ALLEGION™

VON DUPRIN®

Guide to selecting a power supply

The PS900 Series provides a variety of flexible options allowing you to design custom solutions to address a broader range of applications. This brief guide will help you configure the proper solution based on the unique characteristics of your opening. If at any point in the system design or installation process you need assistance, you can turn to the security and safety consultants at Allegion for support.

1. Sizing a supply

Simple as they may seem, power supplies play a critical role in your access control system. They protect devices downstream by providing filtered and regulated power. To begin with you must determine the number of devices that will be connected to the power supply and the type of device - electric strikes, electromagnetic locks, electrified mechanical locks, exit devices, automatic operators or accessories such as pushbuttons. Each type of device has specific current demands. For example, high in-rush exit devices pull a significant current to retract or unlock the device and then drop to a lower holding current. If a device has an in-rush current you also need to determine how long the in-rush current lasts.

Power supplies convert high voltage AC power into the low voltage DC outputs required by most access control devices. Begin by checking the input voltage to ensure that it is compatible with your buildings source AC power. The PS900 Series, for example, features a universal 120-240 VAC input. All devices fed from a power supply must accept the same output voltage – typically 12 VDC or 24 VDC. To calculate the total load, add the peak current draw of all devices in the system to determine the required amperage of the supply.

Quick survey

Gather the following information to determine the necessary size of the power supply:

- ☐ Number of devices
- ☐ Type of devices
- ☐ In-rush current requirements
- ☐ Duration of in-rush current

Sizing a supply

Calculate the peak current draw of all devices in the system to determine the required amperage of the supply.

- **PS902** - up to 2 amps
- **PS904** - up to 4 amps
- **PS906** - up to 6 amps

	Allegion product	Current draw	Voltage
Card readers/ Biometrics	PR10	110 mA	Linear: 5 - 16VDC
	SM10	195 mA	Linear: 5 - 16VDC
	MT11	170 mA	Linear: 5 - 16VDC
	MT15	200 mA	Linear: 5 - 16VDC
	MTK15	230 mA	Linear: 5 - 16VDC
	HandKey II	12V AC/DC - 580 mA 24V AC/DC - 300 mA	12 to 24VDC 12 to 24VAC 50-60Hz
Electronic locks	AD-300	250 mA	12VDC or 24VDC
	PIM400-TD2	250 mA	12VDC or 24VDC
	PIM400-485	250 mA	12VDC or 24VDC
	PIB300-2D	250 mA	12VDC or 24VDC
	PIM400-1501	400 mA	PoE 802.3af compliant power injector
	WRI400	500 mA	12VDC or 24VDC
	REPTR400	500 mA	12VDC or 24VDC
	ECK/GCK400	500 mA	12VDC or 24VDC
	CT5000	250 mA	12VDC or 24VDC
Electrified mechanical devices	ND Series	24VAC - 350 mA 24VDC - 150 mA	24VDC or 24 VAC
	L Series	Peak - 1.3 A, 5 - 10 second intervals Holding - 135mA between peak intervals	24VDC or 24 VAC
	QEL	1.4 A inrush (0.5 sec) 0.14 A Holding 2.0 A calibration	24VDC
	E996L 98/99 Series trim	0.22 A	24VDC
	E360L 33A/35A Series trim	.50 A	24VDC
	DE5101	24VDC - 300mA without maglocks	24VDC
	E7500	12VDC - 600 mA 24VDC - 300 mA	12VDC or 24VDC
	EL[1]	16 A inrush (0.5 sec) 0.3 A holding current	24VDC
	Chexit/RCM[1]	16 A inrush (arming 0.5 sec) 0.4 A continuous	24VDC
Electric strikes	5100 Series	12VDC - 0.38 A 24VDC - 0.19 A	12VDC or 24VDC field selectable
	6100 Series	12VDC - 0.6 A 24VDC - 0.33 A	12VDC or 24VDC
	6200 Series	12VDC - 0.6 A 24VDC - 0.33 A	24VDC standard 12VDC and AC optional
	6300 Series	12VDC - 0.5 A 24VDC - 0.24 A	12VDC or 24VDC field selectable
	6400 Series	12VDC - 0.375 A 24VDC - 0.190 A	12VDC or 24VDC field selectable
	4200 Series	12VDC - 0.20 A 24VDC - 0.10 A 30VDC - 0.20 A	12VDC or 24VDC field selectable

