

225 WATTS

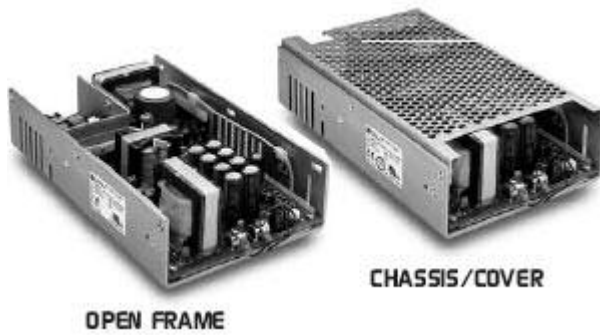
NO MINIMUM ORDERS REQUIRED

CE-225 SERIES

OUTPUT SPECIFICATIONS

Features

- RoHS Compliant
- Universal 85-264 VAC Input
- Compact 4.75" X 8.0" X 2.0" Size
- 2 Year Warranty
- One to Four Tightly Regulated Outputs
- EN 60950-1 ITE Certification
- EN 60601-1 Medical Certification
- Class B Emissions Per EN 55011/22
- Harmonic Current per EN 61000-3-2
- EMC to EN 61000-6-2 & EN 60601-1-2
- Optional Perforated Cover







Total Output Power at 50C	150W Convection cooled 225W 300 LFM Forced Air
Output Voltage Centering	Output 1: +/-0.25% Output 2: +/-0.25% (X0XX) +/-5.0% (X1XX) Output 3: +/-2.0% Output 4: +/-2.0% (All outputs at 50% load)
Source Regulation	Outputs 1-4: 0.5%
Load Regulation	Output 1:0.5% (10-100% Load Change) Output 2: (X0XX) 0.5% (0-100% Load Change) (X1XX) 5.0% (10-100% Load Change) Output 3: 2.0% (0-100% Load Change) Output 4: 2.0% (0-100% Load Change)
Cross Regulation	Output 2: 0.2%(X0XX) 5.0%(X1XX) Output 3: 2.0% Output 4: 2.0% (Output 1 load varied 50-100%)
Output Voltage Adjust Range	Output 1-2:95%-105%(X0XX) Output 1: 95%-105% (X1XX) Output 1: 85%-105% (1001,4001) Output 2: 85%-105% (4002,4003)
Output Noise	Outputs 1-4: 1.0%
Turn On Overshoot	None
Transient Response	Outputs 1-4:
Volt. Deviation	5.0%
Recovery Time	500 MicroS
Load Change	50% To 100%
Output Overvoltage Protection (Optional)	Output 1: 110% to 150%.Shuts down all outputs.Cycle input to restart
Output Overpower Protection	250 W Min., Outputs 1 Outputs cycle on/off, auto recovery
Output Overcurrent Protection	110% Min., Outputs 2,3 & 4
Hold Up Time	20 mS Min, 225 W Output 120 V Inputt
Start Up Time	3 Seconds

INPUT SPECIFICATIONS

Source Voltage	85-264 Voltage AC
Frequency Range	47-63 Hz
Source Current	
True RMS	4.25A At 85V Inputut
Peak Inrush	30A
Peak Repetitive	6.0A at 85V Input
Harmonic Distortion	0.05
Efficiency	.68 -.80 (Varies by model)
Power Factor	0.92 (225 watts, 230V)

ENVIRONMENTAL SPECIFICATIONS

Ambient Operating Temperature Range	0°C to +70°C Derating: See Power Rating Chart
Ambient Storage Temperature Range	-40°C to +85°C
Temperature Coefficient	Outputs 1-4: 0.02%/°C

