				H	
G	Multiply lines E and F. Total standby AH				AH	
H	Alarm sounding period in hours. (For example, 5 minutes = .0833 hours)					H
I	Multiply lines E and H. Total alarm AH					AH
J	Add lines G and I. ⁴ Total ampere hours required				AH	

1. The FACP can only support 5 devices w/LED's on. This current draw has been added to the panels alarm current.
2. If using 24 VDC aux power only. No standby or alarm current for battery calculation if using 24 VAC, 120 VAC or 240 VAC.
3. If using door holders, you do not need to consider door holder current for alarm/battery standby, because power is removed during that time. However, during normal operation, door holders draw current and must be included in the 6.0A total current that can be drawn from the panel.
4. Use next size battery with capacity greater than required.
5. Total does not include isolator devices or accessory bases.

* Use a separate worksheet for each 5895XL.

2.7 Wiring Specifications

2.7.1 Length Limitations

This section contains information on calculating SBUS wire distances and the types of wiring configurations (Class A and B).

2.7.2 Calculating Wiring distance for SBUS modules

The following instructions will guide you in determining the type of wire and the maximum wiring distance that can be used with SBUS accessory modules.

To calculate the wire gauge that must be used to connect SBUS modules to the panel, it is necessary to calculate the total worst case current draw for all modules on a single 4-conductor bus. The total worst case current draw is calculated by adding the individual worst case currents for each module. The individual worst case values are shown in the table below.

Note: Total worst case current draw on a single SBUS cannot exceed 1 amp. If a large number of accessory modules are required, and the worst case current draw will exceed the 1 amp limit, then the current draw must be distributed using 5895XL Power Expanders. Each 5895XL Power Expander provides an additional SBUS, with an additional 1 amp of SBUS current. Wiring

distance calculations are done separately for each 5895XL, and separately for the panel itself.

Model Number	Worst Case Current Draw
6860, 5860, 6855 Fire Annunciator	.120 amps
5815XL SLC Loop Expander	.150 amps
6815 SLC Loop Expander	.078 amps
5824 Serial/Parallel Printer Interface Module	.040 amps
5880 LED I/O Module	.250 amps
5865 LED Annunciator	.200 amps
5895XL Intelligent Power Supply	.010 amps
5496 Intelligent Power Supply	.010 amps
EVS-50W	.010 amps
EVS-125W	.010 amps
EVS-100W	.010 amps
EVS-100W with EVS-100WBU	.010 amps
EVS-VCM / EVS-VCM with EVS-SW24* **	.080 amps / .105 amps
EVS-LOC / EVS-LOC with EVS-SW24* **	.080 amps / .105 amps
SK-NIC Network Interface Card	.021 amps
CELL-MOD/CELL-CAB-SK	.145 amps
SK-F485C Fiber Converter	.125 amps

* All devices must use the same SBUS and VBUS.

** When doing wire calculations, use .080 amps per device with .105 amps for the last device.

After calculating the total worst case current draw, Table 2-6 specifies the maximum distance the modules can be located from the panel on a single wire run. The table insures 6.0 volts of line drop maximum. In general, the wire length is limited by resistance, but for heavier wire gauges, capacitance is the limiting factor.

These cases are marked in the chart with an asterisk (*). Maximum length can never be more than 6,000 feet, regardless of gauge used. (The formula used to generate this chart is shown in the note below).

Table 2-6: Wire Distances Per Wire Gauge

Wiring Distance: SBUS Modules to Panel				
Total Worst Case Current Draw (amps)	22 Gauge	18 Gauge	16 Gauge	14 Gauge
0.100	1852 ft.	4688 ft.	* 6000 ft.	* 6000 ft.
0.200	926 ft.	2344 ft.	3731 ft.	5906 ft.
0.300	617 ft.	1563 ft.	2488 ft.	3937 ft.
0.400	463 ft.	1172 ft.	1866 ft.	2953 ft.
0.500	370 ft.	938 ft.	1493 ft.	2362 ft.
0.600	309 ft.	781 ft.	1244 ft.	1969 ft.
0.700	265 ft.	670 ft.	1066 ft.	1687 ft.
0.800	231 ft.	586 ft.	933 ft.	1476 ft.
0.900	206 ft.	521 ft.	829 ft.	1312 ft.
1.000 (Max)	185 ft.	469 ft.	746 ft.	1181 ft.

Note: The following formulas were used to generate the wire distance chart:

$$\text{Maximum Resistance (Ohms)} = \frac{6.0 \text{ Volts}}{\text{Total Worst Case Current Draw (amps)}}$$

$$\text{Maximum Wire Length (Feet)} = \frac{\text{Maximum Resistance (Ohms)}}{\text{Rpu}} \quad * 500$$

(6000 feet maximum)

where: Rpu = Ohms per 1000 feet for various Wire Gauges (see table below)

Table 2-7: Typical Wire Resistance Per 1000 ft.

Wire Gauge	Ohms per 1000 feet (Rpu)
22	16.2
18	6.4
16	4.02
14	2.54

Wiring Distance calculation example:

Suppose a system is configured with the following SBUS modules:

- 2 - Module 5860 Fire Annunciator
- 1 - 5895XL Intelligent Power Expander
- 1 - 5865 LED Fire Annunciator
- 1 - 5824 Parallel/Serial Interface

The total worst case current is calculated as follows:

5860 Current Draw	= 2 x .100 amps	= .200 amps
5895XL Current Draw	= 1 x .010 amps	= .010 amps
5865 Current Draw	= 1 x .200 amps	= .200 amps
5824 Current Draw	= 1 x .040 amps	= .040 amps
Total Worst Case Current Draw		= .450 amps

Using this value, and referring to the Wiring Distance table, it can be found that the available options are:

- 370 feet maximum using 22 Gauge wire
- 938 feet maximum using 18 Gauge wire
- 1493 feet maximum using 16 Gauge wire
- 2362 feet maximum using 14 Gauge wire

2.7.3 Wire Routing

You must follow power-limited wiring techniques, which includes maintaining one-quarter inch spacing between power-limited and nonpower-limited circuits and separating high and low voltage circuits.

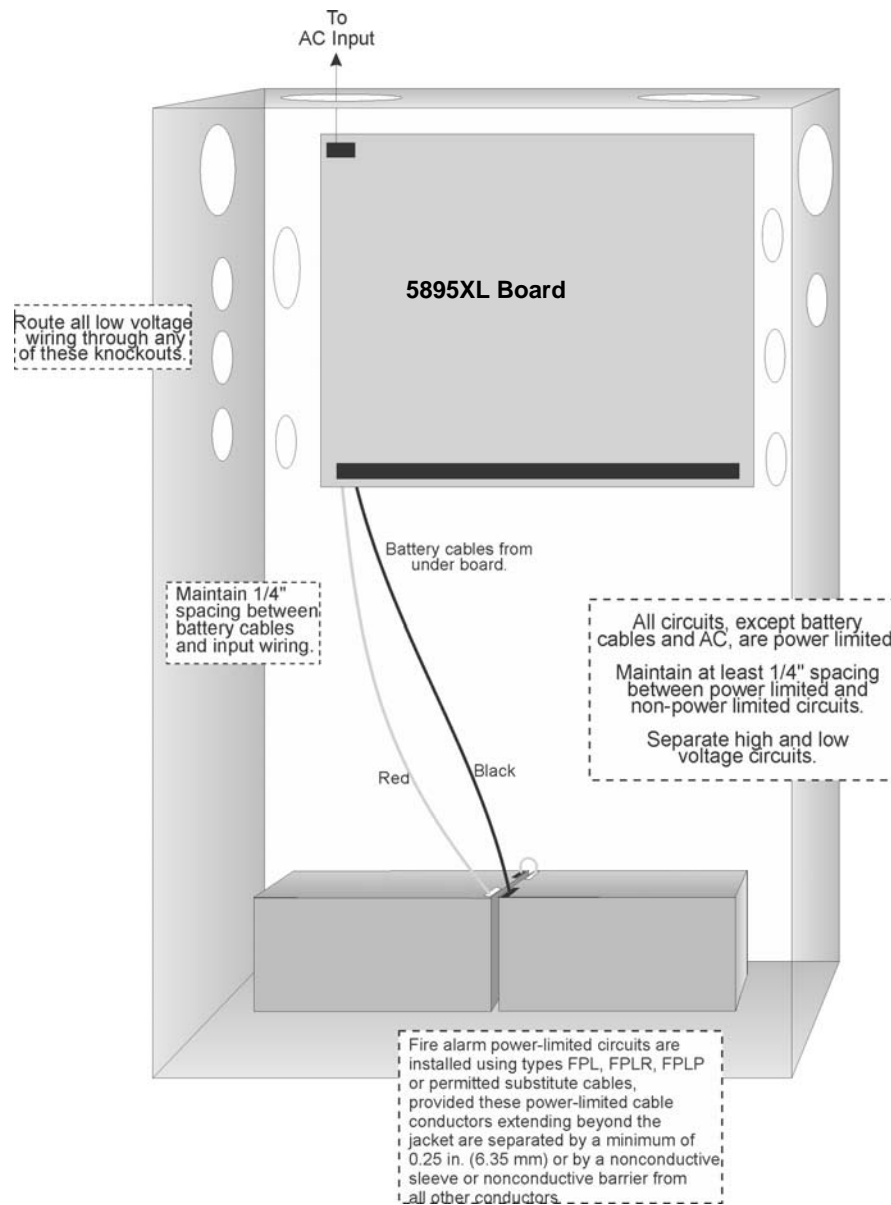


Figure 2-2 Wire Routing Example

Section 3

Hardware Installation

5895XL installation involves the following steps:

- AC power (Section 3.1) and backup battery connection (Section 3.2).
- Physical connection to the FACP or to the controlling 5895XL (see Section 3.3).
- Setting an ID for the 5895XL (Section 3.3.1).
- Physical connection of SBUS modules that will be powered by this 5895XL (Section 3.4).
- Physical connection of any outputs (conventional relays, notification appliances, auxiliary power modules, and so on) that will be powered by this 5895XL. See Section 3.5.1 for notification appliance wiring information. Refer to the FACP Installation Manual, for software configuration information and other information about installing outputs.

Model Number	FACP Installation Manual
5820XL/EVS	LS10061-001SK-E
6820/EVS	LS10144-001SK-E
5700	151295
6700	LS10148-001SK-E
5808	151274-L8
6808	LS10146-001SK-E

3.1 AC Power

At installation, connect the AC terminals to 120 VAC source as shown in Figure 3-1. It may be necessary for a professional electrician to make this connection.

