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AL600ULX Series Power Supply/Charger

Installation Guide

Models Include:

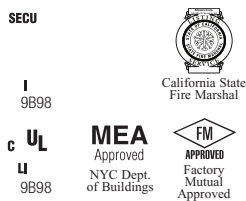
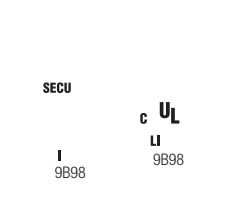
- ***AL600ULX***
 - *Single Output*
- ***AL600ULPD4***
 - *Four (4) Fused Outputs*
- ***AL600ULPD8***
 - *Eight (8) Fused Outputs*
- ***AL600ULXPD16***
 - *Sixteen (16) Fused Outputs*
- ***AL600ULPD4CB***
 - *Four (4) PTC Outputs*
- ***AL600ULPD8CB***
 - *Eight (8) PTC Outputs*
- ***AL600ULXPD16CB***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

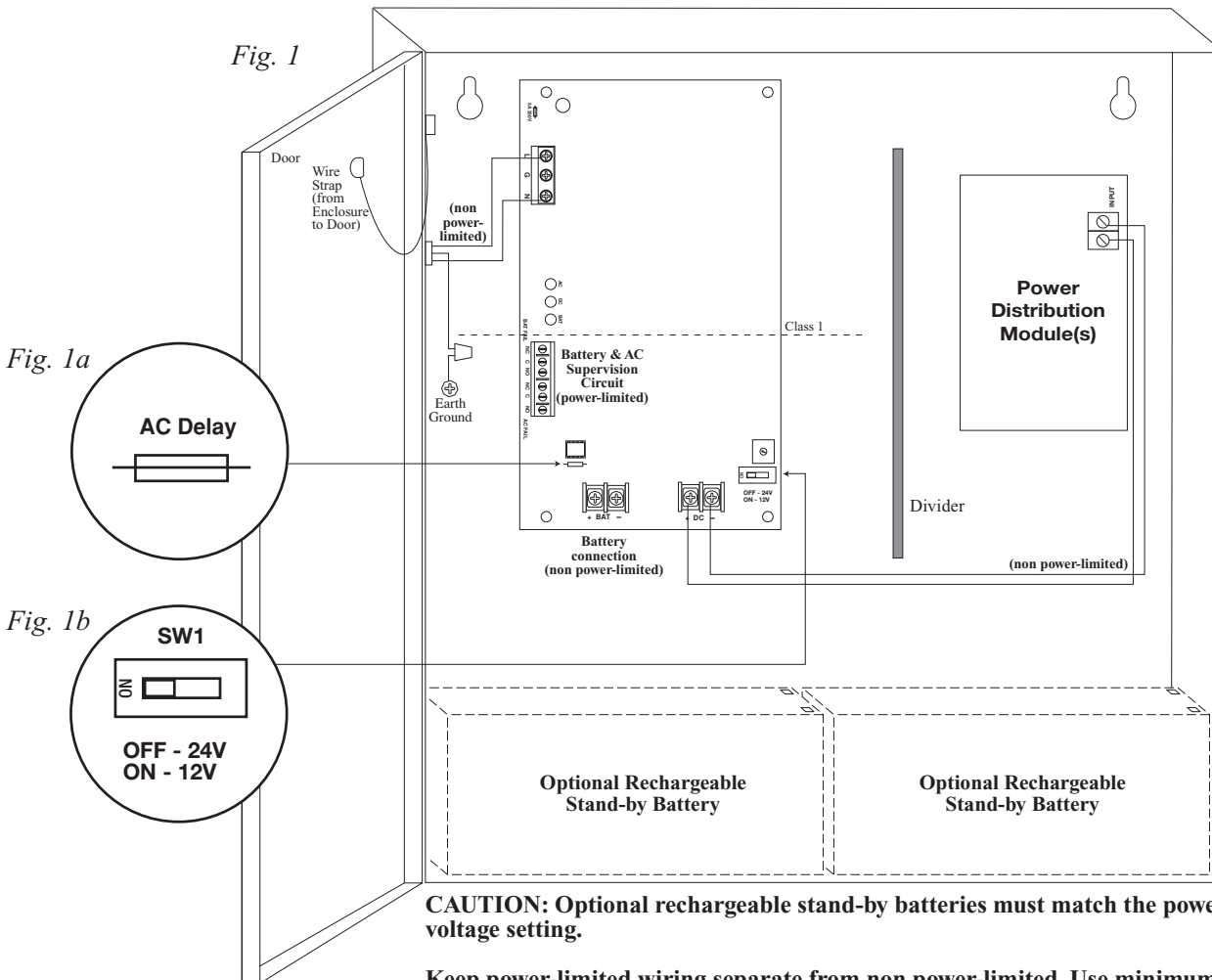
Output	4 hr. of Stand-by and 5 Minutes of Alarm	24 hr. of Stand-by and 5 Minutes of Alarm	60 hr. of Stand-by and 5 Minutes of Alarm
12VDC / 40AH Battery	Stand-by = 6.0A Alarm = 6.0A	Stand-by = 1.0A Alarm = 6.0A	Stand-by = 300mA Alarm = 6.0A
24VDC / 12AH Battery	—	Stand-by = 200mA Alarm = 6.0A	—
24VDC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

