Altronix AL4003V Triple Output Access Control Power Supply and Charger Installation Guide

Contents

Altronix AL4003V Triple Output Access Control Power Supply and Charger

Overview:

AL4003V multi-output access control power supply/charger is specifically designed for use with access control systems and accessories. The AL4003V converts a 220VAC (working range 198VAC – 256VAC), 50/60Hz input into three (3) individually regulated power-limited outputs (see specifications).

Specifications:

Input:

- 220VAC (working range 198VAC – 256VAC), 50/60Hz, 0.8A.

Output:

- 1.75A continuous supply current at 5VDC.
- 1.75A continuous supply current at 12VDC.
- 1.5A continuous supply current at 24VDC.
- 51 mV p/p output ripple.
- Short circuit and thermal overload protection.
- Output fuse rated at 15A/32V.

Supervision:

- AC fail supervision (form “C” contact rated 1A @ 28VDC).
- Low battery and battery presence supervision (form “C” contact rated 1A @ 28VDC).

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.

Additional Features:

- Power supply, enclosure, cam lock and battery leads.
- AC input and DC output LED indicators.

Enclosure Dimensions H x W x D approximate):

- 13.5” x 13” x 3.25” (342.9mm x 330.2mm x 82.6mm) Enclosure accommodates up to two (2) 12VDC/7AH batteries.

Stand-by Specifications

(Current is specified on AL3XB input):

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 / 12AH Battery	–	Stand-by = 200mA Alarm = 3.0A	–
24VDC / 40AH Battery	Stand-by = 3.0A Alarm = 3.0A	Stand-by = 1.0A Alarm = 3.0A	Stand-by = 300mA Alarm = 3.0A

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 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, pg. 4). 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.
2. Connect AC power (220VAC 50/60Hz) to the terminals marked [L, N]. Secure ground wire lead to ground lug (Fig. 1, pg. 3). Use 18 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.
3. Measure output voltage before connecting devices. This helps avoiding potential damage.
4. Connect devices to be powered at 5VDC to the terminals marked [+ 5VDC –].
5. Connect devices to be powered at 12VDC to the terminals marked [+ 12VDC –].

6. Connect 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 terminals marked [+ BAT –] (Fig. 1 , pg. 3).
8. It is required to connect supervisory trouble reporting devices to the outputs marked [AC FAIL, LOW BAT](Fig. 1, pg. 3). Use 22 AWG to 18 AWG for AC Fail and Low Battery reporting.

   AC Failure will report in 5 minutes.

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 0.7A.
Note: Expected battery life is 5 years; however it is recommended changing batteries in 4 years or less if necessary.

Terminal Identification Tables

AL400XB220 – Power Supply

Terminal Legend	Function/Description
L, N	220VAC, 50/60Hz
– DC +	24VDC @ 3A total continuous 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 1A @ 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 1A @ 28VDC. Low battery threshold: 24VDC output threshold is set approximately @ 21VDC
– BAT +	Stand-by battery connections. Maximum charge current 0.7A.