The AC terminals are rated as 120 VAC, 50 or 60 Hz, 2.7 A.

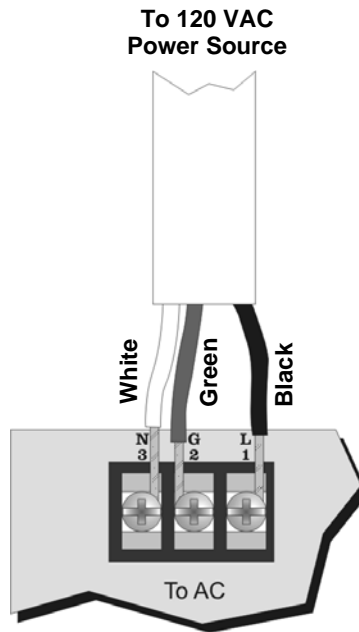


Figure 3-1 AC Power Connection

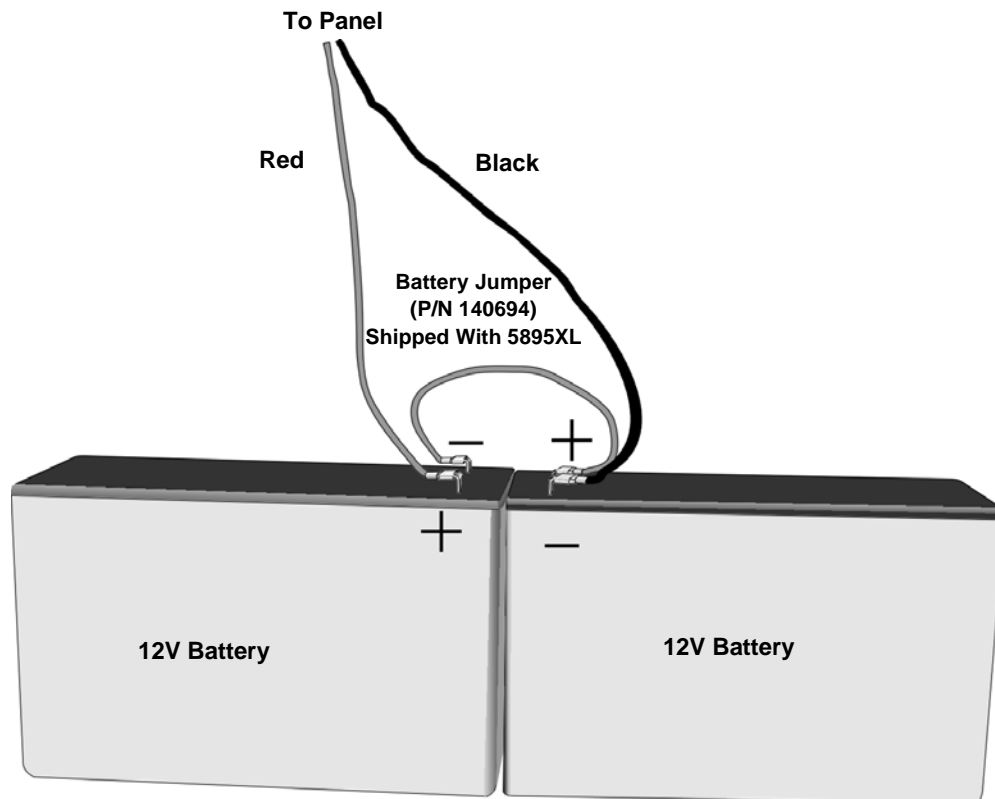
3.2 Battery Connection

The 5895XL battery charge capacity is 7.0 to 33.0 AH. Use 12V batteries of the same AH rating. Determine the correct AH rating as per your current load calculation (see Section Table 2-4 or Table 2-5).

Note: When your backup batteries requirements use backup batteries that are too large to fit into the 5895XL cabinet. The AB-33 cabinet holds batteries up to the 33 AH size. (Refer to FACP Installation Manual for AB-33 installation instructions.

* 33AH max battery size for FM (Factory Mutual) installations

Wire batteries in series to produce a 24-volt equivalent. Do not parallel batteries to increase the AH rating.



Replace batteries every 5 years.

Figure 3-2 Battery Connection

3.3 Connecting the 5895XL to the FACP

1. Connect the 5895XL to the appropriate SBUS. The 5895XL can be connected directly to the FACP or can be daisy-chained to another 5895XL. Figure 3-3 and Figure 3-4 show both connections.
2. Use on-board DIP switch to assign an ID#. (See Section 3.3.1) Figure 2-1 shows the location of the DIP switches on the 5895XL board.
3. Configure the 5895XL module by adding it to the system (through JumpStart or manually). You can also assign a name to the module. These procedures are described in the FACP Installation Manual.

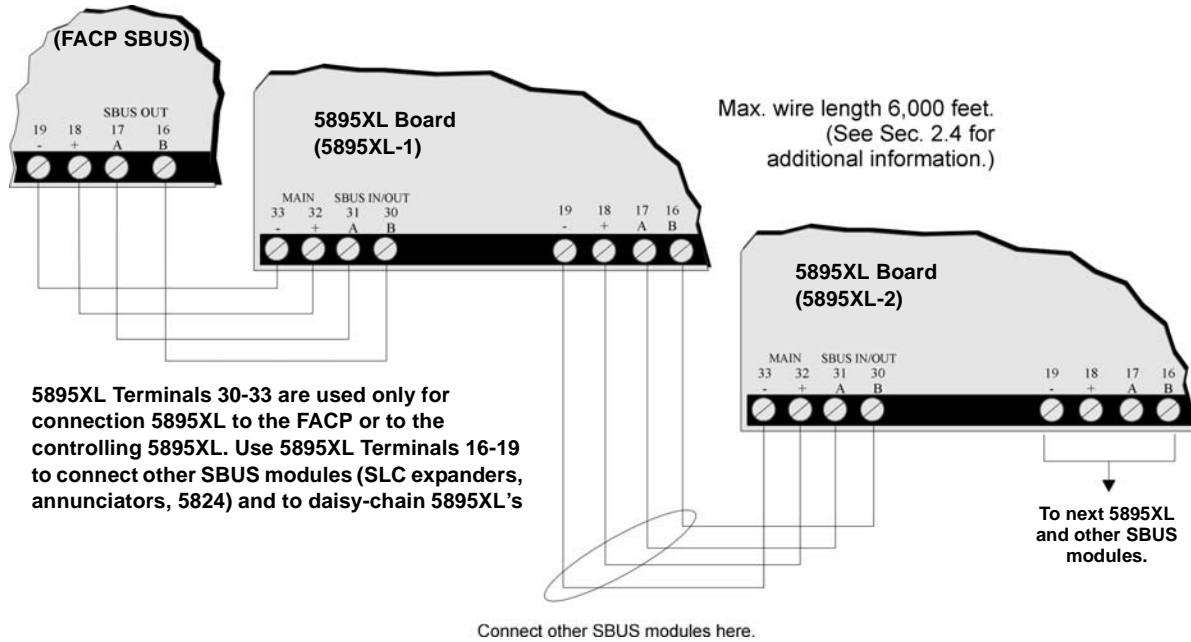


Figure 3-3 Class B 5895XL Connection to FACP

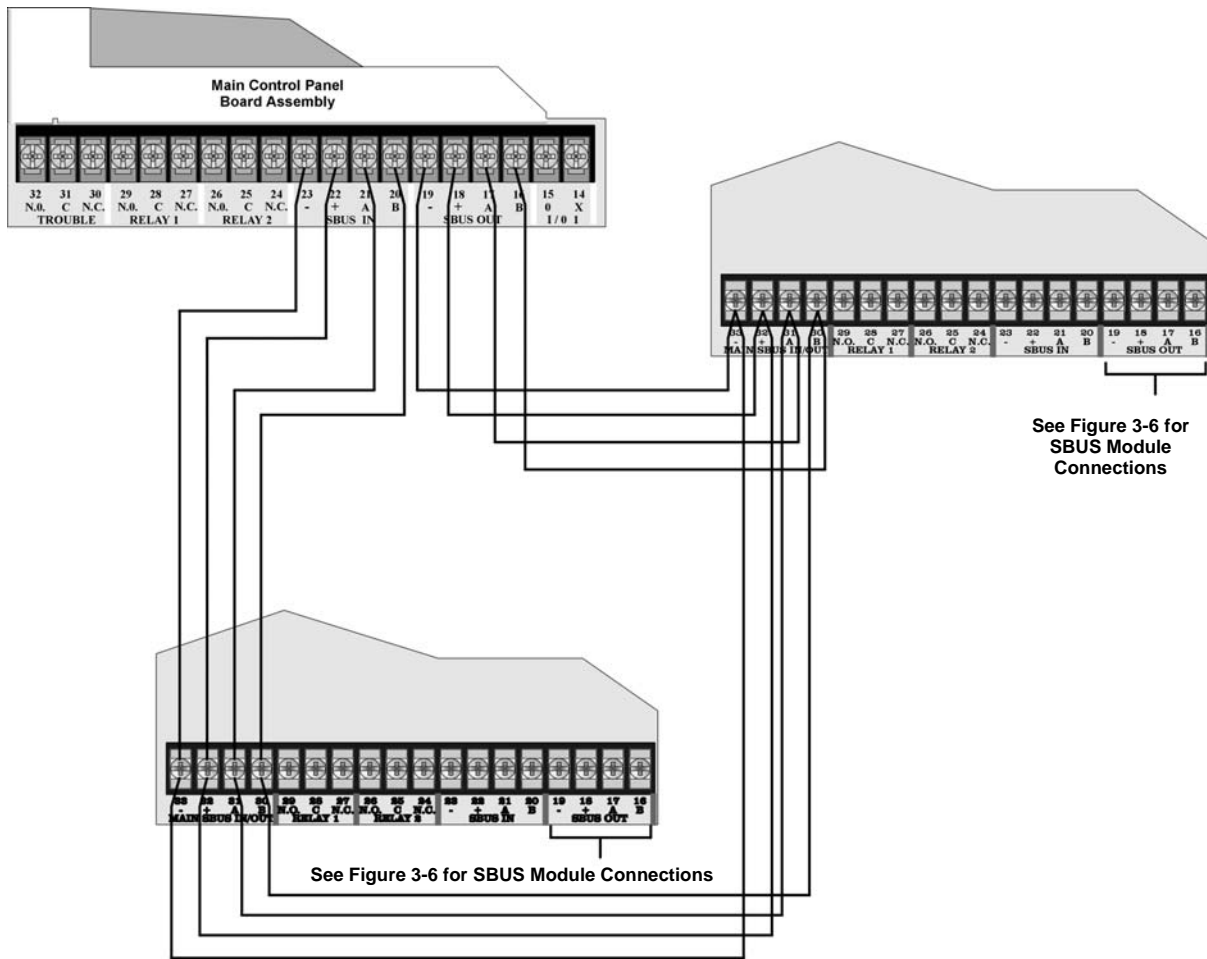
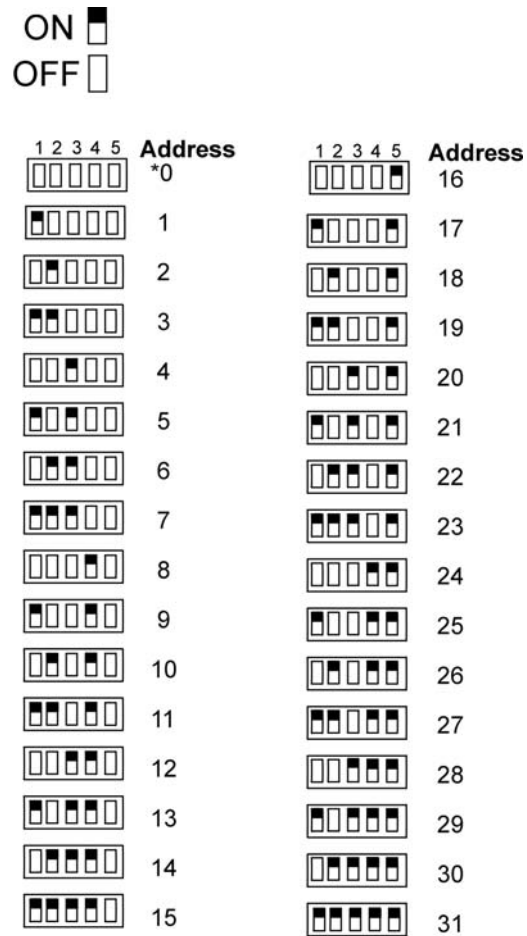


