

# HONEYWELL SILENT KNIGHT

**1** VIRTUAL  
TRAINING  
MANUAL



# FED<sup>®</sup>

LEARNING CENTER



A person is seen from the back, wearing a dark long-sleeved shirt and jeans, working on a control panel. The panel features a keypad with a small display screen at the top. To the right of the keypad is a fire alarm pull station with the word "FIRE" and "PULL DOWN" instructions. Below the pull station are several circular components, possibly sensors or speakers. The entire scene is overlaid with a blue tint.

# 6000 SERIES PANEL FEATURES

# Terminology

**FACP** – Fire Alarm Control Panel

**Addressable Devices** – A fire alarm system component with discrete identification.

**Conventional Devices** – A fire alarm system component without an identifier.

**SLC** – Signaling Line Circuit – provides data and power to addressable devices.

**SK Series** – Intelligent addressable sensors and modules made by System Sensor. Compatible with the 6815 SLC Expander.

**SD Series** – Intelligent addressable sensors made by Hochiki, Intelligent addressable modules designed by Silent Knight made by System Sensor. Compatible with the 5815XL SLC Expander Card.

**SBUS** – RS-485 Serial Bus. Communication between the FACP and the system accessories, Intelligent power supplies, annunciators, etc.

**Modules** – Term used to describe SBUS and SLC hardware.

**NAC** – Notification Appliance Circuit.






## 6820/6808/6700 FACPs

All 6000 series FACPs install and program the same.

- 1 SLC
- Same SLC devices
- Same SBUS devices
- 3 Modes of communication (internet, cellular, phone lines)
- 3 relays (two are programmable)
- Same HFSS software

## FACP Comparison

Model	6700	6808	6820/6820EVS
Features			
Addressable Points - SD	50	127	127 - 635
Points – SK Sensors/Modules	50 / 50	99 / 99	159 / 159 – 1110 Total
Software Zones	125	250	999
Outpost Groups	125	250	999
Power Supply (Amps)	2.5	6	6
Addressable Power Supplies	8	8	16
Built-in Communicator	Yes	Yes	Yes
Remote Annunciators	8	12	16
Number of NACs	2	4	4 NACs + 2 I/Os
Class A SLC & NACs	Yes	Yes	Yes
Class A SBUS	No	No	Yes

## Battery Connection

Charge capacity for all 6000 series

- 7.0 to 35.0 Ah

Use 12V batteries of the same Ah rating

- Determine per your current load calculation

Wire batteries in series NOT parallel to produce a 24-volt equivalent

## Batteries

FACP	Battery Size in Cabinet
6700	Up to 7 Ah
6808	7 or 18 Ah
6820	7 or 18 Ah

Batteries that exceed the dimensions of the FACP require a Remote Battery Box (RBB)

- Must be mounted next to FACP cabinet

## Charging Circuit

Check Battery connections.

- With AC on
  - Batteries hooked up
  - Should read 27.4 VDC
- With each battery only
  - Should read 13.7 VDC
- Batteries under load (no AC)
  - Voltage should hold or slowly drop
  - Starting at 27.4 VDC



To verify the FACP is outputting the correct charging voltage, meter the voltage on the SBUS + and -

**Q: What size batteries will a 6820 charge?**

**A:** 7-35 Ah

**Q: What is the largest battery you can install in the 6820 cabinet?**

**A:** 18 Ah

## REVIEW

### 6820 Point Flexibility

SLC points can be all sensors or all modules or any combination of modules and sensors

- Increases flexibility

#### Example using SK:

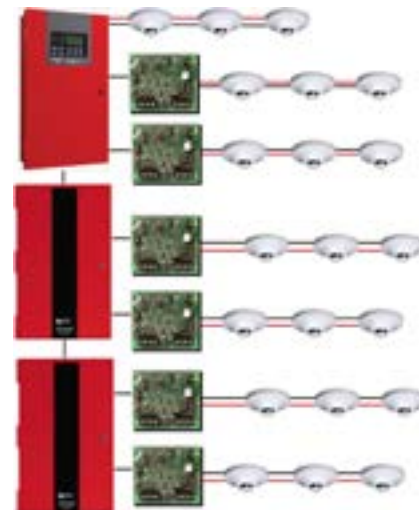
- 1 x 6820
- 1 SLC
- 2 x 6815s per loop
- 2 more SLCs
- 477 sensors
- 3 SLCs x 159 sensors
- All points can be sensors



Extremely Important point! Sets Silent Knight apart

#### Example 2

- 1 x 6820
- 1 SLC
- 2 x 6815s per loop
- 2 SLCs
- 2 x 5895XL
- 4 x 6815s
- 4 x SLCs
- 7 SLCs x 159 sensors = 1113
- 1110 sensors max
- All points can be smokes



**1110 total points! - Modules or Sensors**

## SBUS Wiring Distance

Calculate the total worst-case current draw for all modules on a single 4-conductor bus.  
Add the individual worst-case currents for each module.

Model Number	Worst Case Draw
6855 / 6860 / 5860 Fire Annunciator	.100 Amps
5824 Parallel / Serial Interface	.040 Amps
5880 LED Driver Module	.250 Amps
5865 LED Fire Annunciator	.200 Amps
5815XL SLC Expander	.150 Amps
5895XL or 5496 Intelligent Power Supplies	.010 Amps
EVS-VCM / EVS-VCM w/ EVS-SW24	.080 / .105 Amps
EVS-LOC / EVS-LOC w/ EVS-SW24	.080 / .105 Amps
EVS-50W / 125W / 100W / INT50W Amplifier	.010 Amps

**\*Max current draw = 1 Amp!**

## SBUS Wiring Distance Example

Suppose a system is configured with the following SBUS modules:

- 2 - Module 6860 Fire Annunciator
- 1 - 5895XL Intelligent Power Expander
- 1 - 5865 LED Fire Annunciator
- 1 - 5824 Serial / Parallel Interface Module

**The total worst-case current is calculated as follows:**




6860 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
<hr/>		
Total Worst-Case Current Draw		= .450 Amps

## SBUS Wiring Distance

Wiring Distance SBUS Modules to FACP				
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	2344	3731	5906
0.300	617	1563	2488	3937
0.400	463	1172	1866	2953
0.500	370	938	1493	2362
0.600	309	781	1244	1969
0.700	265	670	1066	1687
0.800	231	586	933	1476
0.900	206	521	829	1312
1.00	185	469	746	1181



## Maximum # of SBUS Modules

Model	6700	6808	6820/6820EVS
Features			
Any combination of 5496's and/or 5895XL Intelligent Power Modules	8	8	16
6855 / 6860 / 5860 Remote Annunciator	8	12	16
Any combination of LED Annunciators / Drivers	8	8	8
6815 / 5815XL SLC Expander	0	0	63
5824 Serial/Parallel Modules	4	4	4
EVS-VCM	0	0	1 per Installation
EVS-LOC (Local Operator Console)	0	0	4 per Installation
Any combination of EVS-50W's and/or EVS-125W and/or EVS-100W Amplifiers / or EVS-IN-T50W	0	0	4 per Installation
EVS-SW24 Switch Expander	0	0	1 per Installation

**Q: What is the max current draw for an individual SBUS?**

A: 1 Amp

**Q: How many 5496's and / or 5895XL Intelligent Power Module's can you put on a 6820 system?**

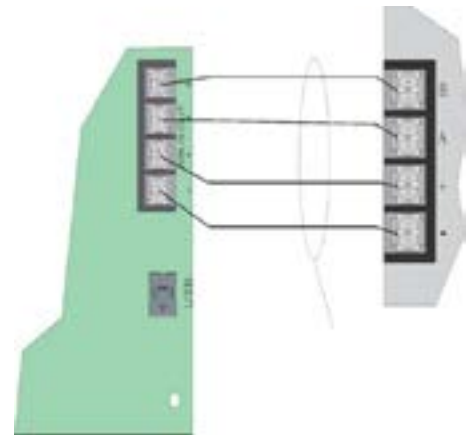
A: Up to 16 per 6820 system

## REVIEW

### SBUS Class B Wiring

Supervised communication path

- Default
- Most common
- Multiple wiring combinations
  - T-tapping
  - Daisy chain
  - Homerun
- Maintain polarity
  - Negative to negative (-)
  - Positive to positive (+)
  - A to A
  - B to B



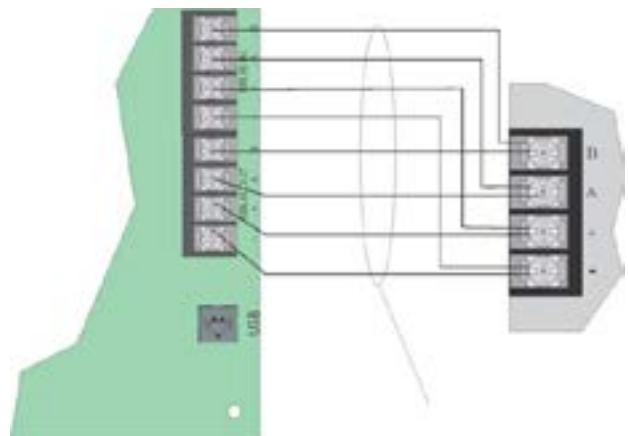
### SBUS Class A Wiring

Gives the modules a second supervised communication path

- Class A must be wired in a loop
  - No T-Taps

To configure the SBUS as a Class A circuit

- Select the SBUS module and program the internal power supply (Module 98) to Class A



The SBUS on the 5895XL can also be programmed for Class A

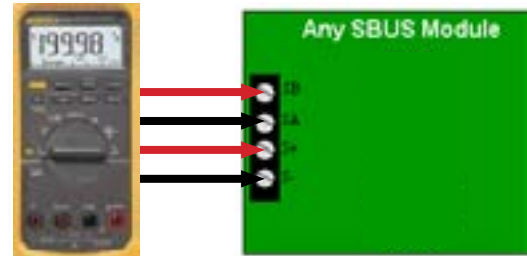
## SBUS Troubleshooting

SBUS (-) to SBUS (+) terminals

- 24-27 VDC

SBUS A to SBUS B terminals

- Alternating between 2-5 VDC
- Data



**Any incorrect wiring will cause SBUS communication troubles**

## SBUS Addressing

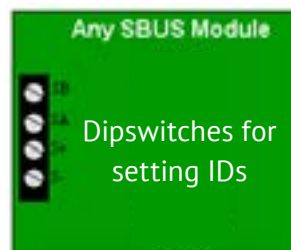
When installing a hardware module, you must use the DIP switches on the module to assign an ID# to the module.

- Address zero is an invalid address and is not allowed.

6 switches

- 1 = 1
- 2 = 2
- 3 = 4
- 4 = 8
- 5 = 16
- 6 = 32

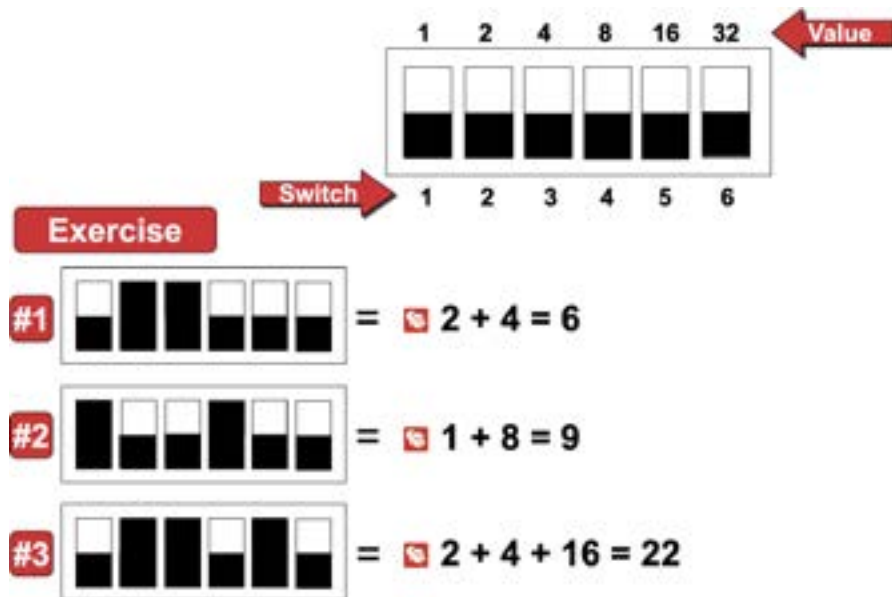
Set with power off



**\*Add together to get address**

Do Not Use	000000	000001	000010	000011	000100	000101	000110	000111	001000	001001	001010	001011	001100	001101	001110	001111	010000	010001	010010	010011	010100	010101	010110	010111	011000	011001	011010	011011	011100	011101	011110	011111	100000	100001	100010	100011	100100	100101	100110	100111	101000	101001	101010	101011	101100	101101	101110	101111	110000	110001	110010	110011	110100	110101	110110	110111	111000	111001	111010	111011	111100	111101	111110	111111
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63

## Examples



## SBUS Addressing

Can assign numbers 1-63 to any SBUS module with dipperswitches.

Internal SBUS devices are pre-assigned an address and cannot be changed.

Module #97

- Internal SLC

Module #98

- Programmable NAC or I/O circuits
- Relay 1 & 2

Module #99

- Onboard annunciator

The SK-NIC does not have dipperswitches and is automatically assigned address #95 when used

# SBUS Modules by Panel

6700/6808



6820



6820EVS



SLC Loop Expanders

SLC Loop Expanders &  
the EVS Devices

## Signaling Line Circuit Expander (SLC)

6815

- 6820 and 6820EVS only
  - SK Protocol only
    - Does NOT support SD protocol
- Supports up to:
  - 159 SK sensors
  - 159 SK modules
    - The number of SLCs that can be deployed is largely limited by maximum available points



**NOT compatible with older generation panels (5820XL & 5820XL-EVS)**

**5815XL**

- 6820 and 6820EVS
  - SD Protocol only
- Supports up to:
  - 127 SD addressable SLC devices
    - The number of SLCs that can be deployed is largely limited by maximum available points

**Compatible with older generation of panels**

- 5820XL and 5820XL-EVS
  - Maximum of 3
  - Supports both SD and SK protocols
    - 127 SD points
    - 99 SK sensors and 99 SK modules



If replacing a 5000 series panel with a 6000 series panel...  
If the 5000 series panel is equipped with a 5815XL using the SK protocol, you *MUST* replace 5815XL with a 6815

## Remote Annunciators

**5860/5860R**

- Compatible with SK 6000 & 5000 series FACPs
- 80-character backlit LCD
- Surface or flush mounted
  - 5860TR: red trim ring for surface mounting
  - 5860TG: gray trim ring for surface mounting

**6855**

- Compatible with SK 6000 series FACPs
- 80-character backlit LCD
- Surface or flush mounted
  - RA-100TR: Surface mount trim ring
- Initiate and end fire drills with a single key press

**6860**

- Compatible with SK 6000 series FACPs
- 160-character backlit LCD
- Surface or flush mounted
  - RA-100TR: Surface mount trim ring
- Initiate and end fire drills with a single key press
- Four programmable function keys for improved efficiencies and time-savings; frees-up time spent at the panel

## 5865-3 / 5865-4 Installation

The 5865 connects to the FACP via the SBUS

- Addressed via dipswitches
- Add via HFSS programming, jumpstart, or keypad programming

Includes zone labels that can be inserted into the 5865-board assembly

- The LEDs will show through the label when illuminated

Each 5865 adds 30 LED points

LEDs are numbered in columns

- Reds are odd
- Yellows are even
  - When added to the program, only circuit 1 is configured as an output circuit the rest of the point types are configured as unused and must be programmed.



