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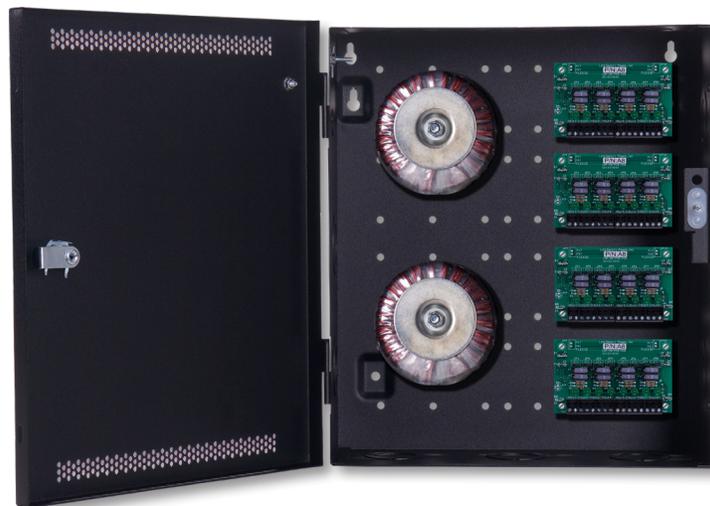
LifeSafety Power®

FlexPower

AC Power System Installation Manual



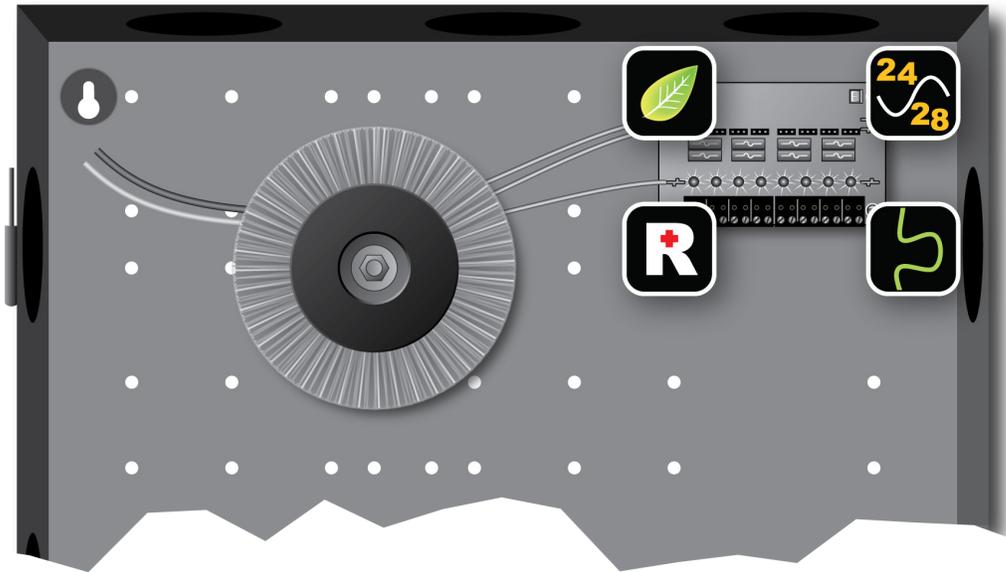
FLEXPOWER®



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FlexPower Features



FlexPower Power Management System CCTV Standard Features

FlexPower's advanced feature set provides greater product reliability, increased flexibility, shorter install time, a smaller service inventory, and an intelligent, economical solution to the problem of reliable system power.



VSelect®

Jumper selectable voltage of 24 or 28VAC by zone allows for the reduction and simplification of service inventory by eliminating the necessity of stocking units in each voltage.



FlexConnect®

The FlexPower series provides a prewired interconnection system between the power supplies and accessory boards of the power system that eliminates inter-module wiring by the field installer. Field upgrading is as simple as using common mounting footprints, predrilled mounting holes, snap-in standoffs, and pluggable wires to add additional system capability or capacity when needed.



Reliability+®

All power supplies within the FlexPower system are fully fault protected and feature conformal coating on the electronic PC boards to protect the electronics from water, dust, and other corrosive elements found in industrial settings.



