829767-00

Power Supply

LP150, LP250
LP150B, LP250B
LP250RDB4

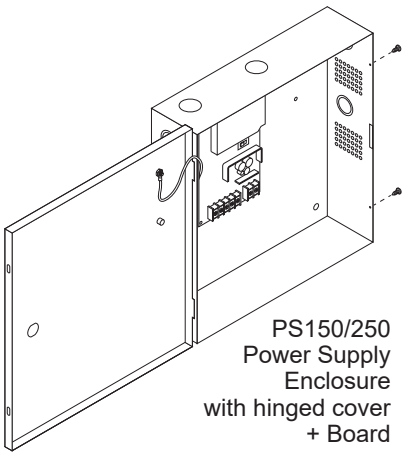
LOCKNETICS™

Installation Instructions

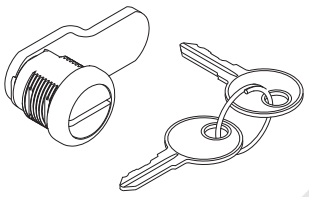
The LP150/LP250 is a power-limited power supply and battery charger that will convert 120 VAC / 60Hz input into field-selectable 12 VDC or 24 VDC Class 2 rated outputs (one continuous, one switchable). It is intended for use in applications with UL listing requirements (see specifications below for specific listings).

This instruction covers:

LP150	PS cabinet + board (1.5A), battery wire kit, keylock
LP250	PS cabinet + board (2.5A), battery wire kit, keylock
LP250RDB4	PS cabinet + board (2.5A), battery wire kit, keylock, RDB4 board *



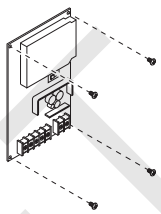
PS150/250 Power Supply Enclosure with hinged cover + Board



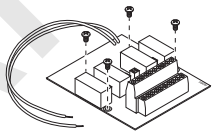
Keylock

Battery Wire Kit

LP150B	PS board only (1.5A), 4 mounting screws
LP250B	PS board only (2.5A), 4 mounting screws



PS board



* RDB4 board included with LP250RDB4 only and is covered in separate instruction

PS150/250 Specifications:

Input	120 VAC, 1A, 60Hz
Output	LP150: 12 VDC (13.2V nominal) or 24 VDC (26.4V nominal), 1.5A, Class 2 rated LP250 (LP250RDB4): 12 VDC (13.2V nominal) or 24 VDC (26.4V nominal), 2.5A, Class 2 rated
Output Protection	DC OUT and CONTROL OUT are protected from overload or shorts via self-resetting electronic protection circuit
Battery Protection	PTC
Environment	32°-120° F (0°- 49° C), up to 85% relative humidity, indoor use only, protected area
Compliance	UL294, UL603, CSA22.2, CSFM, FCC
Battery Backup	Requires 12V, 7AH max. rechargeable sealed lead acid battery: (1) for 12V, (2) for 24V output. Battery maximum dimensions: 3-3/4” H x 6” W x 3” D LP150 rated UL294, level III, 2 hour backup LP250 rated UL294, level II, 30 min. backup See typical backup times in Section 2 See Section 8 for maintenance of battery
Control Input / Output	Input: Normally closed, requires dry contact rated at 24 VDC, 10mA Output: Powered NC/NO contacts rated at 24 VDC, 2.5A
AC Status	Indicator: Green LED Relay contacts: NO/NC contacts rated at 24 VDC, 1A
DC Output Status	Indicator: Red LED
Battery Status	Indicator: Red LED Relay contacts: NO/NC contacts rated at 24 VDC, 1A
Enclosure	13” H x 12-5/8” W x 3-1/4” D (8 knockouts, 1/2” or 3/4”)

Definitions:

⊣⊢	Normally closed contacts (NC)	FACP -	Fire Alarm Control Panel
⊣ ⊢	Normally open contacts (NO)	ACC -	Access Control Contacts
FSE -	Fail secure (needs power to lock)	FS -	Fail safe (needs power to unlock)

See Section 10 for an explanation of the Warnings and Cautions used in this booklet.

