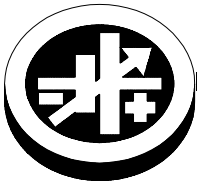


# INSTRUCTION MANUAL



**KEPCO** An ISO 9001 Company.

**FAW**

## KEPCO SINGLE OUTPUT 50 WATT HIGH FREQUENCY SWITCHING POWER SUPPLIES

### I — INTRODUCTION

The Kepco FAW 50 Watt Series low profile high frequency switching power supplies employ flyback conversion and operate with a 76% efficiency with either a-c or d-c input. A thermistor soft-start circuit limits start-up surge. Surface mount technology permits efficient component layout for minimum mounting space. Five models may be selected for outputs of 5, 12, 15, 24, or 48V. "POWER OK" logic and a green "POWER OK" light are provided. A steel cover (Model CA 26) is available as an option. Output voltage may be adjusted with a trimmer accessible near the input-output terminal strip. When the input is cut off, the output is maintained for 15 milliseconds minimum. EMI filtering meets FCC Class B rating and VDE 0871 Class B rating. This page contains specifications for each model of the FAW 50 Watt Series. Environmental specifications for each model are the same.

### II — SPECIFICATIONS

The following specifications apply to FAW 50 Watt Series models. Other models are also available; consult your Kepco representative for their specifications.

**TABLE 1. OUTPUT RATINGS AND SPECIFICATIONS, FAW 50W SERIES**

MODEL	FAW 5-10K	FAW 12-4.2K	FAW 15-3.4K	FAW 24-2.1K	FAW 48-1K	
OUTPUT VOLTS, d-c (NOMINAL)	5V	12V	15V	24V	48V	
ADJUSTMENT RANGE	4.5-5.5V	10.8-13.2V	13.5-16.5V	21.6-26.4V	43.2 - 52.8V	
OUTPUT CURRENT (NOMINAL) <sup>(1)</sup>	10.0A	4.2A	3.4A	2.1A	1.0A	
OUTPUT POWER (MAXIMUM) <sup>(2)</sup>	50.0W	50.4W	51.0W	50.4W	48W	
RIPPLE AND NOISE (mV p-p) 0-50°C 10-100% LOAD	source (typ)	10	15	15	25	30
	source (max)	20	30	30	50	60
	switching (typ)	30	35	45	50	60
	switching (max)	60	70	90	100	150
	spike noise (d-c—50MHz)	120	190	220	310	350
OVERVOLTAGE SETTING 25°C, NOM. INPUT	6.0-6.9V	13.7-15.7V	17.0-19.0V	27.0-30.5V	53.5-60.0	
OVERCURRENT SETTING 25°C, NOM. INPUT	10.5 - 12.0A	4.4 - 5.1A	3.6 - 4.1A	2.2 - 2.6A	1.1 - 1.3A	

1) Derates same as Output Power.

2) See power derating curve, Figure 1.

#### INPUT:

Voltage: 120V a-c/240V a-c nominal; Range 85-264V a-c; 110-370V d-c.

Frequency: Nominal 50-60 Hz; Range 47-440Hz (at 440Hz leakage current exceeds UL/VDE safety spec.limit).

Current (nominal output at rated load): @120V a-c rms: 1.0A typ., 1.2A max; @240V a-c rms: 0.5A typ., 0.7A max.

Initial Turn-on Surge: (one-half of first input cycle): @120V a-c rms, 45A max., @240V a-c rms, 90A max.

#### STABILIZATION:

Source Effect: Range 85-132V a-c or 170-264V a-c, 1.0% typ.; 2.0% max.

Load Effect: Range 10%-100% load, 1.0% typ.; 2.0% max.

Temperature Effect: Range 0° to 50°C, 1.0% typ.; 2.0% max.

Combined Effect: 2.0% typ.; 4.0% max. (includes source, load, and temperature effects).

Drift: 0.1% typ.; 0.5% max. (1/2 hr-8 hr at 25°C).

**RECOVERY CHARACTERISTICS:** A step load change from 50% to 100% produces less than  $\pm 4\%$  output excursion. Recovery occurs to within  $\pm 1\%$  of the original setting in  $< 2$  ms ( $t_r$  or  $t_f$  equal to or greater than 50 $\mu$ sec at load change).

**START-UP TIME:** 500 ms. maximum.

**HOLDUP TIME:** 15 ms. min (100V a-c), 20 ms. typ. (120V a-c).

#### DIELECTRIC STRENGTH:

Between input and output: 2KV a-c for one minute.