Figure 3-4 Class A 5895XL Connection to FACP

3.3.1 Setting the Device ID

board to set the module ID#. Figure 2-1 shows the location of the DIP switch on the board.



*Note: Address 0 cannot be used.

Figure 3-5 Possible Module Addresses

3.4 Connecting SBUS Modules to the 5895XL

1. Connect SBUS modules to the 5895XL as shown in Figure 3-6 or Figure 3-7.
2. All SBUS modules must have an ID. Use the DIP switches on the module board to assign an ID number (1-31) to the module. This number identifies the module to the 5895XL and must be unique.
3. Software configuration steps vary for each SBUS module. For more information, refer to the FACP installation manual in the section that discusses the type of module you are installing.

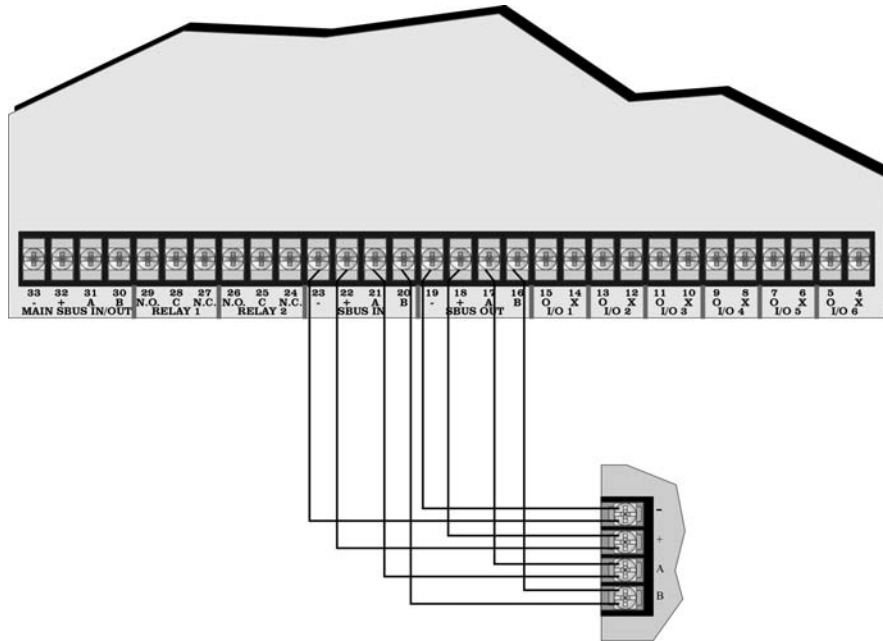


Figure 3-6 SBUS Class A Connection to 5895XL

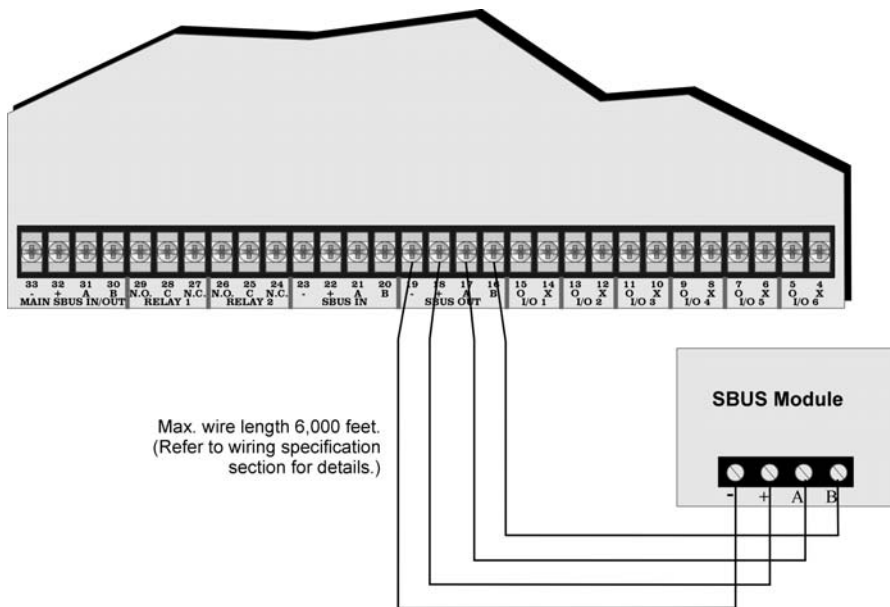


Figure 3-7 SBUS Class B Wiring to 5895XL

3.5 Flexputs™ I/O Circuits

The six Flexput™ circuits are an innovative and versatile feature of the 5895XL panel. They can be used as: Class A or B notification circuits, Class A or B initiation circuits (either 2 or 4 wire detectors), or as auxiliary power (resettable, continuous, or door holder).

This section of the manual explains how to install conventional notification appliances and initiating devices to be used with the 5895XL.

3.5.1 Conventional Notification Appliance

This sub-section of the manual explains how to install conventional notification appliances for Class A and Class B configurations.

3.5.2 Releasing Operations

Approved releasing solenoids are list in Table 3-1. Do not mix cross alarming zones with smoke verification zones. There must be at least two automatic detection devices in each protected space. Spacing must be reduced to 0.7 times the linear spacing in accordance with NFPA 72.

Table 3-1: Approved Releasing Solenoids

Manufacturer	Part Number	Rating	Current	Freq
Asco	T8210A107	24 VDC	3A max	0 Hz
	8210G207	24 VDC	3A max	0 Hz

3.5.2.1 Class B Notification Wiring

You must use an appliance from the list of compatible appliances in Appendix A.

To install a Class B notification appliance circuit:

1. Wire Class B Notification appliances as shown in Figure 3-8.
2. Configure the circuit through programming.

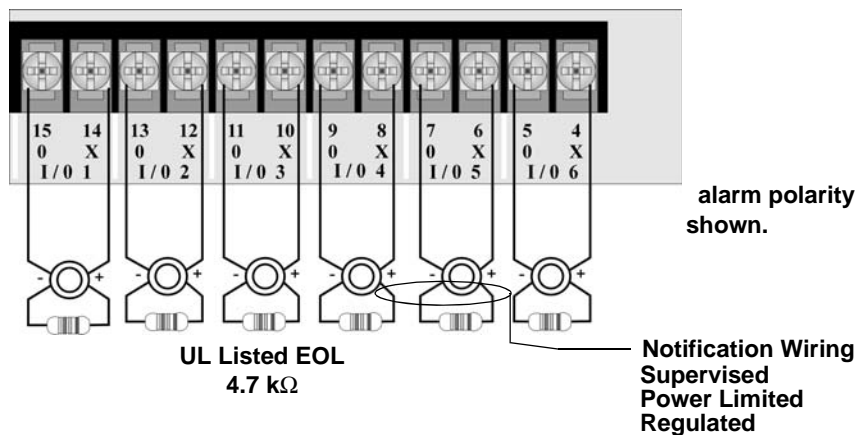


Figure 3-8 Class B Notification Appliance Circuit Wiring

3.5.2.2 Class A Notification Wiring

You must use an appliance from the list of compatible appliances in the Appendix A at the back of this manual.

