

DC High Voltage Generators 300W to 2kW SR Series

From 300V to over 200kV output voltage

SR60kV-1.2kW
0 to 60kV, 0 to 20mA

Non-contractual photo



Main information

- Compact & industrial design
- Double resonance technology (ZVC)
- Low stored energy
- High reliability & efficiency
- Voltage & Current outputs continuously adjustable from 0 to 100%
- Voltage setting limitation (locally)
- Voltage & Current Setting & monitoring from front panel or remote interface
- Customized Voltage & Current* with no extra cost
- High precision regulation
- Total protection against arc, overload, short circuit & over temperature
- Automatic Regulation crossover
- Over current limitation
- Remote, inhibit & interlock functions
- 4 ½ digit display with polarity display
- Safety switch key
- Air cooling
- 2 years warranty

* You can choose your own full scales (V_{max} and I_{max}) even if these values are not available in standard.

For example, you can get a 3750 V generator based on 1.5 kW model. In this case, you will get an output voltage adjustable from 0 to 3750 V and an output current from 0 to 0.4 A.

Description

The numerous advantages of compactness, robustness, reliability, and saving offered by the double resonance technology are already available on these models which constitute the low end range.

Four series of power are offered:
300W, 600W, 1.2kW and 2kW.

These products are all based on 3U and 5U height 19" rack presentation.

Using a modular design, our products integrate the latest technology components.

Above 20KV, HV blocks are in resin.



Electrical specifications

Output Voltage and Output Current

Both Voltage Output and Current Output are continuously adjustable from 0 to 100% (full scale)

Local mode: by using 10 turn potentiometers resolution 0.05%

Remote mode: by external 0 to 10V

Voltage regulation*

Load Regulation: $\pm 0.05\%$ of full voltage (for 0 – 100% load)
 $\pm 0.01\%$ available on request

Line Regulation: $\pm 0.05\%$ of full load (for Mains Voltage $\pm 10\%$)
 $\pm 0.01\%$ available on request

Current regulation*

Load Regulation: $\pm 0.05\%$ of full current (for 0 – 100% load)

Line Regulation: $\pm 0.05\%$ of full load (for Mains Voltage $\pm 10\%$)

Ripple + Noise

0.1% RMS of full voltage

Settling time

80ms typical for output voltage $\leq 80\text{kV}^{}$** , up to 10ms available on request*

Protections

Short circuit

HV arc to ground (Stop time of 100ms)

Shutdown on Over temperature

Open interlock

Stored energy: 1 J/ kW

Stability (after one hour warm-up)

0.01% / hour, operating at constant load and constant ambient temperature

Temperature Coefficient: 100 ppm/°C

Operating Temperature: from 0 to 50°C

Efficiency: > 90% at full load

Air Cooling by air :

Dust filter fans on front panel

Easily removable filters for cleaning

Mains Voltage

170V to 255VAC 47-63Hz Single Phase + Earth

Power Factor Correction Input: ≥ 0.98

Inrush current: limited to full power operating current

Calibration: with probes periodically approved by Authorized Measurement Laboratories

CE Certification

* For fixed polarity

** 300 ms typical for output voltage $\geq 81\text{kV}$

Options

- ✓ Other voltage and current values available with no extra cost
- ✓ Reversibility
- ✓ Floating outputs (unipolar or bipolar)
- ✓ Non instrumented front panel
- ✓ Power regulation
- ✓ Other settings for Arc protection
- ✓ Arc management
- ✓ RS232, Ethernet and Profibus interfaces
- ✓ Optical fibre transmission kit with RS232 or Ethernet
- ✓ LABVIEW run time for RS232 or Ethernet
- ✓ Relay interface 24V DC
- ✓ Isolated Remote interface
- ✓ Adaptation to Customer's remote interface
- ✓ Emergency stop switch
- ✓ Safety signs and devices alerting to hazard
- ✓ Industrial dust filters
- ✓ Multichannel control unit
- ✓ Zero floating
- ✓ Adjustable rise time
- ✓ Tropicalization
- ✓ Transportable "all terrain" container
- ✓ Specific AC or DC mains power inputs
- ✓ OEM Design on request
- ✓ Remote front panel

Any special request can be considered

Possible restrictions when multiple options are selected (please contact our sales department for more details)

Physical description

Non-contractual photo



19" Rack	3U - 480 mm	3U - 600 mm	5U - 600 mm
Dimensions	H 133 x W 483 x D 480 mm	H 133 x W 483 x D 600 mm	H 222 x W 483 x D 600 mm

Voltage	SR 300W Series		SR 600W Series		SR 1.2KW Series		SR 2KW Series	
	Current	Model	Current	Model	Current	Model	Current	Model
700 V	429 mA	SR700V-300W	857 mA	SR700V-600W	1.71 A	SR700V-1.2KW	2.86 A	SR700V-2KW
1 kV	300 mA	SR1KV-300W	600 mA	SR1KV-600W	1.2 A	SR1KV-1.2KW	2 A	SR1KV-2KW
2.5 kV	120 mA	SR2.5KV-300W	240 mA	SR2.5KV-600W	480 mA	SR2.5KV-1.2KW	800 mA	SR2.5KV-2KW
5 kV	60 mA	SR5KV-300W	120 mA	SR5KV-600W	240 mA	SR5KV-1.2KW	400 mA	SR5KV-2KW
10 kV	30 mA	SR10KV-300W	60 mA	SR10KV-600W	120 mA	SR10KV-1.2KW	200 mA	SR10KV-2KW
15 kV	20 mA	SR15KV-300W	40 mA	SR15KV-600W	80 mA	SR15KV-1.2KW	CONTACT US	
20 kV	15 mA	SR20KV-300W	30 mA	SR20KV-600W	60 mA	SR20KV-1.2KW		
30 kV	10 mA	SR30KV-300W	20 mA	SR30KV-600W	40 mA	SR30KV-1.2KW		
40 kV	7.5 mA	SR40KV-300W	15 mA	SR40KV-600W	30 mA	SR40KV-1.2KW		
50 kV	6 mA	SR50KV-300W	12 mA	SR50KV-600W	24 mA	SR50KV-1.2KW		
60 kV	5 mA	SR60KV-300W	10 mA	SR60KV-600W	20 mA	SR60KV-1.2KW		
80 kV	3.75 mA	SR80KV-300W	7.5 mA	SR80KV-600W	15 mA	SR80KV-1.2KW		
100 kV	3 mA	SR100KV-300W	6 mA	SR100KV-600W	12 mA	SR100KV-1.2KW		
120 kV	2.5 mA	SR120KV-300W	5 mA	SR120KV-600W	10 mA	SR120KV-1.2KW		
150 kV	2 mA	SR150KV-300W	4 mA	SR150KV-600W	8 mA	SR150KV-1.2KW		
200 kV	1.5 mA	SR200KV-300W	3 mA	SR200KV-600W	6 mA	SR200KV-1.2KW		
> 200 kV	CONTACT US							