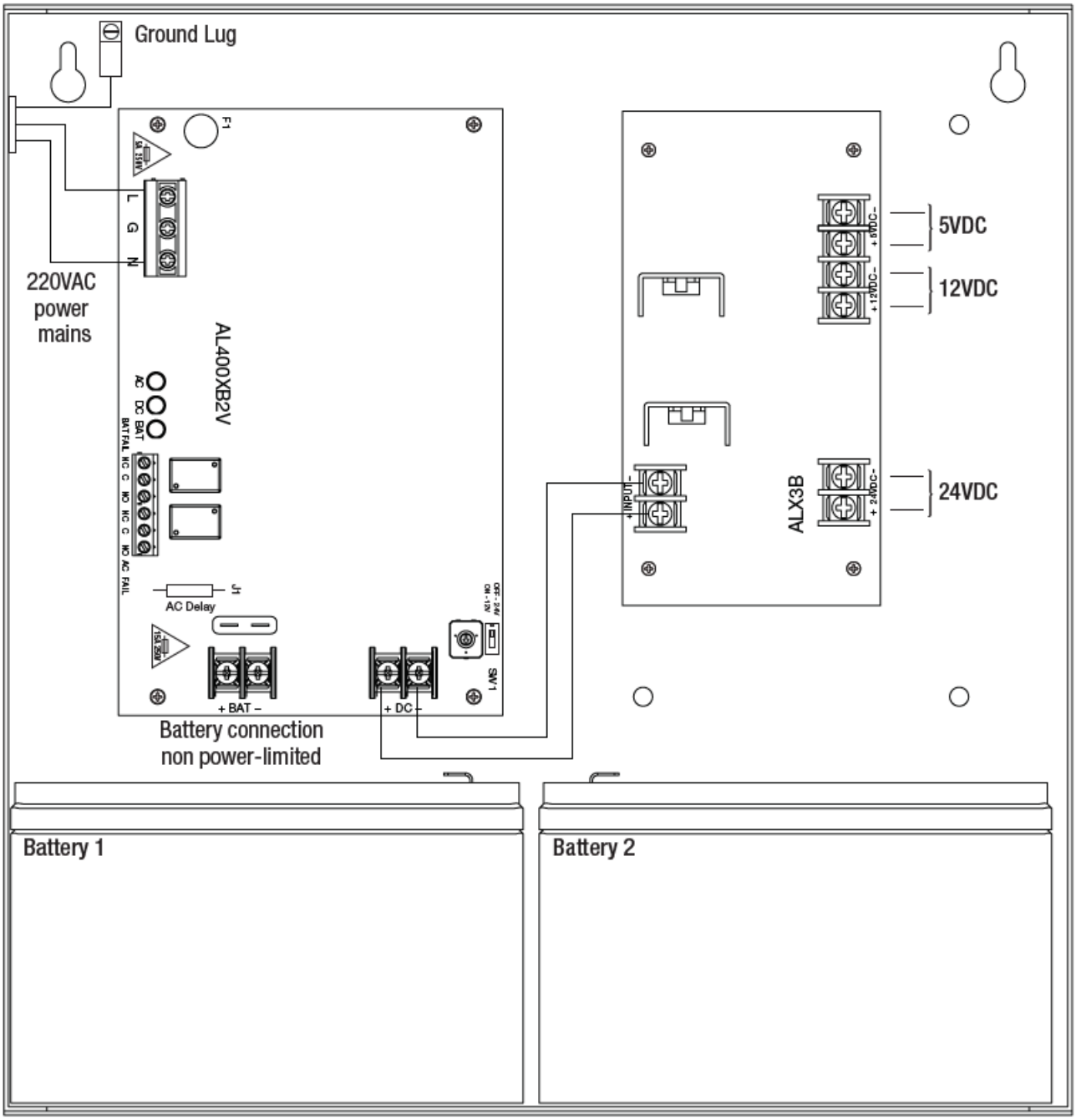
AL3XB – Power Output Module

Terminal Legend	Function/Description
– INPUT +	24VDC from power supply (AL400XB220)
– OUT 1 +	24VDC @ 1.5A continuous power-limited output
– OUT 2 +	12VDC @ 1.75A continuous power-limited output.
– OUT 3 +	5VDC @ 1.75A continuous power-limited output.

