AL400X220 Series
Power Supply/Charger

Models Include:

AL400X220
- Single Output.

AL400PD4220
- Four (4) Fuse Protected Outputs.

AL400PD8220
- Eight (8) Fuse Protected Outputs.

AL400XPD16220
- Sixteen (16) Fuse Protected Outputs.

AL400PD4CB220
- Four (4) PTC Protected Outputs.

AL400PD8CB220
- Eight (8) PTC Protected Outputs.

AL400XPD16CB220
- Sixteen (16) PTC Protected Outputs.

Installation Guide

For a red enclosure add an "R" suffix to the part #, e.g. AL400PD8R220
For a larger enclosure add an "X" suffix to the part #, e.g. AL400XPD8220

CE

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Rev. 102512

Installing Company: _____ Service Rep. Name: _____

Address: _____ Phone #: _____

Overview:

Altronix AL400X220 is a power supply that converts a nominal 220VAC (working range 198VAC-256VAC), 50/60Hz input to a 12VDC or 24VDC regulating output (see specifications below). The AL400X is the base power supply unit for the multi-output power supply/charger series: AL400PD4220, AL400PD4CB220, AL400PD8220, AL400PD8CB220, AL400XPD16220, AL400XPD16CB220 (Refer to **AL400X220 Series Power Supply Configuration Reference Chart** below).

AL400X220 Series Power Supply Configuration Reference Chart:

Altronix Model Number	Accessory Power Distribution Module(s)	Number of Outputs	Fused Outputs	PTC Outputs (auto-resettable)	12VDC Total Output Current (A)	24VDC Total Output Current (A)	Individual Output Rating (A)	Power Supply Input Fuse Rating	Power Supply Battery Fuse Rating	Accommodates Stand-by Batteries
AL400X220	–	1	–	–	4A	3A	4A (12VDC) 3A (24VDC)	5A/ 250V	15A/ 32V	Two (2) 12VDC/7AH
AL400XX220										Two (2) 12VDC/12AH
AL400PD4220	PD4	4	✓	–			3.5A (12VDC) 3A (24VDC)			Two (2) 12VDC/7AH
AL400XPD4220										Two (2) 12VDC/12AH
AL400PD4CB220	PD4CB		–	✓			2.5A			Two (2) 12VDC/7AH
AL400XPD4CB220										Two (2) 12VDC/12AH
AL400PD8220	PD8	8	✓	–			3.5A (12VDC) 3A (24VDC)			Two (2) 12VDC/7AH
AL400XPD8220										Two (2) 12VDC/12AH
AL400PD8CB220	PD8CB		–	✓			2.5A			Two (2) 12VDC/7AH
AL400XPD8CB220										Two (2) 12VDC/12AH
AL400XPD16220	Two PD8	16	✓	–			3.5A (12VDC) 3A (24VDC)			Two (2) 12VDC/12AH
AL400XPD16CB220	Two PD8CB		–	✓			2.5A			Two (2) 12VDC/12AH

Do not exceed total output rating of 4A @ 12VDC or 3A @ 24VDC per unit.

Specifications:

Agency Listing:
- CE European Conformity.

Input:
- Input 220VAC (working range 198 - 256VAC), 50/60Hz, 1.7A.
- AC input and DC output LED indicators.

Output:
- 12VDC or 24VDC selectable output.
- 4A total supply current at 12VDC or 3A total supply current at 24VDC.
- Filtered and electronically regulated outputs.
- Short circuit and thermal overload protection.
- Battery fuse rated at 15A/32V.

Battery Backup:
- Built-in charger for sealed lead acid or gel type batteries.
- Automatic switch over to stand-by battery when AC fails.
- Maximum charge current 0.7A.
- Zero voltage drop when switched over to battery backup.

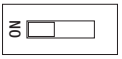
Supervision:
- AC fail supervision (form "C" contacts).
- Low battery and battery presence supervision (form "C" contacts).

Additional Features:
- Power supply, enclosure, cam lock, and battery leads.

