PFC-6030 Fire Alarm Control Panel

Installation, Operation & Programming Manual

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Section 1: Introduction

The Model PFC-6030 is a listed and approved, microprocessor based addressable fire control panel and complies with UL-864, NFPA-13, NFPA-70, NFPA-72, and NYC Fire Department Certificate of Approval #6157.

The PFC-6030 system software is compatible with Windows XP, Windows Vista and Windows 7 Operating Systems; additionally, the latest version of Microsoft .NET Framework is required. The system software incorporates conventional shortcuts, and provides great flexibility in effectively programming individual or groups of devices. The operational mode behavior of the two (2) on-board NAC 1 and 2 circuits can be customized. This flexibility enables configuration of system points to maximize protection throughout controlled site(s).

Purpose of This Manual

This manual is intended to assist in the installation and programming the PFC-6030 Fire Alarm Control Panel. Refer to this manual to properly install and program the PFC-6030. It is recommended that the user follows the procedures as outlined in this manual to assist in proper installation and prevent damage to the control panel and associated equipment.

System Overview

The PFC-6030 system is designed for use as a fire control panel for life safety applications.

System Features

- The PFC-6030 features a built in signaling line circuit (SLC), and is capable of supporting 30 Potter/Nohmi protocol devices.
- 3.5 Amp 24vdc Power Supply
- Two (2) Notification Appliance Circuits (NACs) each rated at 3.0 Amps maximum.
    - Power Limited
    - Built in Sync
    - Cadence Patterns
    - Auxiliary Power
- Support for all major synchronization patterns.
    - Potter
    - Gentex®
    - CooperWheelock®
    - System Sensor®
- Built-in Ethernet port for programming and network connectivity.
- Built-in e-mail support to communicate system status and event information.
- Customizable Reminder E-mails.
- P-Link RS-485 bus supports system accessories.
- 1,000 event non-volatile history buffer.
- Learn mode enrolls connected sensors and modules for efficient system programming.
- 99 Software Zones
- Dead-front Cabinet Design
- 2 X 16 character LCD display
- Dedicated Alarm, Supervisory and Trouble Form C Relays
- Analog / Addressable Sensing Technology
    - Drift Compensation
    - Drift Alert
    - NFPA 72 compliant calibrated smoke test built-in

P-Link Accessories

- RA-6500 or RA-6075 Remote Annunciator – Maximum of 31 per system in any combination
- UD-1000 Dual Line Fire Communicator – Maximum of 1 per system
- CA-6075 Class A converter module – Maximum of 1 per system allows for Class A wiring of the SLC circuit, P-Link communication bus and the two (2) built-in NAC circuits

- PSN-1000 / PSN-1000(E) Intelligent Power Supply Expander – An accessory to the panel providing ten (10) amps of additional power, with four (4) input points, six (6) notification circuits and a P-Link interface

- LED-16 Annunciator module - Maximum of 10 total per system (*the total may be any combination of LED-16 and DRV-50 LED modules*) allows for up to 16 zones alarm, supervisory and trouble conditions to display, and 5 non-programmable system LEDs that display system's overall condition

- DRV-50 LED Driver module - Maximum of 10 total per system (*the total may be any combination of LED-16 and DRV-50 LED modules*) allows output to up to 50 LEDs, 4 dry contact inputs, and 5 non-programmable system LEDs that display system's overall condition

- RLY-5 Relay Board module - Maximum of 31 per system provides five (5) Form-C relay outputs

- FCB-1000 Fire Communications Bridge - An accessory that provides a remotely-located IP connection to the panel

- FIB-1000 Fiber Interface Bridge - An accessory to the panel that converts the standard 4-wire P-Link bus to and from optic cable capable of Class A operation; maximum of 31 per system

- SPG-1000 Serial Parallel Gateway - An accessory to the panel that allows a serial or parallel printer connection; up to 31 maximum per system

SLC Loop Accessories

- Addressable Sensors
    - Photoelectric Smoke Detector (PSA)
    - Photoelectric/Heat Smoke Detector (PSHA)
    - Fixed Temperature Heat Detector (FHA)
    - Rate of Rise/Fixed Temperature Heat Detector (RHA)
    - Addressable Isolator Base (AIB)
    - Addressable Relay Base (ARB)
    - Addressable Sounder Base (ASB)
    - Addressable Pull Station (APS)

- Addressable Modules
    - Miniature Contact Module (MCM)
    - Single Contact Module (SCM-4)
    - Dual Contact Module (DCM-4)
    - Twin Relay Module (TRM-4)
    - Monitored Output Module (MOM-4)
    - Conventional Input Zone Module (CIZM-4)
    - Short Circuit Isolator (SCI)

How to Use this Manual

Refer to this manual before contacting Technical Support. The information in this manual is the key to a successful installation and will assist you in understanding proper wire routing, system requirements, and other guidelines specific to the PFC-6030 system.

Common Terminology

The following table provides you with a list of terms and definitions used with the PFC-6030 system:

Table 1: Terminology	
Term	**Definition**
PFC-6030 Cabinet	Enclosure
EOLD or Diode Assembly	End of Line Diode Assembly
EOLR	End of Line Resistor Assembly
Remote Annunciator	LCD type Remote Annunicator
NAC	Notification Appliance Circuit
SLC	Signaling Line Circuit
DACT	Digital Alarm Communicator Transmitter (UD-1000)

Section 2: Before You Start Installation

This section addresses information that will help you in completing a successful installation, such as the PFC-6030 cabinet layout, specifications, environmental considerations, and calculating the battery circuit and SLC current draw requirements.

System Specifications

Cabinet Description
- Sixteen (16) gauge sheet steel with hinged, removable locked door
- Enclosure dimensions – 16" x 17" x 3-7/8"

Visual Indicators
- LCD (2 x 16 alphanumeric character display)
- LED indicators (Red, Green, Amber)

LCD Description
- Alarm, Supervisory and Trouble conditions display applicable condition, status and circuit for each correlating condition

Environmental Specifications

- Mount indoors only.
- Temperature 32° to 120°F, humidity 93% non-condensing.
- Verify panel is properly grounded.
- Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides, bottom, or rear of the cabinet. Verify that they will not interfere with the batteries or other components.
- The panel and system must be tested and maintained in accordance with all local and national codes and ordinances.

System Configurations / Appliances

Table 2: System Configurations / Appliances						
Model	**Description**	**Local**	**Auxiliary**	**Remote Station**	**Central Station**	**Proprietary**
PFC-6030	Main Board/Panel Assembly	Y	Y	Y	Y	Y
CA-6075	Class A Expander	O	O	O	O	O
UD-1000	DACT	N	N	Y	Y	Y
RA-6500 or RA-6075	LCD type remote Annunciator	O	O	O	O	O
PSN-1000 or PSN-1000(E)	Intelligent Power Supply Expander	O	O	O	O	O
LED-16	LED Annunciator	O	O	O	O	O
DRV-50	LED Driver	O	O	O	O	O
RLY-5	Relay Expander	O	O	O	O	O
FCB-1000	Fire Communications Bridge	O	O	O	O	O
FIB-1000	Fiber Interface Bridge	O	O	O	O	O
SPG-1000	Serial/Parallel Gateway	O	O	O	O	O
3005013	End of line resistor assembly	Y	Y	Y	Y	Y
3005012	End of line resistor and diode	N	Y	N	N	N
Y = Yes, required for applicable section N = No, not required for applicable section O = Optional, may or may not be used, has no affect on the applicable section.						

Electrical Specifications

Please refer to the table below for electrical specifications:

Table 3: System Panel Electrical Specifications						
Panel	**# NACs**	**Rating per NAC**	**I/O Circuits (As Outputs)**	**SLC Power**	**Notes**	**Style and Class**
PFC-6030	2 NACs	3 Amp	1 Amp	Maximum Load of 56.055 mA	Maximum of 30 addressable points	SLC – Class A or B NAC – Class A or B P-Link – Class A or B All are Low Voltage and Power Limited

System Size Specifications

Please refer to the table below for system size specifications:

Table 4: System Size Specifications	
Accessories/Subassemblies	**Maximum System Size**
PFC-6030	• One (1) built-in SLC Loop with 30 addressable points • Two (2) notification circuits on the main board
UD-1000	One (1) DACT

Main Board Wiring Specifications

There are several wiring requirements to consider **before** connecting circuits to the main board: (1) the circuit separation, and (2) wiring types.

Circuit Separation

Proper separation between the different types of circuits must be maintained between Power Limited, Non-Power Limited, and High Voltage wiring to reduce electrical interferences, transient voltage or voltage ratings.

- Separations between the different wiring types **must** be maintained by at least ¼ inch and the wire insulation **must** be for the higher voltage.
- The control panel cabinet has sufficient knockouts located around the periphery allowing the installer to maintain separation between power limited and non-power limited connections.

Wiring Types

Wiring specifications must be followed to prevent damage or other consequences.

Refer to table below for a breakout of the different wiring requirements shown by circuit type:

Table 5: Main Board Circuit Wiring Types		
	Wiring Type	
Type of Circuit	**Voltage**	**Power**
AC Connection	High Voltage	Non-Power Limited
Battery Connection	Low Voltage	Non-Power Limited
Trouble Relay	Low Voltage	Non-Power Limited
Supervisory Relay	Low Voltage	Non-Power Limited
Alarm Relay	Low Voltage	Non-Power Limited
I/O Circuits	Low Voltage	Power Limited
Notification Device Circuits (NACs)	Low Voltage	Power Limited
P-Link RS-485 Connections	Low Voltage	Power Limited
Signaling Line Circuit	Low Voltage	Power Limited
Phone Line – DACT	High Voltage	Non-Power Limited

Cabinet Dimensions

Figure 1. PFC-6030 Cabinet Dimensions

TOP

DEPTH = 3.75 "

DOOR = 16.07"
BACKBOX = 15.77"

DEPTH = 3.84 "

DOOR = 16.78 "
BACKBOX = 16.56"

LEFT SIDE

RIGHT SIDE

BOTTOM
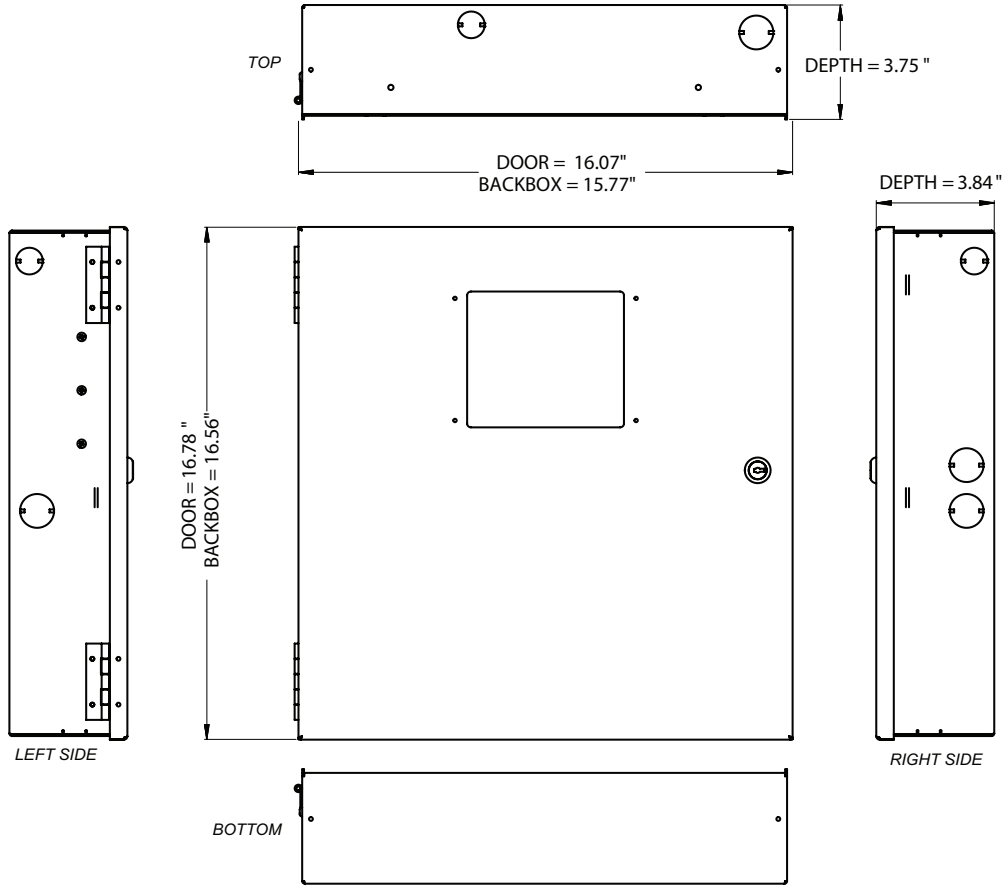
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Cabinet Wiring Connections

Figure 2. PFC-6030 Cabinet Wiring

Optional
UD-1000 DACT

High voltage
phone connections

120VAC 50Hz-60Hz
240VAC 50Hz-60Hz
Connect to separate
unswitched AC circuits

120|240

120/240 VAC
Jumper Position

POWER   ALARM
EARTH FAULT SUPERVISORY
SILENCED TROUBLE

1 2 3
4 5 6
7 8 9
ENTER 0 ESC

SILENCE RESET

ACK DRILL

Optional CA-6075
Class A Expander

Non-power
limited battery
connection

Power limited
wiring

Non-power
limited relay
connection

18Ahr 12Volt

18Ahr 12Volt

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Battery Circuit Calculations

Before selecting the battery, it is important to determine the minimum size batteries for standby and alarm times desired for each application and SLC current draw. If the wrong batteries are installed in a specific application or incorrect current draw used, the proper standby and minimum alarm time will not be present.

The battery circuit is rated for 8 to 55 AH batteries and will operate the panel alarm for at least 24 hours and 5 minutes. The cabinet will house up to two (2) 8 AH or two (2) 18 AH batteries.

Please use the worksheets listed below to calculate the battery size and current draw required for each application and the SLC:

(1) Battery Calculation Worksheet; and (2) SLC Current Draw Worksheet

Battery Calculation Worksheets

Description	Quantity	Standby (mA)	Total Standby (mA)	Alarm (mA)	Total Alarm (mA)
Main board (PFC-6030)	1	130		220	
LCD Remote RA-6075		20		25	
LCD Remote RA-6500		20		50	
CA-6075 Class A Expander		12		44	
UD-1000 DACT		16		23	
PSN-1000/E Power Expander		15		15	
LED-16 P-Link LED-Current (if applicable, see Note 6)		25 15		25 100	
DRV-50 LED-Current (if applicable, see Note 6)		25 10		25 215	
RLY-5 Relay Current (if applicable, see Note 6)		25 10		35 135	
FCB-1000		25		25	
FIB-1000		30		30	
SPG-1000		40		40	
NAC 1					
NAC 2					
SLC Current Draw - (refer to *"SLC Current Draw Worksheet"* for calculation)					
		Total (ma)		Total (ma)	
		Convert to Amps	x 0.001	Convert to Amps	x 0.001
(*Refer to maximum allowable standby current) Total A:				Total A:	
Multiply by standby hours			x____	60 minutes per hour Alarm time (minutes) *Example:* 5 minute alarm: enter 12 10 minute alarm: enter 6	÷ ____
		Total Standby AH		Total Alarm AH	
				+Total Standby AH	
				Total AH	
				Efficiency Factor	÷ 0.85
				Required AH	

*Maximum Allowable Standby Current (UL 24-Hour standby time)	
7 AH	.230 A
18 AH	.619 A
33 AH	1.151 A
55 AH	1.930 A

Important Notes:
1) FACP enclosure can house up to two (2) 18 AH batteries. Larger batteries require accessory enclosure, part #SSU00500.
2) NFPA 72 requires 24 hours of standby power followed by 5 minutes alarm activation.
3) NFPA 12, 12A requires 24 hours and five minutes of alarm activation.
4) Door holder circuits configured to disconnect upon AC loss need not be included in the battery standby calculation since they will not draw power during that time. Door holders will contribute to standby current draw when AC is present.
5) Total current must not exceed power supply rating (3.5A).
6) LED/Relay current must be accounted for in the battery calculation for the supplying source.

SLC Current Draw Worksheet

Device Type	Qty	Standby (mA)	Total Standby (mA)	Alarm (mA)	Total Alarm (mA)
Analog photo smoke detector (PSA)		0.325		0.325	
Analog photo DUCT smoke detector (DSA)		0.325		0.325	
Analog photo smoke / fixed heat detector (PSHA)		0.325		0.325	
Analog fixed heat detector (FHA)		0.325		0.325	
Analog combo heat detector (RHA)		0.325		0.325	
Conventional initiating zone module - 4 inch mount (CIZM-4) *Note 1		0.325		1.000	
Miniature contact module (MCM)		0.325		0.325	
Single contact module - 4 inch mount (SCM-4)		0.325		1.000	
Dual contact module - 4 inch mount (DCM-4)		0.325		1.000	
Monitored output module - 4 inch mount (MOM-4) *Note 2		0.325		1.000	
Twin relay module - 4 inch mount (TRM-4)		0.325		1.000	
Short circuit isolator (SCI)		0.325		2.34	
Analog sounder base (ASB) *Note 3		0.325		0.325	
Analog relay base (ARB) *Note 4		0.325		0.325	
Isolator base (AIB)		0.325		2.34	
SLC alarm LED Current	n/a	n/a		n/a	27.0
		SLC Standby Current		**SLC Alarm Current**	

* Note 1: CIZM requires 24VDC power source. Standby current Style D = 4.90 mA, Style B (8.5 mA). Alarm Current = 50.0 mA
* Note 2: MOM requires 24VDC power source. Standby current = 1.60 mA. Alarm Current = 1.60 mA
* Note 3: ASB requires 24VDC power source. Standby current = 5 mA. Alarm Current = 100 mA
* Note 4: ARB requires 24VDC power source. Standby current = 5 mA. Alarm Current = 50 mA

Isolator Device Load Calculation

This section covers the distinction between an addressable sensor and an isolator to correctly calculate the total SLC device load. A device uses an address and consumes power. Whereas, an isolator does not use an address, but does consume power.

The following scenarios explain how to calculate the current device load based on the SLC configuration.

Scenario 1: Class A Loop – Isolated Devices Configuration

In this configuration, each sensor and isolator device / module counts as one (1) when calculating the total device load.

Formula: Total # addressable devices + Total # isolators = Total power unit allocations (or device load)

Figure 3. Example of a Class A Loop – Isolated Branches

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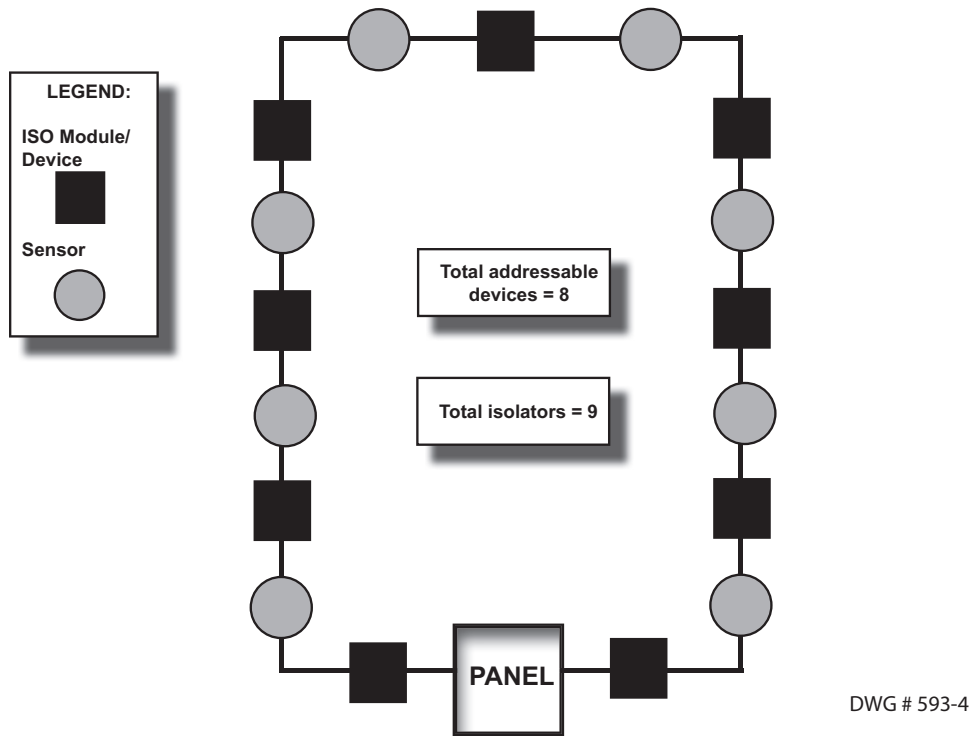
Configuration Summary:

Total addressable devices = 8 (sensors only) out of 30 possible addressable points.

Total device load = 17 (calculated as follows: 8 sensors + 9 isolators) out of 127 power unit allocations.

Example: If a configuration uses 30 sensors, up to 97 isolators may be supported.

 Solution: 127 - 30 = 97

**Scenario 2: Class B Loop – Isolated Branch Configuration**

In this configuration, there are 4 separate branches each with an isolation device / module and 1 or more sensors. Each sensor requires an address, as shown in Scenario #1 (isolators do not require an address). However, in this scenario, each isolator consumes power equal to 8 devices. To calculate the total device load, refer to the following rule:

Device Load Rule for Branch Configurations

Count all devices, including isolators, on the branch.
- If the count is <=8, allocate 8 as the device load.
- If the count is >8, allocate the actual device count number.

Figure 4. Example of a Class B Loop – Isolated Branches
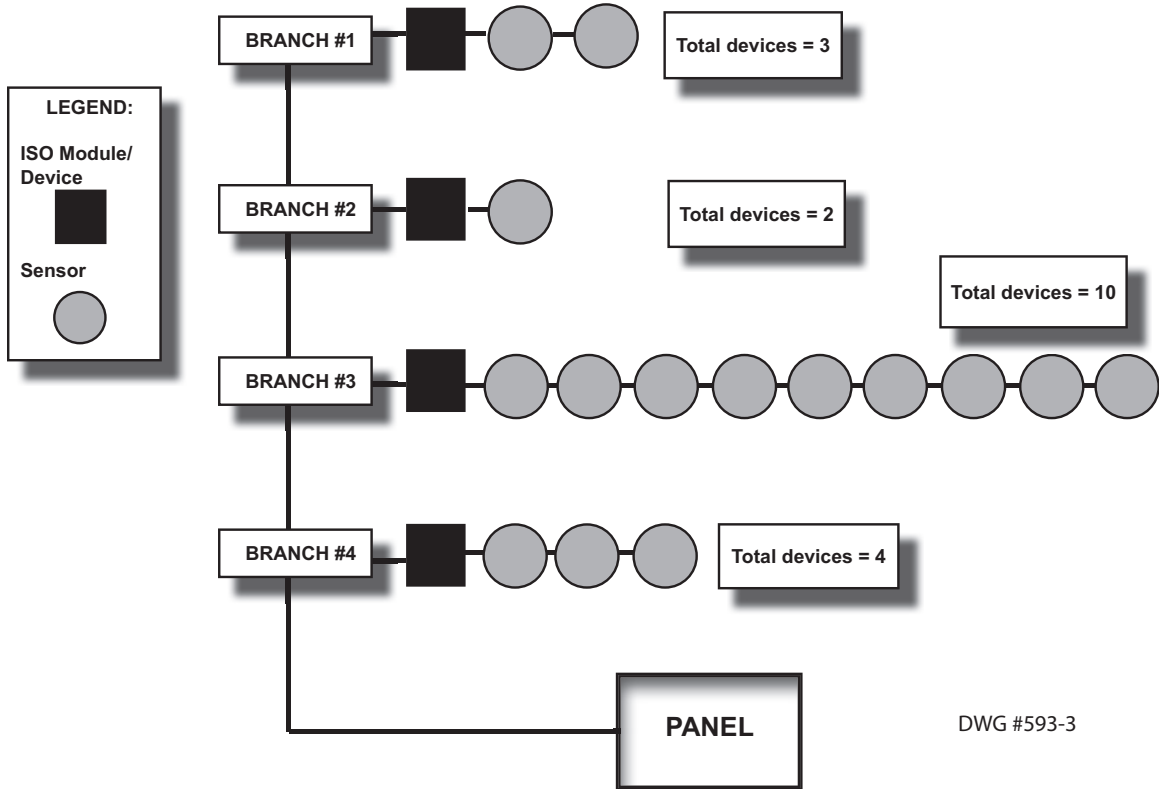
Configuration Summary:

Branch #1 has 3 devices = 8 power allocations
Branch #2 has 2 devices = 8 power allocations
Branch #3 has 10 devices = 10 power allocations
Branch #4 has 4 devices = 8 power allocations

Total addressable devices = 15 (sensors only) out of 30 addressable points.

**Total device load = 34 out of a possible 127 power unit allocations.**

Battery Connections

The battery charging circuit is located on the main panel in the lower left portion of the board. The maximum battery charging circuit is 1.0 amp DC; the charging voltage is approximately 27.3 VDC and is supervised.

> **Note**: The battery should be clearly labeled as "Sealed Lead Acid Battery" or equivalent UL listed or UL Recognized.

Connect the battery wire leads to the terminal connections, as shown. Batteries should be replaced every five (5) years or sooner depending on annual testing.
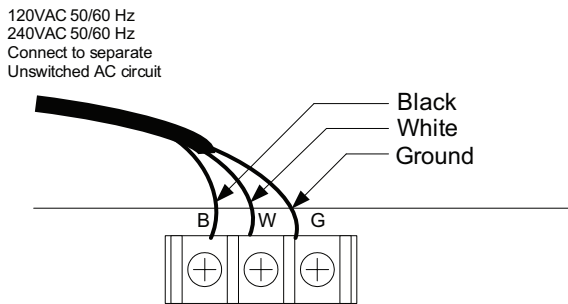
Figure 5. PFC-6030 Battery Connections

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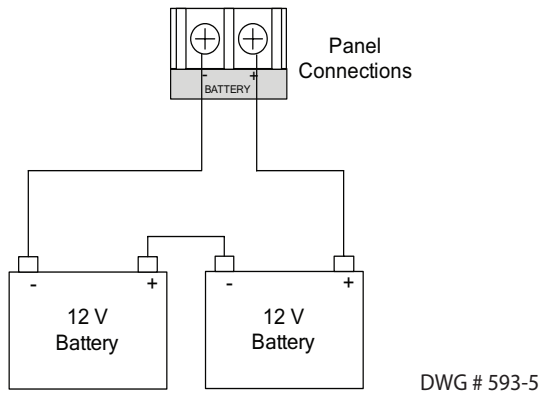
Main Supply Circuit

The AC terminals are located in the upper left hand portion of the main board. The main board supervises the main AC power and provides indication that the AC power is absent.

Figure 6. PFC-6030 AC Terminals

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The terminals are rated at 120 VAC/240 VAC 50/60 Hertz and are marked accordingly on the board. The earth ground connection is marked as "G" and is the furthest connection from the line voltage connection.

The AC input power ratings are as follows:

- Maximum of 3A at the nominal 120 VAC rating.
- Maximum of 2A at the nominal 240 VAC rating.

Section 3: Installation

This section addresses installation procedures for SLCs, NACs and optional modules, including the DACT (UD-1000), Class A Card, and Remote Annunciators. Wiring requirements and configuration examples are included throughout this section. Instructions for addressing SLC devices which must be completed before programming your system are also included. Please read this section carefully before installing devices and/or modules to insure proper installation.

   Note: Instructions for installing the PSN-1000/PSN-1000(E) and/or the IP Dialer accessories are located in Sections 6 and 7, respectively.

Signaling Line Circuit (SLC) Installation

The SLC panel provides power and communication to each of the sensors and modules connected. The SLC is polled by the system every 4–5 seconds. This panel has a loop capacity of 30 addressable points, which may be configured in any combination of smoke sensors, heat detectors, and input or output modules.

NOTICE

All devices require an address **prior** to connecting to the control panel. Refer to "*Addressing SLC Devices"* located later in this section for details.


SLC Wiring Requirements

The wiring parameters listed below **MUST** be followed to ensure proper installation:

- Maximum wiring resistance between two (2) Short Circuit Isolators (SCIs) <u>must</u> be less than 10 ohms.
- Total resistance must be below 50 ohms.
- Maximum wire resistance must be calculated based on 0.1 ohm per SCI.
- Maximum loop capacitance must be 0.5 micro farads.
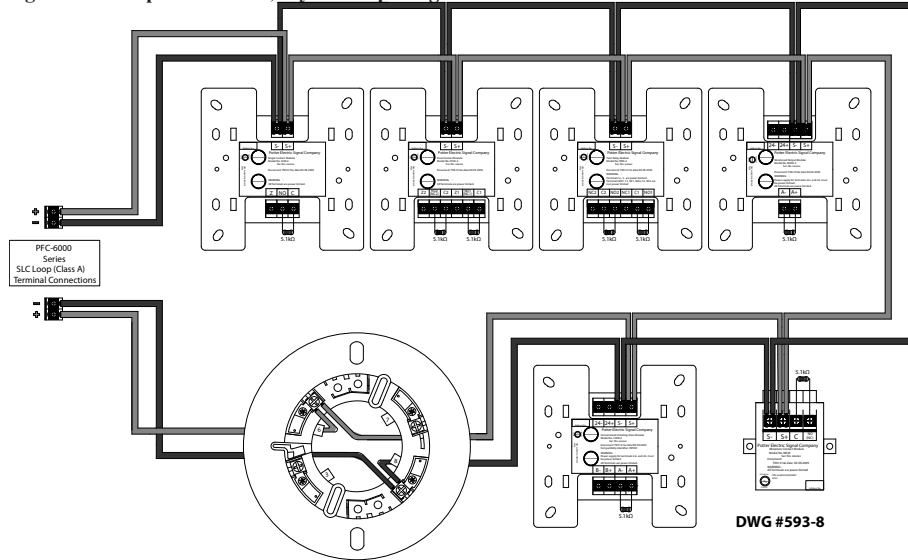- All SLC wiring is low voltage and power limited.

Class B, Style 4 Wiring Configuration

Figure 7. Example of SLC Wiring - Class B, Style 4
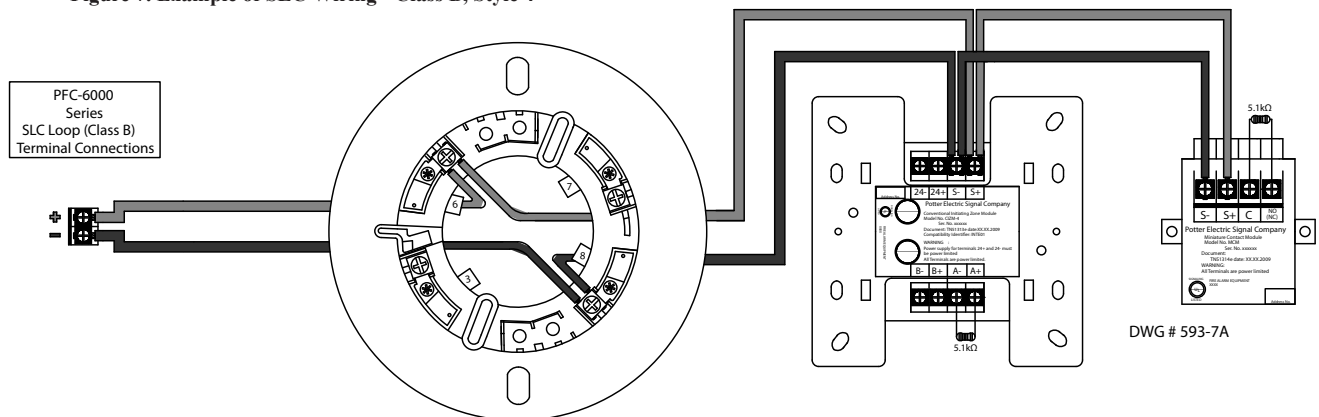
Class A, Style 6 Wiring Configuration

Figure 8. Example of Class A, Style 6 Requiring CA-6075


DWG #593-8

Notes:
1. The Class A, Style 6 configuration does **not** provide the level of protection as Class A, Style 7.
2. Class A, Style 7 requires installation of a CA-6075.
3. The use of a SCI or AIB is **not** required.
4. The SLC connection requires that the wires are separated 10', installed in conduit or other mechanical protection.
5. Maximum wiring resistance must not exceed 50 ohms.

Class A, Style 7 Wiring Configuration

Figure 9. Example of SLC Wiring - Class A, Style 7 Requiring CA-6075
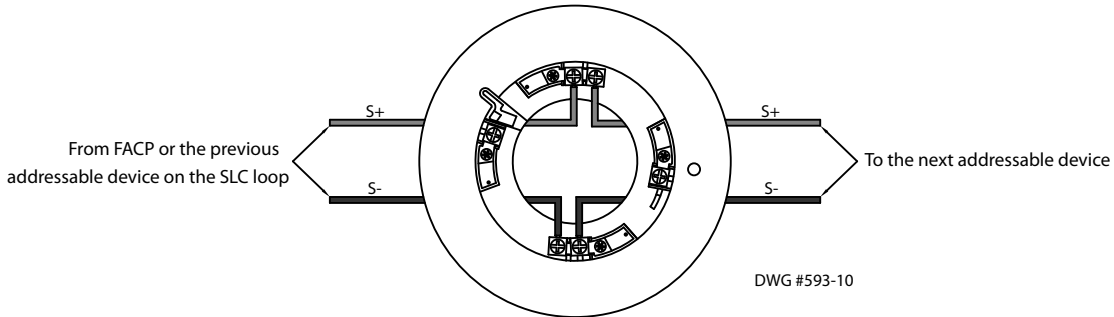

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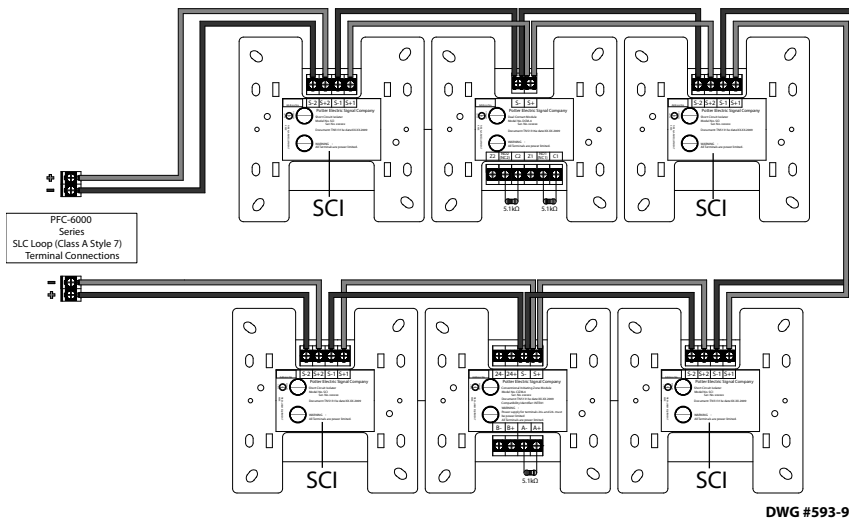
Notes:
1. The Class A, Style 7 requires installation of an isolator close nipple connected to every module or sensor. Isolators may be either a SCI or an AIB addressable base.
2. Class A, Style 7 requires installation of a CA-6075.
3. The SLC connection requires that the wires are separated by a minimum of 10' and installed in conduit or other mechanical protection.
4. Maximum wiring resistance must not exceed 50 ohms.

Connecting Analog Detectors

When installing analog detectors, such as a photoelectric smoke sensor (PSA), photo smoke/fixed heat detector (PSHA), heat detector (FHA), or an analog combination type heat detector (RHA), use detector bases (*i.e. AB-6*). An analog detector activates its response LED when activated. An example of wiring an analog detector is shown below.

Figure 10. Analog Detector Wiring Example

From FACP or the previous addressable device on the SLC loop

S+

S-

S+

S-
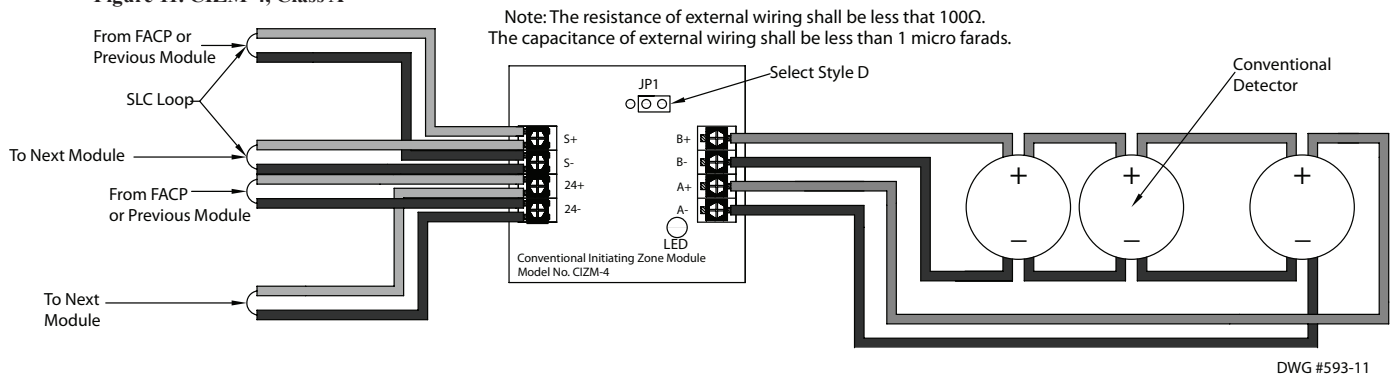
To the next addressable device

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Connecting Addressable Modules

This section provides examples of wiring addressable modules, including Conventional Initiating Zones (CIZM-4), Miniature Contact (MCM), Single Contact (SCM-4), Dual Contact Module (DCM-4), Twin Relay (TRM-4), Monitored Output (MOM-4), Analog Relay (ARB), Analog Sounder Base (ASB), and Addressable Pull Station (APS) modules.

Conventional Initiating Zones (CIZM-4) Class A

Figure 11. CIZM-4, Class A

Note: The resistance of external wiring shall be less that 100Ω.
The capacitance of external wiring shall be less than 1 micro farads.

