

INSTRUCTION SHEET

KEPCO An ISO 9001 Company.



ECM SERIES TRIPLE OUTPUT MINIATURE SWITCHING POWER SUPPLIES

I-INTRODUCTION

The Kepco ECM Series of miniature multiple output switching power supplies feature simplicity and high reliability with isolated input/output. Units operate from a 120V a-c 47-63Hz source. All connections are made through a barrier strip. The ECM Series consists of two models with different output voltages shown in Table 1.

II-SPECIFICATIONS

The following specifications apply to all ECM models.

MODEL	ECM-021K-CB	ECM-022K-CB
Output, V1 (Set within $\pm .02V$)	5V, 0.5 - 2.0A	5V, 0.5 - 2.0A
V2	+ 12V, 0.0 - 0.3A	+ 15V, 0.0 - 0.3A
V3	- 12V, 0.0 - 0.2A	- 15V, 0.0 - 0.2A
Total Power	16 Watts	17.5 Watts
Ripple (mV p-p max) Source & Switching	V1, 120mV; V2, 60mV; V3, 60mV	
Noise (mV p-p max) (Spike)	2% of output voltage + 50mV	
Overcurrent (Minimum @ 25°C)	V1, 2.2A; V2, 0.4A; V3, 0.3A	

TABLE 1 SPECIFICATIONS OF INDIVIDUAL ECM MODELS

Input Voltage: 120V a-c, single phase, 85V-132V or 145V d-c, 110V-170V d-c

Frequency: 47-63 Hz

Current rated load @ 25°C: 0.5A rms, typ., @ 120V input and 0.6A rms, max. @ 85V input

Turn-on Surge @ Rated Load, 25°C cold start, 120V input: 20A peak (one-half of first input cycle)

Start-up and Hold-up time (25°C, nominal input @ rated load):

Start-up: 50 ms. max.; Hold-up (after input interrupt or turn-off): 20 ms. min.

Recovery Characteristics:

A step load change from 50% to 100% produces less than $\pm 4\%$ output excursion. Recovery to within $\pm 1\%$ of the original voltage occurs within 2 ms.

III-STABILIZATION

Output	Source Effect (%)	Load Effect (%)	Temp. Effect (%)	Drift (%)	Combined Effect (%)*
V1	0.5 typ./1.5 max.	1.0 typ./3.0 max.	1.5 typ./3.5 max.	0.5 max.	± 2.0 typ./ ± 4.0 max.
V2	0.5 typ./1.5 max.	0.5 typ./1.5 max.	1.0 typ./3.0 max.	0.5 max.	± 1.5 typ./ ± 4.0 max.
V3	0.5 typ./1.5 max.	0.5 typ./1.5 max.	1.0 typ./3.0 max.	0.5 max.	± 1.5 typ./ ± 4.0 max.

* Combined effect includes source, load and temperature effect.

Ripple: See Table 1.

Ripple components are harmonically related to the source frequency and the switching frequency. The switching frequency ranges between 35KHz and 185KHz depending upon load.

Noise: See Table 1. Measured with 20MHz bandwidth.

Isolation: (20°C, 65% relative humidity).

Insulation resistance between output terminals and chassis, 100 Megohm, min., 500V d-c for one minute.

Dielectric strength: Between input and output terminals, between input and chassis: 2KV a-c for one minute.

Between output and output ground terminals, 0.5KV a-c for one minute.

Leakage current, nominal input with rated load @ 25°C, UL method: 0.5 mA rms, max.

Safety: Designed to meet UL 478, CSA Bulletin No. 1402.

EMI: Designed to meet FCC Class B (0.45-30MHz, 48dB max.)

Shock (non-operating, one-half wave sinusoidal pulse, three shocks to each axes):

Acceleration: 20g peak; Duration: 11ms. ± 5 ms

Vibration: (non-operating, one hour on each of three axes): 5-10 Hz, 10 mm amplitude; 10-55 Hz, 2g acceleration

Operating Temperature: 0 to 71°C (See Figure 1)

Storage Temperature: -40°C to + 85°C

Operating/Storage Relative Humidity: 20% - 95% non-condensing

Weight: 13 ounces (370 g.)

Fuse: 2A, 125V, Kepco P/N 541-0103 (5.2mm x 20mm with wire lead) or manufacturer Nagasawa GHS 2. (See Figure 2).

