



AL400X220 Series Power Supply/Charger

Installation Guide

Models Include:

- ***AL400X220***
 - *Single Output*

- ***AL400PD4220***
 - *Four (4) Fused Outputs*

- ***AL400PD8220***
 - *Eight (8) Fused Outputs*

- ***AL400XPD16220***
 - *Sixteen (16) Fused Outputs*

- ***AL400PD4CB220***
 - *Four (4) PTC Outputs*

- ***AL400PD8CB220***
 - *Eight (8) PTC Outputs*

- ***AL400XPD16CB220***
 - *Sixteen (16) PTC Outputs*

***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***



Overview:

The 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 | 12VDC Total Output Current (amp) | 24VDC Total Output Current (amp) | Output Rating (amp) per Output | Power Supply Input Fuse Rating | Power Supply Output Fuse Rating | Enclosure Dimensions | Accommodates Stand-by Batteries |
|-----------------------|--|-------------------|---------------|-------------|----------------------------------|----------------------------------|--------------------------------|--------------------------------|---------------------------------|---|---------------------------------|
| AL400X220 | - | 1 | - | - | 4 | 3 | 2.5 | 5A/250V | 15A/32V | 13.5" x 13" x 3.25" (342.99mm x 330.2mm x 82.55mm) | Two (2) 12VDC/7AH |
| AL400XX220 | | | | | | | | | | 15.5" x 12" x 4.5" (393.7mm x 304.8mm x 114.3mm) | Two (2) 12VDC/12AH |
| AL400PD4220 | PD4 | 4 | x | - | 4 | 3 | 3.5 | 5A/250V | 15A/32V | 13.5" x 13" x 3.25" (342.99mm x 330.2mm x 82.55mm) | Two (2) 12VDC/7AH |
| AL400XPD4220 | | | | | | | | | | 15.5" x 12" x 4.5" (393.7mm x 304.8mm x 114.3mm) | Two (2) 12VDC/12AH |
| AL400PD4CB220 | PD4CB | 4 | - | x | 4 | 3 | 2.5 | 5A/250V | 15A/32V | 13.5" x 13" x 3.25" (342.99mm x 330.2mm x 82.55mm) | Two (2) 12VDC/7AH |
| AL400XPD4CB220 | | | | | | | | | | 15.5" x 12" x 4.5" (393.7mm x 304.8mm x 114.3mm) | Two (2) 12VDC/12AH |
| AL400PD8220 | PD8 | 8 | x | - | 4 | 3 | 3.5 | 5A/250V | 15A/32V | 13.5" x 13" x 3.25" (342.99mm x 330.2mm x 82.55mm) | Two (2) 12VDC/7AH |
| AL400XPD8220 | | | | | | | | | | 15.5" x 12" x 4.5" (393.7mm x 304.8mm x 114.3mm) | Two (2) 12VDC/12AH |
| AL400PD8CB220 | PD8CB | 8 | - | x | 4 | 3 | 2.5 | 5A/250V | 15A/32V | 13.5" x 13" x 3.25" (342.99mm x 330.2mm x 82.55mm) | Two (2) 12VDC/7AH |
| AL400XPD8CB220 | | | | | | | | | | 15.5" x 12" x 4.5" (393.7mm x 304.8mm x 114.3mm) | Two (2) 12VDC/7AH |
| AL400XPD16220 | Two PD8 | 16 | x | - | 4 | 3 | 3.5 | 15A/32V | 15A/32V | 15.5" x 12" x 4.5" (393.7mm x 304.8mm x 114.3mm) | Two (2) 12VDC/12AH |
| AL400XPD16CB220 | Two PD8CB | | | | | | | | | 15.5" x 12" x 4.5" (393.7mm x 304.8mm x 114.3mm) | Two (2) 12VDC/12AH |

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

Specifications:

Agency Listing:

- CE European Conformity.

Input:

- Input 220VAC (working range 198VAC - 256VAC) 50/60Hz, 0.8 amp.
- AC input and DC output LED indicators.

Output:

- 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.
- Output 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 0.7 amp.
- 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.