From FACP or Previous Module

SLC Loop

To Next Module

From FACP or Previous Module

To Next Module

JP1

Select Style D

S+
S-
24+
24-

B+
B-
A+
A-

LED

Conventional Initiating Zone Module
Model No. CIZM-4

Conventional Detector

DWG #593-11

Notes:
1. The resistance of external wiring shall be less than 100 ohms.
2. The capacitance of external wiring shall be less than 1 micro F.
3. In this style, the open circuit "*trouble condition*" of IDC is latched at the control panel until system is reset. Therefore, the system **MUST** be reset at the control panel after clearing the open circuit condition at the site.
4. Refer to the CIZM data sheet for information on compatible devices.
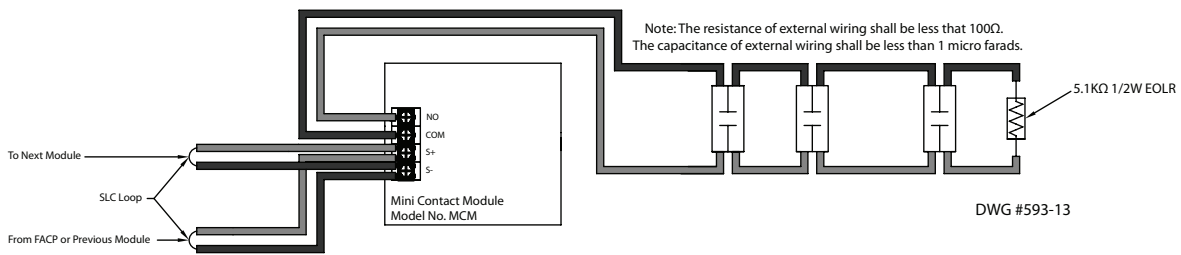
Conventional Initiating Zones (CIZM-4) Class B

Figure 12. CIZM-4, Class B

From FACP or Previous Module

SLC Loop

To Next Module

From FACP or Previous Module

To Next Module

JP1

Select Style B

Conventional Detector

S+
S-
24+
24-

B+
B-
A+
A-

LED

Conventional Initiating Zone Module
Model No. CIZM-4

5.1KΩ 1/2W EOLR

Note: The resistance of external wiring shall be less that 100Ω.
The capacitance of external wiring shall be less than 1 micro farads.

DWG #593-12
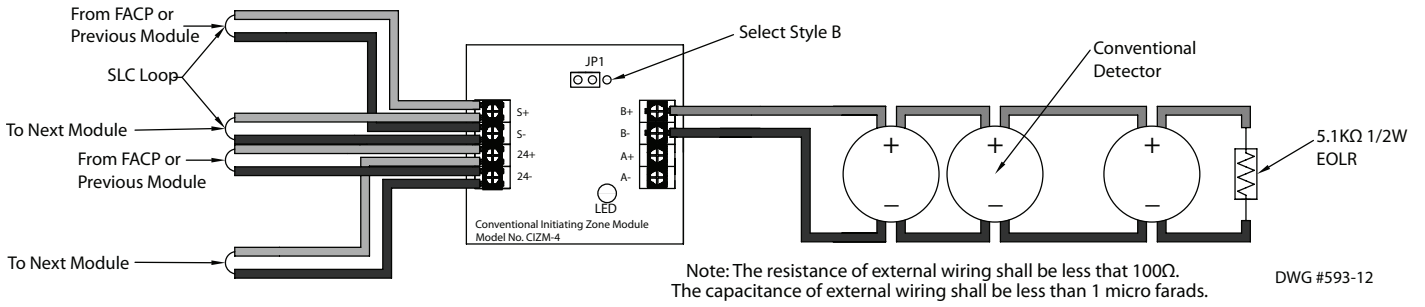
Miniature Contact Module (MCM)

Refer to the figure shown below for a MCM wiring example.

Figure 13. MCM Wiring Example

Note: The resistance of external wiring shall be less that 100Ω.
The capacitance of external wiring shall be less than 1 micro farads.

To Next Module

SLC Loop

From FACP or Previous Module

NO
COM
S+
S-

Mini Contact Module
Model No. MCM

5.1KΩ 1/2W EOLR

DWG #593-13

Note: If MCM is located in an electrical box, it should be secured using crew tabs or other method to prevent movement.

Single Contact Module – 4 inch Mount (SCM-4)

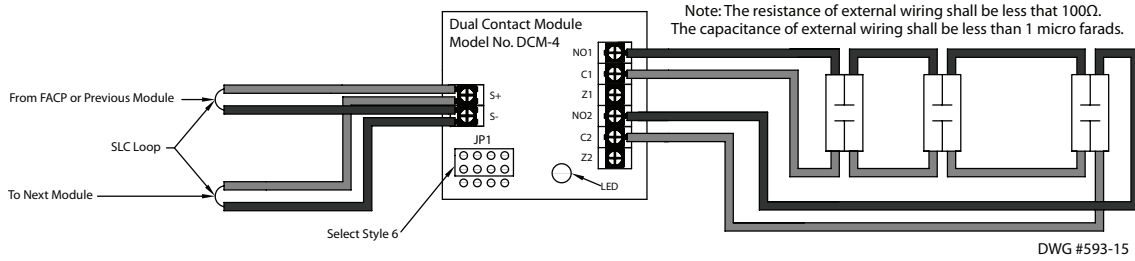Refer to the figure shown below for a SCM-4 wiring example.

Figure 14. SCM-4 Wiring Example

Note: The resistance of external wiring shall be less that 100Ω.
The capacitance of external wiring shall be less than 1 micro farads.

To Next Module

SLC Loop

From FACP or Previous Module

S+
S-

COM
NO
Z

LED

Single Contact Module
Model No. SCM-4

5.1KΩ 1/2W EOLR

DWG #593-14

3-16
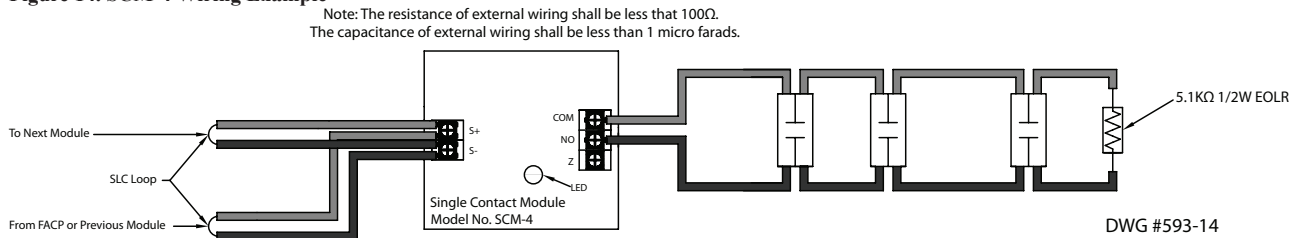
Dual Contact Module – 4 inch Mount (DCM-4)

Refer to the figure shown below for a Class A DCM-4 wiring example.

Figure 15. DCM-4 with One Class A Circuit

Note: The resistance of external wiring shall be less that 100Ω.
The capacitance of external wiring shall be less than 1 micro farads.

Dual Contact Module
Model No. DCM-4

From FACP or Previous Module

SLC Loop

To Next Module

S+
S-
NO1
C1
Z1
NO2
C2
Z2
JP1
LED
Select Style 6

DWG #593-15

> **Note**: In this configuration, the DCM-4 operates as a single point Class A module.

When configuring a Class B, the DCM-4 has two (2) addresses. If address No.1 is set, input circuit No.1 (NO1, C1) will be addressed as No.1, and input circuit No.2 (NO2, C2) will automatically be addressed as No.2. Refer to the figure below for an example of wiring a Class B DCM-4.

Figure 16. DCM-4 with Two Class B Circuits

Note: The resistance of external wiring shall be less that 100Ω.
The capacitance of external wiring shall be less than 1 micro farads.

Dual Contact Module
Model No. DCM-4

From FACP or Previous Module

SLC Loop

To Next Module

S+
S-
Address #   NO1
C1
Z1
Address #+1   NO2
C2
Z2
JP1
LED
Select Style 4

DWG #593-16
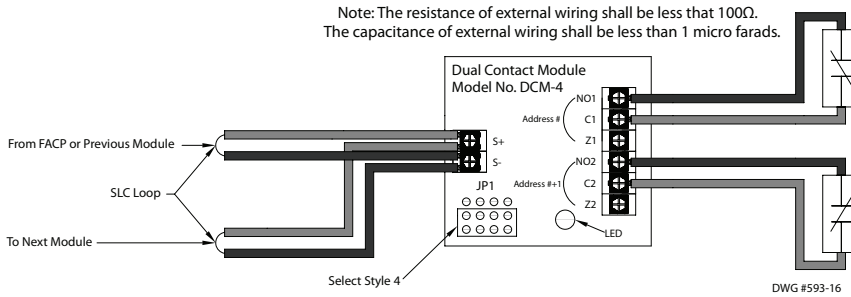
Twin Relay Module – 4 inch mount (TRM-4)

The TRM-4 has two (2) contacts that are active simultaneously when TRM-4 is in the active mode. Normal output is nonpower-limited, unless the power supply connected to the TRM-4 is power-limited and the circuits are power-limited.

Figure 17. Example of TRM-4 Wiring

Contact Rating:
24VDC / 2.0A
125VAC / .5A

From FACP or Previous Module

SLC Loop

To Next Module

S+
S-

NO1 — Normally Open 1
C1 — Common 1
NC1 — Normally Closed 1
NO2 — Normally Open 2
C2 — Common 2
NC2 — Normally Closed 2

Twin Relay Module
Model No. TRM-4

LED

DWG. #593-17
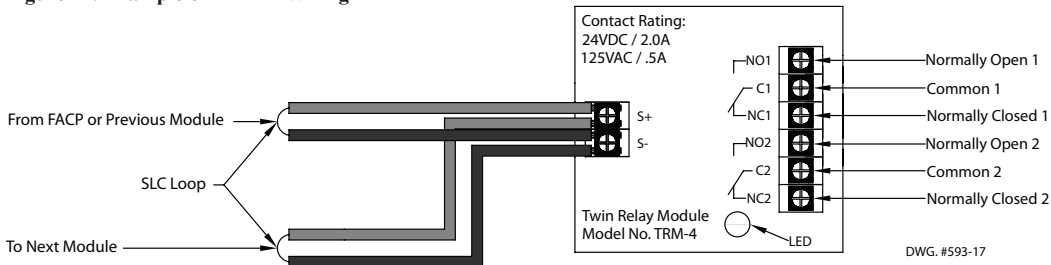
Monitored Output Module – 4 inch mount (MOM-4)

If the power supply connected to the MOM-4 is power limited, then the outputs are power limited. An example of a MOM-4 wired as a conventional application is shown here.
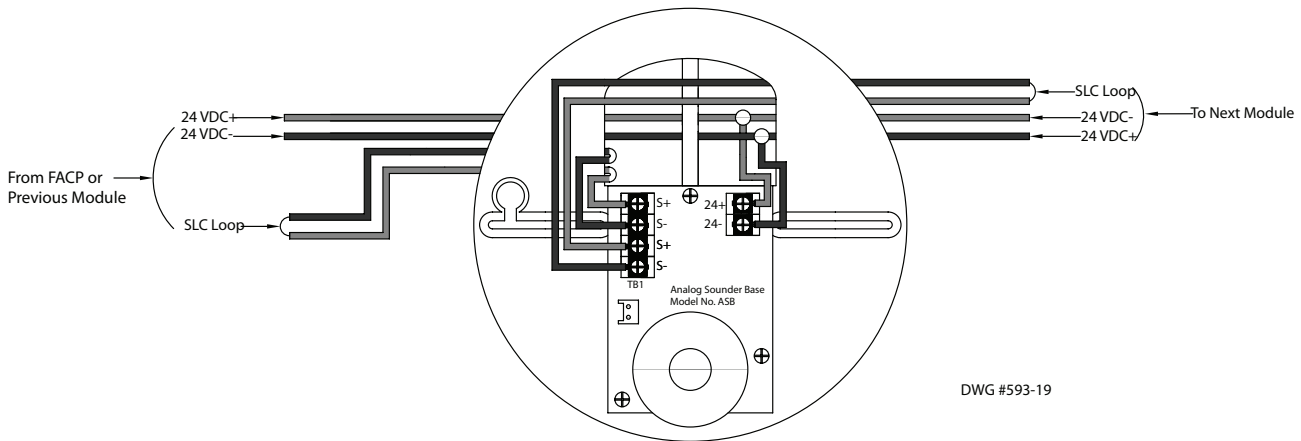
Figure 18. Example of MOM-4 with NAC Connections
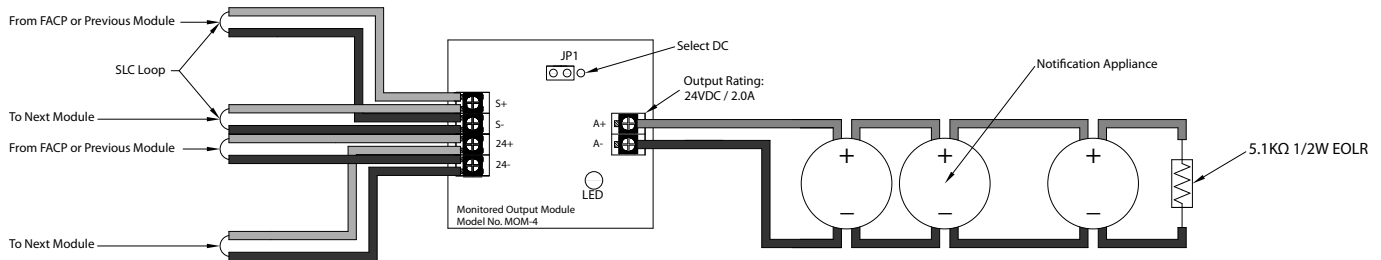
DWG #593-18

Analog Sounder Base (ASB)

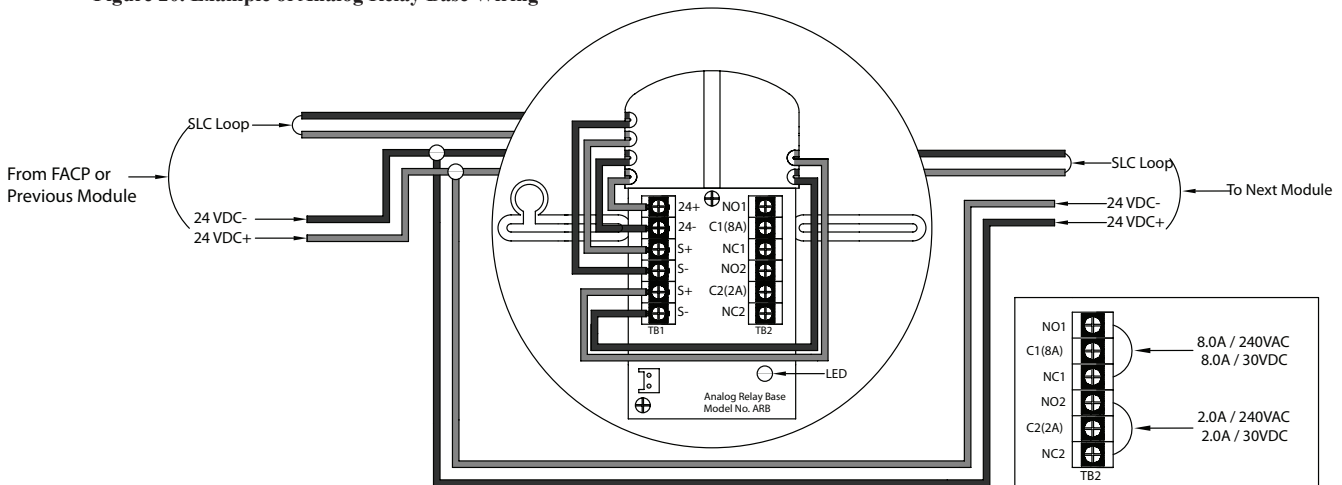**Figure 19. Example of Analog Sounder Base Wiring**

DWG #593-19

Notes:
1. The supply power must be coded in order for the output to be coded.
2. ASB does not generate a coded output. It will track the pattern delivered to its 24 VDC input.

Analog Relay Base (ARB)

Figure 20. Example of Analog Relay Base Wiring

DWG #593-20

3-18

Single Action / Dual Action Pull Station (APS-SA / APS-DA)

The APS-SA/DA addressable pull stations are non-coded that provide an addressable point to the panel. The APS pull stations have terminals that allow the SLC to be wired directly to the device and then exit to the next device in the loop. Refer to the wiring example shown below.

Figure 21. Example of Addressable Pull Station Wiring

NO   C   S+   S-

From FACP or Previous Module

SLC Loop

To Next Module

Addressable Pull
Station - Single Action/
Dual Action

Model No. APS-SA/DA

FACTORY WIRED
CONTACTS
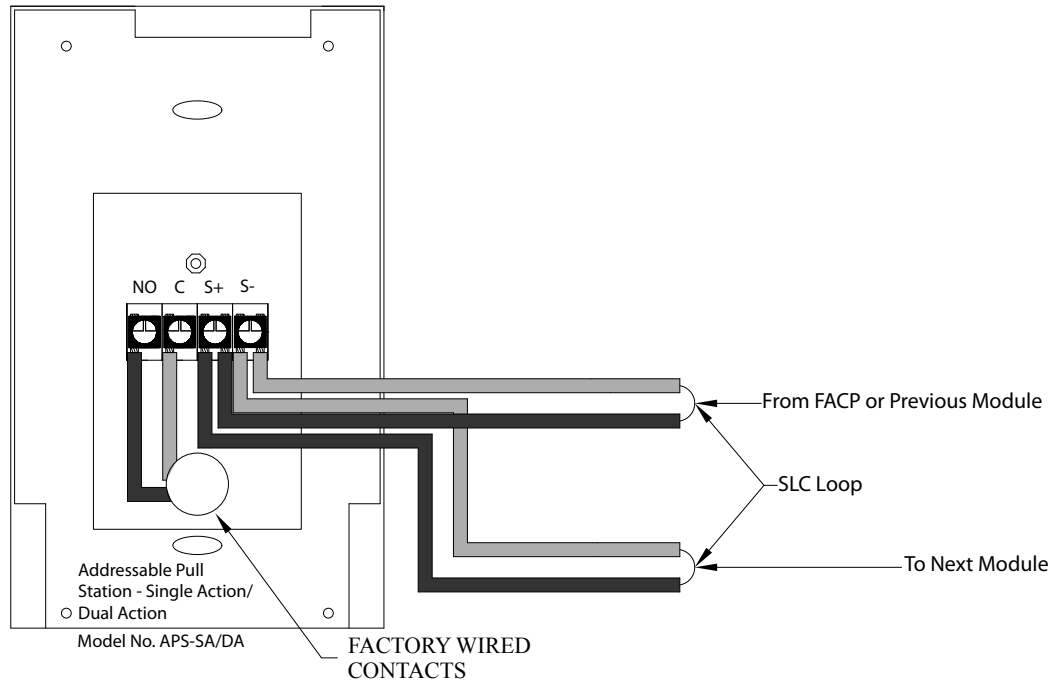
DWG #593-36

Addressing SLC Devices

Before devices can be programmed, they must be assigned a unique address. There are two (2) methods to address devices:
(1) You may use a *hand-held address setting device* or (2) Use the panel's **System Tools – SLC Addr Prog** option. Only <u>authorized</u> system users may access the System Tools options. You may sequentially address individual devices or groups of devices and assign different numerical ranges (*i.e., #1-10, and 15-25*) as necessary.

To address devices via a hand-held address device:

1. Connect the device to the base on the hand-held address device or to the terminals with a pair of wires to connect modules.
2. Use the buttons on the device to set the address, and press *Enter* to complete addressing device.
3. Repeat steps for each device.

> **Note**: The "R22" LED is selected by default; if the "R22" LED is not lit, press *Power* until it is reselected.

To address devices from the Panel:

1. Press **ENTER** to display **Main Menu**.
2. Press **5** to access **System Tools** (or press the down arrow to display **5=System Tools).**
   - Press **ENTER** to select. The **"Enter Code" prompt** displays.
   - Enter the applicable user code on keypad to continue.

     > **Note**: User code displays ******** (*asterisks*) on LCD panel.

   - The **System Tools menu** displays.
3. Press **1** to select **SLC Tools**.
4. Press **3** to select **SLC Addr Prog**. The prompt *"Enter key will Shutdown System"* displays on LCD panel, and emits beeping until acknowledged.
5. Press **ENTER** to shutdown (or press **ESC** to exit **SLC Addr Prog**).

   The **SLC Addr Prog menu** displays:

   > **3=SLC Addr Prog**
   >   1=Single device
   >   2=Mltp device

```
Main Menu
1=View History
2=Enable/Disable
3=Set Date/Time
4=Walk Test
5=System Tools
        1=SLC Tools
            1=SLC Pinpoint
            2=SLC Stats
        3=SLC Addr Prog
            1=Single device
            2=Mltp device
```

Next, you must connect the device's cable to the panel's **SLC PGM** terminals *(as shown below)*.

Figure 22. Example of Control Panel Showing SLC Program Terminals
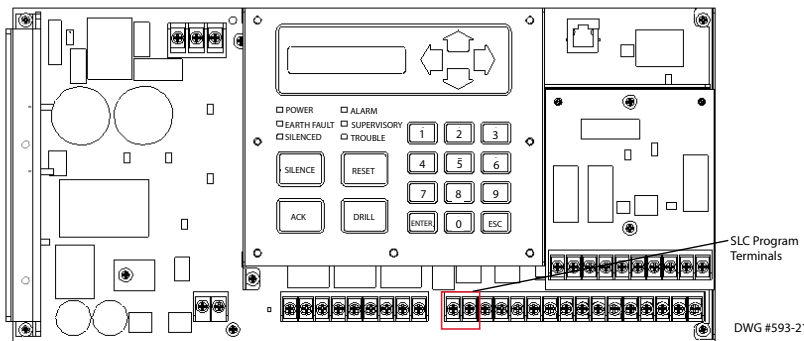
For a Single Device:

1. From the **SLC Addr Prog menu**, press **1** to address a **Single device.**

2. Attach connector wires to **SLC PGM** terminals, if not already done. The **"Connect Device" prompt** displays.

3. Connect device. The *"Found Address: xx" prompt* displays.
   - Modify new address, if needed, or press **ENTER** to continue.
   - The **"Writing Addr: XX"** *prompt* displays, and the system beeps three (3) times when completed.
     When addressing is completed, the *"Found Addr: XX, New Addr: XX" prompt* displays.
   - Disconnect device, and continue with next device.
   - Repeat steps, as needed.

4. Press **ESC** when finished.

For Multiple Devices:

1. From the **SLC Addr Prog menu**, press **2** to address **Mult device**.

   - The "**Start Address: XX" prompt** displays.
   - Modify starting address, if needed, and press **ENTER**.
   - The prompt **"Connect Device"** displays.

2. Connect 1st device. The *"Addr = XX Next = XX Remove" prompt* displays.

   - Disconnect the device, connect next device. Addressing is completed when the panel emits a series of **three (3) beeps**.
   - The **"Addr = XX Next = XX Remove" prompt** displays.
   - Continue with next device, following prompts.

   Notes:
   - The prompt *"Addr = XX"* refers to the current device number, and **"Next = XX"** is the next sequential address number.
   - When configuring a **Class B DCM-4**, press the **UP ARROW** to skip the next sequential number. The Class B DCM-4 requires 2 addresses; if this isn't done, the next available address will be assigned to a different device and the DCM-4 will operate as a single point device.

3. Press **ESC** when finished.

Notification Appliance Circuits Installation

There are two (2) NAC circuits provided on the PFC-6030 rated as continuous 3 amps at 24 VDC. The NAC circuits may be configured for Class A or Class B. *(Please refer to the Class A and B wiring examples located in this section.)*

NAC Wiring

- Outputs are supervised and regulated.
- Circuits are power limited.
- Type of NAC output is selectable, and may be configured for strobe synchronization with Potter/AMSECO, Cooper Wheelock®, Gentex®, or System Sensor® strobe devices. Refer to the listing of compatible models located in the *"NAC Compatibility Document"*, Potter #*5403592*, for this information.
- The CA-6075 Class-A Expander may be programmed to allow for operation of the NACs. The expander adheres to the same circuit rating, supervision and regulation as other circuits.

NAC Maximum Wiring Impedance Formula

The maximum impedance is a *function* of the *load* placed on the circuit. To calculate the maximum line current impedance, use the following formula:

(Alarm Current of Notification Appliances) x (Wire Resistance) < 3 Volts

NAC Wiring Configurations

Examples of Class B and Class A Wiring follow.

Figure 23. NAC Class B Wiring Example
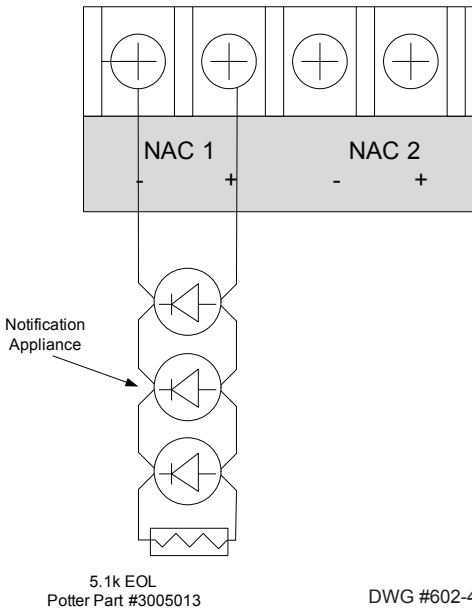
Notes:
1. The Potter part number for the listed end of line assembly is #3005013 EOL Resistor Assembly.
2. The panel has ground fault detection on the NAC circuits. The impedance to ground for ground fault detection is 0 ohms.

Figure 24. NAC Class A Wiring Example

NAC 1
-    +

NAC 2
-    +

NAC 1
-    +

NAC 2
-    +

CA-6075 Class A card

Notification
Appliance

DWG #602-5A
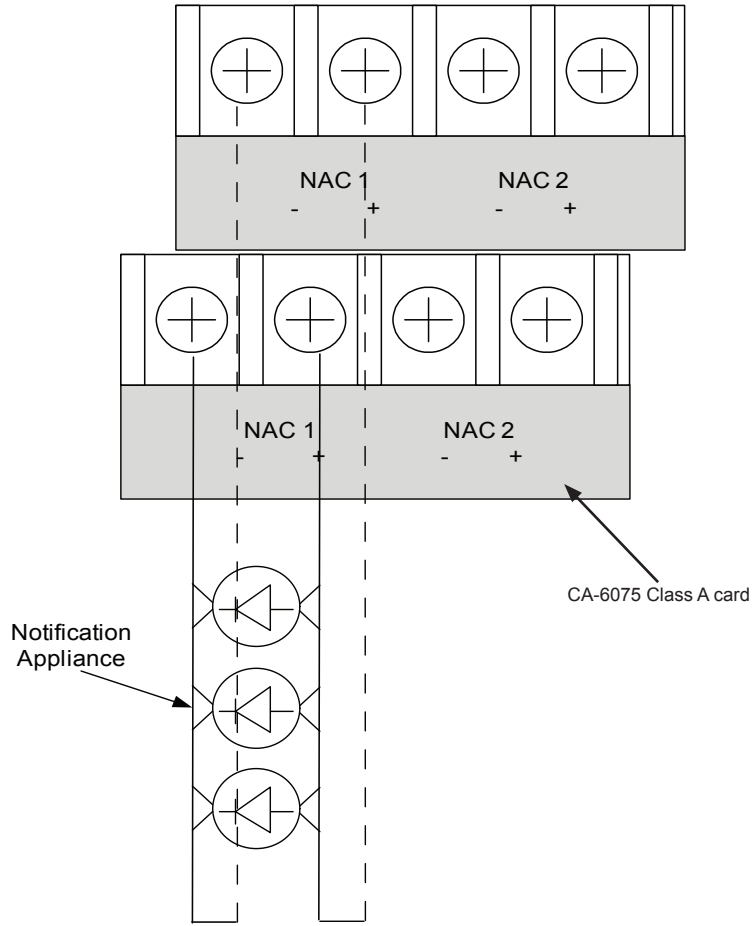
Relay Output Wiring

The panel has three (3) dedicated common relays. The dedicated trouble relay is a fail safe trouble relay that changes position anytime a trouble condition occurs.

Relays have a contact rating of 24VDC / 3.0A, 125VAC / 3A, and Power Factor of 1.0. These outputs are *non-power limited* and *not supervised*.

Note: If the power supply connected to the devices is power-limited, then the outputs are power limited.

Figure 25. Relay Outputs
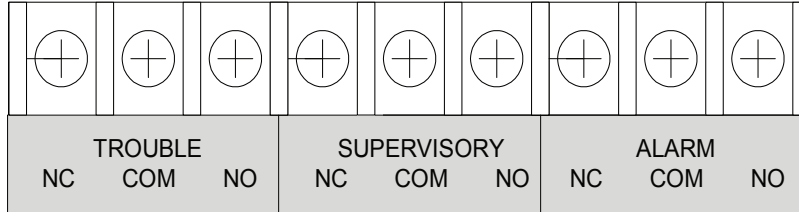
DWG #593-26

CA-6075 Class A Expander Installation

The Class A configuration requires the use of the CA-6075. Once the card is installed, the additional terminals are provided for the return loop of the NAC. The CA-6075 provides the terminals for both NACs, SLCs, and P-Link. Refer to the figures below for examples of installing and wiring a Class A expander card.

Notes:
1. One (1) CA-6075 Class A expander may be installed per panel.
2. The CA-6075 provides the terminals for NACs, P-Link, and SLCs.

Figure 26. Examples of Installing and Wiring a Class A Expander Card

DWG #593-27

DWG #602-5A
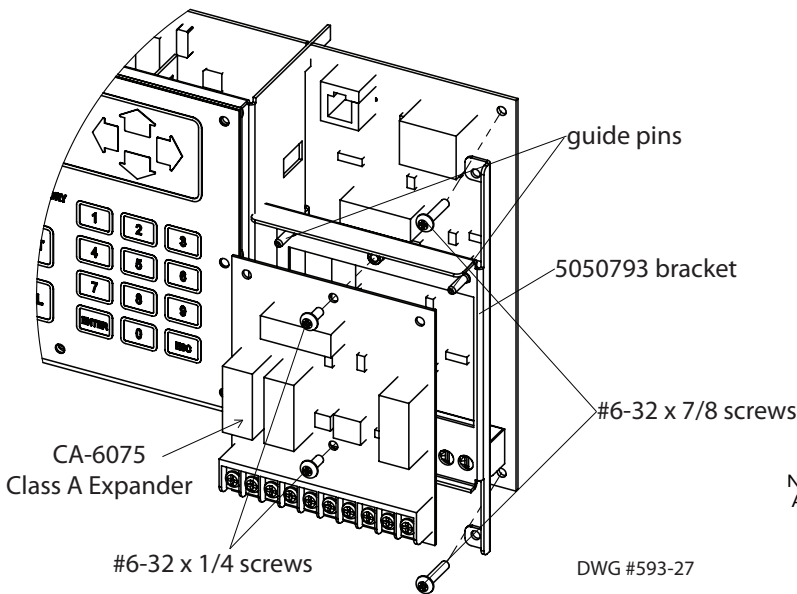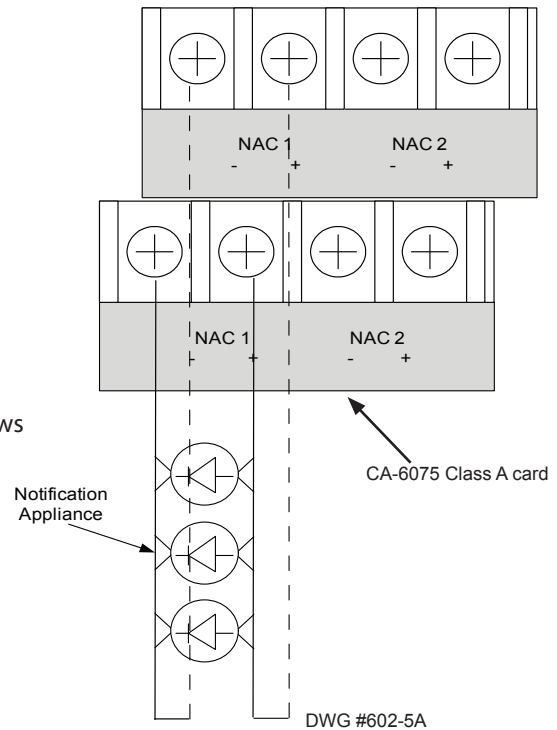
P-Link Devices

Accessory devices, such as remote and LED annunciators, and a relay expander (RLY-5), are connected to the main control panel utilizing the four-wire P-Link bus for power and communication. This panel supports a maximum of **64 P-Link devices,** which can be connected using a Class B or Class A wiring style (examples are provided throughout this topic).

> **Note**: If you have chosen to install an optional PSN-1000/PSN-1000(E) power expansion board, refer to *Section 6: PSN-1000/PSN-1000(E) – Installing, Operating & Programming,* for instructions on installing this appliance.

Configuration Characteristics

- P-Link current rating is one (1) amp.
- P-Link voltage rating is 24 VDC.
- The maximum wire length is 6,500 feet.

Maximum Wire Resistance Formula

The maximum resistance is based on the *load* placed on the circuit. To calculate the maximum wire resistance, use the following formula:

(Total Annunciator Alarm Current) x (Wire Resistance) < 6 Volts

Figure 27. P-Link Class B Wiring Example

DWG #602-11A
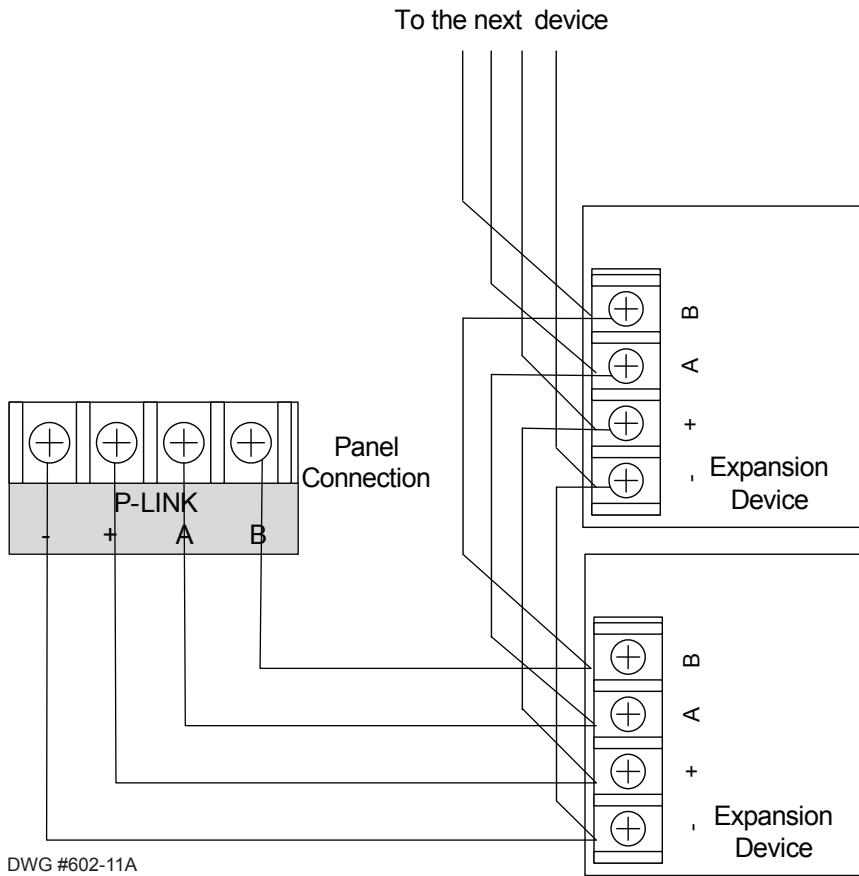
Figure 28. Example of P-Link Class A Wiring Requiring a CA-6075

DWG #602-12A
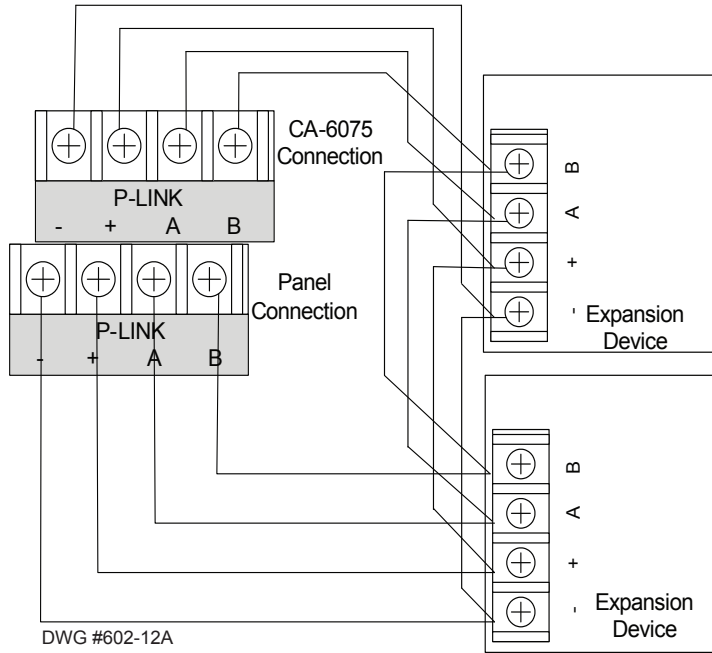
P-Link Addresses

Each P-Link device has a five position dip switch which is used to program the device address ranging from one (1) to thirty-one (31). Use the chart below to reference Dip Switch Settings:

Annunciator Address	Dip Switch Settings					Annunciator Address	Dip Switch Settings				
	SW-1	SW-2	SW-3	SW-4	SW-5		SW-1	SW-2	SW-3	SW-4	SW-5
1	On	Off	Off	Off	Off	17	On	Off	Off	Off	On
2	Off	On	Off	Off	Off	18	Off	On	Off	Off	On
3	On	On	Off	Off	Off	19	On	On	Off	Off	On
4	Off	Off	On	Off	Off	20	Off	Off	On	Off	On
5	On	Off	On	Off	Off	21	On	Off	On	Off	On
6	Off	On	On	Off	Off	22	Off	On	On	Off	On
7	On	On	On	Off	Off	23	On	On	On	Off	On
8	Off	Off	Off	On	Off	24	Off	Off	Off	On	On
9	On	Off	Off	On	Off	25	On	Off	Off	On	On
10	Off	On	Off	On	Off	26	Off	On	Off	On	On
11	On	On	Off	On	Off	27	On	On	Off	On	On
12	Off	Off	On	On	Off	28	Off	Off	On	On	On
13	On	Off	On	On	Off	29	On	Off	On	On	On
14	Off	On	On	On	Off	30	Off	On	On	On	On
15	On	On	On	On	Off	31	On	On	On	On	On
16	Off	Off	Off	Off	On						

Note: When assigning dip switch addresses, each device must have a unique number within each device type group. For example, a group of LCD annunciators may be assigned 1-10, and PSN-1000/PSN-1000(E) power expansion boards may also be assigned 1-10.