SAFETY SPECIFICATIONS			GENERAL SPECIFICATIONS	
General	Protection Class:	I	Dielectric Strength	5656 VDC, Primary to Secondary, 1 Sec. 2121 VDC, Primary to Ground, 1 Sec. 707 VDC, Secondary to Ground, 1 Sec.
	Overtoltage Category:	II	Reinforced Insulation	
	Pollution Degree:	2	Basic Insulation	
 Underwriters Laboratories File E137708	UL 60950-1 First Edition	UL First	Operational Insulation	<300 $\hat{A}$ $\mu$ A Earth Leakage Current
	60601-1 First Edition	First	Leakage Current	
	CB Report Per IEC 60950-1(2001) First Edition	All National	Power Fail Signal (Optional)	Logic low with input power failure 10 mS minimum prior to output 1 dropping 1%
	Deviations CB Report Per IEC 60601-1(1988) First Edition, A1, A2	First	Remote On/Off (Optional)	Contact closure shuts off all outputs
	UL Recognition Mark for Canada File E137708	CAN/CSA-C22.2 No. 60950-1-03 CAN/CSA-C22.2 No. 601-1-M90 with updates 1 and 2	Remote Sense	250mV compensation of output cable losses
	TUV	EN 60950-1:2001 EN 60601-1/A2:1995	Mean-Time Between Failures	100,000 Hours min., MIL-HDBK-217F, 25 $^{\circ}$ C, GB
	Low Voltage Directive		Weight	3.00 Lbs.

### MODEL LISTING

Model	Output 1	Output 2	Output 3	Output 4
CE-225-4001	+3.3V/25A <sub>(1)</sub>	+5V/8A <sub>(1)</sub>	+12V/2A <sub>(1)</sub>	-12V/2A <sub>(1)</sub>
CE-225-4002	+5V/25A <sub>(1)</sub>	+3.3V/8A <sub>(1)</sub>	+12V/2A	-12V/2A
CE-225-4003	+5V/25A <sub>(1)</sub>	+3.3V/8A <sub>(1)</sub>	+15V/2A	-15V/2A
CE-225-4004	+5V/25A <sub>(1)</sub>	-5.2V/8A <sub>(1)</sub>	+12V/2A	-12V/2A
CE-225-4005	+5V/25A <sub>(1)</sub>	-5.2V/8A <sub>(1)</sub>	+15V/2A	-15V/2A
CE-225-4006	+5V/25A <sub>(1)</sub>	+12V/8A <sub>(1)</sub>	+12V/2A	-12V/2A
CE-225-4007	+5V/25A <sub>(1)</sub>	+12V/8A <sub>(1)</sub>	+15V/2A	-15V/2A
CE-225-4008	+5V/25A <sub>(1)</sub>	+12V/8A <sub>(1)</sub>	+9V/2A	-9V/2A
CE-225-4101	+5V/25A <sub>(1)</sub>	+24V/8A <sub>(1)</sub>	+12V/2A	-12V/2A
CE-225-4102	+5V/25A <sub>(1)</sub>	+24V/8A <sub>(1)</sub>	+15V/2A	-15V/2A
CE-225-4104	+24V/6A <sub>(1)</sub>	+24V/3A <sub>(1)</sub>	+12V/2A	5V/2A
CE-225-3001	+5V/25A <sub>(1)</sub>	+12V/8A <sub>(1)</sub>		-12V/2A
CE-225-3002	+5V/25A <sub>(1)</sub>	+15V/8A <sub>(1)</sub>		-15V/2A
CE-225-2001	+12V/10A <sub>(1)</sub>	-12V/8A <sub>(1)</sub>		
CE-225-2002	+15V/10A	-15V/8A <sub>(1)</sub>		
CE-225-2003	+5V/25A <sub>(1)</sub>	+12V/8A		
CE-225-2004	+5.2V/30A	-9V/6A		
CE-225-2005	+3.3V/25A	+12V/8A		
CE-225-2101	+5V/25A <sub>(1)</sub>	+24V/8A <sub>(1)</sub>		
CE-225-1001	3.3V/45A <sub>(6)</sub>			
CE-225-1002	5V/45A <sub>(6)</sub>			
CE-225-1003	12V/18.8A <sub>(1)</sub>			
CE-225-1004	15V/15A <sub>(1)</sub>			
CE-225-1005	24V/9.4A <sub>(1)</sub>			
CE-225-1006	28V/8A <sub>(1)</sub>			
CE-225-1007	48V/4.7A <sub>(1)</sub>			
CE-225-1008	48V/4.7A <sub>(1)</sub>			
CE-225-1009	39V/5.8A <sub>(1)</sub>			