Power Supply Output Specifications:

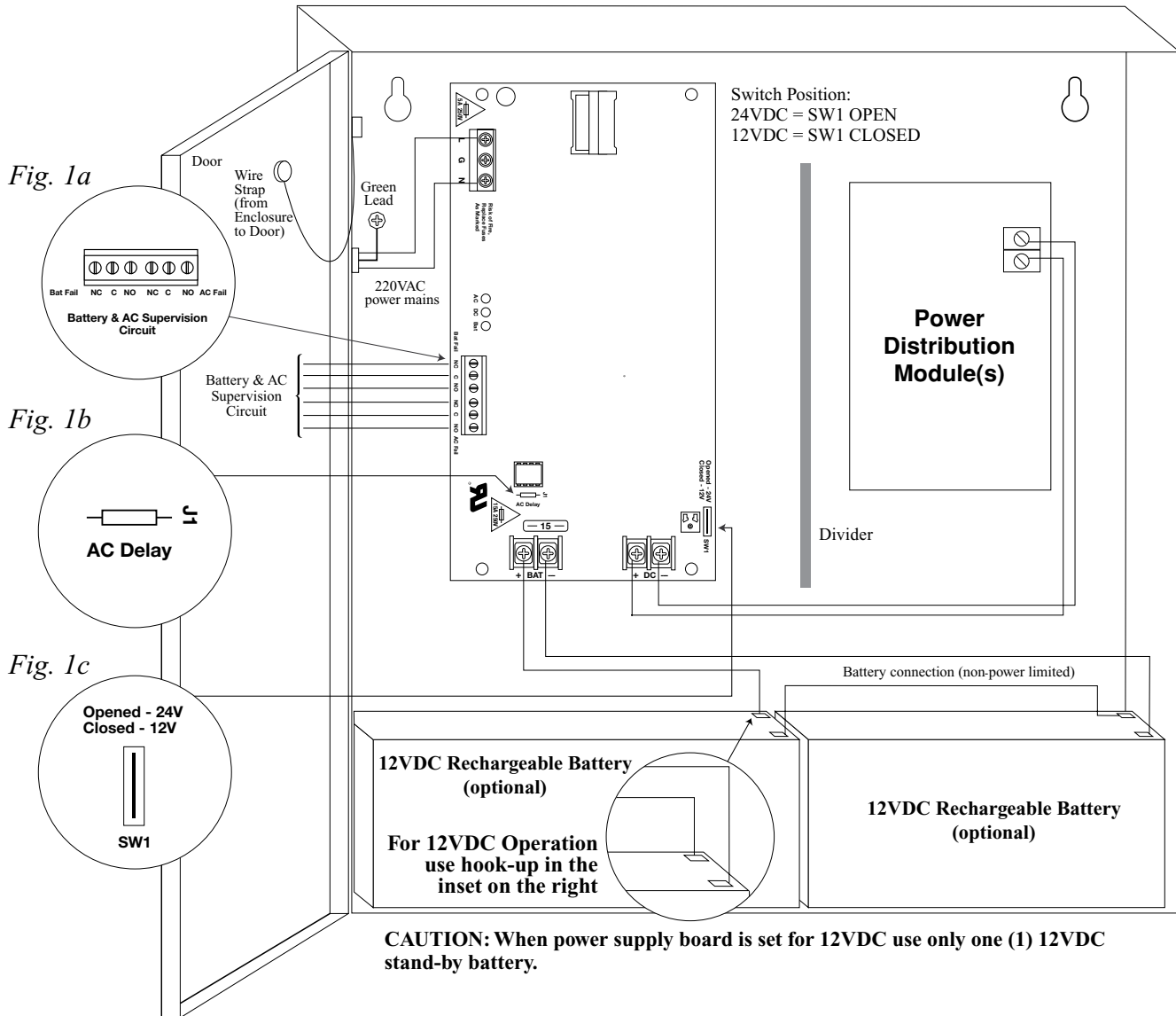
| Output | Switch Position |
|--------|------------------------|
| 12VDC | SW1 - CLOSED (Fig. 1c) |
| 24VDC | SW1 - OPEN (Fig. 1c) |

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 / 40AH Battery | Stand-by = 4.0 amp Alarm = 4.0 amp | Stand-by = 1.0 amp Alarm = 4.0 amp | Stand-by = 300mA Alarm = 4.0 amp |
| 24VDC / 12AH Battery | — | Stand-by = 200mA Alarm = 3.0 amp | — |
| 24VDC / 40AH Battery | Stand-by = 3.0 amp Alarm = 3.0 amp | Stand-by = 1.0 amp Alarm = 3.0 amp | Stand-by = 300mA Alarm = 3.0 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. Do not expose to rain or moisture.



