

# AL600ULX Series

## Power Supply/Charger

### Models Include:

#### AL600ULX

- Single Output.

#### AL600ULPD4

- Four (4) Fuse Protected Outputs.

#### AL600ULPD8

- Eight (8) Fuse Protected Outputs.

#### AL600ULXPD16

- Sixteen (16) Fuse Protected Outputs.

#### AL600ULPD4CB

- Four (4) PTC Protected Outputs.

#### AL600ULPD8CB

- Eight (8) PTC Protected Outputs.

#### AL600ULXPD16

- Sixteen (16) PTC Protected Outputs.

For a red enclosure add an "R" suffix to the part #, e.g. AL600ULPD8R

For a larger enclosure add "XX" suffix to the part #, e.g. AL600ULXX

## Installation Guide

SECURITY  
SIGNALING



Rev. 013119

Installing Company: \_\_\_\_\_ Service Rep. Name: \_\_\_\_\_

Address: \_\_\_\_\_ Phone #: \_\_\_\_\_










More than just power.™

## Overview:

Altronix AL600ULX is a power supply that converts a 115VAC, 60Hz input to a 12VDC or 24VDC regulating output (see specifications below).

The AL600ULX is a base power supply unit for the UL Listed multi-output power supply/charger series: AL600ULPD4, AL600ULPD4CB, AL600ULPD8, AL600ULPD8CB, AL600ULXPD16, AL600ULXPD16CB (Refer to AL600ULX Series Power Supply Configuration Reference Chart below).

## AL600ULX Series Power Supply Configuration Reference Chart:

| Altronix Model Number              | Accessory Power Distribution Module(s) | Number of Output(s) | Fused Outputs | Class 2 Rated PTC Protected Power-Limited Outputs (auto-resettable) | Output Rating (A) per Output | Agency Listings   | UL Listings and File Numbers   |
|------------------------------------|--|---------------------|---------------|---|------------------------------|---|--|
| AL600ULX<br>AL600ULXR<br>AL600ULXX | -                                      | 1                   | -             | -   | 6                            |      | <b>UL File # S4707</b><br><br><b>UL 294*</b><br>UL Listed for Access Control System Units.   |
| AL600ULPD4                         | PD4UL                                  | 4                   | ✓             | -   | 3.5                          |    | <b>UL 1481</b><br>UL Listed Power Supplies for Fire Protective Signaling Systems.<br><br>"Signal Equipment"<br>Evaluated to <b>CSA Standard C22.2 No.205-M1983</b> |
| AL600ULPD4CB                       | PD4ULCB                                | 4                   | -             | ✓   | 2.5                          |   |  |
| AL600ULPD8                         | PD8UL                                  | 8                   | ✓             | -   | 3.5                          |   |  |
| AL600ULPD8CB                       | PD8ULCB                                | 8                   | -             | ✓   | 2.5                          |   |  |
| AL600ULXPD16                       | Two (2) PD8UL                          | 16                  | ✓             | -   | 3.5                          |   |  |
| AL600ULXPD16CB                     | Two (2) PD8ULCB                        | 16                  | -             | ✓   | 2.5                          |   |  |

**\*Access Control Performance Levels:**

Destructive Attack - I; Endurance - IV; Line Security - I; Stand-by Power - IV.

Do not exceed total output rating of 6A per unit.

AL600ULPD4(CB) and AL600ULPD8(CB) are available in larger enclosure.

Add "X" to the model number (e.g. AL600ULXPD4/CB).

## Specifications:

### Input:

- Input 115VAC / 60Hz, 3.5A.

### Output:

- 12VDC or 24VDC selectable output(s).
- 6A continuous supply current at 12VDC or 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.
- 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 supervision (form "C" contacts).
- Battery presence supervision (form "C" contacts).

### LED Indicators:

- AC input, DC output and Battery LED indicators.

