a.l.e. systems

LC1202 Series Data Sheet

High Voltage Power Supply
Capacitor Charging and DC
Output Voltage from 1kV - 30kV
Output Power 12kJ/sec or 15kW
Compact Water-cooled Design
Full local and remote control

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LC1202 Series Specification

High performance, high rep rate water-cooled capacitor charging and DC power supplies available in 12kJ/sec for capacitor charging, or 15kW(1) in continuous DC applications.

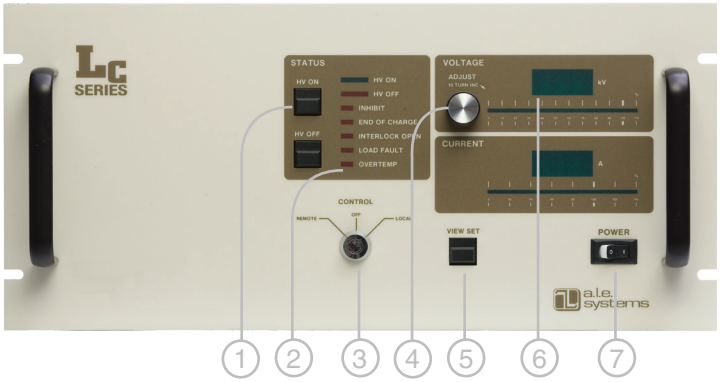
- **Power rating of 12kJ/sec, 13.5kJ/sec peak**
- **Compact water cooled rack mount package**
- **Option Remote Voltage Sense input**
- **Configurable 208 or 400VAC 3Ø input(2)**
- **Full remote control interface**
- **Better than 0.1% pulse-pulse repeatability at rep rates to 2kHz**
- **Output Voltages from 0-1kV to 0-30kV**
- **Passive PFC (pf = 0.9)**
- **Full local output voltage and HV On/Off controls (L version)**
- **Lab, Slave, or OEM front panel options**

Average Capacitor Charging Power	12,000 Joules/sec ($\frac{1}{2}CV^2$ x Rep Rate)
Peak Capacitor Charging Power	13,500 Joules/sec ($\frac{1}{2}CV^2 / t_{charge}$)
Average Continuous DC Power	15,000 Watts (1)
Output Voltage Range	1, 2, 4, 5, 10, 15, 20, 30kV, variable from 10-100% of rated
Polarity	Available as fixed Positive or Negative. Please specify at time of ordering
HV Output Cable	All Models - DS2214 Coaxial cable with proprietary HV connector
HV Insulating Medium	XIAMETER® PMX-561 Transformer Liquid
AC Input Voltage, Current	208VAC (180-264) 3Ø, 50A max - Suffix 3P208 or 400VAC (340-460) 3Ø, 26A max - Suffix 3P400 or 480VAC (432-528) 3Ø, 20A max - Suffix 3P480 specify at time of ordering
AC Connector	UL/CSA approved terminal block. 3Ø + ⏚
AC Line Contactor	UL/CSA approved AC line contactor (standard on LC1202L and S, option for OEM)
Power Factor	Passive PFC pf = 0.9 at full load and nominal AC line
Efficiency	Better than 90% at full load
Front Panel	LC1202L - Voltage Control, Voltage & Current Meters, Status Indicators
	LC1202S - On/Off Switch, Status Indicators
	LC1202-OEM - Blank front panel
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	±0.1% to 300Hz std, ±0.1% to 1000Hz optional, consult factory for higher rep rates
Dimensions - inches (mm)	19 (483) W x 8.72 (222) H x 17 (432) D
Weight - lbs (kg)	100 (46)
Ambient Temperature	Storage: -20 to +70°C. Operating: +5 to +45°C
Altitude	Storage: 40,000ft (12,000m), Operating: 9,900ft (3,000m)
Humidity	10-90%, non-condensing
Cooling	Flowed water at 2US GPM (7.6L/min) max. inlet temperature 35°C. All water paths are at ground potential and are copper, brass or Buna-N hose.
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, Vpeak
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
	CT - AC line contactor (option for LC1202-OEM models only, standard for L and S)
	RS - Remote load voltage sense replaces local sense
	Double terminated HV cable, and mating bulkhead connector
Ordering Info	Model - XXkV - POS (or NEG) - 3PYYY - ZZ (options)
Ordering Examples	LC1202L-10kV-POS-3P208, LC1202S-1kV-NEG-DC-3P400

(1) Continuous DC output power de-rated to 12,000W average with 208VAC 3Ø line voltage (2) Requires conversion kit supplied with unit
All specifications subject to change without notice