Between input and output with Y-capacitor removed: 3.75KV a-c for one minute.

Between input and case (ground): 2KV a-c for one minute.

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<http://www.kepcopower.com> ● email: [hq@kepcopower.com](mailto:hq@kepcopower.com)

**INSULATION RESISTANCE:** Between input and ground, output and ground, input and output;  
100 Megohms min. (500V d-c).

**LEAKAGE CURRENT**

(UL method, 120V a-c, 50-60Hz): 0.5 mA maximum.  
(VDE method, 240V a-c): 0.75 mA maximum.

**SAFETY:** UL 478 recognized; CSA 1402B certified, VDE 0806, IEC 380 approved by TÜV Rheinland

**+ SENSE, (-) SENSE:** See Figure 3. These terminals are provided to compensate for voltage drops in the load connecting wires. The Sense terminals must be connected to their respective (+) and (-) output terminals, either at the load or at the Power Supply output terminals. The connection ensures the most accurate error tracking. Error compensation in the connecting wires is up to 0.25 Volts for the 5-10K model, and up to 0.4 Volts for all other models.

**“POWER OK” SIGNAL OUTPUT:** The unit supplies a “POWER OK” TTL logic 1 signal at CP51 (see Figure 2).

**CONNECTOR TYPES:** Refer to the Mechanical Outline Drawing. The mating connector for CP51 is a Panduit, P/N CT10F22-2: Cover, P/N TC100F-2.

**CONNECTOR KIT:** Kepco furnishes an optional connector kit with the specified connector listed above. The kit may be ordered under Kepco Model Kit P/N 518-0029. The connector is provided with 1 meter length leads for trimming to desired lengths.

**EMI:** Designed to meet FCC Class B (100-120V a-c) and VDE 0871 Class B (220-240V a-c).

**VIBRATION:** (non-operating, one hour on each one of the three axes):  
5-10 Hz, 10 mm amplitude.  
10-55 Hz, 2g acceleration.

**SHOCK:** (non-operating, one-half sinusoidal pulse, three shocks to each axis):  
Acceleration: 20g  
Duration: 11ms  $\pm$ 5ms

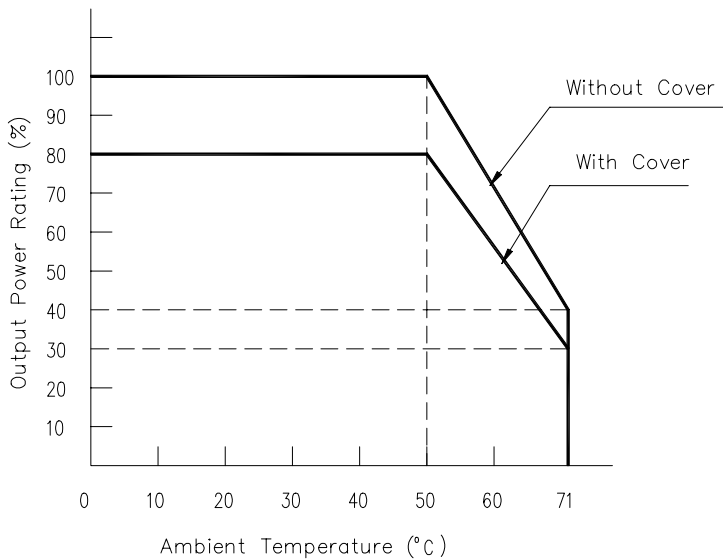
**OPERATING TEMPERATURE:** See Figure 1.

**STORAGE TEMPERATURE:** -40°C to +75°C.

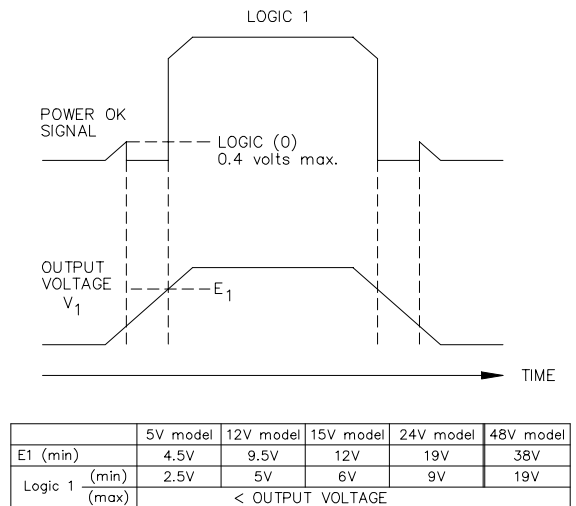
**OPERATING AND STORAGE RELATIVE HUMIDITY:** up to 95% (wet bulb temp. <35°C non-condensing).