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. The power supply is pre-wired to the ground (chassis). Connect main incoming ground to the provided green grounding conductor lead. Connect unswitched AC power (220VAC 50/60Hz) to the terminals marked [L, 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 (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. 5*) or 1 to 8 marked [1P & 1N through 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 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 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 0.7 amp.

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 (AC) | 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 50/60 Hz to these terminals: L to hot, N to Neutral. Do not use the [G] terminal. |
| + DC - | 12VDC @ 4 amp or 24VDC @ 3 amp continuous output. |
| AC Fail NC, C, NO | Indicates loss of AC power, e.g. connect to audible device or alarm panel. Relay normally energized when AC power is present. Contact rating 1 amp @ 28VDC. AC or brownout fail is reported within 1 minute of event. To delay reporting of up to 6 hrs., cut "AC delay" jumper and reset power to the unit. |
| 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 1 amp @ 28VDC. |
| + BAT - | Stand-by battery connections. Maximum charge current 0.7 amp. |

Power Distribution Module

| Terminal Legend PD4/PD4CB | Terminal Legend PD8/PD8CB | Function/Description |
|---------------------------|---------------------------|--------------------------|
| 1P to 4P | 1P to 8P | Positive (+) DC Outputs. |
| 1N to 4N | 1N to 8N | Negative (-) DC Outputs. |

Power Distribution Module(s):

Fig. 2a

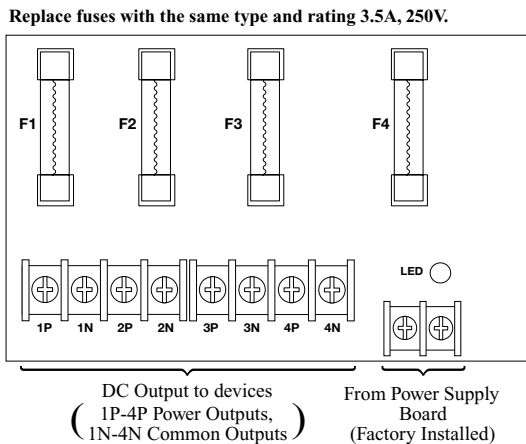


Fig. 2b

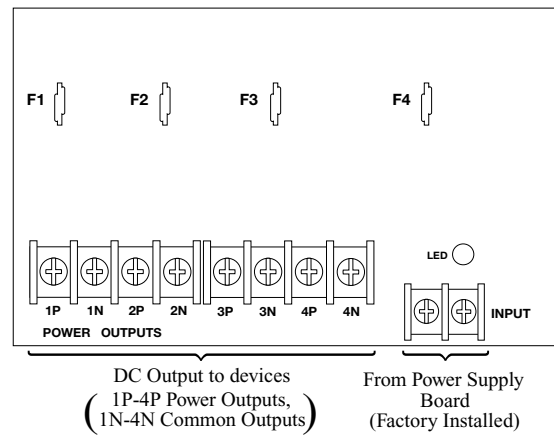


Fig. 3a

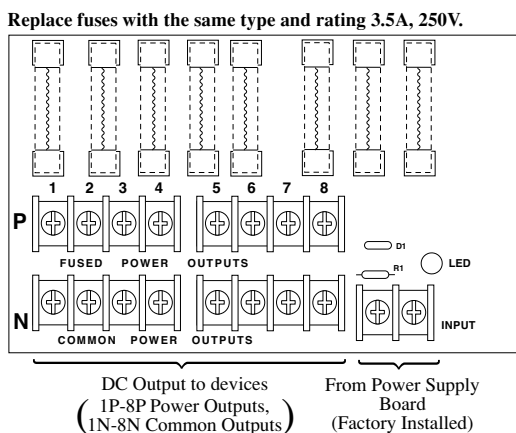
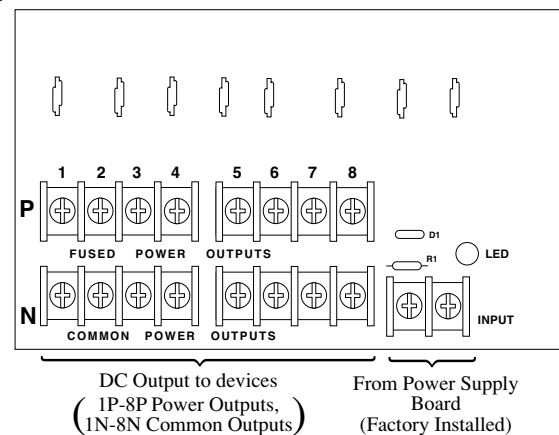