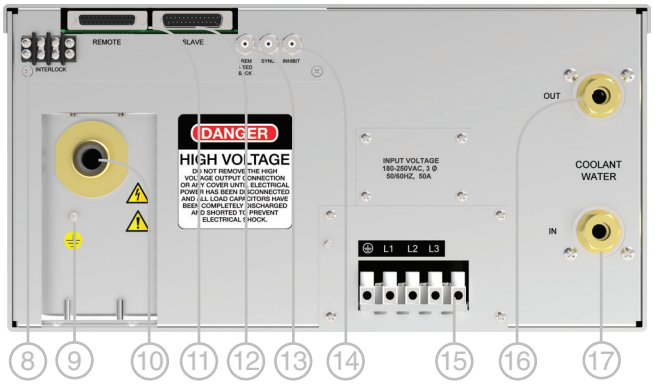
LC1202 Series Mechanical Details

LC1202L Front View



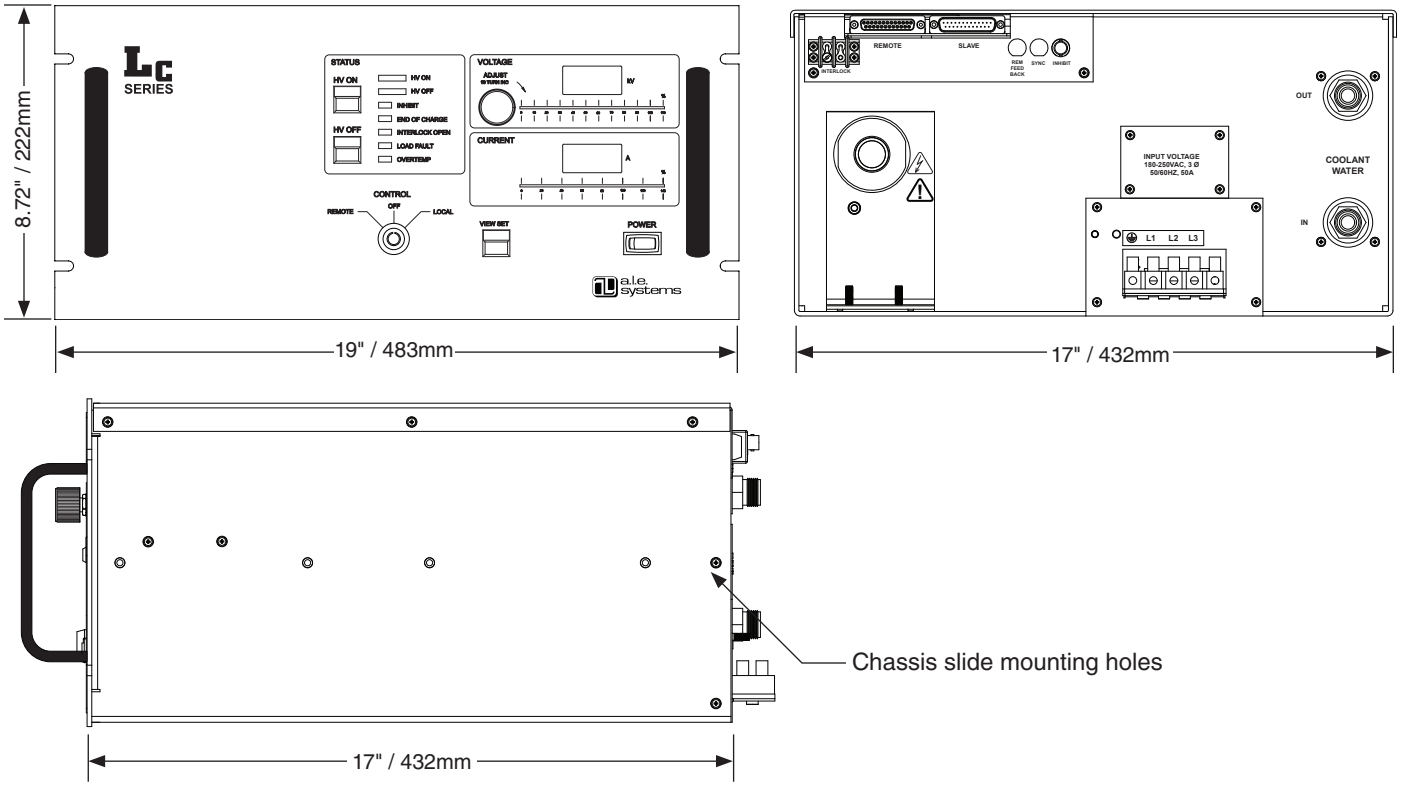
1 - HV On/Off Push Buttons (L model only)
2 - Status Indicator LEDs (L and S models only)
3 - Local/Remote Keyswitch (L model only)
4 - 10-Turn HV Output Control (L models only)
5 - View Set Push Button (L models only)
6 - Output Voltage and Current Displays (L models only)
7 - Power Switch (L and S models only)

LC1202L Rear View



8 - Interlock Terminals (L and S mdoels only)
9 - Ground Stud
10 - HV Output Connector
11 - Remote Programming Connector
12 - Slave Supply Programming Connector (L models only)
13 - Remote Sense Input (optional)
14 - Inhibit BNC (L models only)
15 - AC Input Terminal Block
16 - Cooling water outlet (Swagelok 12mm)
17 - Cooling water intlet (Swagelok 12mm)

Outline Drawings



Notes:
1 - Chassis slide mounting pattern matches General Devices CT series or equivalent with 3.875" hole spacing.
2 - Cooling air exits rear of unit and enters at either side. Do not block air vents or cooling fan and allow several inches of clearance at rear of unit.
3 - Allow 6" bend radius at rear of unit for HV cable.

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