Enclosure Dimensions:
AL400X220, AL400XR220, AL400PD4220, AL400PD4CB220, AL400PD8220, AL400PD8CB220:
13" x 12.5" x 3.25"
(330.2mm x 317.5mm x 82.6mm)
AL400XX220, AL400XPD4220, AL400XPD4CB220, AL400XPD8220, AL400XPD8CB220, AL400XPD16220, AL400XPD16CB220:
15.5" x 12.23" x 4.5"
(393.7mm x 310.6mm x 114.3mm)

Power Supply Output Specifications:

Output	Switch Position
12VDC	SW1 - ON
24VDC	SW1 - OFF



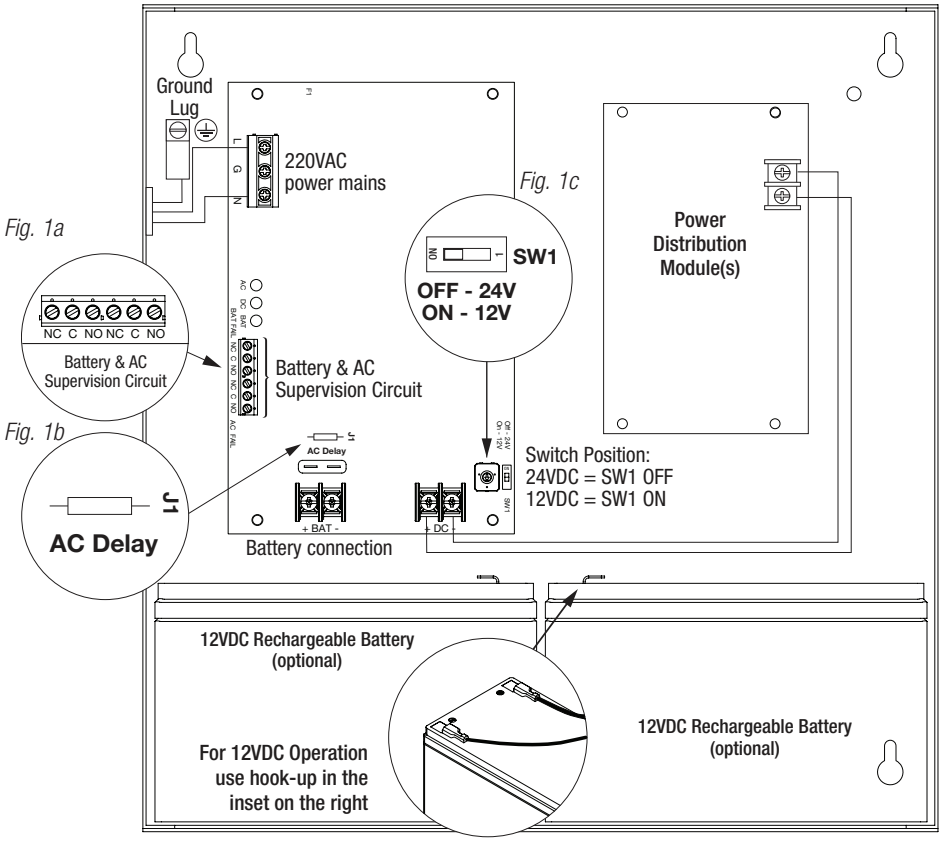
OFF - 24V
ON - 12V

Stand-by Specifications (total current shown):

Output	4 hr. of Stand-by and 5 Minutes of Alarm	24 hr. of Stand-by and 5 Minutes of Alarm	60 hr. of Stand-by and 5 Minutes of Alarm
12VDC / 40AH Battery	Stand-by = 4.0A Alarm = 4.0A	Stand-by = 1.0A Alarm = 4.0A	Stand-by = 300mA Alarm = 4.0A
24VDC / 12AH Battery	–	Stand-by = 200mA Alarm = 3.0A	–
24VDC / 40AH Battery	Stand-by = 3.0A Alarm = 3.0A	Stand-by = 1.0A Alarm = 3.0A	Stand-by = 300mA Alarm = 3.0A

Fig. 1 - **AL400X220 Series**

CAUTION: De-energize unit prior to servicing. For continued protection against risk of electric shock and fire hazard replace fuse with the same type and rating. Do not expose to rain or moisture.



CAUTION: When power supply board is set for 12VDC use only one (1) 12VDC stand-by battery. Keep power-limited wiring separate from non power-limited. Use minimum 0.25" spacing.

Installation Instructions:

Wiring methods should be in accordance with the National Electrical Code/NFPA 70/NFPA 72/ANSI, and with all local codes and authorities having jurisdiction. Product is intended for indoor use only.

