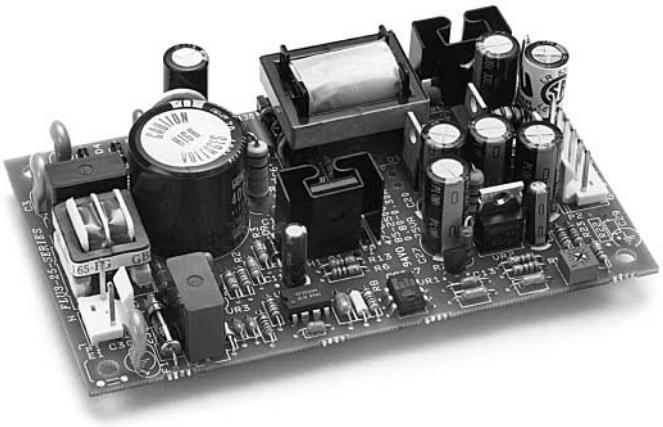
20-25W

Open-Frame Switching Power Supplies

- ✔ Single, Dual and Triple Output Models
- ✔ 85-265 VAC Universal Input Voltage Range
- ✔ *CE* Mark: UL/CSA/EN60950 Approvals
- ✔ EN55022/FCC Class B Input Line Filter
- ✔ 0% Minimum Load Requirement
- ✔ Short-Circuit Protection
- ✔ 2-Year Warranty
- ✔ Minimum 200,000-Hour MTBF



Characteristics

AC Input	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 protection. Input line fuse provided on-board. (Note 1.)
EMI Filter	Standard. Performance surpasses the conducted EMI requirements of EN55022/FCC Class B by 10 dB, typical.
DC Output	See table. (Note 2.)
Continuous Output Power	FLU2-20 series—20W, maximum. FLU1-25 series—25W, maximum. FLU3-25 series—25W, maximum.
Output Voltage Adjust	Primary output adjustable ±5%. Auxiliary outputs fixed.
Efficiency	65-75%, typical (115 or 230 VAC input, 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.
Soft Start	Standard on all models. Prevents output overshoot and power transformer saturation at turn-on.
Design Topology	Flyback converter with current-mode control.
Frequency of Operation	50 kHz (fixed).
Electrical Strength/Isolation	5300 VDC, input-to-output for one minute. (Note 3.)
Noise, Ripple and Spike	1% peak-to-peak, maximum. (See Note 5.)
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	±0.05%/°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. When operating in a confined area, moving air is recommended.
Storage Temperature	-40°C to +85°C.
Storage Humidity	0 to 95%, non-condensing.
Mean Time Between Failures	>200,000 hours. (Note 6.)

Model	Output Voltage Output	(V)	Output Current Min. (A)	Nom. (A)	Max. (A)	Output Voltage Tol.	Line Reg.	Load Reg.	Cross-Reg.
AC-DC Singles									85-265 VAC Input
FLU1-25-1AD	V1	5	0.00	5.00	5.00	1.0%	0.1%	0.3%	—
FLU1-25-3AD	V1	12	0.00	2.10	2.10	1.0%	0.1%	0.3%	—
FLU1-25-5AD	V1	24	0.00	1.05	1.05	1.0%	0.1%	0.3%	—
AC-DC Duals									85-265 VAC Input
FLU2-20-1AD	V1	+5	0.00	2.50	3.00	1.0%	0.2%	1.0%	—
	V2	+12	0.00	0.60	1.00	5.0%	0.5%	3.0%	4.0%
AC-DC Triples									85-265 VAC Input
	V1	+5	0.00	1.50	2.00	1.0%	0.2%	1.0%	—
FLU3-25-1AD	V2	+12	0.00	1.25	1.50	5.0%	0.5%	3.0%	4.0%
	V3	-12	0.00	0.20	0.20	5.0%	0.5%	1.0%	1.0%
	V1	+5	0.00	1.50	2.00	1.0%	0.2%	1.0%	—
FLU3-25-3AD	V2	+15	0.00	1.00	1.20	5.0%	0.5%	3.0%	4.0%
	V3	-15	0.00	0.20	0.20	5.0%	0.5%	1.0%	1.0%

