KEPCO/TDK FCP 3 WATT DUAL OUTPUT MINIATURE SWITCHING POWER SUPPLIES

I—INTRODUCTION

The Kepco FCP3W Series of a compact high reliability 2.82-ounce 3-Watt switching power supplies feature simplicity and high reliability with isolated input/output. Units operate from a 120V a-c 47-440Hz source and are housed in a plastic case with threaded inserts for versatile mounting. All connections are made through a STO-41T-187N (JST) or 170037-2 (AMP) mating connector. The FCP3W Series consists of two models. Model FCP-031K has a ±12V output and Model FCP-032K has a ±15V output as shown in Table 1. Output voltage V1 (+) may be adjusted within the ranges shown in Table 1. An external 125V, 630mA slow-blow fuse is recommended.

II—SPECIFICATIONS

The following specifications apply to both FCP3W models.

MODEL	FCP-031K V1 & V2	FCP-032K V1 & V2
Output	±12V, 0.12A/2.9W	±15V, 0.1A/3.0W
Adjustment Range (V1)*	+10.8V ~ +13.2V	+13.5V ~ +16.5V
Ripple (mV p-p max)	80	80
Noise (mV p-p max)	150	150
Overcurrent (120V input @25°C)	0.14A/0.25A	0.12A/0.2A
Efficiency (Nominal input, rated load, @25°C)	64% typ.	64% typ.

* V2 follows within ±2% of the V1 setting

TABLE 1 SPECIFICATIONS OF INDIVIDUAL FCP3W MODELS

INPUT

Voltage: 120V a-c, single phase, 85V-132V a-c or 145V d-c, 110V-170V d-c
Frequency: 47-440 Hz.
Brownout Voltage: 80V a-c, 105V d-c
Current rated load @25°C: 0.08A rms, typ., @120V input
0.1A rms, max. @85V input
Initial Turn-on Surge: (one-half of first input cycle) @Rated Load, 25°C cold start @120V input: 16A.

STABILIZATION:

Source Effect: <0.1% typ. (85V-132V)
Load Effect: <0.8% typ. (10%-100% load)
Temperature Effect: 1% (0°C to 50°C)
Combined Effect: (includes source, load, and temperature effects); ±1% typ., ±3% max.
Drift (8 hr. after ½ hr. warmup): 0.5% max.

Start-up and Hold-up time (25°C, nominal input @ rated load):
Start-up: 100 ms. max. to reach 90% of nominal output.
Hold-up: 20 ms. min.

Recovery Characteristics: A step load change from 50% to 100% produces less than ±4% output excursion. Recovery occurs within ±1% of the original setting within 1 ms. A step load change should be over 50 micro-seconds.

Ripple: See Table 1. Ripple components are harmonically related to the source frequency and the switching frequency.

Noise: See Table 1. Noise bandwidth is d-c to 50MHz.

Isolation: (20°C, 65% RH)
Insulation resistance between output terminals and ground, d-c 500V, 100 MOhm, min.

Dielectric strength:
Between input and output or input and ground terminals, 2KV a-c for one minute.
Between output and 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: UL 478 recognized; CSA 1402 certified.

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

Vibration: (non-operating, one hour on each of 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 peak
Duration: 11ms ±5ms.