Remote Annunciators Installation (RA-6500 and RA-6075)

This panel supports up to 31 annunciators in any combination (RA-6500 / RA-6075). The RA-6500 provides a 4 x 40 character LCD display. Whereas, the RA-6075 provides a 2 x 16 character LCD display, along with standard function and numeric keys. All annunciator models listed are designed to be mounted on a flat non-condensing surface or electrical box.

Setting Addresses

An annunciator's address is set by dip switch S1, which is located on the back of the annunciator. The address must be set in the range of one to thirty-one (1–31) to be recognized by the panel. *(Refer to chart on the previous page for P-Link DIP switch programming.)*

Figure 29. Annunciator Back Panel View

DWG #593-31
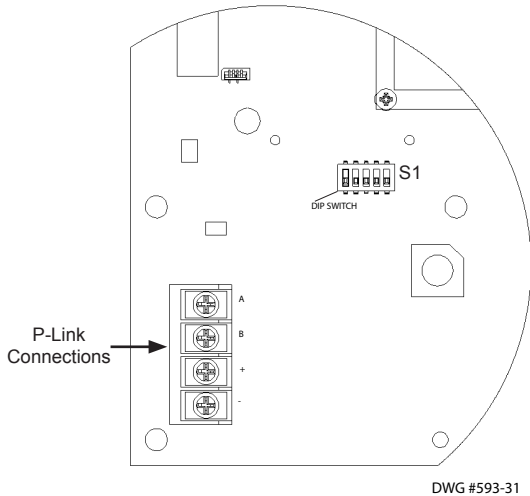
LED Annunciators Installation (LED-16)

The panel supports up to ten (10) LED-16 annunciators, which display alarm, supervisory, and trouble conditions for up to 16 zones per LED-16. It also provides Silence and Reset functionality. Blank zone labels are provided for use with the LED annunciator to label each zone name or identifier. The labels may be typed or written on the supplied card-stock, and then inserted into the back of the front panel as shown in the right-most figure below.

Note: This panel supports up to ten (10) LED-16 annunciators and/or DRV-50 drivers in any combination.

Figure 30. LED-16 Module & Board

DWG #608-4

DWG #608-5
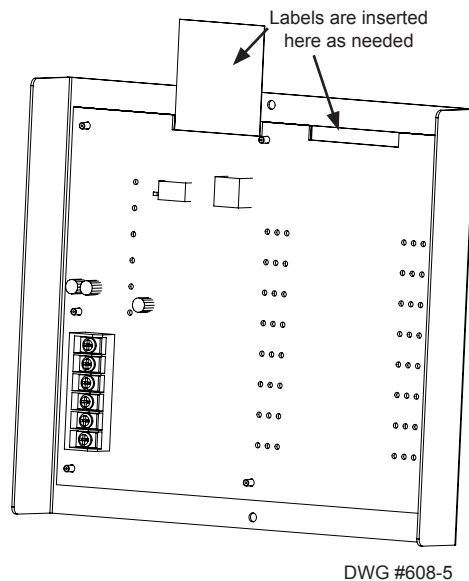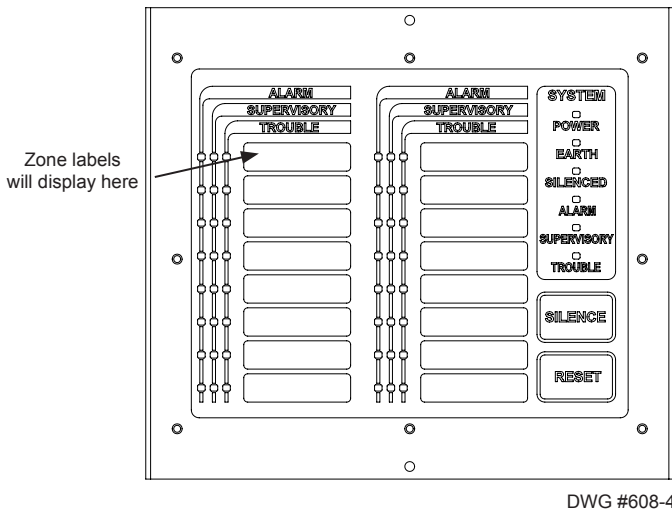
The LED-16 is controlled over the 4-wire P-Link connection. The higher current required for the LED outputs can be provided by the panel, or from an auxiliary power source as shown below. The auxiliary power can be any 24VDC source, and is fully supervised.

Figure 31. Examples of Wiring LED-16 Module to Control Panel or Auxiliary Power Supply
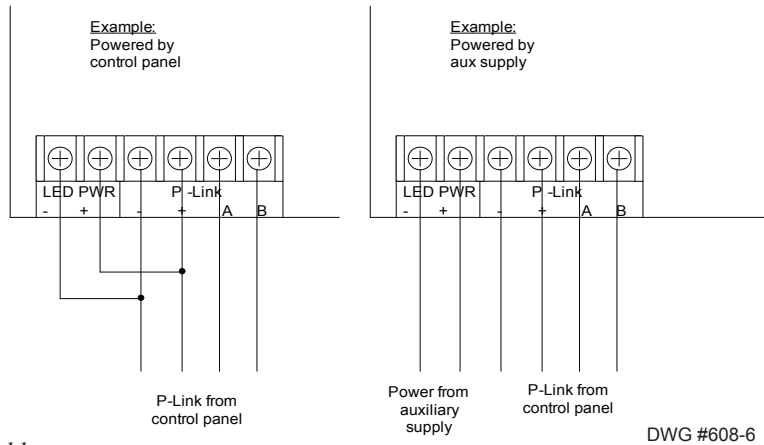
DWG #608-6

Setting Addresses

The LED-16's address is set by **dip switch S1**, which is located on the back of the annunciator. The address must be set in the range of one to thirty-one (1–31) to be recognized by the panel. *(Refer to the "P-Link Addresses" table shown earlier in this section for DIP switch programming.)*

**Figure 32. LED-16 Back Panel Showing Dip Switch Location**
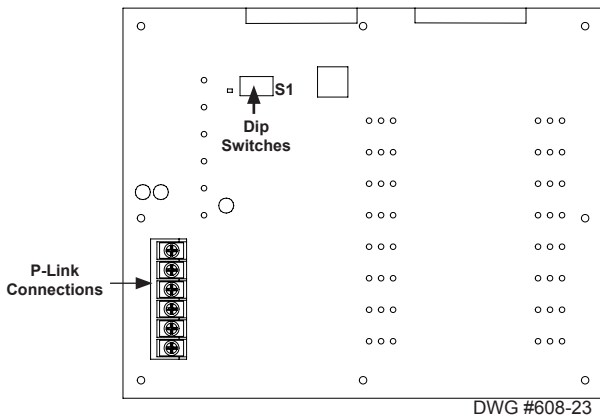
DWG #608-23

LED Drivers Installation (DRV-50)

The panel supports up to ten (10) DRV-50s. Each DRV-50 provides programmable LED outputs and 4 programmable dry-contact inputs, which can be individually mapped to any zone. The DRV-50 is controlled over the 4-wire P-Link connection, and is installed onto a mounting bracket as shown below. This can then be mounted into any of the compatible fire enclosures, or in either of the AE-8 or AE-14 accessory cabinets.

Note: This panel supports up to ten (10) DRV-50 drivers and/or LED-16 annunciators in any combination.

Figure 33. DRV-50 Board
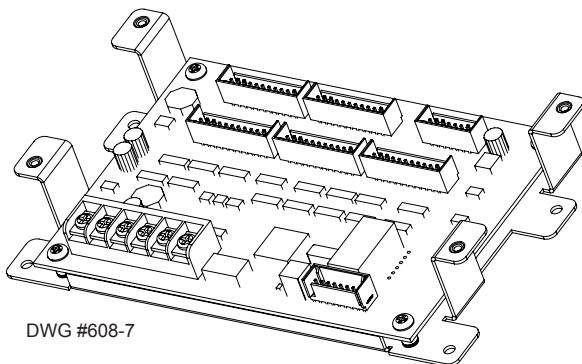
DWG #608-7

The **50 programmable LED outputs** are located on connectors **P1-P5**, each containing ten (10) LED outputs and two (2) 5VDC outputs. The **system LEDs** and **PZT control outputs** are located on connector **P6**. LEDs are wired as shown below; no external resistor is required. All outputs are power limited.

Figure 34. DRV-50 "P1-P5" and "P6" Connectors

Programmable LED
Connectors P1-P5

System LED and PZT
Connector P6

DWG #608-8
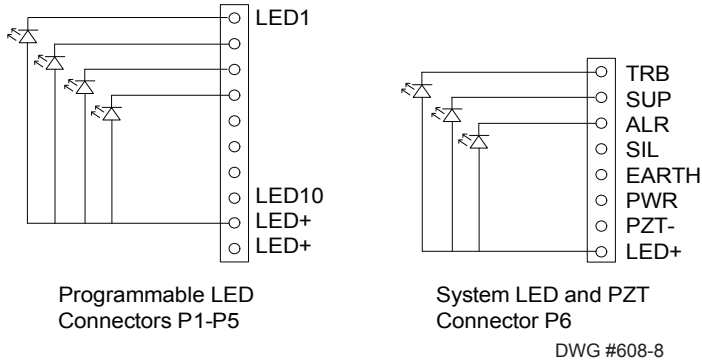
The **4 programmable dry-contact inputs** are located on connector **P7**. All input circuits are power limited and use a 5.1k EOL resistor. The inputs can be programmed for any of the contact input functions available for other input circuits available on the panel.

Figure 35. DRV-50 "P7" Dry-Contact inputs
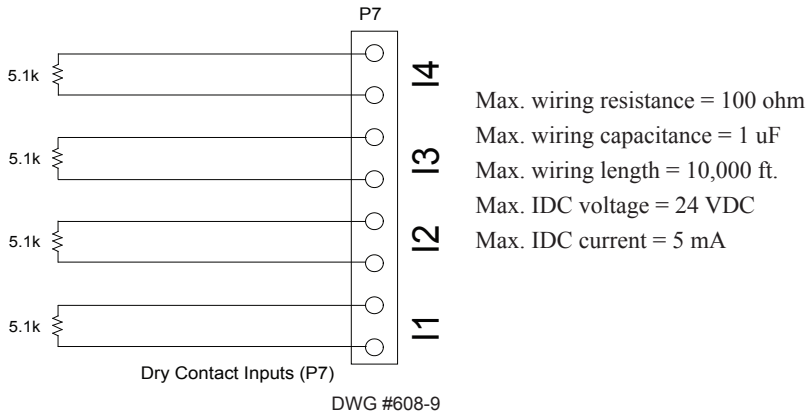
Max. wiring resistance = 100 ohm
Max. wiring capacitance = 1 uF
Max. wiring length = 10,000 ft.
Max. IDC voltage = 24 VDC
Max. IDC current = 5 mA

Dry Contact Inputs (P7)

DWG #608-9

The higher current required for the LED outputs can be provided by the panel, or from an auxiliary power source as shown below. The auxiliary power can be any 24VDC source, and is fully supervised.

Figure 36. Examples of Wiring DRV-50 from Control Panel or Auxiliary Power Supply

DWG #608-9B
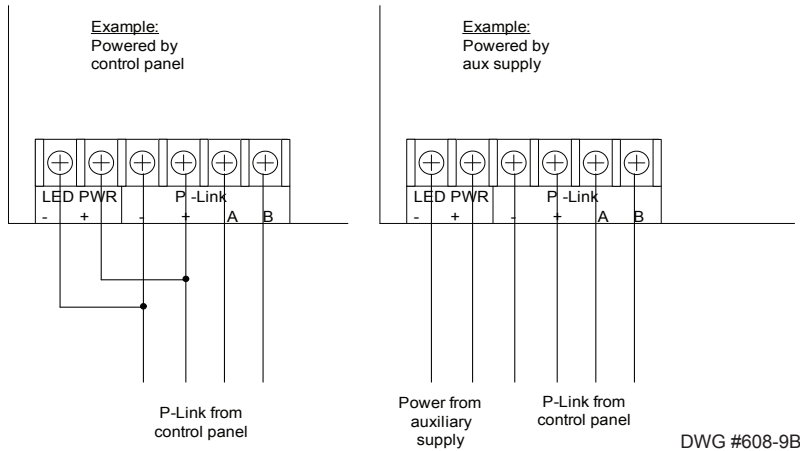
Setting Addresses

The DRV-50's address is set by **dip switch S1,** which is located on the back of the board. The address must be set in the range of one to thirty-one (1–31) to be recognized by the panel. *(Refer to the "P-Link Addresses" table shown earlier in this section for DIP switch programming.)*

**Figure 37. DRV-50's Back Panel View Showing Dip Switch Location**

P-Link
Connections   Dip Switch   S1   DWG #608-22
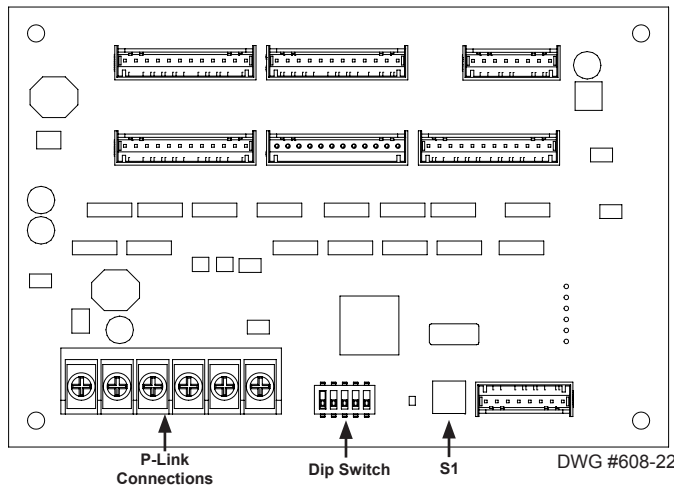
Relay Board Installation (RLY-5)

This panel supports up to thirty-one (31) RLY-5s. The RLY-5 (Relay Board) module is controlled over the 4-wire P-Link connection. The RLY-5 mounts in a mounting bracket as shown below, and then installed into the panel cabinet, or in either of the AE-8 or AE-14 accessory cabinets.

Figure 38. RLY-5 Board Showing Mounting Bracket

DWG #608-10
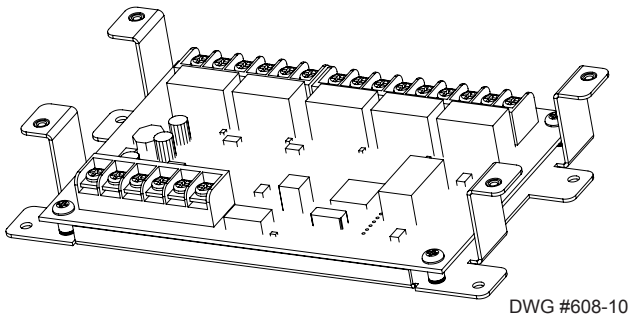
The RLY-5 higher current required for the relay outputs can be provided by the panel, or from an auxiliary power source as shown below. The auxiliary power can be any 24VDC source, and is fully supervised.

Figure 39. RLY-5 Wiring to Control Panel or Auxiliary Power Supply Examples & RLY-5 Showing Normally Open/Normally Closed Contacts
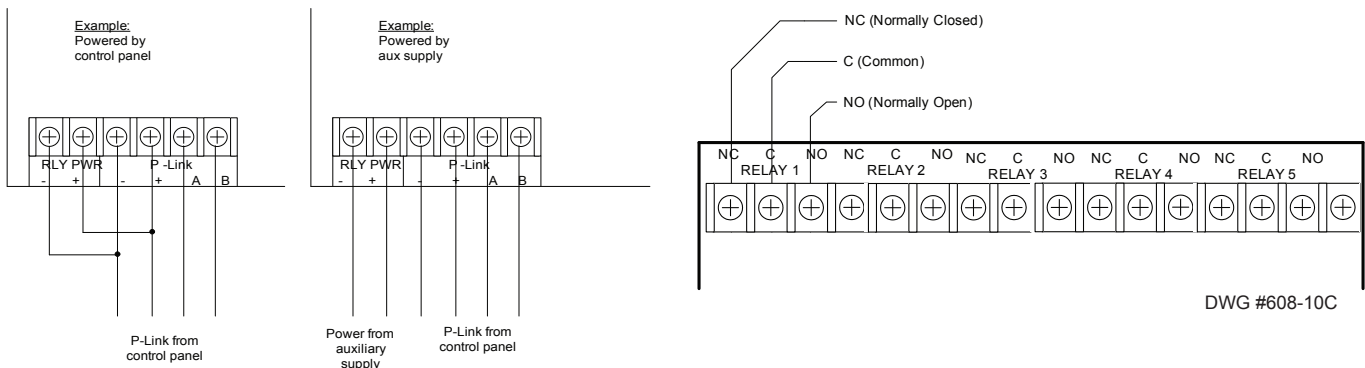
DWG #608-6

Setting Addresses

The RLY-5's address is set by **dip switch S1,** which is located on the back of the board. The address must be set in the range of one to thirty-one (1–31) to be recognized by the panel. *(Refer to the "P-Link Addresses" table shown earlier in this section for DIP switch programming.)*

Figure 40. Relay Board Back Panel View Showing Dip Switch Location

DWG #608-21
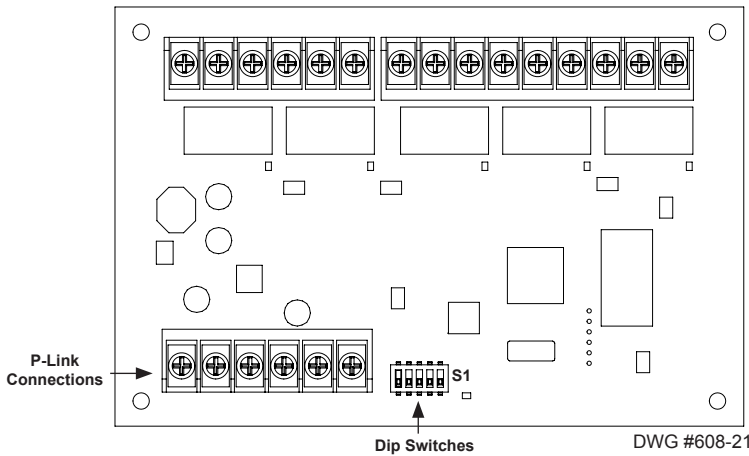
Fire Communications Bridge Installation (FCB-1000)

This panel supports one (1) Fire Communications Bridge accessory. This module provides an optional remote IP connection for IP reporting functionality. The FCB-1000 is controlled over the 4-wire P-Link connection. This then can be mounted inside the AE-8 or AE-14 accessory cabinets, or the optional rack-mount kit (FCB-1000RM). The FCB-1000RM includes a standard 19 inch rack-mount enclosure, which can then be installed directly into the IT equipment rack.

Note: The Ethernet IP connection is limited to same room installation. This connection shall be limited to 20 feet and enclosed in conduit or equivalently protected against mechanical injury.

Figure 41. FCB-1000 Bridge & FCB-1000RM Showing Rack Mount

DWG #608-13

DWG #608-14
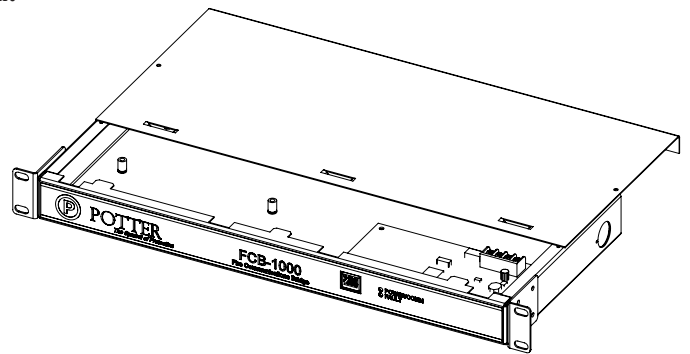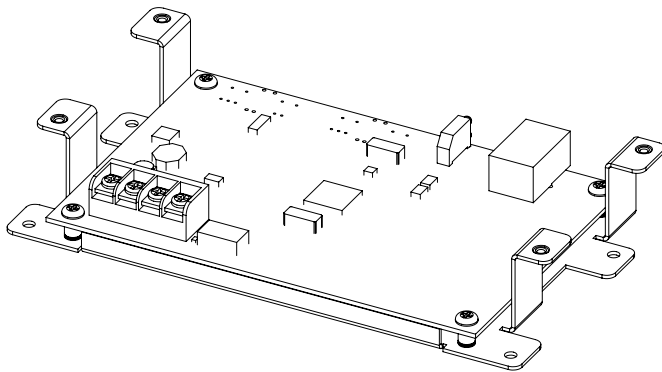
Figure 42. FCB-1000 Wiring to Control Panel Example

Example:
Powered by
control panel

P-Link

- + A B

DWG #608-26

P-Link from
control panel
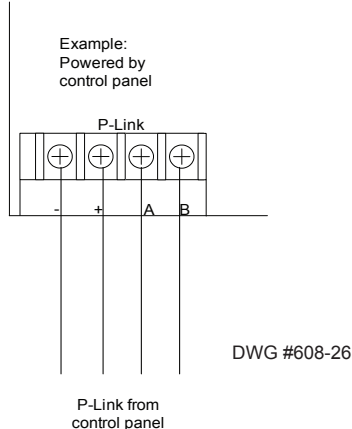
Setting Addresses

The FCB-1000's address is set by **dip switch S1**. The address must be set in the range of one (1) to thirty-one (1–31) to be recognized by the panel. *(Refer to the "P-Link Addresses" table shown earlier in this section for DIP switch programming.)*

Figure 43. FCB-1000 Back Panel View Showing Dip Switch Location

P-Link Connections

S1

DWG #608-20

Dip Switch
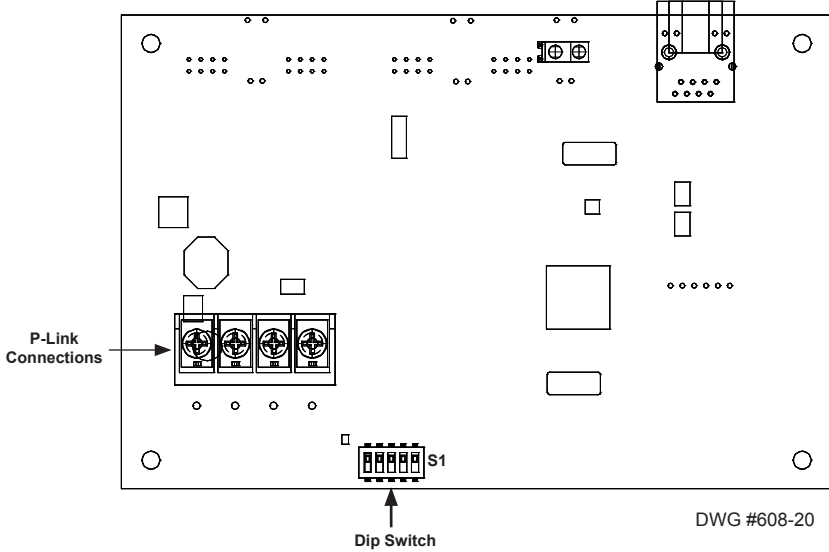
Fiber Interface Bridge Installation (FIB-1000)

The panel supports up to thirty (30) FIB-1000s (Fiber Interface Bridge), which enables the 4-wire P-Link bus to be converted to and/or from the fiber optic cable.

- Utilizes multimode 62.5/125 micron fiber optic cable
- Cable Length up to 2000 meters or 6500 feet
- Installed in pairs (*refer to the "FIB-1000 Wiring" heading for details*)

The first installed FIB-1000 can be mounted into any of the compatible fire enclosures, in either of the AE-8 or AE-14, or the optional rack-mount kit (FIB-1000RM). The FIB-1000RM includes a standard 19 inch rack-mount enclosure, which can then be installed directly in an equipment rack. The second installed FIB-1000 must be installed in a PSN-1000E cabinet as illustrated in the following drawings.

Figure 44. FIB-1000 Bridge & FIB-1000RM Showing Rack Mount

DWG #608-11

DWG #608-12
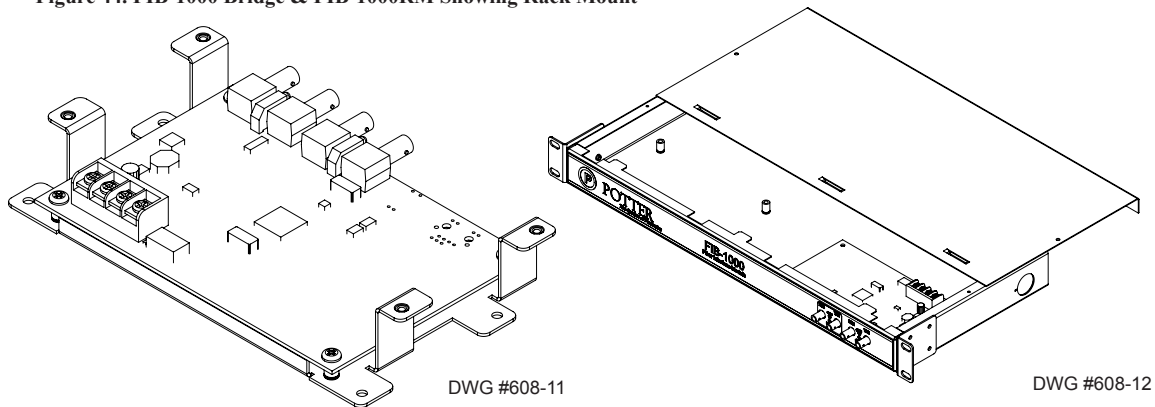
FIB-1000 Wiring

FIB-1000s are installed in pairs. (*Please refer to Diagrams #1 & 2 shown below to properly wire the two FIB-1000s.*) The first FIB-1000, referred to as **"FIB-1000 (A)"** below can be installed in any of the compatible fire alarm enclosures, or the FIB-1000RM. It is connected via the *4-wire P-Link connection*. **Set S2 on FIB-1000 (A) to the "OFF" position,** which provides an *outgoing fiber option connection*. That fiber optic connection can be connected as *Class A or Class B* to the second FIB-1000, referred to as **"FIB-1000 (B)"** below.

The second FIB-1000 (B) is installed in a *PSN-1000E* (*shown in Diagram #2 below*). **Set S2 on FIB-1000 (B) to the "ON" position.** It then provides an *outgoing P-Link connection*. Connect the **4-wire P-Link on the FIB-1000 (B)** to the **P-Link connection on the PSN-1000E.**

To power the FIB-1000 (B), connect the **24VDC "+" and "-" terminals** on PSN-1000E (*shown in Diagram #2 below*) to the **isolated P -Link 24 VDC "+" and "-" terminals**. The **PSN-1000E's isolated P-Link** can now be used to connect any other P-Link appliance, including the RA-1000, LED-16, and PSN-1000/PSN-1000E.

Figure 45. Diagram #1: FIB-1000 Wiring Diagram Showing Detail
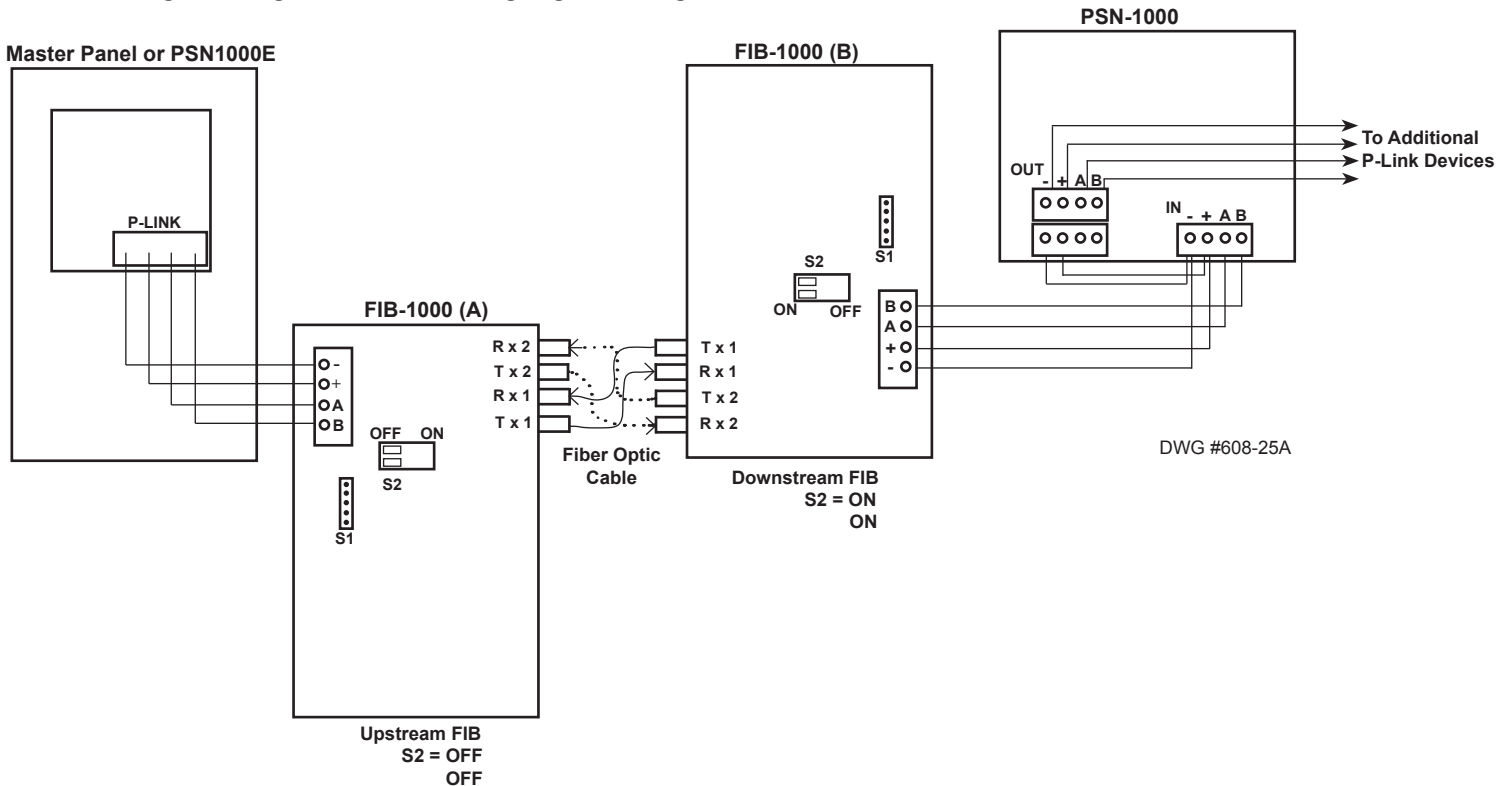
Figure 46. Diagram #2: FIB-1000 Wiring Diagram Shown Installed in PSN-1000E Cabinet
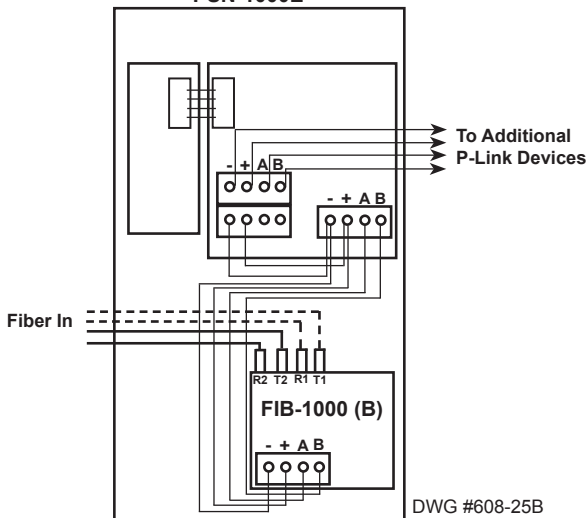
Setting Addresses

The FIB-1000's address is set by **dip switch S1**, which is located on the back of the board. The address must be set in the range of one to thirty (1–30) to be recognized by the panel. *(Refer to the "P-Link Addresses" table shown earlier in this section for DIP switch programming.)*

Figure 47. FIB-1000 Back Panel Showing Dip Switch Location

DWG #608-24
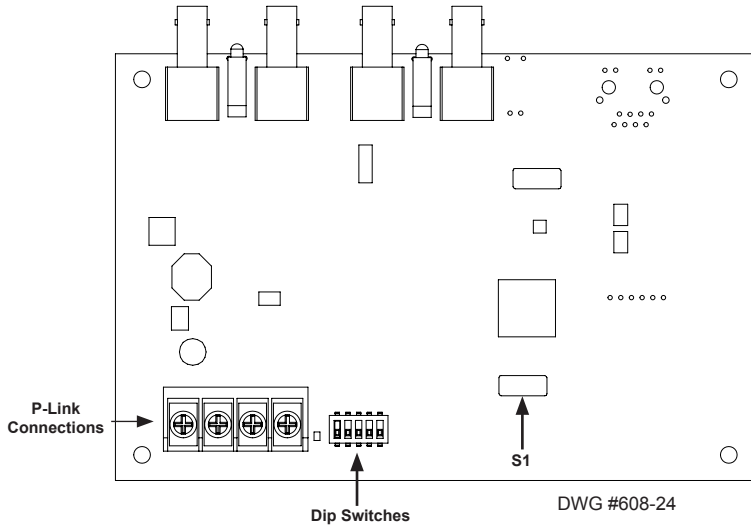
Serial Parallel Gateway Installation (SPG-1000)

An optional SPG-1000 serial/parallel gateway (printer drive) board can be mounted inside the AE-8 or AE-14 accessory enclosure, or the AE-RM rack mount enclosure kit. The SPG-1000RM includes a standard 19 inch rack-mount enclosure, which can then be installed directly in an equipment rack. Up to thirty-one (31) printers may be installed on this panel.

Figure 48. SPG-1000 Serial Parallel Gateway Board & Rack Mount

DWG #608-15

DWG #608-16
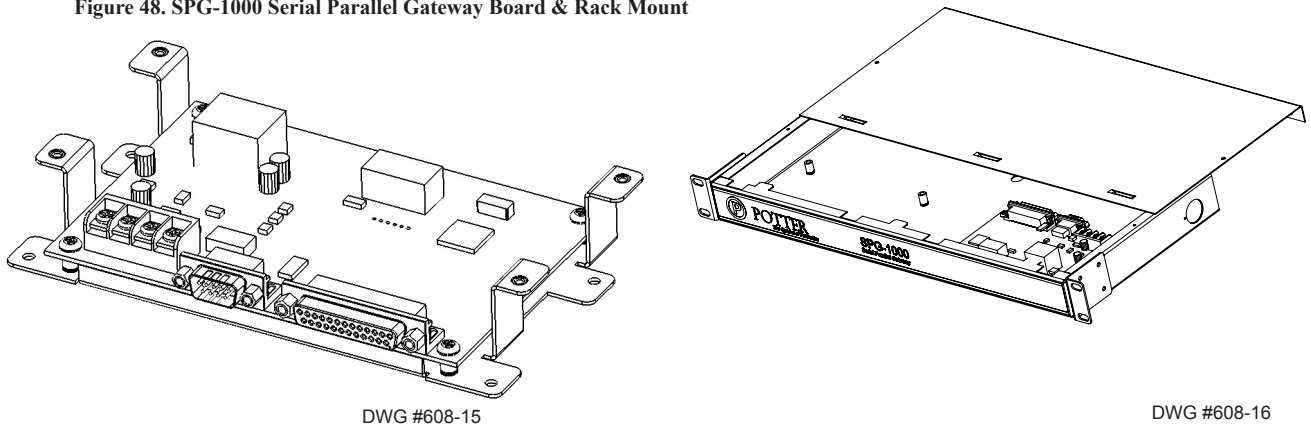
Figure 49. SPG-1000 Wiring to Control Panel Example

DWG #608-26
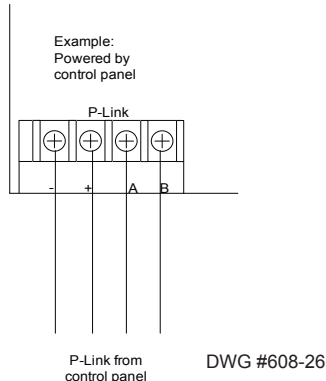
Setting Addresses

A SPG-1000 address is set by **dip switch S1**. The address must be set in the range of one (1) to thirty-one (1–31) to be recognized by the panel. *(Refer to the "P-Link Addresses" table shown earlier in this section for DIP switch programming.)*

Figure 50. SPG-1000 Back Panel View Showing Dip Switch Location
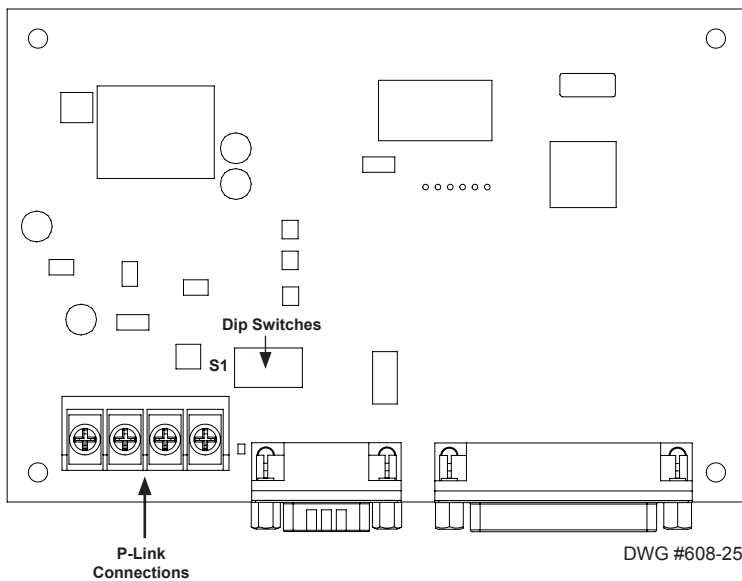
DACT Installation

NOTICE
Phone lines are high voltage and should be run in a separate conduit from other circuits. The wire conductors connecting the DACT to the phone system should be 26 AWG or larger.

