



AL400ULX Series Power Supply/Charger

Installation Guide

Models Include:

- ***AL400ULX***
 - ***Single Output***
- ***AL400ULPD4***
 - ***Four (4) Fused Outputs***
- ***AL400ULPD8***
 - ***Eight (8) Fused Outputs***
- ***AL400ULXPD16***
 - ***Sixteen (16) Fused Outputs***
- ***AL400ULPD4CB***
 - ***Four (4) PTC Outputs***
- ***AL400ULPD8CB***
 - ***Eight (8) PTC Outputs***
- ***AL400ULXPD16CB***
 - ***Sixteen (16) PTC Outputs***

For a red enclosure, add an "R" suffix to the part # e.g. AL400ULPD8R

Overview:

The AL400ULX is a power supply that converts a 115VAC / 60Hz input, to a 12VDC or 24VDC regulating output, (see specifications below).

The AL400ULX is the base power supply unit for the UL Listed multi-output power supply/charger series: AL400ULPD4, AL400ULPD4CB, AL400ULPD8, AL400ULPD8CB, AL400ULXPD16, AL400ULXPD16CB (Refer to AL400ULX Series Power Supply Configuration Reference Chart below).

AL400ULX Series Power Supply Configuration Reference Chart:

Altronix Model Number	Accessory Power Distribution Module(s)	Number of Outputs	Fused Outputs	PTC Outputs	12VDC Per Output Current (amp)	24VDC Per Output Current (amp)	Agency Listings	UL Listings and File Numbers
AL400ULX(R)	-	1	-	-	4	3	   NYC Dept. of Buildings Approved   Factory Mutual Approved	UL File # S4707 UL 294 UL Listed for Access Control System Units. UL 603 UL Listed Standard for Power Supplies for Use with Burglar-Alarm Systems. UL 1069 UL Listed Hospital Signaling and Nurse Call Equipment. UL 1481 UL Listed Standard for Safety for Fire Protective Signaling Systems. "Signal Equipment" Evaluated to CSA Standard C22.2 No.205-M1983
AL400ULPD4	PD4UL	4	x	-	3.5	3	 	
AL400ULPD4CB	PD4ULCB	4	-	x	2.5	2.5	 	
AL400ULPD8	PD8UL	8	x	-	3.5	3	 	
AL400ULPD8CB	PD8ULCB	8	-	x	2.5	2.5	 	
AL400ULXPD16	Two (2) PD8UL	16	x	-	3.5	3	 	
AL400ULXPD16CB	Two (2) PD8ULCB	16	-	x	2.5	2.5	 	

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

Specifications:

Input:

- Input 115VAC / 60Hz, 1.45 amp.
- AC input and DC output LED indicators.

Output:

- Class 2 Rated power limited output(s).
- 12VDC or 24VDC selectable output.
- 4 amp total supply current at 12VDC or 3 amp total supply current at 24VDC.
- Filtered and electronically regulated outputs.
- Short circuit and thermal overload protection.

Battery Backup:

- Built-in charger for sealed lead acid or gel type batteries.

Battery Backup (cont'd.):

- Automatic switch over to stand-by battery when AC fails.
- Maximum charge current .7 amp.
- Zero voltage drop when switched over to battery backup.

Supervision:

- AC fail supervision (form "C" contacts).
- Low battery supervision (form "C" contacts).
- Battery presence supervision (form "C" contacts).

Additional Features:

- Power supply, enclosure, cam lock and battery leads.
- All models are available in red enclosure (add an "R" suffix to the part # e.g. AL400ULPD8R).

