

## Installation Guide

### eFlow104NB - Power Supply/Charger

#### Overview:

The eFlow104NB power supply/charger converts a 120VAC / 60Hz input to a 24VDC @ 10A output.

#### Specifications:

##### Agency Listings:

- UL Recognized component for: Access Control System Units (UL 294), Power Supplies for use with Burglar-Alarm Systems (UL 603), Power Supplies for Fire Protective Signaling Systems (UL 1481).
- cUL Listed ULC-S318-96: Power Supply for Burglar Alarm Systems.

##### Input Rating:

- Input 120VAC 60Hz, 4.5A.

##### Output:

- 24VDC output.
- 10A continuous supply current.
- Aux. Power-Limited output rated @ 1A (unswitched).
- Overvoltage Protection.
- Filtered and electronically regulated outputs.

##### Battery Backup:

- Built-in charger for sealed lead acid or gel type batteries.
- Maximum charge current 1.54A.
- Automatic switch over to stand-by battery when AC fails. Transfer to stand-by battery power is instantaneous with no interruption.

##### Fire Alarm Disconnect:

- Supervised Fire Alarm disconnect (latching or non-latching) 10K EOL resistor. Operates on a normally open (NO) or normally closed (NC) trigger.

##### Supervision:

- AC fail supervision (form “C” contacts).
- Battery fail & presence supervision (form “C” contacts).
- Low power shutdown. Shuts down DC output terminals if battery voltage drops below 80% of nominal. Prevents deep battery discharge.

##### Visual Indicators:

- Green AC Power LED indicates 120VAC present.
- AC input and DC output LED indicators.

##### Additional Features:

- Short circuit and overload protection.

##### Board Dimensions (approximate L x W x H):

8.25” x 4.56” x 1.5” (209.5 mm x 115.8 mm x 38.1 mm).

#### Stand-by Specifications:

Battery	Burg. Applications 4 hr. Stand-by/ 15 min. Alarm	Fire Applications 24 hr. Stand-by/ 5 min. Alarm	Access Control Applications Stand-by
7AH	0.4A/10A	N/A	5 Mins./10A
12AH	1A/10A	0.3A/10A	15 Mins./10A
40AH	6A/10A	1.2A/10A	Over 2 Hours/10A
65AH	6A/10A	1.5A/10A	Over 4 Hours/10A

#### Installation Instructions:

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

1. Mount the eFlow104NB in desired location/enclosure.
2. Connect unswitched AC power (120VAC 60Hz) to terminals marked [L, G, N] (Fig. 1a, pg. 3). Use 14 AWG or larger for all power connections. Secure green wire lead to earth ground.

**Keep power-limited wiring separate from non power-limited wiring (120VAC 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 terminals marked [– DC +] (Fig. 1h, pg. 3).  
For auxiliary device connection this output will not be affected by Low Power Disconnect or Fire Alarm Interface. Connect device to terminals marked [+ AUX –] (Fig. 1f, pg. 3).
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. 1g, pg. 3). Use two (2) 12VDC batteries connected in series for 24VDC operation (battery leads included). Use batteries - Casil CL1270 (12V/7AH), CL12120 (12V/12AH), CL12400 (12V/40AH), CL12650 (12V/65AH) batteries or UL recognized BAZR2 batteries of an appropriate rating.

6. Connect appropriate signaling notification devices to AC FAIL & BAT FAIL (Fig. 1b, pg. 3) supervisory relay outputs.
7. To delay AC reporting for 2 hrs., set SW2 to appropriate dip switch position [AC Delay] (Fig. 1c, pg. 3).
8. To enable or disable Fire Alarm Disconnect set SW2 to appropriate dip switch position [Shutdown] (Fig. 1c, pg. 3).
9. A short or NO or NC input triggers FACP [Trigger EOL Shutdown] (Fig. 1d, pg. 3).
10. Place a jumper for non-latching FACP. A momentary short on these terminals resets FACP latching [Trigger EOL Shutdown] (Fig. 1e, pg. 3).

### **Wiring:**

Use 18 AWG or larger for all low voltage power connections.

**Note:** Take care to keep power-limited circuits separate from non power-limited wiring (120VAC, 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.

**Battery Test:** Under normal load conditions check that the battery is fully charged, check specified voltage (24VDC @ 26.4) 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 discharges is 1.54A.