The UD-1000 Digital Alarm Communicator Transmitter provides connections for two (2) phone lines for communication to a monitoring station. The UD-1000 DACT communicates using the SIA-DCS or Ademco Contact ID protocols. Only one UD-1000 is allowed per main control panel, for convenience the UD-1000 is typically programmed as device ID #01.

The UD-1000 must be installed <u>prior</u> to any other telephone equipment in the building to ensure proper operation. An RJ31X jack can be installed to provide the connection to the telephone lines, a patch cable between the RJ31X jack and the built in RJ-11 jacks on the UD-1000 provide a convenient connection method. The UD-1000 automatically monitors each phone line for voltage and has the ability to seize the line and connect with a remote receiver. Once the communication is complete, the DACT will hang up the phone line.

The DACT is provided with an RJ-11 jack for each phone line. In order for the DACT to work properly, it must be installed on a plain old telephone service (POTS) or equivalent as deemed by the authority having jurisdiction. The DACT <u>must</u> be installed before any other equipment to ensure it can seize the line and disconnect any other lines.

The UD-1000 slides into the guides located at the bottom of the panel, and then secured with screws as shown in the following illustration.

Figure 51. Example of an Installed UD-1000 Dialer

Screw

UD-1000 DACT

Slides in guides under main board.
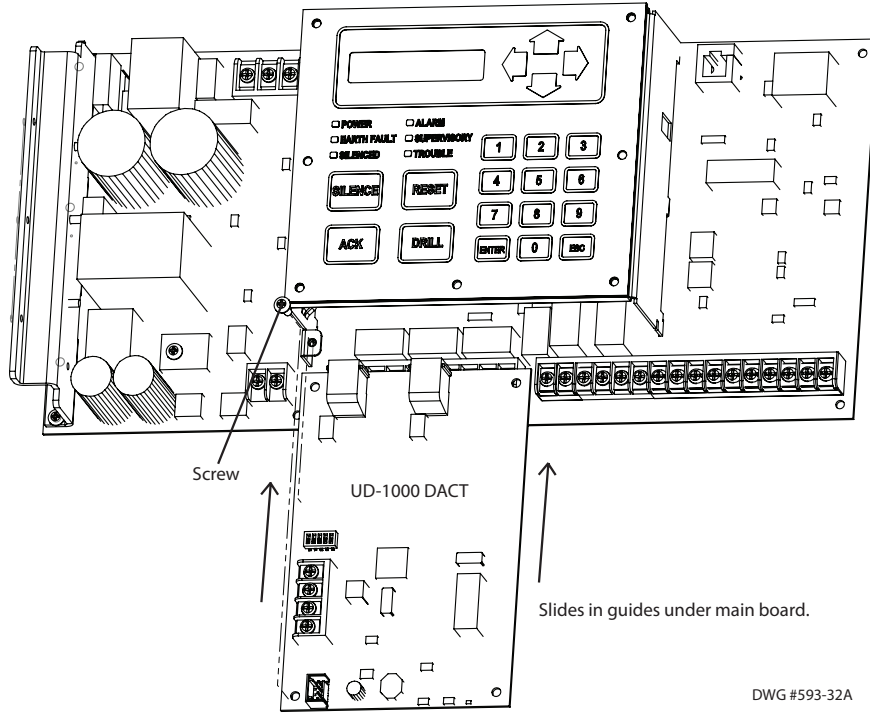
DWG #593-32A

P-Link & Dip Switch Locations

The UD-1000 is connected to the P-Link bus. A four-wire cable (P/N 5210514) is supplied with the UD-1000, which should be used to connect the **P1** on the UD-1000 and the "**P" connection** on the main panel board (*as shown in the illustrations below*).

Setting Addresses

The UD-1000 must be programmed with an address between one and thirty-one (1–31) to be recognized by the panel. *(Refer to the "P-Link Addresses" table shown earlier in this section for DIP switch programming.)*

Figure 52. UD-1000 Board Showing Dip Switch & P1 Connector / Main Board "P" Connector

Line #2

Line #1

P1 Connector

DWG #593-33

P Connector on
PFC-6030 main board
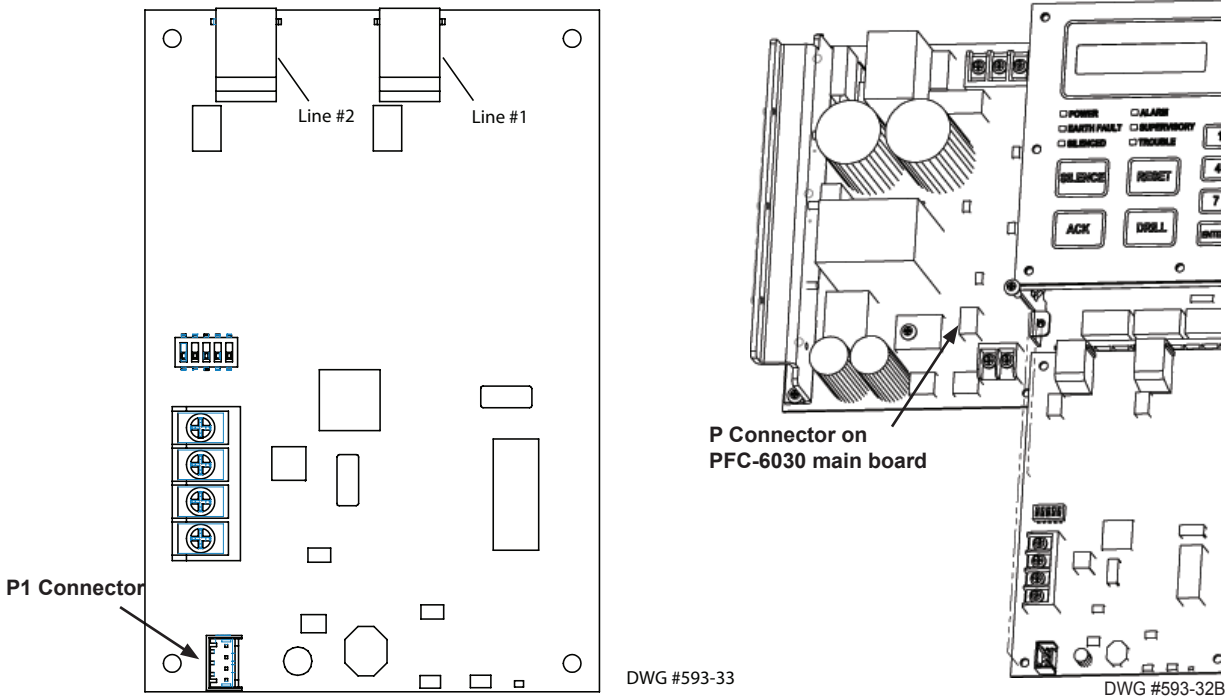
DWG #593-32B

Section 4: Operation

This section provides an overview of the control panel's basic operations, which includes the status LEDs, function pushbuttons, and a Control Panel Menu Tree quick reference sheet.

Control Panel Basic Operation

The control panel is comprised of a two (2) line x 16-character LCD display panel, arrow keys, push button function keys, status LEDS, and the numeric keypad. A description of each component is included in this section, and refer to the figure below for an example.

Figure 53. PFC-6030 Control Panel Display
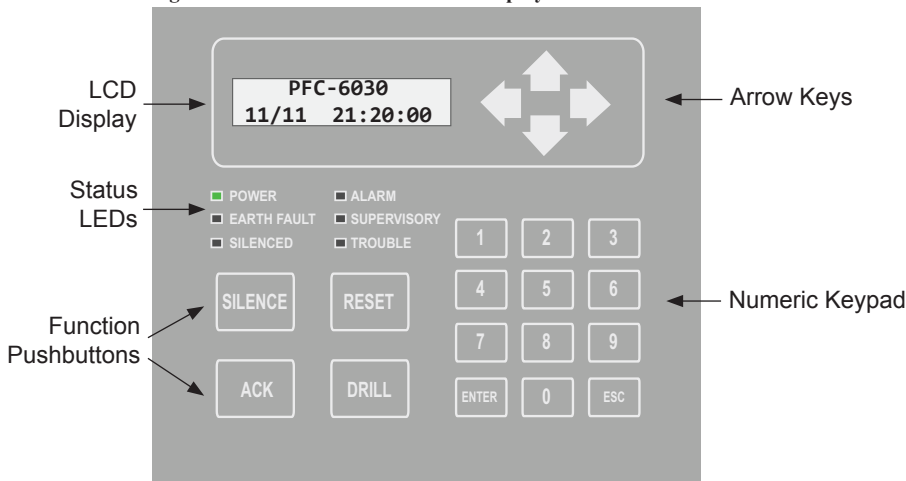
Note: Authorized system operators must use a key to open the outer door of the cabinet.

LCD Display

The LCD panel displays the standard *Start-up menu* as shown below. The LCD displays up to thirty-two (32) characters of information displays, providing important feedback to system users, i.e., system messages, status information, trouble conditions, or input changes. The LCD also provides access to the Main Menu for daily system operations and specific programming functions (*refer to "Section 5: Programming – Menu Functions" for details on these topics*).

Figure 54. LCD Start-Up Screen
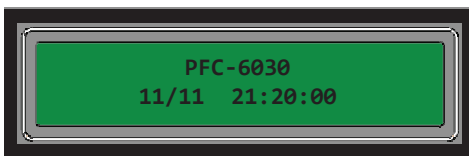
Note: You may customize the Start-up screen to display a specific job site name or other relevant descriptive text.

Menu Navigation Keys

The **arrow keys** allow you to scroll or move through the control panel menus. The **Enter** and **Esc** keys may also be used to navigate through menus; they are located on the numeric keypad. The table shown below provides a summary of the navigation keys.

Table 6: Menu Navigation Keys	
Push button	**Description**
⬆️⬇️	Moves/scrolls up or down through menus.
➡️⬅️	Scrolls to the left or right to display details, if any, of current menu item. **Note:** When the LCD panel displays a LEFT and/or RIGHT arrow, this indicates more information may be viewed.
ENTER	Displays the Main Menu or selects the current menu option. **Note:** The blinking "➔" indicates the current menu option.
ESC	Returns to previous menu or backs up to previous screen.

Numeric Keypad

The numeric keypad allows you to enter user codes when required to access restricted functions. Alternatively, the numbers may be used to quickly select menu options vs. using the arrow and Enter keys to select a function.

Figure 55. Control Panel Numeric Keypad

Function Pushbuttons

The four (4) function pushbuttons are used when system alarm / trouble conditions occur or to perform a fire drill.

Figure 56. Control Panel Pushbuttons
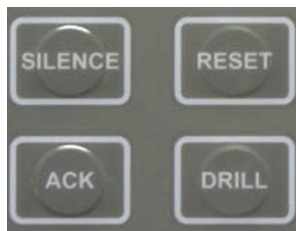
The table below provides a brief summary of the pushbuttons:

Table 7: Control Panel Pushbuttons	
Pushbutton	**Description**
ACK	Press to *acknowledge* the currently displayed condition.
SILENCE	Press to *silence* all outputs programmed as *silenceable* and buzzer.
RESET	Press to *reset* panel to *normal condition*.
DRILL	Press to begin a fire drill.

Status LEDs

The control panel's LEDs communicate system conditions by illuminating and/or flashing the applicable **green**, **red** or **amber** indicators. These are described in the table below.

Figure 57. Control Panel Status LEDs
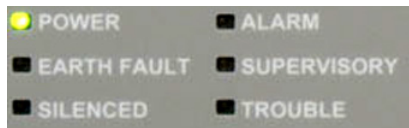
Table 8: Status LEDs		
LED Type	**LED Color/Action**	**Description**
Power	Steady Green	Power is present. **Note:** If power is absent for more than 5 seconds, LED will extinguish.
Alarm	Flashing Red	An alarm device is active.
Earth Fault	Flashing Amber	A ground fault is present.
Supervisory	Flashing Amber	A supervisory condition is present.
Silenced	Steady Amber	A fault condition has been silenced.
Trouble	Flashing Amber	A fault condition is present.

Control Panel Menu Tree

This section provides a reference to menu options as they appear on the LCD panel. Appendix G also provides a copy of the menu tree.

MAIN MENU

- 1=View History
- 2=Enable/Disable
  - 1=By Point
    - Select Device
      Internal SLC
      Internal PWR
  - 2=By Zone
    - Zone 1
      1=Disable Inputs
      2=Disable Outputs
- 3=Set Date/Time
- 4=Walk Test

MAIN MENU

- 5=System Tools
  - 1=SLC Tools
    2=Point Control
    3=Ethernet Status
    4=DACT Test
    5=DACT Reset
    6=Erase History
    7=Lamp Test
    8=App Revisions
    - 1=SLC Pinpoint
      2=SLC Stats
      3=SLC Addr Prog
      - 1=Single Device
        2=Mltp Device
- 6=Programming
  - 1=LEARN Mode
    2=Panel Default
    3=IP Settings
    4=Dflt ID/Pswd
    5=Prog ID/Pswd
    Esc=Exit
    - 1=Username
      2=Password
      Esc=Exit
    - Ethernet Options
      1=DHCP Settings
      2=Default IP
      3=Default Gateway
      4=Default Subnet
      5=Alternate IP
      6=Alt. Gateway
      7=Alt. Subnet
      Esc=Exit
- 7=Data Transfer
  - Select Data
    1=Remote Access
    2=E-mail Det Stat
    3=E-mail History
    4=E-mail Config
    5=E-mail Test
    6=Server Status
    Esc=Exit
- Esc=Exit

TIP: To save time, enter the menu selection number on the keypad to select a function. For example, press "3" to select "Set Date/Time" from the Main Menu.

Section 5: Programming

This section addresses programming options and their parameters, provides an overview of the programming process, and addresses how to use the two programming methods: (1) the *LEARN* function, and (2) the **remote computer programming process**.

This section also includes procedures on uploading and downloading configuration data using the **panel configuration software**. Please refer to this section to learn how to navigate within the software, access and modify programming settings, such as the system clock and day/night mode sensitivity settings, scheduling holidays, displaying events, and programming optional modules (*i.e., a DACT, remote and LED annunciators, and a Class A card*).

Programming Options

NOTICE
To users, installers, authorities having jurisdiction, and other involved parties: This product incorporates field-programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, certain programming features or options must be limited to specific values or not used at all as indicated below.

Table 9: Programming Options					
Topic	**Feature or Option**	**Permitted in UL (Y/N)**	**Possible Settings**	**Setting(s) Permitted in UL864?**	**Comment**
Misc	Idle LCD Message	Y	Yes/No	All settings allowed	
Misc	Display Events	Y	Initial Event Newest Event	Initial Event	Auto display of first event
Misc	SLC Blink	Y	Normal/Slow/Off	All settings allowed	
Misc	Alarm Verification Time	Y	0-60 Sec	All settings allowed	
Misc	Waterflow Delay	Y	0-255 Sec	0-90 sec	
Misc	AC Report Delay	Y	0-30 Hours	1-3 Hours	For UL864 use 1-3 Hr
Misc	DH Low AC Dropout Delay	Y	No delay, 15 sec, 1 minute, 5 minute	All settings allowed	
Misc	Auto Test Time	Y	Time of Day	All settings allowed	
Misc	Strobes Active When Silenced	Y	Yes/No	All settings allowed	
Misc	50 Hz AC	Y	Yes/No	All settings allowed	
Misc	Display AM/PM	Y	AM/PM, 24 Hour	All settings allowed	
Misc	Time Zone	Y	24 Time Zone Selections	All settings allowed	
Misc	DST Enabled	Y	Yes/No	All settings allowed	
Misc	DST Start	Y	Month/Day	All settings allowed	
Misc	DST End	Y	Month/Day	All settings allowed	

				Table 9: Programming Options		
Topic	**Feature or Option**	**Permitted in UL (Y/N)**	**Possible Settings**		**Setting(s) Permitted in UL864?**	**Comment**
Zone	Zone Type	Y	Alarm Supervisory Positive Alarm Sequence Auxiliary Fire Drill System Alarm System Supervisory System Trouble		All settings allowed	
Zone	Alarm Count	Y	1-10		All settings allowed	
Zone	Silenceable	Y	Yes/No		All settings allowed	
Zone	Silence Inhibit	Y	Yes/No		All settings allowed	
Zone	Auto Silence	Y	Yes/No		All settings allowed	
Zone	Auto Unsilence	Y	Yes/No		All settings allowed	
Zone	Restore Delay	Y	0-300 Sec		Full range allowed	
Zone	Latching	Y	Yes/No		All settings allowed	
Zone	Local	Y	Yes/No		All settings allowed	
Zone	Output Pattern	Y	Constant ANSI Temporal March Code Double Time		All settings allowed	
Zone	Day Sensitivity	Y	1.1%-3.5%		Full range allowed	Within listed range of sensor
Zone	Night Sensitivity	Y	1.1%-3.5%		Full range allowed	Within listed range of sensor
Zone	Fixed Heat Setting	Y	135˚F-185˚F		Full range allowed	Within listed range of sensor
Zone	Combo ROR/ Fixed Setting	Y	135˚F-174˚F		All settings allowed	Within listed range of sensor
SLC Point	Function	Y	Photo Detector (PSA) Photo Duct Detector (DSA) Photo/Heat Detector (PSHA) Fixed Heat Detector (FHA) Combination Fixed / ROR Heat Detector (RHA) Conv. Zone Module (CIZM) Mini Contact Mod (MCM) Single Contact Mod (SCM) Dual Contact Mod (DCM) Mon. Output Mod (MOM) Twin Relay Module (TRM) Sounder Base (ASB) Relay Base (ARB)		All settings allowed	Specifies use/type of SLC device
SLC Point	Dry Contact Input Functions	Y	Pull Station, Water Flow, Supervisory, Tamper, Fire Drill, Trouble Monitor, Aux, Abort, Reset, Silence, Fire Alarm, Disable Inputs, Disable Outputs, Disable Inputs/Outputs, Lamp Test		All settings allowed	Applies to all dry-contact input devices and circuits.

Table 9: Programming Options					
Topic	**Feature or Option**	**Permitted in UL (Y/N)**	**Possible Settings**	**Setting(s) Permitted in UL864?**	**Comment**
SLC Point	Alarm Verif	Y	Yes/No	All settings allowed	
SLC Point	Supervisory	Y	Yes/No	All settings allowed	
NACs	Function		Potter/Amseco Sync Gentex Sync System Sensor Sync Wheelock Sync Constant Output Resettable Output Door Holder Output ANSI Output City Tie Output	All settings allowed	Specifies use of NAC circuit(s)
Day/Night	Smoke Sensitivity	Y	Full listed range of smoke detector	All settings allowed	Up to 50 holidays where day mode is not active.
DACT	Daily Test Call	Y	Any time of day	All settings allowed	Alternates between line 1 and 2 if line 2 is enabled.
E-Mail	E-mail Status Reports	N	Alarms, Troubles, Supervisory Test, History & Status Reports		
IP-Dialer	IP Based Central Station Reporting	Y	Alarms, Supervisory, Trouble & Test Reports	All settings allowed	

Programming Overview

The **LEARN** function is available through the control panel, and is an efficient way to automatically configure all system devices. **LEARN** detects all connected devices, assigns a name and selects the applicable device type (*i.e., module, sensor or P-Link device)*. The system configuration mirrors a basic fire protection system where all inputs and outputs are a one-to-one relationship.

The **panel configuration software** allows custom programming and configuration for all points via a network or remote computer. At the click of a mouse, you may fine-tune device behavior characteristics or create mapping zones for a more sophisticated fire protection system. By using the system software, you will realize the power and flexibility of the PFC-6030 system. *(Please refer to "Panel Software Overview" and "Mapping Zones" in this section for details on these procedures.)*

The Programming Cycle

The following is a recommended approach to programming the system:

1. Install Software
2. Address and Install SLCs
3. Run LEARN
4. Connect Ethernet Cable
5. Upload Data to Computer
6. Program the System
7. Download Configuration File

Note: This approach may eliminate programming errors, however, these are only recommendations.

Software Installation

It's easy to install the PFC-6030 software and requires only a few minutes to complete. Once done, the program automatically creates a shortcut icon on your desktop for easy access.

The system software is compatible with Windows XP, Windows Vista and Windows 7 Operating Systems, and incorporates conventional shortcuts and features (*i.e., right click to display short cut menus, drag and drop, etc.*). The software's flexibility enables you to effectively program individual and/or groups of devices. Several examples in configuring a basic fire system are provided later in this section under the *"System Programming"* heading.

Note: The latest version of Microsoft .NET Framework is required.

To install the software:
• Access the Potter website at *www.pottersignal.com*, and go to the *"Fire Alarm Systems" link,* then click the *"Fire Panel Configuration Software" icon* to select program to download.
• The default installation directory is: *C:\ProgramFiles\Potter\Potter Fire Panel Programmer.*
• You may change the location of the application files.

LEARN Programming

The LEARN mode enables you to efficiently configure all connected, addressed input and output devices. (*Refer to Section 3: Installation – Addressing SLC Devices, for detailed instructions*.) Only authorized users may access this function. LEARN generates a list of all points, which may be viewed through the Points and Zones functions on a remote computer. *(Refer to the "Configuring Points" and "Mapping Zones" sections for details.)*

To run the LEARN mode:

1. From the control panel, press the **Enter button** to display the Main Menu.
   - Press **6** to select **Programming.** The *"Enter Code" prompt* displays.
   - Enter the user code as prompted. The "*1 Learn" prompt* displays.
   - Press **1** to select **LEARN**. The *"SLC Initializing" prompt* displays, and the system begins the initialization process.

2. Results are grouped by **device type**. If no changes are detected, the prompt *"No changes"* displays.
   - Use do**wn arrow** to scroll through results by device type:

   1=P-Link Found
   2=P-Link Removed
   3=Pts Found
   4=Pts Removed
   5=Pts Changed
   Esc=Exit

   Note: The abbreviation "Pts" refers to addressable SLC points.

   - Select **Esc** when finished reviewing results. The system prompts to save or discard file.

3. Press **1** to **save** changes; press **2** to **discard** changes.
   - If option **1** is selected, the *"Accept confirmation" prompt* displays.
   - Press **Enter** to accept or **Esc** to discard.

4. Press **Esc** to exit programming menu.

Connecting the Computer and Panel

This section provides instructions on setting up connectivity between a laptop or networked computer and the control panel. Once this is achieved, you may program your system using the panel configuration software.

> **Note**: These instructions are relevant to all system configurations. If your PC connects directly to the panel, any procedural differences are noted throughout.

Connecting a Computer to the Panel via a Network:

1. Connect cable to the Ethernet port on network (or directly to the panel if not using a network)**.**
2. Connect Ethernet cable to port as shown below.

Figure 58. Control Panel Ethernet Port
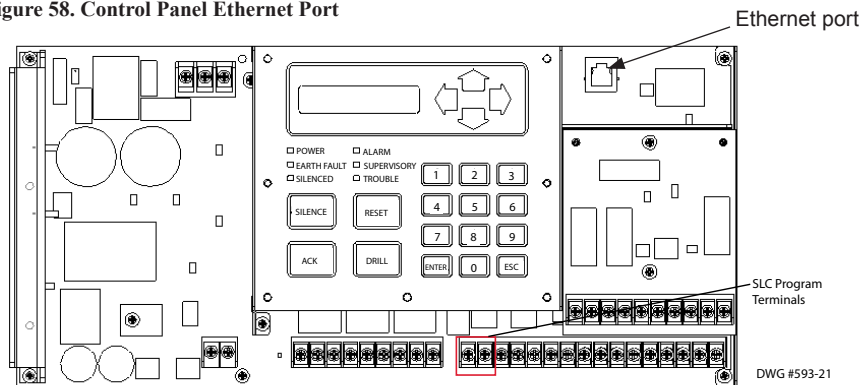
The following series of messages display on the LCD:

```
         PFC-6030
       Initializing IP
```

```
         PFC-6030
        Obtaining IP
```
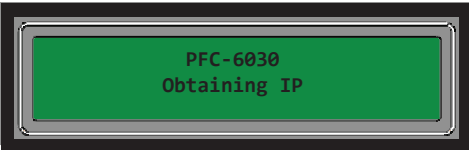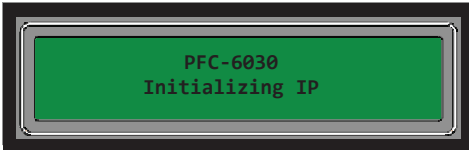
Notes:

- If the Ethernet cable is connected to PC, you will see the *"Initializing IP" message* prior to the *"Obtaining IP" message*.

- If your PC is connected directly to the panel, the *"Obtaining IP" message* displays for approximately 45 seconds, followed by the *"Private IP" message* (*the* "*Private IP" message is not shown here*).

```
         IP address
         10.0.5.27
```
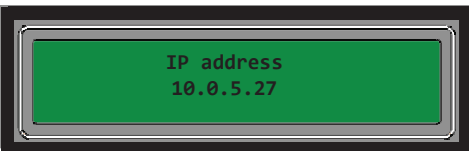
Note: The number "10.0.5.27" shown above represents an example of a panel's IP or identifier used for illustration purposes only. The panel's IP is unique to each computer / network. Write down the **IP address**; it is required to transfer programming data between the panel and the computer.

3. The "*IP configured*" and *"IP address*" prompts alternatively display until configuration is completed.

```
         PFC-6030
        IP Configured
```
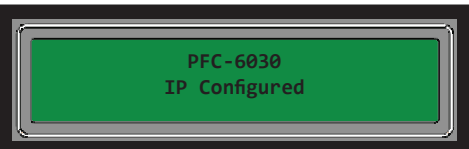
Note: If Ethernet connectivity is lost, the message "***Ethernet Lost***" displays on panel. This indicates that the Ethernet cable is disconnected at the panel or network (computer) port.

Transferring Data

This section provides step-by-step instructions for completing uploading and downloading data transfers. The **"Transfer" icons** are located at the top of the **Programmer window** and are briefly described below.

	Table 10: Transfer Functions	
Icons	**Description**	
	Downloads configuration file from computer to panel.	
	Uploads configuration file from panel to computer.	
	Uploads history events file from panel to computer.	
	Uploads detector "sensitivity" status file from panel to computer.	
	Prints selected file.	

The **Transfers region** is located at the bottom of the Programmer window and lists all completed transfers. This area displays transfer details, including their date and time. You may also access the **"Transfer" shortcut menu** from this location to select any of the transfer functions.

Figure 59. Example of Programming Window Showing Transfer Icons and Transfer Section
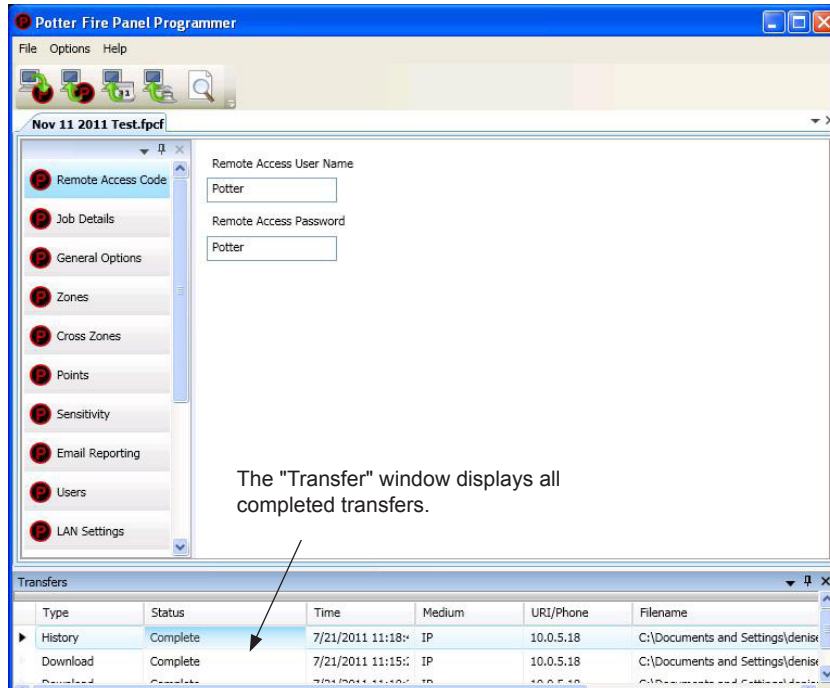
Note: Double-click anywhere on the transfer record to view details.

Uploading from Panel to Computer

The **Upload Configuration File to Computer transfer icon** is used to upload the configuration file from the panel to the computer once the LEARN function is completed or whenever devices are added or removed from the panel.

To upload programming changes to computer:

1. Click the **Upload Configuration File to Computer icon** or right click from **"Transfers" region** as shown below:

Figure 60. Example of Transfer Shortcut Menu
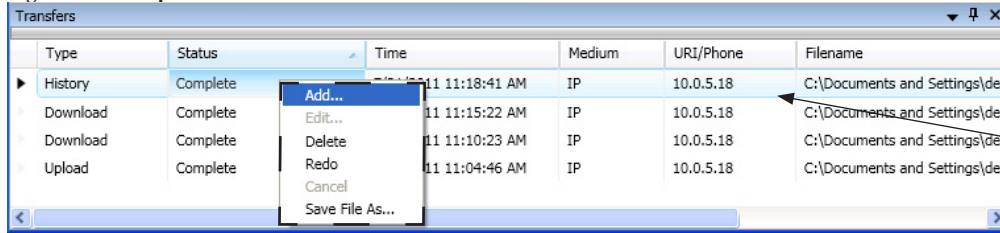
Right click anywhere in the transfer window to display the shortcut menu.

Note: Click the *"Add" option* from the shortcut menu to choose the transfer type.

The **Transfer dialog box** displays.

Figure 61. Example of Transfer Upload Dialog Box
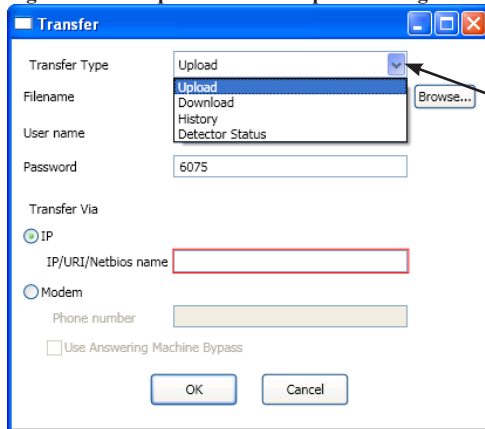
Click here to choose applicable transfer type, if necessary.

2. Verify that **Upload** is selected in the *"Transfer Type" field.*

3. Enter the **configuration filename** in the *"Filename" field* or leave blank to Autoname.

Figure 62. Example of Transfer – Upload Window
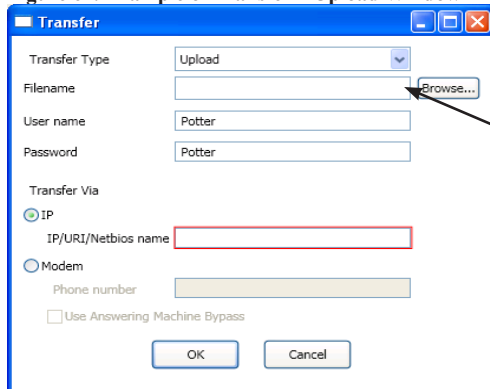
Enter file name or leave blank to auto-name.

Notes:
- If you do not name the file, the program automatically names it using the transfer type and date stamp as the file name.
- Once the file has been saved, and additional programming changes are made at a later date, click the **Browse button** to locate the file name to replace the old file with the updated configuration changes.

4. Enter **IP address** or **panel name** in the *"Transfer Via IP" field.*

> **Notes:**
> - To capture your panel's unique IP address, disconnect the Ethernet cable from panel. The message **"Ethernet Lost"** displays indicating connectivity is lost. Be prepared to write down the address, and reconnect cable.
> - If you are connecting via a modem, please refer to **"Appendix B: Modem Connectivity Setup".**

5. Click **OK.** The **Transfers region** displays the uploaded file.

Figure 63. Example of Transfers Download Results

- Double-click on the transfer file to display results.

- All points detected during the LEARN process have been uploaded to the panel configuration software.

Note: Details on viewing and configuring points are addressed in detail later in the *"System Programming – Configuring Points"* topic.

Downloading Configuration File to Panel

The **Download Configuration File to Panel icon** allows you to copy all programming changes to the panel.

> **Notes:**
> - Be sure to "*Enable Remote Access"* at the panel before choosing this option. If your PC is directly connected to the panel versus a network, this step is not necessary.
> - Verify that the *Remote User Name and Password* match the panel's user name and password. You will receive an error message when attempting to download data to the panel if they do not match.

Enable Remote Access

To enable remote access:

1. At control panel, press **ENTER** to display the **Main Menu**.

2. Press **7** to select **Data Transfer**.

3. The **"ENTER CODE"** prompt displays. Enter the user code to continue.

4. The **Select Data option** displays. Press **1** to select **Remote Access.**

5. Press **ESC** to return to **Main Menu.**

Note: Once enabled, the remote access will "time out" after thirty (30) minutes if contact is not established.

File New

The ***File New menu option*** is used to complete <u>all</u> programming from scratch on the computer. You must select the correct panel model prior to programming.

> **Note**: It is imperative that you choose the correct panel model **<u>prior</u>** to programming or completing any data transfers, otherwise, you cannot complete a successful download to the panel. If this occurs, you will have to reprogram the entire panel.

Figure 64. Example of File New Dialog Box
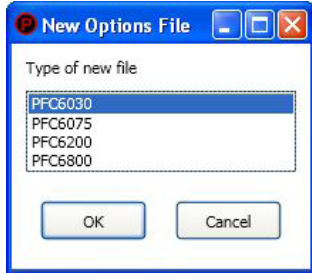
File Save / Save As

Once programming has been completed, save your configuration file using either the ***"File – Save" or "File – Save As" function***. An *audit* is performed that checks for rule violations; if errors are encountered, you may choose to either save with errors or cancel the save operation.

Figure 65. Example of Save Panel Dialog Box
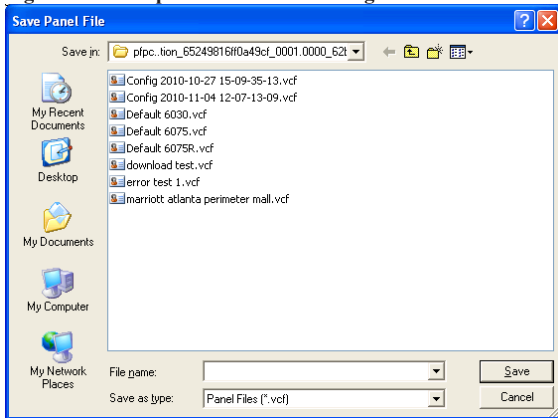
Notes:
1. All site specific configuration data is stored in the panel's non-volatile memory.
2. The next time you make programming changes, you may overwrite the original configuration file with changes. If you choose to do this, you will lose the original programming report information.
3. The panel configuration file has a .fpcf file extension.

Audit Errors

The *Audit Error - Save Anyway? dialog box* displays if programming errors are encountered when saving the configuration file. You may choose to save the file with errors; however, you cannot download the data until all errors are corrected.

Figure 66. Example of the "Save anyway?" Dialog Box
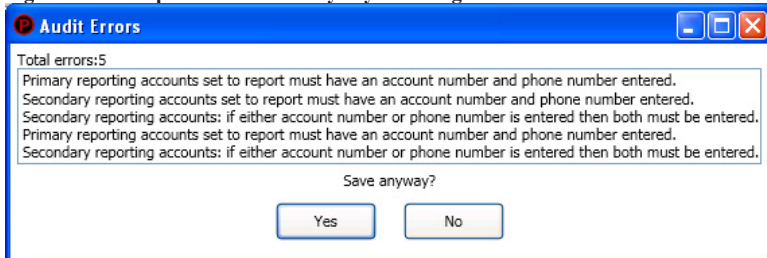
Downloading a Configuration File

To download the configuration file:

1. Click the **Download Configuration File to Panel icon** or **right click** from the **"Transfers" region**, then click "**Add**". The **Transfer dialog box** displays.

Figure 67. Example of Transfer – Download Dialog Box
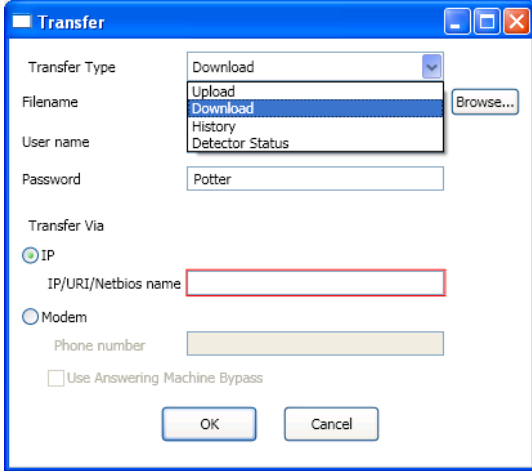
2. Verify that **Download** is selected in the *"Transfer Type" field.*

3. Enter the file name in the *"Filename" field* or click the **Browse button** to select file name.

4. Enter the **IP address** in the *"Transfer Via IP" field*.

Figure 68. Transfer - Download Dialog Box
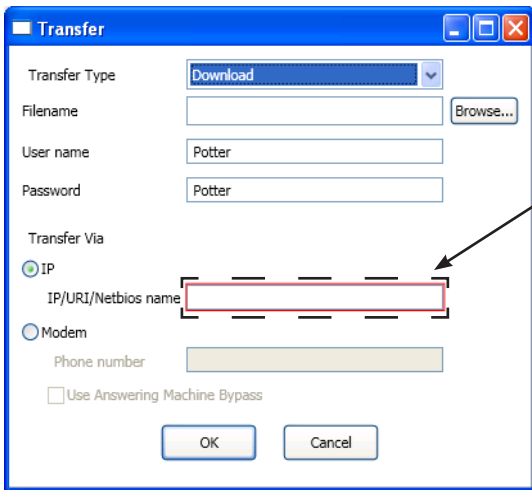
Note: To capture the panel's <u>unique</u> IP address:
1. Disconnect the Ethernet cable from panel.
2. The message "Ethernet Lost" displays indicating connectivity is lost.
3. Reconnect the cable, and write down the IP address shown.