Power Supply Output Specifications:

Output VDC	Switch Position
12VDC	SW1 CLOSED

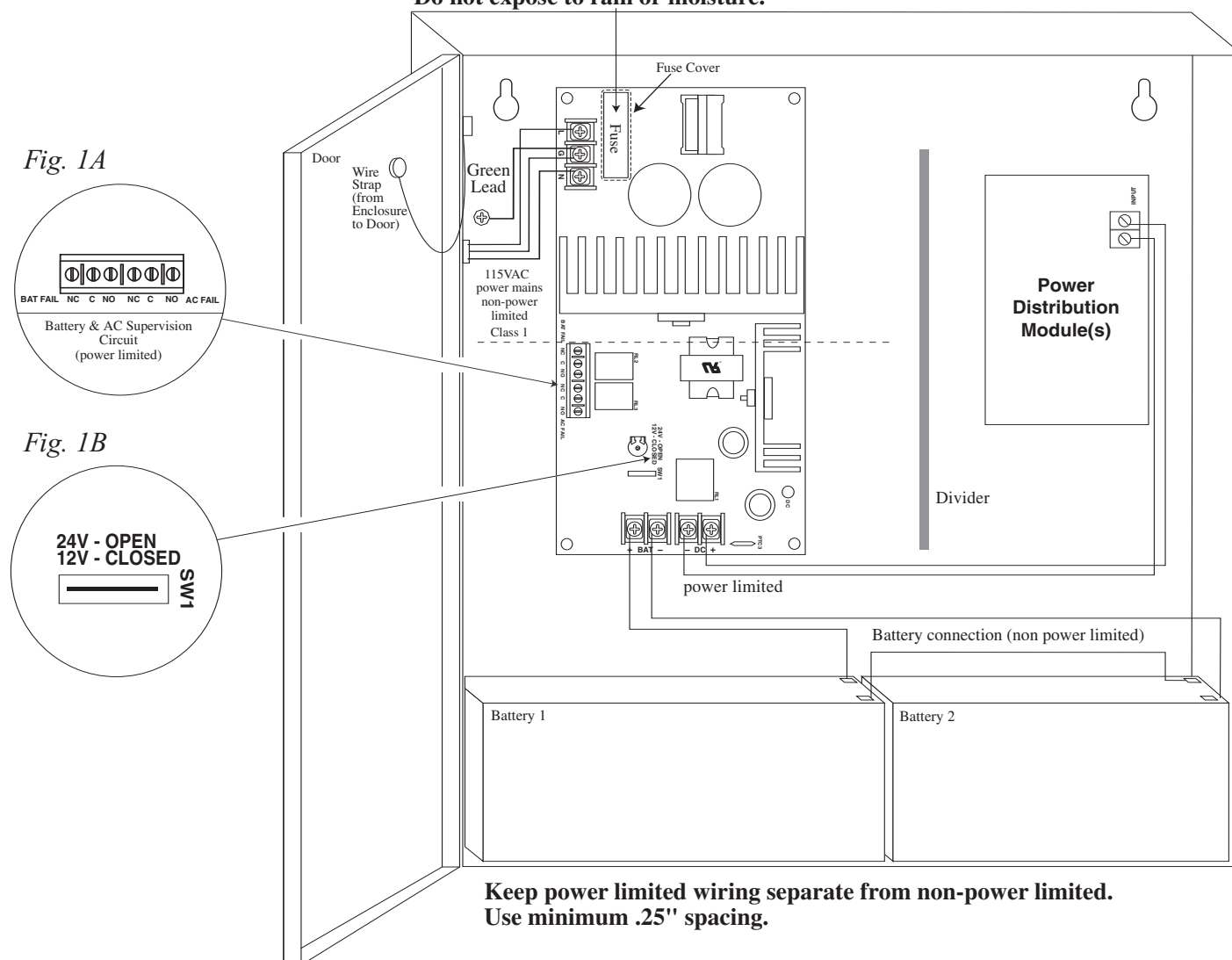
Output VDC	Switch Position
24VDC	SW1 OPEN

Stand-by Specifications (total current shown):