\*5865-4 displayed

## Additional SBUS Amps

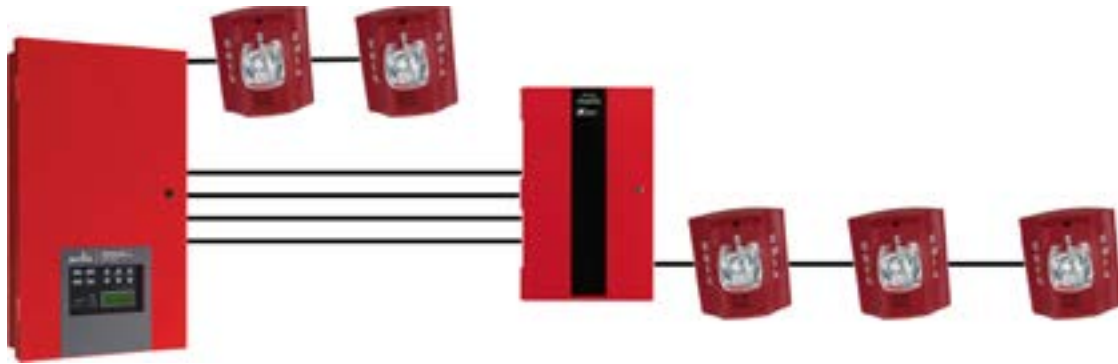
SBUS Modules can be distributed among the FACP SBUS and 5895XL SBUS in virtually any combination

Each additional 5895XL provides an additional SBUS with 1A

- Only the 5895XL can be used to power SBUS devices



## 5895XL Intelligent Power Supply



- 6 Amps
- 6 Flexput I/O circuits
  - Independently programmable
  - Inputs or outputs
- Up to 16 on a system
  - Combination 5895XL & 5496
- Class A or B circuits

Each power supply works independently to sync its outputs

## 5895XL Power Supply

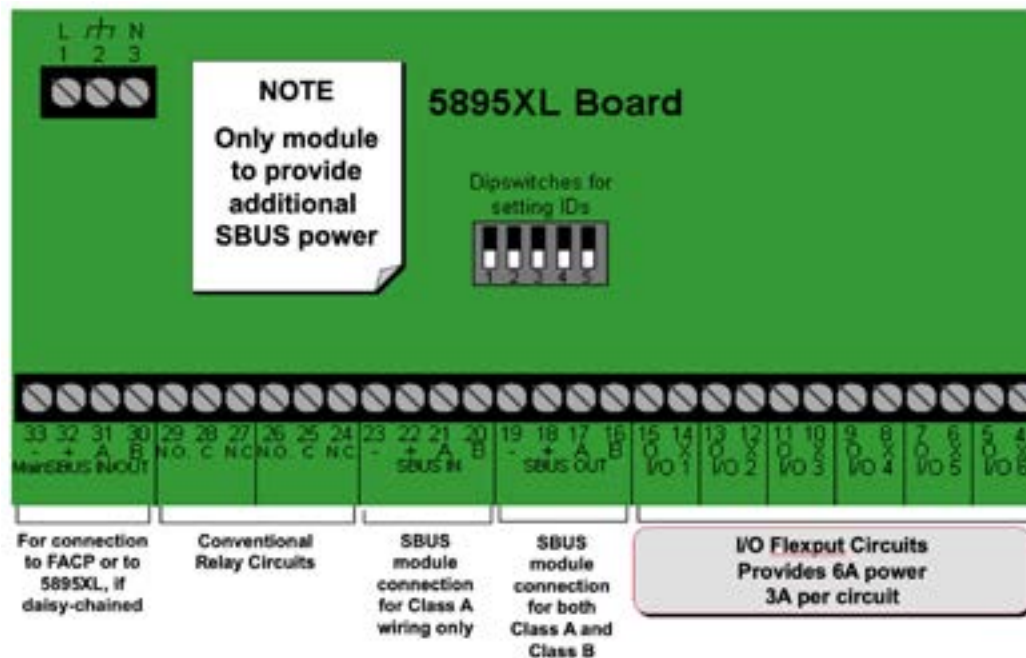


Each additional SBUS has a max distance of 6000 ft

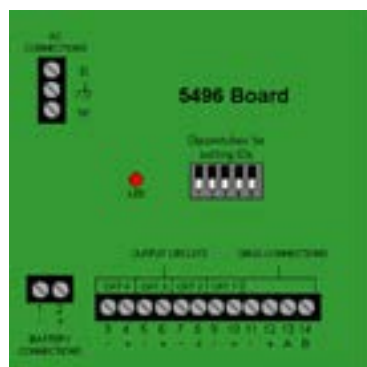
Reconditions SBUS power for extended distances



## 5895XL Board Description



## 5496 Board Description



6 Amps

4 output circuits

- NAC
- Aux power

No additional SBUS power

Less expensive

**Q:** The circuits that can be used as either input or output are called...

**A:** Flexput or I/O

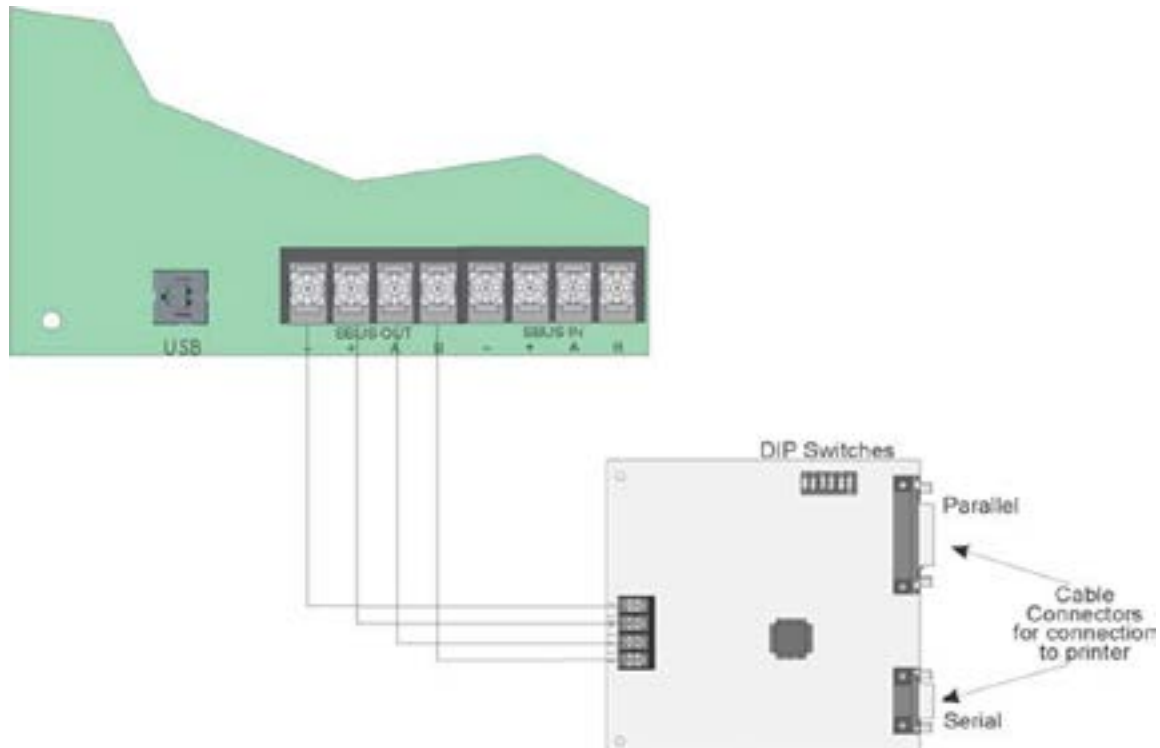
**Q:** True or False:

**Adding an extra 5895XL will not extend your SBUS distance?**

**A:** False, each one will recondition SBUS power for extended distances

## REVIEW

## 5824 Serial / Parallel Interface Installation

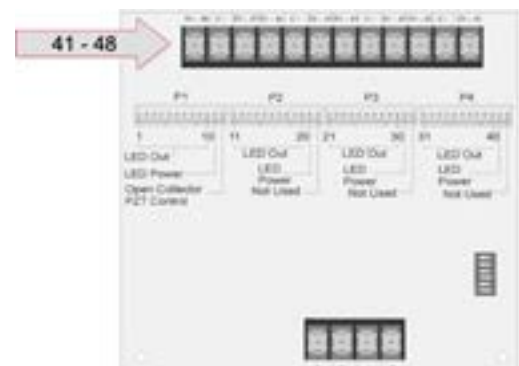


CAD Graphics for computer interface [www.rescuelogic.com](http://www.rescuelogic.com)

## 5880

The 5880 adds 48 points

- 1- 40 will be output circuits (points)
  - LED driver outputs
  - Can be converted to relays
- 41- 48 will be input points
  - Programmed as contact inputs
  - Can be programmed to activate EVS events

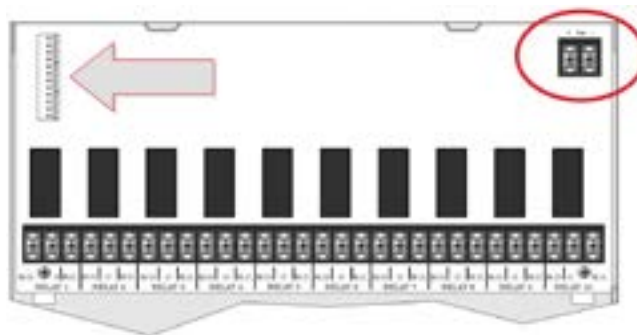


**5883 required to convert output points to relays**

## 5883 Relay Wiring

The P1-P4 connectors on the 5880 can be used to connect to the 5883.

- Relay outputs are mapped (programmed through the 5880) just like all the notification outputs
- Up to 4 per 5880
- Relays rated up to
  - 5A at 30 VDC
  - 5A at 240 VAC



**Must supply 24 VDC, 400 mA**

**Q: What should the voltage between SBUS A & SBUS B read?**

A: 2 & 5 VDC because of data

**Q: True or False:**

**You can T-tap Class A wiring?**

A: False, Class A needs to be in loop

**Q: What should the voltage between SBUS (+) & SBUS (-) read?**

A: 24-27 VDC

**Q: SBUS modules can be ID from # to #**

A: 1 - 63

**Q: If you add an SBUS module and it's not properly connected and addressed, what kind of trouble will you get?**

A: "Module #" Communication Trouble

## REVIEW

## SK-F485C

Converts SBUS to fiber

- Then back to SBUS again

Powered by UL 864 listed power supply 9-35 VDC @ 125 mA

- Silent Knight FACP or power supply
- Other manufacturer FACP or power supply that is UL 864 listed and meets the voltage and current draw requirements

Fiber

- Fiber distance up to 1.0 mile (5,280 FT)
- Connection - ST 62.5 micron multimode
- Maximum signal line loss 5.5 dB



**Note: No programming needed. Does not require SBUS address**

## SK-F485C Installation

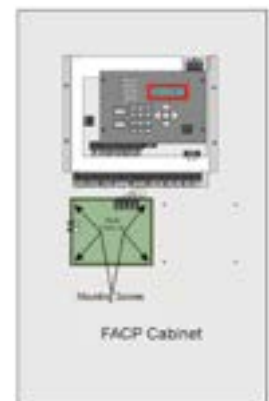
Remove AC and battery from the FACP and 5895XL

Mount the board in the FACP

- Or the 5815RMK if using a 6700 panel

Wire SK-F485C to FACP via SBUS out

Power down the FACP and the RPS-1000. Mount the converter in the FACP cabinet. Then wire the converter to the SBUS out at the FACP

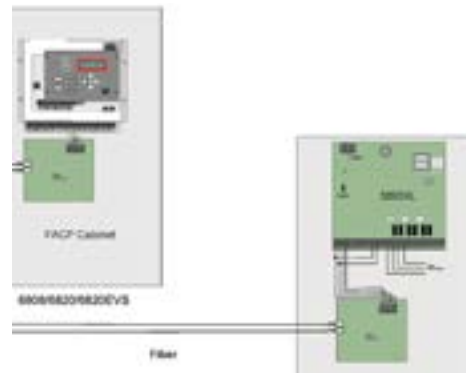


# SK-F485C with 5895XL

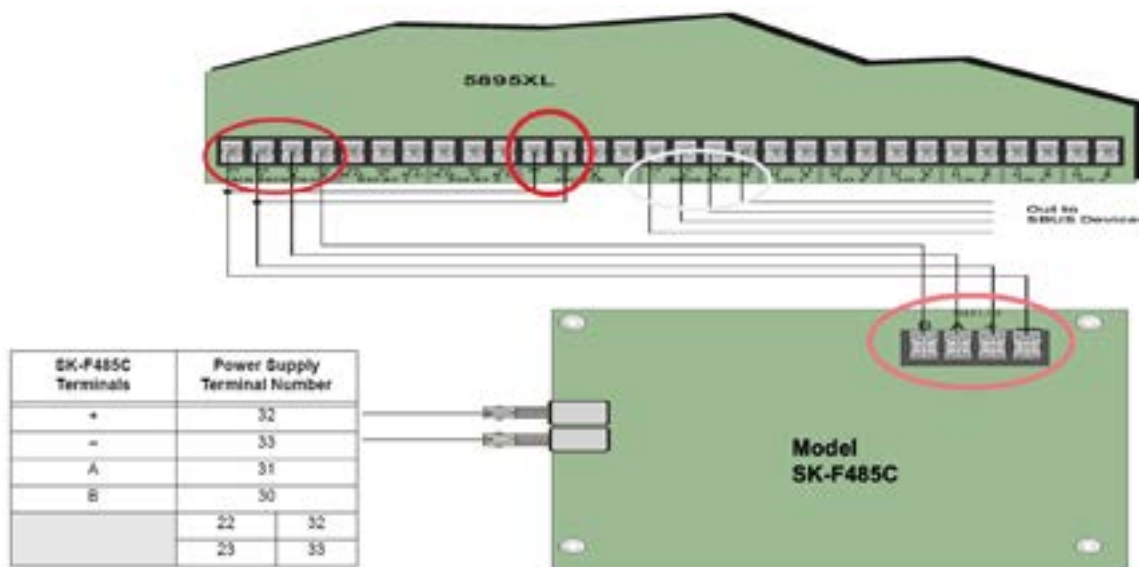
Connect the fiber cable between the converters and power up the FACP and the RPS-1000

- It's important to always double check the wiring and connections before you power up the system

Connect the fiber cable between the converters and power up the FACP and the RPS-1000. It's important to always double check your wiring and connections before you power up the system



