



CCR--3000 J/S Series
CCR--4000 J/S Series
CCR--6000 J/S Series
CCR--7500 J/S Series

Capacitor Charging Power Supplies
500V - 200 KV

User Facilities

LLC Series Resonant Converter
Current range from 50 mA to 8 A
Anodised front panel
No damage in rugged environments
Electric arcs proof
Low charging current ripple
Protection against excessive peak current
End of charge without overshoot
Output current & voltage pre-selected



CCR – 50 – N – 7500

Specifications on request

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

Applications

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

Description

The LLC series resonant converter (LLC-SRC) presents two resonant frequencies. Operation of the circuit at each of these resonant frequencies maintains zero-current switching and high-frequency operation.

Moreover, we note that LLC-SRC converter operates as a current source, that is, output current stays constant even though the load or output voltage may change.

This property, particularly convenient for the capacitor charging applications, brings a load protection against hard environments and electric arcs by controlling and limiting the current amplitude.

The Technix CCR 3000 J/sec – 7500 J/sec series are available in 64 models from 1 kV to 200 kV with a 19" rack and 5 or 7 HU size.

Electrical Specifications

- **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 < 0.5 % (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 hr. warm -up, 0.05 % RMS after 8 hours of functionment 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 :** < 200 Hz max. (up to 1 kHz 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 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

EXAMPLE OF REFERENCE

CCR – 50 – N – 7.500 – NI

Model

Voltage

Polarity

Power

Option

CC Model for Capacitor Charging

Adjustable Voltage from 0 to **50** kVolts

Négative Polarity

Power : **7.500** Joules/seconde

Option: *Non Instrumented* (blank front panel)