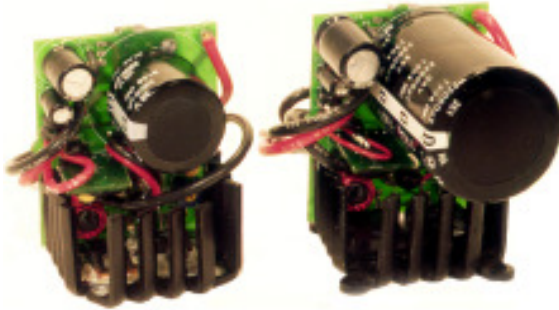


DC Linear Power Supply

2.5 Amp and 7.5 Amp Versions



Switched efficiency, linear performance

The high efficiency of a switched power supply plus the idealistic performance of a linear! With this DC Linear Power Supply, computers, communication electronics, instruments, alarms, LED lighting, and most other electronic loads can be powered at exact voltage with ultra-low noise, nil on/off transient, and steady delivered voltage regardless of shifting battery and load parameters.

Noise margin in driven digital circuitry and signal-to-noise ratio in analog are instantly improved. Plus ground loops -- a major source of false triggering in alarms systems and hum in audio equipment -- is virtually eliminated.

With the proprietary two-stage design, a switching stage first reduces supply voltage to an intermediate level at near unity efficiency. A linear stage then regulates and conditions delivered output, while an interstage optical coupler coordinates stages on a pulse-by-pulse basis at the speed of light for crystal-clear performance.

Delivered voltage is continuously adjustable between 1.2V and supply minus about 0.5V, to a laboratory

precise setting accuracy of about 0.01V. 12V units can even be set for 12V and 24V units for 24V to condition output and prevent overvoltage such as might be caused by an "equalizing" or multistage battery charger or nicad. Voltage stability requires no minimum load, while quiescent current is a low 14mA (about the same as an LED).

With minuscule drive current, efficiency is high under even light loading. Full thermal, short circuit, load dump, and reverse battery protection are provided. Noncritical lead length and routing allow flexible siting of the module to fill any available space or sink on an existing metallic structure.

Board material is 94V-0 rated for extra safety margin, with UL recommended trace spacings used throughout. A 500W bidirectional transorb on both input and output protect against aberrant surge voltages. All circuitry is silicon sealed for extra corrosion protection.

The wiring harness includes a remote activation wire allowing 20mA on/off switching for such purposes as radio control. System cost is so low that even non-sophisticated loads such as incandescent and LED lights can be economically powered.

Features

- Ultra-low conducted, induced, and radiated rf emissions for improved margins, ratios, and noncritical module siting
- High efficiency allows physically smaller size for given power delivery
- Output voltage continuously adjustable between 1.2V and supply minus about 0.5V to meet exact requirements
- 14mA quiescent current. No minimum load. Low drive current
- Fully protected (thermal, short circuit, load dump, surge voltage, reverse battery)
- Versions for 6, 12, and 24V battery

Applications

- LED lighting
- Security electronics
- Telemetry
- Instrumentation
- Alarms/mobile electronics
- Battery charging
- Fuel cell applications
- Alarm systems

LINEAR POWER SUPPLY 24V SYSTEM PERFORMANCE		
DELIVERED VOLTAGE	CONTINUOUS CURRENT	EFFICIENCY
24V	7.5A	95%
20V	7.5A	88%
18V	7.5A	86%
15V	7.5A	83%
12V	7.5A	80%
9V	7A	77%
7.4V	6A	73%
6V	5A	68%
5V	5A	62%
Operation below 5V not recommended		

Technical Specifications

Mode of Operation

Dual stage (PWM and Linear) with optical interstage coupler. Non-isolated, point-of-use design (output leads must remain isolated from battery voltages). Switching stage locks on full as source voltage reaches about 2 volts of delivered voltage for extra efficiency

Output Current (general)

The 2.5A version can deliver up to 3A, where current limiting activates.