## Wiring SK-F485C to 5895XL

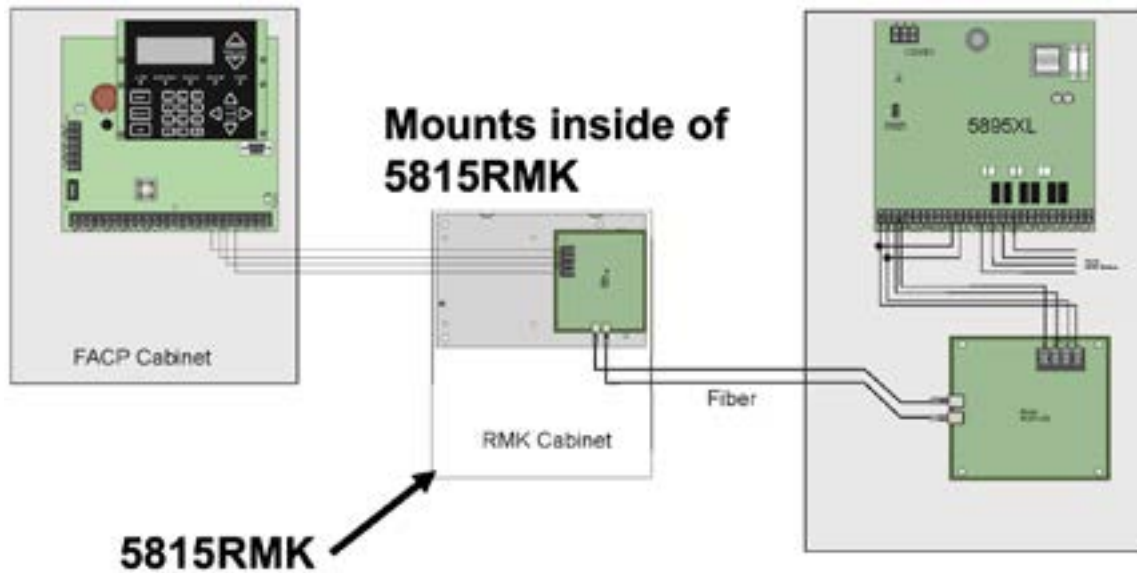


Then wire the converter to the SBUS Main at the RPS-1000

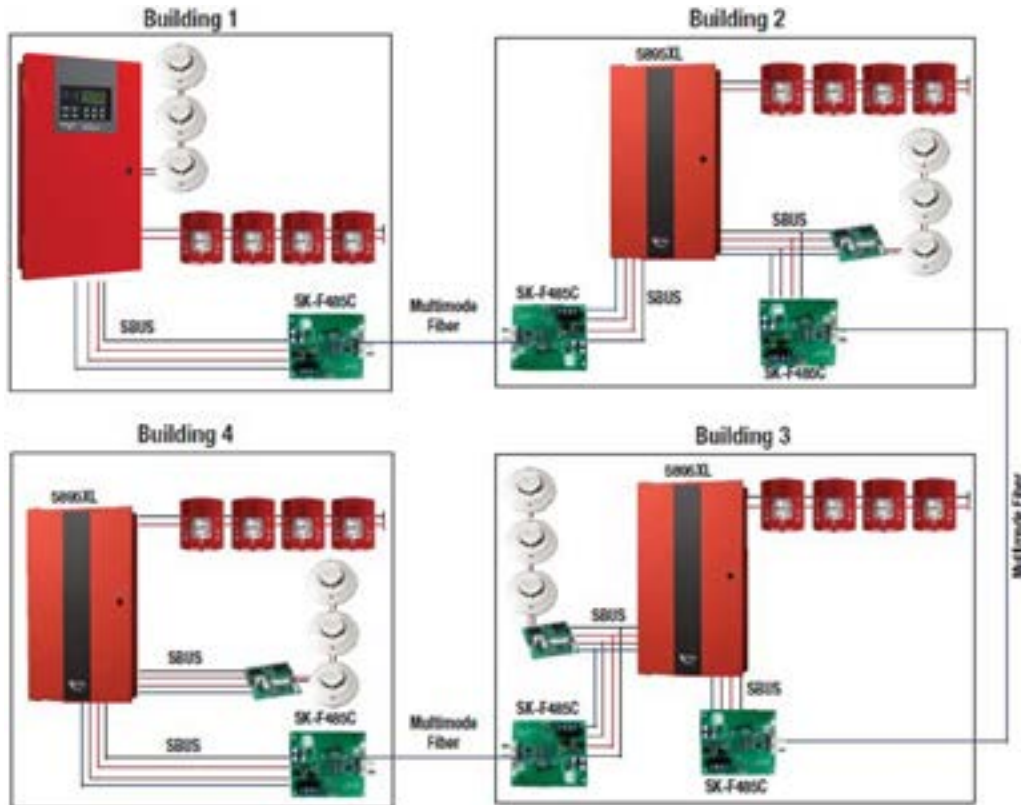
Connect the SBUS IN (+) and (-) to the SBUS Main to power the convertor

Then wire the converter to the SBUS Main at the RPS-1000. Connect the SBUS IN plus and minus to the SBUS Main to power the convertor

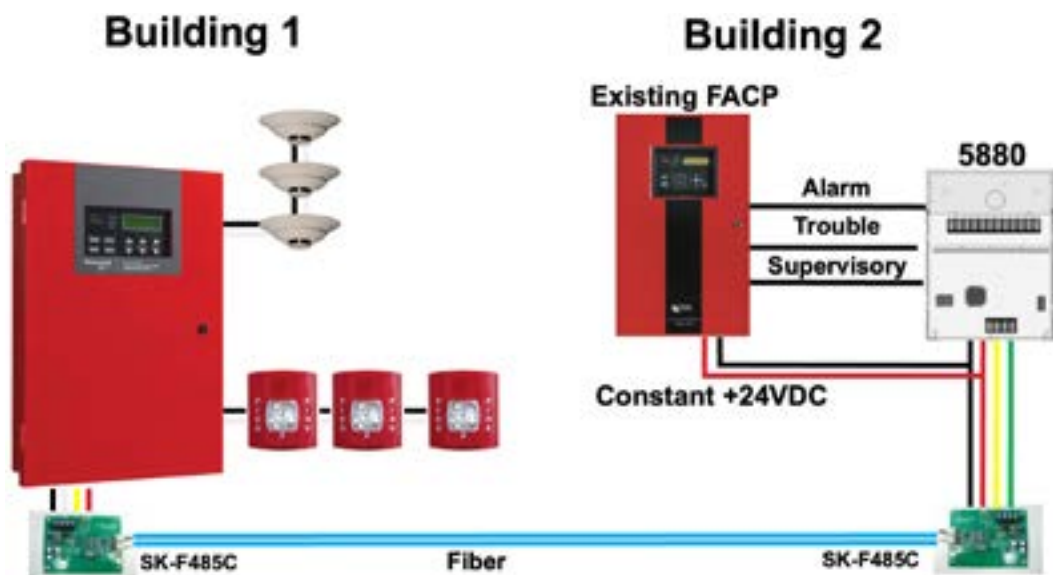
# Installation with 6700



# Multi-Building Protection with one FACP



## Monitor Existing FACP



**Q:** The total distance of fiber you can run is up to?

**A:** One mile (5,280 ft)

**Q:** True or False:

The SK-F485C has to be used with a 5895XL power supply?

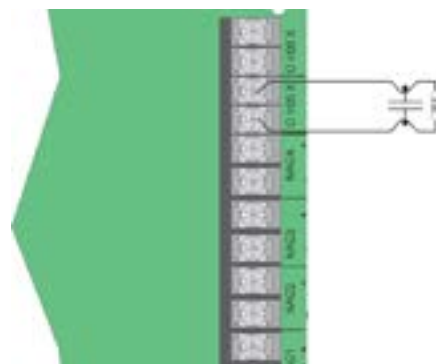
**A:** False

## REVIEW

## Flexput™ I/O Circuits

The 2 Flexput I/O circuits can be used as:

- Class A or B notification circuits
- Class A or Class B initiation circuits
  - Programmed as 2 or 4 wire detectors
- Auxiliary power
  - Resettable
  - Continuous
  - Door holder
  - Sounder base sync



**\*See appendix A of the 6820/EVS manual for compatible devices**

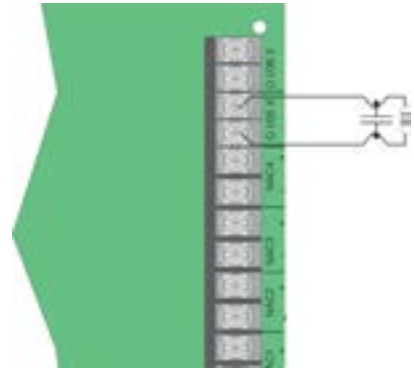
The polarity of the Flexput terminals differ depending on whether the circuit is programmed as an input or output circuit

#### Input circuit

- Detector or normally open contact
- X terminal is negative
- O terminal is positive

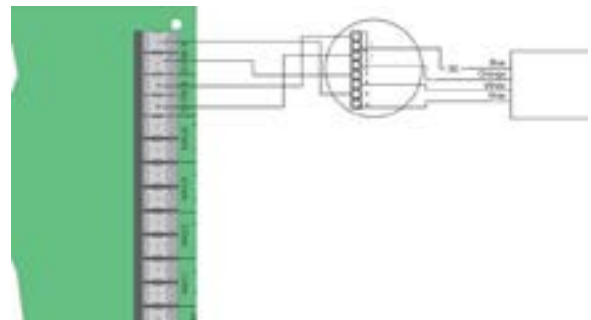
#### Output circuit

- Aux power or NAC
- X terminal is positive
- O terminal is negative



#### 4-Wire Smoke Class B Wiring

- Both Flexput I/O circuits are used
  - Program 98:005 as Det-4-Wire
  - Reports 98:005
  - 98:006 becomes unused



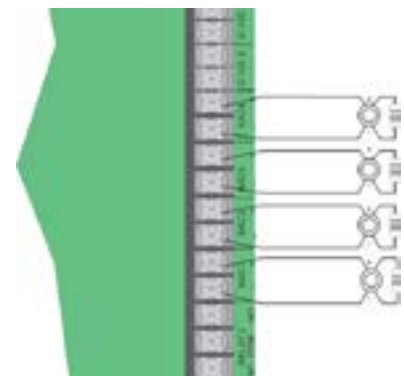
## 4 NACs

The NACs:

- Class A or B notification circuits

Auxiliary Power:

- Resettable
- Continuous
- Door holder
- Sounder base sync

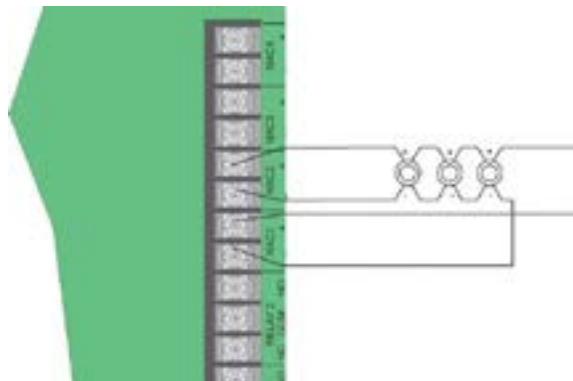




## Flexput™ I/O Circuits / NAC Class A Wiring

Groups 2 adjacent I/O circuits

- Circuits 1 & 2
  - Reports as circuit 1
- Circuits 3 & 4
  - Reports as circuit 3
- Circuits 5 & 6
  - Reports as circuit 5



Configure as Class A in programming

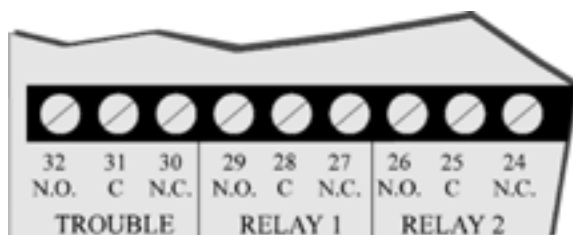
## Onboard Relays

The control FACP has two built-in programmable relays and a built-in trouble relay

Relays are form C

- 2.5 A @ 27.4 VDC

NO 120 VAC



**Q: What is the polarity of a Flexput I/O terminals being used for output?**

A: X is positive, O is negative

**Q: The total current for all circuits must not exceed?**

A: 6 A

**Q: Used as a conventional Class A input, if you remove a wire off of circuit 6, what will the display show?**

A: Module 98 circuit 5 open circuit trouble

## REVIEW

# Power Supplies

## SK-PS Series Remote Power Supplies

- Conventional power supply used to expand power and distribute it throughout a system
  - SK-PS6
  - SK-PS10

SK-PS6 and SK-PS10  
Distributed Power Supplies



## Intelligent Power Supply

- Uses unique identification that can both report status and control other devices
  - 5496
  - 5895XL

5895XL and 5496 Intelligent  
Power Supplies



# SK-PS Series Remote Power Supply

## Features

- Self-contained in a lockable cabinet
- 24 VDC remote power supply
- Outputs are completely power-limited
- Two (SK-PS6) or three (SK-PS10) optically-isolated input/command circuits, compatible with 12 VDC and 24 VDC control panel NACs
  - Trigger input voltage: 9-32 VDC
  - Input current draw in alarm polarity: 9-32 volts, 14.0 mA maximum per input
- Five (SK-PS6) or seven (SK-PS10) output circuits
  - Fully filtered power
  - Five or seven 24 VDC Class B NACs
  - Optional ZNAC-PS Class A converter module for conversion to Class A NACs
  - Alternatively, all output circuits may be configured as 24 VDC special application power outputs or Class D door holder power outputs
  - Output circuits may be configured as resettable or non-resettable



**Class B NACs (require 2kΩ - 27kΩ end-of-line resistors)**

## Features

- Individual NAC power (red) and trouble (yellow) LEDs for each output
- Maximum current available
  - **SK-PS6:** TB8-TB9 – 1 A regulated, 3 A special applications; TB10-TB12 – 0.3 A regulated, 3 A special applications
  - **SK-PS10:** TB8-TB11 – 1.5 A regulated, 3 A special applications; TB12-TB14 – 0.3 A regulated, 3 A special applications
- Maximum total current available (alarm and standby)
  - 6.0 Amps for SK-PS6 Alarm; 3.0 Amps standby
  - 10.0 Amps for SK-PS10 Alarm; 3.0 Amps standby
- Integral supervised battery charger for lead acid batteries only
- Capable of charging 7.0 AH - 33.0 AH (Amp Hour) batteries
  - Cabinet fits 7 or 18 Ah batteries
  - Supervised, non-power-limited
- Fully supervised power supply, battery and NACs



Maximum Battery Capacity: 33.0 Ah  
Minimum Battery Capacity: 7.0 Ah

**The SK-PS only supports 7 Ah or 18 Ah batteries in the cabinet**

\*Other battery capacities up to 33 Ah will not fit in the cabinet due to physical dimensions and require a separate battery cabinet

## Features

- Selectable Strobe Synchronization for NACs
  - System Sensor, Gentex, Wheelock, and Amseco
- Coded signal synchronization
- Removable terminal blocks for field wiring capable of accepting 12-18 AWG wire
- Selectable ground fault detection by switch SW1
- LED trouble diagnostics and history
- Power supply trouble and AC loss Form-C relay contacts
  - fail-safe (normally energized, transfers with loss of power)
  - 4.0 Amps @ 30 VDC resistive
- Optional delay of AC loss reporting for 0, 2, 12, or 30 hours
- Mounting location for optional addressable module
- Up to four PS series units can be cascaded

## Special Applications vs Regulated

Special Applications	Regulated Power
NAC devices included in panel compatibility doc	Industrial horn strobes chimes not included in compatibility doc
Aux Power	
Door Holder	

When are outputs active?					
	Aux Power	Door Holder	NAC	Total current from a PS10	Total current from a PS6
NS-Standby	x	x		3A	3A
A-Alarm	x		x	10A	6A

“What’s the max current you can pull from each NAC circuit?”