To install a Class A notification appliance circuit:

1. Wire the Class A notification appliances as shown in Figure 3-9.
2. Configure the circuit for Class A in programming.

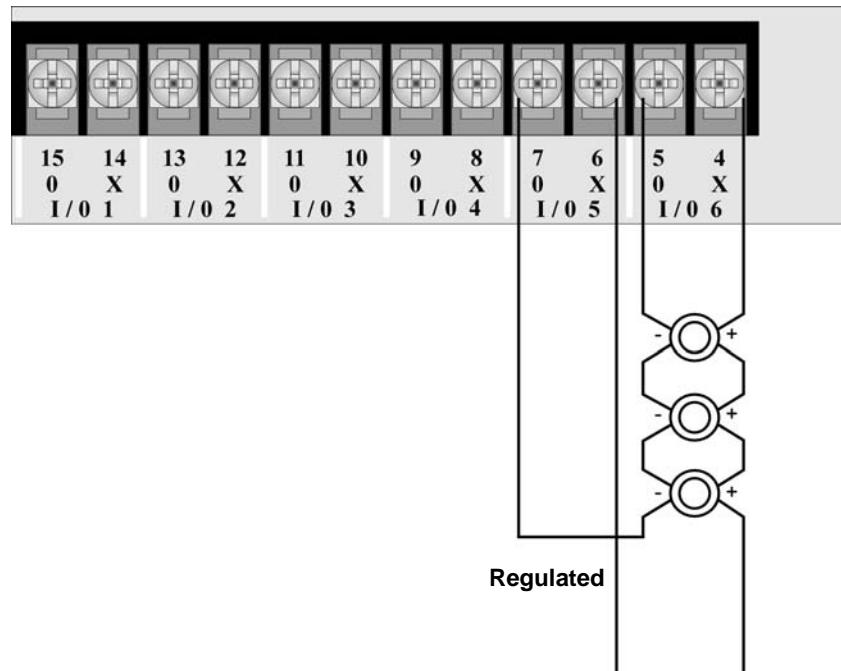


Figure 3-9 Class A Notification Appliance Circuit Configuration

Note: In programming any point that uses multiple I/O circuits are always referred to as the lowest I/O circuit number used. For example, Figure 3-9 uses both I/O circuit 5 and 6, so in programming it would be referred to as point 5.

3.5.3 Conventional Initiation Circuits

This section of the manual explains how to install conventional initiating devices for Class A (Style D) or Class B (Style B) configurations.

3.5.3.1 Class B Inputs

You can connect conventional Class B switches, such as waterflow switches and pull stations, directly to the I/O circuits of the 5895XL panel.

To install a Class B switch:

1. Wire the Class B switch as shown in Figure 3-10.

- Configure the circuit through programming (see Section 7.4 of the *Installation Manual P/N 151209*).

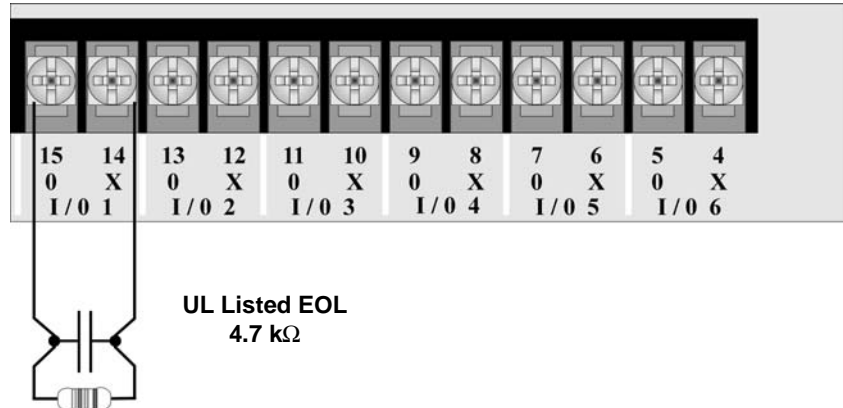


Figure 3-10 Class B Input Switches

3.5.3.2 Class A Inputs

You can connect conventional Class A switches, such as waterflow switches and pull stations, directly to the I/O circuits of the 5895XL panel.

To install a Class A switch:

- Wire the Class A switch as shown in Figure 3-11.
- Configure the circuit through programming.

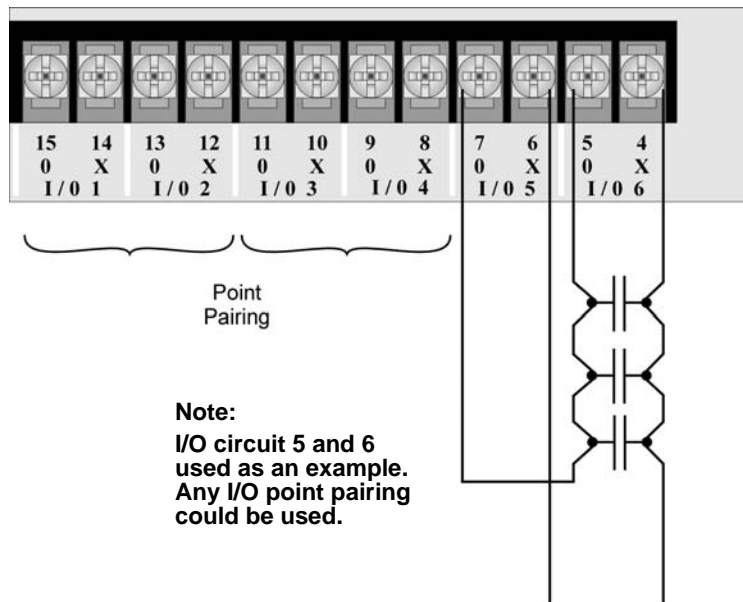


Figure 3-11 Class A initiating Switches

Note: In programming any point that uses multiple I/O circuits are always referred to as the lowest I/O circuit number used. For example, Figure 3-11 uses both I/O circuit 5 and 6, so in programming it would be referred to as point 5.

3.5.4 Installing 2-Wire Smoke Detectors

Any compatible U.L. listed two-wire smoke detector can be used with the 5895XL panel (see Appendix

A for list of compatible smoke detectors). Figure 3-12 and Figure 3-13 illustrate how to connect a UL listed 2-wire detector to the control panel.

Class B Installation

To install a Class B two-wire smoke detector, wire as shown in Figure 3-12.

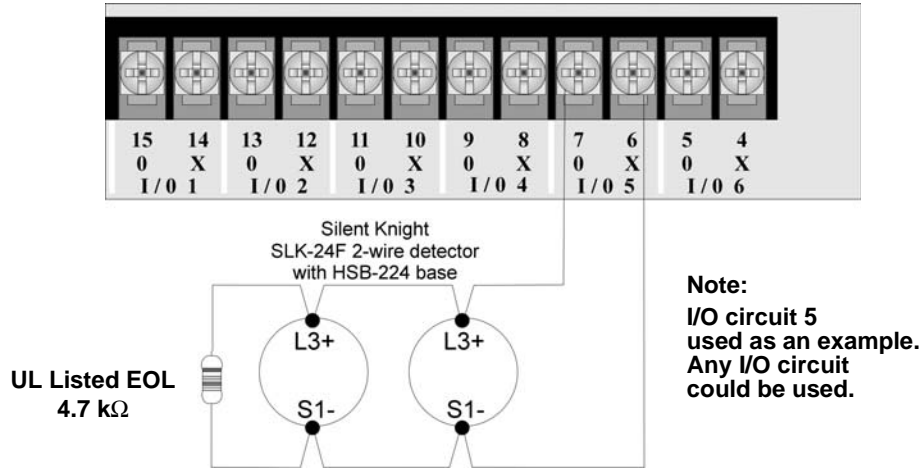


Figure 3-12 Two-Wire Class B Smoke Detector

2-Wire Class A Smoke Detector Installation

To install a Class A two-wire smoke detector, wire as shown in Figure 3-13.

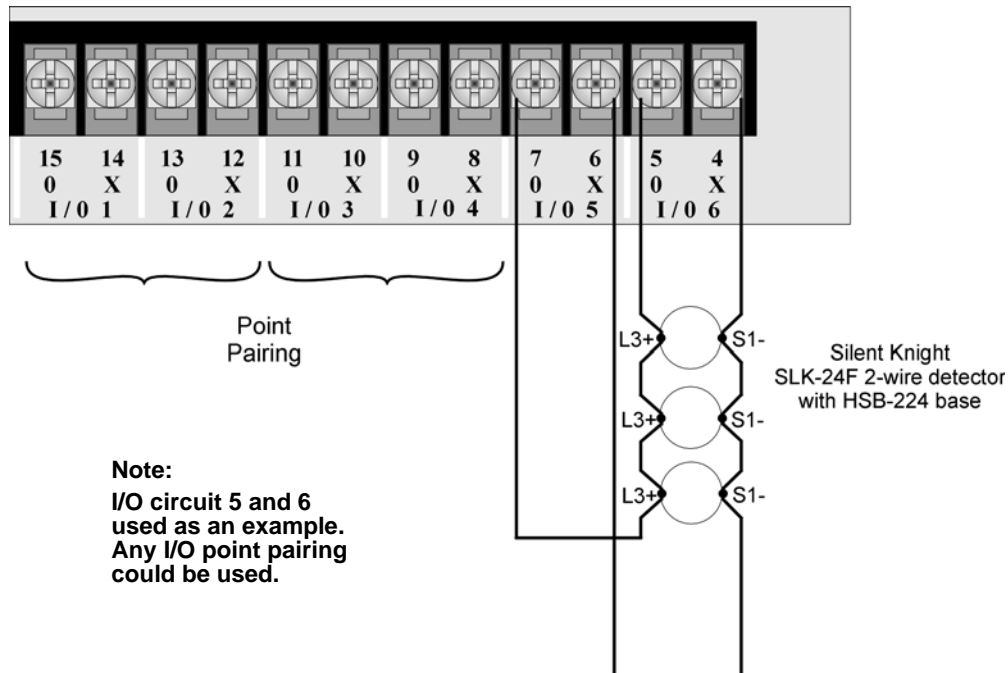


Figure 3-13 Two-Wire Class A Smoke Detector Connections

Note: In programming any point that uses multiple I/O circuits are always referred to as the lowest I/O circuit number used. For example, Figure 3-13 uses both I/O circuit 5 and 6, so in programming it would be referred to as point 5.

3.5.5 Installing 4-Wire Smoke Detectors

Any compatible U.L. listed four-wire smoke detector can be used with the 5895XL panel (see Appendix A for list of compatible smoke detectors). Figure 3-12 and Figure 3-13 illustrate how to connect a UL listed four-wire detector to the control panel.

Installing a Class B 4-Wire Smoke Detector

Figure 3-14 illustrates how to install a 4-wire Class B smoke detector.

Conventions used for wiring 4-wire Class B loops:

1. Up to three Class B 4-wire smoke detector loops can be connected to the control panel at once.
2. Each Class B loop input is paired with a unique power source as shown in Figure 3-14.
3. Each loop gets smoke power from the even numbered I/O circuit and the contact input is connected to the odd numbered I/O circuit.

