

150 WATTS

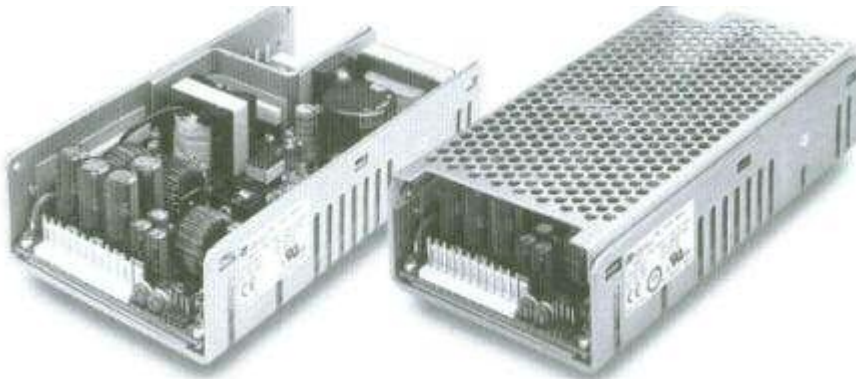
NO MINIMUM ORDERS REQUIRED

CE-150 SERIES

OUTPUT SPECIFICATIONS

Features

- RoHS Compliant
- Universal 85-264 VAC Input
- Compact 4.0" X 7.0" X 1.75" 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 100W Convection cooled 50C	125W Convection cooled w/ 1Sq.ft Baseplate
	150W 300 LFM Forced Air
Output Voltage Centering	Output 1: +/-0.25% (All outputs at 50% load) Output 2: +/-0.25% (X0XX) +/-3.0% (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% (0-100% Load Change)  Output 2: (X0XX) 0.5% (0-100% Load Change)  (X1XX) 3.0% (10-100% Load Change)  Output 3: 2.0% (10-100% 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	Output1-2: 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 Volt. Deviation	Outputs 1-4: 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	165 W Min., Outputs 1 and 2 Outputs cycle on/off, auto recovery
Output Overcurrent Protection	110% Min., Outputs 3 & 4
Hold Up Time	20 mS Min, 150 W Output 120 V Inputt
Start Up Time	3 Seconds

INPUT SPECIFICATIONS

Source Voltage	85-264 Volts AC
Frequency Range	47-63 Hz
Source Current	
True RMS	3A At 85V Input
Peak Inrush	30A
Peak Repetitive	4.25A at 85V Input
Harmonic Distortion	0.05
Efficiency	.68 -.80 (Varies by model)
Power Factor	0.90 (150 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	
	Overvoltage Category:	II	Reinforced Insulation	5656 VDC, Primary to Secondary, 1 Sec.
	Pollution Degree:	2	Basic Insulation	2121 VDC, Primary to Ground, 1 Sec.
			Operational Insulation	707 VDC, Secondary to Ground, 1 Sec.
 Underwriters Laboratories File E137708	UL 60950-1 First Edition 60601-1 First Edition	UL First	Leakage Current	<300 $\hat{A}$ $\mu$ A Earth Leakage Current
	CB Report Per IEC 60950-1(2001) First Edition All National Deviations CB Report Per IEC 60601-1(1988) First Edition, A1, A2		Power Fail Signal (Optional)	Logic low with input power failure 10 mS minimum prior to output 1 dropping 1%
	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 On/Off (Optional)	Contact closure shuts off all outputs
	TUV	EN 60950-1:2001 EN 60601-1/A2:1995	Remote Sense	250mV compensation of output cable losses
		Low Voltage Directive	Mean-Time Between Failures	150,000 Hours min., MIL-HDBK-217F, 25 $^{\circ}$ C, GB
			Weight	2.0 Lbs.

