



Electronics for Model Railroads

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## PS-2A

### ADJUSTABLE AC TO DC CONVERTER & REGULATOR

**GENERAL DESCRIPTION:** The CIRCUITRON **PS-2A** is a self-contained **AC** to **DC** converter with an adjustable voltage regulated output. The output voltage can be adjusted anywhere between 1.25 and 12.00 volts **DC**. Maximum continuous current output of the **PS-2A** is in excess of one amp. The **PS-2A** is ideal for powering any low current **DC** accessories including 1.5 volt micro-lamps. The **AC** or unfiltered **DC** input to the **PS-2A** should be about 5 - 6 volts higher than the desired regulated output voltage to allow maximum current output. The input voltage may be as high as 22 volts, but this may result in reduced current available at the output, particularly at lower voltage settings. A section of CIRCUITRON's Printed Circuit Mounting Track (**PCMT**) is provided for easy snap-in mounting.

**CIRCUIT DESIGN:** **AC** or **DC** input to the **PS-2A** passes through diodes D1-D4 which are connected as a full wave bridge rectifier. The resulting full wave **DC** is filtered by capacitor C1 and appears at the input of the integrated circuit voltage regulator as smooth, essentially ripple free **DC**. The regulator IC drops the voltage to the required output and dissipates the excess power as heat.

**INSTRUCTIONS:** The **PS-2A** can be connected with .110" x .032" solderless connectors (available from CIRCUITRON) or by soldering leads directly to the terminals on the printed circuit board. If soldering, use a small pencil-type iron and electronics-grade rosin core 60/40 solder (available from Radio Shack). Use only as much heat as necessary to obtain a good joint and do not wiggle the terminal until the solder has cooled completely. A section of CIRCUITRON'S **PCMT** is included for simple, snap-in mounting of the circuit board.

- 1) Mount the section of **PCMT** in a convenient location.
- 2) Snap the **PS-2A** into the track so that the terminals are along the side rather than across the width.
- 3) Adjust the trimmer marked [**VOLTAGE**] fully counter-clockwise. Note the position of the arrow at this minimum setting. This starting position may vary depending on the make of trimmer. At this minimum setting, the output voltage will be around 1.2 volts.
- 4) Connect a source of **AC** or **DC** to the [**INPUT**] terminals. Under no conditions should the input voltage exceed 22 volts, and to achieve maximum current output, the input should be limited to 5-6 volts above the output setting.
- 5) Connect the [**OUTPUT**] terminals to the load (lamps, etc.). *Using a voltmeter*, measure the output voltage as you adjust the [**VOLTAGE**] trimmer clockwise to achieve the desired setting. **NOTE:** *If you are powering lamps with the **PS-2A**, a setting 10% below the lamps' rated voltage will more than triple lamp life.*

#### WARRANTY

*CIRCUITRON warrants this device against defects in materials and workmanship for a period of one year from the date of purchase. This warranty covers all defects incurred in normal use of the device and does not apply in the following cases:*

- a) damage to the device resulting from abuse, mishandling, accident or failure to follow operating instructions.*
- b) if the device has been serviced or modified by other than the CIRCUITRON factory.*

*EXCEPT AS MENTIONED ABOVE, NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED INCLUDING MERCHANTABILITY, ON THE PART OF THE UNDERSIGNED OR ANY OTHER PERSON, FIRM OR CORPORATION, APPLIES TO THIS DEVICE.*

CIRCUITRON, INC.