



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



TDK-Lambda

www.us.tdk-lambda.com/hp

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.

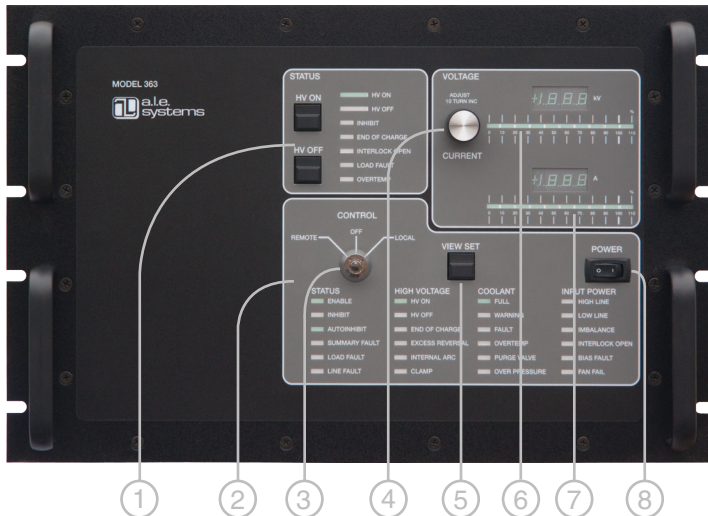
- Power rating of 36kJ/sec, 45kJ/sec peak
- Output Voltages from 0-5kV to 0-50kV
- Unique evaporative cooling/insulation
- Efficient IGBT based resonant inverter
- Excellent pulse to pulse repeatability
- 480VAC 3Ø input voltage
- Ultra compact water cooled rack mount design
- Full remote control interface
- 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

Average Capacitor Charging Power	36,000 Joules/sec ($\frac{1}{2}CV^2 \times \text{Rep Rate}$)
Peak Capacitor Charging Power	45,000 Joules/sec ($\frac{1}{2}CV^2/t_{\text{charge}}$)
Average Continuous DC Power	50,000 Watts
Output Voltage Range	5, 10, 15, 20, 30, 40, 50kV, variable from 10-100% of rated
Polarity	Available as fixed Positive or Negative. Please specify at time of ordering
HV Output Cable	5-29kV Models DS2214 Coaxial cable with proprietary HV connector 30-50kV Models DS2212 Coaxial cable with proprietary HV connector
AC Input Voltage	480VAC (432-528), 3Ø
AC Input Current	67A ⁽¹⁾
AC Connector	UL/CSA approved terminal block. 3Ø + $\frac{1}{2}$ "
AC Line Contactor	UL/CSA approved AC line contactor
Power Factor	Passive PFC pf = 0.9 at full load and nominal AC line
Efficiency	Better than 85% at full load
Front Panel	363L - Output Voltage Control, Voltage & Current Meters, Status Indicators 363S - On/Off Switch, Current Bar Graph, Status Indicators
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	±2% to 100Hz std, consult factory for higher rep rates
Dimensions - inches (mm)	19 (483) W x 12.25 (311) H x 22.5 (571) D
Weight - lbs (kg)	230 (105)
Ambient Temperature	Storage: -40 to +70°C. Operating: 0 to +55°C
Altitude	Storage: 40,000ft (12,000m), Operating: 9,900ft (3,000m)
Humidity	10-90%, non-condensing
Cooling	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.
Protection	Open/Short Circuits, Overloads, Arcs, Overtemp, Overvoltage, Safety Interlock
Remote Control (all models)	Via 25-pin D-sub connector on rear of unit, Signals include, Vprogram (0-10V), HV Enable/Reset, Inhibit, Summary Fault, Load Fault, Vanalog
Accessories	10ft HV cable, operating manual
Options	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 CP - 10 turn C urrent P rogramming pot and/or 0-10V remote input for DC units only RS - Remote load voltage sense replaces local sense Double terminated HV cable, and mating bulkhead connector
Ordering Info	Model - XXkV - POS (or NEG) - YYYVAC - ZZ (options)
Ordering Examples	363L-10kV-POS, 363S-50kV-NEG-DC