### MODEL LISTING

Model	Output 1	Output 2	Output 3	Output 4
CE-150-4001	+3.3V/15A	+5V/5A	+12V/2A	-12V/2A
CE-150-4002	+5V/15A	+3.3V/5A	+12V/2A	-12V/2A
CE-150-4003	+5V/15A	+3.3V/5A	+15V/2A	-15V/2A
CE-150-4004	+5V/15A	-5.2V/5A	+12V/2A	-12V/2A
CE-150-4005	+5V/15A	-5.2V/5A	+15V/2A	-15V/2A
CE-150-4006	+5V/15A	+12V/5A	+12V/2A	-12V/2A
CE-150-4007	+5V/15A	+12V/5A	+15V/2A	-15V/2A
CE-150-4008	+15V/5A	-15V/5A	24V/1A	24V/1A
CE-150-4009	+5V/15A	+12V/5A	+15V/2A	-12V/2A
CE-150-4011	+5V/15A	+12V/5A	-5V/1A	-12V/1A
CE-150-4101	+5V/15A	+24V/5A	+12V/2A	-12V/2A
CE-150-4102	+5V/15A	+24V/5A	+15V/2A	-15V/2A
CE-150-4103IT	+5V/15A	+24V/5A <sub>(6ApK)</sub>	+12V/2A	-12V/2A
CE-150-3001	+5V/15A	-12V/5A		-12V/2A
CE-150-3002	+5V/15A	+15V/5A		-15V/2A
CE-150-3003	+15V/5A	-15V/5A	+5V/2A	
CE-150-3004	+5V/15A	+15V/5A	+36V/2.5A	
CE-150-2001	+12V/7.5A	-12V/5A		
CE-150-2002	+15V/5A	-15V/5A		
CE-150-2003	+5V/15A	+12V/6A		
CE-150-2101	+5V/15A	+24V/5A		
CE-150-1001	3.3V/30A <sub>(2)</sub>			
CE-150-1002	5V/30A <sub>(2)</sub>			
CE-150-1003	12V/12.5A			
CE-150-1004	15V/10A			
CE-150-1005	24V/6.25A			
CE-150-1006	28V/5.4A			
CE-150-1007	48V/3.1A			



## Notes

Consult factory for alternate output configuration.