**ELECTROMAGNETIC COMPATIBILITY**

Electrostatic Discharge	EN 61000-4-2	+/-8kV Contact Discharge +/-8kV Air Discharge
Radiated Electromagnetic Field	EN 61000-4-3	80MHz-2.5GHz, 10V/m, 80% AM
EFT/Bursts	EN 61000-4-4	+/-2kV
Surges	EN 61000-4-5	+/-1 kV Differential Mode +/-2 kV Common Mode
Conducted Immunity	EN 61000-4-6	.15-80MHz., 10V, 80% AM
Voltage Dips and Interruptions	EN 61000-4-11	30% Reduction,500mS 95% Reduction,10mS 60% Reduction, 1s (Criteria B) 95% Reduction,5000ms
Radiated Emissions	EN 55011/22	Class B
Conducted Emissions	EN 55011/22	Class B
Harmonic Current Emissions	EN 61000-3-2	

## Notes

Consult factory for alternate output configuration.

Consult factory for positive, negative or floating outputs.

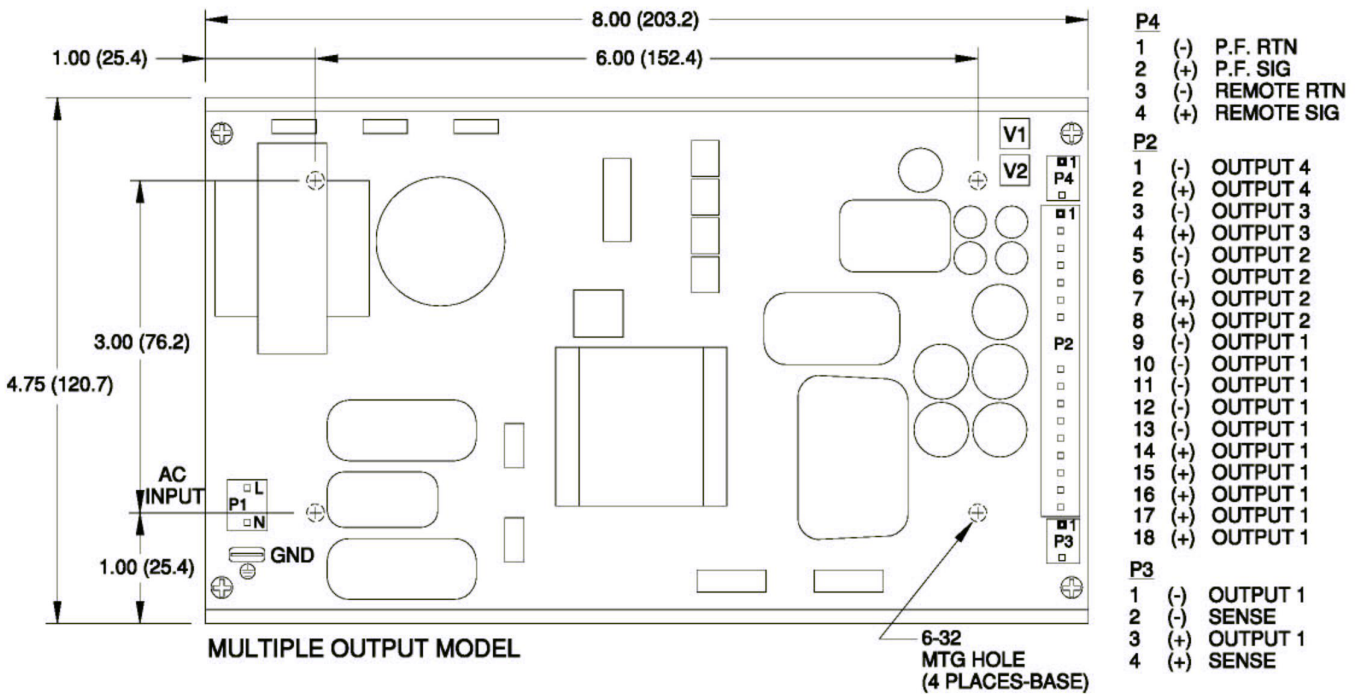
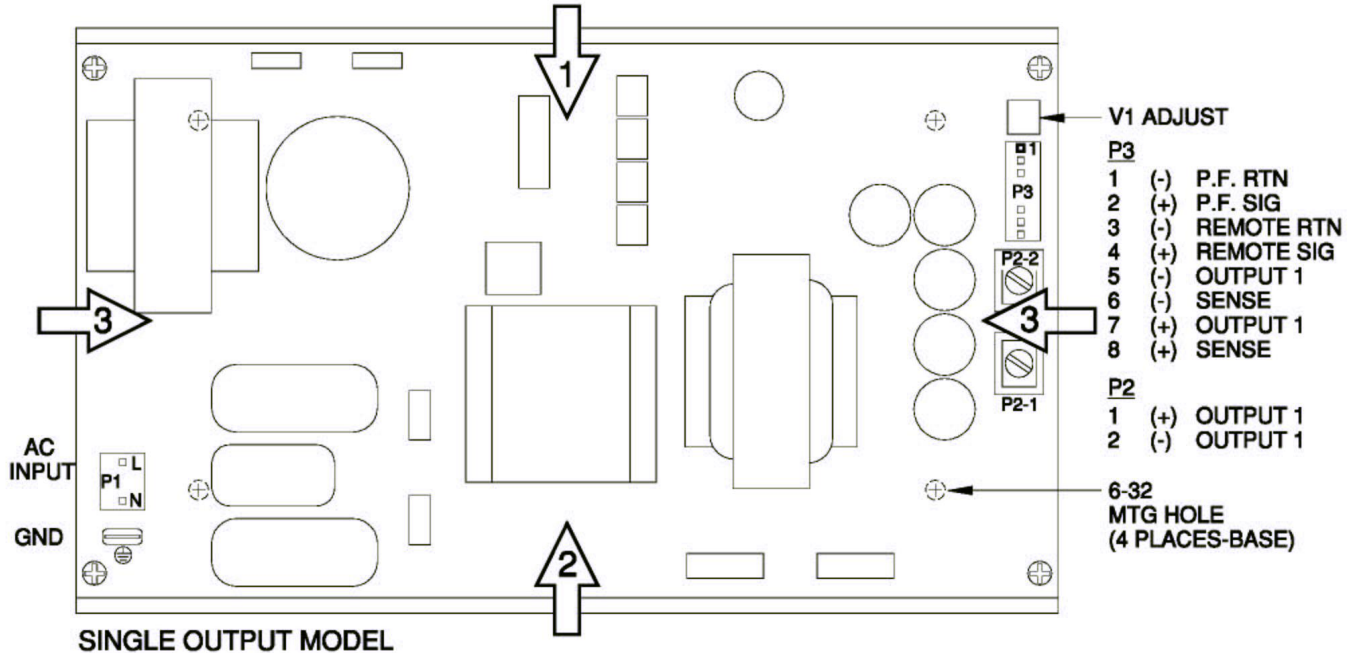
Refer to Application Information for complete output power ratings.