Polarity can be positive, negative, reversible (option) or floating (option)
 Floating or reversibility options can modify the size of the unit

Example of reference : SR 15KV- 300W

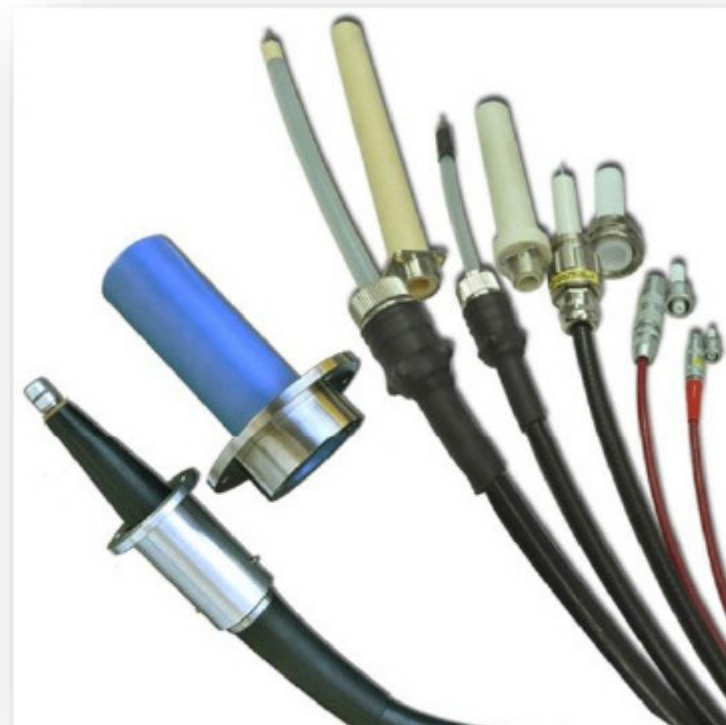
Mode : SR model (generator)
 Voltage : Adjustable from 0 to 15 kV
 Power : 300 W

HV connectors and cables available

All our generators are delivered with :

HV output:
 HV connector and 3 meters HV cable

Mains input:
 2 meters CE22 cable



DC High Voltage Generators 1.5kW to 8kW SR Series

From 300V to over 200kV output voltage



SR 10kV-20kW
0 to 10 kV, 0 to 2A

Non-contractual photo

Main information

- Compact & industrial design
- Low stored energy
- Low cost per Watt
- Voltage & current outputs continuously adjustable from 0 to 100%
- Voltage setting limitation (locally)
- Voltage & current setting & monitoring from front panel or remote interface
- Customized voltage & current* with no extra cost
- High reliability & efficiency
- High precision regulation
- Total protection against arc, overload, short circuit & over temperature
- Automatic regulation crossover
- Over current limitation
- Remote, inhibit & interlock functions
- 4 ½ digit display with polarity display
- Double resonance technology (ZVC)
- Safety switch key
- Air cooling with high reliability fans
- Fans regulations on 10kW series
- 2 years warranty

*You can choose your own full scales (V_{max} and I_{max}) even if these values are not available in standard.

For example, you can get a 4.5kV generator based on 6 kW model. In this case, you will get an output voltage adjustable from 0 to 4.5 kV and an output current from 0 to 1.33A.

Description

Double resonance technology operating at high frequency (40 kHz) improves reliability by a smooth switching of critical components

In addition, internal power dissipation, harmonics & ripples are significantly reduced.

Hence, our generators can intensively operate with no failure even in rugged environments. Many of them are used at full power 24 hours per day, 7days per week.

Five series of power are offered from 1.5kW to 8kW.

Above 20KV, HV blocks are isolated with oil.

With its low cost per Watt, this series is particularly well adapted in applications looking for power and performance at affordable prices.