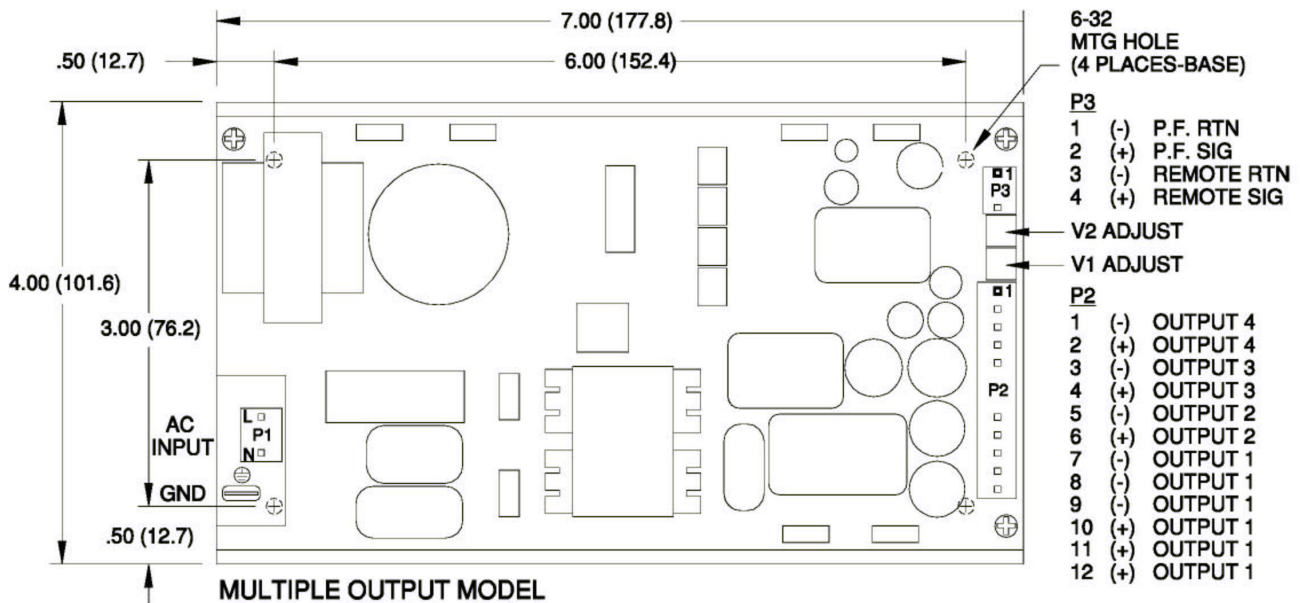
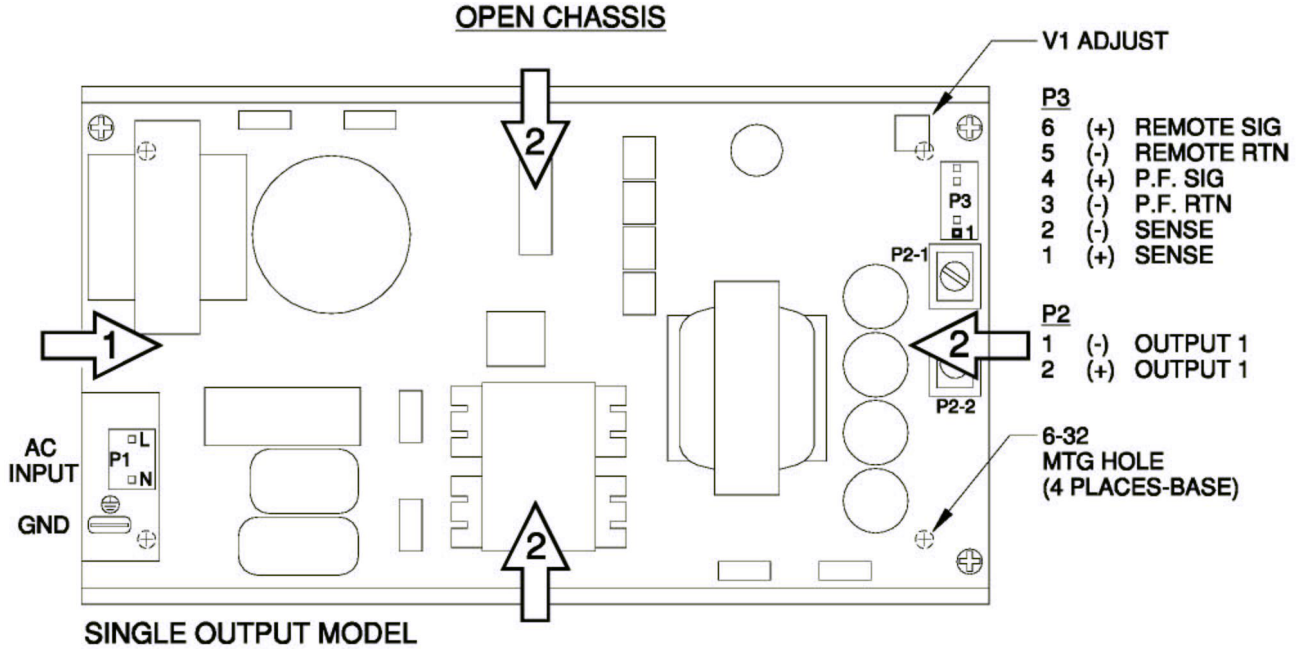
Consult factory for positive, negative or floating outputs.