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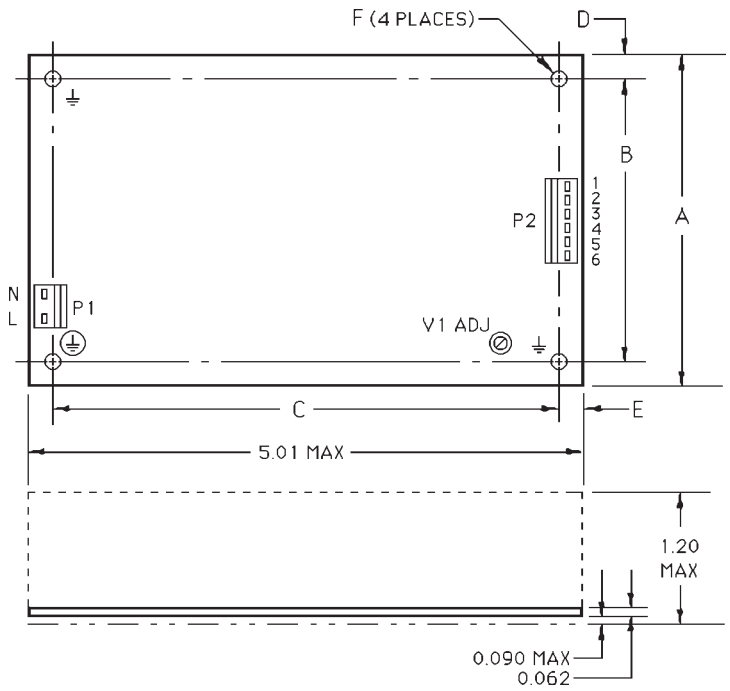


FLU 20W AND 25W SERIES

Dimension	FLU1-25	FLU2-20	FLU3-25
A (Max.)	2.76	3.01	3.01
B (Typ.)	2.36	2.55	2.55
C (Typ.)	4.72	4.57	4.57
D (Typ.)	0.195	0.23	0.23
E (Typ.)	0.140	0.22	0.22
F (Dia.)	0.157	0.166	0.166

A. Dimensions shown are in inches.
B. Tolerances = 0.00 ±0.01 inch.
0.000 ±0.005 inch.
C. P1 input connectors are Molex 26-62-4030. 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.

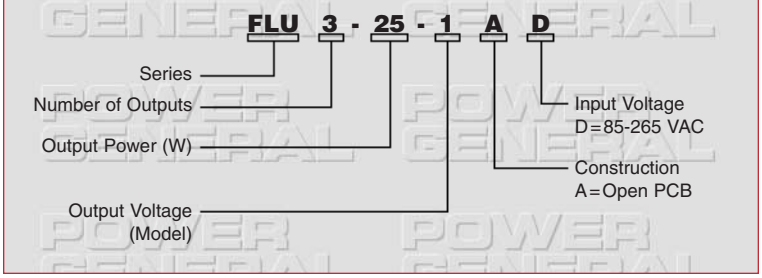
Pin-Out

Pin	FLU1-25	FLU2-20	FLU3-25
1	V1	V2	V2
2	V1	V1	V1
3	V1	V1	V1
4	Return	Common	Common
5	Return	Common	Common
6	Return	Common	V3

Notes

1. Replace the input line fuse with the same type and rating. Recommended: 2A/250V slow-blow fuse.
2. The sum of primary and auxiliary output currents from multiple output models must not exceed 3.0A.
3. Electrical strength/isolation is 2200 VDC from the input of the supply to ground for 60 seconds.
4. All measurements are made directly at the terminals of the power supply.
5. 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 probe ground band must make direct contact with the output return or common terminal to prevent erroneous noise measurements.
6. MTBF is calculated using the parts stress method in MIL-HDBK 217F (ground benign, T_A = +25°C).
7. Output voltage tolerance is measured under nominal load current conditions.
8. 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 current 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 FLU1-25 series is approved to UL1950 (File E140439), CAN/CSA22.2 No. 234 (File LR52335) and EN60950/IEC950 (TÜV License R9472109).
12. The FLU2-20 series is approved to UL1950 (File E140439), CAN/CSA22.2 No. 234 (File LR52335) and EN60950/IEC950/DIN VDE 0805 (TÜV License R9171555).
13. The FLU3-25 series is approved to UL1950 (File E140439), to CAN/CSA22.2 No. 234 (File LR52335), and to EN60950/IEC950/DIN VDE 0805 (TÜV License R9572053).

Model Selection Guide



POWER GENERAL

Rev. PG/ABBB