1. Mount unit in the desired location. Mark and predrill holes in the wall to line up with the top two keyholes in the enclosure. Install two upper fasteners and screws in the wall with the screw heads protruding. Place the enclosure's upper keyholes over the two upper screws; level and secure. Mark the position of the lower two holes. Remove the enclosure. Drill the lower holes and install two fasteners. Place enclosure's upper keyholes over the two upper screws. Install the two lower screws and make sure to tighten all screws *(Enclosure Dimensions, pg. 7-8).*
2. Connect AC circuit (220VAC, 50/60Hz) as follows: Green branch wire connects to earth (safety) ground lug ⏚. Line and Neutral to the connector on power supply board marked [L, N] respectively *(Fig. 1, pg. 3).*
   Use 14 AWG or larger for all power connections (Battery, DC output, AC input).
   Use 22 AWG to 18 AWG for power-limited circuits (AC Fail/Low Battery reporting).
   Keep power-limited wiring separate from non power-limited wiring (220VAC 50/60Hz Input, Battery Wires). Minimum 0.25" spacing must be provided.
   CAUTION: Do not touch exposed metal parts. Shut branch circuit power before installing or servicing equipment. There are no user serviceable parts inside. Refer installation and servicing to qualified service personnel.
3. Set the unit to the desired DC output voltage by setting SW1 *(Fig. 1c, pg. 3)* to the appropriate position (**Power Supply Voltage Output Specifications Chart**, *pg. 2).*
4. Measure output voltage before connecting any devices to ensure proper operation. Improper or high voltage will damage these devices. When servicing the unit, AC mains should be removed.
5. Connect devices to be powered:
   a. For AL400X220 Power Supply: connect devices to the terminals marked [+ DC –] (*Fig. 1, pg. 3*).
   b. For other Power Distribution Models: connect devices to be powered to the terminal pairs 1 to 4 marked [1P & 1N] through [4P & 4N] (*Fig. 2a & 2b, pg. 6*) or 1 to 8 marked [1P & 1N] through [8P & 8N] *(Fig. 3a & 3b, pg. 6),* carefully observing correct polarity.
6. For Access Control applications batteries are optional. When batteries are not used, a loss of AC will result in the loss of output voltage. When the use of stand-by batteries is desired, they must be lead acid or gel type.
7. Connect appropriate signaling notification devices to AC FAIL & BAT FAIL *(Fig. 1a, pg. 3)* supervisory relay outputs.
   Note: When used in fire alarm, burglar alarm or access control applications, "AC Fail" relay should be utilized to visually indicate that AC power is on. To delay report for 6 hours cut "AC Delay" jumper *(Fig. 1b, pg. 3).*
8. Please ensure that the cover is secured with the provided key lock.

Wiring:

Use 14 AWG or larger for all power connections.
Note: Take care to keep power-limited circuits separate from non power-limited wiring (220VAC, Battery).

Maintenance:

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

Output Voltage Test:	Under normal load conditions the DC output voltage should be checked for the proper voltage level *(Power Supply Voltage Output Specifications Chart, pg. 3).*
Battery Test:	Under normal load conditions check that the battery is fully charged, check specified voltage both at the battery terminal and at the board terminals marked [+ BAT –] to ensure that there is no break in the battery connection wires.
Note:	Maximum charging current under discharges is 0.7A.
Note:	Expected battery life is 5 years; however, it is recommended changing batteries in 4 years or less if needed.

LED Diagnostics:

Power Supply Board

Red (DC)	Green (AC)	Power Supply Status
ON	ON	Normal operating condition.
ON	OFF	Loss of AC. Stand-by battery supplying power.
OFF	ON	No DC output.
OFF	OFF	Loss of AC. Discharged or no stand-by battery. No DC output.

Red (Bat)	Battery Status
ON	Normal operating condition.
OFF	Battery fail/low battery.

Power Distribution Module

Green	Power Distribution Module Status
ON	Normal operating condition.
OFF	No Power Output.

Terminal Identification:

Power Supply Board

Terminal Legend	Function/Description
L, G, N	Connect 220VAC (working range 198VAC - 256VAC), 50/60Hz to these terminals: L to Hot, N to Neutral. Do not use the [G] terminal.
+ DC –	12VDC @ 4A or 24VDC @ 3A continuous power-limited output.
AC Fail NC, C, NO	Indicates loss of AC power, e.g. connect to annunciator/alarm panel. Relay normally energized when AC power is present. Contact rating 1A @ 28VDC. AC Fail condition will report approximately within one (1) minute after loss of AC. To delay report for 6 hours cut jumper J1 on the Power Supply Board (AC trouble output delay option). If this mode is selected, the Power Supply Board must be reset by removing all power to it for 30 seconds.
Bat Fail NC, C, NO	Indicates low battery condition, e.g. connect to alarm panel. Relay normally energized when DC power is present. Contact rating 1A @ 28VDC. Low battery conditions will report approximately 21VDC (24VDC output setting) or approximately 10.5VDC (12VDC output setting). Battery presence detection will report approximately 1 minute after battery remains undetected (missing or removed).
+ BAT –	Stand-by battery connections. Maximum charge current 0.7A.