Electrical specifications

Output Voltage and Output Current

Both Voltage Output and Current Output are continuously adjustable from 0 to 100% (full scale)

Local mode: by using 10 turn potentiometers resolution 0.05%

Remote mode: by external 0 to 10V

Voltage regulation*

Load Regulation: $\pm 0.05\%$ of full voltage (for 0 – 100% load)
 $\pm 0.01\%$ available on request

Line Regulation: $\pm 0.05\%$ of full load (for Mains Voltage $\pm 10\%$)
 $\pm 0.01\%$ available on request

Current regulation*

Load Regulation: $\pm 0.05\%$ of full current (for 0 – 100% load)

Line Regulation: $\pm 0.05\%$ of full load (for Mains Voltage $\pm 10\%$)

Ripple + Noise

0.1% RMS of full voltage

Settling time

80ms typical for output voltage $\leq 80\text{kV}^{}$** , up to 10ms available on request*

Protections

Short circuit

HV arc to ground (Stop time of 100ms)

Shutdown on Over temperature

Open interlock

Stored energy: 1 J/ kW

Stability (after one hour warm-up)

0.01% / hour, operating at constant load and constant ambient temperature

Temperature Coefficient: 100 ppm/°C

Operating Temperature: from 0 to 50°C

Efficiency: > 92% at full load

Air Cooling by air :

Dust filter fans on front panel

Easily removable filters for cleaning

Mains Voltage

400 VAC $\pm 10\%$ 47 – 63 Hz 3 Phases + Earth

Power Factor: ≥ 0.9 at full load

Inrush current: limited to full power operating current

Calibration: with probes periodically approved by Authorized Measurement Laboratories

CE Certification

* For fixed polarity

** 300 ms typical for output voltage $\geq 81\text{kV}$

Options

- ✓ Other voltage and current values available with no extra cost
- ✓ Reversibility
- ✓ Floating outputs (unipolar or bipolar)
- ✓ Non instrumented front panel
- ✓ Power regulation
- ✓ Other settings for Arc protection
- ✓ Arc management
- ✓ RS232, Ethernet and Profibus interfaces
- ✓ Optical fibre transmission kit with RS232 or Ethernet
- ✓ LABVIEW run time for RS232 or Ethernet
- ✓ Relay interface 24V DC
- ✓ Isolated Remote interface
- ✓ Adaptation to Customer's remote interface
- ✓ Emergency stop switch
- ✓ Safety signs and devices alerting to hazard
- ✓ Industrial dust filters
- ✓ Multichannel control unit
- ✓ Zero floating
- ✓ Adjustable rise time
- ✓ Tropicalization
- ✓ Transportable "all terrain" container
- ✓ Specific AC or DC mains power inputs
- ✓ OEM Design on request
- ✓ Remote front panel

Any special request can be considered

Possible restrictions when multiple options are selected (please contact our sales department for more details)

Physical description

Non-contractual photo



	3U – 19" Rack	5U – 19" Rack	7U-19" Rack	19" Cabinet
Dimensions	H133xW483xD480 mm	H222xW483xD480 mm	H311xW483xD600 mm	Height : from 12 to 30 HU Depth : 800 mm
	H133xW483xD600 mm	H222xW483xD600 mm		

Voltage	SR 1.5 kW Series		SR 3 kW Series		SR 5 kW Series		SR 6 kW Series		SR 8 kW Series		
	Current	Model	Current	Model	Current	Model	Current	Model	Current	Model	
300 V	5.0 A	SR300V-1.5KW	10.0 A	SR300V-3KW	16,67 A	SR300V-5KW	20,00 A	SR300V-6KW	26,67 A	SR300V-8KW	
700 V	2.14 A	SR700V-1.5KW	4.29 A	SR700V-3KW	7,14 A	SR700V-5KW	8,57 A	SR700V-6KW	11,43 A	SR700V-8KW	
1 KV	1.50 A	SR1KV-1.5KW	3.00 A	SR1KV-3KW	5,00 A	SR1KV-5KW	6,00 A	SR1KV-6KW	8,00 A	SR1KV-8KW	
2.5 KV	600 mA	SR2.5KV-1.5KW	1.20 A	SR2.5KV-3KW	2,00 A	SR2.5KV-5KW	2,40 A	SR2.5KV-6KW	3,20 A	SR2.5KV-8KW	
5 KV	300 mA	SR5KV-1.5KW	600 mA	SR5KV-3KW	1,00 A	SR5KV-5KW	1,20 A	SR5KV-6KW	1,60 A	SR5KV-8KW	
10 KV	150 mA	SR10KV-1.5KW	300 mA	SR10KV-3KW	500 mA	SR10KV-5KW	600 mA	SR10KV-6KW	800 mA	SR10KV-8KW	
15 KV	100 mA	SR15KV-1.5KW	200 mA	SR15KV-3KW	333 mA	SR15KV-5KW	400 mA	SR15KV-6KW	533 mA	SR15KV-8KW	
20 KV	75.0 mA	SR20KV-1.5KW	150 mA	SR20KV-3KW	250 mA	SR20KV-5KW	300 mA	SR20KV-6KW	400 mA	SR20KV-8KW	
30 KV	50.0 mA	SR30KV-1.5KW	100 mA	SR30KV-3KW	167 mA	SR30KV-5KW	200 mA	SR30KV-6KW	267 mA	SR30KV-8KW	
40 KV	37.5 mA	SR40KV-1.5KW	NOT AVAILABLE		125 mA	SR40KV-5KW	150 mA	SR40KV-6KW	200 mA	SR40KV-8KW	
50 KV	30.0 mA	SR50KV-1.5KW		100 mA	SR50KV-5KW	120 mA	SR50KV-6KW	160 mA	SR50KV-8KW		
60 KV	25.0 mA	SR60KV-1.5KW		83.3 mA	SR60KV-5KW	100 mA	SR60KV-6KW	133 mA	SR60KV-8KW		
80 KV	18.7 mA	SR80KV-1.5KW		62.5 mA	SR80KV-5KW	75 mA	SR80KV-6KW	100 mA	SR80KV-8KW		
100 KV	CONTACT US			50 mA	SR100KV-5KW	60 mA	SR100KV-6KW	80 mA	SR100KV-8KW		
120 KV				40 mA	SR120KV-5KW	50 mA	SR120KV-6KW	66.7 mA	SR120KV-8KW		
150 kV				CONTACT US							
200 kV											
> 200 kV											

Polarity can be positive, negative, reversible (option) or floating (option)
 Floating or reversibility options can modify the size of the unit