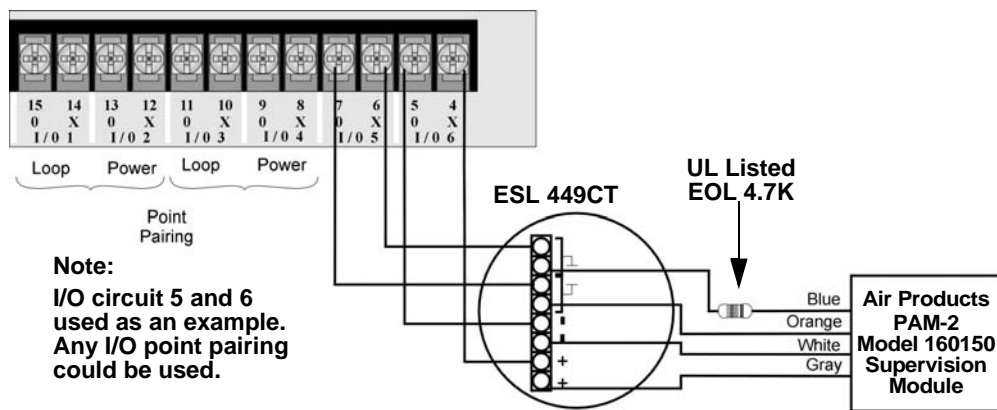


Figure 3-14 Class B 4-Wire Smoke Detector Connections

Note: In programming any point that uses multiple I/O circuits are always referred to as the lowest I/O circuit number used. For example, Figure 3-14 uses both I/O circuit 5 and 6, so in programming it would be referred to as point 5.

Installing 4-Wire Class A Smoke Detectors

Figure 3-15 illustrates how to install 4-wire Class A detectors.

Conventions used for wiring 4-wire Class A loops:

1. Up to two Class A 4-wire loops can be connected to the control panel at once.

- Smoke power is supplied to each Class A loop as shown in Figure 3-15.

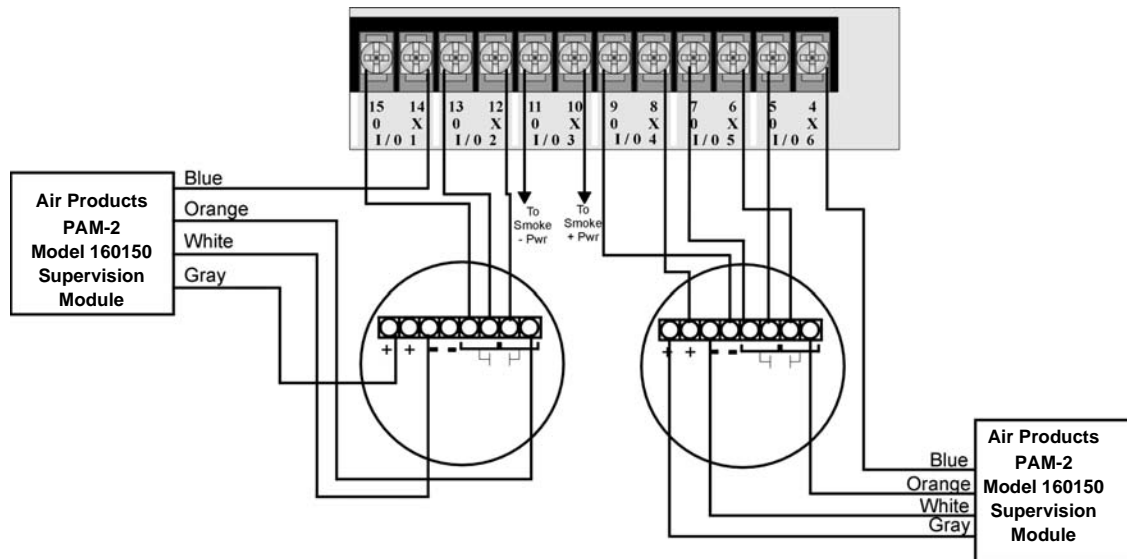


Figure 3-15 Class A 4-Wire Smoke Detector Connections

Note: In programming any point that uses multiple I/O circuits are always referred to as the lowest I/O circuit number used. For example, Figure 3-15 uses I/O circuits 1, 2, 3 together and 4, 5, 6 together. In programming (1, 2, 3) would be referred to as point 1, and (4, 5, 6) would be referred to as point 4.

3.5.6 Auxiliary Power Configuration

Circuits 1-6 on the control panel can be used as auxiliary power circuits. The four types of auxiliary power available are:

- Door Holder (see section 3.5.6.1)
- Constant (see section 3.5.6.2)
- Resettable Power (see section 3.5.6.3)
- Sounder Sync Power (see Section 3.5.6.4)

Auxiliary power circuits are power limited. Each circuit can source up to 3A (total current for all circuits must not exceed 6A).

To install an auxiliary power circuit:

1. Wire the circuit(s) that will be used for auxiliary power.
2. Configure the auxiliary power output through programming.

3.5.6.1 Door Holder Power

Door holder power is intended for fire door applications. When there are no fire system alarms in the system and the panel has AC power, door holder circuits have 24 volt power present at their terminals. Any fire system alarm will cause power to disconnect. Power will be re-applied when the fire system is reset. If AC power is not present, the auxiliary door holder power will be disconnected to conserve the battery backup. When AC power is restored, power is immediately restored to the door holder circuits.

3.5.6.2 Constant Power

Use constant power for applications that require a constant auxiliary power source. Power is always present at Constant circuits.

3.5.6.3 Resettable Power

Resettable power is typically used to power beam detectors, flame detectors and conventional 4-wire smoke detectors. For circuits selected as Resettable, 24-volt power is always present at the terminals unless a system reset occurs. If a system reset occurs, power is disconnected from the terminals for 30 seconds, then re-applied.

3.5.6.4 Sounder Sync Power

Sounder Sync Power continuously outputs the System Sensor synchronization pattern and is intended for use with B200S sounder bases.

3.6 Conventional Relay Installation

5895XL relay circuits are installed in exactly the same way as the FACP relay circuits. Refer to the FACP Installation Manual for information on installing conventional relays.

Appendix A

Compatible Devices

A.1 Notification Appliances

For proper operation, you must use polarized devices with a Model 7628 4.7k ohm EOL resistor on each loop. All supervised notification appliances used with the 5895XL must be polarized.

Note: Not all devices can use the Sync feature, be sure to check Table A-1 to ensure the device you have chosen will work with this feature. This control is UL listed for panel wide Synchronization.

A.1 below lists notification appliances compatible with the fire alarm control panel. Appliances which can be synchronized indicate the type of sync available in the columns marked Audio and/or Visual.

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
AMSECO	SH24W-153075	x	x	Horn/Strobe
	SAD24-153075		x	Strobe
	SAD24-75110		x	Strobe
	SL24W-75110		x	Strobe
	SL24C-3075110		x	Strobe
	SLB24-75		x	Strobe
	RSD24-153075		x	Strobe
	RSD24-75110		x	Strobe
	SH24W-75110	x	x	Horn/Strobe
	SH24W-3075110	x	x	Horn/Strobe
	SHB24-75	x	x	Horn/Strobe
	SCM24W-153075	x		Chimes/Strobe
	SCM24W-75110	x		Chimes/Strobe
	SCM24C-3075110	x		Chimes/Strobe
	SCM24C-177	x		Chimes/Strobe
	H24W	x		Horn
	H24R	x		Horn

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type	
FCI	S2415-FC		x	Strobe	
	S241575-FC		x	Strobe	
	S2430-FC		x	Strobe	
	130-3117C	x		Mini Horn	
	130-3147C	x		Mini Horn	
	BLV-6	x		Vibrating Bell	
	BLV-10	x		Vibrating Bell	
	BLVCH	x		Vibrating Chime	
	H12/24-FC	x		Horn	
	H12/24W-FC	x		Horn	
	H12/24K-FC	x		Horn	
	HC12/24-FC	x		Horn	
	HC12/24W-FC	x		Horn	
	HC12/24K-FC	x		Horn	
	P2415-FC	x	x	Horn/Strobe	
	P2415W-FC	x	x	Horn/Strobe	
	P2415K-FC	x	x	Horn/Strobe	
	P241575-FC	x	x	Horn/Strobe	
	P241575W-FC	x	x	Horn/Strobe	
	P241575F-FC	x	x	Horn/Strobe	
	P241575K-FC	x	x	Horn/Strobe	
	P2430-FC	x	x	Horn/Strobe	
	P2430W-FC	x	x	Horn/Strobe	
	P2430K-FC	x	x	Horn/Strobe	
	P2475-FC	x	x	Horn/Strobe	
	P2475W-FC	x	x	Horn/Strobe	
	P2475K-FC	x	x	Horn/Strobe	
	P24110-FC	x	x	Horn/Strobe	
	P24110W-FC	x	x	Horn/Strobe	
	P24110K-FC	x	x	Horn/Strobe	
	S2430W-FC			x	Strobe
	S2430K-FC			x	Strobe
	S2475-FC			x	Strobe
	S2475W-FC			x	Strobe
	S2475K-FC			x	Strobe
	S24110-FC			x	Strobe
	S24110W-FC			x	Strobe
	S24110K-FC			x	Strobe
	Federal Signal	450	x		Horn
	Federal Signal	VALS	x	x	Horn/Strobe

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
Gentex	GEC-24-15	x	x	Horn/Strobe
	GEC-24-30	x	x	Horn/Strobe
	GEC-24-60	x	x	Horn/Strobe
	GEC-24-75	x	x	Horn/Strobe
	GEC-24-177	x	x	Horn/Strobe
	GEC-24-110	x	x	Horn/Strobe
	GEC-24-15/75	x	x	Horn/Strobe
	GX91	x		MiniHorn Steady Tone
	GX93	x		MiniHorn Temporal Tone
	HG124	x		Horn
	HS24-15	x	x	Horn/Strobe
	HS24-30	x	x	Horn/Strobe
	HS24-60	x	x	Horn/Strobe
	HS24-75	x	x	Horn/Strobe
	HS24-110	x	x	Horn/Strobe
	HS24-1575	x	x	Horn/Strobe
	GCC24	x	x	Multi Candella Horn/Strobe Ceiling Mount
	GCCR24		x	Multi Candella Horn/Strobe Ceiling Mount
	GCS24		x	Multi Candella Strobe Ceiling Mount
	GCSR24		x	Multi Candella Strobe Ceiling Mount
	GEGR-24	x	x	Multi Candella Horn/Strobe
	GES24-15		x	Strobe
	GES24-30		x	Strobe
	GES24-60		x	Strobe
	GES24-75		x	Strobe
	GES24-110		x	Strobe
	GES24-15/75		x	Strobe
	GES24-177		x	Strobe
	GES3-24		x	Multi Candella Strobe
	GESR-24		x	Multi Candella Strobe
	GEH-24	x		Horn
	ST24-30		x	Strobe
	ST24-60		x	Strobe
	ST24-75		x	Strobe
	ST24-110		x	Strobe
	ST24-1575		x	Strobe
	WGEC24-75W	x	x	Weatherproof Horn/Strobe
	WGES24-75W		x	Weatherproof Strobe
	WGMS-24-X	x	x	Horn/Strobe

