

INSTRUCTION MANUAL



KEPCO

EMR

3-output switching module

Model EMR 200K

I—INTRODUCTION

SCOPE OF MANUAL. This instruction manual contains the specifications and information for installation and operation of the Kepeco Model EMR 200K Switching Power Supply.

DESCRIPTION. The Model EMR 200K is a switching power supply with one principal output of (+)5 volt and two (2) auxiliary outputs of (\pm)12 volt. The power supply is constructed as a printed circuit board, enclosed by a metal, perforated cover. The cover is mounted onto an aluminum base-plate, serving as the mounting surface and heatsink. Two (2) pin-header connectors (See Outline Drawing) are used for input/output connections.

II—SPECIFICATIONS

PARAMETER	CONDITION	SPECIFICATION
A-C Source Voltage	Selectable (See Fig. 1)	85V to 130V a-c or 170V to 260V a-c 47-66 Hz, single phase.
A-C Source Current	at 85V a-c, 25°C, max. load at 170V a-c, 25°C max. load	<1.4A <0.7A
Brown-out Voltage	At 25°C Power Supply will function at this input voltage with minor degradation in performance	75V a-c or 150V a-c
Turn-on Half Cycle peak current	at 115V a-c or 230V, 25°C cold start Limited by power thermistor	<45A
Efficiency	Maximum load, Nominal Source Voltage	>70%
Hold up time	Maximum load, Nominal Source Voltage	20 msec., Minimum 30 msec., Typical
D-C Output Ratings	0°C to 50°C ambient temperature	See Rating Table

*NOTE: Total power is 42W at 50°C.
From 50°C to 70°C, derate linearly
to 21W.*

D-C OUTPUT VOLTS	MIN. LOAD CURRENT	MAX. LOAD CURRENT
+ 5V ⁽¹⁾ (V1)	1.0A	3.0A
+ 12V (V2)	0.4A	2.0A
- 12V (V3)	0A	0.3A

D-C OUTPUT RATINGS

⁽¹⁾ Set to this value at full load at 25°C ambient temperature by means of an internal trim pot. (See Fig. 1). All other outputs are fixed and interdependent.

II—SPECIFICATIONS (Cont'd)

PARAMETER	CONDITION	SPECIFICATION
Source Effect	85V to 130V a-c or 170V to 260V a-c	(V1) + 5V output: < 1.5% (V2) + 12V output: < 1% (V3) - 12V output: < 1.5%
Load Effect	MIN. LOAD-MAX. LOAD per Rating Table	(V1) + 5V output: < 3.5% (V2) + 12V output: < 5.0% (V3) - 12V output: < 1.0%
Time Effect	0.5 to 8 hrs, at 25°C, max. load	All outputs: < 0.5%
Combined Effect For all specified changes in Source Voltage, Load- Conditions and Time.	As individually specified.	(V1) + 5V output: < ± 3% (V2) + 12V output: < + 7 - 4% (V3) - 12V output: < ± 5%
Transient Recovery Time	50% to 100% load change	All outputs: < 2 milliseconds
Temperature Effect	0-50°C	All outputs: 3% maximum
Current Limit Setting	Output power limit type Limits specified with all other outputs at 100% rated load	(V1) + 5V output: 3.1-6.0A (V2) + 12V output: 2.2-4.0A (V3) - 12V output: 0.5-1.2A
Over-Voltage	(Reset by removing input power for 50 sec.)	(V1) + 5V output only: 5.8-6.9V
Operating Temperature- Range	Mount vertically on base-plate	0°C to + 50°C. From + 50°C to 70°C, derate linearly to 50% of total rated power.
Storage Temperature- Range	N.A.	- 25°C to + 75°C
Humidity	Non-Condensing	Operating: Up to 85% RH. Non-operating: Up to 95% RH.
Vibration	5-10 Hz.	10 mm, 3 axes
Shock	10-55 Hz. 11 ms ± 5 ms.	2 g, 3 axes 20 g, 3 axes
Size (See also FIG. 2)	inches millimeters	3.9" x 2" x 7.8" 99 x 50 x 199
Weight	unpacked, approximately	1.8 lb (0.8 kg.)
Safety	N.A.	UL 478 recognized CSA C22.2-No. 143 and 154, certified.
EMI	Conducted Noise Radiated Noise	FCC Level B VDE 0875/7.71 (Level N)
ISOLATION	Hi-Pot Test Hi-Pot-Test Isolation Resistance	Input/Output: 2KV a-c, 1 min Input/Ground: 2KV a-c, 1 min Output/Ground: 100 Megohm, 500V d-c
Warranty	Operated within given specifications	1 Year

II—SPECIFICATIONS, CONT'D.