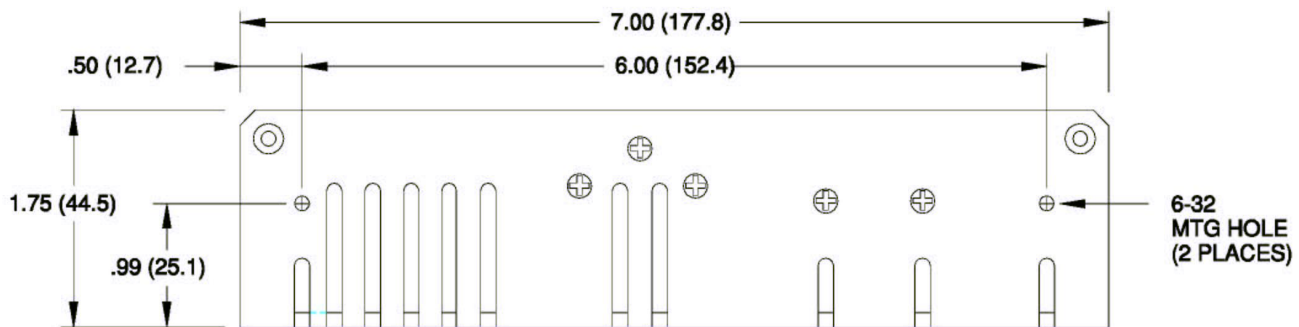
Refer to Application Information for complete output power ratings.

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

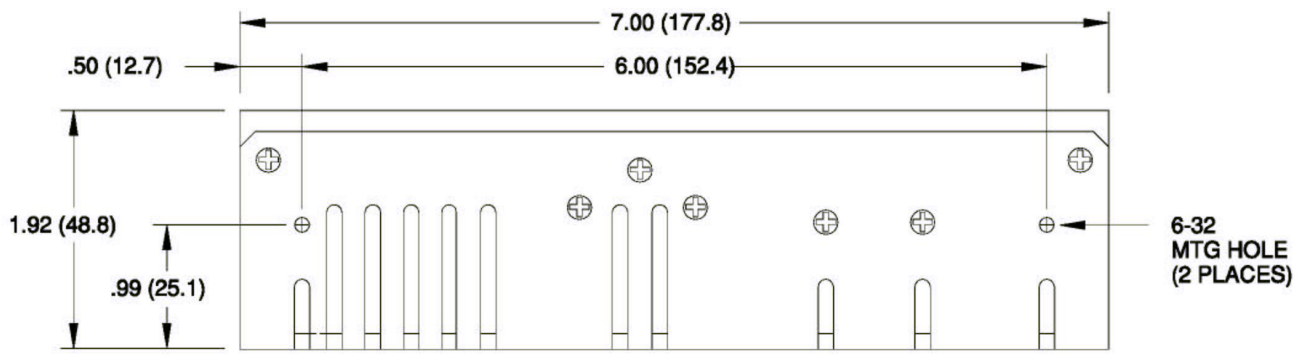
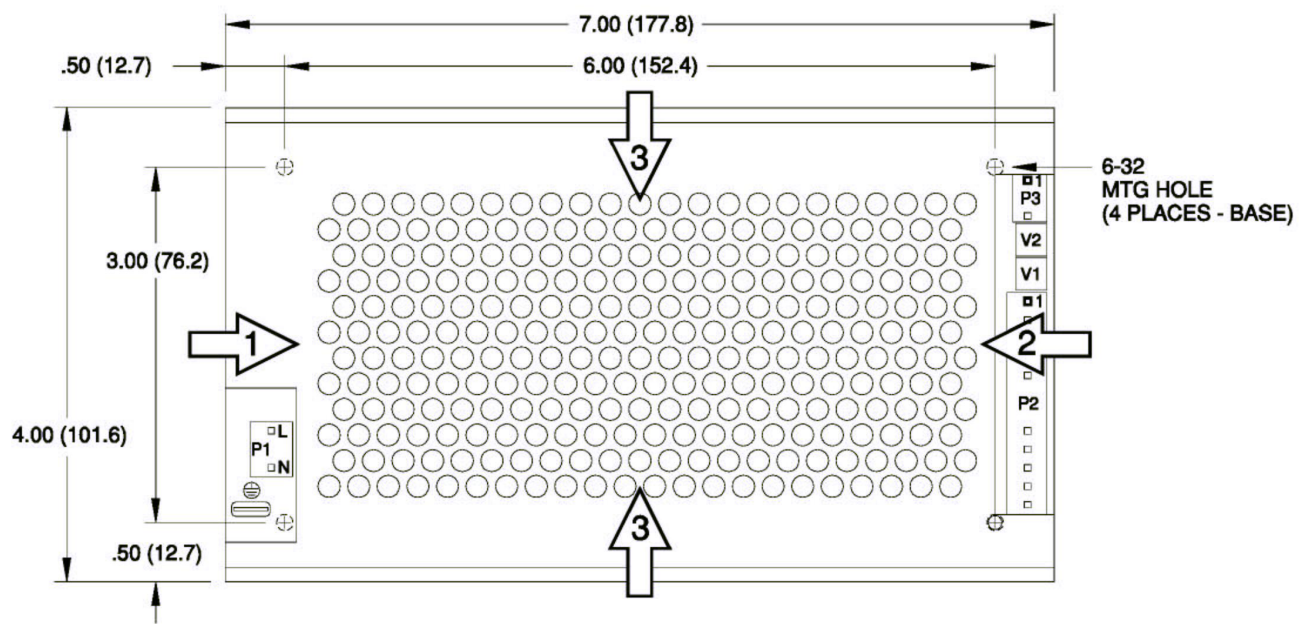
Specify optional perforated cover, power fail, overvoltage protection or remote on/off when ordering.  
UL, CUL only: CE-150-4008