Output	4 hr. of Stand-by & 5 Minutes of Alarm	24 hr. of Stand-by & 5 Minutes of Alarm	60 hr. of Stand-by & 5 Minutes of Alarm
12VDC / 40 AH Battery	Stand-by = 4 amp Alarm = 4 amp	Stand-by = 1.0 amp Alarm = 4 amp	Stand-by = 300mA Alarm = 4 amp
24VDC / 12 AH Battery		Stand-by = 200mA Alarm = 3.0 amp	
24VDC / 40 AH Battery	Stand-by = 3 amp Alarm = 3 amp	Stand-by = 1.0 amp Alarm = 3 amp	Stand-by = 300mA Alarm = 3 amp

Fig. 1

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 3.5A, 250V. Replace fuse cover before energizing. Do not expose to rain or moisture.



Installation Instructions:

The unit should be installed in accordance with article 760 of The National Electrical Code as well as NFPA 72 and all applicable Local Codes.

1. Mount the unit in desired location.
2. Set the unit to the desired DC output voltage by setting SW1 (*Fig. 1B, pg. 3*) to the appropriate position (*Power Supply Voltage Output Selections Chart, pg. 3*).
3. Secure enclosure to earth ground. Connect AC power (115VAC / 60 Hz to terminals marked [L, G, N] (*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 (115VAC / 60Hz Input, Battery Wires). Minimum .25" spacing must be provided.
4. Measure output voltage before connecting device. This helps avoid potential damage.
When servicing the unit, AC mains should be removed.
5. Connect devices to be powered:
 - a. For AL400ULX Power Supply connect devices to terminals marked [- DC +]. (*Fig. 1, pg. 3*)
 - b. For other Power Distribution Models connect devices to be powered to terminal pairs 1 to 4 marked [1P & 1N thru 4P & 4N] (*Fig. 2A & 2B, pg. 5*) or 1 to 8 marked [1P & 1N thru 8P & 8N] (*Fig. 3A & 3B, pg. 5*) 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 terminals marked [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 must be used to provide a visual indication of AC power on.
8. Please insure that the cover is secured with the provided Key Lock.

LED Diagnostics:

AL400ULXB - 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.

Terminal Identification:

AL400ULXB - Power Supply Board

Terminal Legend	Function/Description
L, G, N	Connect 115VAC to these terminals: L to Hot, N to Neutral, G to ground.
- DC +	12VDC @ 4 amp or 24VDC @ 3 amp continuous power limited output.
AC FAIL N.C., C, N.O.	Used to notify loss of AC power, e.g. connect to annunciator/alarm panel. Relay normally energized when AC power is present. Contact rating 1 amp @ 30VDC. 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 N.C., C, N.O.	Used to indicate low battery condition, e.g. connect to alarm panel. Relay normally energized when DC power is present. Contact rating 1 amp @ 30VDC. 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 rate .7 amp.

LED Diagnostics: PD4UL/PD4ULCB/PD8UL/PD8ULCB - Power Distribution Module

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

Terminal Identification: PD4UL/PD4ULCB/PD8UL/PD8ULCB - Power Distribution Module

Terminal Legend		Function/ Description
PD4UL/PD4ULCB	PD8UL/PD8ULCB	
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

Replace fuses with the same type and rating 3.5A, 250V.

