AL1024XB2V
Power Supply/Charger

Overview:

The AL1024XB2V is a power supply that converts a nominal 220VAC (working range 198VAC-256VAC), 50/60Hz input to a 24VDC output (see specifications).

Specifications:

Input:
- Nominal 220VAC (working range 198VAC-256VAC), 50/60Hz, 2.5A.

Output:
- 24VDC output.
- 8A continuous supply current with 10A supply current during alarm.
- Filtered and electronically regulated output.
- Maximum Ripple: 250mV P/P.

Battery Backup:
- Built-in charger for sealed lead acid or gel type batteries.
- Maximum charge current 3.6A.
- Automatic switch over to stand-by battery when AC fails.

Battery Backup *(cont'd)*:
- Zero voltage drop when switched over to battery backup.

Visual Indicators:
- AC input and DC output LED indicators.

Supervision:
- AC fail supervision (form "C" contacts).
- Low battery and battery presence supervision (form "C" contacts).

Additional Features:
- Short circuit and thermal overload protection.

Board Dimensions *(L x W x H approximate)*:
8.4" x 4.5" x 1.4" (213.4mm x 114.4mm x 35.6mm)

Stand-by Specifications:

Output	**15 min. of Stand-by and 5 min. of Alarm**	**4 hr. of Stand-by and 5 min. of Alarm**	**24 hr. of Stand-by and 5 min. of Alarm**	**60 hr. of Stand-by and 5 min. of Alarm**
24VDC / 12AH Battery	Stand-By = 8A Alarm = 10A	Stand-By = 1.5A Alarm = 10A	Stand-By = 200mA Alarm = 10A	Stand-By = 100mA Alarm = 10A
Output	**15 min. of Stand-by and 5 min. of Alarm**	**4 hr. of Stand-by and 5 min. of Alarm**	**24 hr. of Stand-by and 15 min. of Alarm**	**60 hr. of Stand-by and 15 min. of Alarm**
24VDC / 65AH Battery	———	Stand-By = 8.0A Alarm = 10A	Stand-By = 1.5A Alarm = 10A	Stand-By = 500mA Alarm = 10A

Installation Instructions:

The AL1024XB2V should be installed in accordance with article 760 of The National Electrical Code, as well as NFPA 72 and all applicable Local Codes.

1. Mount AL1024XB2V in the desired location/enclosure.
2. Connect unswitched AC power (220VAC 50/60Hz) to the terminals marked [L, N] *(Fig. 1, pg. 2)*. Use 14 AWG or larger for all power connections (Battery, AC input, DC output). Use 22 AWG to 18 AWG for power-limited circuits (AC Fail/Low Battery reporting).
   Keep power-limited wiring (DC output) separate from non power-limited wiring (220VAC 50/60Hz Input, 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.
3. Measure output voltage before connecting devices. This helps avoiding potential damage.
4. Connect devices to be powered to the terminals marked [+ DC –] *(Fig. 1, pg. 2)*.
5. 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. Connect battery to terminals marked [– BAT +] *(Fig. 1, pg. 2)*.
6. It is required to connect appropriate signaling notification devices to AC FAIL & BAT FAIL *(Fig. 1, pg. 2)* supervisory relay outputs. Use 22AWG to 18AWG wires. AC FAIL will report in 5 minutes.
   To delay report for 6 hours cut "AC Delay" jumper *(Fig. 1a, pg. 2)*.

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.
Battery Test: Under normal load conditions check that the battery is fully charged, check specified voltage both at 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 discharge is 3.6A.
Note: Expected battery life is 5 years; however, it is recommended changing batteries in 4 years or less if needed.

LED Diagnostics:

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.

Terminal Identification:

Terminal Legend	Function/Description
L, N	Connect 220VAC (working range 198VAC-256VAC) to these terminals: L to hot, N to neutral.
+ DC –	24VDC @ 8A continuous, 10A in alarm.
AC FAIL NO, C, NC	Used to notify 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 event. To delay reporting of up to 6 hrs., cut “AC Delay” jumper and reset power to unit *(Fig. 1a)*.
BAT FAIL NO, C, NC	Used to indicate low battery condition, e.g. connect to alarm panel. Relay normally energized when DC power is present. Contact rating 1A @ 28VDC. A removed battery is reported within 1 minute. Battery reconnection is reported within 1 minute. Low battery threshold: @ approximately 21VDC.
– BAT +	Stand-by battery connections. Maximum charge current 3.6A.

CAUTION: For continues protection against risk of fire replace fuses with the same type and rating:
Input Fuse is 5A/250V, Battery Fuse is 15A/32V

Fig. 1

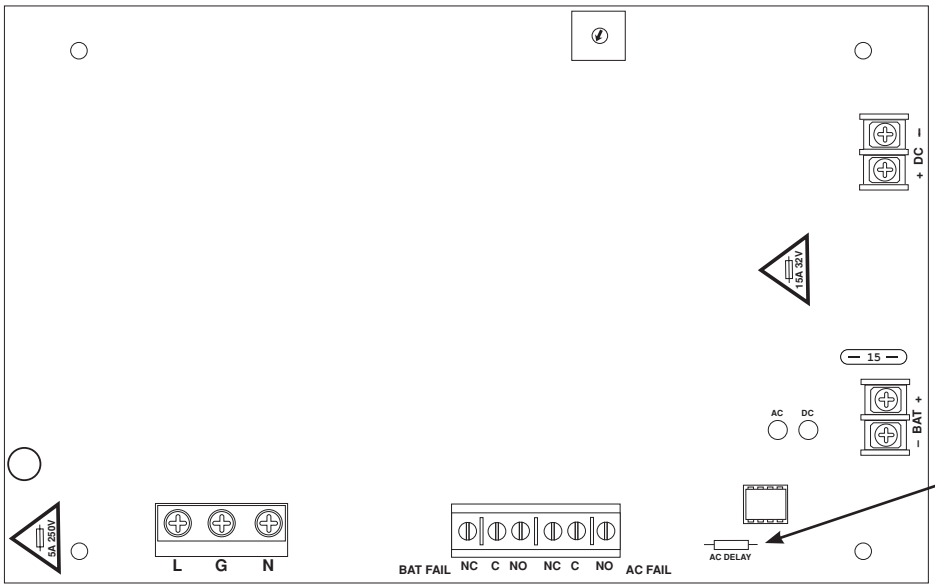

Fig. 1a