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
System Sensor	CHR	x		Chime
	CHW	x		Chime
	CHSR	x	x	2-Wire Chime/Strobe
	CHSW	x	x	2-Wire Chime/Strobe
	HR	x	x	Horn
	HW		x	Horn
	HRK		x	Horn
	HWL		x	Horn WHT Wall 4x4
	HRL		x	Horn Red Wall 4x4
	HGRL		x	Horn Red Wall 2x4
	HGWL		x	Horn WHT Wall 2x4
	CHWL	x		Chime WHT Wall 4x4
	CHRL	x		Chime Red Wall 4x4
	CHSRL	x	x	Chime/Strobe Red Wall 4x4
	CHSWL	x	x	Chime/Strobe WHT Wall 4x4
	CHSCRL	x	x	Chime/Strobe Red Ceil 4x4
	CHSCWL	x	x	Chime/Strobe WHT Ceil 4x4
	P2R	x	x	2-Wire Horn/Strobe
	P2R-P	x	x	2-Wire Horn/Strobe
	PC2R	x	x	2-Wire Horn/Strobe
	PC2R-P	x	x	2-Wire Horn/Strobe
	P2RH	x	x	2-Wire Horn/Strobe High Candela
	P2RH-P	x	x	2-Wire Horn/Strobe High Candela
	PC2RH	x	x	2-Wire Horn/Strobe High Candela
	PC2RH-P	x	x	2-Wire Horn/Strobe High Candela
	P2W	x	x	2-Wire Horn/Strobe
	P2W-P	x	x	2-Wire Horn/Strobe
	PC2W	x	x	2-Wire Horn/Strobe
	PC2W-P	x	x	2-Wire Horn/Strobe
	P2WH	x	x	2-Wire Horn/Strobe High Candela
	P2WH-P	x	x	2-Wire Horn/Strobe High Candela
	PC2WH	x	x	2-Wire Horn/Strobe High Candela
	PC2WH-P	x	x	2-Wire Horn/Strobe High Candela
	P2RK	x	x	2-Wire Horn/Strobe
	PC2RK	x	x	2-Wire Horn/Strobe
	P2RHK	x	x	2-Wire Horn/Strobe High Candela
	PC2RHK	x	x	2-Wire Horn/Strobe High Candela
	P4R	x	x	4-Wire Horn/Strobe
	PC4R	x	x	4-Wire Horn/Strobe
	P4RH	x	x	4-Wire Horn/Strobe High Candela
P4W	x	x	4-Wire Horn/Strobe	

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type	
System Sensor (cont.)	PC4W	x	x	4-Wire Horn/Strobe	
	P4WH	x	x	4-Wire Horn/Strobe High Candela	
	PC4WH	x	x	4-Wire Horn/Strobe High Candela	
	P4RK	x	x	4-Wire Horn/Strobe	
	PC4RK	x	x	4-Wire Horn/Strobe	
	P4RHK	x	x	4-Wire Horn/Strobe High Candela	
	PC4RHK	x	x	4-Wire Horn/Strobe High Candela	
	PC4RH	x	x	4-Wire Horn/Strobe High Candela	
	P2RL, P2RL-P, P2RL-SP*	x	x	Horn/Strobe 2W Red Wall 4x4	
	P2WL, P2WL-P, P2WL-SP*	x	x	Horn/Strobe 2W WHT Wall 4x4	
	PC2RL	x	x	Horn/Strobe 2W Red Ceil 4x4	
	PC2WL	x	x	Horn/Strobe 2W WHT Ceil 4x4	
	P2GRL	x	x	Horn/Strobe 2W Red Wall 2x4	
	P2GWL	x	x	Horn/Strobe 2W WHT Wall 2x4	
	P4RL	x	x	Horn/Strobe 4W Red Wall 4X4	
	P4WL	x	x	Horn/Strobe 4W WHT Wall 4X4	
	PC4RL	x	x	Horn/Strobe 4W Red Ceil 4X4	
	PC4WL	x	x	Horn/Strobe 4W WHT Ceil 4X4	
	SR			x	Strobe
	SR-P			x	Strobe
	SCR			x	Strobe
	SCR-P			x	Strobe
	SRH			x	Strobe High Candela
	SRH-P			x	Strobe High Candela
	SCRH			x	Strobe High Candela
	SCRH-P			x	Strobe High Candela
	SW			x	Strobe
	SW-P			x	Strobe
	SCW			x	Strobe
	SCW-P			x	Strobe
	SWH			x	Strobe High Candela
	SWH-P			x	Strobe High Candela
SCWH			x	Strobe High Candela	

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
System Sensor (cont.)	SCWH-P		x	Strobe High Candela
	SRK		x	Strobe
	SCRK		x	Strobe
	SRHK		x	Strobe High Candela
	SCRHK		x	Strobe High Candela
	SRL, SRL-P, SRL-SP*		x	Strobe Red Wall 4x4
	SWL, SWL-P, SWL-ALERT SWL-CLR-ALERT*		x	Strobe White Wall 4x4
	SCRL		x	Strobe Red Ceil 4x4
	SCWL		x	Strobe White Ceil 4x4
	SCWL-CLR-ALERT		x	Strobe WHT Ceil CLR Lens 4x4
	SGRL		x	Strobe Red Wall 2x4
	SGWL		x	Strobe White Wall 2x4
	P2RH-LF	x	x	2-Wire Low Frequency Sounder Strobe
	P2WH-LF	x	x	2-Wire Low Frequency Sounder Strobe
	HR-LF	x		Low Frequency Sounder
	HW-LF	x		Low Frequency Sounder
	* P=Plain, ALERT=Pad Printing ALERT, SP=Fuego			
Wheelock	AH-12	x		Horn
	AH-24	x		Horn
	AH-12WP	x		Horn Weatherproof
	AH-24WP	x		Horn Weatherproof
	AMT-241575W	x	x	Multi-Tone Horn Strobe
	AMT-24MCW		x	Multi-Tone Horn Strobe
	AMT-241575W-NYC	x	x	Multi-Tone Horn Strobe
	AMT-12/24	x		Multi-tone Horn
	AMT-12/24 NYC	x		Multi-tone Horn
	AS-121575W		x	Horn/Strobe
	NH-12/24	x	x	Horn
	AS-241575W	x	x	Horn/Strobe
	AS-24MCC	x	x	Horn/Strobe
	AS-24MCCH	x	x	Horn/Strobe
	AS-24MCW	x	x	Horn/Strobe
	AS-24MCWH	x	x	Horn/Strobe
	ASWP-2475W	x	x	Horn/Strobe Weatherproof
	ASWP-2475C	x	x	Horn/Strobe Weatherproof

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
Wheelock (cont.)	ASWP-24MCWH	x	x	Horn/Strobe
	ASWP-24MCCH	x	x	Horn/Strobe
	CH-70	x		Chime
	CH-90	x		Chime
	CH70-241575W		x	Chime/Strobe
	CH70-24MCW		x	Chime/Strobe
	CH70-24MCWH		x	Chime/Strobe
	CH90-24MCC		x	Chime/Strobe
	CH90-24MCCH		x	Chime/Strobe
	HS-24	x		Horn
	HS4-241575W	x	x	Horn/Strobe
	HS4-24MCW	x	x	Horn/Strobe
	HS4-24MCWH	x	x	Horn/Strobe
	HS4-24MCC	x	x	Horn/Strobe
	MIZ-24S	x	x	Mini Horn Strobe
	MT-121575W		x	MultitoneHorn Strobe
	MT-241575W	x	x	Multitone Horn Strobe
	MT-24MCW		x	Multitone Horn Strobe
	MTWP-2475W		x	Multitone Horn Strobe
	MTWP-2475C		x	Multitone Horn Strobe
	MTG-121575W	x	x	Multitone Horn Strobe
	MTR-121575W	x	x	Multitone Horn Strobe
	MTWPA-2475W	x	x	Multitone Horn Strobe
	MTWPB-2475W	x	x	Multitone Horn Strobe
	MTWPG-2475W	x	x	Multitone Horn Strobe
	MTWPR-2475W	x	x	Multitone Horn Strobe
	MTWPA-24MCCH	x	x	Multitone Horn Strobe
	ZNH	x		Horn
	NS-121575W	x	x	Horn/Strobe
	NS-241575W	x	x	Horn/Strobe
	NS-24MCW	x	x	Horn/Strobe
	NS-24MCC	x	x	Horn/Strobe
	NS-24MCCH	x	x	Horn/Strobe
	ZNS-MCW	x	x	Horn/Strobe
ZNS-MCWH	x	x	Horn/Strobe	
ZNS-24MCC	x	x	Horn/Strobe	

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
Wheelock (cont.)	ZNS-24MCCH	x	x	Horn/Strobe
	RSS-121575W		x	Strobe
	RSS-241575W		x	Strobe
	RSS-24MCC		x	Strobe
	RSS-24MCCR		x	Strobe
	RSS-24MCCH		x	Strobe
	RSS-24MCCHR		x	Strobe
	RSS-24MCW		x	Strobe
	RSS-24MCWH		x	Strobe
	RSSP-121575W		x	Strobe
	RSSP-241575W		x	Strobe
	RSSR-2415W		x	Strobe
	RSSR-2415C		x	Strobe
	RSSR-2475W		x	Strobe
	RSSR-2475C		x	Strobe
	RSSR-24110C		x	Strobe
	RSSA-24110W		x	Strobe
	RSSB-24110W		x	Strobe
	RSSG-24110W		x	Strobe
	RSSR-24110W		x	Strobe
	RSSA-24MCC		x	Multi-Cd Strobe
	RSSB-24MCC		x	Multi-Cd Strobe
	RSSG-24MCC		x	Multi-Cd Strobe
	RSSR-24MCC		x	Multi-Cd Strobe
	RSSWPA-2475W		x	Strobe Weatherproof
	RSSWPA-24MCCH		x	Strobe Weatherproof
	RSSWPG-24MCCH		x	Strobe Weatherproof
	RSSWPR-24MCCH		x	Strobe Weatherproof
	RSSWP-2475W		x	Strobe Weatherproof
	RSSWP-2475C		x	Strobe Weatherproof
RSSWP-24MCWH		x	Strobe Weatherproof	

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
Wheelock (cont.)	ZRS-MCWH		x	Strobe
	ZRS-24MCC		x	Strobe
	ZRS-24MCCH		x	Strobe
	MB-G6-24	x		Motor Bell
	MB-G10-24	x		Motor Bell
	MB-G6-12	x		Motor Bell
	MB-G10-12	x		Motor Bell
	MIZ-24-R	x		Mini-Horn
	MT-12/24-R	x	x	Multitone Horn
	MT4-12/2z	x	x	Multitone Horn
	ZRS-MCW		x	Strobe
	MTWPR-24MCCH	x	x	Multitone Horn Strobe
	NH-12/24R	x		Horn
	HSR		x	Horn/Strobe
	HSW		x	Horn/Strobe
	STR		x	Strobe
	STW		x	Strobe
	HNR		x	Horn
HNW		x	Horn	

A.2 Two-Wire Smoke Detectors

Table A-2 lists two-wire smoke detectors that are compatible with the panel. The table is organized by manufacturer. The columns show the number of detectors per loop that can be used.

