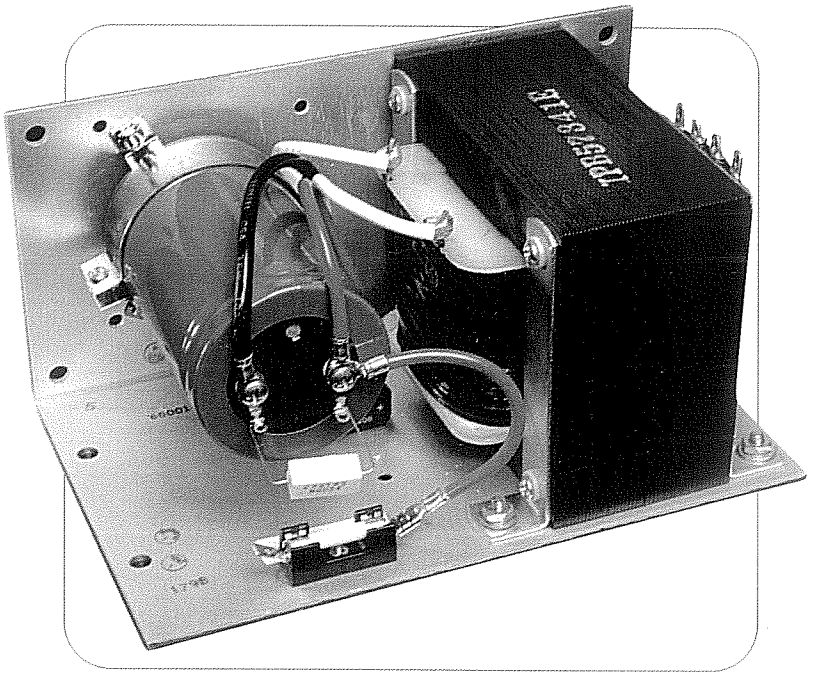
IP500U Series

Unregulated Power Supply Line

The IP500U series unregulated power supply line is designed for high current applications at low cost when full regulation is not required. This rugged, highly reliable power supply line is ideal for applications such as powering solenoids, relays, DC motors, lamps and DC-DC converters. Standard DC outputs are listed below, other outputs are available on special order.



Standard Features

- Bobbin Wound Transformer
- Computer Grade Capacitors
- Floating Output
- Full Rated to 55 degrees Celsius
- Open Frame Construction
- Secondary Fuse Protection
- 50 amp, 200 volt full bridge rectifier
- Full two year warranty

Specifications

- AC Input 47-63 Hz
- 108/120/132/216/240/264 VAC Selection
- Output Ripple: 3% RMS at full rated load, 4% on 12 volt model
- Efficiency @ Full Load 80% typical
- UL Recognized for USA and Canada File Number E133338
- TUV Rheinland licensed. Certificate no. R 9675002
- CE marked per CVD 73/23/EEC

Typical DC Output @ Nominal Input

MODEL NUMBER	NO LOAD	HALF LOAD	FULL LOAD	AMPS FULL LOAD
IP500U12	14.7	13.0	12.0	30
IP500U24	29.2	26.8	24.6	20
IP500U36	42.8	38.2	36.1	13.3
IP500U48	56.6	52.8	48.8	10
IP500U65	75.2	68.8	65.2	7.7
IP500U75	85.5	78.2	74.8	6.6

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Remote Sense

Remote sense terminals may be used to compensate for output line losses and provide for a remote point of regulation. Figure I shows the proper termination for a power supply with remote sensing.

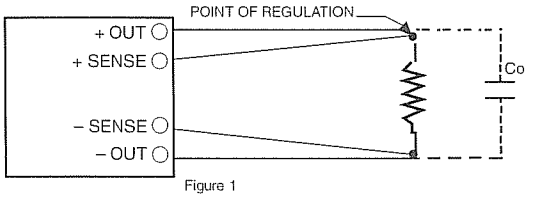


Figure 1

Load lines must be sized to prevent an excessive voltage drop from the output to the load. Since the point of regulation is at the load, the power supply must compensate for line losses. Excessive load line losses may affect current limiting, AC line dropout point and OVP margin (if applicable).