### 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. AL600ULPD8R).

| Output Voltage               | Voltage Type | Output Current                            |   |                 |   | Frequency | Ripple Voltage |
|------------------------------|--------------|---|---|-----------------|---|-----------|----------------|
|                              |              | Normal Stand-by                           | Stand-by Battery Minimum Operating Time | Maximum (alarm) | Stand-by Battery Minimum Operating Time |           |                |
| DC Output<br>12VDC and 24VDC | DC           | See Stand-by Specifications, <i>pg. 3</i> |   |                 |   | N/A       | 300mV          |

## Power Supply Output Specifications:

| Output | Switch Position                     |
|--------|-------------------------------------|
| 12VDC  | SW1 - ON ( <i>Fig. 1b, pg. 4</i> )  |
| 24VDC  | SW1 - OFF ( <i>Fig. 1b, pg. 4</i> ) |



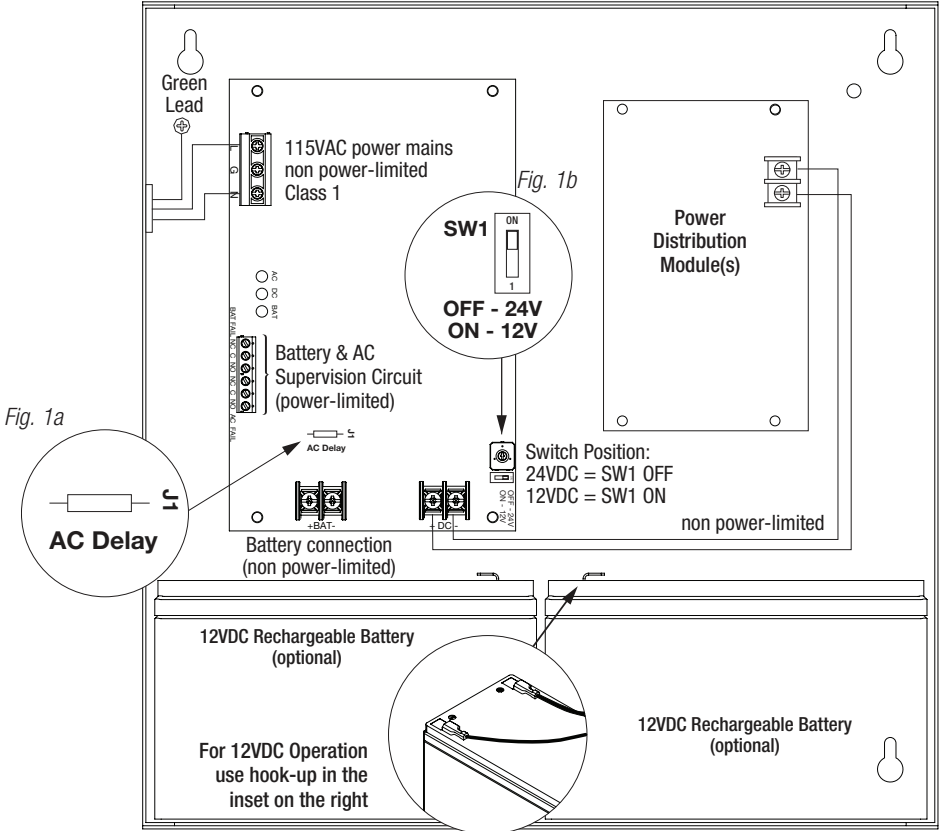
**OFF - 24V**  
**ON - 12V**

## 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 = 6.0A<br>Alarm = 6.0A          | Stand-by = 1.0A<br>Alarm = 6.0A           | Stand-by = 300mA<br>Alarm = 6.0A          |
| 24VDC / 12AH Battery | -  | Stand-by = 200mA<br>Alarm = 6.0A          | -   |
| 24VDC / 40AH Battery | Stand-by = 6.0A<br>Alarm = 6.0A          | Stand-by = 1.0A<br>Alarm = 6.0A           | Stand-by = 300mA<br>Alarm = 6.0A          |

Fig. 1 - AL600ULX 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 shall 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 the enclosure's upper keyholes over the two upper screws. Install the two lower screws and make sure to tighten all screws (*Enclosure Dimensions, pg. 11, 12*).
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 (115VAC, 60Hz) to the terminals marked [L, N] (*Fig. 1, pg. 4*). Green "AC" LED on power supply board will turn on. This light can be seen through the LED lens on the door of the enclosure. 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, DC Output, 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.**

For Fire Alarm applications the outputs are "Special Applications" only see list (*refer to Appendix A, pg. 8*).

For other devices contact Underwriters Laboratories to ensure compatibility.

3. Set the unit to the desired DC output voltage by setting SW1 (*Fig. 1b, pg. 4*) to the appropriate position (*Power Supply Voltage Output Selections Chart, pg. 3*).
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 device(s) to be powered:
  - a. For AL600ULX(R) Power Supply: connect devices to the terminals marked [+ DC -] (*Fig. 1, pg. 4*).
  - 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. 7*) or 1 to 8 marked [1P & 1N] through [8P & 8N] (*Fig. 3a & 3b, pg. 7*), 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 the terminals marked [AC FAIL & BAT FAIL] (*Fig. 1, pg. 4*) supervisory relay outputs.