The 7.5A version can deliver up to 8A, where current limiting activates. Heat sinking in addition to that provided is needed for full output current (sinking to existing metallic structure usually possible).

Output current in both versions is automatically reduced to a safe level in the event of a thermal or current overload, and restored once the overload is removed. Protection against load dump and reverse battery (included fuse blows) also provided

Supply Voltage and Adjustment Range

6V Battery Versions: 4 to 11 vdc working range. Absolute maximum is 32 vdc (point where transorb activates). Adjusts from 1.2 to supply voltage minus about 0.5 vdc.

12V Battery Versions: 10 to 21 vdc working range. Absolute maximum is 32 vdc (point where transorb activates). Adjusts from 1.2 vdc to supply voltage minus about 0.5 vdc

24V Battery Versions: 20 to 28 vdc working range. Absolute maximum is 40 vdc (point where transorb activates). Adjusts from 5 vdc to supply minus about 0.5 vdc. Do not set for over 25 vdc due to parts tolerance.

Output voltage at positive and negative output leads differs from that of input leads, and the output must remain 100% floating. Any interconnection between input and out results in erratic operation. Paralleling is not possible. Battery or filtered dc only

Ambient Temperature Range

Rated current between - 40 F (- 40 C) and 90 F (32 C) ambient temperature; 75% of rated up to about 115 F (46 C)

Load Types

Resistive and capacitive. Use with inductive loads (including motors) is application-specific and therefore not recommended

Line Regulation

Nil within specified supply range

Quiescent (no load) Current

About 14mA

Weight

2.5A Version: about 3 oz (84 gm).
7.5A Version: about 4 oz (112 gm)

Installation

Installs through 1/8" holes drilled in a 1 1/2" square pattern. Mounting to metallic structure permits additional heat dissipation

Load Regulation

Nil from zero load to maximum rated load at any specified output setting

Transient Protection

Delivered voltage is decoupled from interference in supply voltage via attenuation in PWM stage, interstage filter, interstage coupler, and linear stage. 500W transorb included on both input and output sides for all versions. Additional external surge filter recommended where transient hazard is substantial

Output Ripple Voltage (250 Hz)

6V Battery Version: About 25mV peak-to-peak at full rated load

12V Battery Version: About 50mV peak-to-peak at full load rated load

24V Battery Version: About 100mV peak-to-peak at full rated load

Heat Sink

Included heat sink is electrically isolated from circuit voltages, and acts as a circuit enclosure.

Dimensions

Length and width are about 1.8" (47 mm), and height about 2.5" (64 mm)

Accessories Included

Detailed installation instructions

Warranty and Disclaimer

Although Manufacturer warrants the goods, so far as the same are of its manufacturer, against defects in materials and workmanship under normal use and service for which they were designed for a period of 90 days after invoice date, Manufacturer's obligation under this warranty are limited, at its option, to the replacement of the part or parts determined to be defective or to the refund of the purchase price.

Claims made in this data sheet are based on extensive testing and are believed to be true. Manufacturer shall under no circumstances be liable for any special, indirect, incidental, or consequential damages owing to failure of the goods. Manufacturer makes no warranty of fitness for a particular purpose or merchantability or any other warranty, oral or written, expressed or implied, except as specifically set forth herein. Do not use ZANE products as critical components in life support devices or systems, aircraft, or other hazardous applications. Quotation, order acknowledgment, purchase, etc. does not grant or imply a license under any present or future patents owned by seller except to extent purchases are made from seller.

Any goods returned under warranty must be returned freight prepaid to ZANE International Inc., Minden, NV.

Linear Power Supply, 7.5A for Panel Mount Packaging Options

Part #	UPC Number	Input Voltage	Max Current
ALN-30R-6V	13600	6V	2.5A
ALN-30R-12V	13700	12V	2.5A
ALN-30R-24V	13800	24V	2.5A
ALN-75R-6V	13900	6V	7.5A*
ALN-75R-12V	14000	12V	7.5A*
ALN-75R-24V	14100	24V	7.5A*

* Additional heat sinking required