3 A

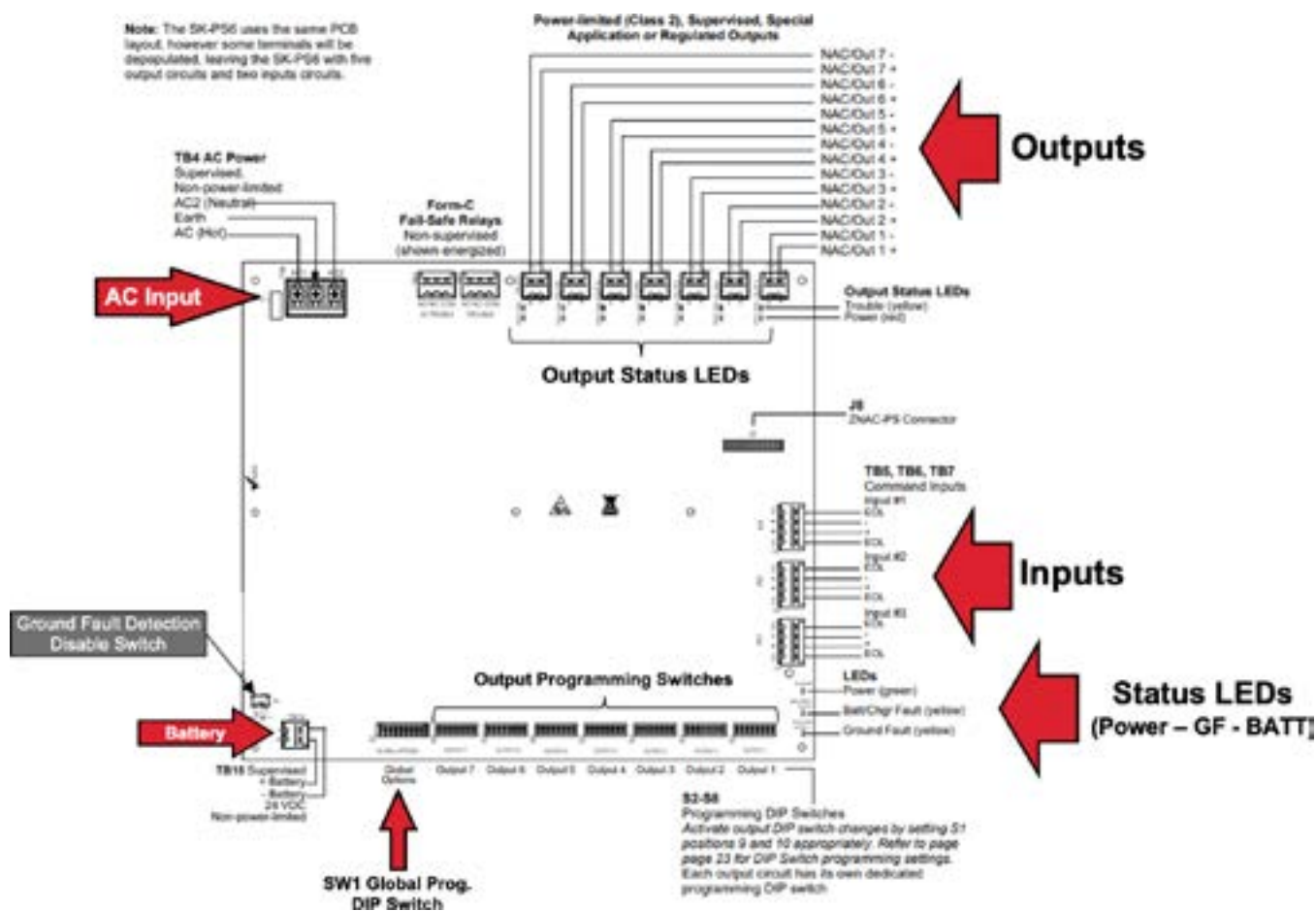
“What’s the max current you pull from each 24 VDC circuit?”

3 A

“What the max current you pull from the booster?”

Resettable/non resettable, door holder is 3 A , 6/10 A for NAC

# SK-PS Board Layout



## S1 Global Options DIP Switch

### Switch 1 and 2

- Debounce/dejitter option provides settling time for input signals to avoid false triggers
  - What is it?
    - Signals from electronic circuits or relay contacts can have a small unstable time when changing state (OFF to ON, or ON to OFF). Which means the signal can briefly “bounce” between states before stabilizes to the desired state, causing signal “jitter”
    - The SK-PS provides four “debounce/dejitter” settings, providing time for a NAC Input signal to stabilize before the NAC Input will recognize it as a valid signal, and not just “noise”, to prevent false alarms

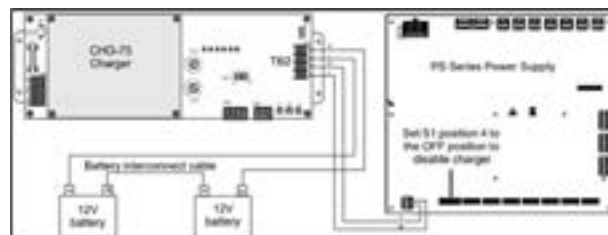
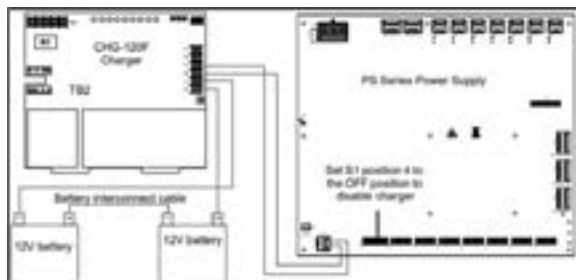
**Switch 3**

- **Command input #1 mode**
  - Power supply output circuits can be configured to “follow” a sync pattern that is input to Command Input #1, either immediately (normal mode), or only after a trigger signal (sync input mode) is applied at command input #2

S1 DIP Switch	OFF	ON
1, 2	These switches determine the command input debounce/dejitter setting (Setting applies to ALL inputs). 1 OFF, 2 OFF = Temporal (for ANSI temporal signals) 1 ON, 2 OFF = 50 Hz (20 msec, for full wave rectified signals) 1 OFF, 2 ON = 6 msec (for strobe signals, control/relay modules) 1 ON, 2 ON = 1 msec (for strobe signals, control/relay modules)	
3	Command input #1 configured for slave mode sync input	Command input #1 configured as normal
4	Internal battery charger = disabled	Internal battery charger = enabled
5, 6	These switches determine door holder dropout after AC power loss 5 OFF, 6 OFF = Power does not drop out 5 ON, 6 OFF = 5 minutes 5 OFF, 6 ON = 60 seconds 5 ON, 6 ON = 15 seconds	
7, 8	These switches determine the AC loss delay timer 7 OFF, 8 OFF = 30 hours 7 ON, 8 OFF = 12 hours 7 OFF, 8 ON = 2 hours 7 ON, 8 ON = None	
9, 10	These switches determine the operating mode of the power supply 9 OFF, 10 OFF = Normal 9 ON, 10 OFF = Change output circuit configurations 9 OFF, 10 ON = Display trouble history 9 ON, 10 ON = Normal	

### Switch 4

- **Charger enable/disable**
  - The SK-PS battery charger can be disabled to accommodate an external battery charger, such as the CHG-75 or CHG-120F.
  - It should only be disabled if an external battery charger is being used for the SK-PS.



### Switch 5 and 6

- **AC loss door holder dropout timer**
  - Any output can be configured as a door closer circuit
    - Configuring an output circuit as a door closer circuit will provide a steady 24 VDC to door holders until an alarm condition or an AC fail condition.
    - Upon an alarm condition, power to door holder circuits will be removed, causing doors to close immediately.
    - During an AC fail condition, the door holder will remain energized until the programmed AC fail indication delay expires.

Position 5	Position 6	Door holder dropout delay after AC loss
OFF	OFF	Power does not drop out with AC loss
ON	OFF	5 minutes
OFF	ON	60 seconds
ON	ON	15 seconds

**Programmed delays are only applicable to AC loss conditions.**

**Switch 7 and 8**

- **AC trouble relay**
  - The SK-PS power supply has a fail-safe Form-C trouble relay located at TB2.
    - The AC trouble relay responds to an AC fail condition on the SK-PS immediately, or after a programmed delay time
    - The reporting of AC loss to a central station is usually delayed in order to prevent multiple transmissions of AC loss and restoral, allowing AC power to stabilize.
    - **When a host FACP is programmed to delay AC loss reporting, the SK-PS MUST be configured to delay the reporting of AC fail.**
    - This will prevent AC loss from being reported as a trouble condition for 30, 12, 2, or 0 hours.

Position 7	Position 8	AC Fail Indication Delay
OFF	OFF	30 hours
ON	OFF	12 hours
OFF	ON	2 hours
ON	ON	none

**\*Note that only “NO” delay and the “2-Hour” delay are acceptable per UL 864 and UL 2572**

**Switch 9 and 10**

- **Special operating mode**
  - The power supply can be placed in two special operating modes.
    - Change output circuit configurations
    - Display trouble history
    - Upon completion of either of these two modes, the system must be placed back in normal operating mode.
    - **Note:** The current operation of all outputs will not be affected or disturbed while in either of these two special operating modes.

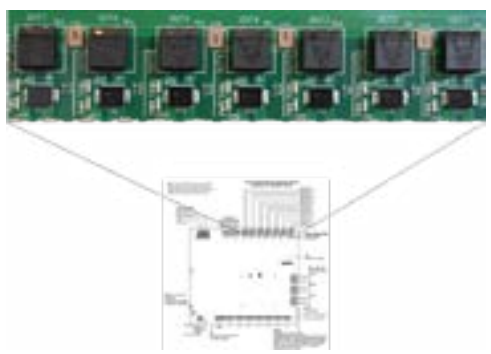


Position 9	Position 10	Operating Mode
OFF	OFF	Normal
ON	OFF	Change output circuit configurations
OFF	ON	Display Trouble History
ON	ON	Normal

DIP switch settings may be changed to the desired configuration either before or after entering the change output circuit configurations mode.

**Change Output Circuit Configurations**

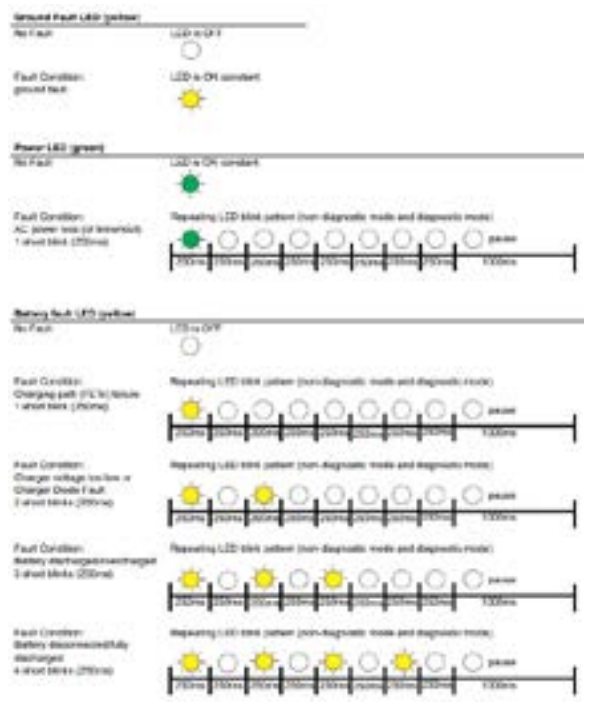
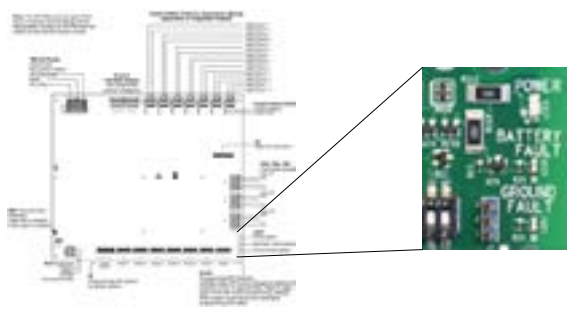
- Enables output circuit programming
  - Output trouble LEDs will continually flash from right to left to confirm the SK-PS is in change output configuration mode.
  - When placed into normal operating mode output trouble LEDs will stop the flashing to confirm Normal mode has been restored.



**Global Options Cont.**

**Display trouble history**

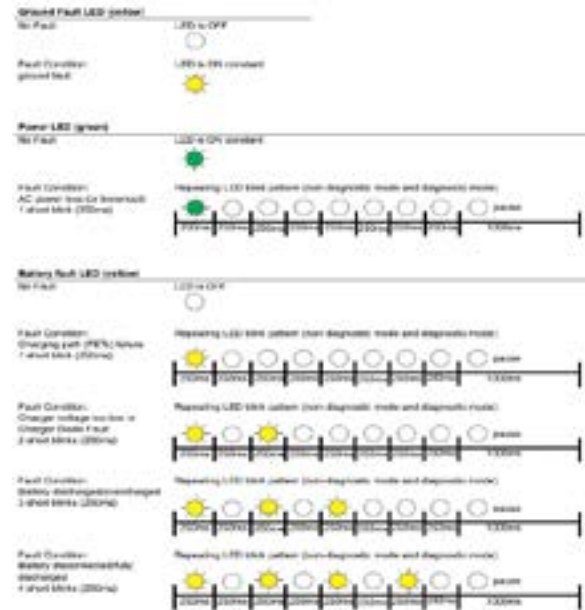
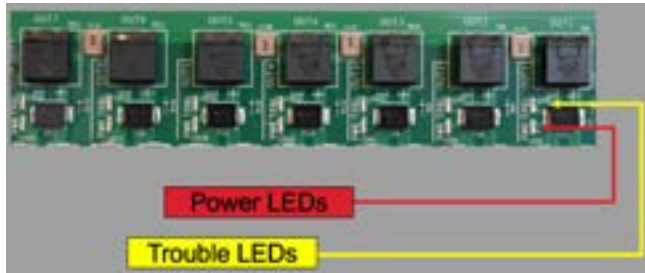
- To see past troubles on the system, place position 9 to OFF and position 10 to ON
  - The SK-PS power supply has 3 system LED indicators for Power, Batt/Chgr Fault, and Ground Fault.