**FUSE:** Quick acting 3.0A, 250V; (5.2 x 20mm), San-O P/N MT4 3A; Kepco P/N 541-0110.

**WARRANTY:** 1 year.



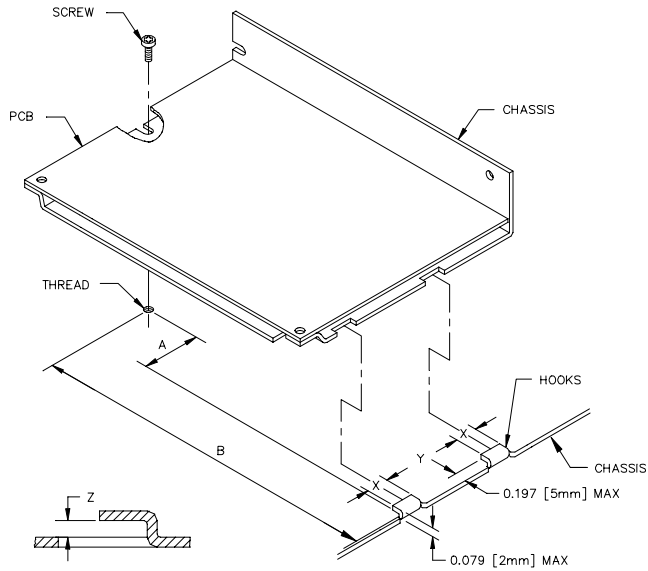
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**FIGURE 1. %OUTPUT POWER RATING VS. AMBIENT TEMPERATURE**

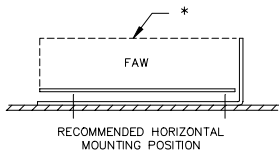
**FIGURE 2. “POWER OK” SIGNAL RELATED TO OUTPUT**



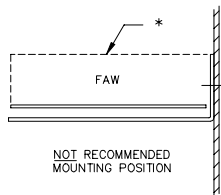
MODEL	A	B	X	Y	Z
FAW 15W	1.14 (29)	3.72 (94.5)	.327 (8.3)	1.26 (32)	.047 (1.2)
FAW 25W	.945 (24)	4.70 (119.5)	.327 (8.3)	1.26 (32)	.047 (1.2)
FAW 50W	1.14 (29)	6.28 (159.5)	.327 (8.3)	1.06 (27)	.047 (1.2)

DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

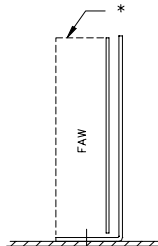
HORIZONTAL MOUNTING WITH ACCESS ONLY FROM TOP OF UNIT