1 Installation Overview

Wiring methods shall be applied in accordance with the National Electric Code/NFPA 70/NFPA 72/ANSI, and with all local codes and authorities having jurisdiction.

⚠ WARNING

To avoid risk of electric shock, turn off AC power before installing or servicing LP150/LP250 power supply.

1. Mount unit in a protected area per Section 2.
2. Select voltage (12 or 24 VDC) per Section 3.

3. Connect AC power per Section 3.
   - Connect the earth ground to the green/yellow cabinet wire and line (L) and neutral (N) to the appropriate terminals on the AC terminal block.

ⓘ Measure output voltage before connecting devices to prevent damage.

4. Disconnect AC power and finish all wiring per Sections 4 and 6.

5. Install battery backup (if required) per Sections 2 and 3.

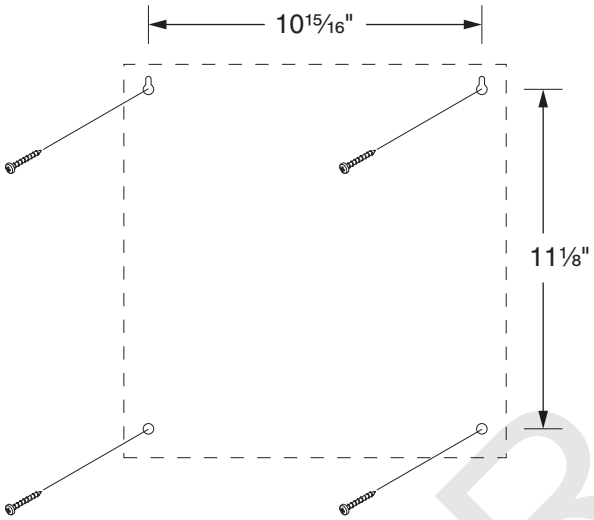
ⓘ If AC input goes off and battery backup is not being used, all devices connected to the power supply will be unpowered.

6. AC status may be required for Battery Backup systems (Section 3).
7. Secure cover with screws or keylock when complete per Section 7.
8. For maintenance and troubleshooting, see Sections 8 and 9.

⚠ CAUTION

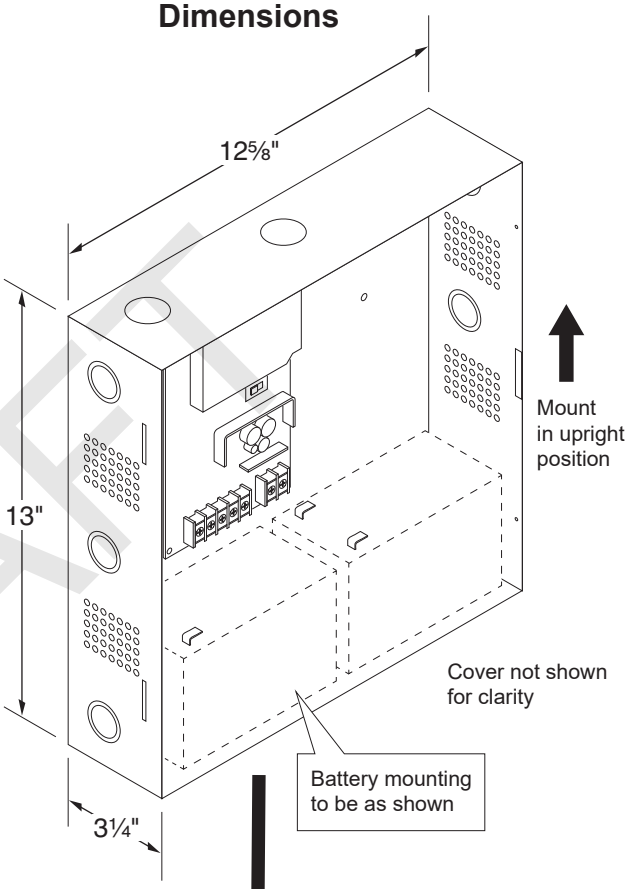
Product intended for indoor use only and within the temperature range specified. Mount unit in a protected area. Do not install in locations with exposure to rain or water.