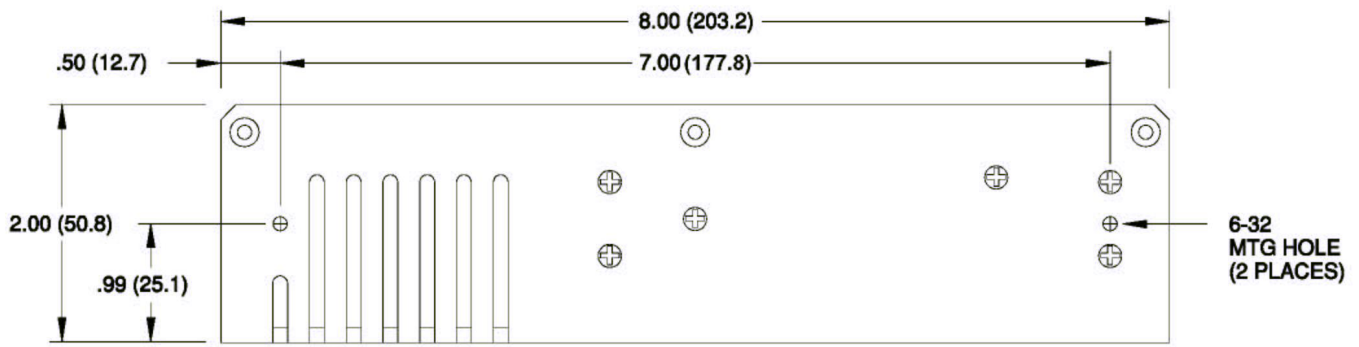
All specifications are maximum at 25° C unless otherwise stated and are subjected to change without notice.

