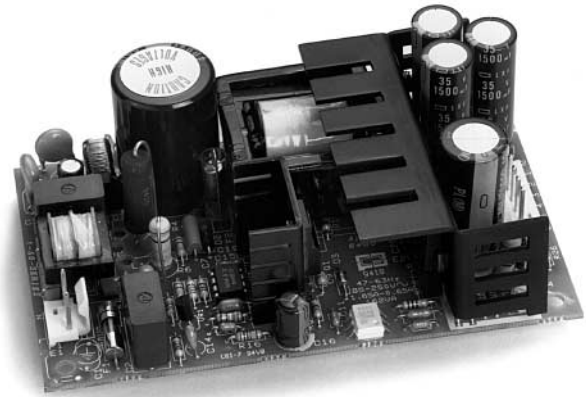


50-60W

OPEN-FRAME SWITCHING POWER SUPPLIES

- ✓ Single and Triple Output Models
- ✓ Universal AC Input
- ✓ CE Mark: UL/CSA/EN60950 Approvals
- ✓ EN55022/FCC Class B Input Line Filters
- ✓ 0% Minimum Load Requirement
- ✓ Over-Current/Short-Circuit Protection
- ✓ 2-Year Warranty
- ✓ Minimum 200,000-Hour MTBF



CHARACTERISTICS

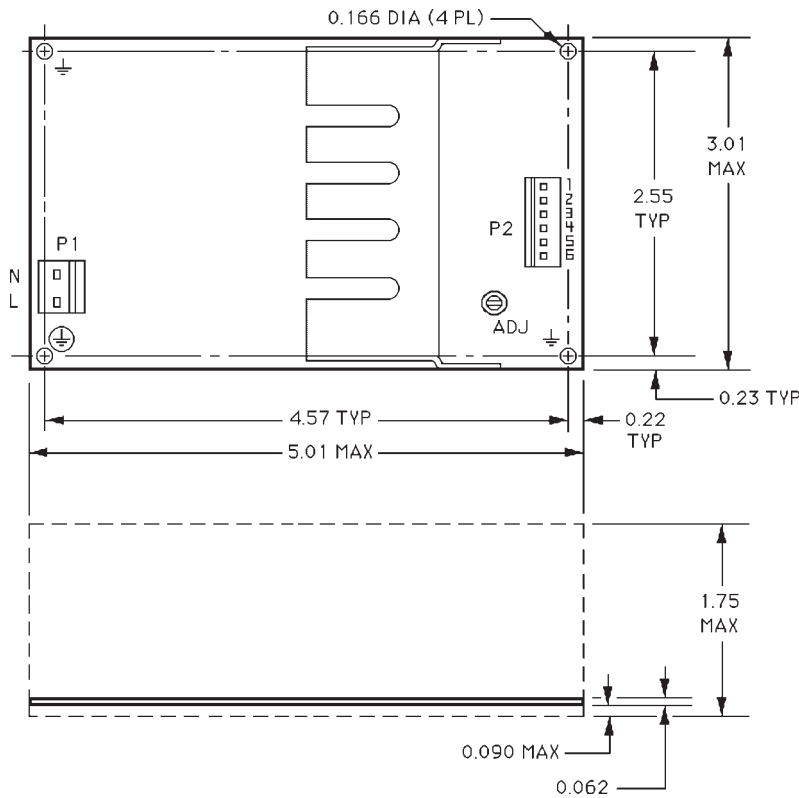
Input Voltage	Universal input voltage range 85-265 VAC single phase or 100-370 VDC.
Input Line Frequency	47-440 Hz (50/60 Hz, nominal).
Input Line Protection	MOV transient protected, input line fuse on-board. (See Note 1.)
EMI Filter	Standard. Performance surpasses the conducted EMI requirements of EN55022/FCC Class B by 10 dB, typical.
Continuous Output Power	FLU1-50 and FLU3-50, 50W, max. FLU1-60 series, 60W, max.
Output Voltage Adjust	Primary output adjustable $\pm 5\%$. Auxiliary outputs fixed.
Efficiency	74%, typical (nominal input voltage, nominal load conditions).
Hold-Up Time	16 ms (115 VAC input), 32 ms (230 VAC input), minimum, at full load.
Overload Protection	Power-limit circuit.
Short-Circuit Protection	Continuous.
Over-Voltage Protection	Primary output only (120% of rated output, typical).
Soft Start	Standard all models.
Design Topology	Flyback converter with current-mode control.
Frequency of Operation	FLU1-50 series, 40 kHz, fixed. FLU1-60 and FLU3-50 series, 33 kHz, fixed.
Electrical Strength/Isolation	5300 VDC, input-to-output for one minute. (See Note 2.)
Noise, Ripple and Spike	1% peak-to-peak, maximum. (See Notes 3, 4.)
Temperature Range	-20°C to +70°C.
Output Power De-Rating	De-rate output power and current linearly 2%/°C from +50°C to +70°C.
Temperature Coefficient	$\pm 0.05\%/^{\circ}\text{C}$ over the entire operating temperature range.
Relative Humidity	0 to 95%, non-condensing.
Altitude	0 to 10,000 feet.
Cooling	Convection cooling is adequate. Moving air is recommended for operation in a confined area.
Storage Temperature	-40°C to +85°C.
Storage Humidity	0 to 95%, non-condensing.
Mean Time Between Failures	>200,000 hours. (Note 5.)