Mounting Hole Dimensions



Enclosure mounting screws not provided

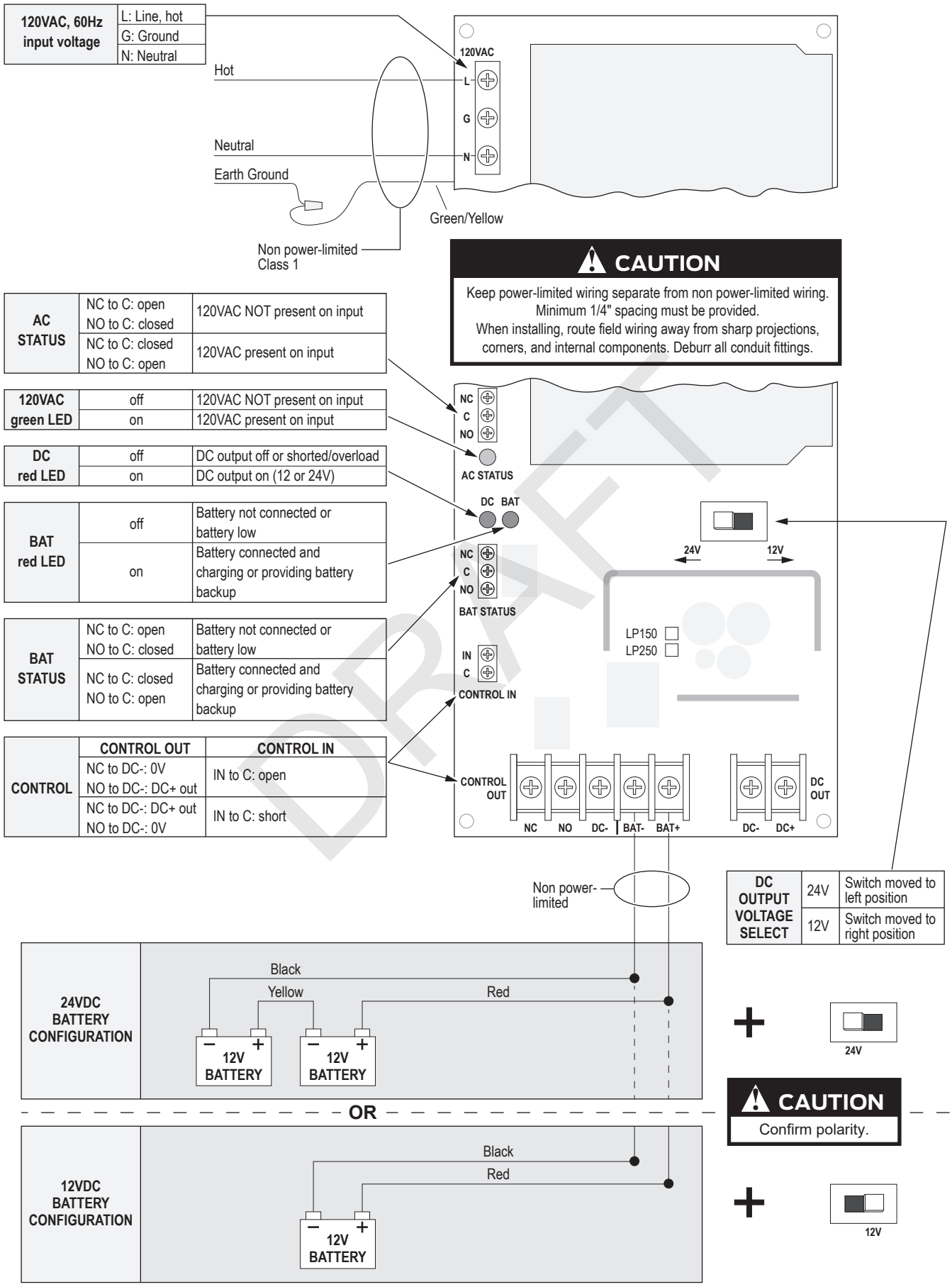
Enclosure Dimensions



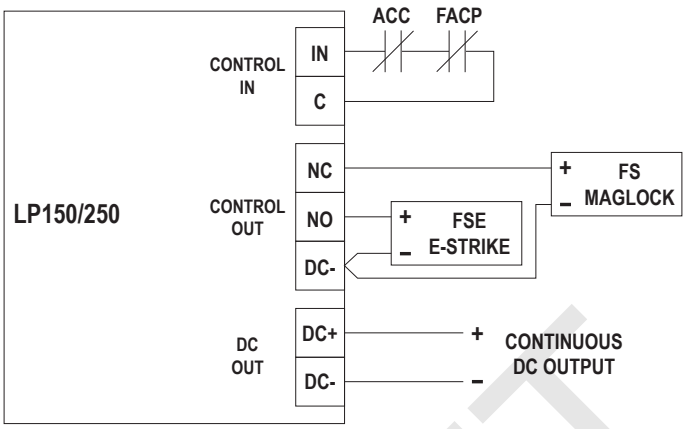
Battery Backup Time

LOAD CURRENT (AMPS)	BACKUP TIME (HOURS)	
	LP150	LP250
0.2	XX	XX
0.5	XX	XX
1.5	XX	XX
2.5		XX

ⓘ Battery backup time based on a charging time of 48 hours.

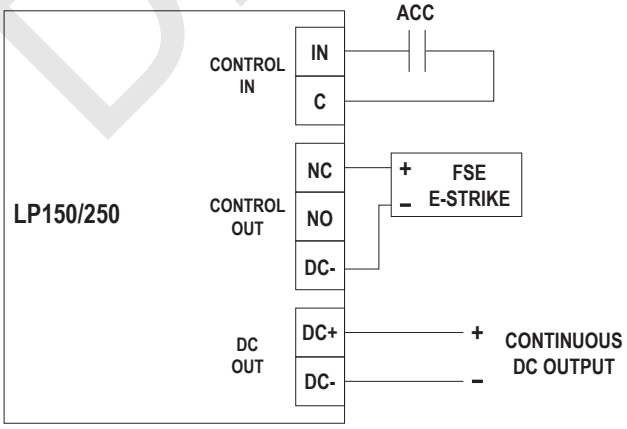

120VAC, 60Hz input voltage
L: Line, hot
G: Ground
N: Neutral
Hot
Neutral
Earth Ground
Green/Yellow
Non power-limited Class 1
120VAC
L
G
N
CAUTION
Keep power-limited wiring separate from non power-limited wiring. Minimum 1/4" spacing must be provided.
When installing, route field wiring away from sharp projections, corners, and internal components. Deburr all conduit fittings.
AC STATUS
NC to C: open
NO to C: closed
120VAC NOT present on input
NC to C: closed
NO to C: open
120VAC present on input
120VAC green LED
off
120VAC NOT present on input
on
120VAC present on input
DC red LED
off
DC output off or shorted/overload
on
DC output on (12 or 24V)
BAT red LED
off
Battery not connected or battery low
on
Battery connected and charging or providing battery backup
BAT STATUS
NC to C: open
NO to C: closed
Battery not connected or battery low
NC to C: closed
NO to C: open
Battery connected and charging or providing battery backup
CONTROL
CONTROL OUT
CONTROL IN
NC to DC-: 0V
NO to DC-: DC+ out
IN to C: open
NC to DC-: DC+ out
NO to DC-: 0V
IN to C: short
NC
C
NO
AC STATUS
DC BAT
BAT STATUS
IN
C
CONTROL IN
24V
12V
LP150
LP250
CONTROL OUT
NC NO DC- BAT- BAT+
DC OUT
DC- DC+
Non power-limited
DC OUTPUT VOLTAGE SELECT
24V
Switch moved to left position
12V
Switch moved to right position
24VDC BATTERY CONFIGURATION
Black
Yellow
Red
12V BATTERY
12V BATTERY
24V
OR
CAUTION
Confirm polarity.
12VDC BATTERY CONFIGURATION
Black
Red
12V BATTERY
12V

