# SR HV DC POWER SUPPLY

## 200KV DC POWER SUPPLY

## POWER UP TO 1.2KW

SR series is designed to offer optimal performance in a compact design. Dry isolated, they provide high reliability and easy installation.

## APPLICATIONS

- Pulsed applications
- Research and Development
- Test Equipment
- Accelerators
- Beams (Election-Ion)
- Tubes

## MAIN SPECIFICATION

- Voltage : 200kV
- Charging Power: 300W to 1200W
- Polarity: Positive-Negative
- Rise-time(10-90%): <300ms
- Ripple+Noise: 0.1% RMS of max output voltage
- Remote interface: 0-10V analog

Your contact:

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# SR HV DC POWER SUPPLY

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| FORMAT | 5U 19” Rack, 600 mm depth |
| EFFICIENCY | > 80% at full load |
| MAINS INPUT | 170 V to 255 VAC, 47-63 Hz<br>Single Phase  Earth |
| INPUT POWER FACTOR | ≥ 0.98 at full load |
| INRUSH CURRENT | Limited to operating current at full power |
| REGULATION MODES | Constant Voltage (CV) and Constant Current (CC) regulations, automatic crossover. Power regulation on demand. |
| STATIC LOAD REGULATION | ±0.05% of full voltage or current, from no load to full load (lower on demand) |
| STATIC LINE REGULATION | ±0.05% of full voltage or current for ±10% mains voltage (lower on demand) |
| STABILITY  (AFTER 1-HOUR WARM-UP) | 100 ppm/hour, 300ppm/ 8 hours operating at constant load and temperature |
| PROTECTIONS | Short circuit, Arc quench, External interlock, Over temperature, Overload, Over voltage, Over current |
| STORED ENERGY | 1 J/kW |
| ACCESSORIES | Interlock terminator, 2 safety keys, CE22 power cord for mains connection (for 300W to 1200W models) |

## CONTROL

| | |
|---|---|
| LOCAL CONTROLS | Mains power switch, safety lock, HV on, HV off, Over current mode, Preset, Limitation of voltage setting |
| OUTPUT VOLTAGE AND CURRENT SETTING | 10 turn potentiometer (0.05% resolution)<br>Continuously adjustable from 0 to 100% |
| VOLTAGE AND CURRENT DISPLAY | 4.5 Digit |
| STATUS INDICATORS | HV on, HV off, Line, Fault, Interlock, Remote, Over current limitation/ protection, Regulation mode |
| REMOTE CONTROL INTERFACE | Standard: 0-10V Analog<br>On demand: RS-232, Ethernet, 0-10V Isolated Analogue,  0-10V Analog with 24V relay, Optical fiber |
| REMOTE CONTROL SOFTWARE | On demand: Labview |

## OPERATING ENVIRONMENT

| | |
|---|---|
| AMBIENT TEMPERATURE | From 0 to 50 °C |
| AMBIENT HUMIDITY | 0 to 80% at 25°C, 50% at 40°C (non-condensing) |
| TEMPERATURE COEFFICIENT | 100 ppm/°C |
| COOLING | Air forced<br>Inlet through front panel (dust filters)<br>Outlet at rear panel |

## STANDARDS AND REGULATIONS

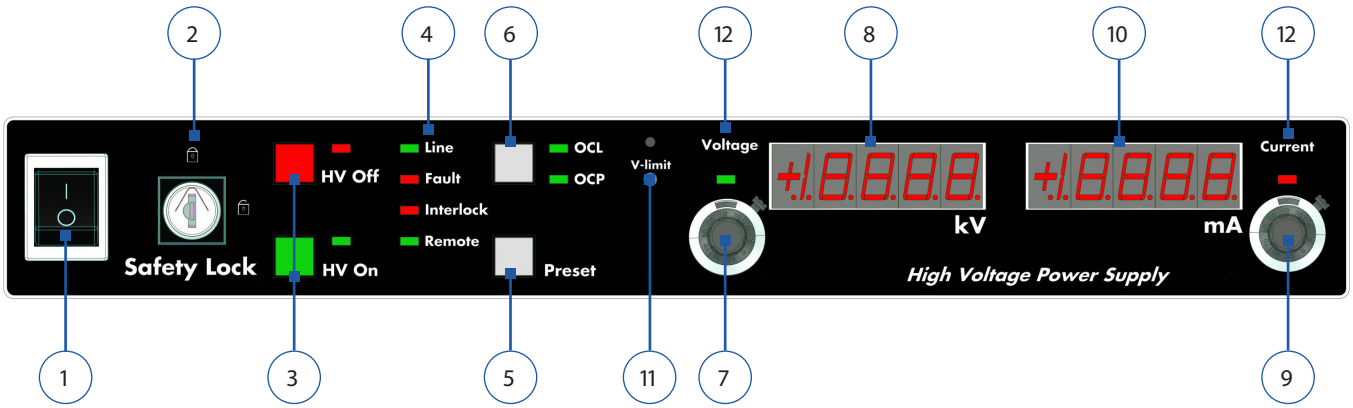
| | |
|---|---|
| CE CERTIFIED AND ACCORDING | Low voltage directive: 2014/35/EU<br>EMC directive: 2014/30/EU<br>RoHS directive: 2011/65/EU<br>EN 61000-6-2: 2019<br>EN 61000-6-4: 2019<br>EN 61326-1: 2021<br>EN 61000-3-2: 2019<br>EN 61000-3-3: 2013 + A1: 2019<br>EN 61010-1: 2010 + A1: 2019<br>EUROLAB EMC decision n°11: issue 1 of 18 of December 2007 |