GreenSmart®

All members of the FlexPower family are RoHs compliant, lead-free, and meet the new state and federal requirements for energy efficiency.



Notes and Warnings

Symbol Definitions

The following symbols are used throughout this manual.

-  This symbol is intended to alert the installer of shock hazards within the enclosure. Service should only be performed by qualified service personnel.
-  This symbol is intended to alert the installer of important information intended to help the installer avoid personal injury or property damage.

Warnings

-  Installation and service should be performed only by qualified service personnel and should conform to all local codes.
-  To reduce the risk of electric shock or fire, do not expose this equipment to rain or moisture.
-  This equipment shall be installed in a manner which prevents unintentional operation by employees, cleaning personnel, or others working in the premises, by falling objects, customers, building vibration, or similar causes.
-  This equipment is not intended for use within the patient care areas of a Health Care Facility.
-  Replace fuses only with the same type and rating as indicated in the specifications section of this manual.
-  To prevent impaired operation, ensure that all wiring is routed and secured to prevent accidental open or short circuit conditions.

Regulatory Information

The equipment discussed within this manual has been tested to the following standards:

- UL2044
- UL294
- CSA C22.2 #107.1

Conventions Used Within this Manual

Positional information (eg. top, bottom, up, down, left, right, etc.) is referenced with the board or enclosure in the the orientation shown in the illustrations in this manual.

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Section 1 - Installation and Operation