FS & FSE device connected to PS board with FACP override



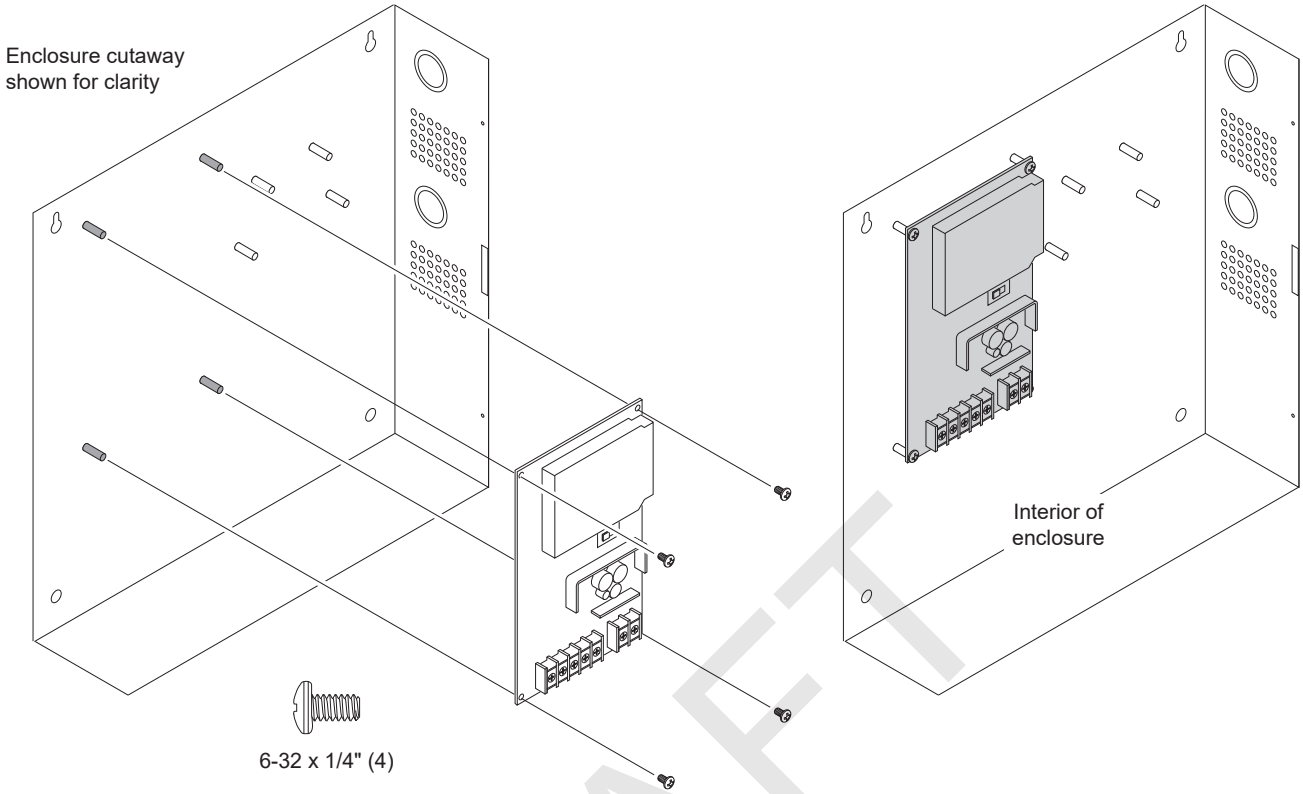
Operation:
1. CONTROL IN controls the operation of devices connected to the NO or NC terminals.
2. Opening of the FACP contacts will unpower the CONTROL OUT NC contacts and power the NO contacts.
3. DC OUT is always powered regardless of the state of the FACP contacts.