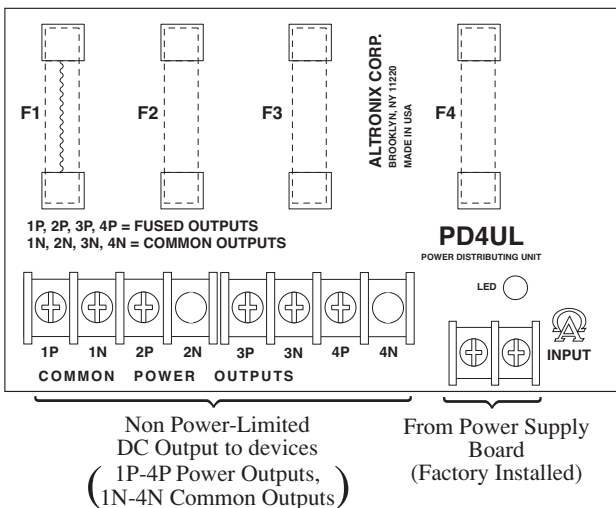


Fig. 2b

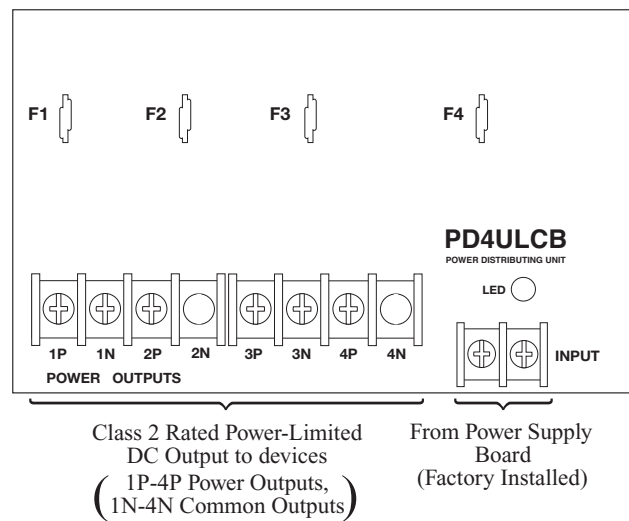


Fig. 3a

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

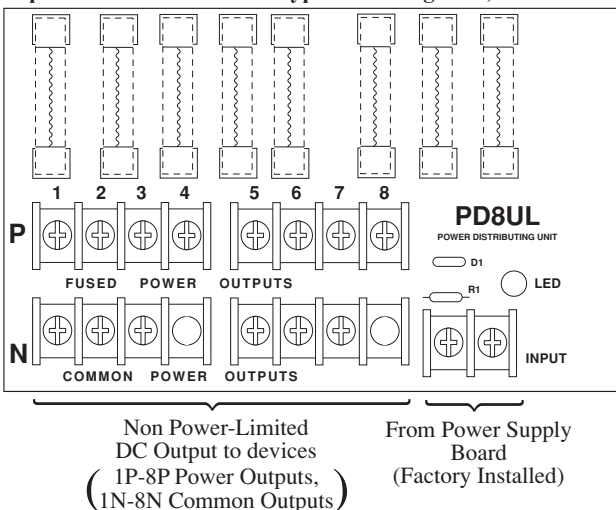
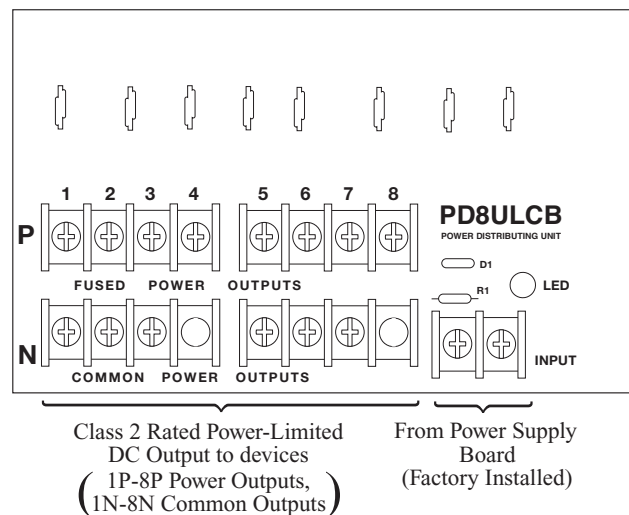