	5895XL
Identifier	24H
Operating Voltage Range	18.5–27.4 VDC

The maximum number of smoke detectors per zone is determined by both the current draw and the impedance of the smoke detector. If too many smoke detectors are used on any zone, false alarms could occur.

Do not mix different models of detectors on any zone; false alarms could occur.

Do not mix detectors of different models unless the system is specifically intended to be installed in that configuration.

Control unit Smoke Reset Time must be programmed for a number greater than or equal to the maximum reset time of the smoke detector.

Table A-2 lists two-wire smoke detectors that are compatible with the 5895XL panel. The table is

organized by manufacturer. The columns show the number of detectors per loop that can be used.

Table A-2: Compatible Two-Wire Smoke Detectors

Manufacturer	Model Name or Number (Base model name or number in parentheses.)	Compatibility ID		# per Loop
		Head	Base	
Apollo	55000-350 (45681-200)	55000-350	45681-200	24 / loop
	55000-250 (45681-200)	55000-250	45681-200	24 / loop
Detection Systems	DS200 (MB200-2W)	A	A	30 / loop
	DS200HD (MB200-2W)	A	A	30 / loop
	DS230	N/A	N/A	30 / loop
	DS250 (MB2W or MB2WL)	B	A	30 / loop
	DS250HD (MB2W or MB2WL)	B	A	30 / loop
	DS250TH (MB2W or MB2WL)	B	A	30 / loop
	DS282	B	N/A	30 / loop
	DS283 (MB2W or MB2WL)	N/A	N/A	30 / loop
ESL	425 (S10)			30 / loop
	425C (S11)			30 / loop
	425CR (S11)			30 / loop
	425CRT (S11)			30 / loop
	425CT (S11)	S10	N/A	30 / loop
	429C (S10A)	N/A	S10A	30 / loop
	429CRT (S11A)	N/A	S11A	30 / loop
	429CST (S11A)	N/A	S11A	30 / loop
	429CT (S10A)	N/A	S10A	30 / loop
	521BXT	N/A	S11A	30 / loop
	521B	N/A	S11A	30 / loop
	609U01-11	S10	S00	40 / loop
	609U02-11	S10	S00/S03	40 / loop
	611U (601U or 602U)	S10	S00/S03	40 / loop
	611UD (601U or 602U)	S10	S00/S03	40 / loop
	611UT (601U or 602U)	S10	S00/S03	40 / loop
	612U (601U or 602U)	S10	S00/S03	40 / loop
	612UD (601U or 602U)	S10	S00/S03	40 / loop
	711U (701E or 701U)	N/A	S10A	25 / loop
	712U (701E or 701U)	N/A	S10A	25 / loop
	713-5U (702E or 701U)	N/A	S10A	25 / loop
	713-6U (702E or 701U)	N/A	S10A	25 / loop
	721-U (S10A)	N/A	S10A	30 / loop
721-UT (S10A)	N/A	S10A	30 / loop	

Table A-2: Compatible Two-Wire Smoke Detectors

Manufacturer	Model Name or Number (Base model name or number in parentheses.)	Compatibility ID		# per Loop
		Head	Base	
Kidde-Fenwall	PSD 7156 (FE01A) (P56FE1)	P56FE1	FE01A	30 / loop
	PSD 7156 (FE51A) (P56FE1)	P56FE1	FE51A	30 / loop
	PSD 7155 (FE01A) (P55FE1)	P55FE1	FE1A	30 / loop
	PSD 7155 (FE51A) (P55FE1)	P56FE1	FE1A	30 / loop
	CPD 7051 (FE01A) (I51FE1)	CPD 7051	FE51A	30 / loop
	CPD 7051 (FE01A)	CPD 7051	FE01A	30 / loop
	CPD 7051 (FE51A)	CPD 7051	FE51A	30 / loop
Falcon	525	FDT1	N/A	17 / loop
	525T	FDT1	N/A	17 / loop
Faraday	9374			30 / loop
	9375			30 / loop
	9376			30 / loop
Hochiki	SIH-24F (HS-224D OR HSD-224)	HD-3	HB-5	30 / loop
	SLK-12			30 / loop
	SLK-24F (HS-224D)	HD-3	HB-5	30 / loop
	SLK-24FH (HS-224D)	HD-3	HB-5	30 / loop
	SLR-24 V			30 / loop
	SLR-835B-2 (HD-6)			30 / loop
System Sensor	1100T	A	N/A	30 / loop
	1100TB	A	N/A	30 / loop
	1151 (110LP)	A	A	30 / loop
	1400	A	N/A	20 / loop
	1451 (B401B)	A	A	20 / loop
	1800	A	N/A	30 / loop
	1851B (B101B)	A	A	30 / loop
	1851DH (DH1851DC)	A	A	30 / loop
	2100	A	N/A	30 / loop
	2100D	A	N/A	30 / loop
	2100S	A	N/A	30 / loop
	2100T	A	N/A	30 / loop
	2100TB	A	N/A	30 / loop
	2100TS	A	N/A	30 / loop
	2151 (B110LP)	A	N/A	30 / loop
	2300T	A	N/A	30 / loop
	2300	A	N/A	30 / loop
	2300TB	A	N/A	30 / loop
	2400	A	N/A	30 / loop
	2400 (DH400)	A	N/A	30 / loop
2400AIT	A	N/A	30 / loop	

Table A-2: Compatible Two-Wire Smoke Detectors

Manufacturer	Model Name or Number (Base model name or number in parentheses.)	Compatibility ID		# per Loop
		Head	Base	
System Sensor (cont.)	2400AT	A	N/A	30 / loop
	2400TH	A	N/A	30 / loop
	2451 (B401B)	A	N/A	30 / loop
	2451DH (DH 400)	A	N/A	30 / loop
	2451TH (B401B)	A	N/A	30 / loop
	2800	A	N/A	30 / loop
	2800TH	A	N/A	30 / loop
	2851B (B101B)	A	A	30 / loop
	2851BTH (B101B)	A	A	30 / loop
	2851DH	A	A	30 / loop
	2851TH (B101B)	A	A	30 / loop
	i ³ 2W-B	A	N/A	30 / loop
	i ³ 2WT-B	A	N/A	30 / loop

A.3 Four-Wire Smoke Detectors/Devices (UL Listed)

Table A-3 Compatible Four-Wire Smoke Detectors

Smoke Detector/Base	Detector Type	Max Standby Current (mA)	Alarm Current (mA)
Fenwal CPD-7021 (w/70-201000-005 Base)	Ionization	0.10	*
Fenwal PSD-7125	Photoelectric	0.10	*
Fenwal PSD-7126 (w/70-201000-005 Base)	Photoelectric	0.10	*
Fire-Lite BLP-12-4W	Base	*	*
Gentex 824	Photoelectric	0.50	*
Gentex 824T	Photoelectric	0.50	*
Gentex 824CP	Photoelectric	0.50	*
Gentex 824CPT	Photoelectric	0.50	*
Hochiki HSC-4R	Base	*	*
Hochiki SPB-24	Projected Beam	0.25	*
System Sensor B112LP	Base	0.12	36
System Sensor B114LP	Base	*	*
System Sensor B404B	Base	*	*
System Sensor DH100ACDC	Photoelectric	0.15	0.70
System Sensor DH100ACDCLP	Photoelectric	0.15	0.70
System Sensor DH100ACDCLWP	Photoelectric	0.15	0.70
System Sensor DH400ACDCI	Ionization Duct	25	95
System Sensor DH400ACDCP	Photoelectric Duct	25	95
System Sensor 1112/24/D	Ionization	0.05	50
System Sensor 1424	Ionization	0.10	41
System Sensor 1451 (w/B402B Base)	Ionization	0.10	39

Smoke Detector/Base	Detector Type	Max Standby Current (mA)	Alarm Current (mA)
System Sensor 2112/24ATR	Photoelectric	0.50	60/70
System Sensor 2112/24AITR	Photoelectric	0.50	60/70
System Sensor 2112/24/D	Photoelectric	0.05	50
System Sensor 2112/24R	Photoelectric	0.50	60/70
System Sensor 2112/24TR	Photoelectric	0.50	60/70
System Sensor 2112/24T/D	Photoelectric w/135° Thermal	0.05	50
System Sensor 2112/24TSRB	Photoelectric w/135° Thermal Supervisory Relay	15	45
System Sensor 2312/24TB	Photoelectric	0.12	50
System Sensor 2412 (12 volt)	Photoelectric	0.12	77
System Sensor 2412AT (12 volt)	Photoelectric	0.12	58
System Sensor 2412TH (12 volt)	Photoelectric	0.12	77
System Sensor 2424	Photoelectric	0.10	41
System Sensor 2424TH	Photoelectric	0.10	41
System Sensor 2451	Photoelectric	0.10	39
System Sensor 2451TH (with/B402B Base)	Photoelectric	0.10	39
System Sensor 2W-MOD	Loop Test/Maintenance Mod.	30	50
System Sensor 4W-B (12/24 Volt)	Photoelectric I ³	.05	23
System Sensor 4WT-B (12/24 Volt)	Photoelectric I ³ w/Therm	.05	23
System Sensor 4WTA-B (12/24 Volt)	I ³ Photo w/ Therm Sounder	.05	35
System Sensor 4WTR-B (12/24 Volt)	I ³ Photo w/ Therm/Relay	.05	35
System Sensor 4WTAR-B (12/24 Volt)	I ³ Photo w/ Therm/ Sounder/Relay	.05	50
System Sensor 4WITAR-B (12/24 Volt)	I ³ Photo w/ Isolated Therm/ Sounder/Relay	.05	50
System Sensor 2W-MOD2	I ³ Loop Test/Maintenance Mod.	.05	*
System Sensor RRS-MOD	I ³ Reversing Relay/Sync Module	.05	*
System Sensor 6424	Projected Beam	10	28.4
System Sensor Beam 1224(S)	Projected Beam	17	38.5
* Contact manufacturer for current draws			

A.4 Door Holders (UL Listed)

Table A-4 lists door holders that are compatible with the fire control panel.