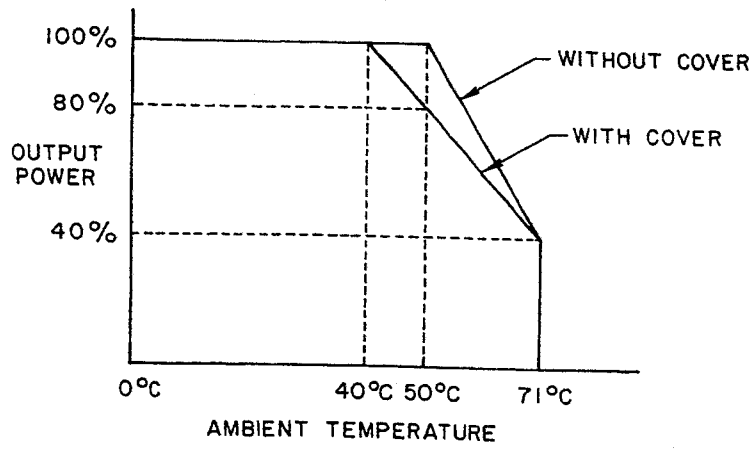


FIGURE 1. OUTPUT POWER vs. AMBIENT TEMPERATURE

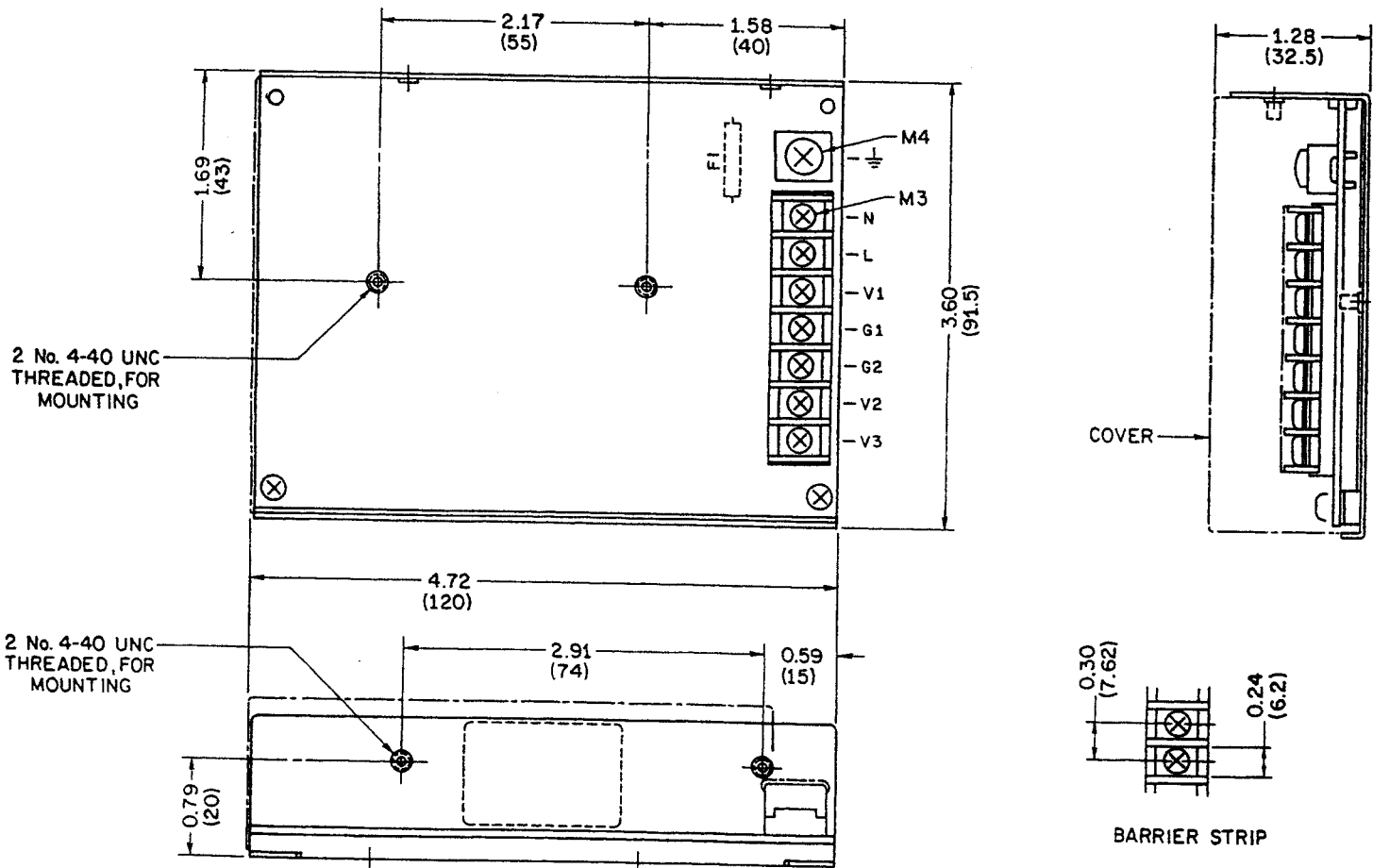


FIGURE 2. OUTLINE DRAWING

NOTES:

- 1) DIMENSION IN PARENTHESES ARE IN MILLIMETERS, OTHERS ARE IN INCHES.
- 2) TOLERANCES: $\pm 0.015''$ (0.4 mm) BETWEEN MOUNTING HOLES; $\pm 0.03''$ (± 0.7 mm) ALL OTHER DIMENSIONS.

- 3) MOUNTING SCREW PENETRATION: 0.24'' (6mm) MAXIMUM.
- 4) MATERIAL AND FINISH:
 - A) CHASSIS: 1mm CRS, CADMIUM PLATED, YELLOW CHROMATE WASH.
 - B) COVER: 0.5mm CRS, CADMIUM PLATED, YELLOW CHROMATE WASH.