Fig. 3b



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

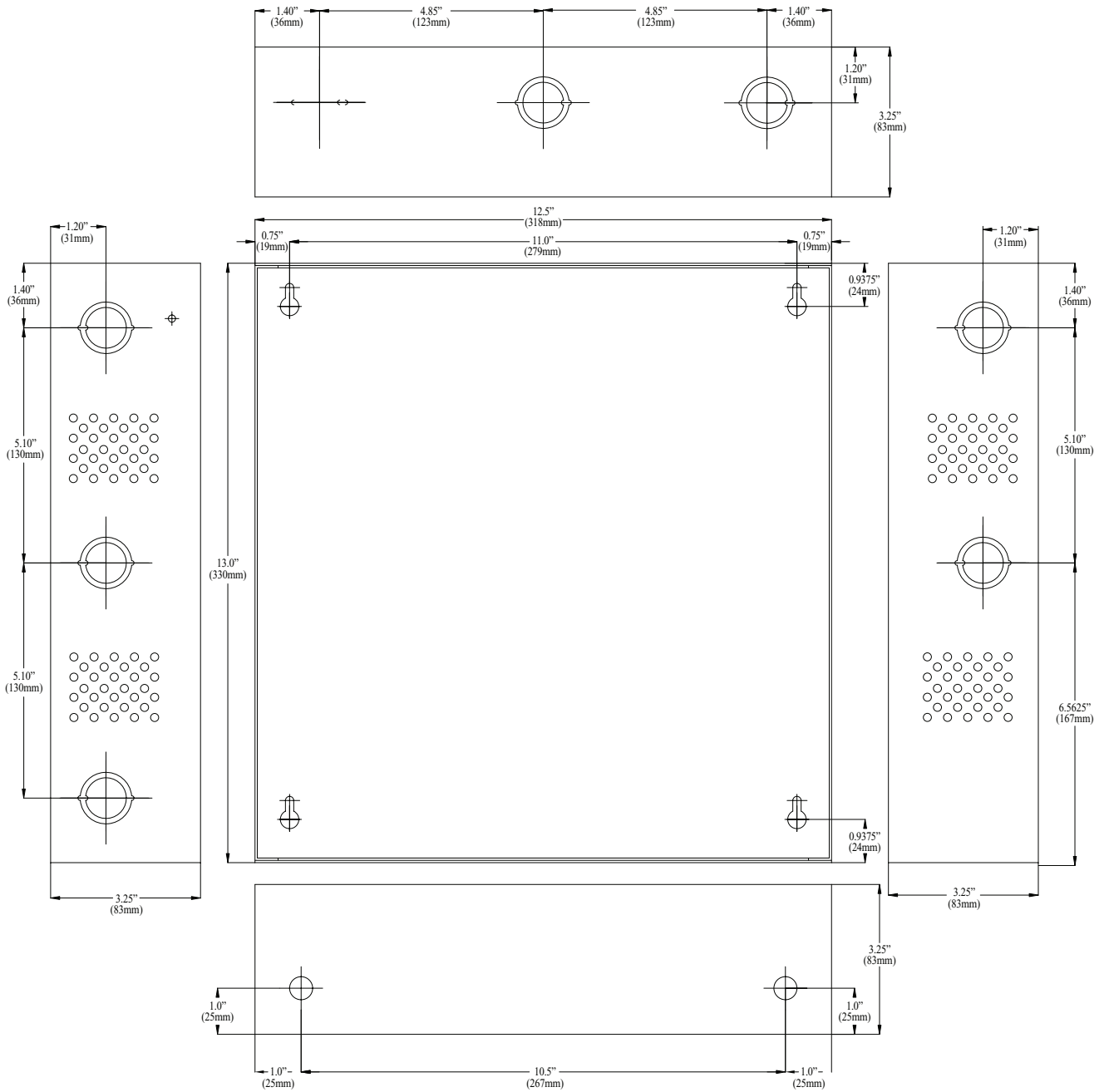
Table A-2 below lists relays compatible with *AL600ULX* output.