**Note:** When used in fire 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. 1a, pg. 4*).
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 (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 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 115VAC 60 Hz. to these terminals: L to hot, N to Neutral.<br>Do not use the [G] terminal.  |
| + DC –                | 12VDC or 24VDC @ 6A continuous non power-limited output.   |
| AC Fail<br>NC, C, NO  | Indicates loss of AC power, e.g. connect to audible device or alarm panel.<br>Relay normally energized when AC power is present. Contact rating 1A @ 28VDC.<br>AC or brownout fail is reported within 1 minute of the event.<br>To delay reporting for up to 6 hrs. cut "AC delay" jumper and reset power to unit. |
| Bat Fail<br>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.  |
| + BAT –               | Stand-by battery connections. Maximum charge current 0.7A.   |

### Power Distribution Module

| Terminal Legend<br>PD4UL/PD4ULCB | Terminal Legend<br>PD8UL/PD8ULCB | Function/Description       |
|----------------------------------|----------------------------------|----------------------------|
| 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 - PD4UL Power Distribution Board  
Non Power-Limited Outputs

Fig. 2b - PD4ULCB - Power Distribution Board  
Class 2 Power-Limited Outputs

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

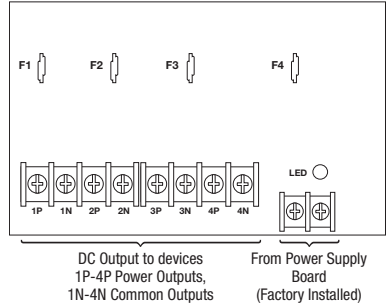
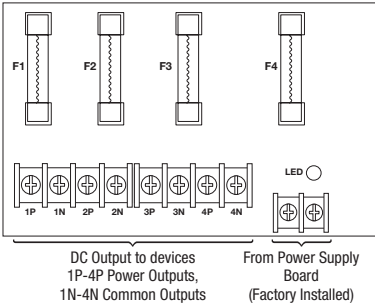
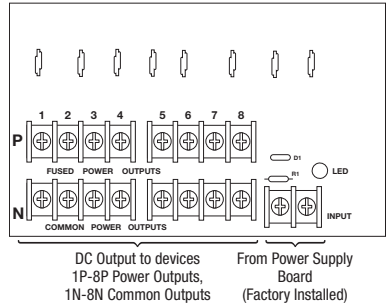
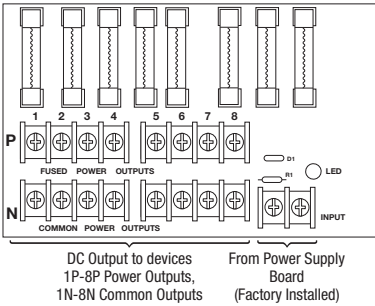


Fig. 3a - PD8UL Power Distribution Board  
Non Power-Limited Outputs

Fig. 3b - PD8ULCB - Power Distribution Board  
Class 2 Power-Limited Outputs

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



## Appendix A - UL Listed Compatible Devices

### A.1 Four (4) Wire Smoke Detectors

Table A-1 below lists four (4) wire smoke detectors compatible with AL600ULX output.