**\*Trouble history will be erased upon returning to normal operating mode**

## Display Trouble History

- To see past troubles on the system, place position 9 to OFF and position 10 to ON
  - Each available output circuit has 2 status LEDs
    - TRBL – Flashes YELLOW during trouble conditions
    - PWR – RED when active



## Slave Mode (Normal Mode)

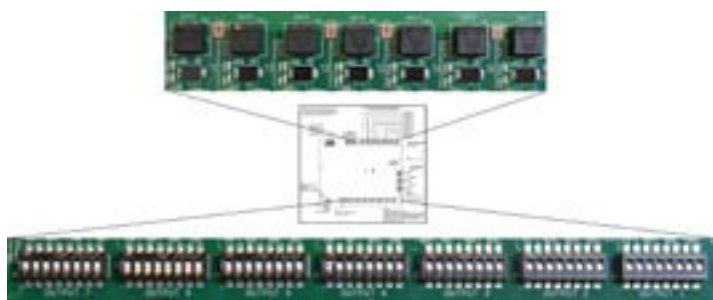
When configured as a slave unit, the SK-PS is connected to a master FACP that has been programmed for synchronized output

- Global Switch 3 must be set to ON (Default)
  - Use only devices from the same manufacturer in each system
  - Set output DIP switch: position 3=ON, 4 = OFF, 5 = ON, 6 = OFF

S1 DIP Switch	OFF	ON
1, 2	These switches determine the command input debounce/dejitter setting (Setting applies to ALL inputs). 1 OFF, 2 OFF = Temporal (for ANSI temporal signals) 1 ON, 2 OFF = 50 Hz (20 msec, for full wave rectified signals) 1 OFF, 2 ON = 6 msec (for strobe signals, control/relay modules) 1 ON, 2 ON = 1 msec (for strobe signals, control/relay modules)	
3	Command input #1 configured for slave mode sync input	Command input #1 configured as normal
4	Internal battery charger = disabled	Internal battery charger = enabled
5, 6	These switches determine door holder dropout after AC power loss 5 OFF, 6 OFF = Power does not drop out 5 ON, 6 OFF = 5 minutes 5 OFF, 6 ON = 60 seconds 5 ON, 6 ON = 15 seconds	
7, 8	These switches determine the AC loss delay timer 7 OFF, 8 OFF = 30 hours 7 ON, 8 OFF = 12 hours 7 OFF, 8 ON = 2 hours 7 ON, 8 ON = None	
9, 10	These switches determine the operating mode of the power supply 9 OFF, 10 OFF = Normal 9 ON, 10 OFF = Change output circuit configurations 9 OFF, 10 ON = Display trouble history 9 ON, 10 ON = Normal	

## Output Circuit Programming

- Each output circuit has its own set of programming DIP switches
- DIP switches S2-S8 are labeled on the PCB to indicate which output circuit it is controlling
- Output circuits are labeled at the top of the PCB, TB8-TB14



**Enable the special operating mode when changing the output circuit configuration**

## Command Inputs/NAC Circuits

The SK-PS allows for individual NAC circuit programming.

- Each NAC can be configured to activate for up to three command inputs
- Switch 1 and 2 **OFF**
  - NAC will activate when input #1 is activated
- Switch 1 **ON** and 2 **OFF**
  - NAC will activate when input #2 is activated
  - Exception: this Input controls horn silencing during selective silence operation
- Switch 1 **OFF** and 2 **ON**
  - NAC will activate when input #3 is activated
  - Input #3 is only available on the SK-PS10 model. If selected on SK-PS6, this setting will default to input #2
- Switch 1 **ON** and 2 **ON**
  - NAC will activate when any input (1, 2, or 3) activates

DIP Switch Position			Output Control Setting/Operation	
	1	2		
	OFF	OFF	NAC output will be active when command input #1 is activated.	
	ON	OFF	NAC output will be active when command input #2 is activated. (Exception: this input controls horn silencing during Selective Silence operation.)	
	OFF	ON	NAC output will be active when command input #3 is activated, if available. (IF accidentally programmed on a SK-PS6, the system will default to Input #2.)	
	ON	ON	NAC output will activate when ANY command input is activated.	
3	4	5	6	Output control setting/operation
OFF	OFF	OFF	OFF	Unused/unsupervised. Outputs will not activate. Factory default setting.
ON	OFF	OFF	OFF	Reserved – Outputs will not activate
ON	ON	OFF	OFF	Non-resettable auxiliary power
OFF	OFF	ON	OFF	Resettable auxiliary power
ON	ON	OFF	OFF	Door holder auxiliary power
ON	OFF	ON	OFF	Slave mode (NAC follower)
OFF	ON	ON	OFF	Master mode – ANSI Temporal (Temporal 3)
ON	ON	ON	OFF	Master mode – CO Temporal (Temporal 4)
OFF	OFF	OFF	ON	Master mode – Amseco/Potter
OFF	ON	OFF	ON	Master mode – Gentex
OFF	OFF	ON	ON	Master mode – System Sensor
OFF	ON	ON	ON	Master mode – Wheelock
ON	OFF	OFF	ON	Master mode, Selective Silence – Amseco/Potter
ON	ON	OFF	ON	Master mode, Selective Silence – Gentex
ON	OFF	ON	ON	Master mode, Selective Silence – System Sensor
ON	ON	ON	ON	Master mode, Selective Silence – Wheelock
			7	Output control setting/operation (Only applies when ZNAC-PS is installed)
			OFF	Class B
			ON	Class A
			8	Output control setting/operation (unused)
			OFF	Unused/unassigned
			ON	Unused/unassigned

## Unused Outputs

The factory default setting for all output circuits is “unused/unsupervised” where positions 3, 4, 5, and 6 are set to the **OFF** position.

- Any unused or disabled outputs in the system configuration must be set to **OFF**
- Switch 3, 4, 5, and 6 **OFF**
  - Unused/unsupervised. Outputs will not activate
- Switch 3 **ON**, Switch 4, 5, and 6 **OFF**
  - Reserved – Outputs will not activate

DIP Switch Position				Output Control Setting/Operation
		1	2	
		OFF	OFF	NAC output will be active when command input #1 is activated.
		ON	OFF	NAC output will be active when command input #2 is activated. (Exception: this input controls horn silencing during Selective Silence operation.)
		OFF	ON	NAC output will be active when command input #3 is activated, if available. (IF accidentally programmed on a SK-PS6, the system will default to Input #2.)
		ON	ON	NAC output will activate when ANY command input is activated.
3	4	5	6	Output control setting/operation
OFF	OFF	OFF	OFF	Unused/unsupervised. Outputs will not activate. Factory default setting.
ON	OFF	OFF	OFF	Reserved – Outputs will not activate
ON	ON	OFF	OFF	Non-resettable auxiliary power
OFF	OFF	ON	OFF	Resettable auxiliary power
ON	ON	OFF	OFF	Door holder auxiliary power
ON	OFF	ON	OFF	Slave mode (NAC follower)
OFF	ON	ON	OFF	Master mode – ANSI Temporal (Temporal 3)
ON	ON	ON	OFF	Master mode – CO Temporal (Temporal 4)
OFF	OFF	OFF	ON	Master mode – Amseco/Potter
OFF	ON	OFF	ON	Master mode – Gentex
OFF	OFF	ON	ON	Master mode – System Sensor
OFF	ON	ON	ON	Master mode – Wheelock
ON	OFF	OFF	ON	Master mode, Selective Silence – Amseco/Potter
ON	ON	OFF	ON	Master mode, Selective Silence – Gentex
ON	OFF	ON	ON	Master mode, Selective Silence – System Sensor
ON	ON	ON	ON	Master mode, Selective Silence – Wheelock
			7	Output control setting/operation (Only applies when ZNAC-PS is installed)
			OFF	Class B
			ON	Class A
			8	Output control setting/operation (unused)
			OFF	Unused/unassigned
			ON	Unused/unassigned

## Resettable and Non-Resettable Aux Power

Each output circuit on the SK-PS can be used as a remote stand-alone power supply to provide power to any devices that require filtered, resettable, or non-resettable power.

- The SK-PS can provide up to 3 A of continuous current
- Non-resettable power is suitable for powering annunciators and other peripheral equipment
- Resettable power is suitable for four-wire smoke detectors
- Resettable outputs reset when the mapped input receives a negative pulse trigger signal from FACP or control module
  - There will be a three second delay prior to output reset
  - The output reset will last 10 seconds



DIP Switch Position				Output Control Setting/Operation
		1	2	
		OFF	OFF	NAC output will be active when command input #1 is activated.
		ON	OFF	NAC output will be active when command input #2 is activated. (Exception: this input controls horn silencing during Selective Silence operation.)
		OFF	ON	NAC output will be active when command input #3 is activated, if available. (IF accidentally programmed on a SK-PS6, the system will default to Input #2.)
		ON	ON	NAC output will activate when ANY command input is activated.
3	4	5	6	Output control setting/operation
OFF	OFF	OFF	OFF	Unused/unsupervised. Outputs will not activate. Factory default setting.
ON	OFF	OFF	OFF	Reserved – Outputs will not activate
ON	ON	OFF	OFF	Non-resettable auxiliary power
OFF	OFF	ON	OFF	Resettable auxiliary power
ON	ON	OFF	OFF	Door holder auxiliary power
ON	OFF	ON	OFF	Slave mode (NAC follower)
OFF	ON	ON	OFF	Master mode – ANSI Temporal (Temporal 3)
ON	ON	ON	OFF	Master mode – CO Temporal (Temporal 4)
OFF	OFF	OFF	ON	Master mode – Amseco/Potter
OFF	ON	OFF	ON	Master mode – Gentex
OFF	OFF	ON	ON	Master mode – System Sensor
OFF	ON	ON	ON	Master mode – Wheelock
ON	OFF	OFF	ON	Master mode, Selective Silence – Amseco/Potter
ON	ON	OFF	ON	Master mode, Selective Silence – Gentex
ON	OFF	ON	ON	Master mode, Selective Silence – System Sensor
ON	ON	ON	ON	Master mode, Selective Silence – Wheelock
			7	Output control setting/operation (Only applies when ZNAC-PS is installed)
			OFF	Class B
			ON	Class A
			8	Output control setting/operation (unused)
			OFF	Unused/unassigned
			ON	Unused/unassigned

# Door Holder

## Each output circuit can be configured as a door holder circuit

- Door holder circuits will provide a steady 24 VDC to door holders until a mapped input activates an alarm or when an AC fail condition removes the power following a programmable delay (set in global settings)
  - Power does not drop out with AC loss
  - 5 minutes
  - 60 seconds
  - 15 seconds

DIP Switch Position				Output Control Setting/Operation
		1	2	
		OFF	OFF	NAC output will be active when command input #1 is activated.
		ON	OFF	NAC output will be active when command input #2 is activated. (Exception: this input controls horn silencing during Selective Silence operation.)
		OFF	ON	NAC output will be active when command input #3 is activated, if available. (IF accidentally programmed on a SK-PS6, the system will default to Input #2.)
		ON	ON	NAC output will activate when ANY command input is activated.
3	4	5	6	Output control setting/operation
OFF	OFF	OFF	OFF	Unused/unsupervised. Outputs will not activate. Factory default setting.
ON	OFF	OFF	OFF	Reserved – Outputs will not activate
ON	ON	OFF	OFF	Non-resettable auxiliary power
OFF	OFF	ON	OFF	Resettable auxiliary power
ON	ON	OFF	OFF	Door holder auxiliary power
ON	OFF	ON	OFF	Slave mode (NAC follower)
OFF	ON	ON	OFF	Master mode – ANSI Temporal (Temporal 3)
ON	ON	ON	OFF	Master mode – CO Temporal (Temporal 4)
OFF	OFF	OFF	ON	Master mode – Amseco/Potter
OFF	ON	OFF	ON	Master mode – Gentex
OFF	OFF	ON	ON	Master mode – System Sensor
OFF	ON	ON	ON	Master mode – Wheelock
ON	OFF	OFF	ON	Master mode, Selective Silence – Amseco/Potter
ON	ON	OFF	ON	Master mode, Selective Silence – Gentex
ON	OFF	ON	ON	Master mode, Selective Silence – System Sensor
ON	ON	ON	ON	Master mode, Selective Silence – Wheelock
			7	Output control setting/operation (Only applies when ZNAC-PS is installed)
			OFF	Class B
			ON	Class A
			8	Output control setting/operation (unused)
			OFF	Unused/unassigned
			ON	Unused/unassigned

## Slave Mode (Sync Input)

If the FACP has a dedicated sync output connector, wire the remote sync output connector to Input #1 terminals 2 and 3

- Global switch 3 must be set to OFF
- Use only devices from the same manufacturer on each circuit
- Set output DIP switch: position 3=ON, 4 = OFF, 5 = ON, 6 = OFF

S1 DIP Switch	OFF	ON
1, 2	These switches determine the command input debounce/dejitter setting (Setting applies to ALL inputs). 1 OFF, 2 OFF = Temporal (for ANSI temporal signals) 1 ON, 2 OFF = 50 Hz (20 msec, for full wave rectified signals) 1 OFF, 2 ON = 6 msec (for strobe signals, control/relay modules) 1 ON, 2 ON = 1 msec (for strobe signals, control/relay modules)	
3	Command input #1 configured for slave mode sync input	Command input #1 configured as normal
4	Internal battery charger = disabled	Internal battery charger = enabled
5, 6	These switches determine door holder dropout after AC power loss 5 OFF, 6 OFF = Power does not drop out 5 ON, 6 OFF = 5 minutes 5 OFF, 6 ON = 60 seconds 5 ON, 6 ON = 15 seconds	
7, 8	These switches determine the AC loss delay timer 7 OFF, 8 OFF = 30 hours 7 ON, 8 OFF = 12 hours 7 OFF, 8 ON = 2 hours 7 ON, 8 ON = None	
9, 10	These switches determine the operating mode of the power supply 9 OFF, 10 OFF = Normal 9 ON, 10 OFF = Change output circuit configurations 9 OFF, 10 ON = Display trouble history 9 ON, 10 ON = Normal	

## Master Mode

A master SK-PS power supply, set for synchronization, is connected to an FACP with a non-synchronized output

- Set output DIP switches to the desired sync protocol.
- Refer to the Device Compatibility Document for compatible devices
- Use only devices from the same manufacturer in each zone or field of view
  - Global switch 3 must be set to ON (default)

S1 DIP Switch	OFF	ON
1, 2	These switches determine the command input debounce/dejitter setting (Setting applies to ALL inputs). 1 OFF, 2 OFF = Temporal (for ANSI temporal signals) 1 ON, 2 OFF = 50 Hz (20 msec, for full wave rectified signals) 1 OFF, 2 ON = 6 msec (for strobe signals, control/relay modules) 1 ON, 2 ON = 1 msec (for strobe signals, control/relay modules)	
3	Command input #1 configured for slave mode sync input	Command input #1 configured as normal
4	Internal battery charger = disabled	Internal battery charger = enabled
5, 6	These switches determine door holder dropout after AC power loss 5 OFF, 6 OFF = Power does not drop out 5 ON, 6 OFF = 5 minutes 5 OFF, 6 ON = 60 seconds 5 ON, 6 ON = 15 seconds	
7, 8	These switches determine the AC loss delay timer 7 OFF, 8 OFF = 30 hours 7 ON, 8 OFF = 12 hours 7 OFF, 8 ON = 2 hours 7 ON, 8 ON = None	
9, 10	These switches determine the operating mode of the power supply 9 OFF, 10 OFF = Normal 9 ON, 10 OFF = Change output circuit configurations 9 OFF, 10 ON = Display trouble history 9 ON, 10 ON = Normal	

