225W

Enclosed Quad Output Switching Power Supplies

- ✔ 225W Continuous Output Power
- ✔ Auto-Ranging AC Input and DC-Input Models
- ✔ Power-Fail Warning Signal
- ✔ ±3% Margining
- ✔ Remote Sense and Remote On/Off
- ✔ Over-Current and Short-Circuit Protection
- ✔ Thermal Shutdown Protection
- ✔ *CE* Mark: UL/CSA/EN60950 Approvals
- ✔ EN55022/FCC Class B Input Line Filter
- ✔ 2-Year Warranty
- ✔ Minimum 200,000-Hour MTBF

Characteristics

Input Voltage	FLU models, auto-ranging input voltage range, 90-265 VAC, single phase. DC-input models, 38-72 VDC (48V, nominal).
Input Line Frequency	FLU models, 47-440 Hz (50/60 Hz, nominal).
Input Line Protection	MOV transient-protected (FLU models). Input line fuse on-board (Note 1).
EMI Filter	Standard. Performance surpasses conducted EMI requirements of EN55022/FCC Class B by 10 dB, typ.
Continuous Output Power	225W, maximum.
Output Voltage Adjust	V1 adjustable ±5%. V2 adjustable ±5% (models 1,3); V2 adjustable ±2% (model 2). V4 fixed.
Efficiency	65%, minimum (FLU models, 115 or 230 VAC input, DC models, 48V input, full load conditions).
Hold-Up Time	16 ms at 115 VAC input, 32 ms at 230 VAC input, minimum, full load conditions (FLU models).
Overload Protection	Independent current limiting, each output.
Short-Circuit Protection	Continuous.
Over-Voltage Protection	V1, V2, V3, standard on all models.
Soft Start	Standard on all models.
Design Topology	Forward converter, current-mode control.
Frequency of Operation	125 kHz (fixed).
Electrical Strength/Isolation	5300 VDC, input-to-output for one minute. (Note 2.)
Noise, Ripple and Spike	1% peak-to-peak, max. (See Note 4.)
Transient Response	4 ms recovery to within 1% of the regulation band with no more than 5% deviation.
Margining	V1, ±3%, nominal.
Remote On/Off	TTL compatible (logic 1 or OPEN = ON, logic 0 = OFF).
Power-Fail Warning	TTL compatible (logic 1, 5 ms, minimum, before loss of output).
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	Cooling fan built-in.
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 Min. (A)	Nom. (A)	Max. (A)	Output Voltage Tol.	Line Reg.	Load Reg.	Cross-Reg.
AC-DC Quad Output									90-265 VAC Input
FLU4-225-1CDP	V1	5.0	3.0	30.0	30.0	1.0%	0.2%	0.5%	—
	V2	+12	0.0	4.00	4.00	1.0%	0.2%	0.5%	1.0%
	V3	-12	0.0	2.00	3.00	1.0%	0.2%	0.5%	1.0%
	V4	5.0(ISO)	0.0	1.50	1.50	3.0%	0.2%	1.0%	1.0%
DC-DC Quad Output									38-72 VDC Input
DC4-225-1CCP	V1	5.0	3.0	30.0	30.0	1.0%	0.2%	0.5%	—
	V2	+12	0.0	4.00	4.00	1.0%	0.2%	0.5%	1.0%
	V3	-12	0.0	2.00	3.00	1.0%	0.2%	0.5%	1.0%
	V4	5.0(ISO)	0.0	1.50	1.50	3.0%	0.2%	1.0%	1.0%

