Altronix®

AL600UL3
AL600UL3X
Triple Output
Power Supply/Charger

Installation Guide

For a red enclosure, add an "R" suffix to the part # e.g. AL600UL3R

SECURITY SIGNALING UL LISTED c UL LISTED MEA Approved

Rev. 120612

Overview:

The AL600UL3/AL600UL3X Triple Output Power Supply/Charger is specifically designed for use with access control and fire-protective signaling systems and accessories. The AL600UL3/AL600UL3X converts a 115VAC 60Hz input into three (3) outputs *(see specifications)*.

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.
- MEA - NYC Department of Buildings Approved.
- CSFM - California State Fire Marshal Approved.
- NFPA 72 compliant (Fire-Protective Signaling Service).

Input:

- Input 115VAC / 60Hz, 3.5 amp.
- AC input and DC output LED indicators.

Output:

- Class 2 Rated power-limited outputs (5VDC and 12VDC only).
- 1.75 amp continuous supply current at 5VDC and 12VDC regulated outputs.
- 3 amp continuous supply current at 24VDC *(for Fire-Protective Signaling use Special applications)*.
- Filtered and electronically regulated outputs. 100 mV p/p output ripple.

Output *(cont'd.)*:

- 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 0.7 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.
- Enclosure accommodates up to two (2) 7AH batteries.

Enclosure dimensions (H x W x D):

AL600UL3

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

AL600UL3X

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

Stand-by Specifications *(Current is specified on AL3XB input)*:

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
24VDC / 40AH Battery	5VDC - 1.75 amp	5VDC - 0.3 amp	5VDC - 0.1 amp
	12VDC - 1.75 amp	12VDC - 0.3 amp	12VDC - 0.1 amp
	24VDC - 3 amp	24VDC - 0.3 amp	24VDC - 0.1 amp

Installation Instructions:

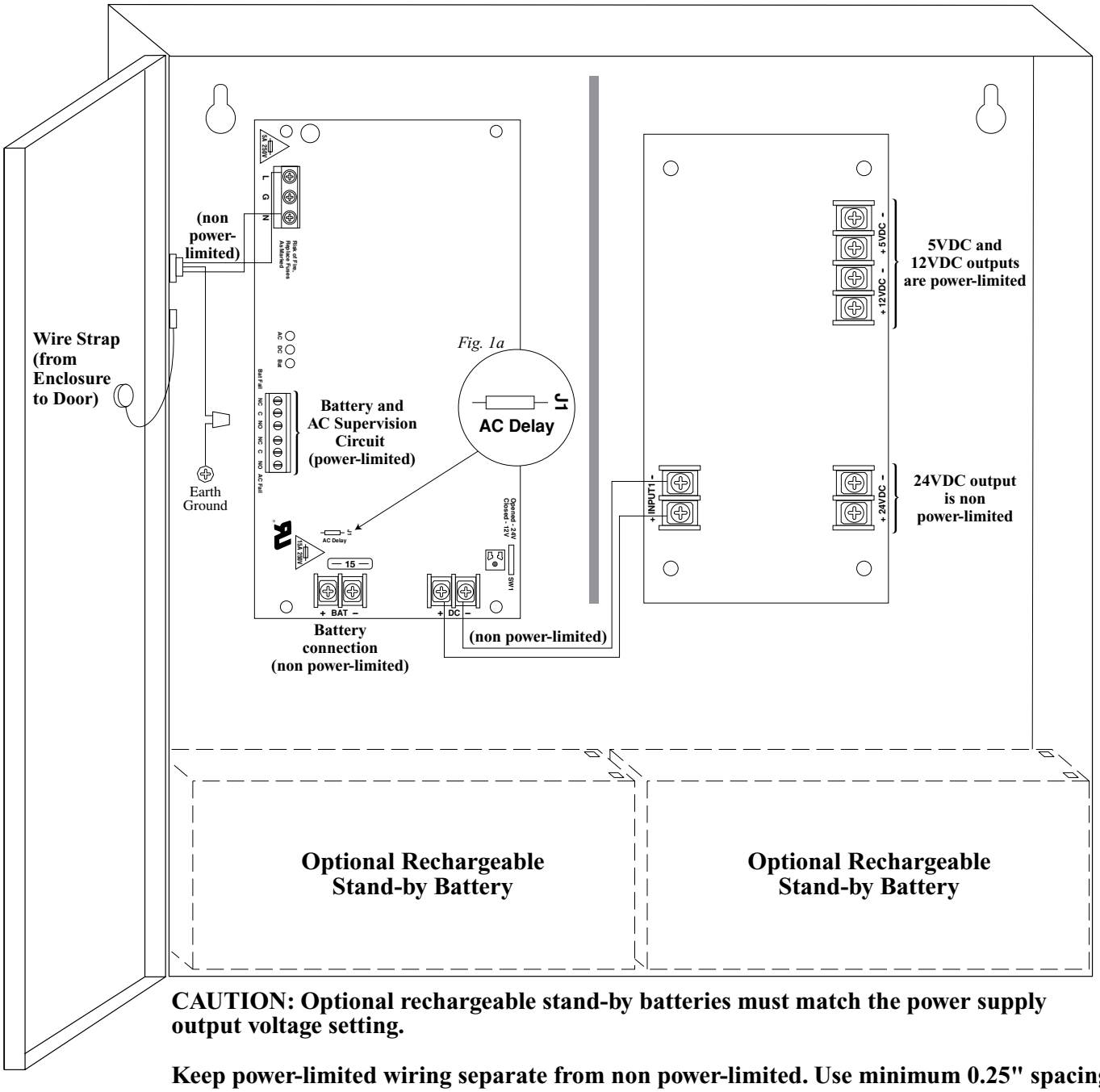
Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/NFPA 72/ANSI, and with all local codes and authorities having jurisdiction. Product is intended for indoor use only.