Power Distribution Module

Terminal Legend		Function/Description
PD4/PD4CB	PD8/PD8CB	
1P to 4P	1P to 8P	Positive DC power outputs.
1N to 4N	1N to 8N	Negative DC power outputs.

Power Distribution Module(s):

Fig. 2a - PD4 Power Distribution Board Fuse Protected Outputs

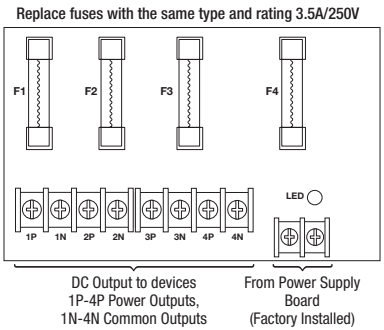


Fig. 2b - PD4CB - Power Distribution Board PTC Protected Outputs

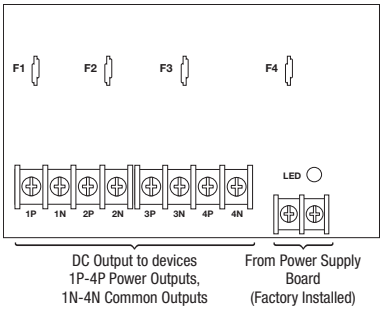


Fig. 3a - PD8 Power Distribution Board Fuse Protected Outputs

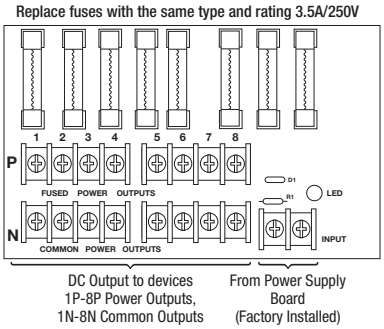
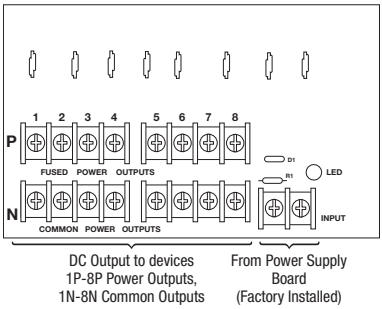


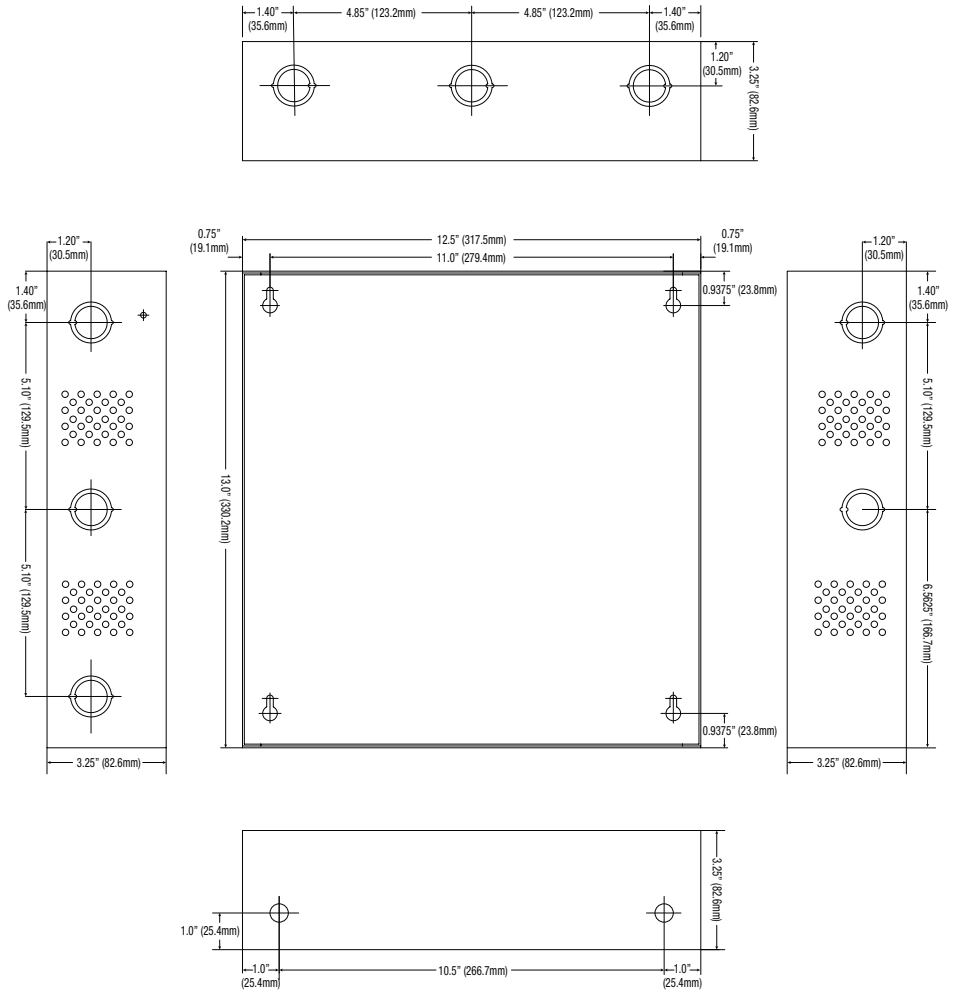
Fig. 3b - PD8CB - Power Distribution Board PTC Protected Outputs