(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

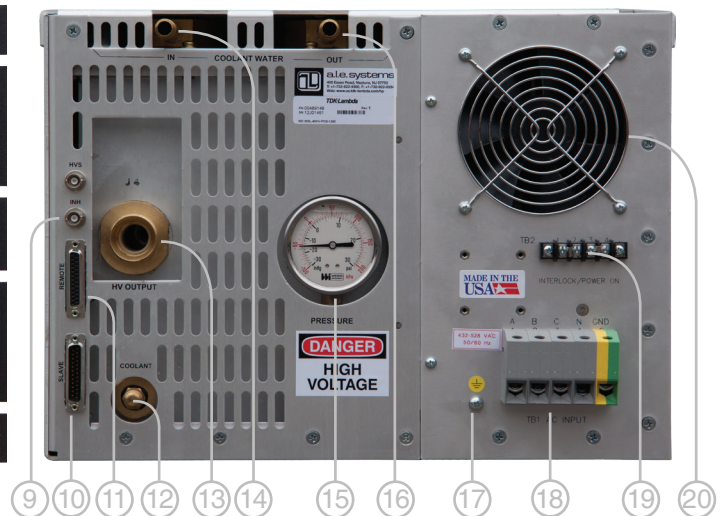
363 Series Mechanical Details

363L Front View



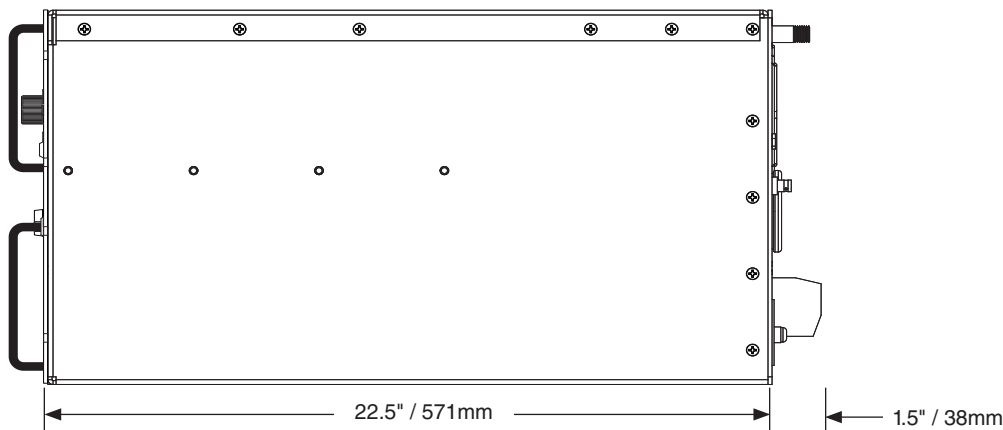
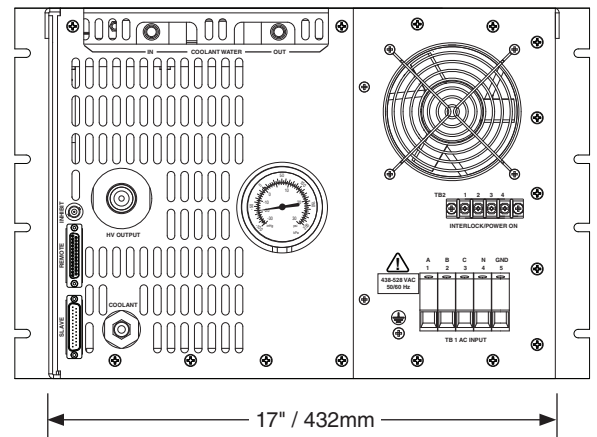
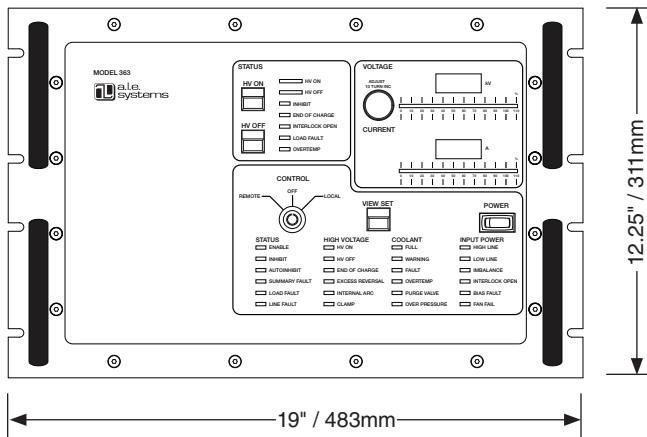
- 1 - HV ON/OFF Push Buttons/Status LEDs (L models only)
- 2 - Detail Operating Status LEDs
- 3 - Local/Remote Keyswitch (L model only)
- 4 - 10-Turn HV Output Control (L models only)
- 5 - View Set Push Button (L model only)
- 6 - Voltage Display and Bar Graph (L models only)
- 7 - Current Display and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



- 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



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