500A Series Data Sheet

High Voltage Power Supply
Capacitor Charging and DC
Output Voltage from 1kV - 40kV
Output Power 500J/sec or 500W
Comprehensive remote control
Compact OEM Design

www.us.lambda.tdk.com
## 500A Series Specification

High Performance, cost effective, reliable, OEM style capacitor charging and DC power supply with average power rating of 500J/sec or 500W DC.

- Power rating of 500J/sec, 550J/sec peak
- 500W in continuous DC operation
- Output Voltages from 0-1kV to 0-40kV
- Compact air cooled OEM style package
- Medical safety approvals (UL60601-1)
- Patented parallel resonant inverter
- Excellent pulse to pulse repeatability
- Selectable 110 or 230VAC 1Ø input voltage
- Reliable, cost effective design with reduced parts count
- Optional Active PFC (pf = 0.98)
- Full remote control interface
- Simple parallel operation for higher power

### Average Capacitor Charging Power
- 500 Joules/sec (½CV² x Rep Rate)

### Peak Capacitor Charging Power
- 550 Joules/sec (½CV² / t_charge)

### Average Continuous DC Power
- 500 Watts

### Output Voltage Range
- 1, 1.5, 2, 3, 4, 5, 6, 10, 15, 20, 30, 40kV, variable from 10-100% of rated

### Polarization
- Available as fixed Positive or Negative. Please specify at time of ordering

### HV Output
- 1-6kV Models - Air Insulated with RG58/U Coaxial cable and MHV connector
- 7-40kV Models - Oil Insulated with DS2024 Silicone lead & proprietary HV connector

### AC Input Voltage
- 110VAC (90-140) or 230VAC (180-254), 50-60Hz 1Ø, selectable on input terminal block

### AC Input Current (1)
- 10A/5A without Active PFC
- 7A/3.5A with optional Active Electronic PFC

### AC Connector
- UL/CSA approved terminal block. User selectable position for 110 or 230VAC input

### Power Factor
- Non PFC pf = 0.65, Optional Active PFC - 0.98 at full load and nominal AC line

### Efficiency
- Better than 85% at full load

### Stability
- ±0.2% per hour after 1 hour warmup

### Temperature Coefficient
- 100ppm per °C typical

### Stored Energy
- Less than 0.3J all models

### Pulse to Pulse Repeatability
- ±0.2% to 300Hz, consult factory for higher rep rates

### Dimensions - inches (mm)
- 5.75 (146) W x 5.56 (141) H x 14.2 (361) D

### Weight - lbs (kg)
- 1-6kV Models Non PFC - 8 (3.6), with optional PFC - 10 (4.5)
- 10-40kV Models Non PFC - 12 (5.5), with optional PFC - 14 (6.5)

### Ambient Temperature
- Storage: -40 to +85°C. Operating: -20 to +45°C

### Humidity
- 10-90%, non-condensing

### Protection
- Open/short circuits, Overloads, Arcs, Overtemp, Overvoltage

### Agency Approvals
- Certified to UL60601-1

### Remote Control (all models)
- Via 15-pin D-sub connector on rear of unit, Signals include, Vprogram (0-10V), HV Enable/Reset, Inhibit, Summary Fault, Load Fault, Vanalog, Vpeak

### Accessories
- Mating HV cable, control connector, operating manual, mounting brackets

### Options
- PFC - Active Electronic PFC
- LH - Low Inhibit. Replaces standard high Inhibit
- EN - Low Enable. Replaces standard high enable
- 5V - 0-5V Analog programming. Replaces standard 0-10V programming
- LP - Latching Overload Protection, requires HV reset after overload fault
- DC - Continuous DC operation

### Ordering Info
- Model - XXkV - POS (or NEG) - PFC (blank for non PFC) - YY (options)

### Ordering Examples
- 500A-10kV-POS, 500A-40kV-POS-PFC-LH, 500A-1kV-POS-PFC-DC

(1) Input current figure valid for repetition rates greater than 10Hz. For operation below 10Hz contact factory.

All specifications subject to change without notice
500A Mechanical Details

Front View

All Models

1 - Cooling Fan (Air exits this end)
2 - AC Input Connector
3 - 15pin D-sub Female Control Connector

Rear Views

Outputs Voltages from 1-6kV
4 - MHV Output Connector (1-6kV Models)
5 - Ground Stud (7-40kV Models)
6 - HV Output Connector (7-40kV Models)

Outputs Voltages from 7-40kV

Dimensional Outline Drawings

Outputs From 1kV to 6kV

Outputs From 7kV to 40kV
# Global High Voltage Network

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<thead>
<tr>
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