Example of reference : SR40KV-6KW

Mode : SR model (generator)
 Voltage : Adjustable from 0 to 40 kV
 Power : 6 kW

HV connectors and cables available

All our generators are delivered with :

HV output:
 HV connector and 3 meters HV cable

Mains input:
 3U rack: 4 pins connector
 Other racks: 4 pins feed-through terminal



DC High Voltage Generators 10kW to over 40kW SR Series From 300V to over 200kV output voltage



SR 20KV-40KW
0 to 20 kV, 0 to 2A

Non-contractual photo



SR 1KV-40KW
0 to 1kV, 0 to 40A

Non-contractual photo

Main information

- Compact & industrial design
- Low stored energy
- Low cost per Watt
- Voltage & current outputs continuously adjustable from 0 to 100%
- Voltage setting limitation (locally)
- Voltage & current setting & monitoring from front panel or remote interface
- Customized voltage & current* with no extra cost
- High reliability & efficiency
- High precision regulation
- Total protection against arc, overload, short circuit & over temperature
- Automatic regulation crossover
- Over current limitation
- Remote, inhibit & interlock functions
- 4 ½ digit display with polarity display
- Double resonance technology (ZVC)
- Safety switch key
- Air cooling with high reliability fans
- Fans regulations
- Up to 200 kW with Master / Slave architecture
- 2 years warranty

*You can choose your own full scales (V_{max} and I_{max}) even if these values are not available in standard.

For example, you can get a 45 kV generator based on 60 kW model. In this case, you will get an output voltage adjustable from 0 to 45 kV and an output current from 0 to 1.33 A.

Description

Double resonance technology operating at high frequency (40 kHz) improves reliability by a smooth switching of critical components

In addition, internal power dissipation, harmonics & ripples are significantly reduced.

Hence, our generators can intensively operate with no failure even in rugged environments. Many of them are used at full power 24 hours per day, 7 days per week.

Up to 500 kW with Master / Slave architecture.

Above 20KV, HV blocks are in oil.

With its low cost per Watt, this series is particularly well adapted in applications looking for high power and performance at competitive prices.



Electrical specifications

Output Voltage and Output Current

Both Voltage Output and Current Output are continuously adjustable from 0 to 100% (full scale)

Local mode: by using 10 turn potentiometers resolution 0.05%

Remote mode: by external 0 to 10V

Voltage regulation*

Load Regulation: $\pm 0.05\%$ of full voltage (for 0 – 100% load)
 $\pm 0.01\%$ available on request

Line Regulation: $\pm 0.05\%$ of full load (for Mains Voltage $\pm 10\%$)
 $\pm 0.01\%$ available on request

Current regulation*

Load Regulation: $\pm 0.05\%$ of full current (for 0 – 100% load)

Line Regulation: $\pm 0.05\%$ of full load (for Mains Voltage $\pm 10\%$)

Ripple + Noise

0.1% RMS of full voltage

Settling time

80ms typical for output voltage $\leq 80kV^{}$, up to 10ms**
available on request*

Protections

Short circuit

HV arc to ground (Stop time of 100ms)

Shutdown on Over temperature

Open interlock

Stored energy: 1 J/ kW

Stability (after one hour warm-up)

0.01% / hour, operating at constant load and constant ambient temperature

Temperature Coefficient: 100 ppm/°C

Operating Temperature: from 0 to 50°C

Efficiency: > 92% at full load

Air Cooling by air :

Dust filter fans on front panel

Easily removable filters for cleaning

Mains Voltage

400 VAC $\pm 10\%$ 47 – 63 Hz 3 Phases + Earth

Power Factor: ≥ 0.9 at full load

Inrush current: limited to full power operating current

Calibration: with probes periodically approved by Authorized Measurement Laboratories

CE Certification

* For fixed polarity

** 300 ms typical for output voltage $\geq 81kV$

Options

- ✓ Other voltage and current values available with no extra cost
- ✓ Reversibility
- ✓ Floating outputs (unipolar or bipolar)
- ✓ Non instrumented front panel
- ✓ Power regulation
- ✓ Other settings for Arc protection
- ✓ Arc management
- ✓ RS232, Ethernet and Profibus interfaces
- ✓ Optical fibre transmission kit with RS232 or Ethernet
- ✓ LABVIEW run time for RS232 or Ethernet
- ✓ Relay interface 24V DC
- ✓ Isolated Remote interface
- ✓ Adaptation to Customer's remote interface
- ✓ Emergency stop switch
- ✓ Safety signs and devices alerting to hazard
- ✓ Industrial dust filters
- ✓ Multichannel control unit
- ✓ Zero floating
- ✓ Adjustable rise time
- ✓ Tropicalization
- ✓ Transportable "all terrain" container
- ✓ Specific AC or DC mains power inputs
- ✓ OEM Design on request
- ✓ Remote front panel

Any special request can be considered

Possible restrictions when multiple options are selected (please contact our sales department for more details)

Physical description

Non-contractual photo



	5U – 19" Rack	7U–19" Rack	10 U – 19" Rack	19" Cabinet
Dimensions (HxWxD)	222x483x600 mm	311x483x600 mm	444x483x600 mm	Height : from 12 to 42 HU Depth : 800 mm