Leads should be sized to drop no more than 0.5V – the less the better. Use of a twisted pair or shielded pair for the sense lines is recommended for noise immunity. In problem applications, the use of a small AC decoupling capacitor (.1 to 10μ Fd) across the sense terminals is highly recommended. In some applications there may be a tendency for the power supply to oscillate due to the additional phase shift caused by the series resistance and inductance in the load leads. The addition of capacitor Co will reduce output impedance and provide stability. The recommended value of Co is 100μ Fd per ampere or 50μ Fd per foot and can be the sum of the distributed decoupling capacitors found in most systems. International Power supplies have open sense lead protection on most outputs to protect the load from an overvoltage condition if the sense leads are removed. There is no need to strap the sense terminals to the output terminals in the local sense mode.

Overvoltage Protection (OVP)

An overvoltage protection circuit, commonly referred to as a crowbar, is used to prevent damage to voltage sensitive loads such as TTL logic. Trip point of the OVP is usually set at 115% - 135% of the output voltage. The OVP will short the output terminals upon sensing a fault condition. The primary fuse of the supply will blow if the supply is not foldback current limited. Nuisance tripping of the OVP is a common problem. Noise from input line spikes or load noise can cause an OVP to fire. International Power has provided OVP noise filtering to prevent nuisance tripping and reduced transformer interwinding capacitance to minimize input line susceptibility.

Common-Mode Latch UP

In certain instances dual power supplies can exhibit a problem known as common-mode latch up. This occurs when the positive supply comes up first and forces a reverse bias condition on the negative supply. The negative supply latches up in a current limit condition. International Power has incorporated a unique antilatch circuit into every dual power supply which will minimize this problem.

Grounding

Grounding considerations in designing a power distribution system are often overlooked but can have a significant impact on overall system performance. A single point system ground should be employed where possible to eliminate ground loops and improve regulation.

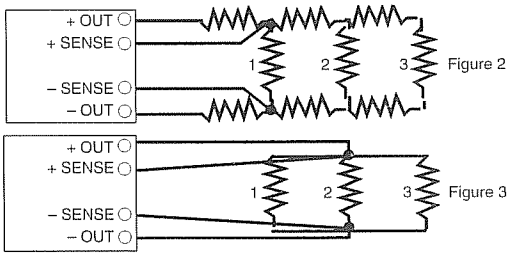
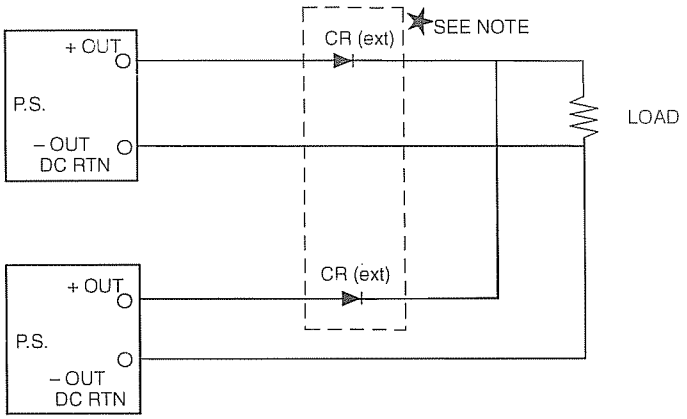


Figure 2 shows a simple but undesirable connection scheme.Regulation at loads 2 and 3 becomes progressively worse due to voltage drops in the finite wire resistance between loads. Figure 3 shows an improved connection system in which regulation is maintained at all three loads because wire losses are not cumulative.

Parallel Connection



External Rectifier Ratings:
4 X Power Supply Output Voltage
2 X Power Supply Output Current

Recommended Rectifier:

International Rectifier T-Modual
T40HF40 or Equivalent

★ Note: External Rectifier not required for IP500U Series.

Warranty

International Power warrants each power supply of its manufacture that does not perform to published specifications as a result of defective materials or workmanship for a period of two full years from the date of original delivery.

International Power assumes no liabilities for consequential damages of any kind through the use or misuse of its products by the purchaser or others. No other obligations or liabilities are expressed or implied.

