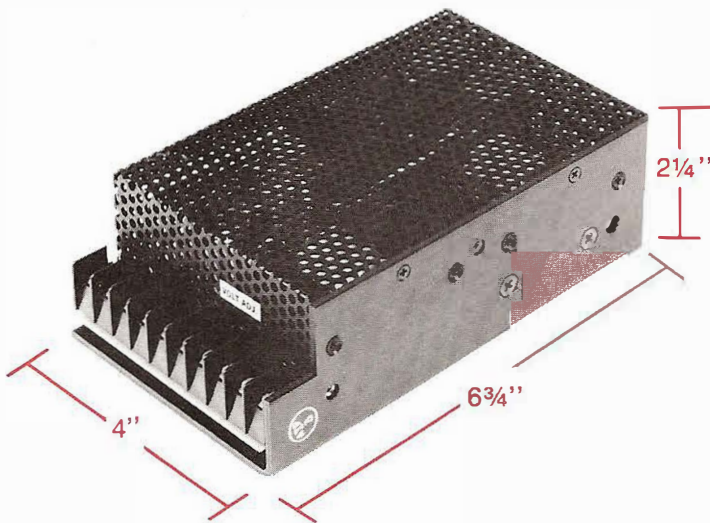




# AC-DC Switchers

## SINGLE OUTPUT HIGH PERFORMANCE COMPACT RELIABLE 120-WATT POWER SUPPLY



- **HIGH POWER DENSITY.** Up to 2 watts per cubic inch
- **HIGH RELIABILITY.** 135,540 Hrs. MTBF per MIL-HDBK-217D
- **DUAL INPUT.** 115/230 VAC
- **HIGH OPERATING TEMPERATURE.** 100% rated power up to 80° C
- **LOW EMI.** Meets FCC20780, Class A
- **DESIGNED TO MEET UL478**
- **TWO-YEAR WARRANTY**
- **NON-CROWBAR INTERNAL OVP** is standard
- **HIGH EFFICIENCY.** Up to 80%

The Model ZB is a pulse-width modulated, forward converter power supply using a single switching transistor at a frequency of 38 KHz. It is designed and manufactured to deliver reliable, regulated power for compact electronic systems that must provide long-term, trouble-free performance.

Quality components and judicious design provide long life expectancy and a MTBF of 135,540 hrs. calculated per Mil-217D at 25°C ambient, ground-benign environment. Premature saturation of the power transformer and failures due to mismatched transistors are avoided by the single transistor design.

The main control IC is a hermetically sealed monolithic component. All power semiconductors are metal-encapsulated. Low ESR output capacitors are used exclusively.

All models include soft start, over voltage protection, and direct output short circuit protection.

Remote sensing and open lead protection is standard. Power supplies can be operated in parallel. (Contact factory for details.)

### ELEVEN SINGLE OUTPUT MODELS

*Voltage	Maximum Load		Model Number
	Current	Power	
5	20A	100W	Z5B20
6	18A	108W	Z6B18
10	12A	120W	Z10B12
12	10A	120W	Z12B10
15	8A	120W	Z15B8
18	6.7A	120W	Z18B7
20	6A	120W	Z20B6
22	5.5A	120W	Z22B6
24	5A	120W	Z24B5
28	4.3A	120W	Z28B4
30	4A	120W	Z30B4

\*Voltage is continuously adjustable  $\pm 5\%$  by means of an externally accessible screwdriver adjustment potentiometer.



Main Sales Office: 639 S. Glenwood Place, Burbank, CA 91506, (818) 841-3630, FAX (818) 954-9305  
Eastern Sales Office: 321 Commercial Avenue, Suite 104, Palisades Park, NJ 07650, (201) 461-4005, FAX (201) 461-6323

## SPECIFICATIONS

**AC INPUT:** 90 to 132 and 180 to 265 Vrms, 47 to 400 Hz, single phase. Dual input selectable.

**EFFICIENCY:** 75% typical, 70% minimum.

**LINE REGULATION:** 0.12% for full input change between 90 and 132 or 180 and 265 Vrms. Temperature and load constant.

**LOAD REGULATION:** 0.2% for change from no load to full load (100%) with line constant.

**RIPPLE:** 50 mV peak-to-peak typical; 100 mV p-p maximum measured with a 25 MHz bandwidth.

**STABILITY:** Output voltage changes less than  $\pm 0.05\%$  for 24 hours following initial warm-up period.

**LOAD TRANSIENT RESPONSE:** For recovery to within 1% of nominal voltage set point, 200 microseconds maximum after 50% load change.