RECOMMENDED HORIZONTAL MOUNTING POSITION

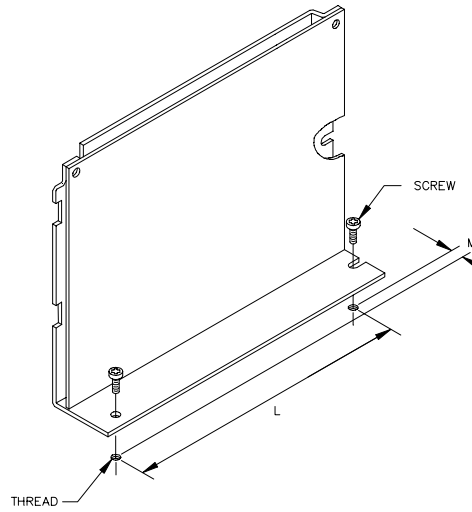


NOT RECOMMENDED MOUNTING POSITION



RECOMMENDED VERTICAL MOUNTING POSITION

\* OPTIONAL COVER SHOWN

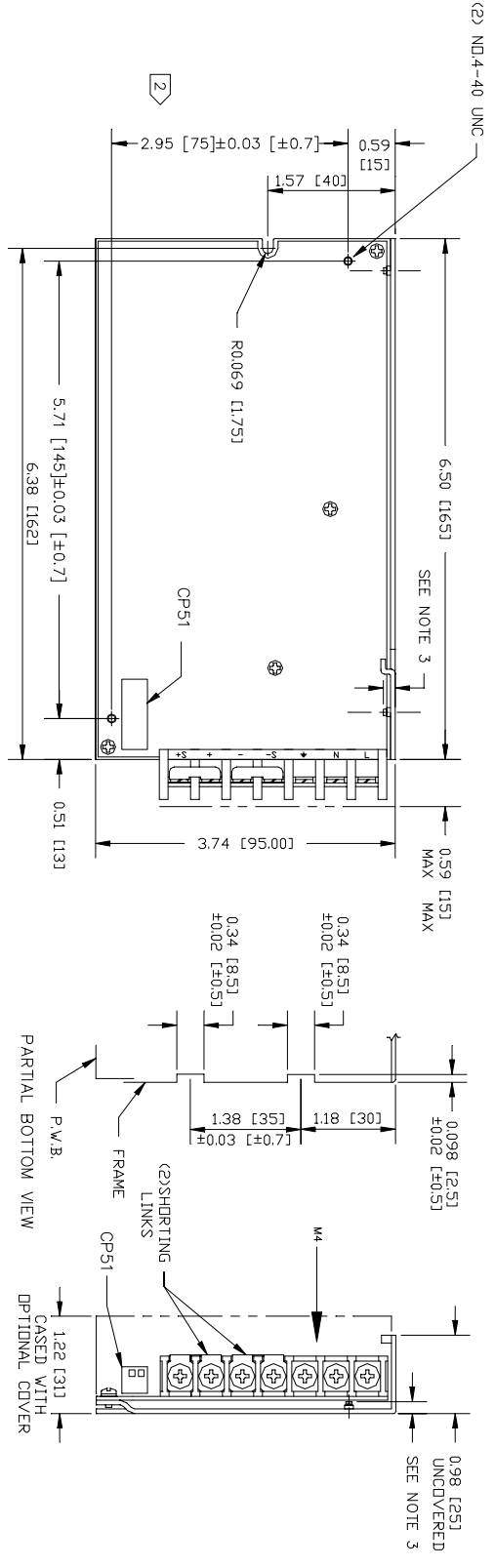
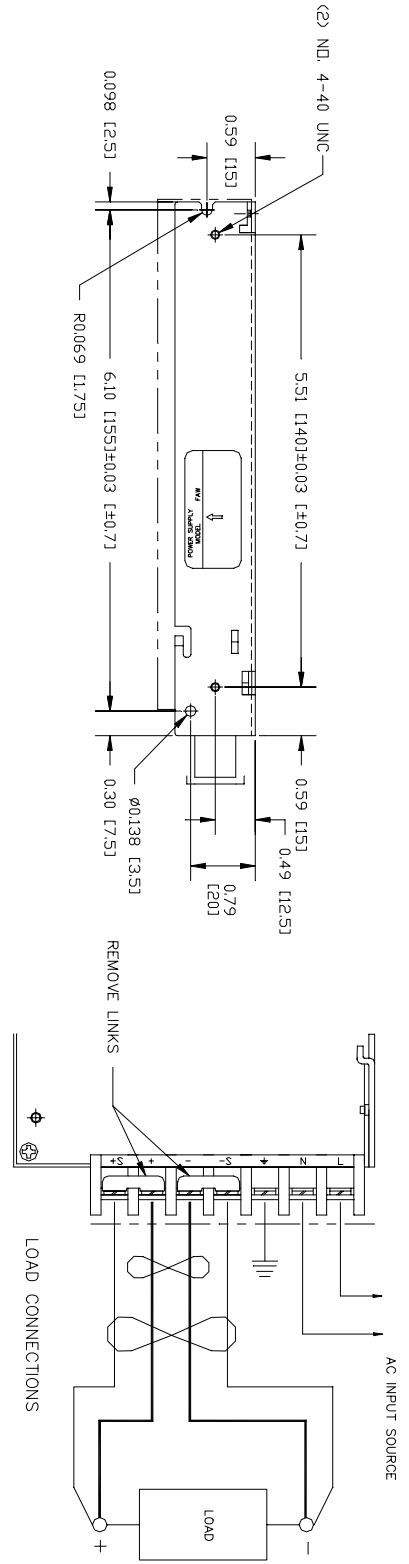


MODEL	L	M
FAW 15W	3.54 (90)	.394 (10)
FAW 25W	4.53 (115)	.394 (10)
FAW 50W	6.10 (155)	.197 (5)

DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

BLIND HOLE VERTICAL MOUNTING

3040550



NOTES:

1. DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS, OTHERS IN INCHES.
2. TOLERANCES: ±.04 (±1) EXCEPT AS NOTED.
3. MAXIMUM MOUNTING SCREW PENETRATION: 0.2 (5).

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FIGURE 3. MECHANICAL OUTLINE DRAWING