Customer Service/Warranty Repair

Please follow this procedure when returning product for customer service: Contact International Power DC Power Supplies, Inc. for a returned material authorization (RMA) number. The RMA number must appear on all shipping containers. Returns must be returned freight prepaid. Returns shipped freight collect or without an RMA number will not be accepted.

(Regulated Power Supplies) for Five Wire Input

AC Connection and Fusing

The five wire input provides four voltage ranges: 100/120/220/230-240** +10%, -13%. See chassis AC connection table for the jumpering requirements. Extended low line tolerance provides additional drop out margin in areas where line voltages are marginal. Inputs must be fused.

	AC Input 47-63-Hz			
For use at	100 VAC	120 VAC	220 VAC	230/240 VAC
JUMPER	1 & 3 2 & 4	1 & 3 2 & 4	2 & 3	2 & 3
Apply AC	1 & 5	4 & 1	1 & 5	4 & 1

Fusing requirements are silkscreened on each individual power supply

FIGURE 4

**Tolerance for 230VAC operation is +15%, -10%.

Jumpering Example

Figure 5 is an example of proper jumpering of the primary for 100/120 VAC operation.

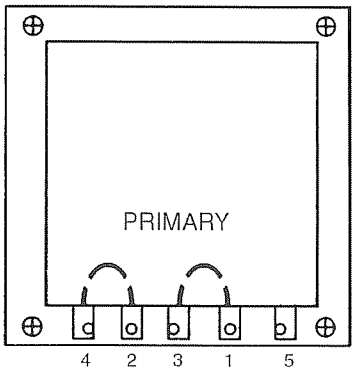


FIGURE 5

(Unregulated Power Supplies) for Eight Wire Input

AC Connection and Fusing

The eight wire input provides six voltage ranges: 108/120/132/216/240/264. See chassis AC connection table for the jumpering requirements. Inputs must be fused.

	AC Input 47-63-Hz					
For use at:	108 VAC	120 VAC	132 VAC	216 VAC	240 VAC	264 VAC
Jumper	1&5, 2&6	1&5, 3&7	1&5, 4&8	2&5	3&5	4&5
Apply AC	1&2	1&3	1&4	1&6	1&7	1&8
Fuse at	8 Amps	8 Amps	8 Amps	4 Amps	4 Amps	4 Amp

Jumpering Example

Figure 6 is an example of proper jumpering of the primary for 120 VAC operation.

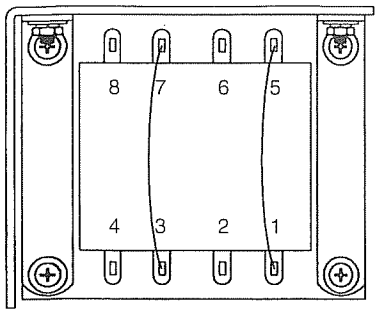
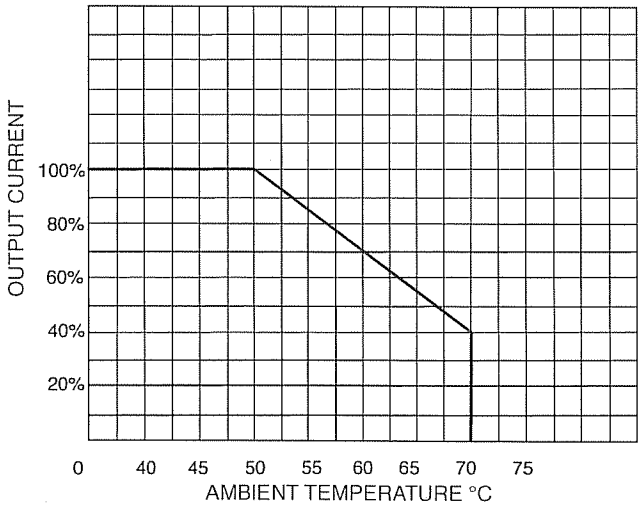


FIGURE 6

Output Derating Curve



Derating:

The specified reduction in an operating parameter to improve reliability. Generally for power supplies. It is the reduction in output current at elevated temperatures. Typical derating is 3%/°C. From 50 °C to 70 °C as shown.