FSE device using open input control contacts



Operation:
1. CONTROL IN controls the operation of the strike connected to the NC terminal.
2. Closing the ACC contacts will apply power to the FSE strike to unlock it.

5 PS150B and PS250B Installation



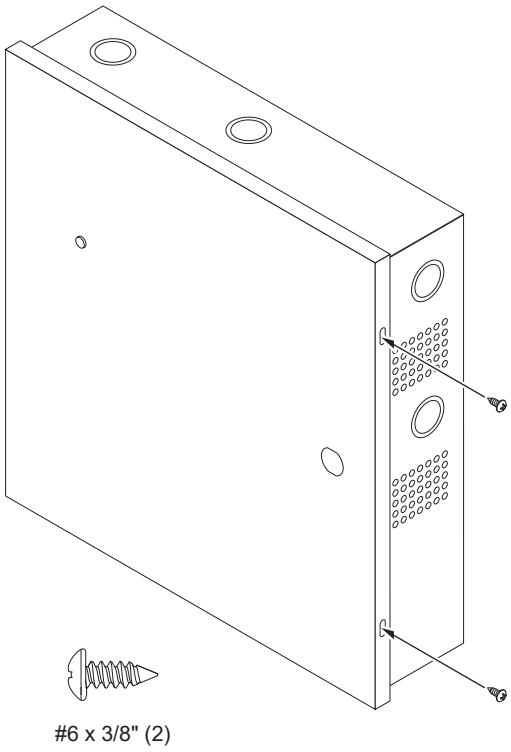
6 Wire run lengths

- Use the following table to estimate the gauge of wire required for the application.
- Wire length based on 15% voltage drop at 12 or 24V using stranded copper wire.
- The wire gauge listed is a minimum. The gauge can be increased if desired.
- Distance = total one way wiring distance between power supply and powered device (includes both power wires).

DISTANCE (FEET)	WIRE GAUGE (AWG)									
100	24	22	18	16	14	24	24	22	20	18
200	22	18	16	14	12	24	22	18	16	14
300	20	16	14	12		24	20	16	14	12
400	20	16	14			22	18	16	14	12
500	18	14	12			22	18	14	12	
	0.2	0.5	1.0	1.5	2.5	0.2	0.5	1.0	1.5	2.5
	LOAD CURRENT AT 12V (AMPS)					LOAD CURRENT AT 24V (AMPS)				