Voltage	SR 10 kW Series		SR 15 kW Series		SR 20 kW Series		SR 30 kW Series		SR 40 kW Series	
	Current	Model	Current	Model	Current	Model	Current	Model	Current	Model
300 V	33,33 A	SR300V-10KW	50.00 A	SR300V-15KW	66.67 A	SR300V-20KW	NOT AVAILABLE			
700 V	14,29 A	SR700V-10KW	21.43 A	SR700V-15KW	28.57 A	SR700V-20KW	42.86 A	SR700V-30KW	57.14 A	SR700V-40KW
1 kV	10,00 A	SR1KV-10KW	15.00 A	SR1KV-15KW	20.00 A	SR1KV-20KW	30.00 A	SR1KV-30KW	40.00 A	SR1KV-40KW
2.5 kV	4,00 A	SR2.5KV-10KW	6.00 A	SR2.5KV-15KW	8.00 A	SR2.5KV-20KW	12.00 A	SR2.5KV-30KW	16.00 A	SR2.5KV-40KW
5 kV	2,00 A	SR5KV-10KW	3.00 A	SR5KV-15KW	4.00 A	SR5KV-20KW	6.00 A	SR5KV-30KW	8.00 A	SR5KV-40KW
10 kV	1,00 A	SR10KV-10KW	1.50 A	SR10KV-15KW	2.00 A	SR10KV-20KW	3.00 A	SR10KV-30KW	4.00 A	SR10KV-40KW
15 kV	667 mA	SR15KV-10KW	1.00 A	SR15KV-15KW	1.33 A	SR15KV-20KW	2.00 A	SR15KV-30KW	2.67 A	SR15KV-40KW
20 kV	500 mA	SR20KV-10KW	750 mA	SR20KV-15KW	1.00 A	SR20KV-20KW	1.50 A	SR20KV-30KW	2.00 A	SR20KV-40KW
30 kV	333 mA	SR30KV-10KW	500 mA	SR30KV-15KW	667 mA	SR30KV-20KW	1.00 A	SR30KV-30KW	1.33 A	SR30KV-40KW
40 kV	250 mA	SR40KV-10KW	375 mA	SR40KV-15KW	500 mA	SR40KV-20KW	750 mA	SR40KV-30KW	1.00 A	SR40KV-40KW
50 kV	200 mA	SR50KV-10KW	300 mA	SR50KV-15KW	400 mA	SR50KV-20KW	600 mA	SR50KV-30KW	800mA	SR50KV-40KW
60 kV	167 mA	SR60KV-10KW	250 mA	SR60KV-15KW	333 mA	SR60KV-20KW	500 mA	SR60KV-30KW	667 mA	SR60KV-40KW
80 kV	125 mA	SR80KV-10KW	188 mA	SR80KV-15KW	250 mA	SR80KV-20KW	375 mA	SR80KV-30KW	500 mA	SR80KV-40KW
100 kV	100 mA	SR100KV-10KW	150 mA	SR100KV-15KW	200 mA	SR100KV-20KW	300 mA	SR100KV-30KW	400 mA	SR100KV-40KW
120 kV	83.3 mA	SR120KV-10KW	125 mA	SR120KV-15KW	167 mA	SR120KV-20KW	CONTACT US			
150 kV	CONTACT US									
200 kV	CONTACT US									
> 200 kV	CONTACT US									

Polarity can be positive, negative, reversible (option) or floating (option)
Floating or reversibility options can modify the size of the unit

Example of reference : SR 15KV-40KW

Mode : SR model (generator)
Voltage : Adjustable from 0 to 15 kV
Power : 40 kW

All our generators are delivered with :

HV output:
HV connector and 3 meters HV cable

Mains input:
4 pins feed-through terminal

HV connectors and cables available



DC High Voltage Capacitor Charging Power Supplies

150 J/s to 1kJ/s CCR Series

From 300 V to over 200 kV output voltage

CCR60kV-600J
0 to 60kV, 0 to 20mA

Non-contractual photo



Main information

- Compact & industrial design
- Double resonance technology (ZVC)
- Low stored energy
- High reliability & efficiency
- Voltage & Current outputs continuously adjustable from 0 to 100%
- Voltage setting limitation (locally)
- Voltage & Current Setting & monitoring from front panel or remote interface
- Customized Voltage & Current * with no extra cost
- High precision regulation
- Total protection against arc, overload, short circuit & over temperature
- Automatic Regulation crossover
- Over current limitation
- Remote, inhibit & interlock functions
- 4 ½ digit display with polarity display
- Safety switch key
- Air cooling
- 2 years warranty

* You can choose your own full scales (V_{max} and I_{max}) even if these values are not available in standard.
For example, you can get a 3750 V generator based on 750 J/s model.
In this case, you will get an output voltage adjustable from 0 to 3750 V and an output current from 0 to 0.4 A.

Description

High Voltage CCR models are designed to charge high voltage capacitors and Marx generators.
They operate as constant current sources.

The numerous advantages of compactness, robustness, reliability, and saving offered with the double resonance technology are already available on these models which constitute the low-end range.

Four series of chargers are offered:
150J/s, 300J/s, 600J/s and 1kJ/s.

These chargers are all based on a 3U and 5U height 19" rack presentation.
Using a modular design, our products integrate the latest technology components.

Above 20KV, HV blocks are in resin.



Electrical specifications

Output Voltage and output Current

Both Voltage Output and Current Output are continuously adjustable from 0 to 100 % (full scale)

Local mode: with 10 turns potentiometers *resolution 0.05%*

Remote mode: by an external 0 to 10 V

Maximum frequency

In standard : **10 Hz**

On request : **up to 1 kHz** depending on the application*

Reproducibility* (pulse to pulse voltage variation)

For frequencies ≤ 10 Hz : $\pm 0.05\%$ *better on request*

For $\pm 10\%$ mains voltage : $\pm 0.05\%$

Voltage holding: **0.1% p-p** (*better on request*)

Stored energy: **0.2J/kJ**

Protections

Against short circuit

HV arc to ground

Shutdown on Over temperature

Open interlock

Warm up shift of voltage (after one hour warm-up)

0.01 % / hour, operating at constant load and ambient temperature

Temperature coefficient: **100 ppm/°C**

Operating temperature: from 0 to 50°C

Efficiency: **> 90 % full load**

Air cooling by air

Dust filter fans on front panel

Easily removable filters for cleaning

Mains voltage

170 to 255VAC 47-63 Hz Single Phase + Earth

Power factor correction Input: ≥ 0.98

Inrush current: limited to full power operating current

Calibration: with probes periodically approved by Authorized Measurement Laboratories

