



SR--2000 W Series
SR--3000 W Series
SR--4000 W Series
SR--5000 W Series

High Voltage Power Supplies
1 KV – 160 KV

User Facilities

Double Resonance Technique

40 kHz average frequency converter

Anodised front panel

Protected against overload, short circuit and arcs

Rectangular voltage versus current characteristic

High stability, low ripple

Available polarities: positive, negative & reversible



SR – 30 – P – 4.000

Specifications on request

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

Applications

- Laser
- Ion Implantation
- X Ray
- Electron Beam Processing
- Magnetrons
- R&D Laboratory

Description

IGBT switching devices are used in switching series & parallel resonant converters. This allows to get sinusoidal waveforms into the converter and then, to reduce high frequency harmonics generated by the traditional PWM technique; these harmonics being responsible for the heating of transformer and transistors.

Using this technique, we obtain better results and it becomes easier to achieve customer specifications: temperature drift, efficiency, low ripple...

For the voltage ranging up to 15 kV, a simple output high voltage transformer is used. For higher voltages, multiple outputs high voltage transformer with rectifier boards connected in series up to 10 units are immersed in an oil tank.

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

- **Voltage regulation :**

Load Regulation < 0.05 % (0 – 100 %)

Line Regulation < 0.05 % (Main Voltage +/- 10 %)

- **Current regulation :**

Load Regulation < 0.1 % (0 – 100 %)

Line Regulation < 0.05 % (Main Voltage +/- 10 %)

- **Ripple + Noise:** < 0.1 %

- **Setting Time:** < 300 mS typical, < 10 mS available

- **Temperature Drift:** 0.01 % RMS after ¼hr. 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

- **Recovery Time After Arc:** < 1 mS

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

Physical Specifications

- **Size :**

- 19" rack with 5 HU, H222 x W483 x D580 up to 15 kV.
- 19" rack with 7 HU, H222 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
- 3 ½ 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 red led indicator
- Voltage mode green led indicator, current mode green led indicator
- Default red led indicator
- Open loop 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 = Reg I, 15V – 1mA = Reg U

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
7. Default
8. HV OFF
9. Ground Reference
10. HV on/off Status
11. Regulation Mode
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 ½digit display

EXAMPLE OF REFERENCE

SR - 40 - N - 5.000 - PR

Model

SR model (*Source Regulation*)

Voltage

Adjustable Voltage from 0V to ***40*** kVolts

Polarity

Positive polarity

Power

5000 W power

Option

Power Regulation option