Specify optional perforated cover, power fail, overvoltage protection or remote on/off when ordering.

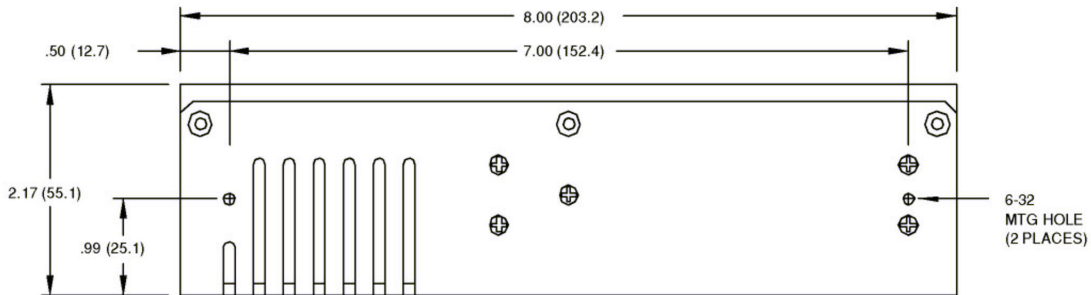
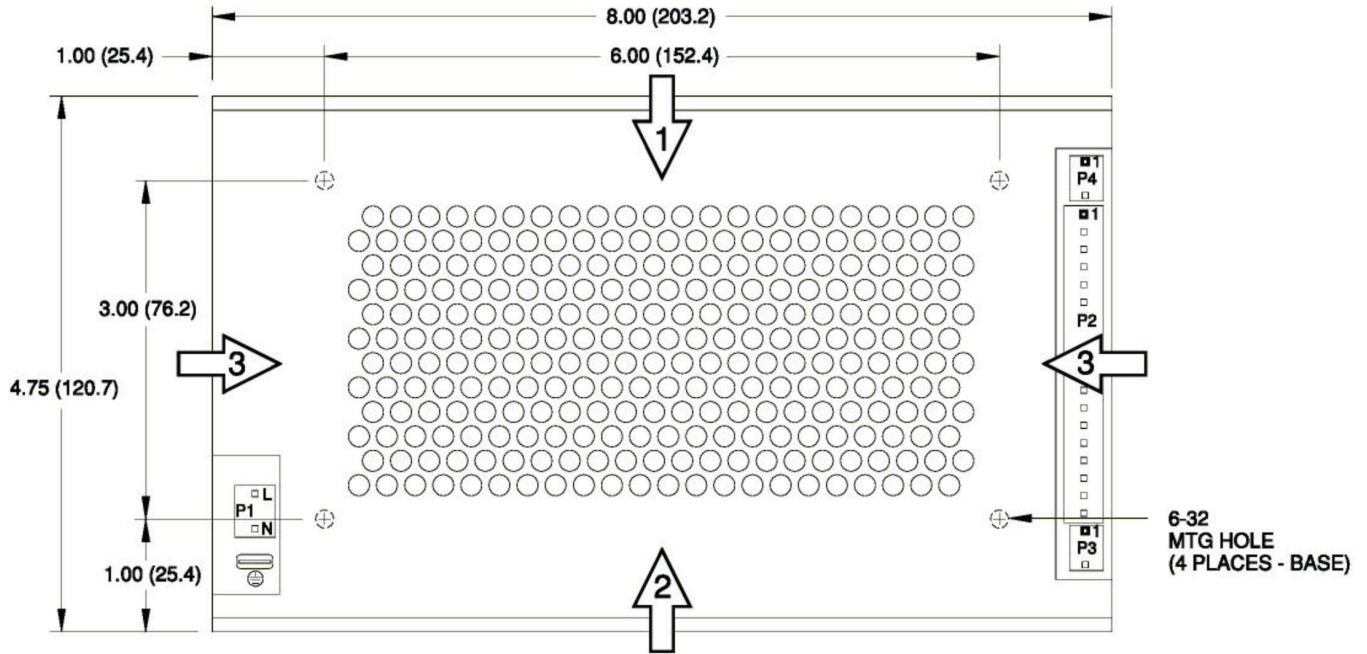
## CE-225 SERIES MECHANICAL SPECIFICATIONS