CE Certification

* For fixed polarity

Options

- ✓ Other voltage and current values available with no extra cost
- ✓ Easy parallel operation (For frequencies ≤ 10 Hz)
- ✓ Reversibility
- ✓ Floating outputs (unipolar or bipolar)
- ✓ Non instrumented front panel
- ✓ Automatic inhibit when discharging
- ✓ RS232, Ethernet and Profibus interfaces
- ✓ Optical fibre transmission kit with RS232 or Ethernet
- ✓ LABVIEW run time for RS232 or Ethernet
- ✓ Relay interface 24V DC
- ✓ Isolated Remote interface
- ✓ Adaptation customer to remote interface
- ✓ Emergency stop switch
- ✓ Safety signs and devices alerting to hazard
- ✓ Industrial dust filters
- ✓ Repetition frequency > 10 Hz : no extra cost
- ✓ Multichannel control unit
- ✓ Zero floating
- ✓ Tropicalization
- ✓ Transportable "all terrain" container
- ✓ Specific AC or DC mains power inputs
- ✓ OEM Design on request
- ✓ Remote front panel

Any special requests can be considered

Possible restrictions when multiple options (please contact our sales department for more details)

Our chargers are designed to be used in standard under the following conditions :

- Complete discharge
- Max. frequency : 10 Hz
- Capacitor Load
- Reversal Voltage $\leq 10\%$ of V_{max} for a charging time between 0.1s and 5s

If the charger is used in other conditions, please fill in our charger form.

Physical description

Non-contractual photo



19" Rack	3U - 480 mm	3U - 600 mm	5U - 600 mm
Dimensions	H 133 x W 483 x D 480 mm	H 133 x W 483 x D 600 mm	H 222 x W 483 x D 600 mm

Voltage	CCR 150 J/s Series		CCR 300 J /s series		CCR 600 J/s Series		CCR 1000 J/s Series	
	Current	Model	Current	Model	Current	Model	Current	Model
< 1 kV	CONTACT US							
1 kV	300 mA	CCR1KV-150J	600 mA	CCR1KV-300J	1.2 A	CCR1KV-600J	2 A	CCR1KV-1000J
2.5 kV	120 mA	CCR2.5KV-150J	240 mA	CCR2.5KV-300J	480 mA	CCR2.5KV-600J	800 mA	CCR2.5KV-1000J
5 kV	60 mA	CCR5KV-150J	120 mA	CCR5KV-300J	240 mA	CCR5KV-600J	400 mA	CCR5KV-1000J
10 kV	30 mA	CCR10KV-150J	60 mA	CCR10KV-300J	120 mA	CCR10KV-600J	200 mA	CCR10KV-1000J
15 kV	20 mA	CCR15KV-150J	40 mA	CCR15KV-300J	80 mA	CCR15KV-600J	CONTACT US	
20 kV	15 mA	CCR20KV-150J	30 mA	CCR20KV-300J	60 mA	CCR20KV-600J		
30 kV	10 mA	CCR30KV-150J	20 mA	CCR30KV-300J	40 mA	CCR30KV-600J		
40 kV	7.5 mA	CCR40KV-150J	15 mA	CCR40KV-300J	30 mA	CCR40KV-600J		
50 kV	6 mA	CCR50KV-150J	12 mA	CCR50KV-300J	24 mA	CCR50KV-600J		
60 kV	5 mA	CCR60KV-150J	10 mA	CCR60KV-300J	20 mA	CCR60KV-600J		
80 kV	3.75 mA	CCR80KV-150J	7.5 mA	CCR80KV-300J	15 mA	CCR80KV-600J		
100 kV	3 mA	CCR100KV-150J	6 mA	CCR100KV-300J	12 mA	CCR100KV-600J		
120 kV	2.5 mA	CCR120KV-150J	5 mA	CCR120KV-300J	10 mA	CCR120KV-300J		
150 kV	2 mA	CCR150KV-150J	4 mA	CCR150KV-300J	8 mA	CCR150KV-600J		
200 kV	1.5 mA	CCR200KV-150J	3 mA	CCR200KV-300J	6 mA	CCR200KV-600J		
> 200 kV	CONTACT US							

Polarity can be positive, negative, reversible (option) or floating (option)
 Floating or reversibility options can modify the size of the unit

Example of reference : CCR 15KV-150J

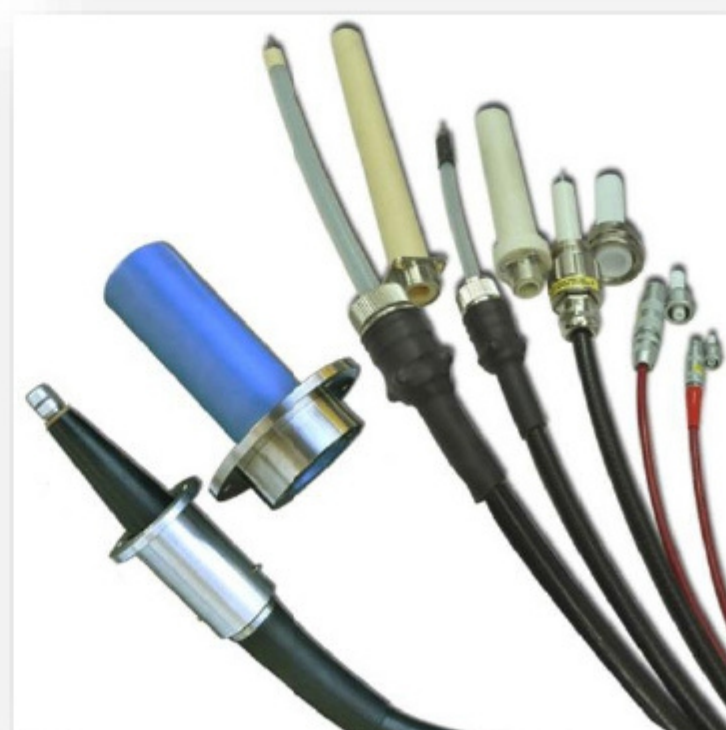
Mode : CCR model (capacitor charger)
 Voltage : Adjustable from 0 to 15 kV
 J/s : 150 J/s charging power