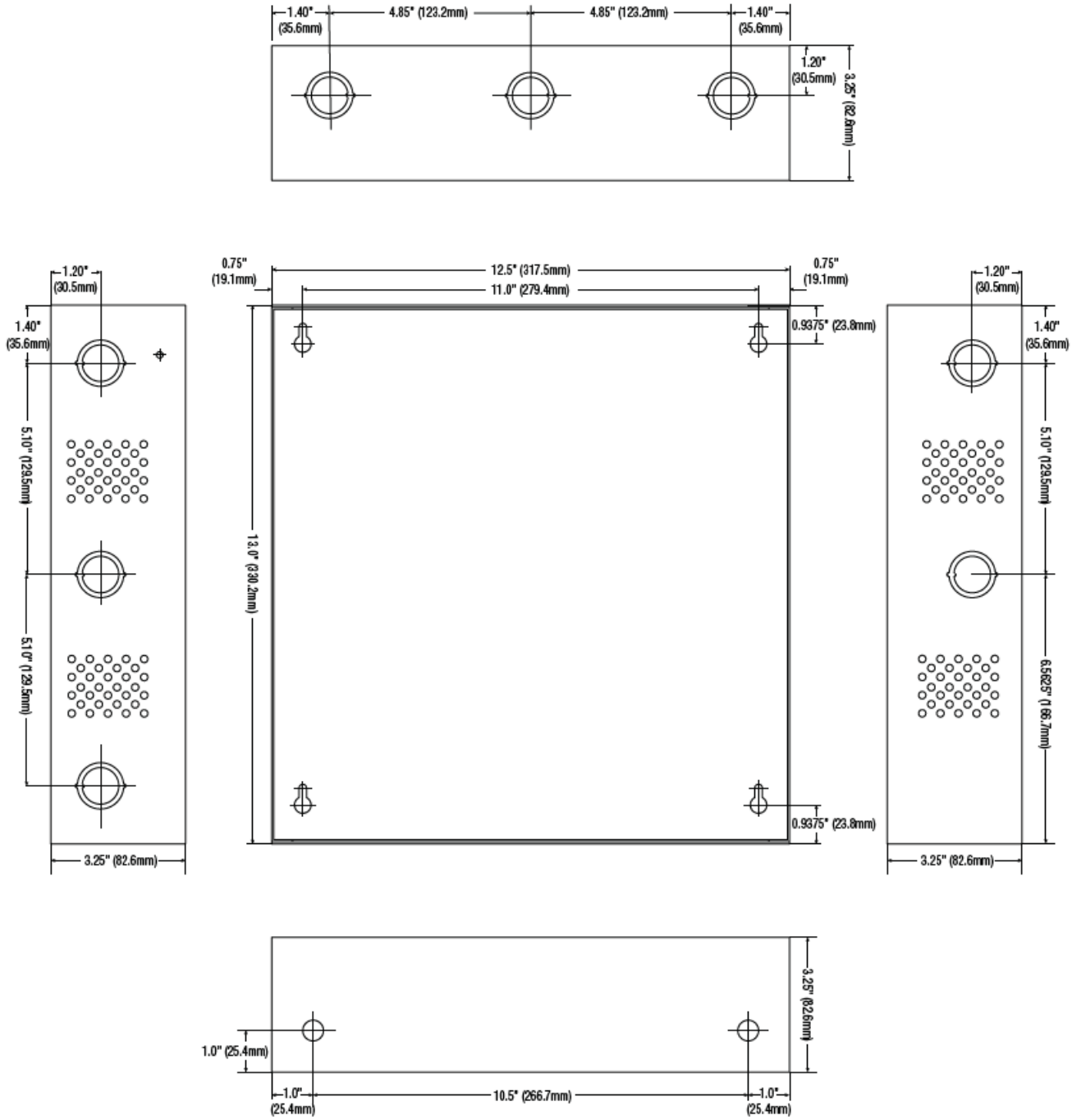
LED Diagnostics:

LED	ON	OFF
AC (Green)	Normal operation	No AC input
DC (Red)	Normal operation	No DC output

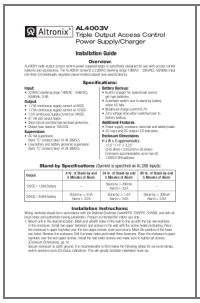
CAUTION: De-energize unit prior to servicing. For continued protection against risk of electric shock and fire hazard replace fuse with the same type and rating. Do not expose to rain or moisture.


Ground Lug
F1
L
G
N
220VAC
power
mains
AL400XB2V
AC
DC
BAT
BAT FAIL
NC
C
NO
NC
C
NO
AC FAIL
J1
AC Delay
+ BAT –
+ DC –
SW1
Battery connection
non power-limited
5VDC
12VDC
24VDC
ALX3B
Battery 1
Battery 2

Dimensions



Documents / Resources

	Altronix AL4003V Triple Output Access Control Power Supply and Charger [pdf] Installation Guide AL4003V, Triple Output Access Control Power Supply and Charger, AL4003V Triple Output Access Control Power Supply and Charger

References

- Altronix Home