PARAMETER	CONDITION	SPECIFICATION
Ripple Envelope Source and Switching frequency (p-p)	At nominal input voltage and load	(V1) +5V output: 50 mV typical 100 mV maximum All other outputs: 50 mV typical 200 mV maximum
Spike - Noise d-c to 15 MHz. (p-p)	At nominal input voltage and load, to 15 MHz.	All outputs: 2% E_o + 50 mV maximum
Cross-Regulation	Minimum to maximum load- change per Rating Table on any other output	(V1) + 5V output: <2% (V2) + 12V output: <7% (V3) - 12V output: <0.5%

III—OPERATION

INPUT VOLTAGE SELECTION (See FIG. 1). The Model EMR 200K power supply is delivered for operation on 85 to 130V a-c power lines (wire-jumper in the "115V" position.) For operation on 170-260V a-c power lines, change the jumper to the "230V" position.

TERMINATIONS: See FIG. 1.

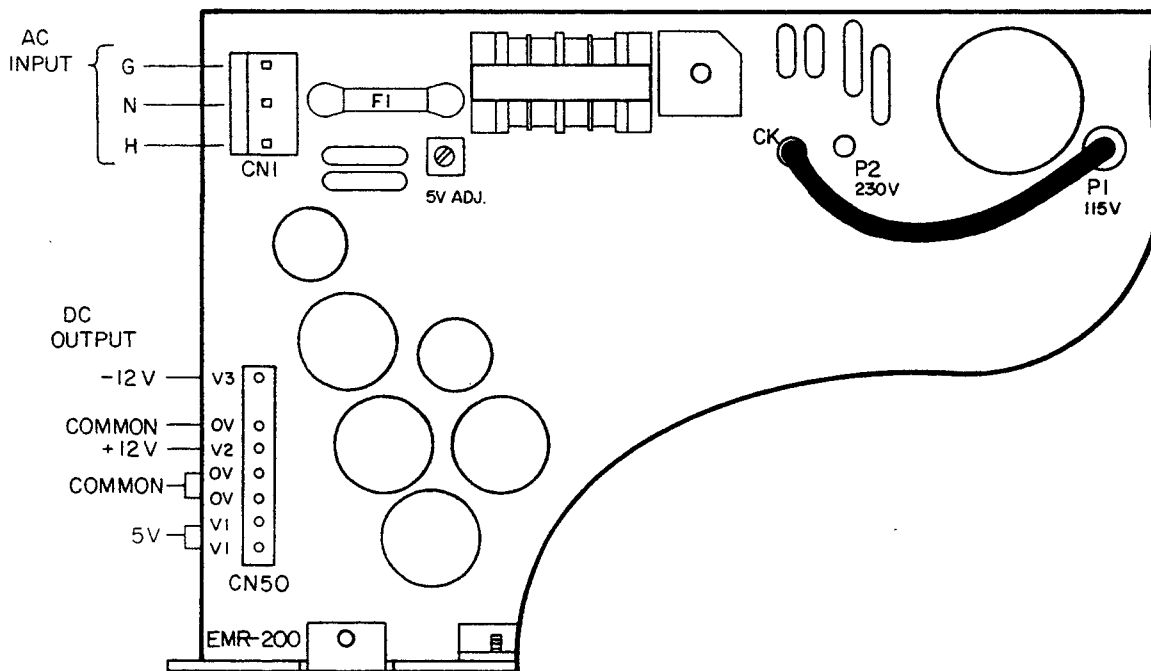


FIG. 1 SIMPLIFIED TOP VIEW, MODEL EMR 200K POWER SUPPLY.