Model	Output Voltage Output (V)	Output Current			Max. Voltage (A)	Line Reg.	Load Reg.	Cross-Reg.
		Min. (A)	Nom. (A)	Output (A)				
AC-DC 50W Singles 85-265 VAC Input								
FLU1-50-1AD	V1 5	0.00	10.0	10.0	1.0%	0.5%	0.5%	—
FLU1-50-3AD	V1 12	0.00	4.20	4.20	1.0%	0.5%	0.5%	—
FLU1-50-5AD	V1 24	0.00	2.10	2.10	1.0%	0.5%	0.5%	—
AC-DC 50W Triples 85-265 VAC Input								
FLU3-50-1AD	V1 +5	0.00	5.00	6.00	1.0%	0.2%	1.0%	—
	V2 +12	0.00	1.60	3.00*	5.0%	1.0%	2.0%	5.0%
	V3 -12	0.00	0.50	0.50	5.0%	2.0%	3.0%	5.0%
FLU3-50-3AD	V1 +5	0.00	5.00	6.00	1.0%	0.2%	1.0%	—
	V2 +15	0.00	1.15	2.00*	5.0%	1.0%	3.0%	5.0%
	V3 -15	0.00	0.50	0.50	3.0%	0.5%	1.0%	1.0%
AC-DC 60W Singles 85-265 VAC Input								
FLU1-60-1AD	V1 5	0.00	12.0	12.0	1.0%	0.1%	0.2%	—
FLU1-60-5AD	V1 24	0.00	2.50	2.50	1.0%	0.1%	0.2%	—

* Peak output current rating = 5.0A (<60 seconds, duty cycle <10%).

50-60W

OPEN-FRAME SWITCHING POWER SUPPLIES



FLU1-50 SERIES

- A. Dimensions shown are in inches.
- B. Tolerances = 0.00 ±0.01 inch.
0.000 ±0.005 inch.
- C. P1 input connectors are Molex 26-60-4030. The mating connector combines Molex housing 43061-0003 and crimp terminal 08-70-1030.
- D. P2 output connectors are Molex 26-60-4060. The mating connector combines Molex housing 43061-0006 and crimp terminal 08-70-1030.