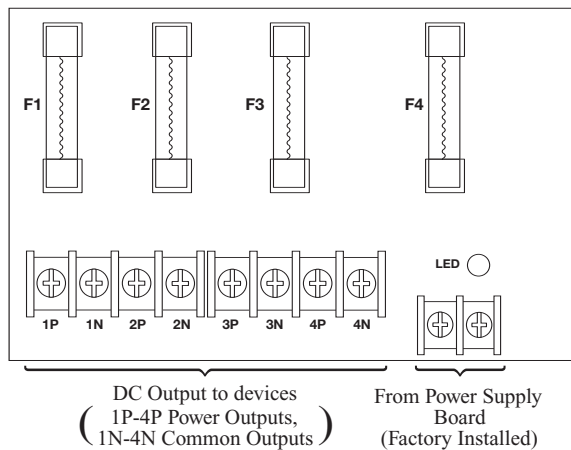


Fig. 2B

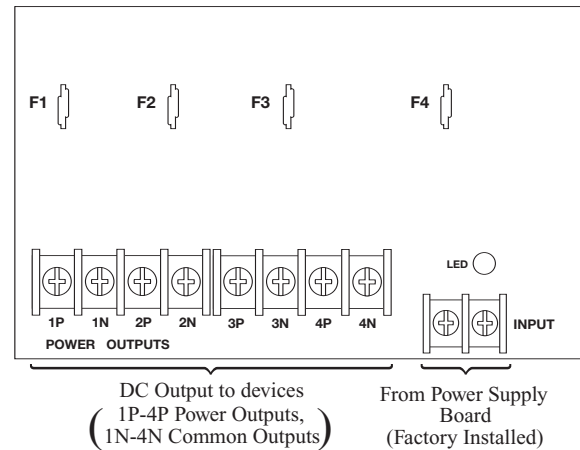


Fig. 3A

Replace fuses with the same type and rating 3.5A, 250V.

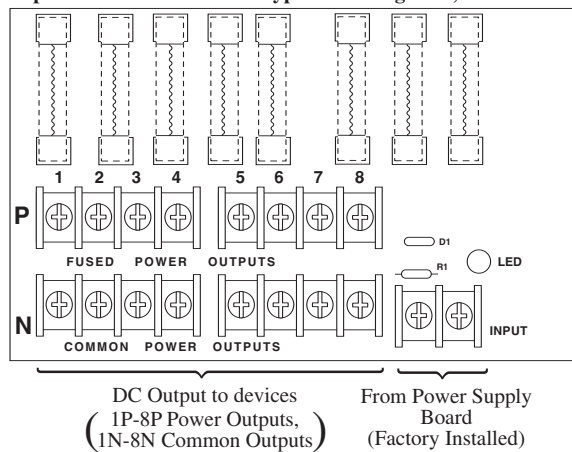
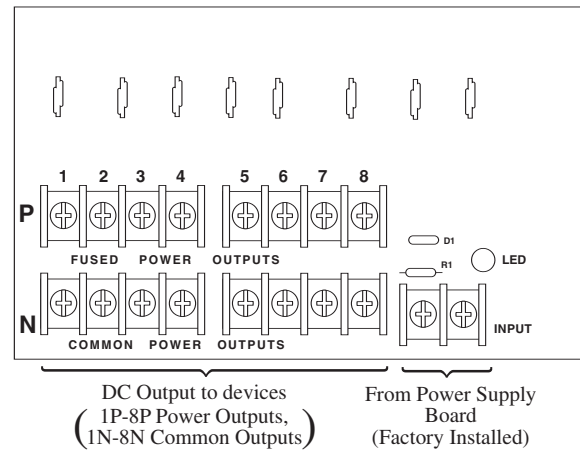


Fig. 3B



Wiring:

USE 14 AWG or larger for all power connections.

Note: Take care to keep power limited circuits separate from non-power limited wiring (115VAC, 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 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 battery terminal and at the board terminals marked [+ BAT -] to insure there is no break in the battery connection wires.