## DOCUMENTATION AND SERVICES

| | |
|---|---|
| DOCUMENTATIONS | User manual<br>Test report<br>EU declaration of conformity CE<br>RoHS2 declaration of conformity |
| WARRANTY | 2 years<br>Extension on demand |
| ON DEMAND | Witnessed Factory Acceptance Test (FAT)<br>Detailed design report<br>Custom tests<br>Manufacturing process certification<br>Special engineering |

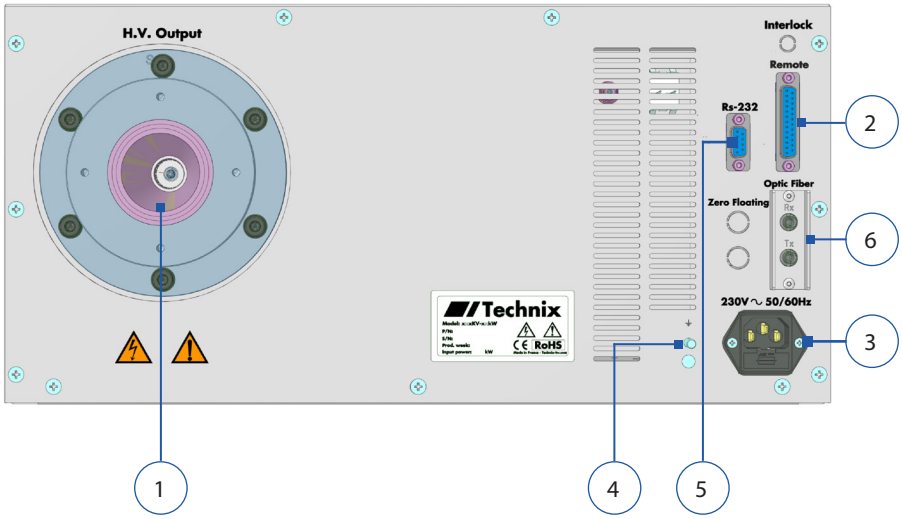
## INTERFACES

### FRONT PANEL




1. ON/OFF switch
2. Safety lock (key)
3. HV ON/OFF push button
4. Statuses (Line, Fault, Interlock, Remote)
5. Preset push button
6. Over Current Limitation (OCL) Over Current Protection (OCP)
7. Voltage setting
8. Voltage display
9. Current setting
10. Current display
11. Local voltage setting limitation
12. Regulation mode

### REAR PANEL




1. HV output
2. Analog interface
3. Mains input
4. Earth bolt
5. RS-232 (option)
6. Optical fiber (option)
7. Ethernet (option)

## 0-10V ANALOG INTERFACE

| PIN | SIGNAL | SIGNAL DESCRIPTION | I/O | IMPEDANCE |
|---|---|---|---|---|
| 1 | HV-Off control | Produced by a fleeting opening from pin 16 | Input | 20Ω |
| 2 | Fault status | Internal Fault: 0V = Detected; +15V = No fault | Output | 100Ω |
| 3 | Interlock status | External interlock: 0V = Open; +15V = Closed | Output | 475Ω |
| 4 | HV-On control | Produced by a fleeting closing to pin 16 | Input | 20Ω |
| 5 | Output voltage measurement | 0V to 10V = 0% to 100% | Output | 475Ω |
| 6 | Output current measurement | 0V to 10V = 0% to 100% | Output | 475Ω |
| 7 | Inhibit control | Activated by digital signal between +5V to +24V | Input | |
| 8 | Remote control | Open contact = Local control mode<br>Closed contact= Remote control mode | Input | 20Ω |
| 9 | Not connected | | | |
| 10 | Arc monitor (Mains Monitor for older models) | Generates a signal when an arc is detected: +15V = No arc; 0V = Arc detected<br>Older models (shipped before january 2023): Generates a fault if the mains input is failing: 0V = Mains is fine ; +15V = Mains is failing | Output | 100Ω |
| 11 | Output power measurement (option) | 0V to 10V = 0% to 100% (option) | Output | 475Ω |
| 12 | Local output voltage setting | Copy of the setting on the front panel potentiometer. 0V to 10V = 0% to 100% | Output | 10Ω |
| 13 | Local output current setting | Copy of the setting on the front panel potentiometer. 0V to 10V = 0% to 100% | Output | 10Ω |
| 14 | Remote output current setting | 0V to 10V = 0% to 100% | Input | 115Ω |
| 15 | +10V reference | +10V reference for analog signals, max current : 5mA | Output | 2.7Ω |
| 16 | 0V reference (digital signals) | 0V ground reference for digital signals | Output | |
| 17 | Remote output voltage setting | 0V to 10V = 0% to 100% of max output voltage | Input | 115Ω |
| 18 | Regulation mode status or End of Charge status | DC power supply:<br>Open contact = Current Regulation; +24V = Voltage Regulation<br>CC power supply:<br>Open contact = Capacitor charging; +24V = End of charge | Output | 100Ω |
| 19 | HV-On status | 0V = HV output disabled (HV Off)<br>+15V = HV output enabled (HV On) | Output | 100Ω |
| 20 | 0V reference (analog signals) | 0V ground reference for analog signals | Output | |
| 21-22-23 | Not connected | | | |
| 24 | External Interlock | Connect to pin 16 to close the interlock. | Input | 500Ω |
| 25 | +10V Reference or Remote output power setting (option) | Standard: +10V reference for analog signals, max current : 5mA Option: 0V to 10V = 0% to 100% of max output power | Output | 2.7Ω or 115Ω |