Pin-Out

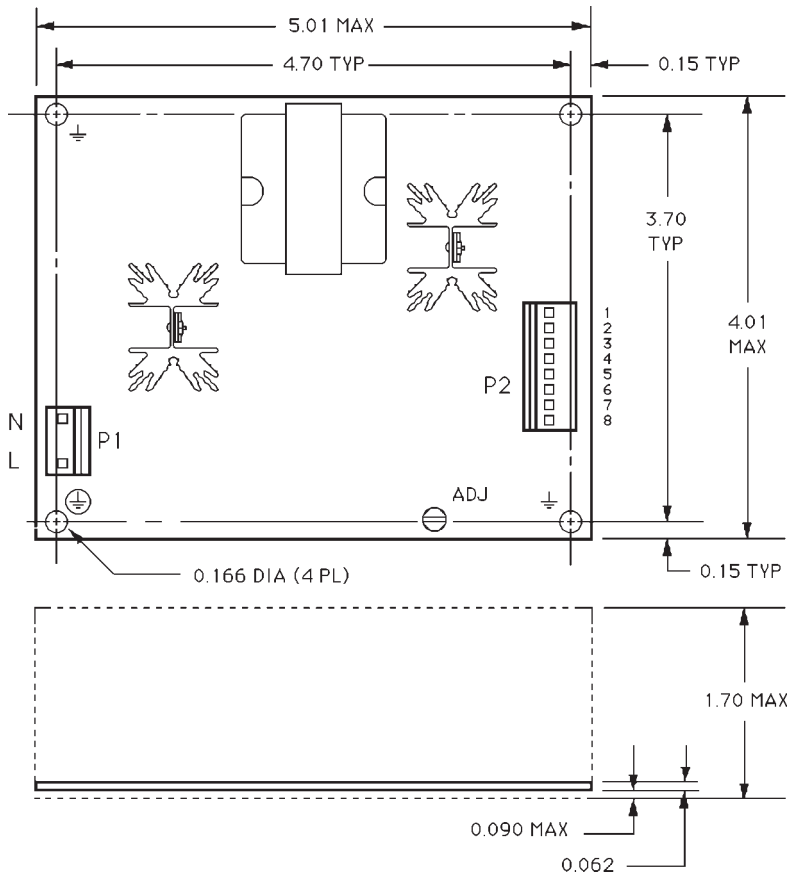
Pin	FLU1-50
1	V1
2	V1
3	V1
4	Return
5	Return
6	Return

Notes

1. Replace the input line fuse with the same type and rating. Recommended: 2A/250V slow-blow fuse.
2. Electrical strength/isolation is 2200 VDC from the input of the supply to ground for 60 seconds.
3. All measurements are made directly at the terminals of the power supply.
4. Peak-to-peak and RMS metering equipment must have a 20 MHz frequency response with probes and cables that maintain a frequency response of 20 Hz to 20 MHz. Output ripple and spikes are measured directly at the output terminals of the power supply with a 0.1 µF ceramic capacitor. The instruments' probe ground band must make direct contact with the output return or common terminal of the supply to prevent erroneous noise measurements.
5. MTBF is calculated using the parts stress method in MIL-HDBK 217F (ground benign, T_A = +25°C).
6. Output voltage tolerance is measured under nominal load conditions.
7. Line regulation is measured under nominal load conditions as the input voltage is varied from 85 to 265 VAC.
9. Load regulation is measured at 115 VAC or 230 VAC. For single output models, load regulation is measured while output current is varied from 0% to 100% of full load. With multiple output models, the output under test is brought to 60% of nominal load; load current is then varied +40%/-30% of nominal while other outputs are held at nominal load conditions.
10. Cross-regulation is tested by changing the load on the primary output from 50% to 100% of nominal load while measuring the voltage change on the auxiliary output under test.
11. The FLU1-50, FLU3-50 and FLU1-60 series are approved to UL1950 (File E140439), CSA22.2 No.234 (File LR52335) and EN60950/IEC950/DIN VDE 0805 (TÜV Licenses R9271543, R9171470, and R9271468).

50-60W

OPEN-FRAME SWITCHING POWER SUPPLIES



FLU3-50/FLU1-60 SERIES

- A. Dimensions shown are in inches.
- B. Tolerances = 0.00 ±0.01 inch.
0.000 ±0.005 inch.
- C. P1 input connectors are Molex 26-60-4030. The mating connector combines Molex housing 43061-0003 and crimp terminal 08-70-1030.
- D. P2 output connectors: FLU1-60 series—Molex 26-60-4080, FLU3-50 series—Molex 26-60-4060. Mating connector housings: FLU1-60 series—Molex 43061-0008, FLU3-50 series—Molex 43061-0006. Crimp terminals: Molex 08-70-1030.

Pin-Out

Pin	FLU3-50	FLU1-60
1	V2	+Sense [§]
2	V1	V1
3	V1	V1
4	Common	V1
5	Common	Return
6	V3	Return
7	N/A	Return
8	N/A	-Sense [§]

[§] If sense terminals are not used, tie together Pins 1 and 2 and tie together Pins 7 and 8.