5. Click **OK**. The **Transfers window** displays the transfer progress.

Figure 69. Example of Transfers Window Showing Download Completed

	Type	Status	Time	Medium	URI/Phone	Filename
	History	Complete	7/21/2011 11:18:41 AM	IP	10.0.5.18	C:\Documents and Settings\den
▶	Download	Complete	7/21/2011 11:15:22 AM	IP	10.0.5.18	C:\Documents and Settings\den

Uploading History Events & Detector (Sensitivity) Status Reports

The **Upload History File to Computer** and **Upload Detector (Sensitivity) Status to Computer icons** allow you to view valuable information that can be essential when analyzing system operations. You may choose to print the History and Detector Status reports by using the **Print icon**. These reports may also be scheduled to be sent automatically to authorized e-mail addresses. Refer to the *"System E-mail Functions"* topic located later in this section for details on programming these e-mail reporting options.

History Reports

The *"Event History" transfer option* creates a report of all events held in the panel's buffer. Up to 1,000 events are held in the buffer at one time. This information may be used to troubleshoot errors or to assess ways to improve the system configuration.

To transfer event history information:

1. Click the **Upload History File to Computer icon** or **right click** from *"Transfers" area,* and clic**k** *"Add"*. The **Transfer dialog box** displays.

2. Verify that **History** is selected in the "*Transfer Type" field, and* click **OK** to display results.

Figure 70. Transfer Window Results

	Type	Status	Time	Medium	URI/Phone	Filename
▶	History	Complete	7/21/2011 11:18:41 AM	IP	10.0.5.18	C:\Documents and Settings\de
	Download	Complete	7/21/2011 11:15:22 AM	IP	10.0.5.18	C:\Documents and Settings\de
	Download	Complete	7/21/2011 11:10:23 AM	IP	10.0.5.18	C:\Documents and Settings\de
	Upload	Complete	7/21/2011 11:04:46 AM	IP	10.0.5.18	C:\Documents and Settings\de

3. Double-click file to view results.

Figure 71. Example of Transfer Results Window

	Date/Time	Event
▶	10/21/2010 09:55:49 PM	System Login User 3
	10/21/2010 10:26:41 AM	Trouble Restore NAC 2 PWR Supply NAC
	10/21/2010 10:26:40 AM	Trouble NAC 2 PWR Supply NAC 2
	10/21/2010 02:08:48 AM	Trouble Restore NAC 2 PWR Supply NAC
	10/21/2010 02:08:47 AM	Trouble NAC 2 PWR Supply NAC 2
	10/20/2010 09:10:22 PM	Trouble Restore NAC 1 PWR Supply NAC
	10/20/2010 09:10:21 PM	Trouble NAC 1 PWR Supply NAC 1
	10/20/2010 02:03:08 PM	Trouble Restore NAC 1 PWR Supply NAC
	10/20/2010 02:03:07 PM	Trouble NAC 1 PWR Supply NAC 1

Note: Click the **Print** icon to print a copy of the report. Refer to *"Printing Reports"* located in this section for more details.

4. Click the **close button** to close report.

Note: Refer to "*System E-mail Functions - Receiving E-mail Status Reports*" located in this section for a sample of a History Events Report sent via e-mail.

Detector Sensitivity Status Reports

The **Upload Detector Status File to Computer icon** allows you to create reports showing sensor sensitivity related settings. This information may be used to troubleshoot detector issues.

To transfer detector (sensitivity) status information:

1. Click the **Upload Detector Status File to Computer icon** or **right click** from *"Transfers" region*, and choose "*Add*".

2. Verify that **Detector Status** is selected in the *"Transfer Type" field*.

3. Click **OK**. The *Transfers window* displays results.

Figure 72. Example of Transfer Status

Type	Status	Time	Medium	URI	Filename
Status	Complete	11/8/2010 2:41:47	IP	PFC6075R0000006	Status 2010-11-08 14-41-47-28.vds
History	Complete	11/8/2010 2:40:09	IP	PFC6075R0000006	History 2010-11-08 14-40-01-80.vhs

4. Double-click file to view results.

Figure 73. Example of Detector "Sensitivity" Status Report Completed

Address	Sensor Type	Sensor Name	Current Condition	Peak Value	Day Sensitivity	Night Sensitivity	Thermal Alarm Level	Drift Percentage	Drift Limit	NFPA 72 Compliant ▲
018	PHOTO	Point 18	0.00% (000)	0.18%(003)	3.5% (055)	3.5% (055)	n/a	-0.31% (055	-1.80% (031)	Yes
019	PHOTO	Unused P019	0.00% (000)	0.31%(005)	3.5% (055)	3.5% (055)	n/a	-0.43% (053	-1.80% (031)	Yes
020	PHOTO	Point 20	0.00% (000)	0.24%(004)	3.5% (055)	3.5% (055)	n/a	-0.49% (052	-1.80% (031)	Yes

Transfers

Type	Status	Time	Medium	URI	Filename
Status	Complete	11/8/2010 2:41:47	IP	PFC6075R0000006	Status 2010-11-08 14-41-47-28.vds
History	Complete	11/8/2010 2:40:09	IP	PFC6075R0000006	History 2010-11-08 14-40-01-80.vhs

Notes:

*   Click the **Print** icon to print a copy of the report. Refer to ***"Printing Reports"*** located in this section for more details.

*   Refer to "*System E-mail Functions - Receiving E-mail Status Reports*" located in this section for a sample of a Detector Status Report sent via e-mail.

5. Click the **close button** to close the report.

Printing Reports

The **Print** [icon] **icon** allows you to print History and Detector Status reports. Double-click the **History** or **Status** file listed in the **Transfer window** prior to clicking the Print icon. An example of the *Report window,* which displays a History report, is shown below:

Figure 74. Example of the History Report (Print) Window
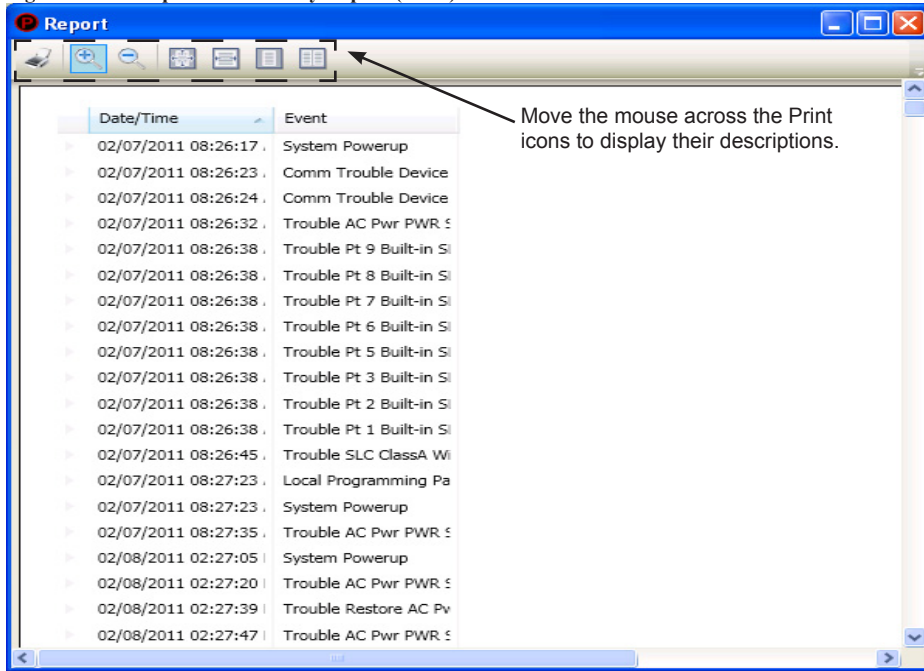
To print a History or Detector Status Report:

1. Double-click the History or Status report listed in the Transfers window to display the report.

2. Adjust the width of the "*Event" column* to display the entire descriptions otherwise the "Event" information will be truncated on the printed report.

    Tip: Double-click on the Event column's border to automatically expand the width to accommodate the longest description. Refer to the example below:

Figure 75. Example of the History Report
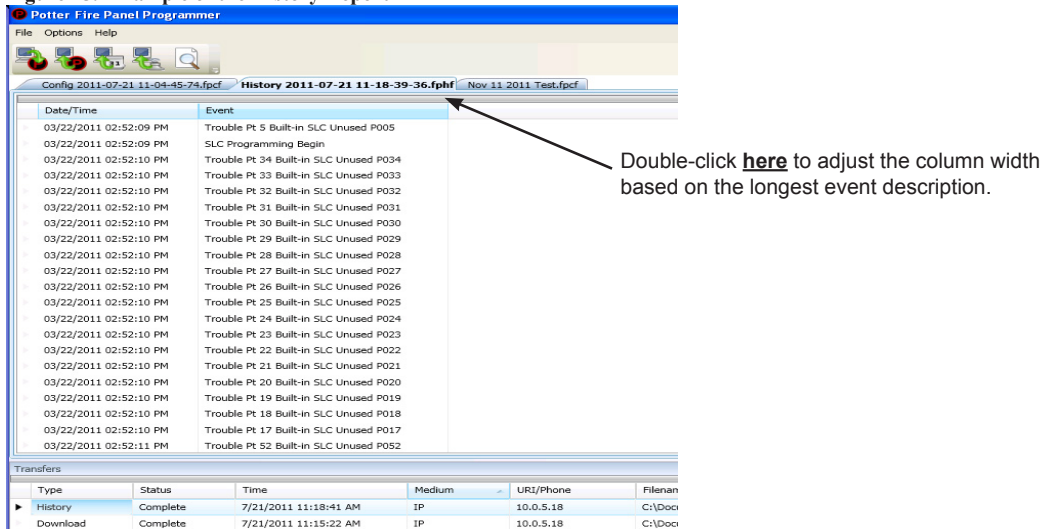
3. Click the **Print** [icon] **icon,** then click the **Report Print** [icon] **icon** or **CTRL P** to open the print dialog box.

4. Click the **Print button**.

Panel Software Overview

This section gives you an overview of the Panel Configuration Software. It addresses navigating through the program windows, understanding the purpose of icons and program features, using Window's conventional editing techniques and other program shortcuts to efficiently configure your system.

Window Regions / Areas

What you select a function from the **Panel window** located on the left, this determines the information displayed on the right. The selected panel function is highlighted, which helps direct your eye to the related information shown on the right. For example, when **"Remote Access Code"** is selected, the remote user name and password displays. Please refer to the examples shown below.

Figure 76. Panel Menu Options
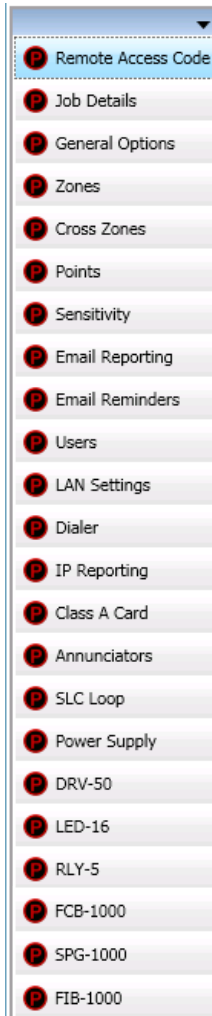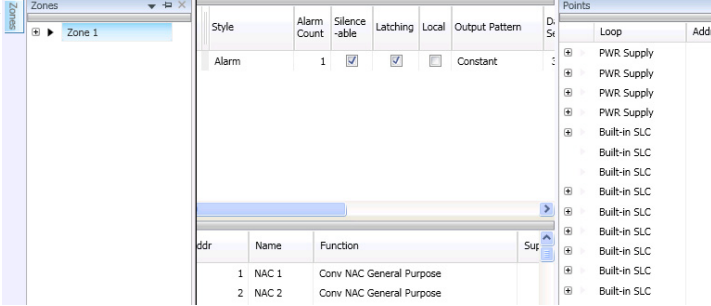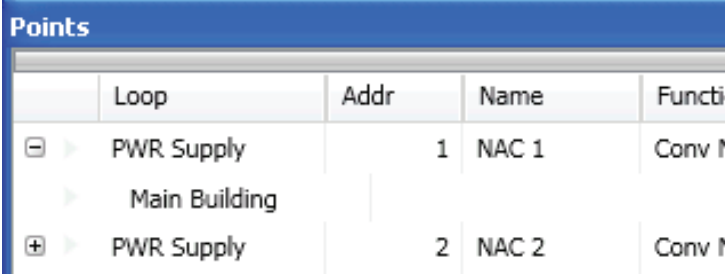
Figure 77. Example of Panel Menu Information
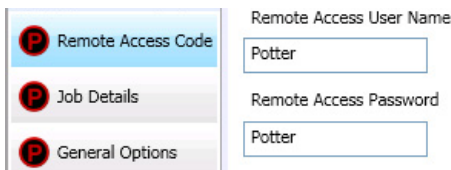
Program Icons

The panel software uses several standard Windows' icons, such as the close button and scroll bars. There are others that are unique to the panel software, such as auto hide, and window position which are summarized in the table below:

Table 11: Panel Configuration Icons		
Name	**Icon**	**Description/Function**
Window Position	▼	Located in the upper right region of some windows. Click the icon to choose an option: • **Floating** – window floats over other windows; right-click title bar to reselect dockable. • **Dockable –** *default* window position; window is "locked" in place. • **Auto Hide** – window is hidden when cursor is moved and "*tab*" displays as window placeholder; point to window "*tab*" to redisplay *(Window Tab is explained below.)*
Auto-Hide	📌	Shortcut to hide a window. • Click 📌 to hide window. • Icon changes to ⊟ (insert window autohide if window is hidden). • Click ⊟ to unhide and dock window.
Window "Tab"	Tab	Displays if window is hidden; available for specific windows only. **Note: "*Tab" name* is specific to the hidden window.** • Point to "*Tab*" to display window. • Point or click in another window to hide. **Example of Zone tab**:
Expand / Collapse	⊞ ⊟	Available in **Zones** and **Points windows** only. • Click the plus sign to expand. • Click the minus sign to collapse. **Example of expand/collapse icons in Points window:**

Programming Functions Overview

The table below gives you a snapshot of the menu order along with a brief description of each. Details for these options are provided on the following pages.

Table 12: Programming Menu Overview	
Menu Option	**Description**
Remote Access Code	Displays remote access *"User Name"* and *"Password"*.
Job Details	Allows site specific information to be entered.
General Options	Allows software's general panel settings to be customized, such as alarm verification time, and door holder low AC dropout delay.
Zones	Define and configure zone's characteristics and mapping points.
Cross Zones	Establish relationships between multiple zones.
Points	Define and view all addressable and non-addressable points.
Sensitivity	Enable Day/Night Sensitivity, setup Holiday schedule, and other related sensitivity options.
E-mail Reporting	Schedule e-mail reports by day and time; setup e-mail addresses, and select type of report(s) to send to each e-mail addressee.
E-mail Reminders	Create and schedule customized daily, weekly, monthly or yearly reminder e-mails.
Users	Create up to ten (10) user codes and passwords, and set access rights.
LAN Settings	Configure Ethernet connectivity options.
Dialer	Add or remove DACT module/appliance.
IP Reporting	Configure IP reporting options for primary and secondary accounts.
Class A Card	Add or remove Class A card.
Annunciators	Add or remove Remote Annunciators.
SLC Loop	Add or remove SLC Loops.
Power Supply	Add or remove Power Supplies.
DRV-50	Add or remove DRV-50 driver modules.
LED-16	Add or remove LED-16 Annunciators.
RLY-5	Add or remove RLY-5 modules.
FCB-1000	Add or remove FCB-1000 modules.
SPG-1000	Add or remove SPG-1000 modules.
FIB-1000	Add or remove FIB-1000 modules.

Remote Access Code

The **Panel Configuration window** displays the remote access user name and password on the right section of the screen *(refer to the example shown below)*.

Figure 78. Example of the Panel Configuration Screen
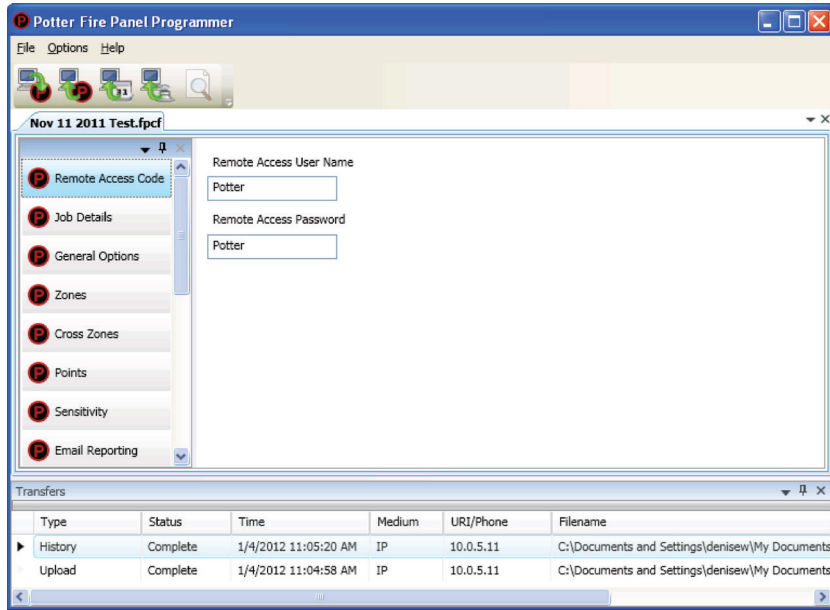
User Name / Password

The default **user name** and **password** is "*Potter*" as shown below; they can be changed to ensure that only authorized personnel can transfer data to and from the panel.

Figure 79. Remote Access Code Screen

Notes:
1. The remote access user name and password may be changed to increase security on the system.
2. The remote user name and password <u>must match</u> the panel's user name and password.

General System Functions

Job Details

Site specific information, such as company name, address and phone numbers may be entered in this window. This information is stored in the panel and is used to identify the panel when using e-mail reporting options. Please refer to the figure shown below.

To enter site information:

1. Click the **Job Details** program option. The *Job Details window* displays.

   Figure 80. Job Details Window

2. Click in each applicable field to enter information.

   Note: You may also press the **TAB key** to move to next field.

General Options

The *General Options window* contains a variety of general system settings, such as the panel's default name, idle message, and the time an *Autotest* will be sent to the monitoring station.

Figure 81. General Options Window

Day/Night Sensitivity Mode and Holiday Scheduling

The **Sensitivity option** allows you to enable the *"Day/Night Sensitivity"* feature, establish the starting and ending times for "*Night*" sensitivity, create a "*Holiday Schedule*", and choose the days of the week that the site is normally occupied.

> **Note:** The Day/Night Sensitivity option is <u>not</u> selected or enabled by default.

To enable day/night sensitivity and setup holidays:

1. Click on the **Sensitivity option**. The *Sensitivity window* displays.

Figure 82. Example of the Day/Night Sensitivity Enabled

2. Click in "*Enable Day/Night Sensitivity*" selection box to enable.
3. Adjust *start and end times*, if needed.
4. Click in applicable days of the week selection boxes to select or deselect.
5. Enter holidays in the *"Month/Day" field,* as shown:

> **Note**: You may enter up to fifty (50) holidays in the "*Holiday Schedule" field*, which enables night sensitivity mode on those dates.

User Codes

The **Users** option allows you to create up to ten (10) user code profiles, if needed. Each profile may have different access rights, which controls the panel functions a user may access as well as the option to connect to the Facility Management Tool.

> **Note:** Please refer to the *"Facility Management Tool" manual* to learn more about programming, installing and using this tool.

To create a new user:

1. Click on the **Users option**. The *User's Code window* displays.

These fields allow the user access to these panel functions when selected.

These two fields may be selected to allow the user access to the *"Facility Management Tool."*

Figure 83. Example of Users Profile Window

Name	User Code	System Reset	System Silence	Acknowledge	Fire Drill	Review History	Enable Disable	Set Date/Time	Walk Test	Tools	Programming	Data Transfer	PC Connect Unsupervised Multi User	PC Connect Supervised Single User
Default Access		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	☐	☐
Eng. Office	789	☐	☐	☐	☐	✓	☐	☐	☐	☐	☐	☐	✓	✓
Security Off	456	☐	☐	☐	☐	✓	☐	☐	☐	☐	☐	☐	✓	✓
User 2	222	✓	✓	✓	✓	✓	✓	✓	✓	✓	☐	☐	☐	☐
Command Ctr	123	✓	✓	✓	✓	✓	☐	✓	☐	☐	☐	☐	☐	☐
User 1	111	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	☐	☐
User 7		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
User 8		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
User 9		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

2. Double click in the "*Name" field* to enter a descriptive user name.

3. Click in the appropriate field selection boxes to grant access to each panel keypad option applicable for the user.

4. Click in the last two (2) fields, *"PC Connect Unsupervised Multi User"* and *"PC Connect Supervised Single User"* to allow the user code access to the *Facility Management Tool.*

5. Repeat steps for up to 10 user codes.

   Note: The access rights for the *"Default Access" user code* can be modified if needed.
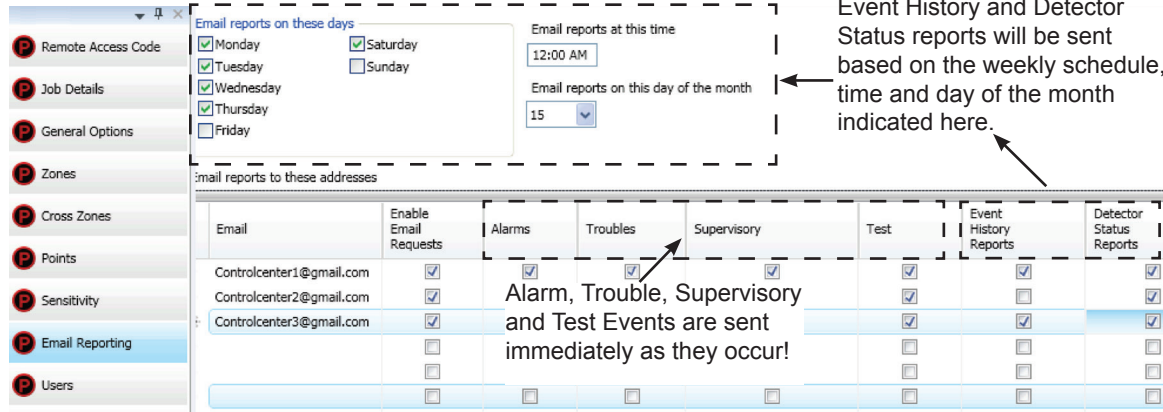
NOTICE

System e-mail communications and functions are intended for informational reporting purposes only. They are intended to be used as a convenience function. E-mail communications should NOT be used as a primary means of reporting emergency information.

System E-mail Functions

The PFC-6030 comes with built-in e-mail capabilities. The panel automatically sends status e-mails, including Alarms, Troubles, Supervisory and Test events, to the e-mail addresses designated on the "*E-mail Reporting" window* as shown below. Customizable e-mail reminders may also be created and scheduled by the installer.

Figure 84. E-mail Reporting Window

Event History and Detector Status reports will be sent based on the weekly schedule, time and day of the month indicated here.

Alarm, Trouble, Supervisory and Test Events are sent immediately as they occur!

Event History and Detector Status reports may be scheduled to be sent on specific days of the week, time or day of the month. Up to twenty (20) e-mail addresses may be programmed on this screen. After the *"E-mail Reporting" section* is completed and downloaded into the panel, the panel will start sending e-mails according to programming.

The panel is capable of sending automatic and on-demand reports because it has a designated outgoing e-mail address comprised of its model and serial numbers. On-demand reports can be requested directly from the panel's *"Data Transfer" function* or remotely from a PC, if the user has a valid e-mail address programmed on the *"E-mail Reporting" window*.

The panel address is structured as: **PFC6XXXXXXXXXX@potterlink.com** where "PFC6XXXXXXXXXX" refers to the **"panel serial number".** The serial number is the same as the NetBIOS name, and is located on the panel as shown below.

Note: Outgoing panel e-mails are routed through a dedicated Potter server. You must make a notation of your panel's outgoing e-mail address in order to send e-mail requests remotely.

Figure 85. Panel Serial Number Location

Panel Serial Number
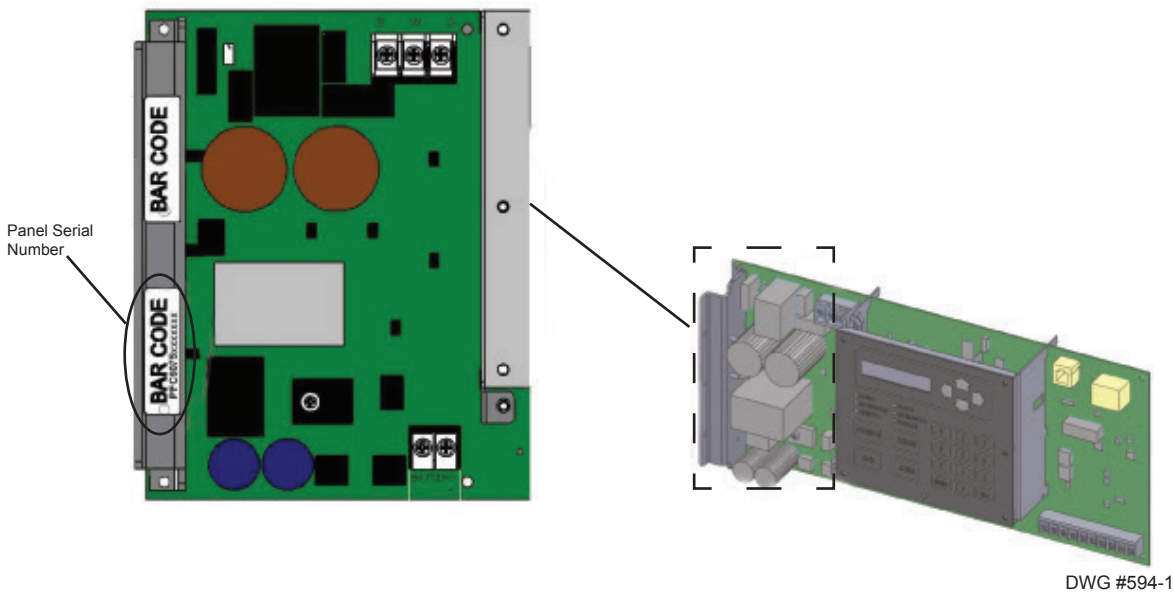
DWG #594-1

NOTICE
System e-mail communications and functions are intended for informational reporting purposes only. They are intended to be used as a convenience function. E-mail communications should NOT be used as a primary means of reporting emergency information.

P-Link E-mail Notification Requirements

The following table lists the necessary hardware and Internet connectivity requirements to use P-Link functions, such as DACT and e-mail notification.

Table 13: P-Link E-mail Notification Requirements	
Item	**Requirement**
Hardware	10/100 Mbps Ethernet Network
IP Address Protocol	DHCP or Static IP (factory default is DHCP)
Outbound Connectivity	Must have outbound access to Internet (mail server connections only). Port 10025 for SMTP Port 110 for POP3
Inbound Connectivity	None required or utilized.

Connecting the Panel to a Network

In order to use the e-mail feature, the panel must be connected to a network with Internet connectivity. This is usually accomplished by installing an Ethernet drop near the panel. The IP address can be set one of two ways:

- The panel has a built in DHCP (Dynamic Host Configuration Protocol) and will ask for an IP address from the *"Host Computer"*.

- The installer or the Network Administrator may set the **IP address** using the software's Static IP function.

Figure 86. Setting the IP Address
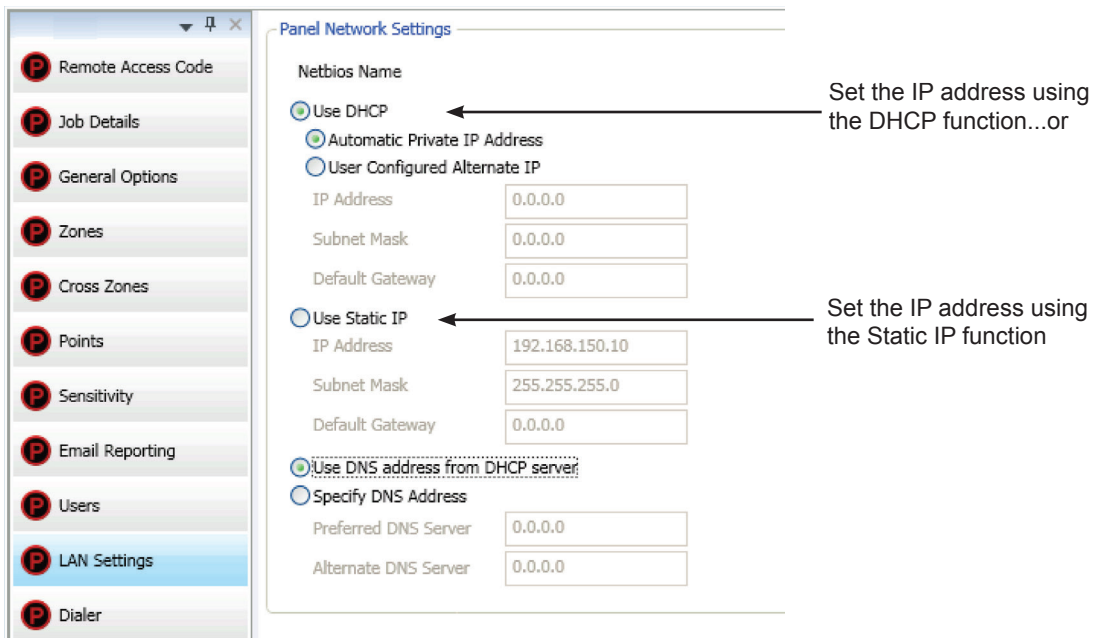
Set the IP address using the DHCP function...or

Set the IP address using the Static IP function

NOTICE

System e-mail communications and functions are intended for informational reporting purposes only. They are intended to be used as a convenience function. E-mail communications should NOT be used as a primary means of reporting emergency information.

E-mail Report Programming

To setup History and Detector Status reports schedule:

1. Click on the **E-mail Reporting option**. The *E-mail Reporting window* displays.

2. Click in the *days of the week's selection box* to choose the days that the *History and Detector Status report(s)* will be sent.

3. Adjust *time*, if necessary.

4. Select a *day of the month*, if you wish reports to be sent on a specific day of each month.

   Note: Be sure to select each report type in the next E-mail section for each recipient you wish to send these reports.

To setup addresses and select events and/or reports:

1. In the E-mail address section, as shown below, enter up to twenty (20) e-mail addresses, if needed.

2. Select the **"Enable E-mail Requests"** option if the e-mail addressee may request reports from the panel.

   Note: If **"Enable E-mail Requests"** is not selected, the panel will ignore an e-mail request for an on-demand report.

3. Select each type of event(s) and/or report(s) you wish to send to the applicable e-mail address.

4. An " ✔ " displays in each selected report type.

Figure 87. E-mail Reporting showing Enable E-mail Request

Important Note: The "Enable E-mail Requests" option must be selected in order for the panel to respond to an e-mail addressee requesting an on-demand report.

E-mail Sent from Panel

To send a report from the panel:

1. Select the **Data Transfer (Menu Option 7)** on the panel menu.

2. Select one of the transfer options as described below:

Table 14: Data Transfer Options	
Option	**Description**
1=Remote Access	Used to enable remote access
2=E-mail Det Stat	Allows user to e-mail a detector status file
3=E-mail History	Allows user to e-mail a history file
4=E-mail Config	Allows user to e-mail a panel configuration file (.fpcf)
5=E-mail Test	Allows user to send a test e-mail
6=Server Status	Allows e-mail server status to be verified

NOTICE

System e-mail communications and functions are intended for informational reporting purposes only. They are intended to be used as a convenience function. E-mail communications should NOT be used as a primary means of reporting emergency information.

3.   Select one or more e-mail address using one of the following options:

- Choose "*Use Default"* to select the address entered in *"General Options" (as shown below).*
- Choose *"Browse List"* to scroll through and select one or more e-mail addresses entered in the *"E-mail Reporting" section* of the software.
- Choose *"Specify New"* to enter additional e-mail addresses, if needed.

Figure 88. Example of the General Options Window - Default Outgoing E-mail Address
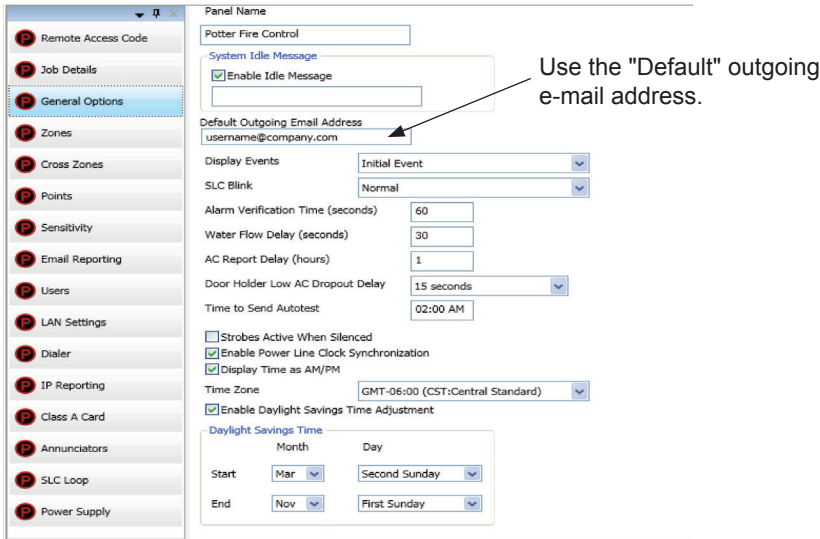
E-mail Report Requested from PC

To request a report from a remote PC:

1.   Open or create a new e-mail.

2.   In the *"To" field,* enter the panel's e-mail address as shown below. *(Refer to the "Panel Serial Number Location" shown earlier in this topic.)*

**Figure 89. Example of Keywords in E-mail Subject Field**
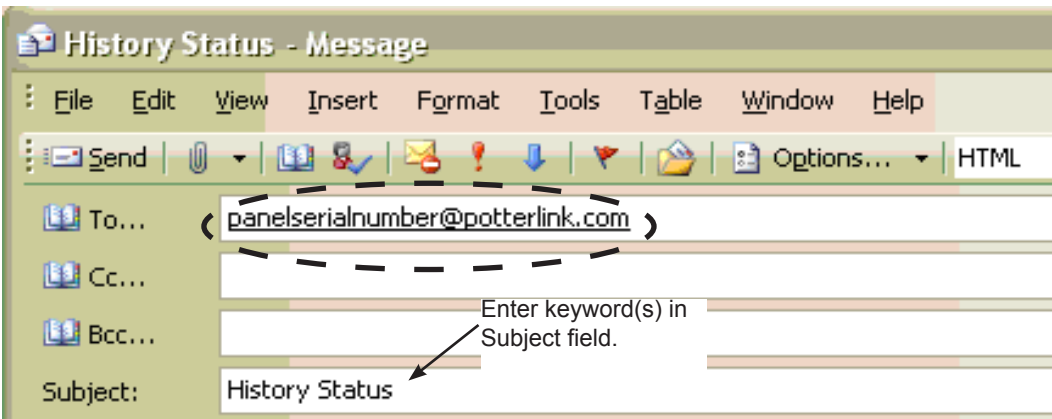
NOTICE

System e-mail communications and functions are intended for informational reporting purposes only. They are intended to be used as a convenience function. E-mail communications should NOT be used as a primary means of reporting emergency information.

3. In the *"Subject" field*, enter one or more of the following keywords:
   - *History* to send a current event history report back to sender.
   - *Status* to send a current detector (sensitivity) status report back to sender.
   - *Configuration* to send a current configuration file back to sender.
   - *Unsubscribe* to stop the current e-mail settings for the sender until panel is reset or that e-mail address sends a "*Subscribe*" to the panel.
   - *Subscribe* to activate e-mail settings for the sender.

   Note: Keywords are NOT case sensitive and more than one can be entered in the subject line of the e-mail.

4. There are no restrictions on contents entered into the body of the e-mail.

   Important Reminders!

   - The person sending the e-mail **must** be added to the e-mail list in the *"E-mail Reporting" section* of the software as shown below. If the sender is not in the list, the panel will not respond.

   - The *"Enable E-mail Requests"* option must also be checked for the sender to receive e-mails when requested from the panel or a remote PC.

Figure 90. E-mail Reporting Window

NOTICE

System e-mail communications and functions are intended for informational reporting purposes only. They are intended to be used as a convenience function. E-mail communications should NOT be used as a primary means of reporting emergency information.

Receiving E-mail Status Reports

When a system status (*Alarm, Supervisory, Trouble events*) e-mail is received, the body of the e-mail contains the information entered in the *"Job Details" section* of the software (*as shown below*). If nothing is entered in the software, the body of the e-mail will only indicate the events that occurred. The events are listed after the *"Job Details"* information. They are formatted with a date/time stamp showing when the event occurred, event type, and the event description or the point information.

Figure 91. Example of Job Details in System Status E-mail
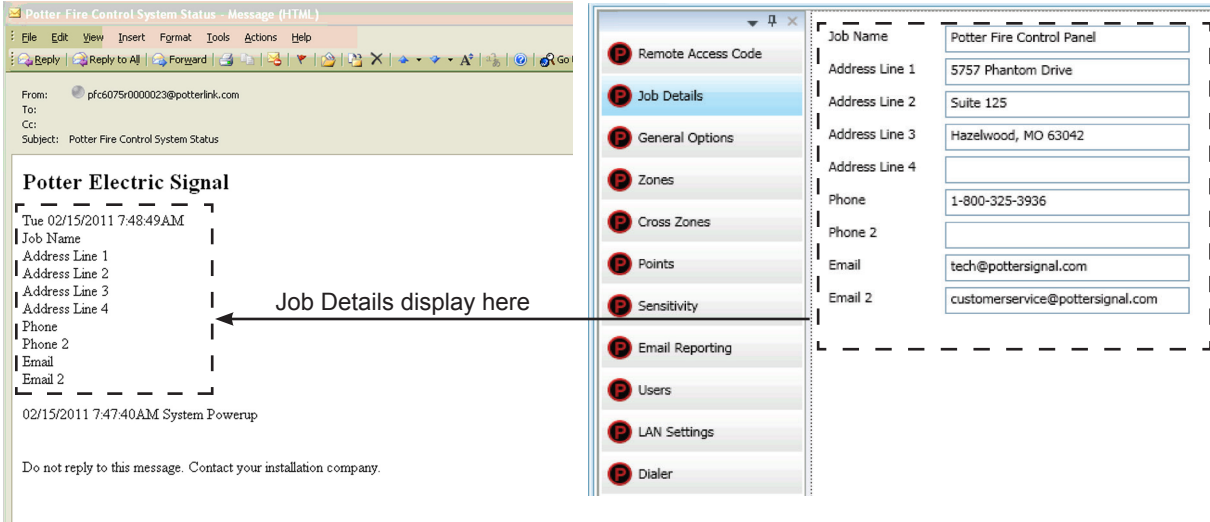
When a history or detector (sensitivity) status e-mail is received it contains two attachments:
- A text file (.txt)
- A comma separated values (.csv) file

Figure 92. Example of a Detector "Sensitivity" Status text file (.txt)

NOTICE
System e-mail communications and functions are intended for informational reporting purposes only. They are intended to be used as a convenience function. E-mail communications should NOT be used as a primary means of reporting emergency information.