All our chargers are delivered with :

HV output:
 HV connector and 3 meters HV cable

Mains input:
 2 meters CE22 cable

HV connectors and cables available



DC High Voltage Capacitor Charging Power Supplies

750J/s to 4kJ/s CCR Series

From 300V to over 200kV output voltage

CCR 10kV-10kJ
0 to 10 kV, 0 to 2A

Non-contractual photo



Main information

- Compact & industrial design
- Voltage & Current Outputs continuously adjustable from 0 to full scale
- Voltage & current setting & monitoring from front panel or remote interface
- Voltage setting limitation (locally)
- High reliability & efficiency
- High precision regulation
- Total protection against arc, overload, short circuit & over temperature
- End of charge signal
- Remote, inhibit & interlock functions
- 4 ½ digit display with polarity display
- Fans regulation on 5 kJ/s models
- Easy parallel operation (option)
- Double resonance technology (ZVC)
- Safety switch key
- 2 years warranty

* You can choose your own full scales (V_{max} and I_{max}) even if these values are not available in standard. For example, you can get a 45kV generator based on 3kJ/s model. In this case, you will get an Output Voltage adjustable from 0 to 45kV and Output Current from 0 to 133 mA.

Description

High Voltage CCR models are designed to charge capacitors pulse forming networks (PFN) and Marx generators. They operate as constant current sources.

As they integrate both double resonant technology and efficient components, they offer high reliability and performance.

These units integrate local and remote programming and monitoring, safety interlock, short circuit and overload protection like in all our products.

All the models are air cooled and their presentation can be either 19" racks (5U or 7U) or 19" cabinet with lifting rings and wheels.

Five ranges of charge rates available from 750J/s to 4kJ/s.

Designed to operate without damage or interruption in rugged environments, they support an intensive use 24 hours per day, 7 days per week.

HV block can operate in the air up to 20kV models. It is immersed in an oil tank for models above 20kV.



Electrical specifications

Output Voltage and output Current

Both Voltage Output and Current Output are continuously adjustable from 0 to 100 % (full scale)

Local mode: with 10 turns potentiometers *resolution 0.05%*

Remote mode: by an external 0 to 10 V

Maximum frequency

In standard : **10 Hz**

On request : **up to 1 kHz** depending on the application*

Reproducibility* (pulse to pulse voltage variation)

For frequencies ≤ 10 Hz : $\pm 0.05\%$ *better on request*

For $\pm 10\%$ mains voltage : $\pm 0.05\%$

Voltage holding: **0.1% p-p** (*better on request*)

Stored energy: **0.2J/kJ**

Protections

Against short circuit

HV arc to ground

Shutdown on Over temperature

Open interlock

Warm up shift of voltage (after one hour warm-up)

0.01 % / hour, operating at constant load and ambient temperature

Temperature coefficient: **100 ppm/°C**

Operating temperature: from **0 to 50°C**

Efficiency: **> 90 % at full load**

Air cooling by air

Dust filter fans on front panel

Easily removable filters for cleaning

Mains voltage

400 VAC $\pm 10\%$ 47-63 Hz 3 Phase + Earth

Power Factor: **≥ 0.9 at full load**

Inrush current: limited to full power operating current

Calibration: with probes periodically approved by Authorized Measurement Laboratories

CE Certification

* For fixed polarity

Options

- ✓ Other voltage and current values available with no extra cost
- ✓ Easy parallel operation (For frequencies ≤ 10 Hz)
- ✓ Reversibility
- ✓ Floating outputs (unipolar or bipolar)
- ✓ Non instrumented front panel
- ✓ Automatic inhibit when discharging
- ✓ RS232, Ethernet and Profibus interfaces
- ✓ Optical fibre transmission kit with RS232 or Ethernet
- ✓ LABVIEW run time for RS232 or Ethernet
- ✓ Relay interface 24V DC
- ✓ Isolated Remote interface
- ✓ Adaptation customer to remote interface
- ✓ Emergency stop switch
- ✓ Safety signs and devices alerting to hazard
- ✓ Industrial dust filters
- ✓ Repetition frequency > 10 Hz : no extra cost
- ✓ Multichannel control unit
- ✓ Zero floating
- ✓ Tropicalization
- ✓ Transportable "all terrain" container
- ✓ Specific AC or DC mains power inputs
- ✓ OEM Design on request
- ✓ Remote front panel

Any special requests can be considered

Possible restrictions when multiple options (please contact our sales department for more details)

Our chargers are designed to be used in standard under the following conditions :

- Complete discharge
- Max. frequency : 10 Hz
- Capacitor Load
- Reversal Voltage $\leq 10\%$ of V_{max} for a charging time between 0.1s and 5s

If the charger is used in other conditions, please fill in our charger form.