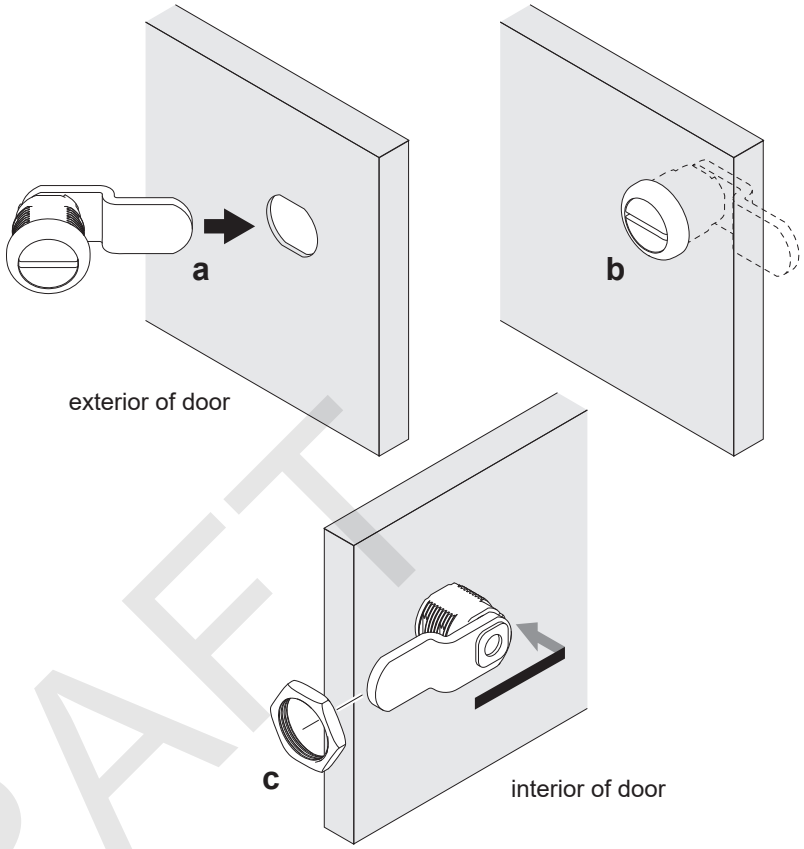
7 Secure enclosure door

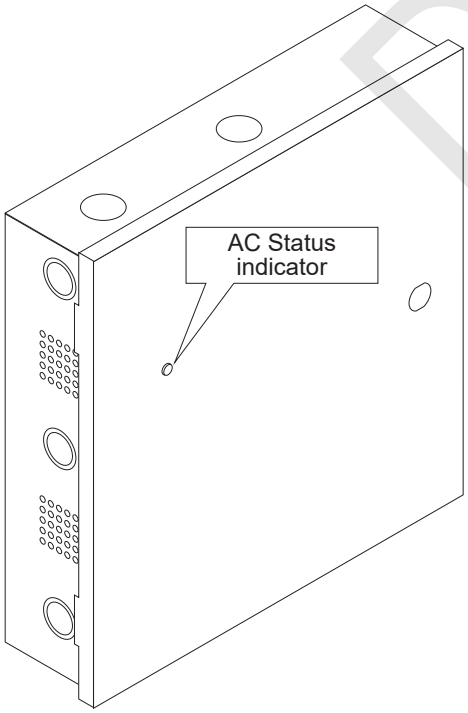
If No Keylock
Enclosure will be secured with 2 screws as shown (done as last step)



#6 x 3/8" (2)

If Keylock
Remove knockout and insert key cylinder and secure with nut as shown





8 Maintenance

Unit should be tested at least once a year for proper operation as follows:

Voltage Output:

- Verify the proper DC output voltage by measuring the DC+ and DC- terminals.

Fire Alarm Release (if used)**:**

- Verify proper operation by opening the wiring to the CONTROL IN input. Confirm that the locks controlled by the CONTROL OUT output unlocked properly.

Battery (if used)**:**

- Verify the proper charge voltage (between 26.3 - 26.5 VDC) on the battery terminals by measuring the BAT+ and BAT- terminals.
- Batteries should be changed every 4 years. Record date of install inside the cabinet to track time of service.

9 Troubleshooting

Refer to Section 3 for LED status of the AC input, DC output, and Battery to determine the cause for any abnormal condition. Each LED has the definition of its ON or OFF state.

10 Warnings and Cautions

Warnings look like this:

WARNING

Warnings indicate potentially hazardous conditions, which if not avoided or corrected, may cause death or serious injury.

Cautions look like this:

CAUTION

Cautions indicate potentially hazardous conditions, which if not avoided or corrected, may cause minor or moderate injury. Cautions may also warn against unsafe practices.

Notices look like this:

Notices indicate a condition that may cause equipment or property damage only.

Directions look like this:

Directions identify a step that may or may not apply to your product configuration. It also may direct you to another part of the instruction.

Customer Service

1-877-671-7011 www.allegion.com/us

ALLEGION

829767-00 Rev. 01/19-a-12