| System Sensor Smoke Detector/Base | Detector Type                                       | Max Stand-by Current (mA) | Alarm Current (mA) |
|-----------------------------------|---|---------------------------|--------------------|
| B112LP                            | Base  | 0.12                      | 36                 |
| B114LP                            | Base  | *                         | *                  |
| B404B                             | Base  | *                         | *                  |
| DH100ACDC                         | Photoelectric                                       | 0.15                      | 0.70               |
| DH100ACDCLP                       | Photoelectric                                       | 0.15                      | 0.70               |
| DH100ACDCLPW                      | Photoelectric                                       | 0.15                      | 0.70               |
| DH400ACDCI                        | Ionization Duct                                     | 25                        | 95                 |
| DH400ACDCP                        | Photoelectric Duct                                  | 25                        | 95                 |
| 1112/24/D                         | Ionization  | 0.05                      | 50                 |
| 1424                              | Ionization  | 0.10                      | 41                 |
| 1451 (w/B402B Base)               | Ionization  | 0.10                      | 39                 |
| 2112/24ATR                        | Photoelectric                                       | 0.50                      | 60/70              |
| 2112/24AITR                       | Photoelectric                                       | 0.50                      | 60/70              |
| 2112/24/D                         | Photoelectric                                       | 0.05                      | 50                 |
| 2112/24T/D                        | Photoelectric w/135° Thermal                        | 0.05                      | 50                 |
| 2112/24TSRB                       | Photoelectric w/135° Thermal Supervisory Relay      | 15                        | 45                 |
| 2312/24TB                         | Photoelectric                                       | 0.12                      | 50                 |
| 2412 (12 volt)                    | Photoelectric                                       | 0.12                      | 77                 |
| 2424                              | Photoelectric                                       | 0.10                      | 41                 |
| 2451                              | Photoelectric                                       | 0.10                      | 39                 |
| 2451TH (with/B402B Base)          | Photoelectric                                       | 0.10                      | 39                 |
| 2W-MOD                            | Loop Test/Maintenance Mod.                          | 30                        | 50                 |
| 4W-B (12/24 volt)                 | Photoelectric I <sup>3</sup>                        | 0.05                      | 23                 |
| 4WT-B (12/24 volt)                | Photoelectric I <sup>3</sup> w/Therm                | 0.05                      | 23                 |
| 4WTA-B (12/24 volt)               | I <sup>3</sup> Photo w/Therm/Sounder                | 0.05                      | 35                 |
| 4WTR-B (12/24 volt)               | I <sup>3</sup> Photo w/Therm/Relay                  | 0.05                      | 35                 |
| 4WITAR-B (12/24 volt)             | I <sup>3</sup> Photo w/Isolated Therm/Sounder/Relay | 0.05                      | 50                 |
| 2W-MOD2                           | I <sup>3</sup> Loop Test/Maintenance Mod.           | 0.05                      | *                  |
| RRS-MOD                           | I <sup>3</sup> Reversing Relay/Sync Module          | 0.05                      | *                  |
| 6424                              | Projected Beam                                      | 10                        | 28.4               |
| Beam 1224(S)                      | Projected Beam                                      | 17                        | 38.5               |

\* Contact manufacturer for current draws.

### A.2 Relays

Table A-2 below lists relays compatible with AL600ULX output.

| Manufacturer  | Model  | Current (mA) | Manufacturer  | Model | Current (mA) |
|---------------|--------|--------------|---------------|-------|--------------|
| System Sensor | PR-1   | 15           | System Sensor | R-20T | 40           |
|               | PR-2   | 30           |               | R-24T | 40           |
|               | PR-3   | 30           |               | R-10E | 23           |
|               | EOLR-1 | 30           |               | R-14E | 23           |
|               | R-10T  | 23           |               | R-20E | 40           |
|               | R-14T  | 23           |               | R-24E | 40           |



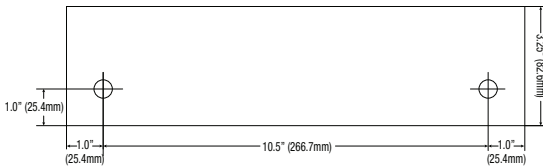
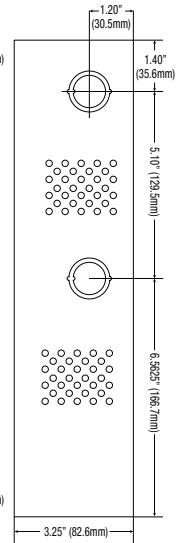
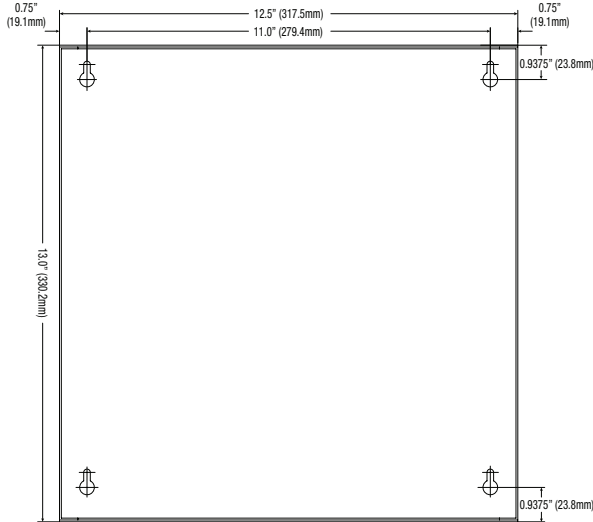
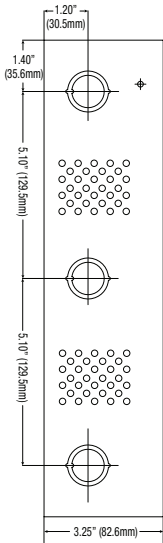
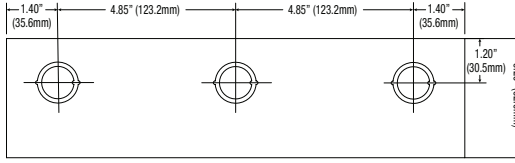
## Notes:

## Notes:

# Enclosure Dimensions (BC300):

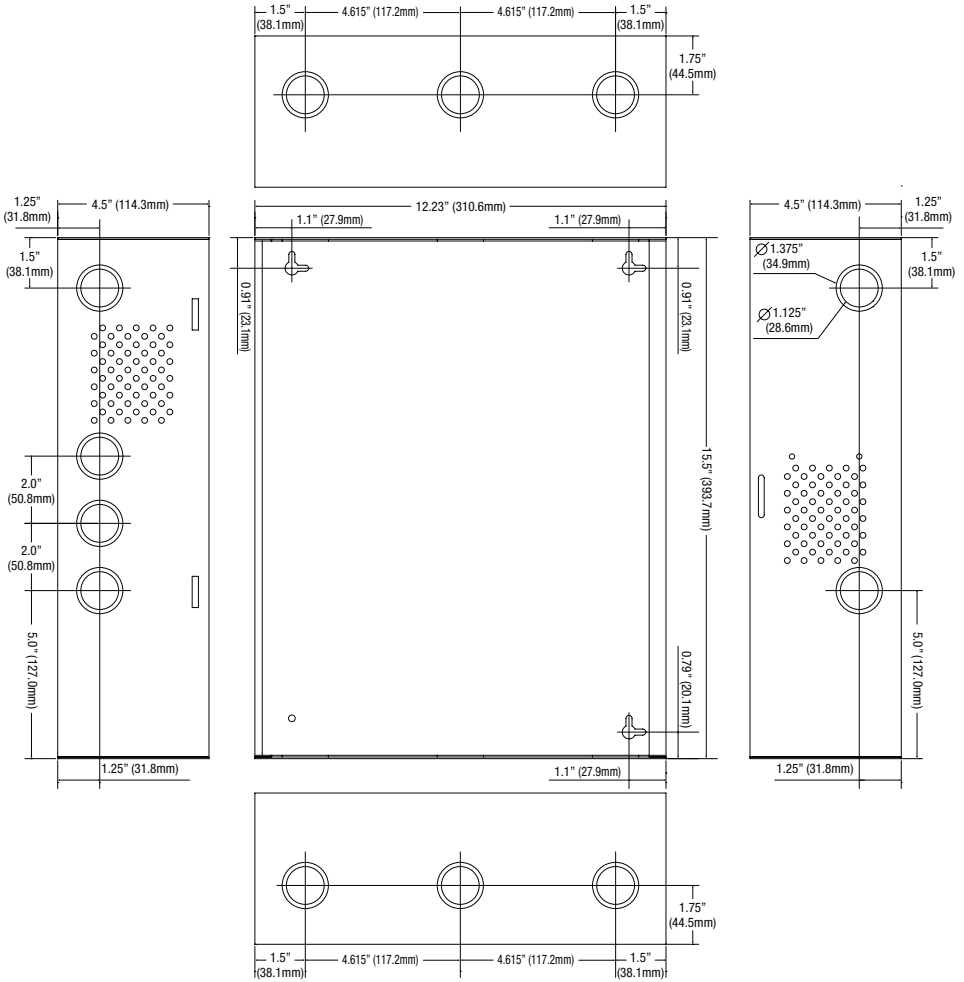
**AL600ULX, AL600ULXR, AL600ULPD4, AL600ULPD4CB, AL600ULPD8, AL600ULPD8CB**

13.5" x 13" x 3.25" (342.9mm x 330.2mm x 82.6mm)



# Enclosure Dimensions (BC400):

AL600ULXX, AL600ULXXR, AL600ULXPD4, AL600ULXPD4CB,  
 AL600ULXPD8, AL600ULXPD8CB, AL600ULXPD16, AL600ULXPD16CB  
 15.5" x 12" x 4.5" (393.7mm x 304.8mm x 114.3mm)



Altronix is not responsible for any typographical errors.

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