Figure 93. Example of Detector "Sensitivity" Status Comma Separated Values file (.csv)

Figure 94. Examples of a History text file (.txt) & History Comma Separated Value file

NOTICE
System e-mail communications and functions are intended for informational reporting purposes only. They are intended to be used as a convenience function. E-mail communications should NOT be used as a primary means of reporting emergency information.

Creating E-mail Reminders

E-mail reminders are fully customizable e-mail messages that may be sent based on a predefined schedule. The e-mail subject and body are defined by the installer, and the *History* and/or *Detector Status reports* may be attached. Up to eight separate e-mail reminders can be created to be sent on a daily, weekly, monthly or yearly schedule.

Figure 95. Example of the Email Reminder Window

To create Reminder e-mails:

1. Select the ***E-mail Reminders*** option on the panel menu.

2. Click a Schedule option, i.e., *Yearly, Monthly, Weekly or Daily*.

3. Select the specific scheduling frequency, i.e., *"Days to send"* for a *Weekly reminder* or *"Time"* for a *Daily reminder*.

4. Click in *"Attach History"* and/or *"Attach Detector Status"* selection box(es), if needed.

5. Complete the following information:

   • In the *"To" field*, enter up to 20 addressees.

   • In the *"Subject" field*, enter an applicable subject.

   • In the *"Body" field*, enter up to 2000 characters, if needed.

Figure 96. Example of Creating a Daily Reminder

6. Continue setting up additional *"Reminders"*, if needed.

System Programming

System programming involves defining the function of devices and their relationships to each other, referred to as mapping. You can define behavior characteristics of individual or groups of devices, map devices into zones, and further customize your system using the panel configuration software from a computer.

The panel configuration software features include:

- Easy to use Windows-based editing techniques, including *drag and dr*op between windows.
- Flexibility in configuring points into multiple zones promoting sophisticated mapping relationships.
- Simple sorting and grouping by select fields enhances viewing and analysis of data.
- Options to view points by type, address and function or description.

Mapping Zones Overview

Mapping is creating relationships between devices, modules and sensors and their behavior between each other. Whereas, the "zone" is the framework in which you group the devices. These terms and other related mapping concepts are provided in this section.

Single Zones

The *LEARN* feature creates or maps a basic, one-to-one relationship where all devices are automatically grouped into **one zone**. When all devices are in the same zone, and an input device is activated, all output devices will activate. Please refer to the illustration below for an example of a one-to-one device relationship:

Figure 97. Mapping all Devices to One Zone
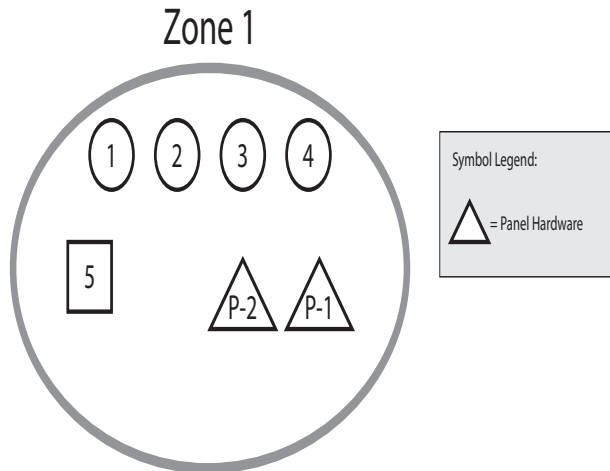
Multiple Zones

The panel configuration software allows you to customize the operational mode behavior of devices by grouping them into a maximum of 99 different zones. All SLC devices, including the two (2) on-board NAC circuits (NACs 1 and 2), may be configured to behave in a specific manner. This flexibility enables you to configure system points to maximize protection throughout your site.

By organizing devices into different zones, you can create unique relationships between devices for specific outputs or events. The panel configuration software allows you to efficiently group points to follow a sequence of events producing the same combination of outputs into different zones. This section addresses how to accomplish these tasks.

Mapping Terminology

The table below provides mapping terms that may be helpful to you in understanding the mapping concept:

Table 15: Mapping Terminology	
Term	**Definition**
Mapping	Creating relationships between devices, modules and sensors and defining their behavior.

Zone	A group of devices.
	
	 • Zones may represent a group of devices located in a specific **physical** area at the site.
	
	    Example: Zone 1 comprised of all devices located in the main lobby of a hotel, [*i.e., pull station #1, one (1) sounder base, and one (1) strobe-NAC].*
	
	 • Zones may represent a set of devices configured for a specific function; their location may be scattered throughout the site. This group is a "**logical**" grouping or zone.
	
	    Example: Zone 2 comprised of all devices in Zone 1 as described above, **plus** a 2nd pull station located at end of a hallway and two (2) additional Sounder bases.
	 Notes:
	 1. If all input / output devices are grouped into one (1) zone, when any input is activated, all outputs activate.
	 2. A device or point may be mapped into more than one (1) zone.

Point	Any specific device, module or appliance connected to panel.
Latching	Device **will not** automatically reset; device must be **RESET** at the keypad to remove condition.
Non-Latching	Device **will** automatically reset when condition is no longer present, *i.e., smoke detector resets once condition clears.*
Cross Zoning	The purpose of creating cross zones is to ensure that two (2) or more separate zones are activated before an output zone is triggered. **Example**: Smoke detector in Zone 1 (R&D Lab), and a heat detector in Zone 2 (Main entrance) are activated, triggers an air handler circuit. • The redundancy in this example provides verification of an alarm condition by requiring that both sensors in two (2) different zones are activated before an output occurs. • There are no limits to the number of cross zones that can be mapped to the same output; as soon as a pair of input devices detects an "*alarm*" condition, the output will be activated.

Zone Types / Styles

You may define or configure each zone to serve a specific purpose or to create specific output results. For procedures on how to select Zone styles, refer to the *"Configuring Zones"* section of this manual. The following zone styles are available:

Table 16: Zone Styles	
Zone	**Description**
Alarm	• **Default zone type**. • Sets system into an Alarm condition when any input is activated.
Supervisory	Used for all Supervisory inputs.
Positive Alarm Sequence	Implements Positive Alarm Sequence.
Auxiliary	Used for all "Aux" inputs.
Fire Drill	Comprised of input / output devices that will activate when running a Fire Drill.

Table 16: Zone Styles	
Zone	**Description**
System Alarm	Used for outputs that will be activated upon any alarm.
System Supervisory	Used for outputs that will be activated upon any supervisory.
System Trouble	Used for outputs that will be activated upon any trouble.

Zone Attributes

Zone attributes are the settings that control the overall behavior of devices within the zone. The zone may be configured as latching or non-latching, silenceable vs. non-silenceable, among other attributes.

> *Tips: Double-click in a field to modify an applicable field, i.e., zone name or alarm count. Click in fields with a selection box to select or deselect the option, i.e., silenceable or latching.*

All zones default to an "*Alarm*" style or type when first created. The figure shown below is an example of the default attributes of a "*Alarm*" zone.

Figure 98. Example of Zone Attributes (Fields 1-10)

Refer to the table below for a brief explanation of zone attributes:

Table 17: Zone Attributes	
Attribute	**Description**
Zone Name *Default = Zone "x"* *(where "x" is a sequential number)*	• Zone name may be up to sixteen (16) alphanumeric characters.
Alarm Count *Default = 1*	• Defines the number of inputs that must be in alarm before outputs are activated. • Default is one (1); up to 10 inputs may be selected.
Silenceable / Non-Silenceable *Default = Silenceable*	• If zone defined as "*silenceable*" allows an operator to silence outputs by pressing the *SILENCE button*.
Latching / Non-Latching *Default = Latching*	• Available for one **(1) count zones only**. • Latching zone requires operator to press **Reset**. • Non-latching zone will automatically turn off outputs when condition clears.
Local / Non-Local *Default = Non-Local*	• Used only for "*Report by Zone*" option. • Allows a zone to be specified as a non-reporting zone.

Table 17: Zone Attributes	
Attribute	**Description**
Output Pattern *Default = Constant*	• Defines the output pattern of general-purpose NAC circuits in the zone that occurs during alarm conditions. • Click on drop-down arrow to display and select an option: *Constant 24VDC* *ANSI .5 sec on, .5 sec off, .5 sec on, .5 sec off, 5 sec on, 1.5 sec off* *March Code 60 signals per minute* *Double Time 120 signals per minute*
Day Sensitivity *Default = 3.5%* Range: 1.1% – 3.5%	The **3.5% default** represents the percentage of obscuration per foot for all smoke sensing detectors. • The term "*obscuration*" refers to the amount of reduction in air transparency caused by smoke. • Day sensitivity is functional during the time a building is normally occupied.
Night Sensitivity *Default = 2.5%* Range: 1.1% – 3.5%	The **2.5% default** represents the percentage of obscuration per foot for all smoke sensing detectors. • The term "*obscuration*" refers to the amount of reduction in air transparency caused by smoke. • Night sensitivity is functional during the times the building is unoccupied, i.e., *weekends, Holidays*.
Heat Sensitivity *Default = 135˚F* Range: 135˚F – 185˚F	Sets alarm threshold for Fix Temperature Heat Detectors (FHA).
Fixed/ROR Heat Sensitivity and 15˚ increase in 1 minute *Default = 135˚F* Range: 135˚F – 174˚F	Sets alarm threshold for Fixed/ROR Heat Sensor (RHA).
Auto-Silence Timer *Default = 0 minutes* Range = 0 – 360 minutes	Defines the amount of time before silenceable NACs are automatically shut down.
Auto-Unsilence Timer *Default = 0 minutes* Range = 0 – 60 minutes	Defines the amount of time before any silenced NACs are reactivated; outputs only reactivate if panel is still in alarm.
Silence-Inhibit Timer *Default = 0 minutes* Range = 0 – 60 minutes	Defines the amount of time you may **<u>not</u>** silence an output when in alarm.
Restore Delay *Default = 0 minutes* Range = 0 – 300 seconds	Defines the amount of time before deactivating an output when the panel is reset.

Creating Zones

When creating zones, you may create one or more at a time. This section explains this process and includes examples for your convenience.

To create a zone:

1. In the **Zones window**, right click on any zone name. The *shortcut menu* displays.

2. Click on "**Add Zones**". The **Add Multiple Zones dialog box** displays.

Figure 99. Examples of Adding Multiple Zones Dialog Box
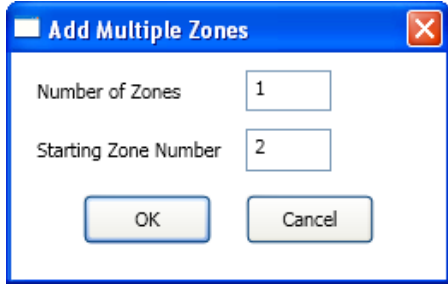
3. In "*Number of Zones" field,* enter the number of zones to create.

    Note: You may enter up to **99 zones**.

4. In "*Starting Zone Number" field*, enter the zone number to begin numbering zones, if different from default.

5. Click **OK** or **Cancel** to exit dialog box. The **Zones window** lists all new zones.

Figure 100. Zones Window
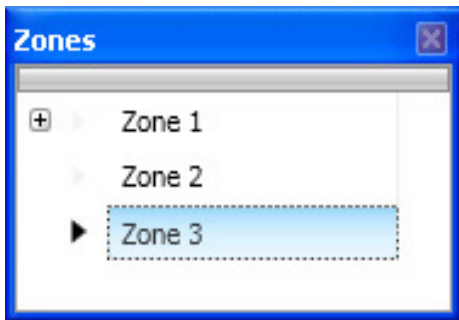
6. Go to the "**Zone Configuration" window**, to view all available zones.

Figure 101. Example of Configuring Two (2) Zones

Name	Style	Alarm Count	Silence -able	Latching	Local	Output Pattern	Day Sens.	Night Sens.	Heat Sens.	Fixed/ROR Heat Sens.
Zone 2	Alarm	1	☑	☑	☐	Constant	3.5	2.5	135	135
Zone 3	Alarm	1	☑	☑	☐	Constant	3.5	2.5	135	135

Configuring Zones

The next step is to customize a zone's attributes, which includes changing the name, selecting type of zone, and other characteristics (i.e., *constant, double time output pattern, latching or non-latching, silenceable, auto-silence timer, etc.*).

To configure a zone:

1. Double-click in the Zone**'**s **"Name" field** to modify default name.

    Note: Up to 16 alphanumeric characters may be entered. For example: *"Main Lobby" or "Server Room."*

2. Click in "**Style**" **field**. Click the drop-down arrow to display zone styles.

```
Alarm                ▼
Unused
Alarm
Supervisory
Pos Alarm Seq
Aux
Releasing
Fire Drill
Sys Alarm
Sys Superv.
Sys Trouble
```

3. Choose the applicable zone style (*refer to the Zone Styles Table in this section for descriptions of zone styles*).

4. Continue editing zone's fields. Refer to the *Zone Attributes Table* for field descriptions.

Configuring Points

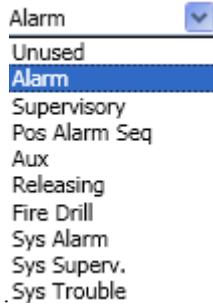This section addresses how to define or configure points through the **Points function**. Each device may have a unique function in relation to the zone as well as the entire system. The user determines the Point's role, specific behavior characteristics, and customizes its name, if desired. The list of available functions is associated to the device or module type selected.

> **Notes**:
> *   Points may be configured from either the **Zones** or **Points functions;** however, for purposes of this manual, points are configured in the **Points function**.
> *   Points can be configured individually, or by groups or ranges of devices.

An example of the **Points window** is shown below.

Figure 102. Example of Points Window

Device	Addr	Name	Function	Supervisory	Alarm Verification
PWR Supply:	1	NAC 1	Conv NAC General Purpose	☐	☐
PWR Supply:	2	NAC 2	Conv NAC General Purpose	☐	☐
PWR Supply:	3	Door Holder	Conv NAC Aux Door Holder	☐	☐
PWR Supply:	4	Door Holder	Conv NAC Aux Door Holder	☐	☐
Built-in SLC:	1	Point 1	Addr Detector Photo	☐	☐
Built-in SLC:	2	Point 2	Addr Detector Photo	☐	☐
Built-in SLC:	3	Point 3	Addr Detector Photo	☐	☐
Built-in SLC:	4	Point 4	Addr Detector Photo	☐	☐
Built-in SLC:	5	Point 5	Addr Detector Photo	☐	☐
Built-in SLC:	6	Point 6	Addr Detector Photo	☐	☐
Built-in SLC:	7	Point 7	Addr Detector Photo	☐	☐
Built-in SLC:	8	Point 8	Addr Detector Photo	☐	☐
Built-in SLC:	9	Point 9	Addr Detector Photo	☐	☐
Built-in SLC:	10	Point 10	Addr Detector Photo	☐	☐

NAC Functions

The two (2) on-board circuits (NACs 1&2) are automatically configured as *"General Purpose"*, but may be reconfigured and renamed. Refer to the table below for descriptions of the configuration functions.

Table 18: NAC Circuit Configuration Functions	
Function	**Description**
Unused	Circuit is unused.
General Purpose	General purpose NAC; obeys zone "*output pattern*" programming.
Potter Sync	Drives Potter synchronized horns / strobes.
Gentex Sync	Drives Gentex synchronized horns / strobes.
System Sensor Sync	Drives System Sensor synchronized horns / strobes.
Wheelock Sync	Drives Wheelock synchronized horns / strobes.
Aux Constant	Constant DC power.
Aux Resettable	Constant DC power; disconnects power during system reset.
Aux Door Holder	Constant DC power; disconnects when an alarm occurs.
Aux Door Holder Low AC Drop	Constant DC power; disconnects on AC Loss or when an alarm occurs.
Aux ANSI	Always on ANSI pattern used for ASB pattern synchronization.
City Tie	Municipal box connection

SLC Functions

The SLC configuration options are described in the table below:

Table 19: SLC Configuration Functions	
Function	**Description**
Unused	SLC point is unused.
Addr Detector Photo	Photoelectric Sensor (PSA)
Addr Detector Photo Heat	Combination Photo-Heat Sensor (PSHA)
Addr Detector Heat Fixed	Fixed Temperature Heat Detector (FHA)
Addr Detector Heat Combo	Combination Fixed Temperature and Rate-of-Rise Heat Detector (RHA)
Addr Relay General Purpose	Addressable Relay Module (TRM)
Addr NAC General Purpose	Monitored Output Module (MOM)
Addr Zone Module	Two-Wire Conventional Detector Module (CIZM)
Addr Sounder Base	Addressable Sounder Base (ASB)
Addr Relay Base	Addressable Relay Base (ARB)
Contact Input Pull Station	Dry contact input options used with MCM, SCM or DCM modules. **Note**: When using an input module on an abort function, there is a 6-second delay before panel responds.
Contact Input Water Flow	
Contact Input Supervisory	
Contact Input Tamper	
Contact Input Fire Drill	
Contact Input Trouble Monitor	
Contact Input Aux	
Contact Input Abort (*see note*)	
Contact Input Reset	
Contact Input Silence	
Contact Input Disable Inputs	
Contact Input Disable Outputs	
Contact Input Disable Inputs/Outputs	

To configure points:

1. Click on the **Points function** to display the "*Points Configuration" window*.

    Figure 103. Example of a Configuration Window

Device	Addr	Name	Function	Supervisory	Alarm Verification	Low Temp Trouble
Built-in Pwr Sup	1	NAC 1	Conv NAC General Purpose	☐	☐	☐
Built-in Pwr Sup	2	NAC 2	Conv NAC General Purpose	☐	☐	☐
Built-in Pwr Sup	3	NAC 3	Conv NAC General Purpose	☐	☐	☐
Built-in Pwr Sup	4	NAC 4	Conv NAC General Purpose	☐	☐	☐
Built-in Pwr Sup	5	NAC 5	Conv NAC General Purpose	☐	☐	☐
Built-in Pwr Sup	6	NAC 6	Conv NAC General Purpose	☐	☐	☐
Built-in Pwr Sup	7	IO Ckt 1	Conv NAC General Purpose	☐	☐	☐
Built-in Pwr Sup	8	IO Ckt 2	Conv NAC General Purpose	☐	☐	☐
Built-in Pwr Sup	9	IO Ckt 3	Conv NAC General Purpose	☐	☐	☐
Built-in Pwr Sup	10	IO Ckt 4	Conv NAC General Purpose	☐	☐	☐
Built-in SLC	1	Point 1	Unused	☐	☐	☐
Built-in SLC	2	Point 2	Unused	☐	☐	☐

    Note: Click the columns to sort devices by the field selected, i.e., *"Name", "Alarm Verification" or "Low Temp Trouble"*.

    - *Supervisory* – Designates a detector as a supervisory input instead of an alarm input.
    - *Alarm Verification* – Specifies that a detector will utilize the alarm verification feature.
    - *Low Temp Trouble* – Indicates that a device is below 40˚F.

2. Devices are listed by "*Built-in SLC"* device addresses, followed by the NACs and I/O circuits.

    Note: Click on the "Device" *field* to sort the list by PWR Supply followed by SLCs.

To configure a <u>single</u> point:

1. Double-click in "**Name**" **field** to enter a descriptive name. The current name is highlighted as shown: `Point 3`

2. Enter a new name (up to 16 alphanumeric characters).

3. Click on drop-down arrow in the *"Function" field*. Select a function type from the list.

    Figure 104. Example of Configuring a "Single" Point

Device	Addr	Name	Function	Supervisory	Alarm Verification	Low Temp Trouble
Built-in SLC	1	Point 1	Unused ▼	☐	☐	☐
Built-in SLC	10	Point 10	Unused		☐	☐
Built-in SLC	100	Point 100	Addr Detector Photo		☐	☐
Built-in SLC	101	Point 101	Addr Detector Photo Heat		☐	☐
Built-in SLC	102	Point 102	Addr Detector Duct		☐	☐
Built-in SLC	103	Point 103	Addr Detector Heat Fixed		☐	☐
Built-in SLC	104	Point 104	Addr Detector Heat Combo		☐	☐
Built-in SLC	105	Point 105	Contact Input Pull Station		☐	☐
Built-in SLC	106	Point 106	Contact Input Water Flow		☐	☐
Built-in SLC	107	Point 107	Contact Input Supervisory		☐	☐
Built-in SLC	108	Point 108	Contact Input Tamper		☐	☐

    (Function drop-down list: Unused, Addr Detector Photo, Addr Detector Photo Heat, Addr Detector Duct, Addr Detector Heat Fixed, Addr Detector Heat Combo, Contact Input Pull Station, Contact Input Water Flow, Contact Input Supervisory, Contact Input Tamper, Contact Input Fire Drill, Contact Input Trouble Monitor, Contact Input Aux, Addr Relay General Purpose, Addr NAC General Purpose, Addr Zone Module)

4. Continue configuring other points, as needed.

To configure a <u>range</u> of points:

1. Click the first point to configure from the ***"Function" field***.
2. Press and hold the **SHIFT key**, then click in *"Function" field* of last point.

Figure 105. Example of Configuring a "Range" of Points

Device	Addr	Name	Function
Built-in SLC:	1	Point 1	Unused
Built-in SLC:	2	Point 2	Unused
Built-in SLC:	3	Point 3	Unused
Built-in SLC:	4	Point 4	Unused
Built-in SLC:	5	Point 5	Unused
Built-in SLC:	6	Point 6	Unused
Built-in SLC:	7	Point 7	Unused
Built-in SLC:	8	Point 8	Unused
Built-in SLC:	9	Point 9	Unused

3. Right-click from *"Function" field* to display configuration options.

Note: If you right-click outside of *"Function" field,* the range is <u>deselected</u>, and only <u>one</u> (1) device will be configured.

4. Click on device type from shortcut menu.
5. Continue configuring other points, as needed.

To configure a <u>group</u> of selective points:

1. Click the first point in *"Function" field* to configure.
2. Press and hold the **CTRL key**, then click selective points (*from "Function" field*).

Figure 106. Example of Configuring "Multiple" Selective Points

Device	Addr	Name	Function
Built-in SLC:	1	Point 1	Unused
Built-in SLC:	2	Point 2	Unused
Built-in SLC:	3	Point 3	Unused
Built-in SLC:	4	Point 4	Unused
Built-in SLC:	5	Point 5	Unused
Built-in SLC:	6	Point 6	Unused
Built-in SLC:	7	Point 7	Unused

3. Right-click from **"Function" field** to display configuration options.

Note: If you select points or right-click outside of *"Function" field,* the points are deselected, and only one (1) device will be configured.

4. Click on device type from the shortcut menu. In the example shown here, *"Addr Detector Photo Heat"* has been selected as the device type.

Figure 107. Example of Configuring "Selective" Points

Adding Points to Zones

This section provides procedures and examples of adding points to one or more zones. Points can be moved and deleted from zones through the Zones panel using the "drag and drop" technique. The examples illustrate how to use shortcuts to expedite configuring zones and also to reinforce the interaction between the Zones and Points windows.

To move one or more points into <u>one</u> zone:

1. Open the Zones' configuration window and adjust Points' window to display functions.

Figure 108. Example of Resizing Points Window

2. Click on one or more points to select; use the **SHIFT** or **CTRL keys** to select a range or group of points.

Figure 109. Example of Selecting Multiple Points

3. Drag and drop selected points from the ***Points' window*** to the "***Device" window***. The selected points display in the *"Device" window*, as shown below.

Figure 110. Example of Moving Selected Points into a Zone
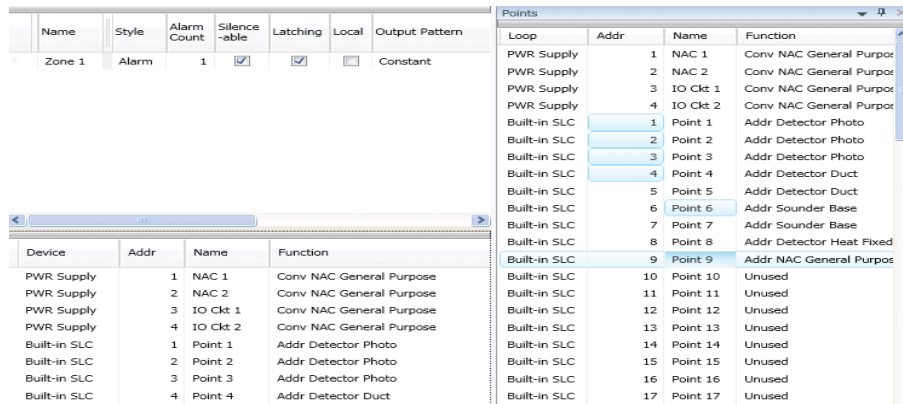
To move one or more points into <u>multiple</u> zones:

1. Select the applicable Zones in the **Zones window,** and select points.

2. Drag and drop selected points into **Device window**.

Figure 111. Example of Moving Selected Points into Two Zones
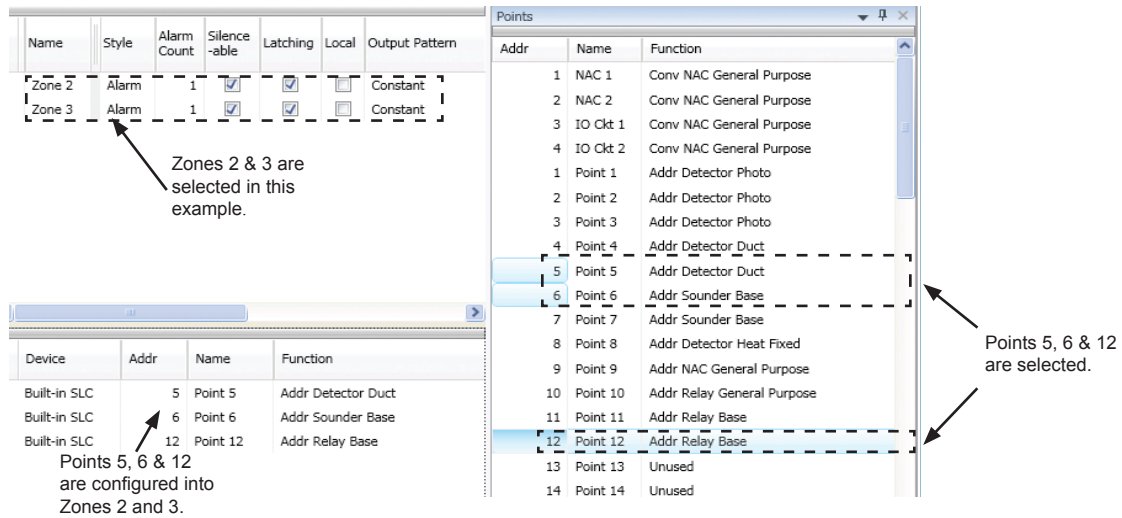
3. Click **"+"** in *Points window* to display point assignment by Zone(s). Click "–" to collapse point assignments.

Figure 112. Example of Expanding Point's Zone Assignment(s)
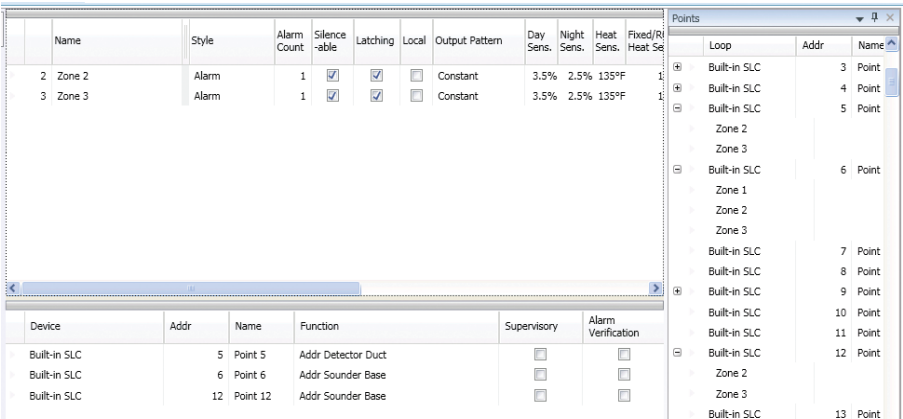
Group by Area

You may group information by different fields in many of the program windows. This flexibility is helpful when configuring or viewing a large amount of information, such as all devices, zones or remote annunciators. Examples are included for illustration purposes only.

To group by area (field):

1. Click on "***group bar***" located at top of window, if available.

   Figure 113. Example of Group Bar in Points Window

2. The ***"group by area"*** *region* displays, as shown.

   Figure 114. Group by Area Field
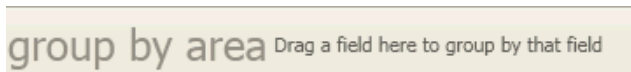
   Note: Click on "group bar" at any time to collapse region.

3. Drag and drop one field into the ***"group by area"*** *region*. The information displays grouped by selected field.

   Figure 115. Example of Points Grouped by Function
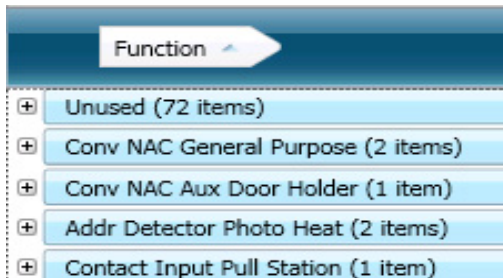
4. Click **"+"** next to the function to view a complete list of points. Click **"-"** to collapse list of points, as needed.

   Figure 116. Example of Points Configured as Addr Detector Photo

5. Drag field out of ***"group by area"*** *region* to redisplay items in original order.

Cross Zone Configurations

The purpose of creating cross zones is to ensure that two (2) or more separate zones are activated before an output zone is triggered.

Although crossing two (2) zones is the most common configuration, up to eight (8) zones may be combined. In this case, when all the zones that have been crossed are active, the specified outputs will be activated.

To create a cross zone:

1. Create two or more (*"Alarm" or "Supervisory" type*) zone(s) and name appropriately.

2. Configure and name devices.

3. Move devices into zones.

4. Open the **Cross Zones window**. Click in the ***"Enabled" box***.

    Figure 117. Cross Zones Window Showing Enabled
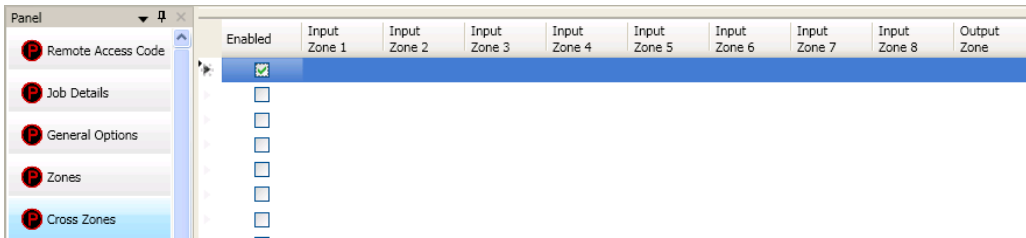
    Note: If the "Enabled" option is <u>not</u> selected, the cross zone relationship will not be in effect.

5. Click on the drop down arrow in the ***"Input Zone 1" field***. All available zones display.
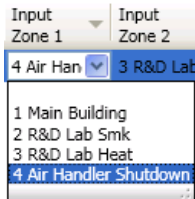
6. Click to select input zone.

7. Repeat steps for the next field, "***Input Zone 2" field.***

8. Click on drop down arrow in the "***Output Zone" field.*** Select output zone.
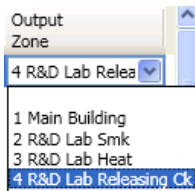
Programming Modules

This section addresses how to program optional all P-Link appliances, including the DACT (UD-1000), RA-6500, RA-6075, CA-6075 Class A expansion card, LED-16 annunciators, and others.

CA-6075 Class A Converter Module

The PFC-6030 supports one (1) Class A Expander card.

To add and configure a Class A module:

1. Select **Class A Card** from the system panel.

2. Click the **Add Device button**. The *"Add Device" window* displays.

Figure 118. CA-6075 Class A – Add Device Window
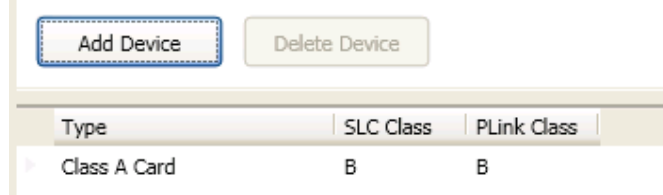
Note: If you attempt to add more than one (1) Class A card, an error dialog box displays, as shown below:

Figure 119. Unable to Add Dialog Box
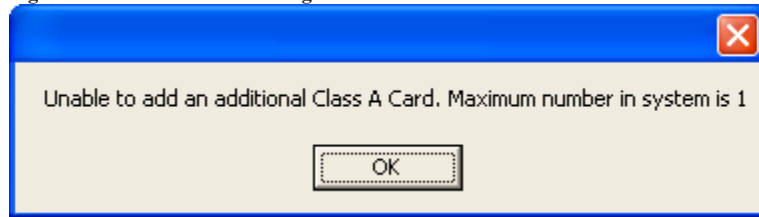
3. Double-click in the *"SLC Class" field* to select class type (A or B).

4. Double-click in the *"P-Link Class" field* to select class type (A or B).

Remote Annunciators (RA-6500 and RA-6075)

The PFC-6030 supports up to thirty-one (31) remote annunciators in any combination of RA-6500 and RA-6075. Each LCD annunciator may be programmed with a unique name to help identify the location of an "*off normal*" condition.

To add and configure a remote annunciator:

1. Select **Annunciators** from system panel.

2. Click the **Add Device button** to display the *"Add Device" window*.

Figure 120. Example of the Add Annunciator Device Window
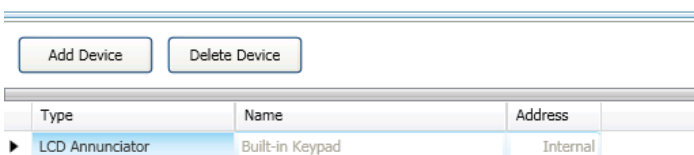
3. Double-click in the *"Name" field* to customize name.

4. Double-click in "*Address" field* to adjust address, if needed.

5. Repeat steps, as needed, to continue adding annunciators.

LED Annunciators (LED-16)

The panel supports ten (10) LED annunciators. The LED annunciator provides sixteen (16) LEDs, which may be assigned to a specific zone; when that zone becomes active, the LED will display the alarm, supervisory or trouble conditions. Each LED annunciator also provides five (5) non-programmable system LEDs that annunciate the overall system condition (*Power, Earth, Silenced, Alarm, Supervisory and Trouble*).

> **Note**: This panel supports up to ten (10) LED-16 annunciators and/or DRV-50 drivers in any combination.

To add and configure a LED annunciator:

1. Select the **LED -16 function** from the system panel.

2. Click the **Add Device button**. The *"Add Device" window* displays.

Figure 121. Example of the Add LED-16 Window

Add Device	Delete Device	
Type	**Name**	**Address**
LED-16	LED-16 1	1

3. Double-click in the *"Name" field* to customize name.

4. Double-click in "*Address" field* to adjust address, if needed.

5. Repeat steps, as needed, to continue adding LED-16s.

LED Driver (DRV-50)

The panel supports up to ten (10) LED drivers. The DRV-50 provides up to 50 LED outputs, which may be mapped to any zone. Like the LED annunciator, the LED driver provides five (5) non-programmable system LEDs that annunciate the overall system condition (*Power, Earth, Silenced, Alarm, Supervisory and Trouble*). Additionally, the LED driver has four (4) programmable supervised dry contact inputs.

> **Note**: This panel supports up to ten (10) DRV-50 drivers and/or LED-16 annunciators in any combination.

To add and configure a LED driver:

1. Select **DRV-5-** from the system panel.

2. Click the **Add Device button**. The *"Add Device" window* displays.

Figure 122. Example of the Add DRV-50 Window

Add Device	Delete Device	
Type	**Name**	**Address**
DRV-50	DRV-50 1	1

3. Double-click in the *"Name" field* to customize name.

4. Double-click in "*Address" field* to adjust address, if needed.

5. Repeat steps, as needed, to continue adding DRV-50s.
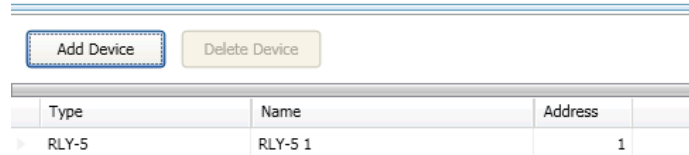
Relay Board (RLY-5)

The panel supports up to thirty-one (31) Relay Boards. Each RLY-5 provides five (5) Form-C relay outputs, which may be individually mapped to any zone.

To add and configure a relay board:

1.   Select **RLY-5** from the system panel.

2.   Click the **Add Device button** to display the *"Add Device" window*.

Figure 123. Example of the Add RLY-50 Window

3.   Double-click in the ***"Name" field*** to customize name.

4.   Double-click in "***Address" field*** to adjust address, if needed.

5.   Repeat steps, as needed, to continue adding RLY-5s.
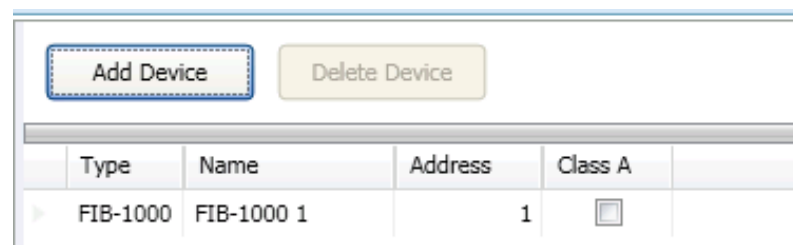
Fiber Interface Bridge (FIB-1000)

The panel supports up to thirty (30) FIB-1000 boards. This optional board allows the standard 4-wire P-Link bus to be converted to and/or from fiber optic cable.