**\*The circuit used to trigger the SK-PS must NOT be configured for sync**

## Master Mode (Selective Silence)

Selective Silence allows the silencing of the sounder portion of a horn/strobe combination device without turning off the strobe

- Selective Silence is only supported while in master mode
  - Only command inputs #1 and #2 are used to control the Selective Silence operation
    - **command input #3 on SK-PS10 does not support Selective Silence**
- Input #1 is used for activating the horn/strobe devices, while Input #2 only controls sounding of the horns
  - **Input #1 must be active for input #2 to have any effect on NAC outputs set for Selective Silence**
    - If only command input #1 is active, only the strobes will be activated
    - If both command input #1 and #2 are active, strobes and horns will be activated
    - If only command input #2 is active, NAC outputs will not be activated
    - If neither command input #1 nor #2 is active, NAC outputs will not be activated

**\*The circuit used to trigger the SK-PS must NOT be configured for sync**

## Class A wiring - ZNAC-PS

NAC circuits (all outputs) and aux power circuits (outputs 1 and 2) can be converted to Class A wiring

- ZNAC-PS option card required for Class A
- Set DIP switch position 7=ON when a selected output circuit is configured for Class A wiring.
  - The default setting is OFF for Class B wiring

**Class A supervision and the ZNAC-PS module are not intended for use with door holder operation**

DIP Switch Position				Output Control Setting/Operation
		1	2	
		OFF	OFF	NAC output will be active when command input #1 is activated.
		ON	OFF	NAC output will be active when command input #2 is activated. (Exception: this input controls horn silencing during Selective Silence operation.)
		OFF	ON	NAC output will be active when command input #3 is activated, if available. (if accidentally programmed on a SK-PS6, the system will default to Input #2.)
		ON	ON	NAC output will activate when ANY command input is activated.
3	4	5	6	Output control setting/operation
OFF	OFF	OFF	OFF	Unused/unsupervised. Outputs will not activate. Factory default setting.
ON	OFF	OFF	OFF	Reserved – Outputs will not activate
ON	ON	OFF	OFF	Non-resettable auxiliary power
OFF	OFF	ON	OFF	Resettable auxiliary power
ON	ON	OFF	OFF	Door holder auxiliary power
ON	OFF	ON	OFF	Slave mode (NAC follower)
OFF	ON	ON	OFF	Master mode – ANSI Temporal (Temporal 3)
ON	ON	ON	OFF	Master mode – CO Temporal (Temporal 4)
OFF	OFF	OFF	ON	Master mode – Amseco/Potter
OFF	ON	OFF	ON	Master mode – Gentex
OFF	OFF	ON	ON	Master mode – System Sensor
OFF	ON	ON	ON	Master mode – Wheelock
ON	OFF	OFF	ON	Master mode, Selective Silence – Amseco/Potter
ON	ON	OFF	ON	Master mode, Selective Silence – Gentex
ON	OFF	ON	ON	Master mode, Selective Silence – System Sensor
ON	ON	ON	ON	Master mode, Selective Silence – Wheelock
			7	Output control setting/operation (Only applies when ZNAC-PS is installed)
			OFF	Class B
			ON	Class A
			8	Output control setting/operation (unused)
			OFF	Unused/unassigned
			ON	Unused/unassigned

# Trouble Supervision Using Input Circuits

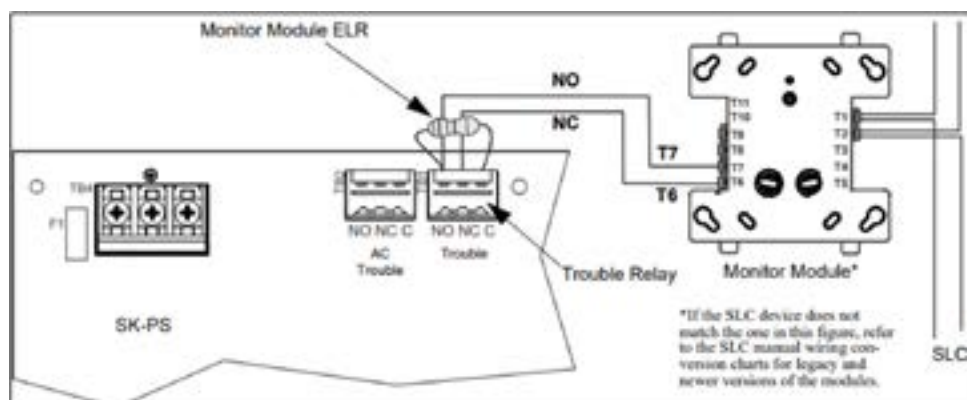
The FACP supervises the connection between itself and the SK-PS via the control panel's NAC End-of-Line Resistor (ELR)

- To supervise the SK-PS, an ELR must be installed across terminals 1 and 4 of command inputs #1 and #2 (and #3 for the SK-PS10)
- A field wiring fault on the NAC output of the SK-PS will trigger a disconnection of the ELR at the related command input, causing a general NAC trouble at the FACP provided the FACP's NAC is not in alarm
- The following are exceptions
  - Aux power outputs that trigger the trouble relay during an output trouble instead of breaking the ELR connection at the command input regardless of the output to input relationship
  - Faults are only reported by command input #1 when Selective Silence output mode is controlled by command input #1 and #2
  - Faults are only reported by the trigger input when command input #1 is configured for sync input mode operation controlled by a sync and trigger input



**\*If the SK-PS is in alarm, only a short circuit on its NAC will be detected as a trouble**

## Trouble Relay



**\*If trouble monitoring is required when the power supply is in alarm, the Trouble Relay at TB1 can be used**



**The SK-PS power supply has a fail-safe Form-C trouble relay located at TB1**

- The contacts can be monitored by an FACP input circuit, or an addressable monitor module.
  - Note that any faults reported by command inputs are not repeated by the trouble relay, offering limited trouble reporting
- Trouble conditions that will cause the normally energized trouble relay to change states regardless of whether the panel is in alarm or standby:
  - A battery fail condition at the power supply
  - A battery charger fail on the power supply
  - A ground fault condition on the power supply
  - A field wiring fault on the SK-PS output in any aux power mode
  - A total panel overload fault

**\*NOTE: The individual NAC trouble LED will indicate which NAC circuit is in trouble**

**Q: What is the max output of the SK-PS6 Conventional Distributed power supply?**

A: 6 A

**Q: What is the max output of the SK-PS10 Conventional Distributed power supply?**

A: 10 A

**Q: How long does the output reset last when using Resettable Power?**

A: 10 Seconds

**Q: What synchronization mode allows all outputs to follow the FACP sync pattern?**

A: Slave Mode

**Q: What synchronization mode allows each output to generate its own sync pattern?**

A: Master Mode

**Q: What mode allows the programming of the outputs while the SK-PS is in use?**

A: Special Operating Mode / Change output circuit configuration

**Q: True or False?**

**Using Special Operating Mode, you can display the power supplies trouble history?**

A: True

**Q: The SK-PS outputs must use a 4.7K  $\Omega$  EOL?**

A: False, supports a range of EOL resistors from 2K-27K  $\Omega$

## REVIEW

A person is seen from the back, interacting with a fire alarm control panel. The panel features a small LCD screen and a keypad. The person's hand is on the keypad. To the right, a perforated metal wall holds various components: two white smoke detectors, a fire alarm pull station with the text "FIRE" and "PULL DOWN", and several white smoke detectors. The entire scene is overlaid with a blue tint.

# PANEL PROGRAMMING OVERVIEW

# Programming Overview

Programming the FACP can be thought of as a three-part process.

You must program:

1. **System Options**
  - These are options that affect general operation of the panel
2. **Options for input points and zones**
  - These are primarily options that control the detection behavior of devices
3. **Options for output points and groups**
  - This includes selecting characteristics for output groups and mapping output circuits to output groups

## Point Identification

Point Identification= MM:SMPPP	
MM	SBUS Module ID (1-63, 95, 97, 98, 99)
SM	Sensor or Module (SK only)
PPP	Point Address (3 digit - zero filled)

Points are identified by SBUS module, sensor or SLC module and address

- Example – 01:s099

SD protocol doesn't use sensor or module

- Example – 01:127

Address for SK detector as 99 on internal SLC

- 97:s099

Address for circuit 1 on internal power supply

- 98:001

Address for I/O circuit 6 on 5895XL ID as 21

- 21:006

Address for SK module as 34 on internal SLC

- 97:m034

Address for SK detector as 59 on 6815 ID as 12

- 12:s059

Address for SD detector as 63 on 5815XL ID as 08

- 08:063

# Inputs

## Input Point

- Addressable input device that initiates a condition
  - Example – SK-Photo-W, SK-Heat-W, SK-Monitor
- All input points are assigned to a zone

## Input Zone

- A protected area of input points
- All points assigned will share the same software zone characteristics
  - Example = naming “First Floor”

6700  
125 Zones

6808  
250 Zones

6820/EVS  
999 Zones

# Input Mapping

- Input points are assigned to input zones.
- Any input point can be assigned to any input zone.
  - Input points can be assigned to one zone only.
  - An input point can be designated as “unused,” which means it has not been assigned to a zone.



**Note: Input points of the same type need to be assigned different zones if they are activating different outputs**

# Zone Events

There are 13 types of events that can occur when mapping zones

- **Fire Events:**
  - Manual pull alarm
  - Water flow alarm
  - Detector alarm
    - Heat or smoke detectors
  - Zone aux 1 and zone aux 2 alarm
    - User-specified
    - Can be custom named
  - Pre – Alarm
  - Interlock alert
- Interlock release
- Fire supervisory
- CO alarm
- CO supervisory
- **Advisory Events:**
  - Trouble
  - Status point active
    - Always non-latching
    - No annunciation at the FACP

# Outputs

## Output Point

- An addressable output point or a notification point, circuit, or relay
  - Example – SLC relay or horn/strobe circuit

6700  
125 Zones

## Output Group

- An output group is made up of output points that have been programmed to respond in the same way
  - Output groups simplify programming
  - You do not have to program each individual point
  - Once you have defined the characteristics, you can assign each point to the appropriate group
    - Example = non-silenceable

6808  
250 Zones

6820/EVS  
999 Zones

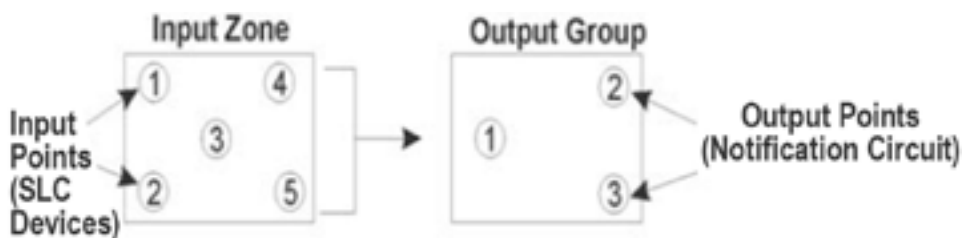
# Output Circuit Mapping

- Output points are assigned to output groups.
- Any output point can be assigned to any output group.
  - Output points can be assigned to one group only.
  - An output point can be designated as “unused,” which means it has not been assigned to a group.



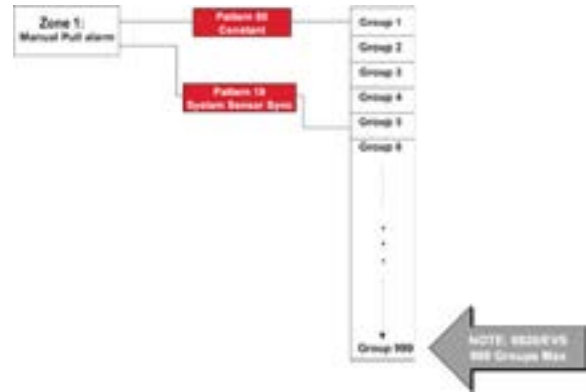
# Mapping

In general terms, mapping is assigning outputs that should activate when input event occurs. You do this by assigning input points to input zones, output points to output groups and then linking or mapping zones and output groups.



**Example**

- Zone 1 manual pull input zone event
- Group 1 using constant output
- Group 5 using System Sensor sync



## Programming

- Through the HFSS downloading software
  - Direct connect via a USB cable connection
- Program directly from an annunciator
  - Using either the on-board annunciator or remote annunciator

**Note: Not all functions can be programmed via the annunciator  
Example: Mapping must be done using HFSS**

## Plan Your Communication Link!!

**Identify Panel ID and set dipswitches before you run the first JumpStart**

- Will need to reset to default if you want to change the Panel ID
- Switches 1 through 5 are used to set the panel address
- Each switch doubles in value when moved up
  - 1=1; 2=2; 3=4; 4=8; 5=16; 6=32



**Please Note**

- SK-6700, SK-6808, SK-6820, and SK-6820EV5 can be Linked together
- Must have a SK-NIC card to link panels
- Switches 6, 7, and 8 are not used

## Restore Defaults

This option allows you to restore the panel back to factory defaults

- All programming will be lost

## Changing the User Codes

In accordance with Honeywell cybersecurity requirements backed by UL and NFPA, you must change the panel's passwords

- Upon startup of your panel, you will receive three troubles as Default Password (PWD) fault
  - Installer profile, multi-site Installer, and computer access code
- To fix this, we must change these passwords through the panel or in HFSS



## Rotary Wheel Addressing

All SK addressable products come with rotary wheels to set the addresses

There are two wheels

- The first one is used to set the address by tens
- The second wheel is used to set the address by ones



## Jumpstart Programming

JumpStart allows for faster system setup

- Panel scans for SBUS expanders and SLC devices not currently in the system
  - New devices are added in their default configuration
  - When Jumpstart completes, you can choose not to accept the new devices and return to previous configuration
- This saves time from having to program options for each module or device

Depending on the application, the installer may need to make some changes after JumpStart completes

## Jumpstart Input Defaults

The first JumpStart on a panel with a default configuration will determine the number and type of input points

### JumpStart assigns the correct detector type

- Heat, fire-CO, or photo

Any contact monitor modules on the system will be assigned “manual pull”

- Monitor, minimon
  - You will need to manually change the switch type if manual pull is not correct

### The first JumpStart auto-programming creates one zone (zone 1) and assigns all input points to zone 1

- Zone 1 is mapped to output group 1

## Jumpstart Output Defaults

A 6000 series panel JumpStart creates three output groups. The 6820EVS with amplifiers will create four output groups

- The output circuits are assigned as follows:
  - **Notification and I/O circuits:**
    - Configured as notification and assigned to Group 1. JumpStart automatically programs Zone 1 to activate group 1 using constant on output when an alarm condition occurs
  - **Relay 1:**
    - Assigned to group 998. JumpStart automatically programs zone 1 to activate group 998 using constant on output when a supervisory condition occurs
  - **Relay 2:**
    - Assigned to group 999. JumpStart automatically programs zone 1 to activate group 999 using constant on output when an alarm occurs
  - **Amplifier Circuits:**
    - Assigned to group 2. JumpStart automatically programs zone 1 to activate group 2
  - **Addressable output points (relay modules):**
    - All addressable relay devices will be configured as “Output Pt” (general purpose output point) and assigned to group 1



## When to Jumpstart

### Run JumpStart after you have addressed and connected all input and output devices

- If you need to install a few devices after you have run JumpStart, you can install them manually or run JumpStart again later
- JumpStart is **INCREMENTAL** and will not erase data but builds on it
  - JumpStart will keep user options, such as names, for devices already installed
  - Example = Adding a module
  - Only adds new devices
  - Does not erase configuration

#### Crucial Point!

Different than previous generation of Silent Knight panels

## Two ways to start a Fire Drill

- Press [ENTER] to go to the main menu
  - Select option 1: System tests
  - Select option 1: Fire drill
  - Press [ENTER] to start, press any key exit
- OR
- Press the DRILL button on the front of the panel
  - Press [ENTER] to start drill
  - Press [ENTER] to stop drill, brings you to home screen

## Walk Test

### From Main Menu

- Select option 1: System tests
- Select option 4 : Walk test with RPT
- Press [ENTER] to start the test
- Press any key to end the test
- Left arrow (<) to the home screen

Rpt is short for reporting, meaning that this test will report to central station.  
Option 3 is a non-reporting test.

