



AL600ULX Series

Power Supply/Charger

Installation Guide

Models Include:








- ***AL600ULX***
 - *Single Output*
- ***AL600ULPD4***
 - *Four (4) Fused Outputs*
- ***AL600ULPD8***
 - *Eight (8) Fused Outputs*
- ***AL600ULXPD16***
 - *Sixteen (16) Fused Outputs*
- ***AL600ULPD4CB***
 - *Four (4) PTC Outputs*
- ***AL600ULPD8CB***
 - *Eight (8) PTC Outputs*
- ***AL600ULXPD16CB***
 - *Sixteen (16) PTC 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

Overview:

The AL600ULX is a power supply that converts a 115VAC / 60Hz input to a 12VDC or 24VDC regulating output (*see specifications below*). The AL600ULX is the 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) | Class 2 Rated Power-Limited Outputs | Fused Outputs | PTC Outputs | Output Rating (A) per Output | Agency Listings | UL Listings and File Numbers |
|------------------------------------|--|---------------------|-------------------------------------|---------------|-------------|------------------------------|---|--|
| AL600ULX AL600ULXR AL600ULXX | — | 1 | — | — | — | 6 |      | UL File # S4707 UL 1481 UL Listed Power Supplies for Fire Protective Signaling Systems. |
| AL600ULPD4 | PD4UL | 4 | — | ✓ | — | 3.5 |   | UL 294 UL Listed for Access Control System Units. “Signal Equipment” Evaluated to CSA Standard C22.2 No.205-M1983 |
| 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 | | |

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:

Agency Listings:

- UL Listed for Access Control System Units (UL 294) and UL Listed Standard for Safety for Fire Protective Signaling Systems (UL 1481).
- cUL Listed: CSA Standard C22.2 No.205-M1983, Signal Equipment.
- NFPA 72 compliant (Fire-Protective Signaling Service).

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).

Additional Features:

- AC input, DC output and BAT trouble LED indicators.
- 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 | Type Voltage | Output Current | | | | Frequency | Ripple Voltage |
|---------------------------|--------------|---|---|-----------------|---|-----------|----------------|
| | | Normal Stand-by | Stand-by Battery Minimum Operating Time | Maximum (alarm) | Stand-by Battery Minimum Operating Time | | |
| DC Output 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 (Fig. 1b, pg. 3) |
| 24VDC | SW1 - OFF (Fig. 1b, pg. 3) |

Stand-by Specifications (total current shown):

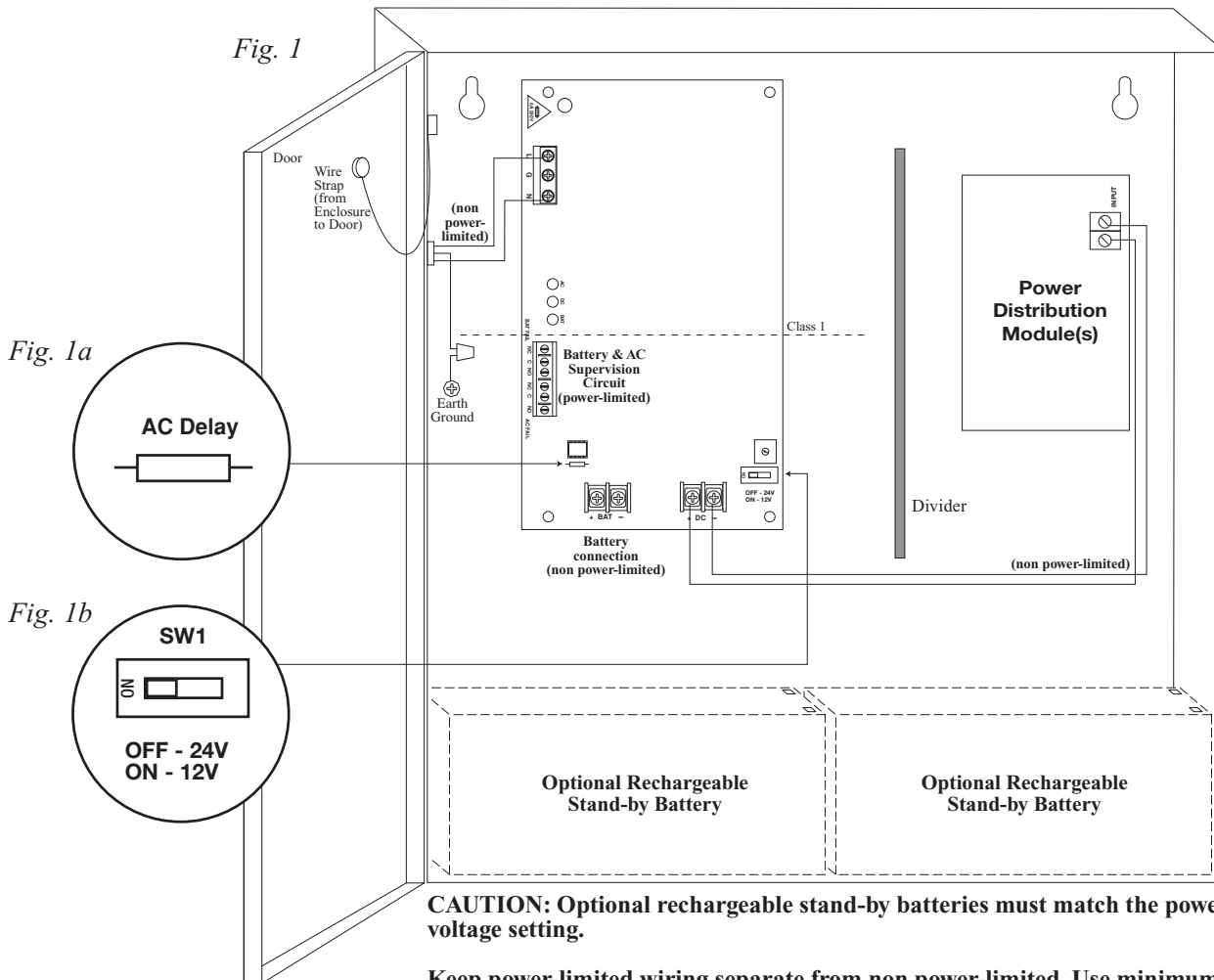
| Output | 4 hr. of Stand-by and 5 Minutes of Alarm | 24 hr. of Stand-by and 5 Minutes of Alarm | 60 hr. of Stand-by and 5 Minutes of Alarm |
|----------------------|--|---|---|
| 12VDC / 40AH Battery | Stand-by = 6.0A Alarm = 6.0A | Stand-by = 1.0A Alarm = 6.0A | Stand-by = 300mA Alarm = 6.0A |
| 24VDC / 12AH Battery | — | Stand-by = 200mA Alarm = 6.0A | — |
| 24VDC / 40AH Battery | Stand-by = 6.0A Alarm = 6.0A | Stand-by = 1.0A Alarm = 6.0A | Stand-by = 300mA Alarm = 6.0A |