	Allegion product	Current draw	Voltage
Electromagnetic locks	M420/M450	12VDC - 0.75 A 24VDC - 0.38 A	12VDC or 24VDC
	M490	12VDC - 0.65 A 24VDC - 0.35 A	12VDC or 24VDC
	40 70 72	12VDC - .32 A 24VDC - 0.15 A 12 VDC - 0.25 A 24VDC - 0.12 A 12VDC - 0.50 A 24VDC - 0.25 A	12VDC or 24 VDC
	320M	12VDC - 0.45 A 24VDC - 0.23 A	12VDC or 24VDC
	GF3000	12VDC - 0.90 A 24VDC - 0.45 A	12VDC or 24VDC
	390RFK	12VDC - 0.65 A 24VDC - 0.45 A	12VDC or 24VDC

Note:

- All devices fed from a power supply must accept the same output voltage.
- Battery powered devices not included in above reference table. Please refer to data sheets for more information.

2. Choosing option boards

Check for fire door labels on the door and frame. If an opening is fire rated code requires that the door have positive latching, which fail-secure hardware provides.

- Fail-secure hardware is locked when power is removed. Power is applied to unlock the door.
- For applications, such as stairwell re-entry doors, where access is required upon fire alarm, fail-safe hardware is applied. Fail-safe hardware is unlocked when power is removed. Power is applied to lock the door.

The PS900 Series offers the 900-FA option board which cuts power to downstream devices when the fire alarm is activated to allow for fail-safe/fail-secure conditions. For the PS902 the 900-FA board can be connected directly to the main printed circuit board (PCB) on the supply. For the rest of the PS900 Series power supplies the 900-FA board must be connected to another option board.

- **900-FA:** Emergency interface relay integrates with fire alarm and is used to cut power in case of emergency

Quick survey

Identify if the opening is fire rated or has special requirements, such as re-entry upon fire alarm. Then identify if it requires hardware for fail-safe, fail-secure, or both conditions upon loss of power or fire alarm. Always consult your local AHJ for requirements of the opening if it is unclear.

3. Application

The PS900 Series allows you to address a wide range of applications with options boards that can be combined and configured in countless ways. A complete operational description of the opening is essential. How many doors are there? Is logic or sequencing required?

- **900-4R:** 4 independently controlled relays to power multiple devices
- **900-2RS:** 2 relay EL panic device control board providing time delay between the firing of the outputs
- **900-4RL:** 4 relay board with integrated logic for controlling security interlocks, auto operators and time delays
- **900-8F:** 8 individually fuse protected outputs, giving the flexibility to power multiple devices and provide another layer of protection
- **900-8P:** 8 positive thermal coefficient (PTC) protected outputs

Quick survey

Provide a complete operational description of the opening.

6. Battery back up

Upon loss of building power it is important that your access control devices still function properly. The 900-BBK board provides up to four hours of backup power at the same output voltage as the power supply. There is a dedicated location on the supply for the 900-BBK board that nothing else can go on so in most cases it does not take away space from other option boards. The exception to this is the PS906. The PS906 can accommodate: a.) two option boards and a 900-BBK kit, or b.) three option boards and no 900-BBK kit.

- **900-BBK:** Battery backup kit (includes battery backup board and two 7A/hr. batteries) and provides up to four hours of backup power when cycled every 5 minutes at full load

Number of connectors	PS902[1] (2 amps)	PS904[1] (4 amps)	PS906[1] (6 amps)
Option boards	1	2	3[2]
Battery backup board	1	1	1

1 One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it must be connected to an option board.

2 If battery back-up is installed, only two additional option boards can be used.

Quick survey

Is access control still required in the event of a power outage:

☐ Yes

☐ No

About Allegion

Allegion (NYSE: ALLE) creates peace of mind by pioneering safety and security. As a $2 billion provider of security solutions for homes and businesses, Allegion employs more than 8,000 people and sells products in more than 120 countries across the world. Allegion comprises 27 global brands, including strategic brands CISA®, Interflex®, LCN®, Schlage® and Von Duprin®. For more, visit **www.allegion.com.**

aptiQ ■ LCN ■ SCHLAGE ■ STEELCRAFT ■ VON DUPRIN

ALLEGION™

010491, Rev. 09/14

www.allegion.com/us