To add and configure the FIB-1000:

1.   Select the **applicable function** from the system panel.

2.   Click the **Add Device button**. The *"Add Device" window* displays.

Figure 124. Example of the Add FIB-1000 Window

3.   Double-click in the ***"Name" field*** to customize name.

4.   Double-click in "***Address" field*** to adjust address, if needed.

5.   Click in the ***"Class A" selection box,*** if applicable.

6.   Repeat steps, as needed, to continue adding FIB-1000s.

Fire Communications Bridge (FCB-1000)

The panel supports one (1) FCB-1000. The FCB-1000 provides a remotely-located IP connection into the panel, which may be designated as the IP reporting device versus passing through the on-board internet connection.

To add and configure the FCB-1000:

1. Select **FCB-1000** from the system panel.

2. Click the **Add Device button**. The *"Add Device" window* displays.

Figure 125. Example of Add FCB-1000 Window
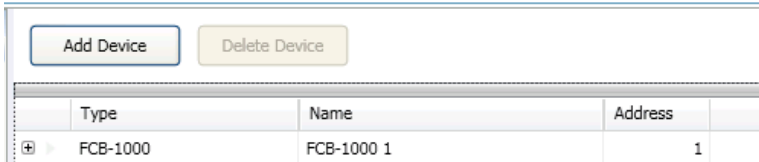
3. Double-click in the *"Name" field* to customize name.

4. Double-click in "*Address" field* to adjust address, if needed.

5. Click the *plus sign* located in the left-most column to display the *"Network Settings"* options.

Figure 126. Example of Add FCB-1000 Window
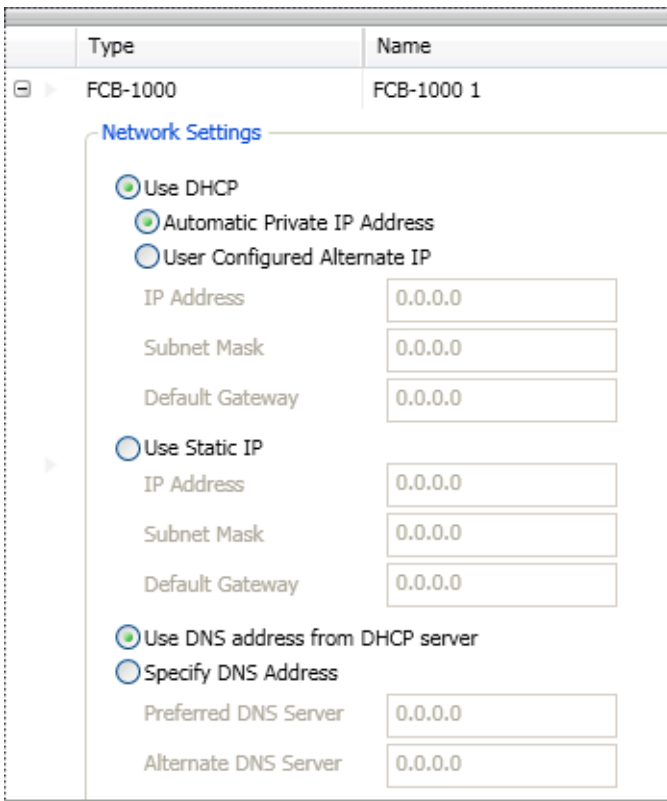
6. Set the IP address by choosing one of the following two methods:

   • The built in DHCP (Dynamic Host Configuration Protocol) option is the default; an IP address is automatically requested from the *"Host Computer"*.
   • The Network Administrator or Installer may set the IP address using the software's *Static IP function*.

7. Click the *minus sign* located in the left-most column to suppress the *"Network Settings"* **options** from the window.

Serial Parallel Printer (SPG-1000)

The SPG-1000 module allows up to 31 serial and/or parallel printers to be used to log system events.

> **Note**: Parallel printers must be connected to the *DB25 (J1)* connector, serial printers to the *DB9 (J2)* connection.

To add and configure the SPG-1000:

1. Select **SPG-1000** from the system panel.

2. Click the **Add Device button** to display the "*Add Device" window*.

   Figure 127. Example of the Add SPG-1000 Window

			Parallel Settings				Serial Settings							
Type	Name	Address	Event Printing Enabled	Supervise Out of Paper	Supervise Off-line	Off-line time (secs)	Event Printing Enabled	Supervise Port	Off-line time (secs)	Baud Rate	Flow Control	Data Bits	Parity	Stop Bits
SPG-1000	SPG-1000 1	1	☐	☐	☐	60	☐	☐	0	9600	None	8	None	1
SPG-1000	SPG-1000 2	2	☐	☐	☐	60	☐	☐	0	9600	None	8	None	1

3. Double-click in the *"Name" field* to customize name.

4. Double-click in *"Address" field* to adjust address, if needed.

5. Select the applicable *"Parallel / Serial" setting options* as described below:

   ### *PARALLEL PRINTERS:*

Event Printing Enabled	If selected, system events are logged to a connected parallel printer via the **DB25 connector**.
Supervise Out of Paper	If selected, the SPG-1000 continuously monitors the connected printer for an out of paper condition. When this condition occurs, a *"Trouble" event i*s generated and is annunciated by the panel.
Supervise Off-line	This option continuously monitors the connected printer for an off-line condition, if selected. When this condition occurs, a "*Trouble" event* is generated and annunciated by the panel.
Off-line time (secs)	If this option is selected, the off-line time specifies the amount of time the condition must be present before a *"Trouble" event* is generated. Default time is 60 seconds.

   ### *SERIAL PRINTERS:*

Event Printing Enabled	If selected, system events are logged to a connected serial printer via the **DB9 connector.**
Supervise Port	If selected, the SPG-1000 continuously monitors the connected printer for the presence of a serial printer; if not connected, a *"Trouble" event* is annunciated.
Baud Rate	This option specifies the baud rate used to transmit data to the connected printer; default is *9600 baud rate*.
Flow Control	If selected, this specifies the flow control method when sending data to the printer. Refer to specifications of the connected printer for proper settings.
Data Bits	This option specifies the number of data bits used when sending data to the printer. Refer to specifications of the connected printer for proper settings.
Parity	This option specifies the parity used when sending data to the printer. Refer to specifications of the connected printer for proper settings.
Stop Bits	This option specifies the number of stop bits used when sending data to the printer. Refer to specifications of the connected printer for proper settings.

6. Repeat steps, as needed, to continue adding and configuring printers.

DACT (UD-1000)

Each system may have one DACT module or Digital Alarm Communicator Transmitter. The DACT provides notification to a remote monitoring company when alarms, troubles and supervisory conditions occur.

Programming options allow you to select separate accounts for test events and alarm, trouble, and supervisory conditions. You may set up telephone parameters, such as number of rings, when and where to send reports by specifying phone numbers and other report output options. An example of the *Add – Dialer window* is shown.

Figure 128. Example of DACT Add-Dialer Window

Notes:
1. A daily test is automatically sent to a remote monitoring location; the test time may be programmed through the *General Options program window – "Time to Send Autotest" field*.
2. If the system has been programmed to use a dialer, and two (2) phone lines are used, DACT will alternate between lines on each daily call.
3. If a DACT (UD-1000) is installed and the IP Communicator is programmed, the daily test call can be sent to both reporting accounts. *(Please refer to Section 7 for more information on the IP Communicator.)*
4. If a DACT is not installed and the IP Communicator is not programmed, the system will operate as a local panel.

Reporting Accounts

The "*Reporting Accounts" section* is used to program DACT operations and to customize the format of the reporting accounts. You may choose different settings for Alarms, Troubles, and Supervisory conditions. Up to five (5) primary and secondary reporting accounts may be configured.

Figure 129. Example of Dialer Reporting Options

To add and configure a DACT module:

1. Select **Dialer** from the system panel.

2. Click the **Add Device button**. The *"Add Dialer" window* displays.

    Figure 130. Example of Add Dialer Window

3. In the *"Phone Line 1 and Phone Line 2" fields*, make any necessary changes.

    Figure 131. Example of Phone Lines Options

    Each "," (comma) creates a 1-second pause before the dialer attempts to dial a reporting account number.

    *   Enter the **number of rings** you want the DACT to pickup when receiving a call.

        Note: If you do not change the default from "0", the DACT will **never** pick up a call!

    *   Enter the appropriate line prefix, if any is required for your phone lines.

        Example: In the example shown above, the phone line requires that **"9"** is dialed to get an outside line.
        The two **",,"** (*commas*) instruct the dialer to pause 2 seconds before dialing the reporting account numbers.

4. In the *"Reporting Accounts" section,* make the necessary selections for the primary and secondary reporting accounts:

    *   Select the **Report type(s)**: *Alarms, Troubles, Supervisory*

    *   Enter the A**ccounts ID**s and **Phone Numbers**

    *   Select the **Primary Report By option**: *Panel, Zone or Poin*t

    *   Choose the **Primary Format option**: *CID / SIA*

        Note: Both SIA-DCS and Ademco Contact ID protocols are supported.

    Figure 132. Example of Report Accounts Setup

    The "Primary" account setting fields are displayed here.

Section 6: PSN-1000 / PSN-1000(E) – Installing, Operating & Programming

The PSN-1000 and PSN-1000(E) power supply boards provide power and communication expansion capability to the PFC-6000 series control panels. They provide an electrically isolated P-Link repeater output that supports additional power and communications distance. The PSN-1000(E)'s larger cabinet allows space for mounting up to six (6) additional P-Link and expansion cards (*i.e., FIB-1000, etc.*).

Board Specifications

Cabinet Descriptions

- Sixteen (16) gauge sheet steel with hinged, locked doors
- Enclosure dimensions
    PSN-1000 – 16" x 17" x 3-7/8" (non-removable door)
    PSN-1000(E) – 26" x 17.6" x 3.75" (removable door)

Visual Indicators

- LED indicators (Green & Amber)

Environmental Specifications

- Mount indoors only.
- Temperature 32° to 120°F, humidity 93% non-condensing.
- Verify panel is properly grounded.
- Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides, bottom, or rear of the cabinet. Verify that they will not interfere with the batteries or other components.
- The panel must be tested and maintained in accordance with all local and national codes and ordinances. Refer to *Appendix D: PSN-1000/PSN-1000(E) Maintenance and Testing* for information on maintenance and testing recommendations.

Electrical Specifications

Please refer to the table below for the board's electrical specifications:

Table 20: PSN-1000/PSN-1000(E) Board Electrical Specifications			
# NACs	Rating per NAC	Input Circuits	Style and Class
6	3 Amp	1 Amp	Class A or B NACs are Power Limited **Note:** Refer to the *"NACs Wiring"* topic located in this section for Class A wiring requirements.

Wiring Specifications

There are several wiring requirements to consider **before** connecting circuits to the PSN-1000/PSN-1000(E) board:
1) the circuit separation, and 2) the wiring types.

Circuit Separation

- Separations between the different wiring types **must** be maintained by at least ¼ inch and the wire insulation **must** be for the higher voltage.
- The two cabinets have various conduit knockouts located for ease of wire installation and allowing the installer to maintain power limited and non-power limited connections.

Wiring Types

Wiring specifications must be followed to prevent damage and/or other consequences.

Table 21: PSN-1000/PSN-1000(E) Board Circuit Wiring Types		
Type of Circuit	**Wiring Type**	
	Voltage	**Power**
AC Connection	High Voltage	Non-Power Limited
Battery Connection	Low Voltage	Non-Power Limited
Trouble Relay	Low Voltage	Non-Power Limited
Low AC Relay	Low Voltage	Non-Power Limited
Notification Device Circuits (NACs)	Low Voltage	Power Limited
Input Circuits	Low Voltage	Power Limited
P-Link RS-485 Connections	Low Voltage	Power Limited

Cabinet Dimensions

Figure 133. PSN-1000(E) Cabinet Dimensions
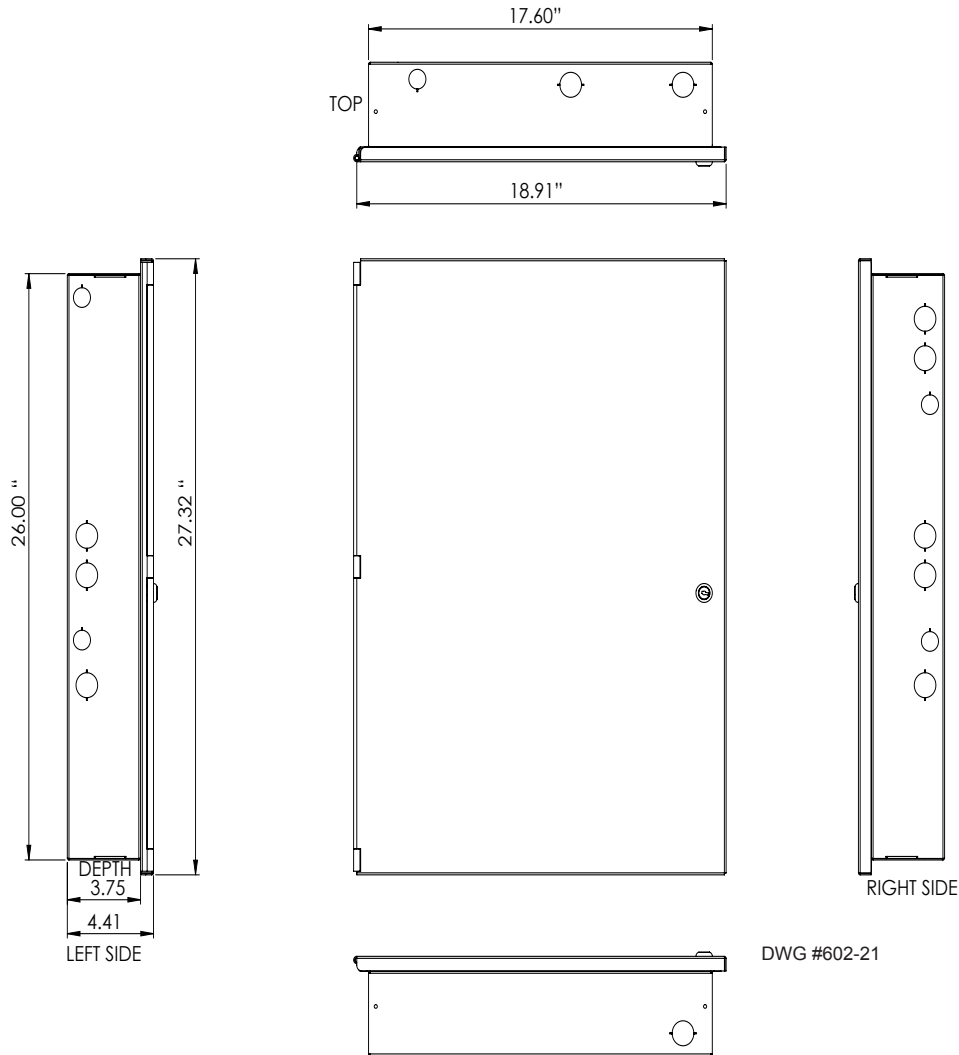
Cabinet Installation

The PSN-1000/PSN-1000(E) slides into the guides located at the bottom of the panel, and then secured with screws as shown in the following illustration.

Figure 134. PSN-1000 Panel Installation Showing Cabinet
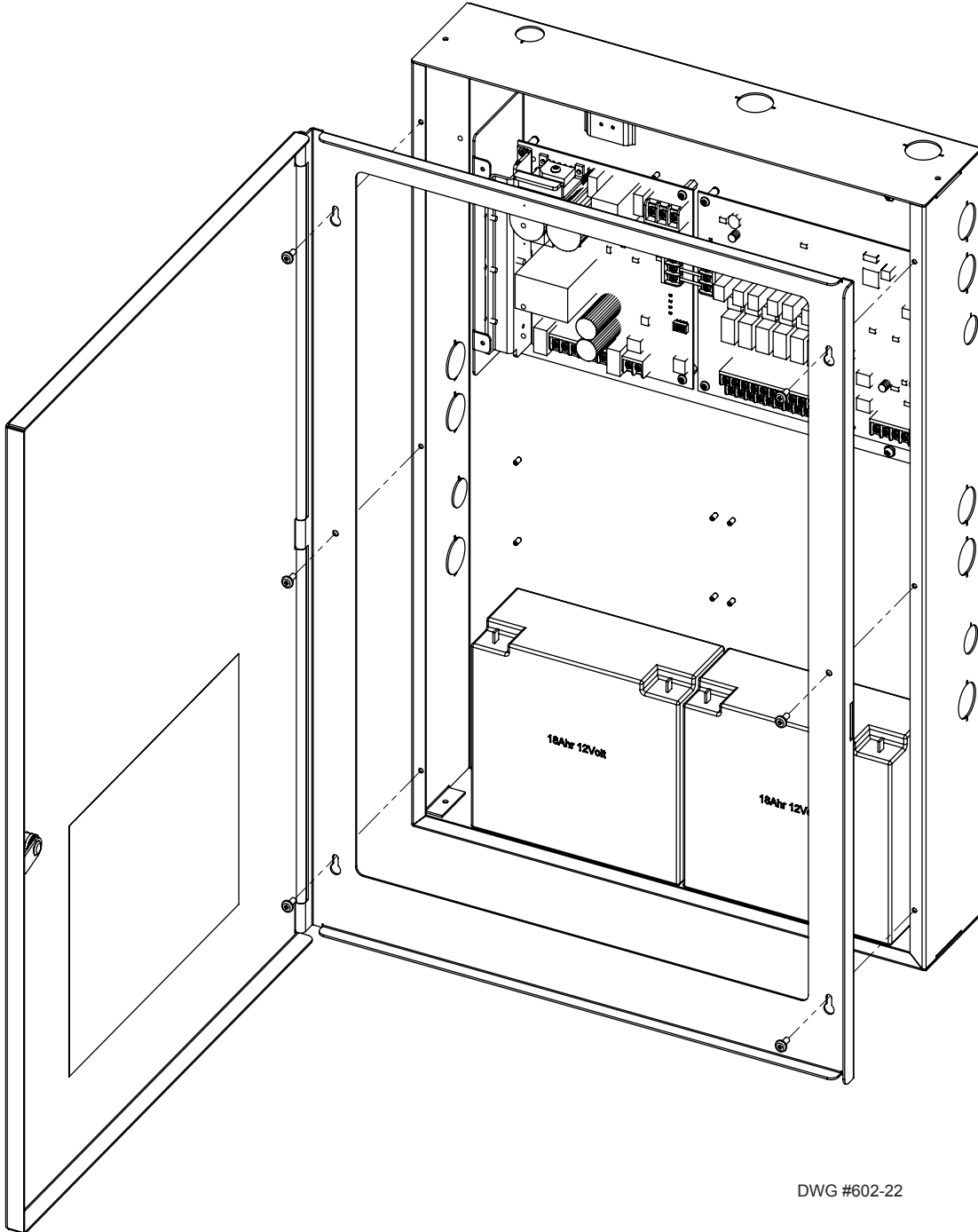
DWG #602-22

Cabinet Wiring Connections

Figure 135. PSN-1000 Wiring

120VAC 50Hz-60Hz
240VAC 50Hz-60Hz
Connect to separate
unswitched AC circuit

Non-power limited
relay connection

Non-power limited
battery connection

P-Link
Terminals

Power limited
wiring

18Ahr 12Volt

18Ahr 12Volt
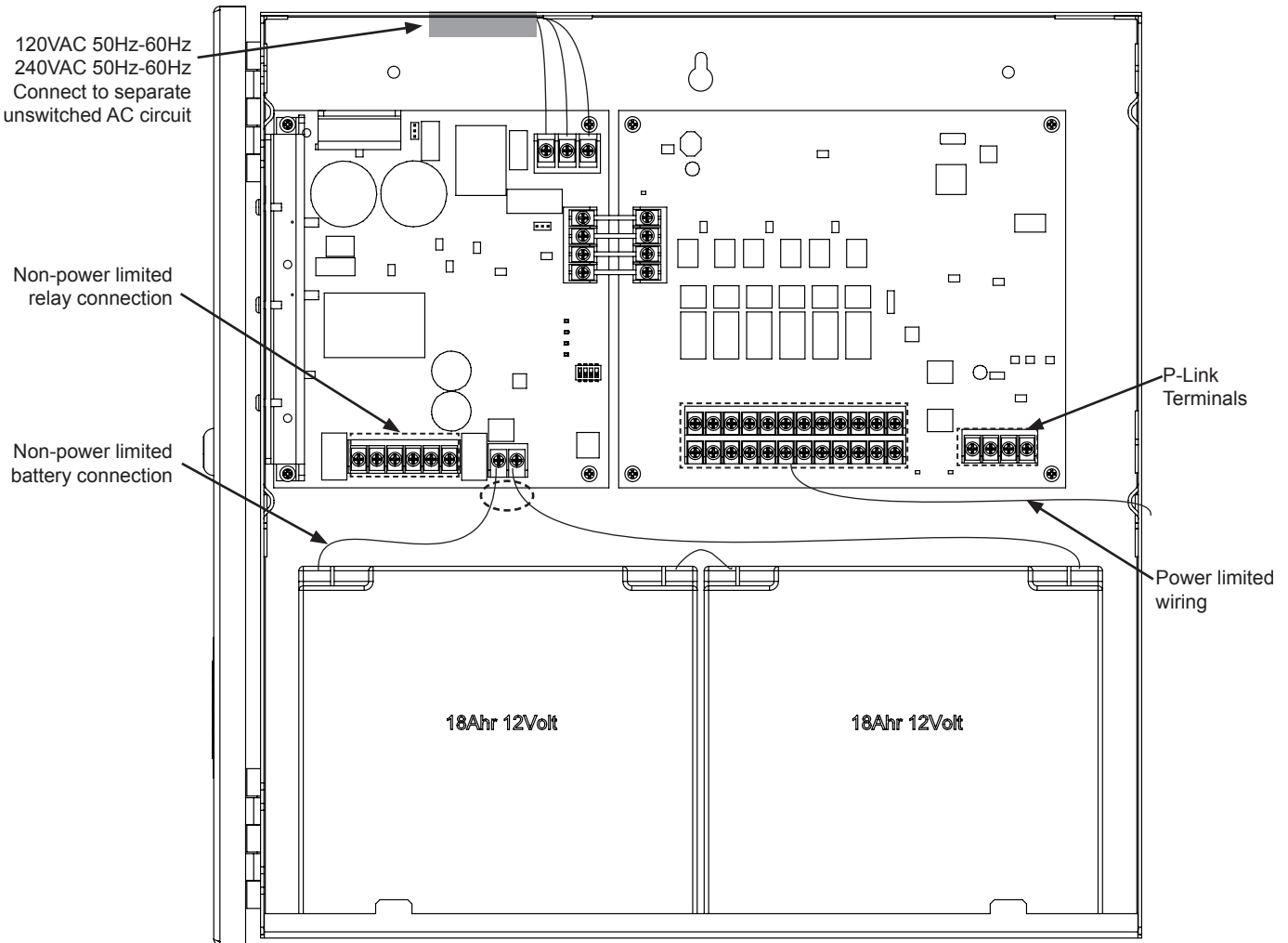
DWG #602-23

Rechargeable Battery Circuit

The battery charging circuit is on the power supply board providing terminal connections to connect the wire leads. The battery must be a recognized or listed sealed lead acid battery or equivalent. It is rated for 8 to 55 AH batteries and will operate the panel alarm for at least 24 hours and 5 minutes.

The battery charging voltage is approximately 27.3 VDC and the circuit is supervised. The maximum battery charging circuit is 1.0 amp DC. The cabinet will house up to two (2) 18 AH batteries.

Battery Circuit Calculation

Before selecting the battery, the installer must determine the minimum size batteries for standby and alarm times desired for each application. If the wrong batteries are installed or incorrect current draw used, the proper standby and minimum alarm time will not be present. (Please use the *Battery Calculation Worksheet* located on the next page to calculate the battery size and current draw required for each application.)

PSN-1000/PSN-1000(E) Battery Calculation Worksheet
Complete one for <u>all</u> P-Link devices powered by the PSN-1000 / PSN-1000(E)

Device Type	Qty	Standby (mA)	Total Standby (mA)	Alarm (mA)	Total Alarm (mA)
PSN-1000 / PSN-1000(E) Main Board	**1**	60		200	**200**
LCD Remote RA-6075		20		25	
LCD Remote RA-6500		20		50	
PSN-1000/E Power Expander		15		15	
LED-16 P-Link LED-Current (if applicable, see Note 6)		25 15		25 210	
DRV-50 LED-Current (if applicable, see Note 6)		25 10		25 215	
RLY-5 Relay Current (if applicable, see Note 6)		25 10		35 135	
FCB-1000		25		25	
FIB-1000		30		30	
SPG-1000		40		40	
NAC 1					
NAC 2					
NAC 3					
NAC 4					
NAC 5					
NAC 6					
SLC Current Draw					
		Total (ma)		Total (ma)	
		Convert to Amps	**x 0.001**	Convert to Amps	**x 0.001**
		(*Refer to maximum allowable standby current) Total A:		Total A:	
		Multiply by standby hours	**x____**	<u>60 minutes per hour</u> Alarm time (minutes) *Example:* 5 minute alarm: enter 12 10 minute alarm: enter 6	÷____
		Total Standby AH		Total Alarm AH	
				+Total Standby AH	
				Total AH	
				Efficiency Factor	**÷ 0.85**
				Required AH	

*Maximum Allowable Standby Current
  (UL 24-Hour Standby Time)
7 AH   .230 A
18 AH   .619 A
33 AH   1.151 A
55 AH   1.930 A

Important Notes:
1) The PSN-1000/E enclosure can house up to two (2) 18 AH batteries. Larger batteries require accessory enclosure, part #SSU00500.
2) NFPA 72 requires 24 hours of standby power followed by 5 minutes alarm activation.
3) NFPA 12, 12A requires 24 hours and five minutes of alarm activation.
4) Door holder circuits configured to disconnect upon AC loss need not be included in the battery standby calculation since they will not draw power during that time. Door holders will contribute to standby current draw when AC is present.
5) Total current must not exceed power supply rating (10A).
6) LED/Relay current must be accounted for in the battery calculation for the supplying source.

Notification Appliance Circuits (NACs)

There are six (6) NAC circuits provided on the PSN-1000/PSN-1000(E) rated as continuous 3 amps at 24 VDC. The NAC circuits may be configured for Class A or Class B. *(Please refer to the Class A and B wiring examples shown in this section.)* The circuits reverse polarity upon activation and are marked accordingly on the board and illustrations.

NAC Wiring

- Outputs are supervised and regulated.
- NAC circuits are power limited.
- Type of NAC output is selectable, and may be configured for strobe synchronization with Potter/AMSECO, Wheelock®, Gentex®, or System Sensor® strobe devices. Please refer to Potter document *"5403592 NAC Compatibility Document"* for this information.
- Class-A operation is accomplished by using a pair of NAC circuits (NAC 1&2, NAC 3&4 and NAC 5&6); this pairing provides three (3) Class A circuits, each rated for a continuous 3 amps at 24 VDC.

NAC Maximum Impedance Formula

The maximum impedance is a *function* of the load being applied to the circuit. In order to calculate the maximum impedance as follows:

(Alarm Current of Notification Appliances) x (Wire Resistance) < 3 Volts

NAC Wiring Configurations

Examples of Class A and B follow.

Figure 136. Class B NAC Wiring Example
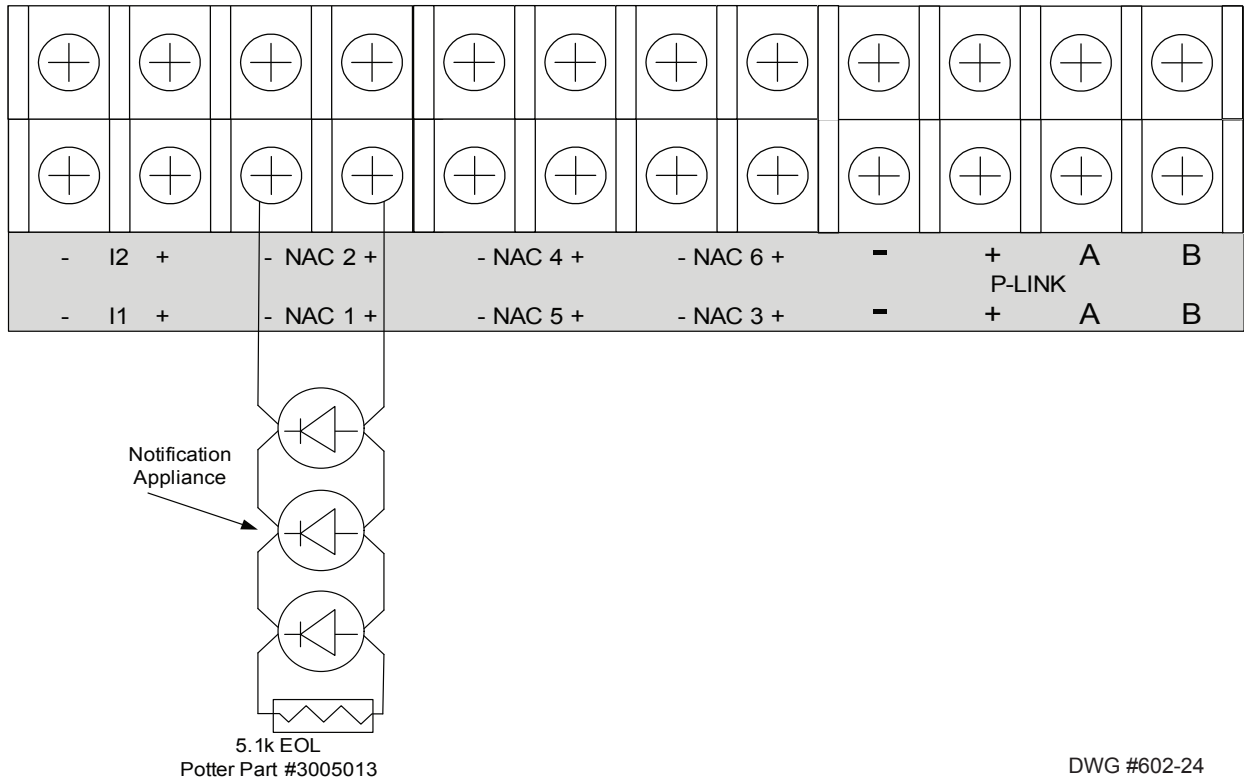
DWG #602-24

Notes:
1. The Potter part number for the listed end of line assembly is #3005013 EOL Resistor Assembly.
2. The panel has ground fault detection on the NAC circuits. The impedance to ground for ground fault detection is 0 ohms.

Figure 137. PSN-1000 / PSN-1000 (E) Class A NAC Wiring Example

| - | I2 | + | | - NAC 2 + | | - NAC 4 + | | - NAC 6 + | | **–** | | + | A | B |

P-LINK

| - | I1 | + | | - NAC 1 + | | - NAC 5 + | | - NAC 3 + | | **–** | | + | A | B |

Notification
Appliance
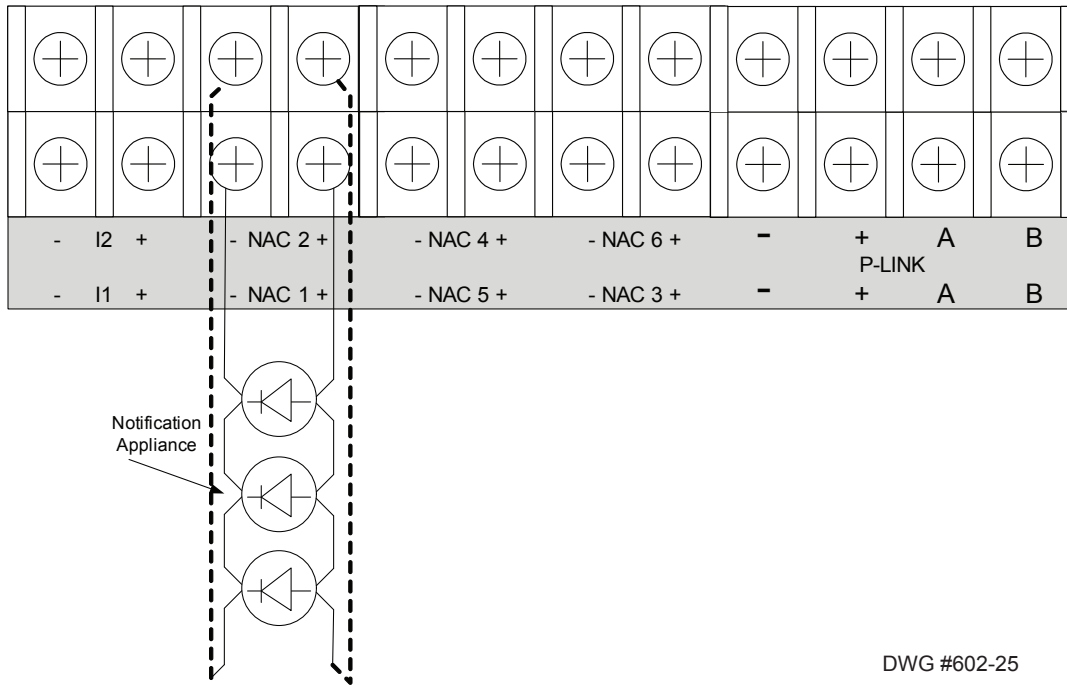
DWG #602-25

Input Circuits

The panel is equipped with two (2) input circuits, **I1 and I2**, that are low voltage, power limited, and supervised. When configured, the circuits function as dry-contact monitoring circuits.

Note: These circuits operate as Class B only. Please refer to the figure shown below.

Configuration Characteristics

- Maximum allowable wire length is 10,000 feet.
- Maximum allowable wiring resistance is 100 ohms.
- Maximum wiring capacitance is 1 uF.
- Maximum IDC voltage is 24 VDC, and current is 15 ma.

Figure 138. Example of PSN-1000 / PSN-1000(E) Input Circuit – Normal Open Dry Contact
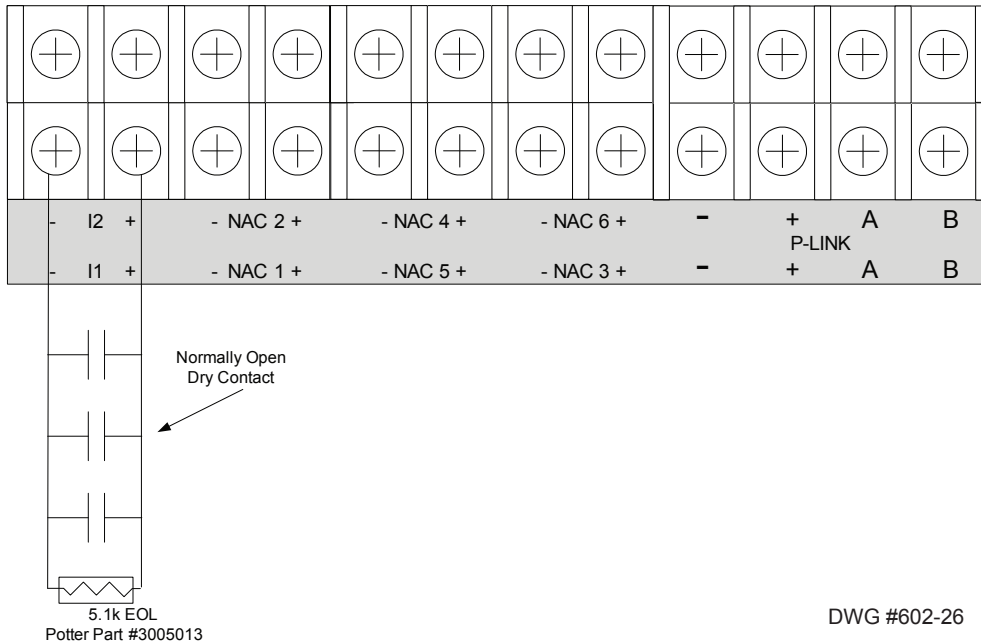
DWG #602-26

Notes:
1. The Potter part number for the listed end of line assembly is #3005013 EOL Resistor Assembly.
2. The panel has ground fault detection on the input circuits. The impedance to ground for ground fault detection is 0 ohms.
3. The end of line resistor is a 5.1K ohm resistor.

Wiring to Control Panel

The control panel communicates with and supervises the PSN-1000/PSN-1000(E) via the main P-Link circuit. This connection is electrically isolated from the rest of the PSN-1000/PSN-1000(E).

Figure 139. P-Link Wiring from Control Panel

DWG #602-27
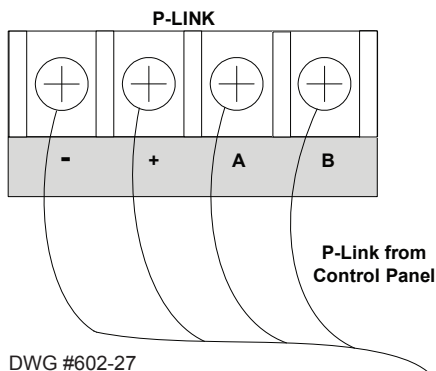
Repeater Output

The PSN-1000/PSN-1000(E) repeater output provides power which supports additional P-Link devices, including LCD Annunciators and/or SLC Loop expanders. This is possible because the P-Link repeater output reconditions and repeats all P-Link communications. Refer to the following figures for examples of Class A and B wiring.

Configuration Characteristics

- PSN-1000 current rating is one (1) amp.
- PSN-1000 voltage rating is 24 VDC.
- The maximum wire length is 6,500 feet.
- Wiring is fully supervised and power limited.

Maximum Wire Resistance Formula

The maximum resistance is based on the *load* placed on the circuit. To calculate the maximum wire resistance, use the following formula:

$$\textbf{(Total Annunciator Alarm Current) x (Wire Resistance) < 6 Volts}$$

Note: Any connection to ground of 0 ohms will be annunciated as a ground fault.