# Communications Set-Up

## Receiver Information

Enter installer code: 1111

- Select option 6: Network prog
- Select option 6: Communicator optns
- Select option 3: Receiver config
  - Select panel 01
- (>) Right arrow to enter reporting format
- Using the up or down arrow select the desired format (CID)
- (>) Right arrow to enter the phone number
- Press the left arrow back to **communicator optns**

## Reporting Table Information

In 'Communicator Optns'

- Select option 4: Reporting table
- Select the \*asterisk button to: Add row
- (>) to move, then up arrow to change reporting status to Y or N for alarms, supervisory, and troubles
- (>) right arrow for primary receiver then enter account number
- (>) right arrow to test prim acct and Y or N
- (<) left arrow to exit and then up or down arrow to save changes

**\*\* If receiver had not already been added. Please go back and follow the steps on the 'Receiver Configuration' slide.**

**Q: How many output groups can a 6820 have?** A: 999

**Q: How many output points can you program into a group?** A: All of them

**Q: Assigning or linking events to outputs that should activate when events occur is called?**  
A: Mapping

**Q: True or False? Input points can be used in multiple zones?** A: False, 1 zone only

**Q: How many input zones can a 6820 have?** A: 999

**Q: How many input points can you program into a zone?** A: All of them

**Q: JumpStart automatically assigns all input points into which zone?** A: Zone 1

**Q: JumpStart automatically creates how many output groups on a 6820?** A: 3 – 1, 998, 999

**Q: When should you set your panel ID?**  
A: BEFORE you turn panel on and BEFORE first JumpStart

**Q: What would you need to do if you wanted to change Panel IDs after JumpStart?**  
A: Power down and Default Panel

**Q: How many event types can occur in a zone?** A: 13

**Q: What is the complete address of I/O 5?** A: 98:005

**Q: What programming option allows for faster system setup?** A: Jumpstart

**Q: True or False? Running a Jumpstart defaults the panel?** A: False... it's incremental

## REVIEW

A person is seen from the back, interacting with a fire alarm control panel. The panel features a digital display and a keypad. To the right, a vertical rack holds several white smoke detectors and a fire alarm pull station labeled 'FIRE PULL DOWN'. Below the rack are four white smoke detectors mounted on a perforated metal surface. The entire scene is overlaid with a blue tint.

# SIGNALING LINE CIRCUIT (SLC)

# Terminology

## SLC Sensor

- Any addressable detector
  - SK and SD protocol detectors

## SLC Module

- Any SK addressable input or output device
  - SK and SD protocol modules
    - Any SLC device that is NOT a detector

## SLC Expander Cards

- Provide a full set of addresses
  - 6815
  - 5815XL

# Signaling Line Circuit Expander (SLC)

## 6815

- 6820 and 6820EVS only
  - SK protocol *only*
    - Does NOT support SD protocol
- Supports up to:
  - 159 SK sensors
  - 159 SK modules
  - The number of SLCs that can be deployed is largely limited by maximum available points



**NOT compatible with older generation panels (5820XL & 5820XL-EVS)**

## 5815XL

- 6820 and 6820EVS
  - SD protocol *only*
- Supports up to:
  - 127 SD addressable SLC devices
    - The number of SLCs that can be deployed is largely limited by maximum available points



### Compatible with older generation of panels

- 5820XL and 5820XL-EVS
  - Maximum of 3
  - Supports both SD and SK protocols
    - 127 SD points
    - 99 SK sensors and 99 SK modules

**If replacing a 5000 series panel with a 6000 series panel...  
If the 5000 series panel is equipped with a 5815XL using the SK protocol, you MUST replace 5815XL with a 6815**

# Wiring Requirements

- Maximum resistance 50 Ohms
- Measure from start to last device
- Class A measures the whole loop
- For both SK and SD protocol

Older 5000 series panels SK maximum resistance was 40 Ohms

## SK Requirements

Wire Requirements	Distance in Feet (meters)	Wire Type
<b>Recommended:</b> Twisted-unshielded pair. 12 to 18 AWG (3.31 mm to 0.82 mm), 50 Ohms per maximum for style 4 loop.	12,500 ft. (3,810 m) 9,500 ft. (2895.6 m) 6,000 ft. (1,828.8 m) 3,700 ft. (1,127.76 m)	12 AWG (3.31 mm) 14 AWG (2.08 mm) 16 AWG (1.31 mm) 18 AWG (0.82 mm)
Untwisted, unshielded wire, in conduit or outside conduit.	5,000 ft. (1,528 m) 3,700 ft. (1,127.76 m)	12 - 16 AWG (3.31 mm - 1.31 mm) 18 AWG (0.82mm)
Twisted, shielded pair. Note: Shields must be isolated from ground. Shields should be broken at each device	5,000 ft. (1,528 m) 3,700 ft. (1,127.76 m)	12 - 16 AWG (3.31 mm - 1.31 mm) 18 AWG (0.82 mm)
<b>Note:</b> Maximum total capacitance of all SLC wiring (both between conductors and from any conductor to ground) should not exceed 0.5 micro farads.		

## SD Requirements

Wire Gauge	Max. Distance for SD
22 AWG	1,500 feet
18 AWG	3,900 feet
16 AWG	6,200 feet
14 AWG	10,000 feet

Wire distance is calculated at the end of the run

- One way - NOT back

Wire distance must be less than max for the gauge



## Wiring Requirements T-Taps



Use the distance of the device that is furthest from the panel to determine the gauge



Wire Gauge	Max. Distance for SD
18 AWG	3,700 feet
16 AWG	6,000 feet
14 AWG	9,500 feet
12 AWG	10,000 feet

Need 18 AWG for the entire SLC



# Rotary Wheel Addressing

All of the SK addressable SLC devices come with rotary wheels to set the addresses  
There are two wheels

- The first one is used to set the address by tens
- The second wheel is used to set the address by ones



Remember that you have up to 159 modules and 159 sensors on one SLC loop

- Do not duplicate addresses of modules or sensors on the same loop
- You can have the same address for a module and a sensor on the same loop
- 0 is an invalid address

## When FACP is programmed to report by point:

Detectors

- Address from 1 – 159
  - Report to central station 001 - 159

Modules

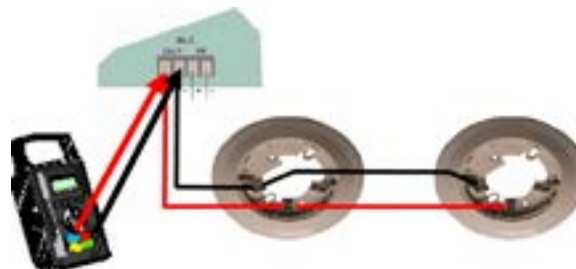
- Addressed 1 – 159
  - Report to central station 201 – 359

**SK-Monitor 2, if you address it as a zero, the 2nd module will be address 1.**

# SLC Voltage

## Measure the SLC Voltage Out

- SD Series 30 – 31 VDC
- SK Series 15 – 16 VDC
  - LEDs flash every 6 seconds



**Maximum number of LEDs that can be on during an alarm is 30**

# SK Input Modules

- Gives an address to a non-addressable, normally open contact
- Programmed as contact input in HFSS
- Maximum initiating device circuit wiring resistance is 1500 Ohms
- Maximum distance of dry contact device from monitor module is 2,500 feet
- 47k end of line resistor (for most Modules)

## 17 different types of inputs

- **Supervisory and tamper**
  - Both report as supervisory to central station
- **Water Flow**
  - Used to monitor waterflow switch
  - Can be programmed with a delay
- **Detector input sw**
  - Used with 4-wire detectors
- **P.A.S.**
  - Positive alarm sequence
- **Manual pull**
- **System silence and system reset**
  - Allows for a remote silence or reset switch
- **Zone aux 1 and 2**
  - Assign a custom name in panel parameters
  - Reports as an auxiliary alarm (CID code:140)
- **System aux 1 and 2**
  - Reports as an auxiliary alarm (CID code:140)
- **Fire drill**
- **Manual Release switch**
- **Interlock switch**
- **Status point**
  - Does not report to central station
  - Not displayed on annunciator
- **CO det input sw**
- **CO supervisory input sw**

## EVS events added when EVS-VCM added to 6820EVS

- **EVS input**
  - Specify EVS event
- **EVS Tamper**
- **EVS Supervisory**

# SK Modules



**SK-Minimon**  
Class B

Mounts in electrical box behind contact



**SK-Monitor**  
Class A or B

Mounts in 4 square electrical box

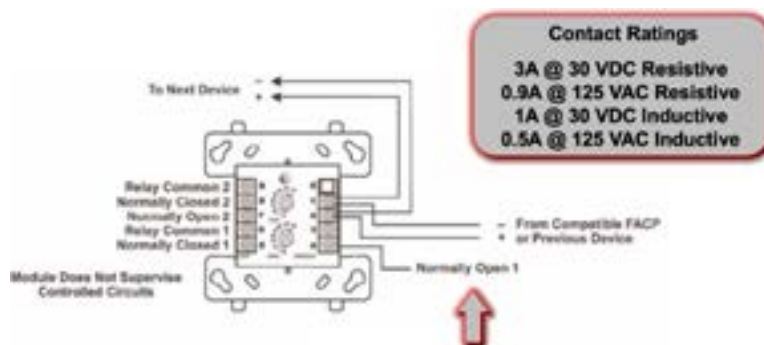
# SK-Relay

## Addressable Relay Module

- Allows you to control a wide variety of normally open and normally closed applications including:
  - Elevator recall
  - Door closing
  - Fan operation
  - Auxiliary notification
- The LED on the relay module
  - LED flashes green during normal condition
  - LED is green constant on, with change of state



## SK-Relay Wiring



**\*When programmed for aux reset or aux door the relay will be in an active state when the system is normal**

## SK-Pull-SA / Pull-DA

### Pull Station

- Single action
- Dual action
  - Both addressable

The LED is visible through the handle

- Blinks for normal conditions
- Steady red in alarm conditions

Key operated and use the same key as the FACP lock set

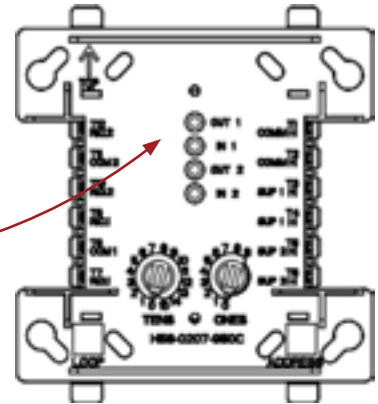
- The operator can open the pull stations without causing an alarm condition



# SK-Relaymon-2

Dual Relay/Monitor Module

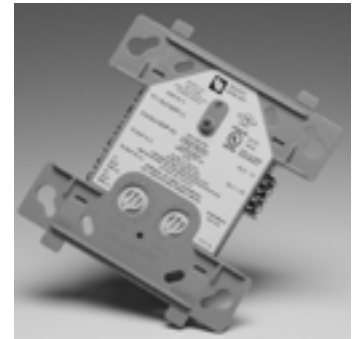
- 2 relay outputs
- 2 monitor inputs
- Class B wiring
- 2 Form C relay contacts, each having a unique address
- Monitors 2 circuits, with unique addresses simultaneously
- Rotary wheel sets 1st relay address
  - Next 3 follow,
  - Input, relay, input
  - All four address must be available and sequential



# SK-Zone

Addressable Module for 2-wire conventional smoke detectors

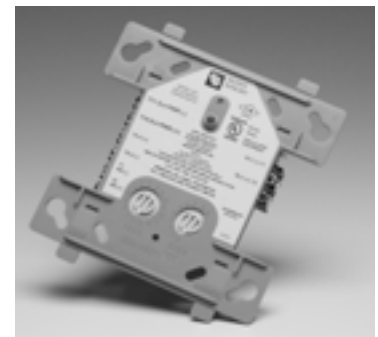
- This means you can retrofit an existing building and use existing conventional devices
  - Check install sheet for compatible smoke detectors
- LED status
  - Blinking = normal
  - Solid red = alarm



**Power to the interface module must be externally switched to reset the detectors. A relay control module can be used to switch power from a standard power supply.**

# SK-Control

- Flexible solution for adding notification circuits where needed
- Support for Class B (style Y) or Class A (style Z) wiring
- Panel controlled status LED that flashes green in normal state and is solid green in alarm
- Polling LED visible through the cover plate
- Rotary address switches for fast installation
- UL listed



# SK-ISO

Line Isolator Module

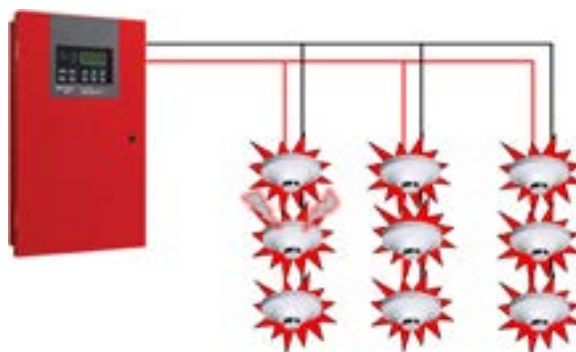
- Acts as an automatic switch that opens when the line voltage on the signaling line circuit (SLC) loop drops below 4 VDC
- Should be spaced between groups of sensors or modules in a loop to protect the rest of the loop
- If a short occurs between any two Isolators, then both Isolators immediately switch to an open circuit state and Isolate the devices between them
- The remaining units on the SLC loop continue to fully operate
- No more than 25 sensors or modules are required for each pair of ISOs



## Wiring without SK-ISO

Short anywhere across the SLC

- Panel communicates = SLC shorted
- All devices lose power



## Wiring with SK-ISO

Short across SLC after ISO

- Rest of loop keeps operating
- Helps you find the short



# SK-ISO Class A



Class A designed to minimize loss of protection during a short

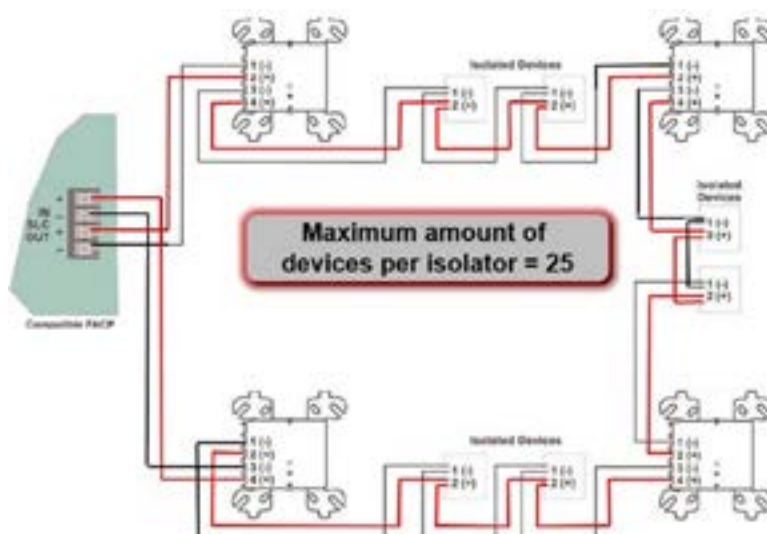


Not protecting the panel can lead to an SLC short



Protect the panel with an ISO on BOTH the SLC input and SLC output!