### OPEN CHASSIS





**OPTIONAL COVER**

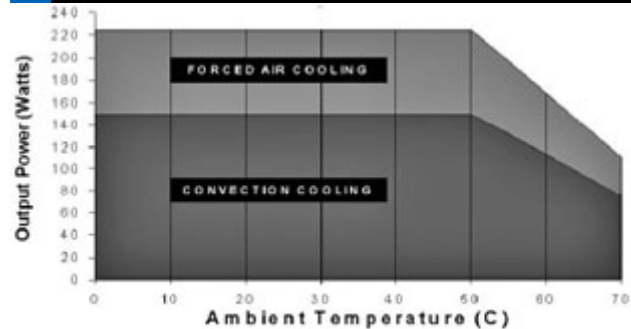


ALL DIMENSIONS IN INCHES (MM)

## APPLICATIONS INFORMATION

- Derated 20% when convection cooled.
- Each output can deliver its rated current but total output power must not exceed 150 or 225 watts as determined by the cooling method.
- Rated 30 amps maximum when convection cooling only.
- Free air convection cooling, 150 watts maximum output power.
- Forced air cooling rating of 225 watts requires an air speed of 300 linear feet per minute flowing past a point one inch above the main isolation transformer.
- Semiconductor case temperature must not exceed 110°C.
- Sufficient area must be provided around convection cooled power supplies to allow natural movement of air develop.
- 300 linear feet per minute of airflow must be maintained one inch above any point of the heatsink in the direction shown when forced air cooling is required.
- This product is intended for use as a professionally installed component within information technology and medical equipment.
- A minimum load of 10% is required on output one to insure proper regulation of remaining outputs.
- Remote sense terminals may be used to compensate for cable losses up to 250mV. The use of a twisted pair is recommended as well as a decoupling capacitor (0.1 0 10 $\hat{\text{A}}$  $\mu$ F) and a capacitor of 100 $\hat{\text{A}}$  $\mu$ F/amp connected across the load.
- Peak to peak output ripple and noise is measured directly at the output terminals of the power supply, without the use of the probe ground lead or retractable tip, 20 MHz bandwidth.
- This product includes only one fuse in the input circuit. In consideration of Clause 57.6 of UL 2601-1, a second fuse may be required in the end product.
- This product was type tested and safety certificated using the the dielectric strength test voltages listed in Table V of UL 60601-1. In consideration of clause 20.4g, care must be taken to insure the voltage applied to a reinforced insulation does not over stress basic insulation. Secondary to ground capacitors may need to be removed prior to performing a dielectric strength type test on the end product. It is highly recommended that the DC test voltages listed in DVB.1. Annex DVB are not exceeded during a production-line dielectric strength test of the assembled end product. Please consult factory for further information.
- This power supply has been safety approved and final tested using a DC dielectric strength test. Please consult factory before performing AC dielectric strength test.
- Maximum screw penetration into bottom chassis mounting holes is .187 inches.

## Maximum Output Power vs. Ambient Temperature



## CONNECTOR SPECIFICATIONS

P1	AC Input	.156 friction lock header mates with Molex 09-50-3031 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.
P2	DC Output(Single)	6-32 screw down terminal mates with #6 ring tongue terminal.(10 in-lb max)
P2	DC Output(Multiple)	.156 friction lock header mates with Molex 09-50-3181 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.
G	Ground	.187 quick disconnect terminal. .100 friction lock header mates with Molex 22-01-2087 or equivalent crimp terminal housing with Molex type 6459 or equivalent crimp terminal.
P3	Option/Sense(Single)	.100 friction lock header mates with Molex 22-01-2047 or equivalent crimp terminal housing with Molex type 6459 or equivalent crimp terminal.
P3/P4	Option/Sense(Multiple)	equivalent crimp terminal housing with Molex type 6459 or equivalent crimp terminal.

## RECOMMENDED AIR FLOW DIRECTION

1.Optimum 2.Good 3.Fair