**LOAD TRANSIENT OVERSHOOT:** Maximum voltage deviation is 5% from nominal voltage set point.

**HOLD UP TIME:** 20 milliseconds minimum after nominal ac input voltage is lost at full load, 50 milliseconds typical at half load, 100 milliseconds typical at quarter load.

**TEMPERATURE RANGE:** Operating 0°C to +85°C. (See Cooling Requirements.) Storage temperature -40°C to 85°C. Operating temperature -20°C to 85°C available at extra cost.

**TEMPERATURE COEFFICIENT:** 0.01% per degree centigrade typical, 0.03% per degree centigrade maximum.

**ISOLATION VOLTAGE:** 1,000 Vdc input to output and input to case, 500 Vdc output to case.

**INSULATION RESISTANCE:** 50 megohms minimum between input and output, input and case, and output and case when measured at 50 Vdc.

**SHORT CIRCUIT PROTECTION:** Each unit is completely protected against a short circuit of any duration. The constant current circuit is nominally set at 120% of full load to reduce voltage. The output voltage automatically restores to normal when the short is removed.

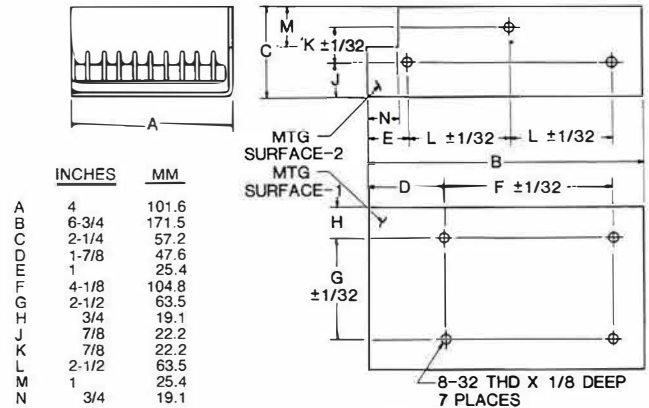
**OVER VOLTAGE PROTECTION:** Standard internal circuit. Non-crowbar protects the load without stressing power supply.

**REMOTE ERROR SENSING:** The regulator circuit monitors the voltage directly at the load using extra "Sensing" leads. The resulting circuit action compensates for a dc voltage drop up to 0.3 volts in the load leads.

**INPUT PROTECTION:** Internal fuses, 115V 5 amp. 230V, 2.5 amp.

**WEIGHT:** 2 lbs., 0.9 Kgs.

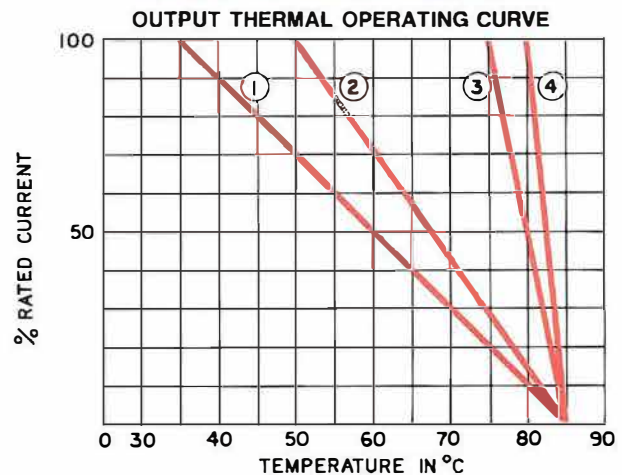
## MECHANICAL DIMENSIONS



Terminal Functions left to right: 230 AC input, AC common, 115 AC input, ground, + out, + out, + sense, -out, -out, -sense.

Dimensional tolerances:  $\pm 1/16$  in.  $\pm 1.6$ mm except as specified.

## COOLING REQUIREMENTS



Curves 1 through 4 describe the percentage of rated output current that may be drawn from any model at various temperatures.

**RADIATION COOLING — CURVE 1.** Using Mounting Surface 2, no additional heat sinking is required. 100% of rated current may be drawn at 35°C. Temperature is ambient and measured within 1 inch of Mounting Surface 1 in still air.

**CONVECTION COOLING — CURVE 2.** Temperature is ambient. A factory accessory finned thermal radiator may be attached to Mounting Surface 1. Using Mounting Surface 2, the unit is installed with fins in vertical position. 100% of rated current may be drawn at 50°C.

**CONDUCTION COOLING — CURVE 3.** Temperature measured at mounting surface. Mounting Surface 1 or 2 must be attached to a heat sink. 100% of rated current may be drawn at 75°C.

**FORCED AIR COOLING — CURVE 4.** Temperature is ambient. Unit can be mounted on either surface when at least 25 cubic ft. per minute of air flow is provided and 100% of rated current may be drawn at 80°C.