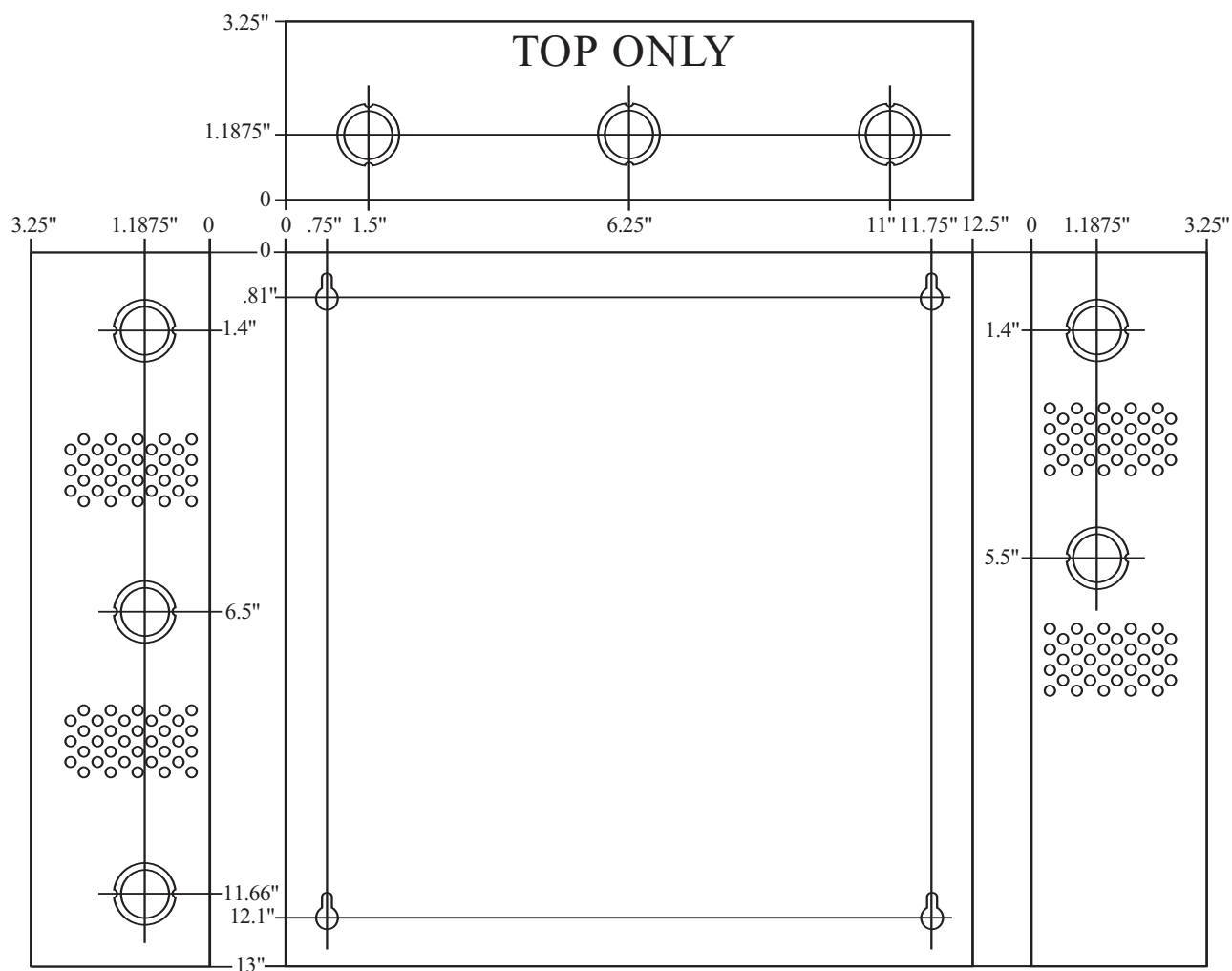
Note: Maximum charging current under discharges is .7 amp.

Note: Expected battery life is 5 years, however it is recommended changing batteries in 4 years or less if needed.

Enclosure Dimensions:

- **AL400ULX**
- **AL400ULPD4**
- **AL400ULPD4CB**
- **AL400ULPD8**
- **AL400ULPD8CB**

13"H x 13.5"W x 3.25"D

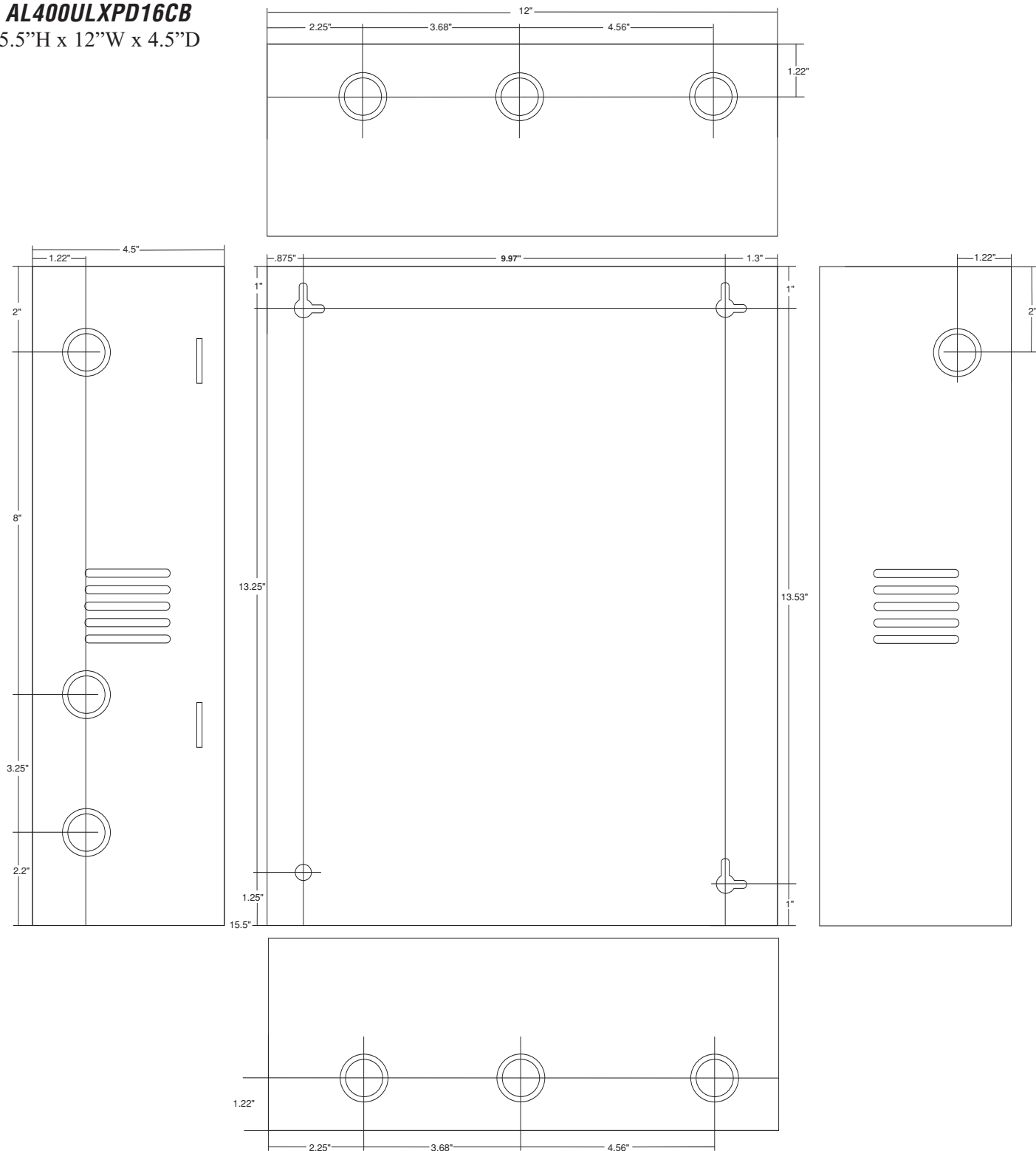


Enclosure Dimensions:

• **AL400ULXPD16**

• **AL400ULXPD16CB**

15.5"H x 12"W x 4.5"D



Notes:

Altronix is not responsible for any typographical errors.

Altronix Corp.
140 58th Street, Brooklyn, New York 11220 USA, 718-567-8181, fax: 718-567-9056
web site: www.altronix.com, e-mail: info@altronix.com, Lifetime Warranty, Made in U.S.A.
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