## OPTIONS

- Arc Management
- Parallel operation
- Custom remote interface
- Zero floating
- Emergency stop switch
- Adjustable rise time
- Special mains input
- Non Instrumented front panel
- Industrial dust filters
- Remote Front panel
- Power regulation
- Tropicalization
- Custom design

## RANGES

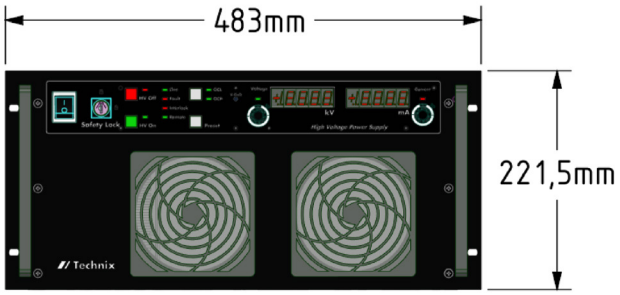
MODEL REFERENCE: SR 200 kV - 300 w to 1.2 kW

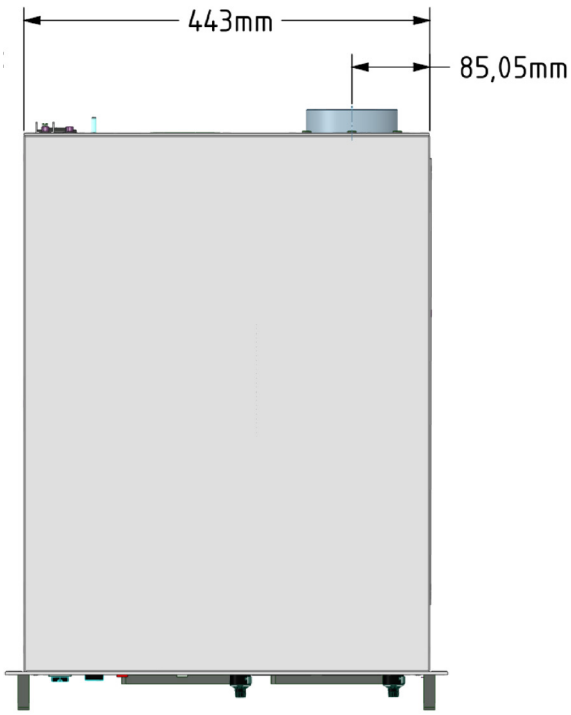
CURRENT POWER

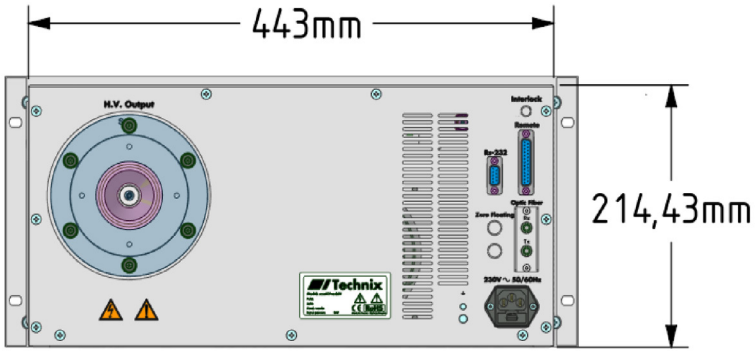
| OUTPUT POWER | 300 W | 600 W | 1.2 kW |
|---|---|---|---|
| OUTPUT VOLTAGE | Max Current | | |
| 200 kV | 1.5 mA | 3 mA | 6 mA |

## DIMENSION

MODEL 5U - 19'' : 311 x 483 x 600 mm (H x W x D)

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