## CE-150 SERIES MECHANICAL SPECIFICATIONS





**OPTIONAL COVER**

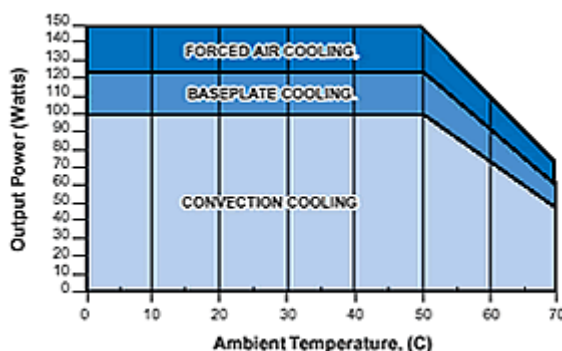


ALL DIMENSIONS IN INCHES (MM)

## APPLICATIONS INFORMATION

- Each output can deliver its rated current but total output power must not exceed 100, 125 or 150 watts as determined by the cooling method.
- Rated 20 amps maximum when convection cooling only.
- Free air convection cooling, 100 watts maximum output power.
- Base plate cooled rating of 125 watts requires a one square foot .09" thick aluminum area attached to bottom four mounting holes.
- Forced air cooling rating of 150 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  $110^{\circ}\text{C}$ .
- 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  $0\ 10^{\mu}\text{F}$ ) and a capacitor of  $100^{\mu}\text{F}/\text{amp}$  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 60601-1, a second fuse may be required in the end product.
- 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.
- 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.
- 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 0/-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 09-50-3121 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.
G Ground	.187 quick disconnect terminal.
P3 Option/Sense (Single)	.100 friction lock header mates with Molex 22-01-2067 or equivalent crimp terminal housing with Molex type 6459 or equivalent crimp terminal.
P3 Option/Sense (Multiple)	.100 friction lock header mates with Molex 22-01-2047 or equivalent crimp terminal housing with Molex type 6459 or equivalent crimp terminal.

### RECOMMENDED AIR FLOW DIRECTION

- Optimum
- Good
- Fair