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 the three 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, pgs. 7-8)*. Secure enclosure to earth ground. It is recommended to first review the following tables for screw terminals, switch selection and LED status indications. This will greatly facilitate installation hook-up.
   Carefully review:
   Stand-by Specifications (pg. 2)
   LED Diagnostics (pg. 4)
   Terminal Identification Table (pg. 4)
2. Connect AC power (115VAC 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 (115VAC / 60Hz Input, Battery Wires). Minimum 0.25" spacing must be provided.
   For Fire Alarm applications the outputs are "Special Applications" only, see list *(refer to Appendix A, pg. 5)*.
3. Measure output voltage before connecting devices. This helps avoiding potential damage.

4. Connect 5VDC devices to be powered at 5VDC to the terminals marked [+ 5VDC –].
5. Connect 12VDC devices to be powered at 12VDC to the terminals marked [+ 12VDC –].
6. Connect 24VDC devices to be powered at 24VDC to the terminals marked [+ 24VDC –].
7. Connect two (2) 12V Stand-by batteries.
   Note: For Access Control applications batteries are optional. When batteries are not used, a loss of AC will result in the loss of output voltage. Batteries must be lead acid or gel type if used. Two (2) 12V Stand-by batteries connected in series to the terminals marked [+ BAT –] *(Fig. 1 , pg. 3)*.
8. It is required to connect supervisory trouble reporting devices to outputs marked [AC FAIL, LOW BAT] *(Fig. 1, pg. 3)*. Use 22 AWG to 18 AWG for AC Fail & Low Battery reporting. AC Failure will report in 5 minutes.
   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)*.
9. Please ensure that the cover is secured with the provided Key Lock.

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.



CAUTION: Optional rechargeable stand-by batteries must match the power supply output voltage setting.

Keep power-limited wiring separate from non power-limited. Use minimum 0.25" spacing.

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 *(see Terminal Identification Tables).*

Battery Test: Under normal load conditions check that the battery is fully charged, check specified voltage at the battery terminals and at the board terminals marked [+ BAT –] to ensure that there is no break in the battery connection wires.

Note: Maximum charge current under discharge is 0.7 amp.

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

LED Diagnostics:

AL600ULXB - Power Supply/Charger

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.

Terminal Identification:

AL600ULXB - Power Supply/Charger

Terminal Legend	Function/Description
L, G, N	115VAC 60 Hz
+DC –	24VDC @ 6 amp total continuous non power-limited output (supplies power to ALX3B).
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.
Bat Fail NC, C, NO	Indicates low battery condition, e.g. no battery presence. Relay normally energized when DC power is present. Contact rating 1 amp @ 28VDC. Low battery threshold: 24VDC output threshold is set approximately @ 21VDC
+BAT –	Stand-by battery connections. Maximum charge current 0.7 amp.

AL3XB - Power Output Module

Terminal Legend	Function/Description
– INPUT +	24VDC from power supply (AL600ULXB)
+ 24VDC –	24VDC @ 3 amp continuous non power-limited output
+ 12VDC –	12VDC @ 1.75 amp continuous power-limited output.
+ 5VDC –	5VDC @ 1.75 amp continuous power-limited output.