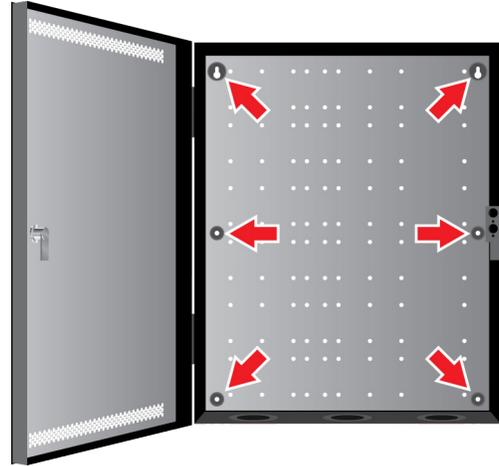
1.1 Mounting

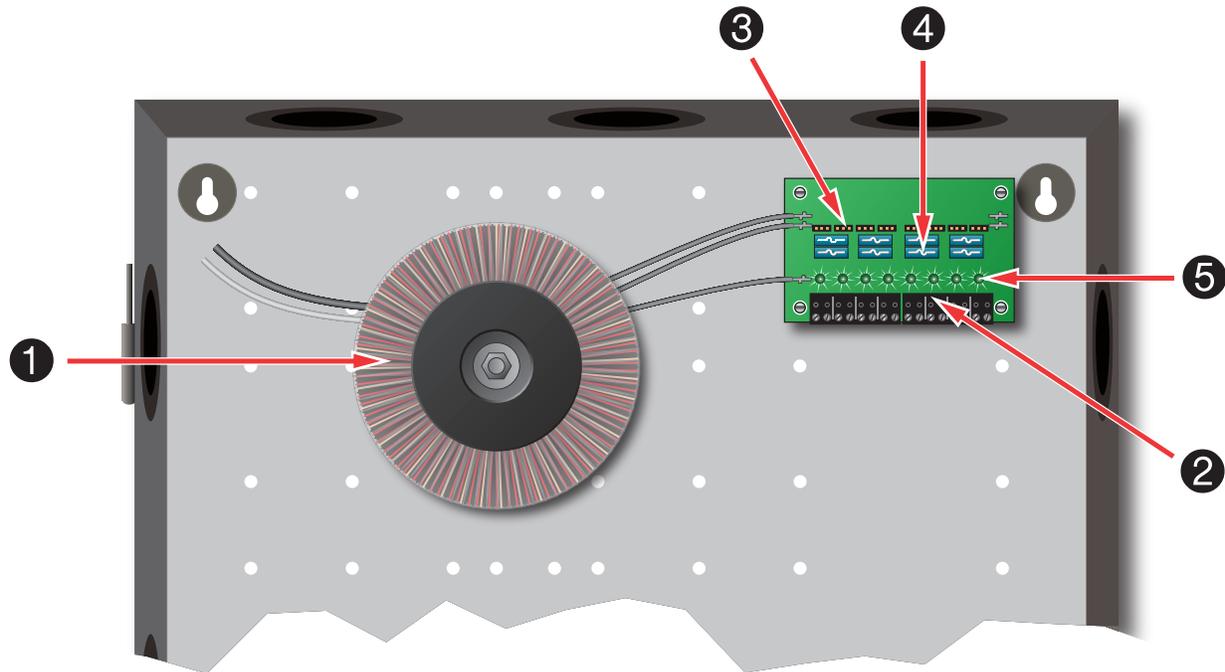
Enclosure-Level Products

Mounting an enclosure to a wall is via the two recessed keyholes and two recessed mounting holes in the back of the enclosure.

1. (Optional) Remove the enclosure's cover.
2. Locate the top keyhole mounting holes in the back of the enclosure.
3. Mark and pre-drill the locations for the keyholes in the mounting surface.
4. Partially install two fasteners appropriate for the surface on which the enclosure is being installed. Leave the heads of the fasteners approximately $\frac{1}{4}$ " out from the surface. Minimum fastener size should be #10 or larger.
5. Hang the enclosure on the two fasteners and mark the locations of the two bottom mounting holes.
6. Remove the enclosure and pre-drill the locations for the two bottom mounting holes.
7. Re-hang the enclosure on the top mounting fasteners, start the bottom two fasteners and tighten all fasteners.
8. Reinstall the enclosure's cover, if removed in step 1.

 It is the installer's responsibility to determine the appropriate fastening system for use with the surface to which the enclosure is being mounted.





1.2 Connections and Setup Ensure all power is disconnected before wiring.

1 AC Input (J9)

The primary AC input for the FPA Series power supplies. Multi-transformer supplies should have all transformer primaries connected together then connect to the AC Line. Input must be 120VAC 60Hz.

- White - Neutral
- Black - Hot
- Green/Yellow - Earth Ground

 Always connect Earth Ground first and remove last

2 A8(P) Board Zone Outputs

The zone outputs on the A8 boards distribute the transformer power to the devices to be powered. These terminal strips are removable and accept wire sizes from AWG14 - AWG22. Phasing is indicated on the PC Board.

3 Output Selection Jumpers (JP1 - JP8)

These jumpers select which voltage buss input is selected for the output. Jumper numbers correspond with the zone number (eg. JP1 is the jumper for OUT1). Possible settings are as follows:

- Position 2 (Left) - 28VAC (18V for 16.5/18V FPA models)
- Position 1 (Right) - 24VAC (16.5V for 16.5/18V FPA models)
- Removed - Disable Output

4 Output Fuses (F1 - F8) - Optional

When using the fused version of the A8, these are the fuses for each zone output. Fuse numbers correspond with the zone number (eg. F1 is the fuse for OUT1). When using the PTC version of the A8, the fuse will be replaced with a soldered-in PTC.

5 Output LEDs (D1 - A8) - Green

These LEDs indicate the availability of voltage on a zone's output. When voltage is available on the output terminals, the LED is lit. LED numbers correspond with the zone number (eg. D1 is the LED for OUT1).