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. 7-8).

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.



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 / 60 Hz) 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 (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. 6).
3. 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).
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. 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 the terminals marked [AC FAIL & BAT FAIL] (Fig. 1, pg. 3) 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. 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 (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 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 (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 115VAC 60 Hz. to these terminals: L to hot, N to Neutral. Do not use the [G] terminal. |
| + DC – | 12VDC or 24VDC @ 6A continuous non power-limited 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 1A @ 28VDC. AC or brownout fail is reported within 1 minute of the event. To delay reporting for up to 6 hrs. cut “AC delay” jumper and reset power to 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 1A @ 28VDC. |
| + BAT – | Stand-by battery connections. Maximum charge current 0.7A. |

Power Distribution Module

| Terminal Legend PD4UL/PD4ULCB | Terminal Legend PD8UL/PD8ULCB | Function/Description |
|-------------------------------|-------------------------------|----------------------------|
| 1P to 4P | 1P to 8P | Positive DC power outputs. |
| 1N to 4N | 1N to 8N | Negative DC power outputs. |

Fig. 2a

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

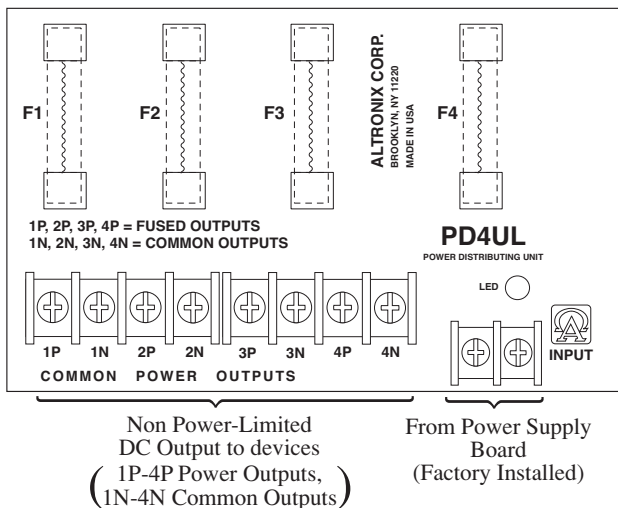


Fig. 2b

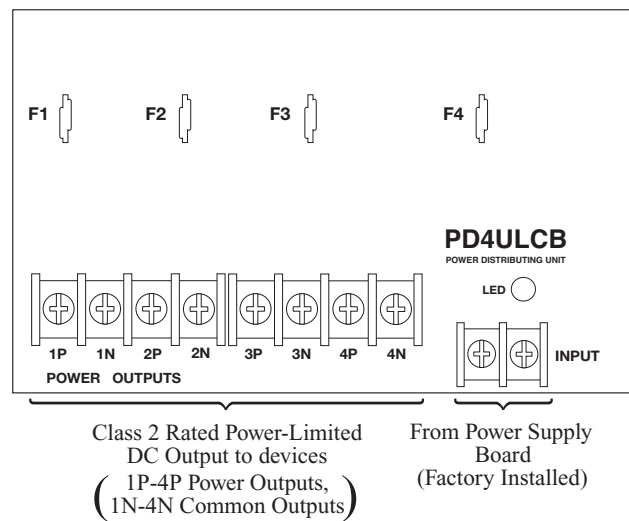


Fig. 3a

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

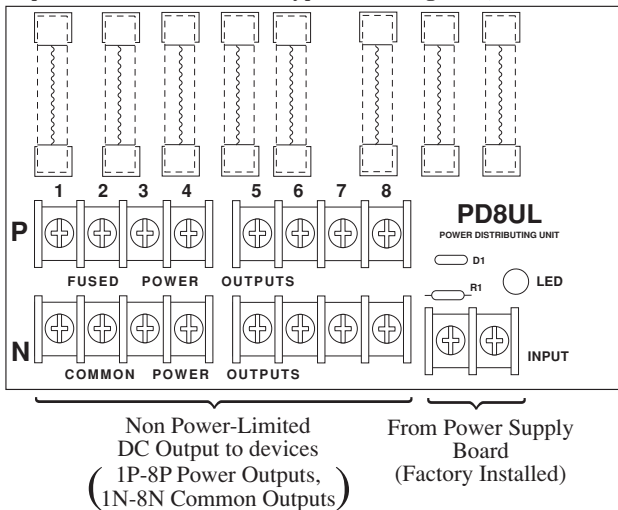
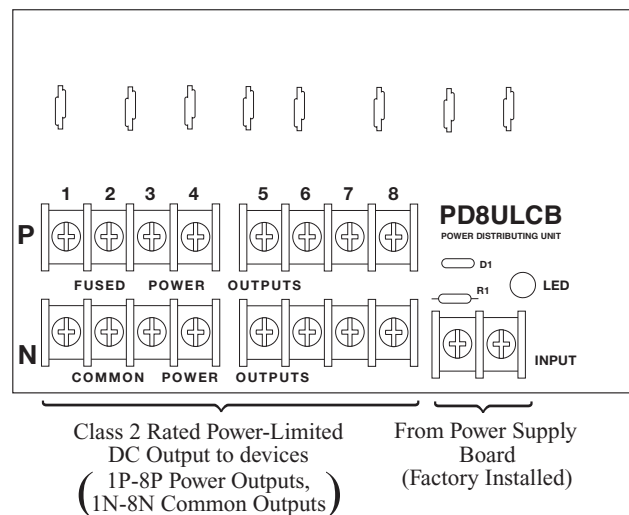


Fig. 3b



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 ³ | 0.05 | 23 |
| 4WT-B (12/24 volt) | Photoelectric I ³ w/Therm | 0.05 | 23 |
| 4WTA-B (12/24 volt) | I ³ Photo w/Therm/Sounder | 0.05 | 35 |
| 4WTR-B (12/24 volt) | I ³ Photo w/Therm/Relay | 0.05 | 35 |
| 4WITAR-B (12/24 volt) | I ³ Photo w/Isolated Therm/Sounder/Relay | 0.05 | 50 |
| 2W-MOD2 | I ³ Loop Test/Maintenance Mod. | 0.05 | * |
| RRS-MOD | I ³ 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