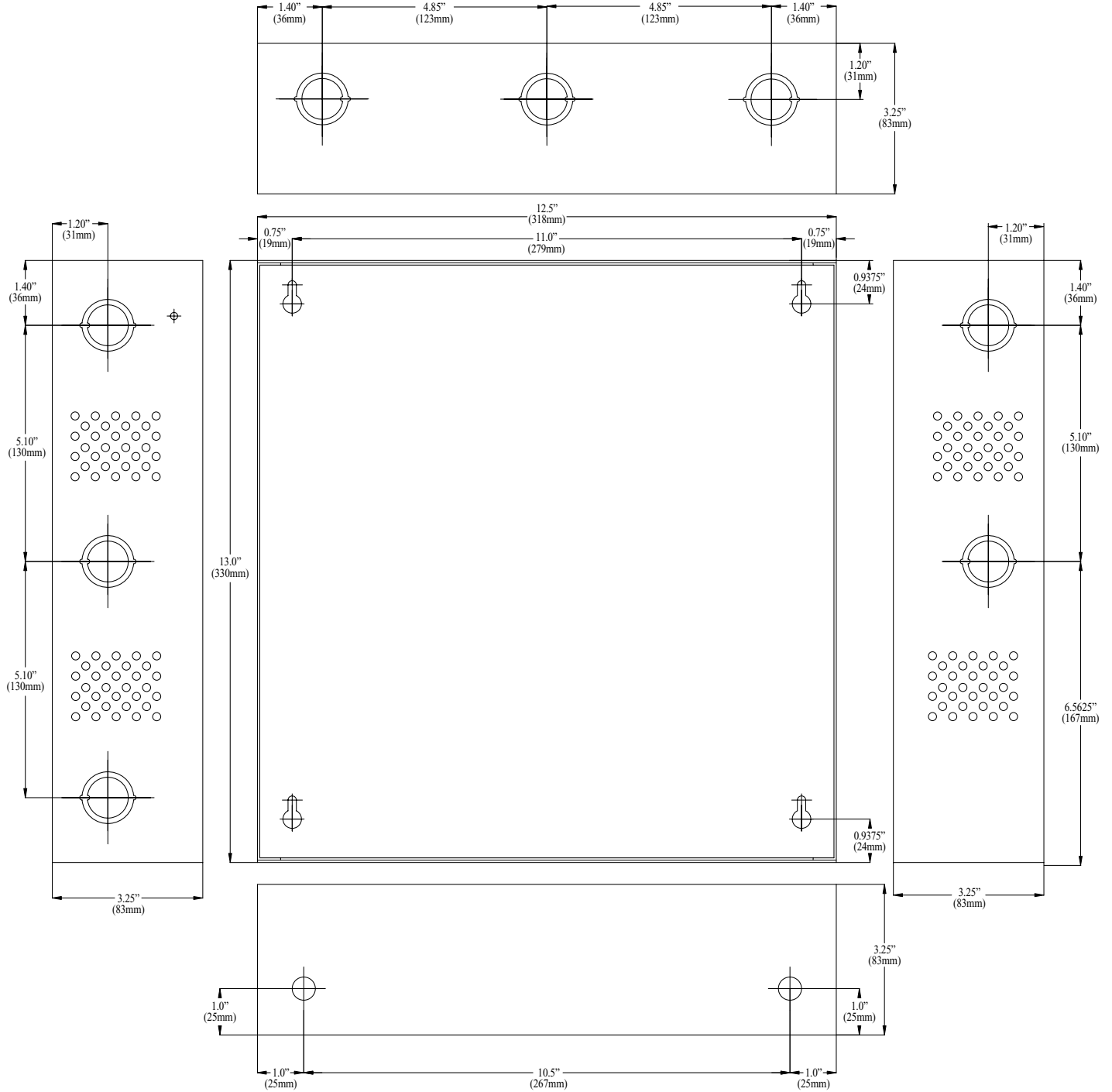
Fig. 3b



Enclosure Dimensions (BC300) (H x W x D):

