



CCR--10 kJ/S  
CCR--20 kJ/S  
CCR--30 kJ/S  
30 kJ to 120 kJ/S

Capacitor Charging Power Supplies  
500V - 200 KV

## User Facilities

**Energy available from 10 KJ/sec to 120 KJ/sec**

**Voltage available from 500 V to 200 kV**

**LLC Series Resonant Converter**

**Protected against short & open circuit**

**Electric arcs proof**

**Low charging current ripple**

**Master-slave operation up to 12 units**

**Low cost per watt**

**Anodised front panel.**

**Easy to use front panel**

### Specifications on request

- Blank front panel
- Other voltage & current on request
- Sequences programming ( electronics or computing )
- Other colour & logo on request
- Fibre optic
- Additional electronics on request
  - Isolated relay interface
  - Electric arcs detection
  - Electric arcs counting



CCR - 25 - P - 10000

### Applications

- Pulsed applications
- Capacitor banks
- Laser
- Electron Beam Processing
- Laboratory R&D
- Sputtering

## Description

Technology using LLC series resonant converter (LLC-SRC) presents many advantages:

- Turn-on & turn-off conduction losses are decreased.
- The operating frequency is high, resulting in reduced transformer and filter capacitor volume.
- A high operating frequency also translates into small values the elements of the resonant tank...

These properties, added with the equivalent model of this converter (perfect current source), allow to achieve a parallel configuration in order to increase the needed current.

Consequently, many units can be mounted into a 19" cabinet with a master electronics which controls step by step the other ones.

The delivered energy is up to 120 kJ/sec with a number of units up to 12. Depending on the power and on the polarity (eg: positive, negative or floating), the HVPS can be provided with an oil container.

- **Output voltage and current :**

From 0 to 100 % adjustable in local mode by using potentiometer

From 0 to 100 % adjustable in remote control mode by an external voltage 0 to 10 V

- **Capability to reproduce the end of loading voltage :**

Load Regulation < 1 % (Reproducibility F < 10 Hz)

Line Regulation < 0.1 % (Main Voltage +/- 10 %)

- **Current Regulation**

Load Regulation < 0.5 % (0 – 100 %)

Line Regulation < 0.1 % (Main Voltage +/- 10 %)

- **Temperature Drift:** 0.01 % RMS after 1/2 hr. warm-up, 0.05 % RMS after 8 hours of functioning with constant load and ambient temperature.

- **Temperature Coefficient:** < 0.01 %/°C

- **Efficiency:** > 92 % full load

- **Main Voltage:** 400 VAC 47 – 63 Hz 3 phases + earth

- **Current Ripple + Noise:** < 0.2 %

- **Repetition frequency :** < 100 Hz max. (up to 500 Hz on request)

## Physical Specifications

- **Size :**

- 19" rack with 5 HU, H222 x W483 x D580 up to 15 kV.

- 19" rack with 5 HU, H222 x W483 x D580 + oil tank 7 HU - 19", H311 x W483 x D580 for higher voltages

- **Output Connector :** Appropriately rated high voltage shielded cable

- **Input connector :** 4 points Socapex model with female plug.

- **Front panel programming and control :**

- Main power general breaker

- Key switch

- Voltage & current control by 10 turn potentiometers resolution < 0.05 %

- 3 1/2 digit display for voltage & current setting / read-out value, with 0.2 % accuracy

- HV on push button with green led indicator

- HV off push button with red led indicator

- OCL/OCP (over-current limitation, over-current protection) push button with 2 green led indicators

- Push button for reading voltage & current setting

- Main input voltage green led indicator

- Default red led indicator

- Open loop red led indicator

- End of charge green led indicator

- Current Regulation Mode red led indicator

- Local / Remote green led indicator

## Available functions in Remote Control Mode

**Output Voltage Prog.** : adjustable 0–100 % with 0-10V

**Output Current Prog.** : adjustable 0-100 % with 0-10V

**Voltage Monitor:** 0 to 10V = 0 to 100 % output voltage

**Current Monitor:** 0 to 10V = 0 to 100 % output current

**HV on/off Status:** 0V = HV off, 15V - 1mA = HV on

**Regulation mode** : 0V = C Regulation, 15V – 1mA = V Regulation

**Local/Remote Mode:** 0V = remote, open collector = local

**Inhibit:** activated by TTL or CMOS signal (3.3V to 18V)

**HV ON:** closed to earth dry-contact

**HV OFF:** opened to earth dry-contact

**Interlock:** 0V = opened, 15V – 1mA = closed

**Default:** 0V = Default, 15V – 1mA = normal mode

**+10V Reference:** + 10V – 2mA

## Remote connector

1. Local/Remote Mode
2. Inhibit
3. Current Monitor
4. Voltage Monitor
5. HV ON
6. Interlock (for remote safety)
7. Default
8. HV OFF
9. Ground Reference
10. HV on/off Status
11. Regulation Mode – End of charge
12. Output Voltage Programming
13. Ground Reference
14. +10V Reference
15. Output Current Programming

## Options

- RS232, GPIB Interfaces
- LabVIEW software driving
- Regulation of the Power
- 4 digit display



**Modèle: CCR – 15 – P – 10.000**

**0 à 15 kV – 0 à 1,35 Amp.**