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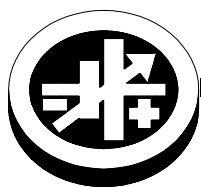
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INSTRUCTION MANUAL



KEPCO An ISO 9001 Company.



150 WATT SINGLE OUTPUT, PFC, OPEN FRAME POWER SUPPLIES

I — INTRODUCTION

SCOPE OF MANUAL. This instruction manual covers the installation and operation of the Kepco RKW 150W Series of Open Frame PFC (Power Factor Corrected) Switching Power Supplies.

DESCRIPTION. The Kepco RKW 150W Series consists of seven models of switching power supplies, with a single output as shown in Table 1. Units may be operated with a nominal 100V a-c to 240V a-c (input voltage range 85 to 265 Va-c), 50-60 Hz (input frequency range 47-66Hz.). They will also operate on 110V to 370V d-c input. The RKW 150W Series employs a forward converter with a fixed switching frequency of 135KHz. Power Factor Correction (PFC) is provided by a boost converter operating at 80KHz. Regulation is provided by pulse width modulation. A thermistor circuit prevents excessive turn-on current surge. Remote programming of output voltage using an external resistance can be implemented. Overvoltage and overcurrent protection is provided. Current limiting with automatic recovery from short circuit is featured. Units are convection cooled L-chassis construction. A steel cover (Model CA 36) is available as an option.

Section II contains specifications and operating limits of individual RKW 150W Series models (Table 1) as well as specifications and operating limits common to all RKW 150W Series Models. Section III describes installation and Section IV describes operation

II — SPECIFICATIONS

The following specifications are at nominal input voltages at 25°C unless otherwise specified.

TABLE 1. OUTPUT RATINGS AND SPECIFICATIONS, RKW 150W SERIES

MODEL	RKW 3.3-35K	RKW 5-30K	RKW 12-13K	RKW 15-10K	RKW 24-6.5K	RKW 28-5.5K	RKW 48-3.3K	
OUTPUT VOLTS, d-c	3.3V	5V	12V	15V	24V	28V	48V	
ADJUSTMENT RANGE, Vd-c	2.85-4.0	4.0-5.8	9.6-13.2	12-16.5	19.2-26.4	22.4-30.8	38.4-52.8	
OUTPUT CURRENT (AMPS) -10 to +50 °C	35	30	13	10	6.5	5.5	3.3	
CURRENT LIMIT ⁽²⁾ (AMPS)	36.75 min	31.5 min	13.65 min	10.5 min	10.5 min	5.78 min	3.46 min	
SHORT CIRCUIT CURRENT ⁽²⁾ (AMPS)	45	37	18	14	13	9	8.5	
OVP SETTING ⁽¹⁾ (VOLTS)	4.2-5.2	6.0-6.9	13.7-15.7	17.0-19.0	27.0-30.5	32.0-35.0	55.0-60.0	
EFFICIENCY	100 Va-c	73%	77%	80%	80%	82%	82%	84%
	240 Va-c	77%	82%	84%	84%	86%	86%	88%
RIPPLE AND NOISE ⁽³⁾ (mV P-p)	Switching ripple (typ)	80	80	100	100	100	100	130
	spike noise (typ) ⁽²⁾	120	120	150	150	150	150	200
External Potentiometer ⁽⁴⁾	1K Ohms	1K Ohms	2K Ohms	2K Ohms	5K Ohms	5K Ohms	10K Ohms	

- (1) An overvoltage shuts down the output. Recover by recycling a-c input (30 second delay required before resetting).
 (2) The current limit is rectangular. After the overload is removed, output is automatically restored.
 (3) Bandwidth 100 MHz. Ripple and noise will be approximately 1.5 times these values in the operating temperature range -10 ~ 0°C. The ripple and noise values tabulated are valid when the output is derated as shown in figure 2 from 50 ~ 65°C
 (4) Used for remote programming of output voltage. See Section IV OPERATION, REMOTE VOLTAGE PROGRAMMING.