# Wiring



**Q: What is the advantage of an SK-ISO?**

A: If a device shorts in the system, all the SLC devices that are protected by a line isolator module will continue to operate

**Q: What is the EOL resistor required for a SK-Monitor?**

A: 47K Ohm

**Q: True or False? 6815 will support SD devices**

A: False

**Q: True or False? Maximum # of 6815 expanders allowed on the 6820 Panel is 3**

A: False

## REVIEW

# SK Multiple Device Modules

**SK-Control-6**



- Up to 3 modules can be disabled
- Separate LED for each module

**SK-Relay-6**



- Up to 3 modules can be disabled
- Separate LED for each module
- 6 Form-C contacts

**SK-Monitor-10**



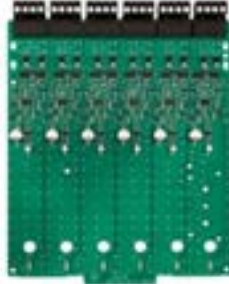
- Unused modules can be disabled
- Separate LED for each module

**SK-Zone-6**



- Up to 2 unused modules can be disabled
- Separate LED for each module
- Converts a conventional two-wire loop to an SLC loop

**SK-ISO-6**



- Separate LED for each module
- Supports a maximum of 25 devices between isolators

**SK-ACB**



- Optional cabinet for one or two modules
- Dimensions: 12½"W x 15¼"H x 3"D (31.8 cm W x 38.7 cm H x 7.6 cm D)

**For addressing: Set the dials for the first address, the rest follow sequentially**



## SK Sensors

- SK-Photo-W = White photoelectric smoke detector
- SK-Photo-T-W = White photoelectric smoke detector with dual 135°F thermals
- SK-Photo-R-W = White, photoelectric sensor, remote test capable, for use with SK-DUCT
- SK-PTIR-W = Multicriteria detector utilizing advanced algorithms
- SK-Heat-W 135°F (57°C) fixed thermal detection
- SK-Heat-ROR-W 135°F (57°C) fixed thermal detection and rate of rise 15-degree F/min
- SK-Heat-HT-W = Provides high temperature detection at 135°F-190°F programmed by zone



## SK-Fire-CO-W

Provides both fire and carbon monoxide (CO) detection. Combines four separate sensing elements in one unit to detect fire.

- Photo
  - Enables enhanced sensitivity to real fire
- Infrared
  - Enables enhanced sensitivity to real fire
- Heat
  - Enables enhanced sensitivity to real fire
- CO



For SK-FIRE-CO-W, smoke entry testing should be performed immediately following the magnet test. Magnet test initiates an approximately 10-minute period when the detector's signal processing software routines are not active.

## SLC LEDs

### Smoke detector heads - 2 LEDS

- Both flash green every 6 seconds
- Both LEDs turn red in alarm

LEDs will turn on green in alarm when activated using I/O point control

First 30 devices will stay on in alarm condition. The new panels will allow for 30 devices to turn on in an alarm condition.



**SLC Modules – 1 LED**

- Input and outputs flash green during poling
  - If input shorts, LED turns red
  - If output changes state, the LED
  - Stays constant ON green

First 30 devices will stay on in alarm condition. The new panels will allow for 30 devices to turn on in an alarm condition.

**SK-DUCT****Duct Detector**

- Includes SK-PhotoR smoke detector
- Detects smoke moving through an HVAC duct to prevent re-circulation of smoke into the air handling system
- When smoke is detected, the unit communicates the condition to the panel
- Panel decides if supervisory or Fire Alarm
- The air velocity rating is from 100 to 4000 feet per minute
  - (0.5 to 20.32 meters per second)
- Has a flexible housing



No Aux Power

**SK-Beam**

- Used in areas where it's hard to service smokes
  - Atriums, gymnasiums
- Also used in environments with temperature extremes
  - -4 to 131°F
- Consist of a transmitter / receiver unit and a reflector
- When smoke enters the area between the unit and the reflector it causes a reduction in the signal
- When the smoke level reaches the predetermined threshold, an alarm is activated
- The beam range is 16 to 328 feet



(Discontinued)

# OSI-RI-SK Beam Detector

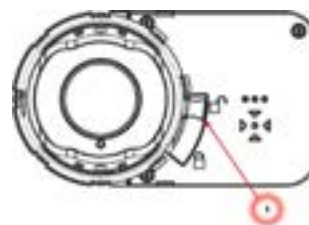
- Aligning the imager to the reflector is extremely intuitive, fast, and accurate
- Both the infrared transmitter and the CMOS imager are contained in a movable “eyeball” that can move +/- 20° in the vertical direction and 50° in the horizontal direction
- Four LED arrows indicate the direction to move the lens, guiding the user to find the imager’s perfect alignment with the reflector. Uses the same reflector as the SK-beam
- Because of power limits, only 5 on Silent Knight 6700, and 7 on the other 6000 series panels SLC loops (as of now)



## Installation

### Step 1

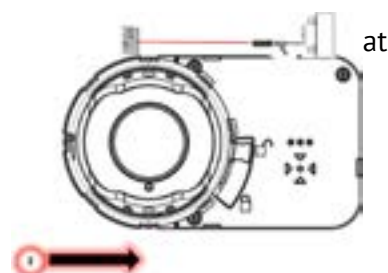
Power up device and make sure eyeball is unlocked by sliding the red lever upward to 3:00 position



### Step 2

Rough alignment with reflector using the laser tool, fits into slot at bottom of eye

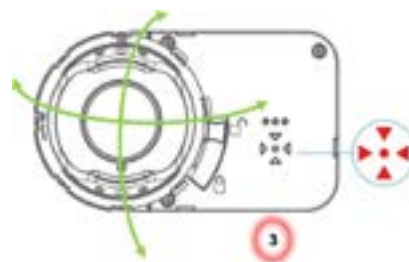
- 50°H-20°V eyeball adjustment



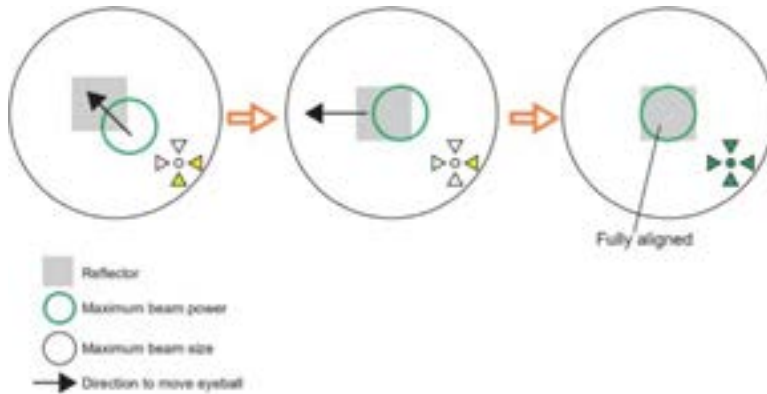
### Step 3

Fine adjustment by gently moving eyeball until all indicator arrows are green

- All arrows and the middle green LED must blink green for the eyeball to be optimal aligned
- Likely the alignment process will start with all arrows red



**Alignment Example**

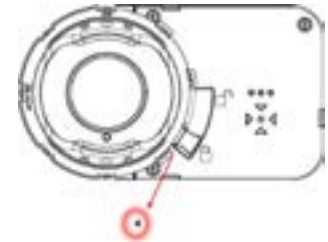


Gently move the eyeball and let the arrow's color, changing color red to orange to green, as the alignment improves guide you till the all arrows and the middle LED turn green.

**Step 4**

Lock eyeball by sliding the lever downward

- By locking the eyeball an internal switch is activated and the detector will now start its initiation or commissioning process
  - In this process cycle the detector will measure the size of the reflector in its Field Of View (FOV) and determine the distance between detector and reflector. Based on this measurement, the sensitivity will be automatically set to the optimum sensitivity for the specific distance
- The process is finalized when the 4 arrows and the middle green LED stop blinking green
- Before going in operational mode, the detector will show its set sensitivity. This is shown by blinking the 4 arrows to the color yellow, reflecting the % of selected obscuration/sensitivity.
  - The key is; 1 blink = 25%, 2 blinks = 30%, 3 blinks = 40% and 4 blinks = 50%.
  - After 5 seconds, the scenario will be repeated a second time and the arrows LEDs go out and the front OK LED blinks green



**Step 5**

Snap on the paintable cover



**Mark the set sensitivity on the inside the cover for later use**

# RTS-151 Key

## Remote Test Station

- Allows you to remotely test the duct and beam detectors
  - Remote test switch
  - Red alarm LED
- Looks like a single gang annunciator
- Wiring instructions can be found on install sheet for corresponding product



# B224BI Detector Bases

6-inch mounting base with built-in Isolator module

- Prevents an entire communication loop from being disabled when a short circuit occurs
- The B224BI isolates any part of a loop that has a short from the rest of the loop
- The base also automatically restores the entire loop when the cause of the short circuit is corrected



# B224BI Wiring

- Works like Class X without all the modules
- Smoke detector is truly isolated from the base



# Relay Base

## B224RB

- 6-inch mounting base with built-in relay module
- Lets you control a wide variety of normally open and normally closed applications
- Because the relay is addressable, the relay device can be located at any point in the signaling line circuit

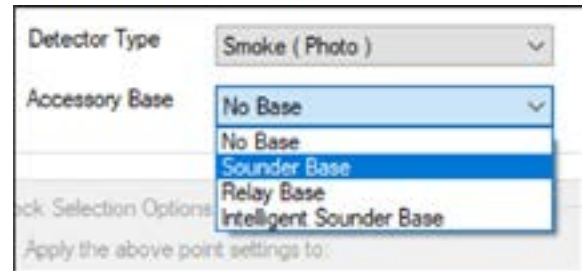


Current Rating	Maximum Voltage	Load Description	Application
2 A	25 VAC	PF = 0.35	Non-coded
3 A	30 VDC	Resistive	Non-coded
2 A	30 VDC	Resistive	Coded
0.65 A	30 VDC	(L/R = 20 ms)	Non-coded
0.7 A	70.7 VAC	PF = 0.35	Non-coded
0.9 A	125 VDC	Resistive	Non-coded
0.5 A	125 VDC	PF = 0.75	Non-coded
0.3 A	125 VDC	PF = 0.35	Non-coded

# Sounder Base

## B200SR/LF (Low Frequency)

- 6-inch mounting base with built-in sounder module
  - Supported tones
    - Temporal 3
    - Constant
  - Does not supervise the auxiliary power
    - Requires an end-of-line relay
    - Program as sounder base in HFSS



# Intelligent Sounder Base

## B200S/LF (Low Frequency)

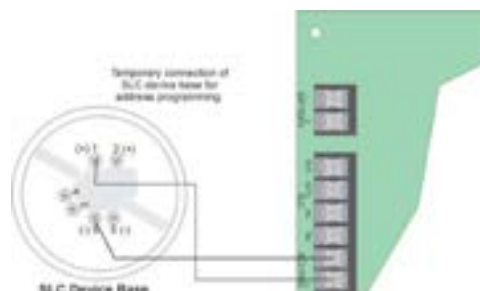
- 6-inch mounting base with built-in intelligent sounder module
  - Supported tones
    - Continuous
    - ANSI Temporal 3
    - ANSI Temporal 4
    - March Time
  - Global sync through mapping
  - Supervises auxiliary power
    - Sounder base sync
    - Program as intelligent sounder base in HFSS



# Addressing SD SLC Devices

## Addressing a SD Detector

- Connect a base to the programming SLC PROG terminals
  - SD505-6AB
- Place SD detector on base
  - Compatible detectors
    - SD-505-Heat
    - SD-505-Photo



**SD505-TCHB100 Handheld Detector Programmer can be used to program detector address**

## From the Main Menu

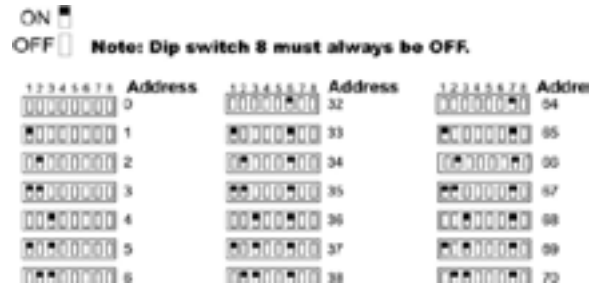
- Select 2 for point functions
- Select 3 for set SLC device address
  - Read address
    - Used to read (or check) a single detector's address
  - Write address
    - Used to program a single detector's address
  - Seq. programming
    - Used to program more than one detector in sequential order



# Addressing a SD Module

## SD Devices with DIP Switches

- Monitor modules
  - SD500-MIM
  - SD500-AIM
- Notification module
  - SD500-ANM
- Relay module
  - SD500-ARM
- Pull stations
  - SD500-PS
  - SD500-PSDA
- 2-wire detector module
  - SD500-SDM
- Line isolation module
  - SD500-LIM



**Q: What temperatures can beam detectors operate in?**

A: -4-131°F

**Q: How do you set the address of the 2nd relay output on a SK-Relay-6?**

A: It follows the address of the 1st relay

**Q: How many seconds does the LED flash green on a detector?**

A: 6 seconds

**Q: True or False: The SLC output module's LED never turns red?**

A: True

**Q: What is the SLC voltage when using:  
SD Protocol?**

A: 30 – 31 VDC

**SK Protocol?**

A: 15 – 16 VDC

**Q: What is the maximum amount of resistance on the SLC?**

A: 50 Ohms

## REVIEW





#FEDLC #FireFam  
#GenerationTrained

#NFPA10 #FireSafety #NFPA

#OurWorkSavesLives #NFPA72

#NFPA17A #FireExtinguisher

#HandsOnTraining #FlameGame #NFPA101

#NFPA96 #KitchenSuppression #FireProtection

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