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

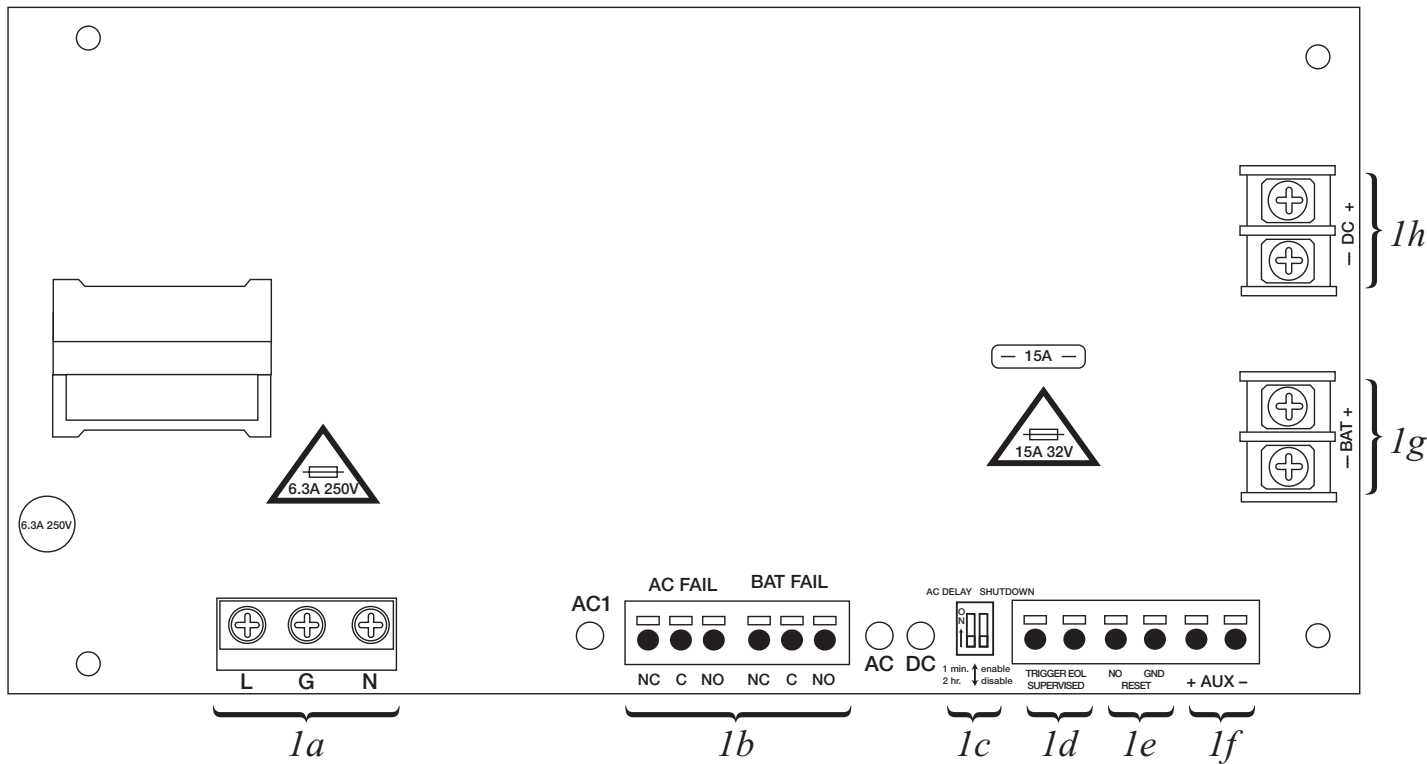
### **LED Diagnostics:**

Green (DC)	Green (AC/AC1)	Power Supply Status
ON	ON	Normal operating condition.
ON	OFF	Loss of AC. Stand-by batteries 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, G, N	Connect 120VAC 60Hz to these terminals: L to hot, N to neutral, G to ground (non power-limited) (Fig. 1a, pg. 3).
– DC +	24VDC @ 10A continuous output (Fig. 1h, pg. 3).
Trigger EOL Supervised	Fire Alarm Interface trigger input from a short or FACP. Trigger inputs can be normally open, normally closed from an FACP output circuit (Power-Limited input) (Fig. 1d, pg. 3).
NO, GND RESET	FACP interface latching or non-latching (Power-Limited) (Fig. 1c, pg. 3).
+ AUX –	Auxiliary Power-Limited output rated @ 1A (unswitched) (Power-Limited output) (Fig. 1f, pg. 3).
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 @ 30VDC (Power-Limited) (Fig. 1b, pg. 3).
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 @ 30VDC. A removed battery is reported within 5 minutes. Battery reconnection is reported within 1 minute (Power-Limited) (Fig. 1b, pg. 3).
– BAT +	Stand-by battery connections. Maximum charge current 1.54A (non power-limited) (Fig. 1g, pg. 3).

Fig. 1 - eFlow104NB configuration



## **Notes:**

Altronix is not responsible for any typographical errors.

140 58th Street, Brooklyn, New York 11220 USA, 718-567-8181, fax: 718-567-9056  
website: [www.altronix.com](http://www.altronix.com), e-mail: [info@altronix.com](mailto:info@altronix.com). Lifetime Warranty, Made in U.S.A.  
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