Operating Temperature: See Figure 1

Storage Temperature: −40°C~85°C

Operating and Storage Relative Humidity: 20%~95% non-condensing

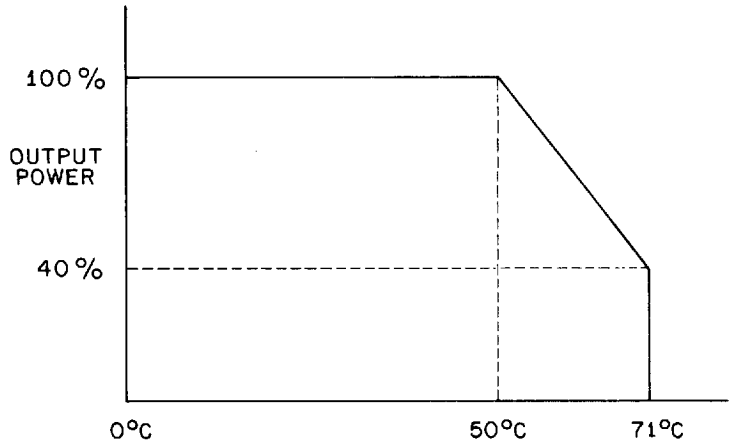
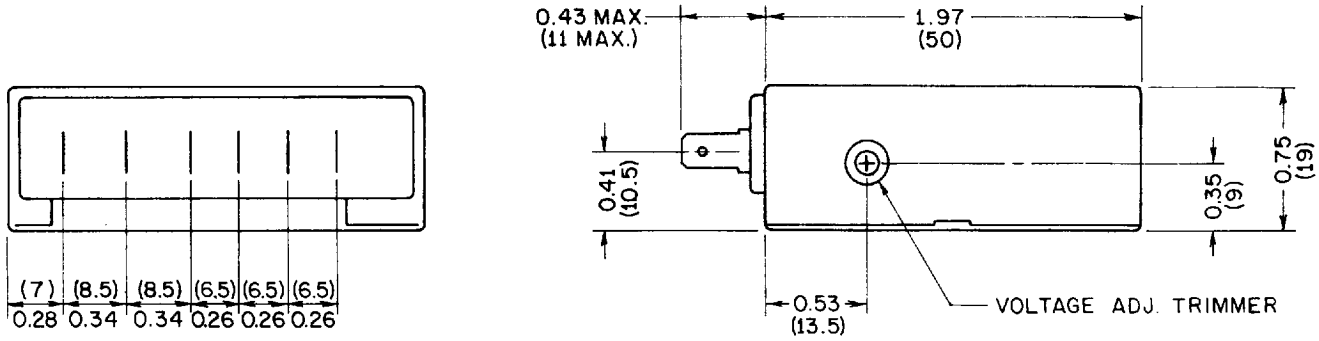
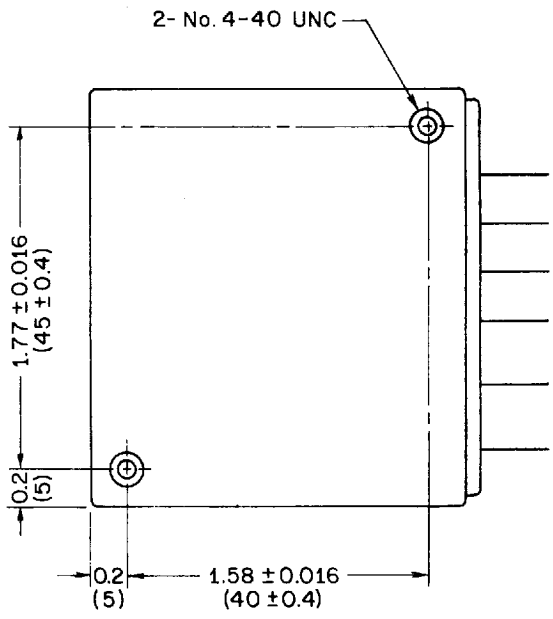


FIGURE 1: OPERATING TEMPERATURE





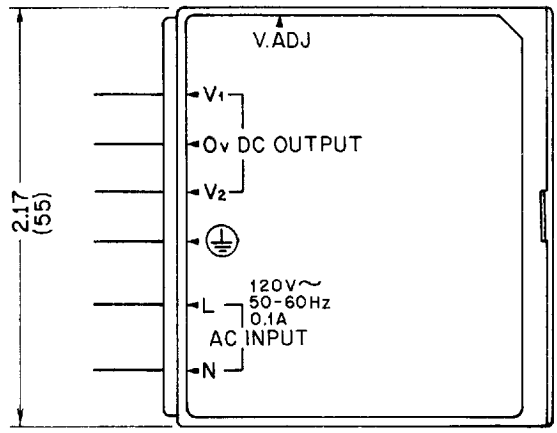


FIGURE 2: MECHANICAL OUTLINE

NOTES:

1. MATERIAL: PHENYLENE OXIDE.
2. DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS, OTHERS IN INCHES.
3. TOLERANCE: ± 0.03 (± 0.7) UNLESS NOTED OTHERWISE.
4. AC & DC TERMINALS: 0.187 INCH SERIES TABS.
5. AC & DC MATING RECEPTACLES: AMP. INC., FASTON 187 SERIES OR EQUIVALENT.
6. WEIGHT: 2.82 oz. (80 gr.) MAX.
7. MAXIMUM MOUNTING SCREW PENETRATION: 0.24 (6).

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