INPUT VOLTAGE:

Nominal 100-240V a-c, range: 85-265V a-c (0 to 100% load, -10 to 71°C).
 d-c range: 110 -370V d-c.

INPUT SOURCE FREQUENCY:

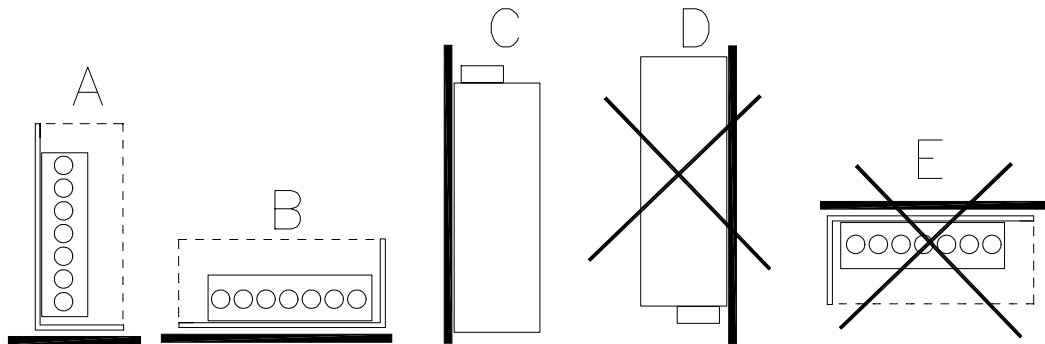
Nominal 50/60 Hz; Range 47-66 Hz (0 to 100% load, -10 to 71°C).

INPUT CURRENT:

5V-48V models: 2.0A max. (100-120 Va-c input, 100% load); 1.0A max. (200-240 Va-c input, 100% load).
 3.3V model: 1.75A max. (100-120 Va-c input, 100% load); 0.85A max. (200-240 Va-c input, 100% load).

INPUT PROTECTION AND SOFT START: A thermistor circuit reduces start-up surge. Units are protected against shorts by an input fuse. Fuse value 5A, 250V.

INPUT SURGE: cold start 25 °C (First surge only, not including the current flow into the EMI filter)
 25A typ. (100 V a-c, 100% load); 50A typ. (200 Va-c, 100% load).