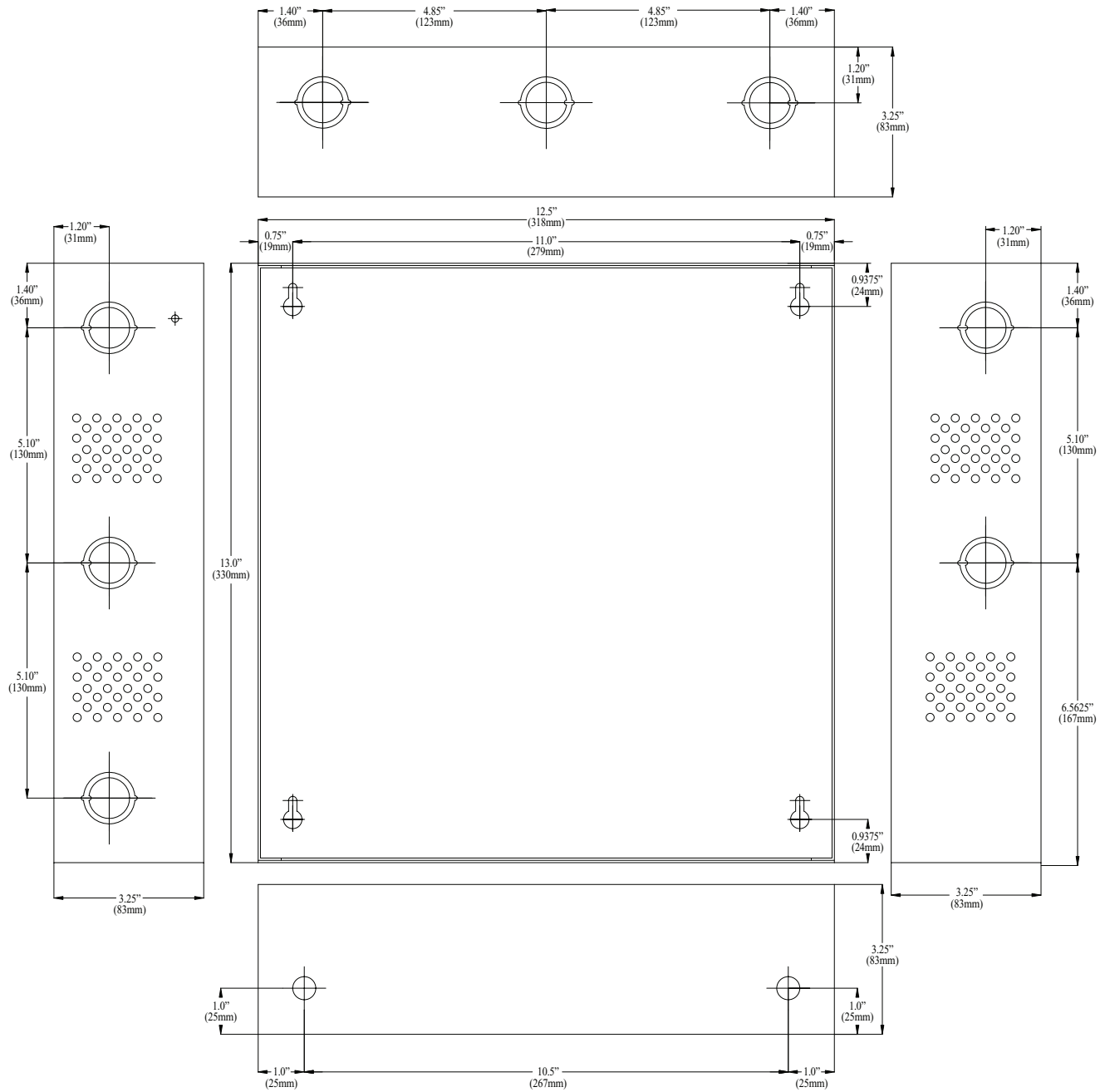
Table A-2 below lists relays compatible with *AL600ULX* output.

| 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 |

Enclosure Dimensions (BC300):

AL600ULX, AL600ULPD4, AL600ULPD4CB, AL600ULPD8, and AL600ULPD8CB

13.5" x 13" x 3.25" (342.9mm x 330.2mm x 82.55mm)



AL600ULXX, AL600ULXPD4, AL600ULXPD4CB, AL600ULXPD8, AL600ULXPD8CB, AL600ULXPD16, and AL600ULXPD16CB

Technical drawing of a rectangular enclosure, showing three views: front, top, and side. Dimensions are provided in inches and millimeters.

Front View:

- Overall width: 12.23" (310.64mm)
- Overall height: 15.5" (393.7mm)
- Top edge features three circular ports (1.375" diameter) and a 1.125" diameter port.
- Bottom edge features three circular ports (1.375" diameter) and a 1.125" diameter port.
- Side edge features three circular ports (1.375" diameter) and a 1.125" diameter port.
- Internal features include a 1.125" diameter port and a 1.375" diameter port.

Top View:

- Overall width: 12.23" (310.64mm)
- Overall height: 5.0" (127.0mm)
- Top edge features three circular ports (1.375" diameter) and a 1.125" diameter port.
- Bottom edge features three circular ports (1.375" diameter) and a 1.125" diameter port.
- Side edge features three circular ports (1.375" diameter) and a 1.125" diameter port.
- Internal features include a 1.125" diameter port and a 1.375" diameter port.

Side View:

- Overall width: 12.23" (310.64mm)
- Overall height: 5.0" (127.0mm)
- Top edge features three circular ports (1.375" diameter) and a 1.125" diameter port.
- Bottom edge features three circular ports (1.375" diameter) and a 1.125" diameter port.
- Side edge features three circular ports (1.375" diameter) and a 1.125" diameter port.
- Internal features include a 1.125" diameter port and a 1.375" diameter port.