POWER GENERAL

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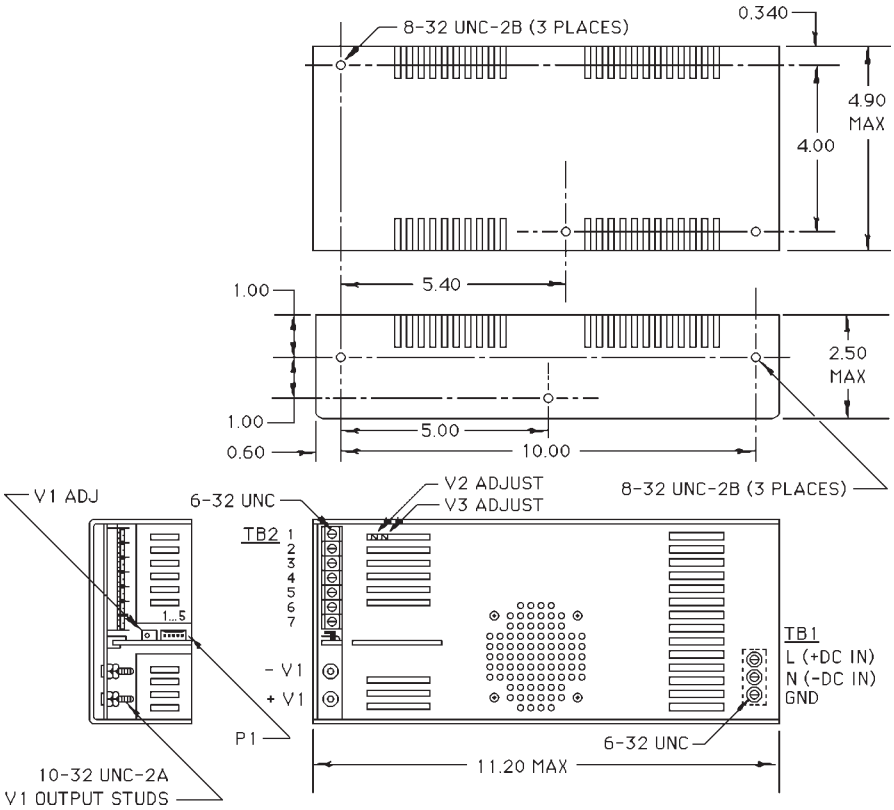

FLU4-225/DC4-225

A. Dimensions shown are in inches.
B. Tolerances = 0.00 ±0.01 inch.
0.000 ±0.005 inch.
C. The TB1 input connector is a three-position screw terminal.
D. The TB2 output connector is a seven-position screw terminal
E. The P1 output connector is Molex 22-05-3051. The mating connector combines Molex housing 22-01-3057 and Molex crimp terminal 08-50-0114.

Pin-Out

Pin	FLU4-225 TB2	DC4-225 TB2	FLU4-225 P1	DC4-225 P1
1	V4 Return	V4 Return	Low Margin	Low Margin
2	V4	V4	Common Margin	Common Margin
3	V3	V3	High Margin	High Margin
4	V2/V3 Common	V2/V3 Common	Power Fail	Power Fail
5	V2	V2	Remote ON/OFF	Remote ON/OFF
6	+Sense§	+Sense§	N/A	N/A
7	-Sense§	-Sense§	N/A	N/A

§ If Remote Sense terminals are *not* used, tie Pin 6 of TB2 to V1 and and tie Pin 7 of TB2 to the V1 Return stud.

Notes

1. Replace the input line fuse with the same type and rating. Recommended: 5.0A/250V slow-blow fuse (ac-dc models); 10A/125V slow-blow fuse (dc-dc models).
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 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 probe ground band must make direct contact with the output return or the common terminal of the power 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 current conditions specified for the power supply.
7. Line regulation is measured under nominal load conditions as the input voltage is varied from 90 to 132 VAC and 180 to 265 VAC (ac-input models) or from 38 to 72 VDC (dc-input models).
8. Load regulation is measured at 115 VAC or 230 VAC input (ac-input models) or at 48 VDC (dc-input models). The output under test is brought to 60% of nominal load; load current and is then varied ±40% of nominal while other outputs are held at nominal load current conditions.
9. Cross-regulation is tested by changing the load on the primary output from 15A to 30A while measuring the voltage change on the auxiliary output under test.
10. The FLU4-225-1 is approved to UL1950 (File E140439), CAN/CSA22.2 No. 234 (File LR52335), and EN60950/IEC950/DIN VDE 0805 (TÜV License B 94 07 18771 007). Power General model DC4-225-1 is approved to UL1950 (File E140439).