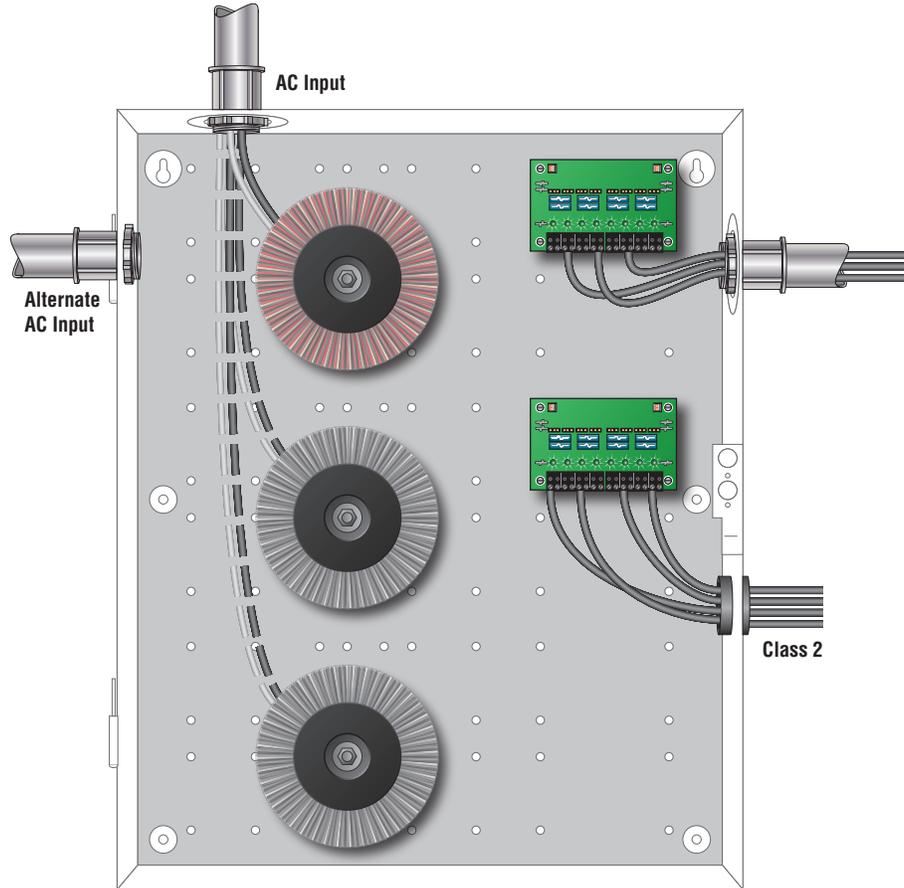


1.2.1 Transformer Secondary Wire Colors

FPA 100/150/300A Winding 1					
	Brown	Blue		Orange	
	Common	Voltage	Current	Voltage	Current
FPA100A	0V	24V	4.17A	28V	3.57A
FPA150A	0V	24V	6.25A	28V	5.4A
FPA300A	0V	24V	12.5A	28V	10.7A

FPA 200A Winding 1					
	Brown	Yellow		Green	
	Common	Voltage	Current	Voltage	Current
FPA200A	0V	16.5V	6.06	18V	5.56A

FPA200A Winding 2					
	Black	White		Blue	
	Common	Voltage	Current	Voltage	Current
	0V	16.5V	6.06	18V	5.56A



1.3 Typical Installation & Wire Routing

The drawing above shows a typical installation. Actual configuration and wire routing will vary based on the components installed in your system. The following guidelines should be followed for installation.

- Class 2 Power limited wiring must be separated from non-power limited wiring by a minimum of 1/4 inch and must use separate knockouts.
- AC Input Power must enter the enclosure via one of the 3/4" single knockouts
- The installation and all wiring methods shall be in accordance with ANSI/NFPA70 and all local codes.
- For Canadian Installations - For permanently connected equipment, a readily accessible disconnect device shall be incorporated external to the equipment. Output circuits not connected to removable terminal strips shall also utilize a readily accessible disconnect device.
- Any wiring passing through knockouts in the bottom or top surfaces of the enclosure must be enclosed in rigid or flexible metal conduit.



1.4 Power-Up and Basic System Verification Checklist

- 1. Ensure proper configuration of all jumpers.
- 2. Apply AC power to the FPA power supply.
- 3. Ensure all green Zone LEDs are lit.
- 4. Verify zone output voltage with a meter.
 - a. If the zone's jumper is set in position 1 , the voltage should be approximately 24VAC
 - b. If the zone's jumper is set in position 2, the voltage should be approximately 28VAC

Note that the exact voltage will vary with the AC line voltage and loading

Section 2 - Troubleshooting and Maintenance

2.1 Troubleshooting Chart

Symptom	Possible Problem	Information / Possible Solution
No voltage on ALL Zones	AC Input voltage missing	Verify that 120VAC is present on the input of the transformer
	Wire disconnected	Verify that all wires are connected between the transformer and the A8 board(s) in the system. Ensure that all crimp connections are secure.
	Transformer problem	Verify that 24 and 28V (or 16.5 and 18V for 16.5/18V FPA Models) are being output from the transformer. If not, the transformer's internal protection may have opened. Contact LifeSafety Power.
	A8 Board Problem	Verify all jumpers and fuses are in place and intact. Contact Life-Safety Power.
Incorrect voltage out of zone	Zone jumper set incorrectly	Verify the proper setting of the zone jumper
	AC Input voltage incorrect	Verify AC input is 120VAC
	Improper wiring between transformer and A8 board(s)	Verify the proper wiring between the transformer and A8 boards. Contact LifeSafety Power for assistance.