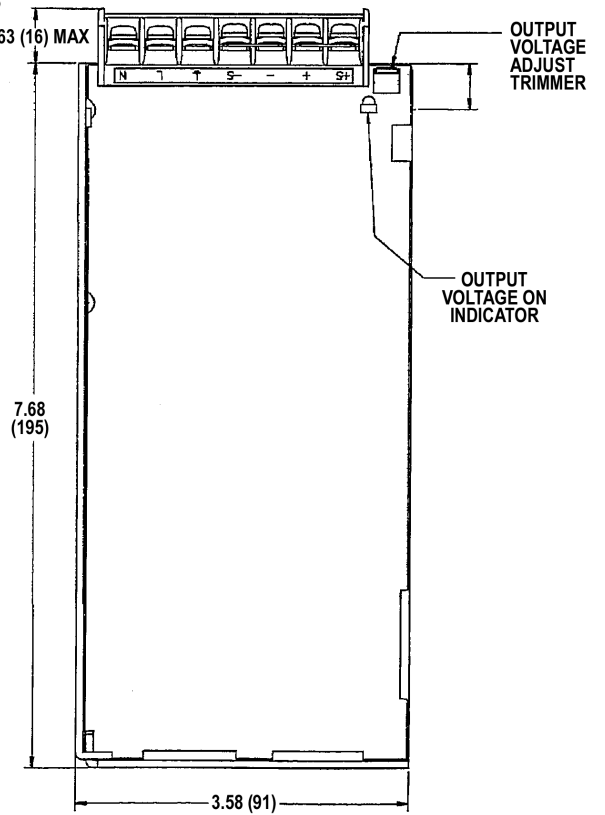
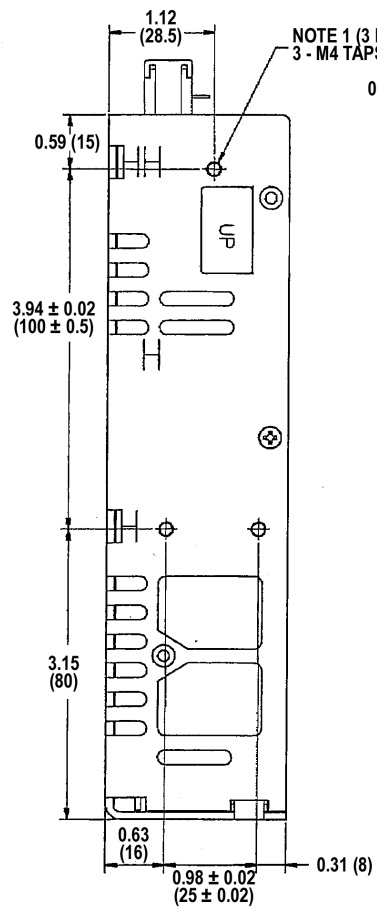
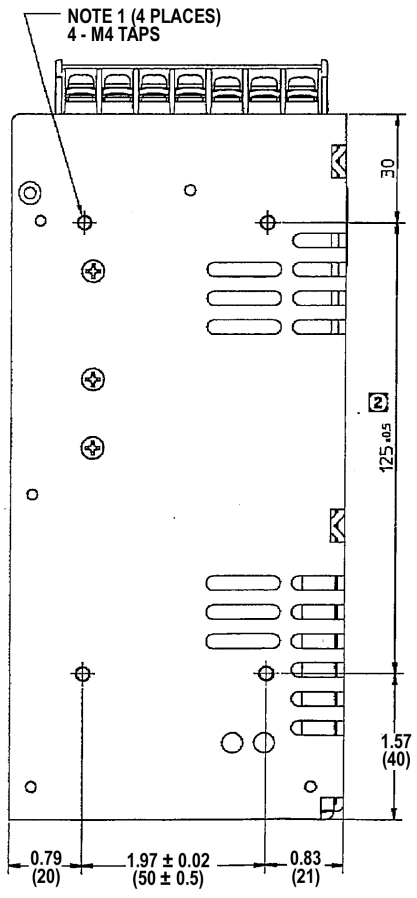
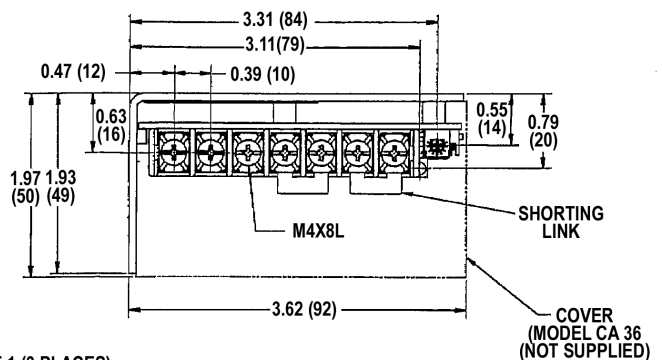
NOTES:
 1. METHODS D AND E ARE NOT RECOMMENDED DUE TO INSUFFICIENT VENTILATION.
 2. REFER TO FIGURE 1 FOR OUTPUT POWER VS. TEMPERATURE FOR MOUNTING METHOD SELECTED.

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FIGURE 4. POWER SUPPLY MOUNTING

NOTES:

1. MAX PENETRATION OF M4 MOUNTING SCREWS IS 0.24 (6) FROM CASE SURFACE.
2. ± 0.04 (± 1) TOLERANCE UNLESS OTHERWISE SPECIFIED.
3. DIMENSIONS ARE IN INCHES, DIMENSIONS IN BRACKETS () ARE IN MILLIMETERS.
4. REFER TO FIGURE 4 FOR MOUNTING ORIENTATION.



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FIGURE 5. RKW 150W MECHANICAL OUTLINE DIAGRAM

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