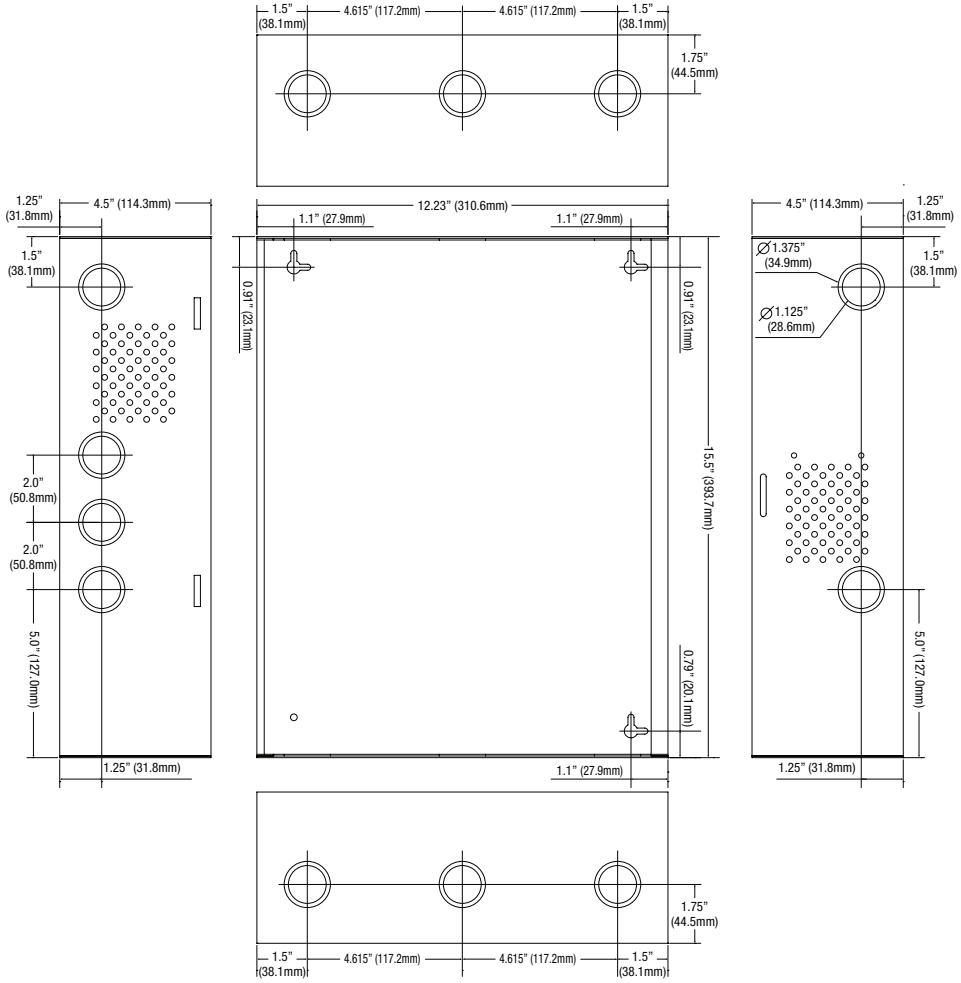
Enclosure Dimensions (BC300)**:**

AL400X220, AL400XR220, AL400PD4220, AL400PD4CB220, AL400PD8220, AL400PD8CB220

13” x 12.5” x 3.25” (330.2mm x 317.5mm x 82.6mm)



Enclosure Dimensions (BC400)**:**

AL400XX220, AL400XXR220, AL400XPD4220, AL400XPD4CB220, AL400XPD8220, AL400XPD8CB220, AL400XPD16220, AL400XPD16CB220

15.5" x 12.23" x 4.5" (393.7mm x 310.6mm x 114.3mm)