Figure 140. P-Link Class B (Repeater) Wiring Example
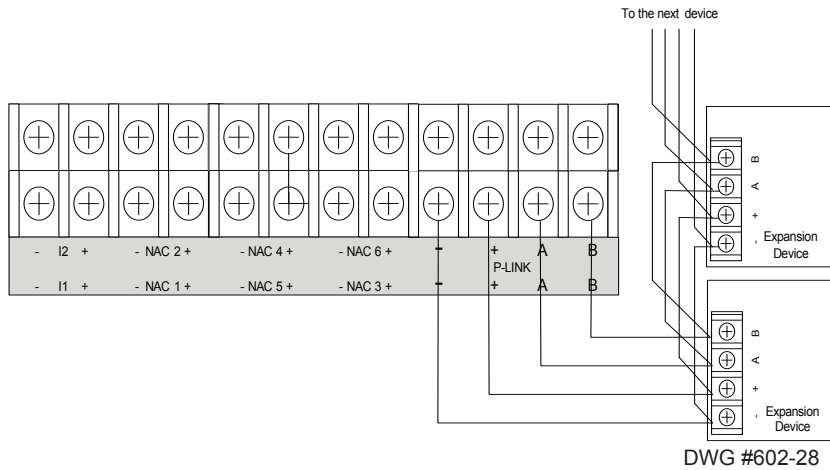
DWG #602-28

DWG #602-31

Figure 141. P-Link Class A Wiring Example
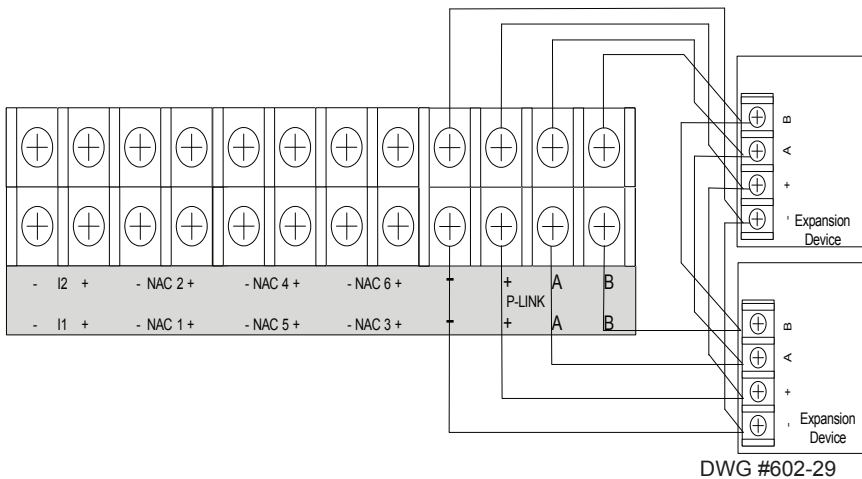
DWG #602-29

DWG #602-32

Municipal Box Connection

When the PSN-1000/PSN-1000(E) is programmed as a municipal box connection, the circuit is power limited and supervised for open and short circuit conditions. It also provides a local energy connection. Please refer to the figure shown below for a wiring example.

Configuration Characteristics

- NAC1-NAC6's trip current is 3 amps.
- Maximum voltage rating is 24 VDC.

Notes:
1. The panel has ground fault detection on municipal box connection circuits.
2. The impedance to ground for ground fault detection is 0 ohms.

Figure 142. PSN-1000 Configured as Municipal Box
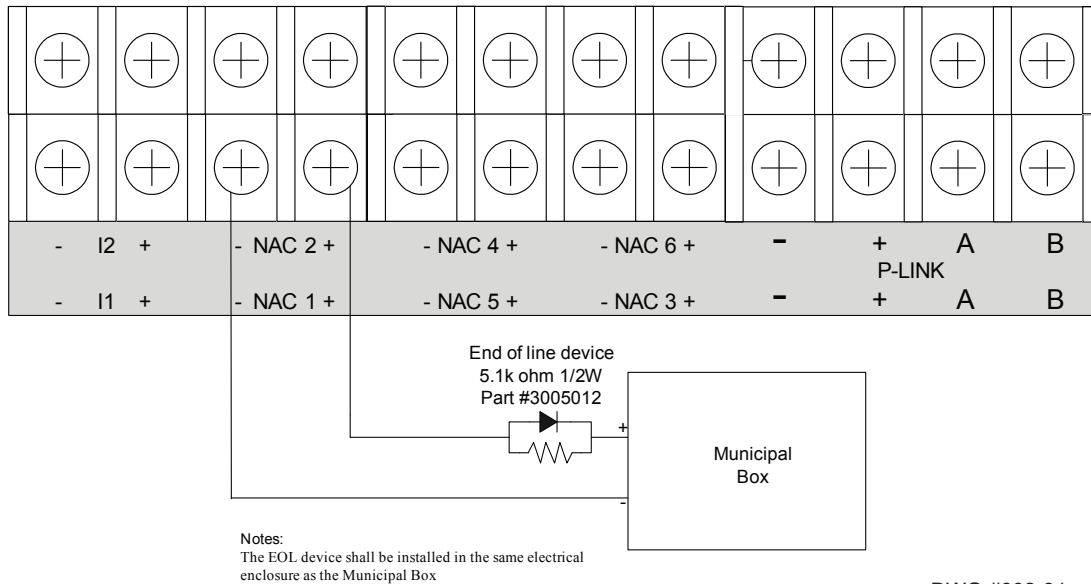
Relay Outputs

The board has two (2) relay outputs: a dedicated **Trouble relay** and a **Low AC relay**. The dedicated *Trouble relay* is a failsafe trouble relay that changes position anytime a trouble condition occurs.

The relays have a contact rating is 24VDC / 3.0A, 125VAC / 3A, and a Power Factor of 1.0. These outputs are *non-power limited* and *are not supervised.*

Note: If the power supply is power-limited, then the outputs are power limited.

Figure 143. PSN-1000's Relay Outputs
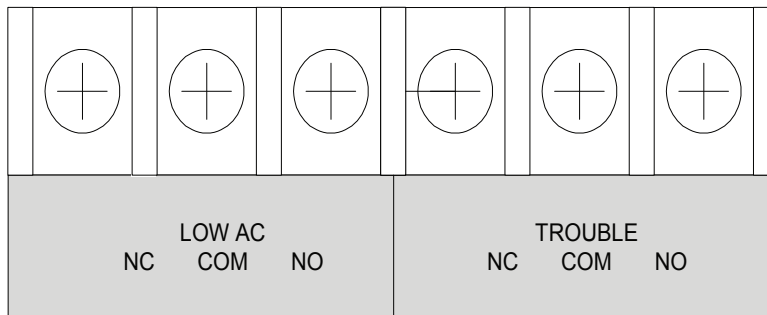
PSN-1000/PSN-1000(E) Operations

The PSN-1000/PSN-1000(E) operates as a fully integrated power expander. The input circuits and/or NAC circuits are configured in the same manner as any input circuit or NAC circuit in the system. Circuit functions and zone assignments are defined using the system software.

Status LEDs

The PSN-1000/PSN-1000(E)'s status LEDs communicate system conditions by illuminating and/or flashing the applicable **green** or **amber** indicators. These are described in the table shown below.

Table 22: PSN-1000/PSN-1000(E) Status LEDs		
LED Type	**LED Color/Action**	**Description**
AC Power	Steady Green	**ON** = AC present; **OFF** = AC not present
Low Battery	Steady/ Flashes Amber	**OFF** = No Fault; **Flashing** = Low Battery conditions **ON** = Battery Charger Failure **Note**: The PSN-1000 transfers from AC to battery instantly upon AC failure or brownout. The trouble relay on the panel will indicate the low AC condition after the Low AC Report Delay has elapsed.
Earth Fault	Flashing Amber	Indicates that an earth fault is detected.
Comm.	1 Flash Green	Flash indicates successful communication with the NAC control board.
Bulk Comm.	Flashing Green	Flash indicates successful communication with the bulk supply board.
RPTR Comm.	Flashing Green	Indicates when P-Link repeater communications are occurring.
Main Comm.	Flashing Green	Flash indicates when P-Link commands are received from the control panel.

PSN-1000/PSN-1000(E) Programming

The panel can be programmed to support up to thirty-one (31) PSN-1000/PSN-1000(E) Power Expanders. Each power supply provides six (6) NAC circuits (3A max), and two (2) dry contact input circuits. Both Class A and B configurations are supported; however, Class A requires that NAC circuits are paired as follows: NAC 1&2, NAC 3&4 and NAC 5&6, thus providing three (3) Class A circuits.

Adding a Power Supply

To add and configure a power supply:

1. Select the **Power Supply function** from the system panel. The *"Add Device" window* displays.

    Figure 144. Example of Add Power Supply Window
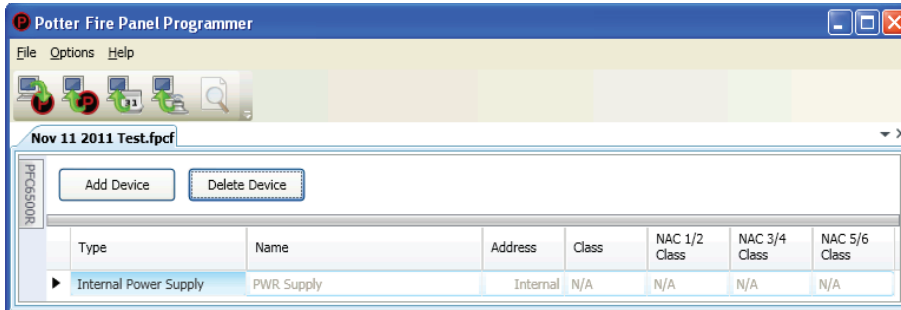
2. Click the **Add Device button** to create a new power supply.

    Figure 145. Example of Add Power Supply Window
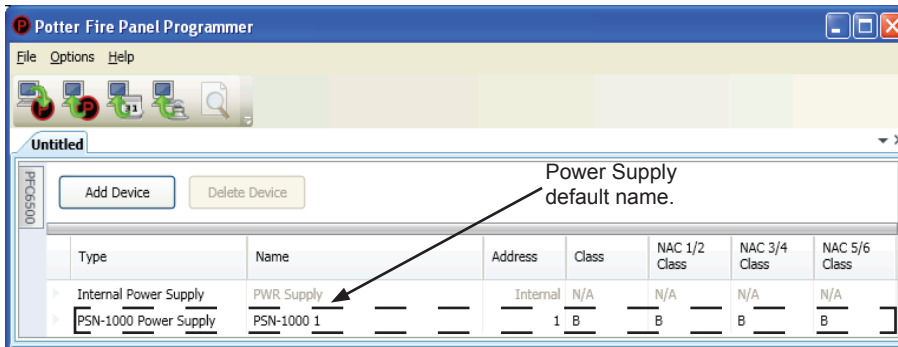
3. Configure the power supply, as needed:

    *   Double-click in the *"Name" field* to change the default name.
    *   Double-click in the *"Address" field* to enter a different address.
    *   Click on the *"Class" drop-down arrow* to select Class A for the repeated P-Link circuit.

    Figure 146. Example of Power Supply "Class for P-Link" Operation
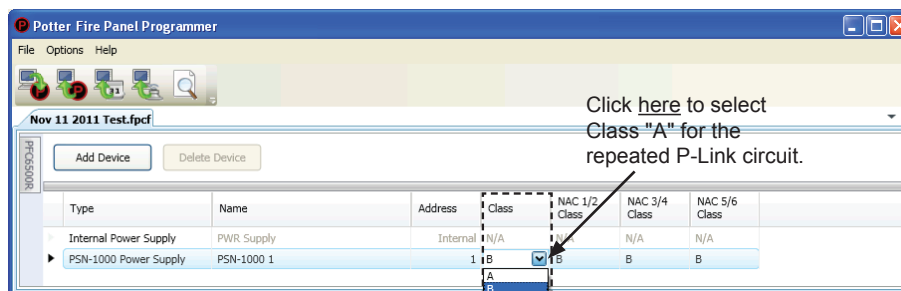
Notes:

- If a power supply is Class A, select the applicable NACs (NAC 1/2, NAC 3/4 or NAC 5/6).
- If a power supply is Class B, programming is completed.
- Class-A operation may be independently selected for the P-Link repeater output and any of the NAC circuit pairs.

4. Repeat steps, as needed, to continue creating or adding additional power supplies.

Deleting a Power Supply

To delete a power supply:

1. Select the **Power Supply function** from the system panel to display all current power supplies.

Figure 147. Example of Power Supply Window
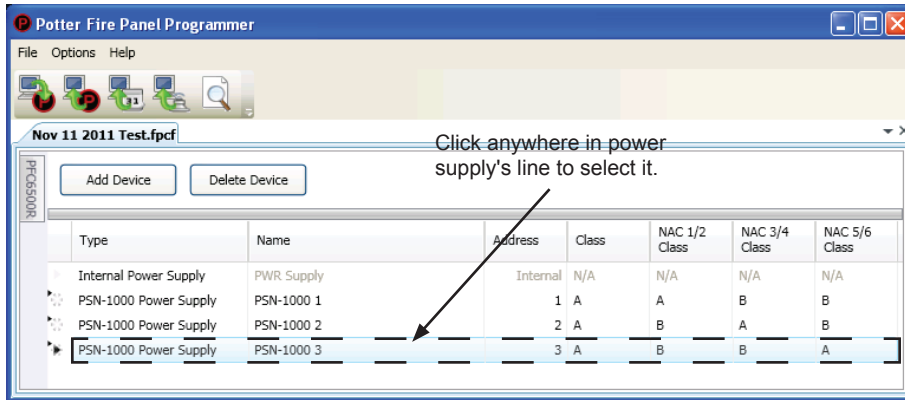
Note: *The Internal Power Supply may <u>not</u> be deleted as indicated by the message in the following dialog box.*

Figure 148. Example of Dialog Box - Showing Internal Power Supply Cannot Be Deleted
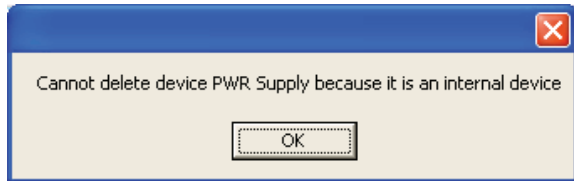
2. Click anywhere in the power supply's line item, then click the *"Delete Device" button*.

    Tip: You may delete more than one power supply in one step by first selecting a <u>range</u> or <u>group</u> using Window's **SHIFT CLICK** or **CTRL CLICK** methods, respectively.

Section 7: IP Communication

The system's built-in, on-board IP Communicator provides notification to a remote monitoring company when alarms, troubles, and supervisory conditions occur. The IP Communicator is used with an IP capable Sur-Guard receiver by means of the Fibro protocol.

> **Note**: The UD-1000 or DACT may also be installed to provide notification to a remote monitoring company via telephone lines.

Programming options allow you to select accounts for test events and alarm, trouble, and supervisory conditions. You may set up IP parameters, such as when and where to send reports by specifying IP addresses and other report output options. An example of the *Add – IP Communicator window* is shown below.

Figure 149. Example of the IP Reporting Window

Notes:
1. A daily test can automatically be sent to a remote monitoring location; the test time may be programmed through the *General Options program window – "Time to Send Autotest" field.*
2. If the system has been programmed to use the IP Communicator <u>and</u> the UD-1000, the daily test call can be sent to both reporting accounts.
3. If the IP Communicator is not programmed and the UD-1000 is not installed, the system will operate as a local panel.
4. Where the fire alarm transmitter is sharing on-premises communications equipment, the shared equipment shall be UL listed.
5. Secondary power shall be provided for all equipment necessary for the transmission and reception of alarm, supervisory and trouble signals at the protected premises.
6. Secondary power shall be provided for all equipment necessary for the transmission and reception of alarm, supervisory and trouble signals at the supervising station.

Programming the IP Communicator

IP Reporting Accounts

The "*IP Reporting Accounts" section* is used to program the IP Communicator operations and to customize the format of the reporting accounts. You may choose different settings for Alarms, Troubles and Supervisory conditions. Up to five (5) primary or secondary accounts may be configured.

To add and configure a IP Dialer:

1. Select **IP Dialer** from the system panel, and click the *Add IP Reporting button.*

    The "*IP Reporting" window* displays.

    Figure 150. Example of the IP Reporting Window

    The **expand ellipses icon** displays all Primary / Secondary account setting fields.
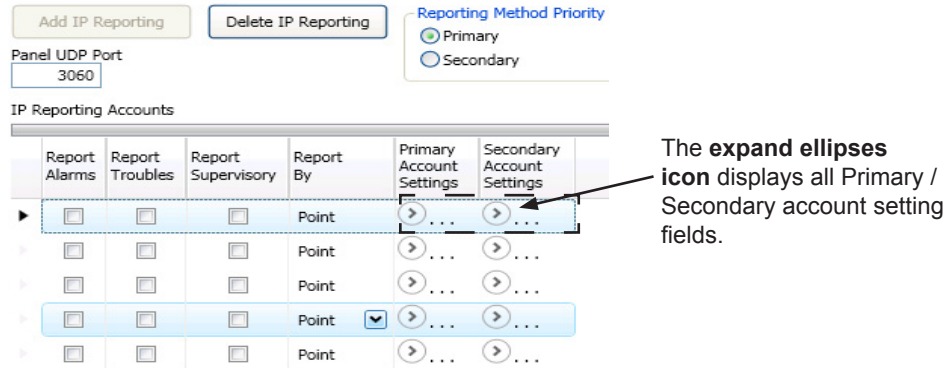
2. In the *Reporting Method Priority* field select the applicable priority.
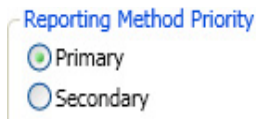
    -   **Primary** – IP Reporting account is used as the first path of communication to the remote monitoring station.
    -   **Secondary** – IP Reporting account is used as the alternate path of communication to the remote monitoring station.

3. In the *Panel UDP Port field*, click to enter an ingoing and outgoing UDP Port. The *UDP* or *User Data Protocol* is the pathway for which data is sent and received between the panel and the remote monitoring station.

    Note: The default UDP Port is 3060; however, an alternate port number may be used. Check with your Network Administrator to determine if an alternate port number for FACP IP Reporting should be assigned.

4. In the "*IP Reporting Accounts" section,* make the necessary selections for the primary and secondary reporting accounts:

    -   Select the **Report type(s)**: *Alarms, Troubles, Supervisory*
    -   Click on the **Report By** drop-down arrow to choose an option: *Panel, Zone or Poin*t

- Click on the **Primary / Secondary Account Settings** ⊙ **expand ellipsis icon** to display additional setup options, as shown below:

Figure 151. Example of Primary Account Settings "Expanded" Window

Notes:

– Use the **scroll bar** to display additional fields if not shown on right.

– Click the ⊙ **collapse icon** at any time to hide the account setting fields.

- Enter the A**ccount ID**.

- Select the applicable **Primary Format option:** *CID / SIA*

- Click in the **Report Test Events selection box** ☑ to send *Test* signals to this account.

- Double-click in the **Receiver IP field** and enter the IP address provided by the remote monitoring station.

- Click on the **Protocol** ☑ **drop-down arrow** to select *Fibro*.

   Note: Fibro communications is used with the Sur-Guard receiver.

- Double-click in the **UDP port field** to enter the *Primary/Secondary port number* as provided by the remote monitoring station.

   Note: The UDP port number is the pathway for data which the receiver receives from the system panel and sends to the system panel.

- Double-click in the **Supervision Interval field** to adjust the amount of time (*in seconds*) that the panel's IP Communicator will send a supervision signal to the remote monitoring receiver.

   – Default setting is 20 seconds.

   – Contact the remote monitoring station to verify the correct setting. The receiver is programmed with a specific window of time to "see" the supervision signal. If the supervision signal is not seen within the programmed time, the receiver generates a *Trouble signal* after six (6) failed communication attempts.

- Double-click in **Encryption Key** to enter an applicable number as provided by the remote monitoring station.

- Click on the **Encryption Method** ☑ **drop-down arrow** to select 128 bit, if applicable.

   Note: If the Encryption Method is set to "*None*", then an Encryption Key is not needed.

5. Click on the ⊙ **collapse icon** to hide the account setting field when finished.

   Reminder: Click the ⊙ **expand ellipsis icon** to review or modify the account settings at any time.

6. Repeat steps for each Primary / Secondary reporting account or to edit an account.

Appendix A: Basic Operating Instructions

These instructions must be framed and displayed next to the PFC-6030 panel in accordance with NFPA 72 fire code for Local Protected Fire Alarm Systems. Test the system in accordance to NFPA 72.

Table 23: Button Functions	
Button	**Function**
ACK	ACK
Arrows	
Drill	DRILL
Esc	ESC
Reset	RESET
Silence	SILENCE

Table 24: Operating Instructions	
Operation	**Task**
Silence Alarms, Troubles	Press the **SILENCE** pushbutton.
Acknowledge Alarms, Troubles	Press the **ACK** pushbutton.
Reset Alarms	Press the **RESET** pushbutton.
View Alarms, Troubles	Press **arrows** to view alarms / troubles.
Conduct a Fire Drill	Press the **DRILL** pushbutton**;** press the **RESET** button to exit Drill mode.
View Point's Status	• Press **ENTER** to display the **Main Menu**. • Press **5 – System Tools**; enter **panel's code**. • Press **2 – Point Control**. • Scroll **Up/Down** to choose **Internal SLC** / **PWR**, and press **ENTER.** • Enter **Addr / Ckt No.** and press **ENTER**. • Press **Up/Down** to view previous / next points.
Check Detector Sensitivity	• Press **ENTER** to display the **Main Menu**. • Press **5 – System Tools**; enter **panel's code**. • Press **1 – SLC Tools**. • Press **1 – SLC Pinpoint**. • Enter **Addr #**, press **ENTER**; detector address and type displays. • Press **ENTER** to display current usage. • Press **Up** to display **Day/Night Sensitivity settings**. • Press **Up / Down** to scroll through point's day / night sensitivity settings.

Table 24: Operating Instructions	
Operation	**Task**
Set Date / Time	• Press **ENTER** – **Main Menu**. • Press **3** – **Set Date / Time**. • Use keypad to enter correct date; use **right arrow** to move through date field and to display time field. • Press **ENTER** to save changes.
Enable / Disable Point	• Press **ENTER** – **Main Menu**. • Press **2** – **Enable/Disable**; enter **panel's code**. • Press **1** – **By Point** • **Up / Down** to select **Device / Internal SLC** / **PWR,** and press **ENTER.** • Enter **Addr / Ckt No.** and press **ENTER.** • Press **Up / Down** to scroll. • Point's current status displays "*Normal*" if enabled, or "*Disabled*". • Press **ENTER** to *change status;* press **ENTER** to save or **ESC** to exit without saving.
View Event History	• Press **ENTER** – **Main Menu**. • Press **1** – **View History**. • Press **Left / Right** to view next / previous events. • Press **ESC** to exit.
Service Call:	

Appendix B: Modem Connectivity Setup

If your computer uses a modem for connectivity to the panel, choose the **Options – Communications menu option**. This involves choosing "Modem" as the transfer medium, and specifying the modem com port. In rare instances, a modem may also require an initialization string. Refer to your manufacturer's instructions for this information.

To setup a modem:

1. Select **Options – Communication.** The "*Communication – Options" dialog box* displays.

    Figure 152. Example of Modem Communication Setup
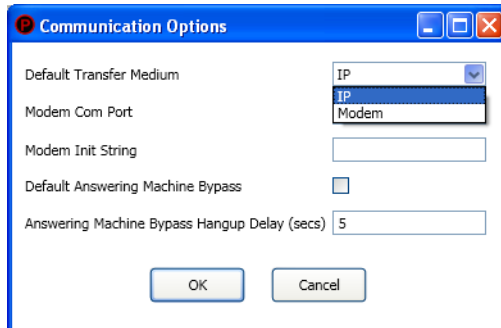
2. Click in "*Default Transfer Medium" field* and select "*modem*".

3. Click in "*Modem Com Port" field t*o select the applicable com port. If required, enter the initialization string.

    Figure 153. Example of Com Port Modem Setup
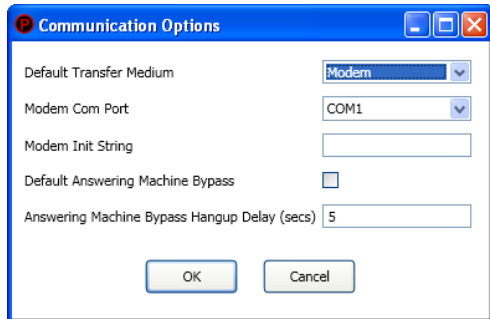
4. Click **OK** to save changes.

Appendix C: System Maintenance and Testing

Acceptance Test

The control panel is required to be installed in accordance with local and state building codes and NFPA 72 (*National Fire Alarm Code*). At the conclusion of each original installation or modification of this system, the control panel and related system is required to be inspected and tested in accordance with NFPA 72 to verify compliance with the applicable standards.

Testing should be conducted by Potter factory trained fire alarm technician(s) in the presence of a representative of the Authority Having Jurisdiction (AHJ) and the building owners representative. Refer to NFPA 72 *(National Fire Alarm Code)*, Inspection Testing and Maintenance.

Periodic Testing and Service

Periodic testing and maintenance of the control panel, all initiating devices, all notification appliances and any other associated equipment is essential to ensure the system will operate as designed in emergency situations. Service and test the control panel according to the schedules and procedures outlined in the following documents:

- NFPA 72, Inspection, Testing and Maintenance.
- Service manuals and instructions for any and all peripheral devices installed in the system. It is very important that any and all trouble conditions (or faults) be corrected immediately.

Operational Checks

During interim periods between formal testing and at regular intervals the control system should be subjected to the following operational performance checks. The Authority Having Jurisdiction (AHJ) should be consulted for requirements on frequency of system testing.

- Check that the green AC power LED is lit.
- Check that all amber LED's are off.
- Using the system menus, perform a Lamp Test function. Verify that all LED's and LCD segments operate.
- Before proceeding: (1) Notify the fire department and the central alarm receiving station if transmitting alarm status conditions; (2) Notify facility personnel of the test so that alarm-indicating devices are disregarded during the test period; and (3) When necessary, bypass activation of alarm notification appliances and speakers (if installed) to prevent sounding of evacuation signals.
- Activate an input device (*i.e., manual station, heat or smoke detector*), and check that all notification appliances function.
- Notify Fire Department, central alarm receiving station and /or building personnel when finished with testing the system.
- The test of ground fault must be measured in below 10k ohms impedance.

AC Fuse

The control panel has one fuse on the board for the AC power over current protection. The AC fuse is rated at 8A 250VAC Time-Lag and screened onto the main board as F1.

Battery Maintenance

The system has been designed to use maintenance-free sealed lead acid batteries. These sealed lead acid batteries do not require any additional water or electrolyte. The system will keep all batteries fully charged by the system's power supply modules float charger. A typical discharged battery will recharge at 1.0 A and reaches the float voltage of 27.3 VDC within 48 hours. The battery is to remain in the cabinet with nothing on or around the batteries.

Replacement and Testing Recommendations

The batteries are to be replaced at least once every four years or more frequently if specified by local AHJ and manufacturer recommendations. Batteries should be dated at the installation. Minimal replacement battery capacity displays on the control panel marking label. The batteries are required to be UL Recognized batteries with a date of manufacture permanently marked on the battery. The battery is to be tested at least annually and if the battery is showing signs of failure, it should be replaced. Immediately replace a damaged or leaking battery, and always replace batteries in pairs.

Proper Handling / First Aid Procedures

- In the event a battery leaks and contact is made with the Sulfuric Acid, immediately flush eyes and/or skin with water for at least 15 minutes. Water and household baking soda provides a good neutralizing solution for Sulfuric Acid.
- If Sulfuric Acid makes contact with eyes, seek immediate medical attention.
- Ensure proper handling of the battery to prevent short-circuits.
- Take care to avoid accidental shorting of the leads from uninsulated work surfaces, tools, jewelry and coins.
- If a battery is shorted, the battery and any connected equipment may be damaged. Additionally, a short may injure personnel.

Appendix D: PSN-1000/PSN-1000(E) Maintenance and Testing

> ## ⚠ CAUTION
> De-Energize Unit Prior to Servicing.

The power supply board has one fuse on the board for the AC power over current protection.

The AC fuse is rated at 8A 250VAC Time-Lag and screened onto the main board as F1.

The batteries are to be replaced at least once every four years. The batteries are required to be UL recognized batteries with a date of manufacture permanently marked on the battery. The battery is to be tested at least annually and if the battery is showing signs of failure, it is to be replaced.

The battery is to remain in the cabinet with nothing on or around the batteries. Only properly sized sealed lead acid batteries are to be used with the control panel. Use of another battery or not providing the proper clearance may result in a fire or an explosions.

The PSN-1000 is required to be installed in accordance with local and state building codes and NFPA 72 (National Fire Alarm Code).

The PSN-1000 and related system is required to be inspected and tested in accordance with NFPA 72.

Appendix E: Compatible Devices Table

This section provides a listing of all NAC appliances, two-wire (2-wire) smoke detectors, releasing and SLC circuit devices, optional modules, and other device compatibilities.

Table 25: Device / Modules Compatibilities	
Module/Device	**Compatibilities**
NAC Appliances	Refer to Potter document *"5403592 NAC Compatibility Document"*.
Two-Wire (2-Wire) Smoke Detectors	None listed with the control panel; all devices listed the Conventional Input Zone Module (CIZM), please refer to CIZM Installation Sheet.
SLC Devices	PSA – Photoelectric Smoke Detector PSHA – Photoelectric/Heat Smoke Detector FHA – Fixed Temperature Heat Detector RHA – Rate of Rise/fixed Temperature Heat Detector AIB – Addressable Isolator Base ARB – Addressable Relay Base ASB – Addressable Sounder Base APS – Addressable Pull Station MCM – Miniature Contact Module SCM-4 – Single Contact Module DCM-4 – Dual Contact Module TRM-4 – Twin Relay Module MOM-4 – Monitored Output Module CIZM-4 – Conventional Input Zone Module SCI – Short Circuit Isolator
DACT/DACR (UD-1000)	UD-1000 DACT – The DACT transmits in Ademco Contact ID and Security Industries Association's Digital Communication Standards (SIA-DCS). Each account may be configured for Contact ID or SIA-DCS independent of the other account's setting. Therefore, some account(s) could be Contact ID and others could be SIA-DCS or vice versa. Similarly, accounts could be the same reporting type.
Receivers	Silent Knight Model 9500/9800 (Ademco MX8000) Sur-Gard System III – SG-DRL3 (POTS Line Card), G-DRL3-IPCA (Network Line Card)
RS-485 Devices	RA-6500 – LCD Remote Annunciator RA-6075 – LCD Remote Annunciator PSN-1000(E) – Intelligent Power Supply Expander LED-16 – LED Annunciator DRV-50 – LED Driver RLY-5 – Relay Board FCB-1000 – Fire Communications Bridge FIB-1000 – Fiber Interface Bridge SPG-1000 – Serial/Parallel Gateway
Class A Expander	CA-6075 Class A Expander
Printers	Keltron 90 Series Fire Alarm printers or other UL Listed fire alarm printer (Ancillary).

Appendix F: Troubleshooting Tips

This section provides basic error messages, their descriptions and recommended actions for each condition.

Table 26: Troubleshooting	
Error Message	**Error Description/Action**
Keypad "##": Missing	The panel is not able to communicate with the annunciator. *Action: Check wiring and programming.*
SLC "##": TYPE ERR	Device is not programmed for the correct function. *Action: Program device for correct function.*
SLC "##": XTRA DEV	FACP found a non-programmed device. *Action: Run LEARN or program specific device.*
SLC "##": DUP ADDR	FACP found multiple devices with the same address. *Action: Manually reassign address of one of the devices.*
SLC LOOP SHORTED	There is a short on the SLC loop wiring. *Action: Locate short and repair accordingly.*
NAC "##": OPEN	There is an open on the wiring. *Action: Locate open and repair accordingly.*
NAC "##": Shorted	There is a short on the Notification Circuit's wiring. *Action: Locate short and repair accordingly.*
SLC 1: Missing	The panel is not able to communicate with a device. *Action: Check device is currently operating and/or connect device to SLC loop.*

SLC "##": OPEN/PWR	• Monitored Output Module is missing 24 VDC connection.
	  Action: Check for 24 VDC to the device.
	• Back up batteries are missing or need to be replaced.
	  Action: Connect or replace batteries as needed.

Appendix G: Control Panel Menu

```
                        ┌─────────────┐
                        │  MAIN MENU  │
                        └──────┬──────┘
        ┌──────────────┬───────┴────────┬────────────────┐
┌───────────────┐ ┌──────────────────┐ ┌───────────────┐ ┌───────────────┐
│1=View History │ │ 2=Enable/Disable │ │3=Set Date/Time│ │ 4=Walk Test   │
└───────────────┘ └────────┬─────────┘ └───────────────┘ └───────────────┘
              ┌────────────┴────────────┐
        ┌────────────┐            ┌────────────┐
        │ 1=By Point │            │ 2=By Zone  │
        └─────┬──────┘            └─────┬──────┘
    ┌────────────────┐          ┌──────────────────┐
    │ Select Device  │          │ Zone 1           │
    │ Internal SLC   │          │ 1=Disable Inputs │
    │ Internal PWR   │          │ 2=Disable Outputs│
    └────────────────┘          └──────────────────┘
```

```
                        ┌─────────────┐
                        │  MAIN MENU  │
                        └──────┬──────┘
        ┌──────────────┬───────┴────────┬────────────────┐
┌───────────────┐ ┌──────────────────┐ ┌───────────────┐ ┌───────────────┐
│ 5=System Tools│ │  6=Programming   │ │7=Data Transfer│ │   Esc=Exit    │
└───────┬───────┘ └────────┬─────────┘ └───────┬───────┘ └───────────────┘
┌────────────────┐ ┌──────────────────┐ ┌──────────────────┐
│1=SLC Tools     │ │1=LEARN Mode      │ │Select Data       │
│2=Point Control │ │2=Panel Default   │ │1=Remote Access   │
│3=Ethernet Statu│ │3=IP Settings     │ │2=E-mail Det Stat │
│4=DACT Test     │ │4=Dflt ID/Pswd    │ │3=E-mail History  │
│5=DACT Reset    │ │5=Prog ID/Pswd    │ │4=E-mail Config   │
│6=Erase History │ │Esc=Exit          │ │5=E-mail Test     │
│7=Lamp Test     │ └──────────────────┘ │6=Server Status   │
│8=App Revisions │                      │Esc=Exit          │
└────────────────┘                      └──────────────────┘

┌────────────────┐          ┌──────────────┐
│1=SLC Pinpoint  │          │1=Username    │
│2=SLC Stats     │          │2=Password    │
│3=SLC Addr Prog │          │Esc=Exit      │
└────────────────┘          └──────────────┘

┌────────────────┐
│1=Single Device │
│2=Mltp Device   │
└────────────────┘

┌──────────────────┐
│Ethernet Options  │
│1=DHCP Settings   │
│2=Default IP      │
│3=Default Gateway │
│4=Default Subnet  │
│5=Alternate IP    │
│6=Alt. Gateway    │
│7=Alt. Subnet     │
│Esc=Exit          │
└──────────────────┘
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TIP: To save time, enter the menu selection number on the keypad to select a function. For example, press "3" to select "Set Date/Time" from the Main Menu.

Normal Standby	The green AC POWER LED will be illuminated and the user defined message on the LCD will be displayed. If the AC power is removed for more than 5 seconds, the green AC power LED will extinguish.
Acknowledging	Off normal events are acknowledged by pressing the ACK key while reviewing events. After all events have been acknowledged, the buzzer will deactivate and the associated LED will stop flashing and remain on continuously. During Positive Alarm Sequence operation the "ACK" key must be pressed within 15 seconds of the alarm initiation to activate the investigation timer.
Alarm Condition	The red ALARM LED will be illuminated anytime an alarm is occurring in the system. The LCD will display the number of inputs in alarm, and the buzzer will be activated. The buzzer will remain active until all alarms have been acknowledged, or until the Silence key is pressed.
Silencing Alarm	When the system is in Alarm, the notification circuits (strobes and horns) can be shut off by pushing the SILENCE button.
Resetting Alarm	After the condition that caused the alarm has been identified and corrected, the system may be reset to the Normal Standby by pressing the RESET button.
Supervisory Condition	When a supervisory condition is detected, the amber SUPERVISORY LED will illuminate and the buzzer will sound. The LCD display will indicate the number of supervisory events that are active. The local buzzer will sound until all supervisory events have been acknowledged.
Restoring Supervisory Condition	If the Supervisory condition is non-latching, once the device is restored to the normal condition, the supervisory event will clear. If the supervisory condition is latching, the device that was activated must be restored and the RESET pressed.
Trouble Condition	When a fault condition occurs, the amber TROUBLE LED will illuminate and the local buzzer will sound until the fault is removed or the ACK button is pressed acknowledging the trouble condition. If the buzzer is acknowledged and the fault is not removed within 24 hours, the buzzer will resound.
Silencing Trouble(s)	When a trouble is occurring, the local buzzer will sound until either all troubles have been acknowledged or the SILENCE button is pressed.
Ground Fault	When a conductor contacts and earth ground, the amber EARTH FAULT LED will illuminate and the LCD display will provide further information of where the fault is located.
Pre-Release (Releasing Panels Only)	The amber Pre-Release LED will illuminate when the system is in a count down timer for an agent release. Additionally, pre-release events and countdown timers are displayed on the LCD.
Release (Releasing Panels Only)	The red Release LED will illuminate when a release condition is active. Additionally, release events will be displayed on the LCD.
Agent Release Abort (Releasing Panels Only)	If the system is being used as an agent releasing panel and a pre-discharge timer is programmed, the release may be aborted by pressing the abort switch. For ULI installations, pushing the Abort will allow the timer to countdown until 10 seconds and then halt. Releasing and reactivating the Abort will set the timer to 10 seconds.
Testing and Maintenance	Test this system monthly or more frequently as required by the AHJ. Before conducting any testing contact the building personnel and the monitoring facility as applicable. When testing a system configured for releasing, activate the releasing disconnect switch to prevent accidental discharge of a suppression system. Test the circuits as outlined in the Installation Manual. Test in accordance with NFPA 72 Inspection, Testing and Maintenance Chapter(s) and any local requirements. The batteries should be marked with the date of installation and replaced every four years or sooner if battery trouble occurs. Batteries should be checked with a tester acceptable to the AHJ such as a Stone Technologies model STC612A or equivalent. In case of a fuse replacement, refer to the Installation Manual for the proper rating. Contact the agency below for service or operational questions.

For service, contact:

Name: —————————————————————

Company: ————————————————————

Address: ————————————————————

Telephone: ————————————————————

Frame and display instructions adjacent to the fire alarm panel.

5409071–Rev B