363 Series Data Sheet
High Voltage Power Supply
Capacitor Charging and DC
Output Voltage from 5kV - 50kV
Output Power 36kJ/sec or 50kW
Ultra-Compact - 50kW in 7U
Unique Water-Cooled Design
363 Series Specification

High Power Ultra-Compact water-cooled capacitor charging and DC power supplies available in 36kJ/sec for capacitor charging, or 50kW(1) in continuous DC applications.

- Power rating of 36kJ/sec, 45kJ/sec peak
- Output Voltages from 0-5kV to 0-50kV
- Unique evaporative cooling/insulation
- Efficient IGBT based resonant inverter
- Excellent pulse to pulse repeatability
- 480VAC 3Ø input voltage

- Ultra compact water cooled rack mount design
- Full remote control interface
- Passive PFC (pf = 0.9)
- Full local output voltage and HV On/Off controls (L version)
- Simple parallel operation for higher power
- Lab, or Slave front panel options

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Capacitor Charging Power</td>
<td>36,000 Joules/sec (½CV² x Rep Rate)</td>
</tr>
<tr>
<td>Peak Capacitor Charging Power</td>
<td>45,000 Joules/sec (½CV²/t_charge)</td>
</tr>
<tr>
<td>Average Continuous DC Power</td>
<td>50,000 Watts</td>
</tr>
<tr>
<td>Output Voltage Range</td>
<td>5, 10, 15, 20, 30, 40, 50kV, variable from 10-100% of rated</td>
</tr>
<tr>
<td>Polarity</td>
<td>Available as fixed Positive or Negative. Please specify at time of ordering</td>
</tr>
<tr>
<td>HV Output Cable</td>
<td>5-29kV Models DS2214 Coaxial cable with proprietary HV connector</td>
</tr>
<tr>
<td>30-50kV Models DS2212 Coaxial cable</td>
<td>with proprietary HV connector</td>
</tr>
<tr>
<td>AC Input Voltage</td>
<td>480VAC (432-528), 3Ø</td>
</tr>
<tr>
<td>AC Input Current</td>
<td>67A (1)</td>
</tr>
<tr>
<td>AC Connector</td>
<td>UL/CSA approved terminal block. 3Ø + ¼</td>
</tr>
<tr>
<td>AC Line Contactor</td>
<td>UL/CSA approved AC line contactor</td>
</tr>
<tr>
<td>Power Factor</td>
<td>Passive PFC pf = 0.9 at full load and nominal AC line</td>
</tr>
<tr>
<td>Efficiency</td>
<td>Better than 85% at full load</td>
</tr>
<tr>
<td>Front Panel</td>
<td>363L - Output Voltage Control, Voltage &amp; Current Meters, Status Indicators</td>
</tr>
<tr>
<td>363S - On/Off Switch, Current Bar Graph, Status Indicators</td>
<td></td>
</tr>
<tr>
<td>Stability</td>
<td>±0.2% per hour after 1 hour warmup</td>
</tr>
<tr>
<td>Temperature Coefficient</td>
<td>100ppm per °C typical</td>
</tr>
<tr>
<td>Stored Energy</td>
<td>Less than 0.3J all models</td>
</tr>
<tr>
<td>Pulse to Pulse Repeatability</td>
<td>±2% to 100Hz std, consult factory for higher rep rates</td>
</tr>
<tr>
<td>Dimensions - inches (mm)</td>
<td>19 (483) W x 12.25 (311) H x 22.5 (571) D</td>
</tr>
<tr>
<td>Weight - lbs (kg)</td>
<td>230 (105)</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>Storage: -40 to +70°C. Operating: 0 to +55°C</td>
</tr>
<tr>
<td>Altitude</td>
<td>Storage: 40,000ft (12,000m), Operating: 9,900ft (3,000m)</td>
</tr>
<tr>
<td>Humidity</td>
<td>10-90%, non-condensing</td>
</tr>
<tr>
<td>Cooling</td>
<td>Flowed water at 2US GPM (7.6 L/min) with max inlet temp 25°C and min inlet of 15°C. All water paths are copper or brass. Connections are ¼NPT male pipe.</td>
</tr>
<tr>
<td>Protection</td>
<td>Open/Short Circuits, Overloads, Arcs, Overtemp, Overvoltage, Safety Interlock</td>
</tr>
<tr>
<td>Remote Control (all models)</td>
<td>Via 25-pin D-sub connector on rear of unit, Signals include, Vprogram (0-10V), HV Enable/Reset, Inhibit, Summary Fault, Load Fault, Vanalog</td>
</tr>
<tr>
<td>Accessories</td>
<td>10ft HV cable, operating manual</td>
</tr>
<tr>
<td>Options</td>
<td>EN - Low Enable. Replaces standard high enable</td>
</tr>
<tr>
<td>5V - 0-5V Analog programming.</td>
<td>Replaces standard 0-10V programming</td>
</tr>
<tr>
<td>LP - Latching Overload Protection,</td>
<td>requires HV reset after overload fault</td>
</tr>
<tr>
<td>DC - Continuous DC operation</td>
<td></td>
</tr>
<tr>
<td>CP - 10 turn Current Programming pot</td>
<td>and/or 0-10V remote input for DC units only</td>
</tr>
<tr>
<td>RS - Remote load voltage sense</td>
<td>replaces local sense</td>
</tr>
<tr>
<td>Protection</td>
<td>Double terminated HV cable, and mating bulkhead connector</td>
</tr>
<tr>
<td>Ordering Info</td>
<td>Model - XXkV - POS (or NEG) - YYYYVAC - ZZ (options)</td>
</tr>
<tr>
<td>Ordering Examples</td>
<td>363L-10kV-POS, 363S-50kV-NEG-DC</td>
</tr>
</tbody>
</table>

(1) AC line current for capacitor charging operation. For DC operation use formula in online App Note 502.
All specifications subject to change without notice.
363 Series Mechanical Details

363L Front View

1 - HV ON/OFF Push Buttons/Status LEDs (L models only)
2 - Detail Operating Status LEDs
3 - Local/Remote Keyswitch (L model only)
4 - 10-Turn HV Output Control (L models only)
5 - View Set Push Button (L model only)
6 - Voltage Display and Bar Graph (L models only)
7 - Current Display and Bar Graph (L models only)
8 - Power Switch
9 - Inhibit BNC (L models only)
10 - Slave Supply Programming Connector (L models only)

363L Rear View

9 10 11 12 13 14 15 16 17 18 19 20

11 - Remote Programming Connector
12 - Coolant Refill connection
13 - HV Output Connector
14 - Cooling Water Inlet
15 - HV Tank Pressure Gauge
16 - Cooling Water Outlet
17 - Ground Stud
18 - AC Input Connector
19 - Interlock/Remote Power On Terminals
20 - Cooling Fan

Outline Drawings

363 Series Data Sheet
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