Table A-4 Compatible Door Holders

Manufacturer	Model	Type	Current (mA)
Edwards	DH150A	Floor Mount	96
Edwards	DH154A	Flush Mount	96
Edwards	DH158A	Surface Mount	96
Rixon Firemark	FM-980	Floor Mount, single	68
Rixon Firemark	FM-996	Surface Wiring	68
Rixon Firemark	FM-998	Concealed Wiring	68

A.5 Relays (UL Listed)

Table A-5 lists relays compatible with the fire control panel.

Table A-5 Compatible Relays

Manufacturer	Model	Current (mA)
Air Products & Controls, LTD	MR-101/C	15
	MR-201/C	35
	PAM-1	15
	PAM-2	15
	PAM-SD	15
System Sensor	A77-716B	20
	PR-1	15
	PR-2	30
	PR-3	30
	EOLR-1	30
	R-10T	23
	R-14T	23
	R-20T	40
	R-24T	40
	R-10E	23
	R-14E	23
	R-20E	40
	R-24E	40

A.6 Compatible 520Hz Signaling Speakers

Table A-6 520Hz Speakers

Model Number	Description
System Sensor Model Number	Description
SPR	Wall High-Fidelity Speaker, Red
SPW	Wall High-Fidelity Speaker, White
SPCR	Ceiling High-Fidelity Speaker, Red
SPCW	Ceiling High-Fidelity Speaker, White
SPSR	Wall High-Fidelity Speaker Strobe, Red
SPSRH	Wall High-Fidelity Speaker Strobe, High Candela, Red
SPSW	Wall High-Fidelity Speaker Strobe, White
SPSCR	Ceiling High-Fidelity Speaker Strobe, Red
SPSCW	Ceiling High-Fidelity Speaker Strobe, White
SPSCWH	Ceiling High-Fidelity Speaker Strobe, High Candela, White
SPSCRH	Ceiling High-Fidelity Speaker Strobe, High Candela, Red
SPSCW-CLR-ALERT	Ceiling High-Fidelity Speaker Strobe, Clear Lens, ALERT, White
SPSCW-P	Ceiling High-Fidelity Speaker Strobe, Plain, White
SPSCWH-P	Ceiling High-Fidelity Speaker Strobe, High Candela, Plain, White
SPSR-P	Wall High-Fidelity Speaker Strobe, Plain, Red
SPSRH-P	Wall High-Fidelity Speaker Strobe, High Candela, Plain, Red
SPSCWH-P	Ceiling High-Fidelity Speaker Strobe, High Candela, Plain, White
SPSW-ALERT	Wall High-Fidelity Speaker Strobe, Amber Lens, ALERT, White
SPSW-CLR-ALERT	Wall High-Fidelity Speaker Strobe, Clear Lens, ALERT, White
SPSW-P	Wall High-Fidelity Speaker Strobe, Plain, Red
SPSWH	Wall High-Fidelity Speaker Strobe, High Candela, White
SPSWH-P	Wall High-Fidelity Speaker Strobe, High Candela, Plain, Red
SPCRL	Ceiling High-Fidelity Speaker, Red
SPCWL	Ceiling High-Fidelity Speaker, White
SPRL	Wall High-Fidelity Speaker, Red
SPWL	Wall High-Fidelity Speaker, White
SPSCRL	Ceiling High-Fidelity Speaker Strobe, Red
SPSCWL	Ceiling High-Fidelity Speaker Strobe, White
SPSRL	Wall High-Fidelity Speaker Strobe, Red
SPSRL-SP	Wall High-Fidelity Speaker Strobe, FUEGO
SPSWL	Wall High-Fidelity Speaker Strobe, White
SPSCWL-P	Ceiling High-Fidelity Speaker Strobe, Standard, White, Plain
SPSRL-P	Wall High-Fidelity Speaker Strobe, Standard, Red, Plain
SPSWL-P	Wall High-Fidelity Speaker Strobe, Standard, White, Plain
SPSCWL-CLR-ALERT	Ceiling High-Fidelity Speaker Strobe, Clear Lens, Standard, White, ALERT
SPSWL-ALERT	Wall High-Fidelity Speaker Strobe, Amber Lens, ALERT, White
SPSWL-CLR-ALERT	Wall High-Fidelity Speaker Strobe, Clear Lens, Standard, White, ALERT

Table A-6 520Hz Speakers

Model Number	Description
*F=FIRE, P=PLAIN, AL=ALERT, AG=AGENT, EV=EVAC, SP=FUEGO, PG=FOGO	

A.7 Compatible 520Hz Low Frequency Bases

Table A-7 Low Frequency Bases

Model Number	Description
B200S-LF	Low Frequency Intelligent Sounder Base
B200SR-LF	Low Frequency Intelligent Sounder Base

Honeywell Fire Product Warranty and Return Policy

General Terms and Conditions

- All new fire products manufactured by Honeywell Silent Knight have a limited warranty period of 36 months from the date of manufacture against defects in materials and workmanship. See limited warranty statement for details.
- This limited warranty does not apply to those products that are damaged due to misuse, abuse, negligence, exposure to adverse environmental conditions, or have been modified in any manner whatsoever.

Repair and RMA Procedure

- All products that are returned to Honeywell for credit or repair require a RMA (Return Authorization) number. Call Customer Service at 800-328-0103 or 203-484-7161 between 8:00 A.M. and 5:00 P.M. EST, Monday through Friday to obtain a return authorization number.
- Honeywell Silent Knight and Farenhyt Series Technical Support is available at 800-446-6444 between 8:00 A.M. and 5:00 P.M. CST, Monday through Friday.
- All returns for credit are subject to inspection and testing at the factory before actual determination is made to allow credit.
- RMA number must be prominently displayed on the outside of the shipping box. See return address example under Advanced Replacement Policy.
- Included with each return should be: a packing slip that has the RMA number, a content list, and a detailed description of the problem.
- All products returned by Honeywell must be sent freight pre-paid. After the product is processed, Honeywell will pay for shipping product back to customer via UPS ground.
- Return the Honeywell Silent Knight product circuit board only. Products that are returned in cabinets will be charged an additional \$50 to cover the extra shipping and handling costs over board only returns. **Do not return batteries.** Honeywell has the authority to determine if a product is repairable. Products that are deemed un-repairable will be returned to the customer.
- Product that is returned that has a board date code more than 36 months from date of manufacture will be repaired and the customer will be assessed the standard Honeywell Silent Knight repair charge for that model.

Advanced Replacement Policy

- Honeywell Silent Knight and Farenhyt Series offers an option of advance replacement for fire product printed circuit boards that fail during the first 6 months of the warranty period. These items must be returned with transportation charges prepaid and must be accompanied by a return authorization.
- For advance replacement of a defective board, contact your local Honeywell Silent Knight distributor or call Honeywell Silent Knight at 800-328-0103 to obtain a RMA (Return Authorization) number and request advanced replacement.
- A new or refurbished board will be shipped to the customer. The customer will initially be billed for the replacement board but a credit will be issued after the repairable board is received at Honeywell Silent Knight. All returned products must comply with the guidelines described under “General Terms and Conditions” and “Repair and RMA Procedure”.
- The defective board must be returned within 30 days of shipment of replacement board for customer to receive credit. No credit will be issued if the returned board was damaged due to misuse or abuse.

- Repairs and returns should be sent to:
Honeywell Fire Systems
Attn: Repair Department / RA Number _____
12 Clintonville Road
Northford, CT 06472 USA

Manufacturer Warranties and Limitation of Liability

Manufacturer Warranties. Subject to the limitations set forth herein, Manufacturer warrants that the Products manufactured by it in its Northford, Connecticut facility and sold by it to its authorized Distributors shall be free, under normal use and service, from defects in material and workmanship for a period of thirty six months (36) months from the date of manufacture (effective Jan. 1, 2009). The Products manufactured and sold by Manufacturer are date stamped at the time of production. Manufacturer does not warrant Products that are not manufactured by it in its Northford, Connecticut facility but assigns to its Distributor, to extent possible, any warranty offered by the manufacturer of such product. This warranty shall be void if a Product is altered, service repaired by anyone other than Manufacturer or its authorized Distributors. This warranty shall also be void if there is a failure to maintain the Products and the systems in which they operate in proper working conditions.

MANUFACTURER MAKES NO FURTHER WARRANTIES, AND DISCLAIMS ANY AND ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCTS, TRADEMARKS, PROGRAMS AND SERVICES RENDERED BY MANUFACTURER INCLUDING WITHOUT LIMITATION, INFRINGEMENT, TITLE, MERCHANTABILITY, OR FITNESS FOR ANY PARTICULAR PURPOSE. MANUFACTURER SHALL NOT BE LIABLE FOR ANY PERSONAL INJURY OR DEATH WHICH MAY ARISE IN THE COURSE OF, OR AS A RESULT OF, PERSONAL, COMMERCIAL OR INDUSTRIAL USES OF ITS PRODUCTS.

This document constitutes the only warranty made by Manufacturer with respect to its products and replaces all previous warranties and is the only warranty made by Manufacturer. No increase or alteration, written or verbal, of the obligation of this warranty is authorized. Manufacturer does not represent that its products will prevent any loss by fire or otherwise.

Warranty Claims. Manufacturer shall replace or repair, at Manufacturer's discretion, each part returned by its authorized Distributor and acknowledged by Manufacturer to be defective, provided that such part shall have been returned to Manufacturer with all charges prepaid and the authorized Distributor has completed Manufacturer's Return Material Authorization form. The replacement part shall come from Manufacturer's stock and may be new or refurbished. THE FOREGOING IS DISTRIBUTOR'S SOLE AND EXCLUSIVE REMEDY IN THE EVENT OF A WARRANTY CLAIM.

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