

CCPF Capacitor Charging Power Supplies



The CCPF family of capacitor charging power supplies utilizes the latest innovations in power electronics to deliver clean and efficient power for pulsed laser applications. A high power resonant inverter insures reliability during all modes of operating conditions. A soft switching power factor circuit ensures near unity power factor with low EMI. CCPF models can drive both PF loads and reservoir charging circuits.

Leakage current is less than 300uA, power factor is greater than 0.99 and conducted emissions meet stringent European regulations. No additional line filter is required to meet EN EN55011 emission requirements.

The CCPF family has been designed with the knowledge that a high power pulsed laser is a rugged high voltage environment.



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ADVANTAGES

- Ideal for OEM applications
- Power factor correction
- Compact size
- Low EMI
- Low leakage for medical apps

AVAILABLE POWER OUTPUTS:

- 500J/sec
- 1500J/sec
- 2000J/sec
- 4000J/sec
- 6000J/sec
- Output voltage to 15kV

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Shoebox Style	Poutmax	Voutmax	Input Voltage	Input Current	Size (L x W x H)	Wt
CCPF-500-XX	500J/sec	500V to 4kV	90-264VAC	5.5A @115VAC	9.13" x 6" x 3.7" 23.2 x 15.2 x 9.4 cm	4.5 lbs
CCPF-1500-XX	1500J/sec	500V to 4kV	90-264VAC	15A @115VAC	12.7" x 5.75" x 4.1" 32.3 x 14.6 x 10.4 cm	8 lbs
CCPF-2000-XX	2000J/sec	500V to 4kV	180-264VAC	11A @220VAC	12.7" x 5.75" x 4.1" 32.2 x 14.6 x 10.4 cm	8 lbs
CCPF-3500-XX	4000J/sec	500V to 4kV	180-264VAC	20A @220VAC	14.2" x 5.5" x 6" 36 x 13.4 x 15.2 cm	15 lbs
CCPF-1500-XX-SYS*	1500J/sec	500V to 4KV	180-264VAC	15A@220VAC	12.7" x 5.75" x 4.1" 32.3 x 14.6 x 10.4 cm	8 lbs

* Includes internal 150mA simmer supply and +24 auxiliary output

Chassis Style	Poutmax	Voutmax	Input Voltage	Input Current	Size	Wt
CCPF-2000-XX	2000J/sec	500V to 15kV	180-264VAC	11A @220VAC	16.5" x 17.3" x 3.7" 41.9 x 43.9 x 9.4 cm	20 lbs
CCPF-6000-XX	6000J/sec	500V to 4kV	180-264VAC	36A @220VAC	16.5" x 17.3" x 3.7" 41.9 x 43.9 x 9.4 cm	25 lbs

INPUT

Voltage: See table above
 Current: See table above
 Power Factor: >.98

OUTPUT

Power: See table above
 Output Voltage: Configurable from 500V to 15kV.
 Output Current: 2 * Poutmax/Voutmax
 Polarity: Positive or Negative
 Efficiency: >80% at full output
 Regulation: 0.5% @100Hz

INTERFACE

Connector: 15 Pin "D" Sub Female
 Voltage Program: 0-10V for 0-Max Voltage
 Voltage Monitor: 0-10V for 0-Max Voltage
 Inhibit/Reset
 End of Charge Indication
 Temperature Fault
 Over-voltage Indication

ENVIRONMENT

Operating Temp: 0 to 40°C
 Storage: -20 to 85°C
 Humidity: 0 to 90% non-condensing
 Cooling: Forced air

REGULATORY

Leakage Current: <300uA
 Isolation: 4000VAC/5700VDC
 EMI: EN55011
 (depending upon Model)



Also available: CCHP-3800/6000
 3Ø capacitor charging power supplies



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CCPF Series Pin Assignment					
Pin#	500/4pin	500/15pin	1500/2000	3500	6000
1	Inhibit				
2	GND		N/C		
3	V Program		Overtemp		
4	N/C	GND		N/C	
5	V Program				
6	Overvoltage				
7	V Peak Hold				
8	V Monitor				
9	+15V				
10	N/C				
11			+15V		+15V
12			GND		+15V
13	End Of Charge				
14, 15	GND				

TITLE/DESCRIPTION

In most cases interface configurations can be modified to conform to older capacitor charger models. Contact customer service if you are trying to replace RCS, CCS, LCS, LS, 5XX, 1XX, 57XX, 78XX or other models up to 8kj/sec.

INHIBIT/FAULT RESET- (INPUT)

This pin is the basic ON/OFF control pin for the power supply. Grounding this pin enables charging operation if all faults are clear. Applying +15V prevents the inverter from operating. Leaving Pin open will inhibit operation.(opposite option available)

FAULT WARNING - (OUTPUT)

When either the over-voltage fault pin, or the OVER-TEMP FAULT indicates a fault status, pin is pulled to GND through the collector of an NPN transistor. This transistor is rated at 30V, 100mA. When no fault is present, the output of this pin is connected to +15V through a 4.99K resistor. This fault can be cleared by applying +15V to INHIBIT/FAULT RESET function.

OVER-TEMP FAULT - (OUTPUT)

Indicates internal high temperature on main heat sink. When thermal switch closes due to excessive internal heat sink temperature this pin is pulled to GND through the collector of an NPN transistor. This transistor is rated at 30V, 100mA. When OVER-TEMP WARNING is tripped, unit will stop charging and will not begin charging again until the internal temperature drops to a safe value. When the unit is operating within safe temperatures, the output of this pin is connected to +15V through a 4.99K resistor. This fault can be cleared by applying +15V to INHIBIT/FAULT RESET function.

VOLTAGE PROGRAM- (INPUT)

Output is programmed externally with a 0 to +10V signal for 0 to 100% of rated output.

OVERVOLTAGE STATUS INDICATOR- (OUTPUT)

If the load becomes open circuited, the power supply will detect

the fault and shut down instantaneously, protecting itself and other equipment from over-voltages. If this occurs the pin is pulled to GND through the collector of an NPN transistor. This transistor is rated at 30V, 100mA. To restart, a capacitor load must be connected to the output and AC power must be turned OFF and ON again. When an appropriate load is connected to the output, the output of this pin is connected to +15V through a 4.99K resistor. This fault can be cleared by applying +15V to INHIBIT/FAULT RESET function.

VOU PEAK HOLD- (OUTPUT)

Monitors output voltage with a peak hold circuit. The time constant of the peak hold circuit is approximately 5 seconds. 0 to +10V for 0 to 100% of rated output voltage.

VOU MONITOR- (OUTPUT)

Monitors output voltage. 0 to +10V for 0 to 100% of rated output voltage.

+15V (OUTPUT)

Maximum output current is 100mA.

END OF CHARGE STATUS INDICATOR-(OUTPUT)

When the load capacitor reaches the programmed voltage this pin is pulled to GND through the collector of an NPN transistor. This transistor is rated at 30V, 100mA. While the load capacitor is being charged to the programmed voltage, the output of this pin is +15V through a 10kΩ resistor. Pin will oscillate from high to low as the power supply replaces charge that is bled through the feedback network.

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Outline Drawings