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 ***AL600UL3/AL600UL3X*** 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	.05	23
4WT-B (12/24 volt)	Photoelectric I^3 w/Therm	.05	23
4WTA-B (12/24 volt)	I^3 Photo w/Therm/Sounder	.05	35
4WTR-B (12/24 volt)	I^3 Photo w/Therm/Relay	.05	35
4WITAR-B (12/24 volt)	I^3 Photo w/Isolated Therm/Sounder/Relay	.05	50
2W-MOD2	I^3 Loop Test/Maintenance Mod.	.05	*
RRS-MOD	I^3 Reversing Relay/Sync Module	.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 ***AL600UL3/AL600UL3X*** output.

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

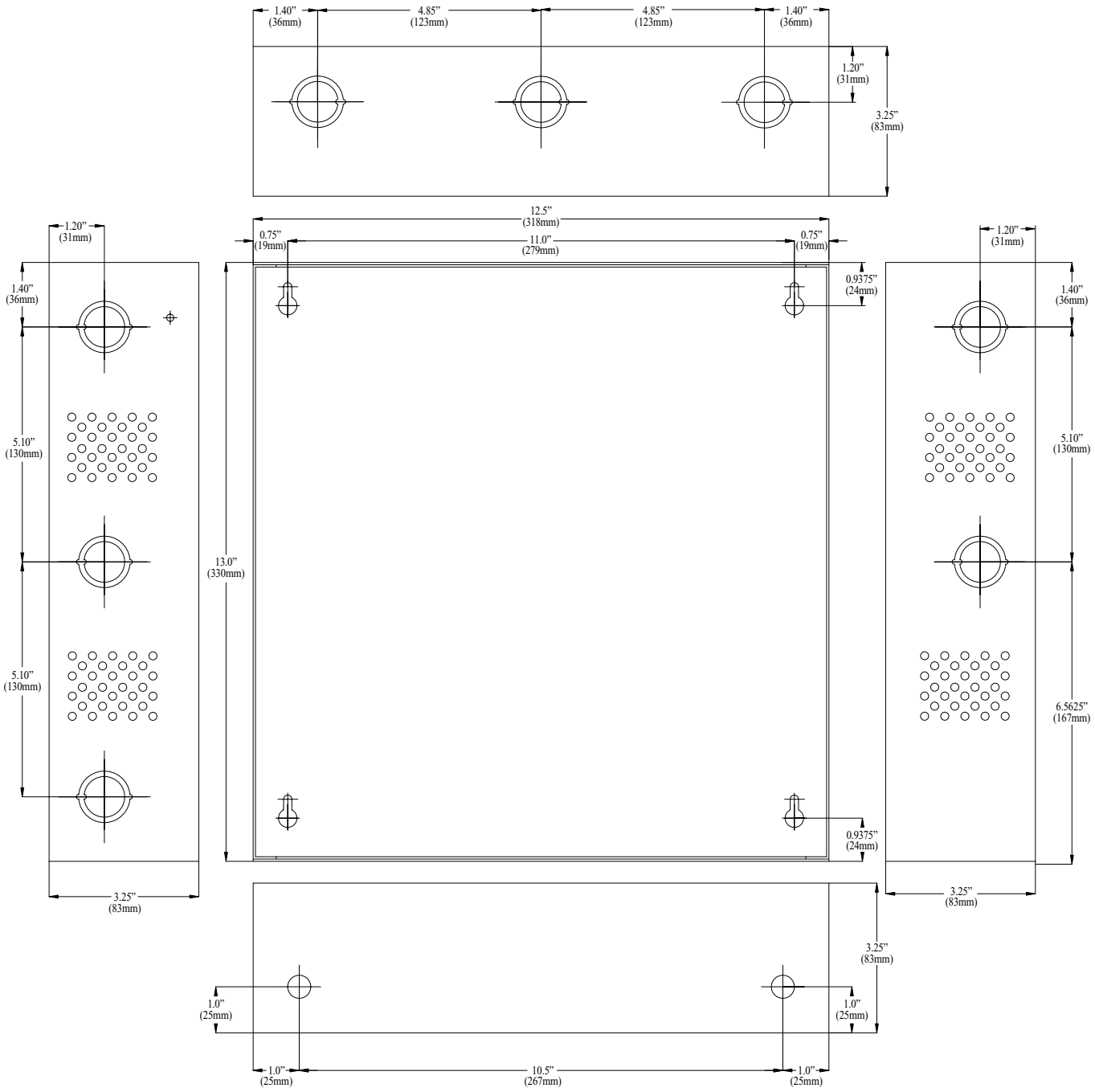
Manufacturer	Model	Current (mA)
System Sensor	R-20T	40
	R-24T	40
	R-10E	23
	R-14E	23
	R-20E	40
	R-24E	40

Notes:

Enclosure Dimensions (BC300):

AL600UL3

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



Enclosure Dimensions (BC400):

AL600UL3X

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