2.2 Maintenance Instructions

The following are the maintenance instructions for the FPA Series power supply system.

- Disconnect AC power prior to servicing
- Verify the integrity of all fuses (if used) and replace as necessary using the fuse ratings supplied in the Specifications section of this manual.
- Verify that all output voltages are within range as specified in the Specifications section of this document

Section 3 - Specifications

3.1 Electrical Specifications

FPA Series Power Supplies

Specification		FPA100A	FPA150A	FPA300A	FPA600A	FPA900A	FPA200A
AC Input	Voltage	120VAC ±15% at 60Hz					
	Power	120 Watts	180 Watts	360 Watts	720 Watts	1080 Watts	240 Watts
Output	Voltage	24/28VAC	24/28VAC	24/28VAC	24/28VAC	24/28VAC	16.5/18VAC
	Total Current	4.1/3.5A	6.2/5.3A	12.5/10.7A	25/21.4A	37.5/32.1A	12/11A
	Total Power	100 Watts	150 Watts	300 Watts	600 Watts	900 Watts	200 Watts
	Current/Zone	With A8 3A/zone max With A8P 2.5A/zone max					
Fuse Ratings	A8	ATM 3A					
	A8P	N/A	N/A	N/A	N/A	N/A	N/A
BTU Output	BTU	68	102	204	410	612	137

3.2 Temperature Specifications

All Models

Ambient Temperature	0°C to 49°C (32°F to 120°F)
Ambient Humidity	93% at 32°C (90°F) maximum
Storage Temperature	-30°C to 70°C (-22°F to 158°F)

3.3 Mechanical Specifications

Visit <http://www.lifesafetypower.com/products/cctv-ac-power-systems> for AutoCAD files.

FPA Transformers	Size [Diameter x thickness] inches (mm)	Approximate weight
100VA	3.6 x 1.5" (91 x 38 mm)	2.70 lbs (1.22 kg)
150VA	3.6 x 1.5" (91 x 38 mm)	3.00 lbs (1.36 kg)
200VA	4.3 x 2.0" (109 x 51 mm)	4.95 lbs (2.25 kg)
300VA	4.6 x 1.9" (117 x 48 mm)	6.15 lbs (2.79 kg)

A8 / A8P Accessory

4.00 x 2.50 x 0.8" (102 x 64 x 20 mm) 0.14 lbs. (0.064 kg)

E1 Enclosure

12 x 14 x 4.5" (305 x 356 x 114 mm) 7.70 lbs. (3.49 kg) empty

E2 Enclosure

16 x 20 x 4.5" (406 x 508 x 114 mm) 12.30 lbs. (5.58 kg) empty

E5 Enclosure

11.25 x 8.63 x 3" (286 x 219 x 76 mm) 3.45 lbs. (1.56 kg) empty

3.4 Replacement Parts

All Models

Part #	Description
A50-001	Replacement Transformer – 150VA, 24/28VAC Secondary, 120VAC Primary, Toroid
A50-002	Replacement Transformer – 300VA, 24/28VAC Secondary, 120VAC Primary, Toroid
A50-003	Replacement Transformer – 100VA, 24/28VAC Secondary, 120VAC Primary, Toroid
A50-004	Replacement Transformer – 200VA, 16.5/18VAC Secondary, 120VAC Primary, Toroid
A02-009	A8 Simple AC Distribution – Replacement Board
A02-010	A8P Simple AC Distribution (Class 2) – Replacement Board
A05-003	Accessory Board Cable Set – Short
A05-004	Accessory Board Cable Set – Long
A05-201	ATM-3 Fuse – Bag of 25
A05-301	Standoffs – Bag of 25
A05-302	Camlock Set
A11-002	NLR - NetLink network communication kit for remote output reset