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

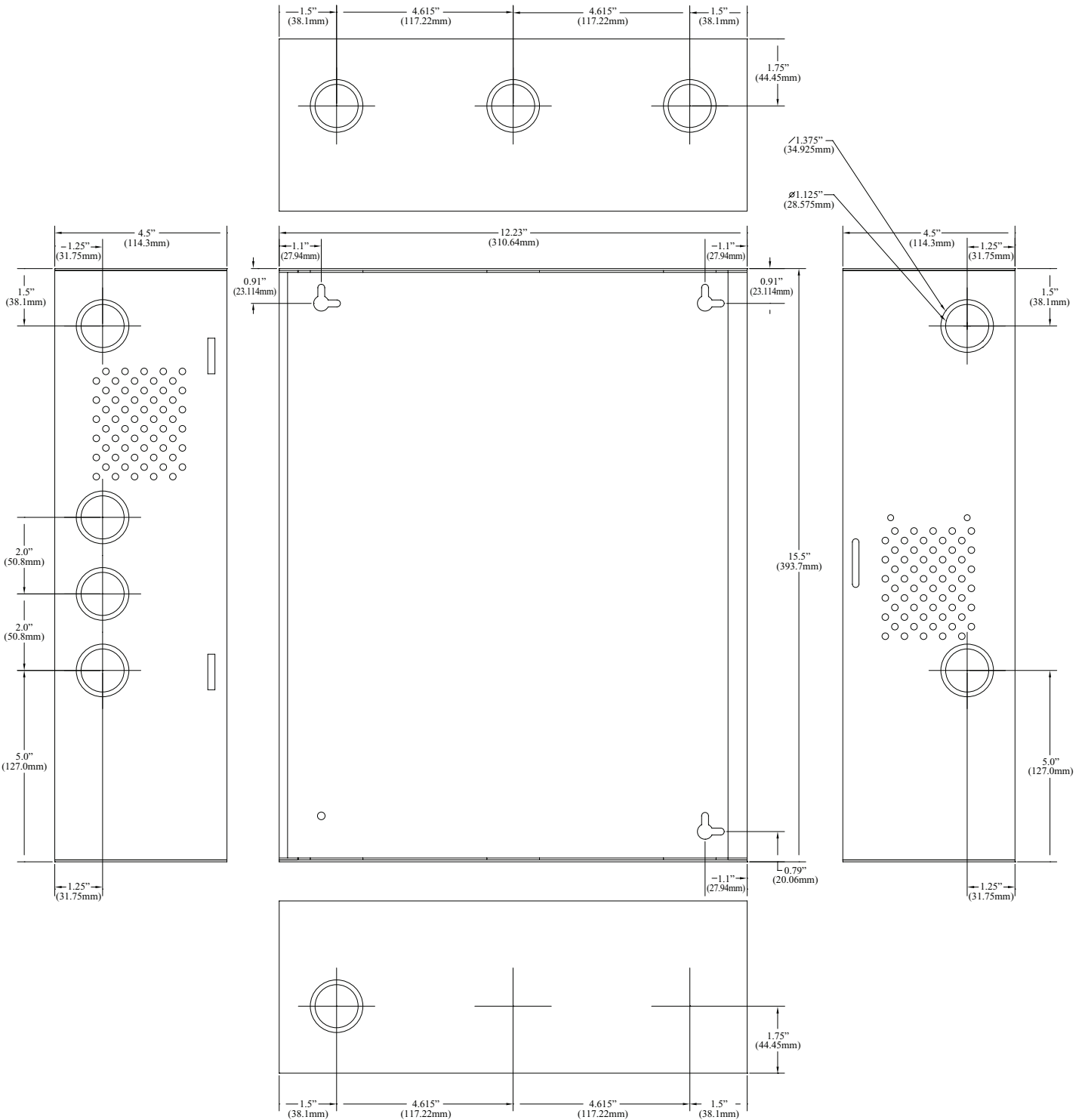
Enclosure Dimensions (BC300):

AL600ULX, AL600ULPD4, AL600ULPD4CB, AL600ULPD8, and AL600ULPD8CB

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



Enclosure Dimensions (BC400):
AL600ULXX, AL600ULXPD4, AL600ULXPD4CB, AL600ULXPD8,
AL600ULXPD8CB, AL600ULXPD16, and 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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- 8 -