AL400X220, AL400XR220, AL400PD4220, AL400PD4CB220, AL400PD8220, AL400PD8CB220

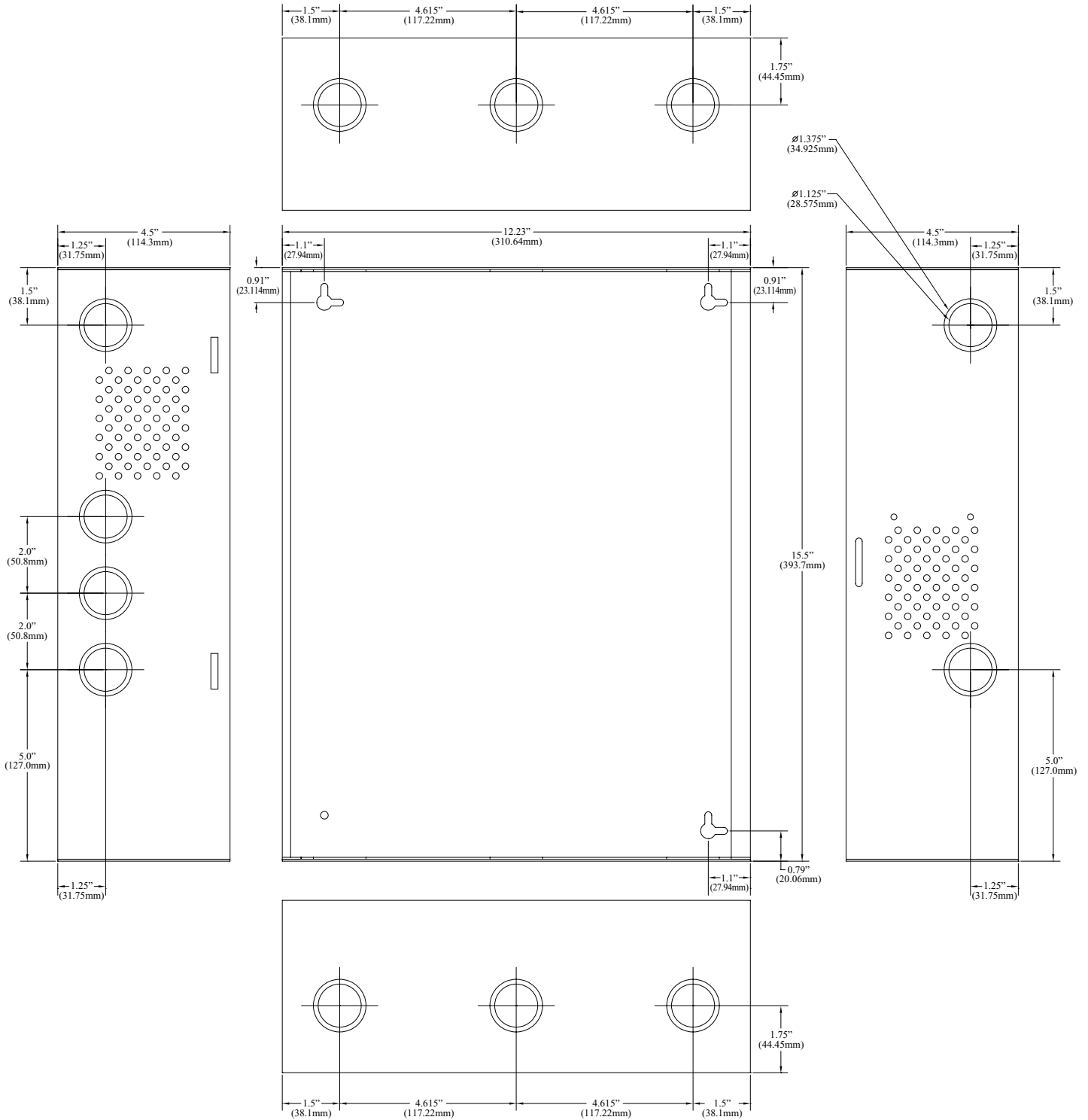
13.5" x 13" x 3.25" (342.99mm x 330.2mm x 82.55mm)



Enclosure Dimensions (BC400) (H x W x D):

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

15.5" x 12" x 4.5" (393.7mm x 304.8mm x 114.3mm)



Notes:

Altronix is not responsible for any typographical errors.

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HAL400X220 series

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- 8 -



AL400X220 series