NOTE: F1 is a medium acting fuse, 2.5A-250V, equivalent to NAGASAWA ULCS-62M-2.5 or LITTELFUSE, P1N 318 02.5

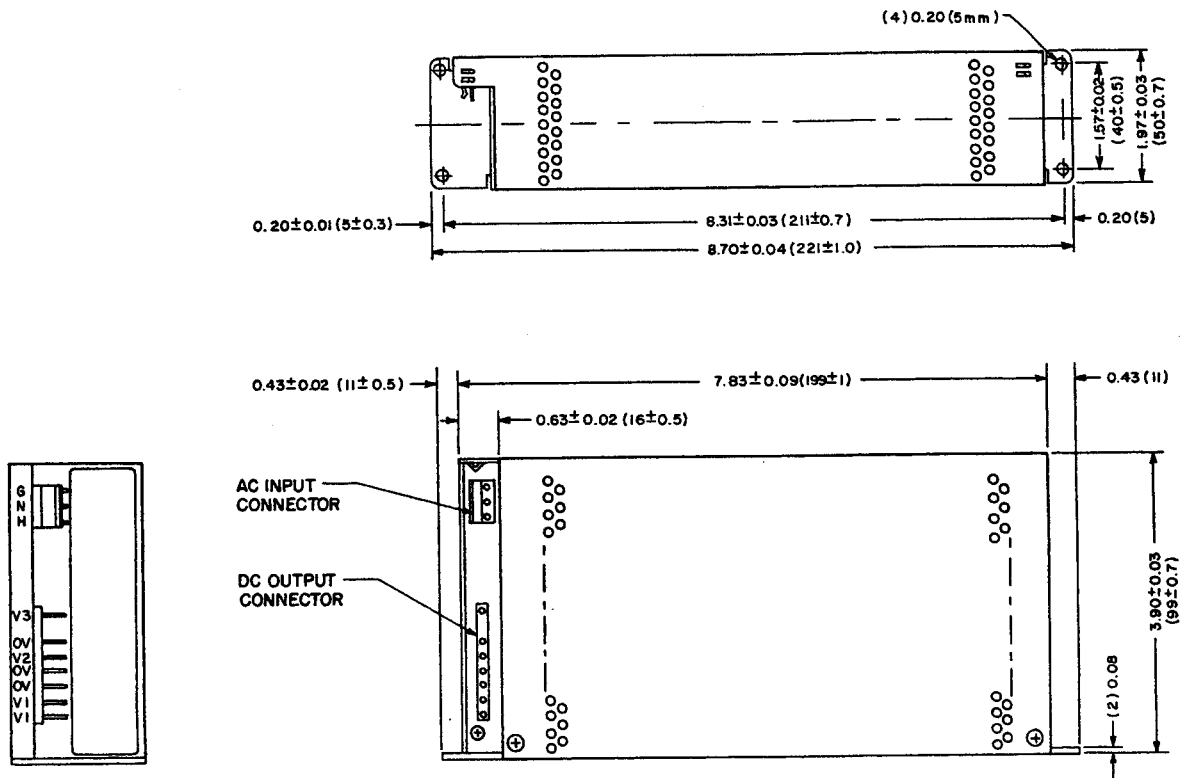


FIG. 2 MECHANICAL OUTLINE DRAWING, MODEL EMR 200K

NOTES:

- 1) DIMENSIONS in parentheses are millimeters, others are inches.
- 2) TOLERANCES: 0.04" (1 mm) unless noted otherwise.
- 3) A-C INPUT CONNECTOR (CN1) Molex "SPOX" system, Series 5277, 0.045" (1.14 mm) square pins, spaced 0.156" (3.96 mm). Mating connector may be selected from Molex Series 2139 or equivalent.
- 4) D-C OUTPUT CONNECTOR (CN50) Molex "SPOX" system, Series 5275, 0.045" (1.14 mm) square pins, spaced 0.156" (3.96 mm). Mating connector may be selected from Molex Series 2139 or equivalent.
- 5) A cable kit, Kepco P/N 219-0148 is available from Kepco Inc. This kit provides input/output terminations for the Model EMR 200K power supply. The kit consists of two cables, one meter long, having the power supply mating connectors on one end and unterminated wire ends at the other.