Physical description

Non-contractual photo



	3U – 19" Rack	5U – 19" Rack	7U–19" Rack	19" Cabinet
Dimensions	H133xW483xD480 mm	H222xW483xD480 mm	H311xW483xD600 mm	Height : from 12 to 30 HU
	H133xW483xD600 mm	H222xW483xD600 mm		Depth : 800 mm

Voltage	CCR 750J/s Series		CCR 1.5kJ/s Series		CCR 2.5kJ/s Series		CCR 3kJ/s Series		CCR 4kJ/s Series	
	Current	Model	Current	Model	Current	Model	Current	Model	Current	Model
< 1kV	CONTACT US									
1 kV	1.5 A	CCR1KV-750J	3.00 A	CCR1KV-1.5KJ	5.00 A	CCR1KV-2.5KJ	6.00 A	CCR1KV-3KJ	8.00 A	CCR1KV-4KJ
2.5 kV	600 mA	CCR2.5KV-750J	1.20 A	CCR2.5KV-1.5KJ	2.00 A	CCR2.5KV-2.5KJ	2.40 A	CCR2.5KV-3KJ	3.20 A	CCR2.5KV-4KJ
5 kV	300 mA	CCR5KV-750J	600 mA	CCR5KV-1.5KJ	1.00 A	CCR5KV-2.5KJ	1.20 A	CCR5KV-3KJ	1.60 A	CCR5KV-4KJ
10 kV	150 mA	CCR10KV-750J	300 mA	CCR10KV-1.5KJ	500 mA	CCR10KV-2.5KJ	600 mA	CCR10KV-3KJ	800 mA	CCR10KV-4KJ
15 kV	100 mA	CCR15KV-750J	200 mA	CCR15KV-1.5KJ	330 mA	CCR15KV-2.5KJ	400 mA	CCR15KV-3KJ	530 mA	CCR15KV-4KJ
20 kV	75 mA	CCR20KV-750J	150 mA	CCR20KV-1.5KJ	250 mA	CCR20KV-2.5KJ	300 mA	CCR20KV-3KJ	400 mA	CCR20KV-4KJ
25 kV	60 mA	CCR25KV-750J	120 mA	CCR25KV-1.5KJ	200 mA	CCR25KV-2.5KJ	240 mA	CCR25KV-3KJ	360 mA	CCR25KV-4KJ
30 kV	50 mA	CCR30KV-750J	100 mA	CCR30KV-1.5KJ	170 mA	CCR30KV-2.5KJ	200 mA	CCR30KV-3KJ	270 mA	CCR30KV-4KJ
40 kV	37.5 mA	CCR40KV-750J	75 mA	CCR40KV-1.5KJ	130 mA	CCR40KV-2.5KJ	150 mA	CCR40KV-3KJ	200 mA	CCR40KV-4KJ
50 kV	30 mA	CCR50KV-750J	60 mA	CCR50KV-1.5KJ	100 mA	CCR50KV-2.5KJ	120 mA	CCR50KV-3KJ	160 mA	CCR50KV-4KJ
60 kV	25 mA	CCR60KV-750J	50 mA	CCR60KV-1.5KJ	80 mA	CCR60KV-2.5KJ	100 mA	CCR60KV-3KJ	130 mA	CCR60KV-4KJ
80 kV	18.7 mA	CCR80KV-750J	37.5 mA	CCR80KV-1.5KJ	60 mA	CCR80KV-2.5KJ	80 mA	CCR80KV-3KJ	100 mA	CCR80KV-4KJ
100 kV	CONTACT US				50 mA	CCR100KV-2.5KJ	60 mA	CCR100KV-3KJ	80 mA	CCR100KV-4KJ
120 kV					40 mA	CCR120KV-2.5KJ	50 mA	CCR120KV-3KJ	70 mA	CCR120KV-4KJ
150 kV					CONTACT US					
200 kV	CONTACT US									
> 200 kV	CONTACT US									

Polarity can be positive, negative, reversible (option) or floating (option)
 Floating or reversibility options can modify the size of the unit

Example of reference : CCR 80KV- 3KJ

Mode : CCR model (capacitor charger)
 Voltage : Adjustable from 0 to 80 kV
 J/s : 3 kJ/s charging power

All our generators are delivered with :

HV output:
 HV connector and 3 meters HV cable

Mains input:
 3U rack: 4 pins connector
 Other racks: 4 pins feed-through terminal

HV connectors and cables available



DC High Voltage Capacitor Charging Power Supplies 5kJ/s to 20kJ/s and more CCR Series From 1 kV to 120 kV output voltage



CCR20kV-20kJ
0 to 20 kV, 0 to 2A

Non-contractual photo



CCR1kV-20kJ
0 to 1kV, 0 to 40 A

Non-contractual photo

Main information

- Compact & industrial design
- Voltage & Current outputs continuously adjustable from 0 to 100%
- Voltage & Current setting and monitoring from front panel or remote interface
- Voltage setting limitation (locally)
- High reliability & efficiency
- High precision regulation
- Total protection against arc, overload, short circuit & over temperature
- Remote, inhibit & interlock functions
- 4 ½ digit display with polarity display
- Master/Slave architecture and control unit allows **250 kJ/s** configurations and more
- Easy parallel operation (option)
- Double resonance technology (ZVC)
- Safety switch key
- Air cooling with high reliability fans
- 2 years warranty

* You can choose your own full scales (V_{max} and I_{max}) even if these values are not available in standard. For example, you can get a 45kV generator based on 3kJ/s model. In this case, you will get an Output Voltage adjustable from 0 to 45kV and an Output Current from 0 to 1.33A.

Description

High Voltage CCR models of Capacitor Charging Power Supplies are designed for modulators, Excimer lasers, X-ray radiation Therapy and Flash lamps process.

As they integrate both double resonant technology and efficient components, they offer high reliability and performance.

These units offer in local and remote programming and monitoring, safety interlock, short circuit and overload protection like in all our products.

All the models are air cooled and their presentation can be either 19" racks (5U, 7U or 10U) or 19" cabinet with lifting rings and wheels.

Five ranges of charge rates available from 5kJ/s to 20kJ/s and more.

Designed to operate without damage or interruption in rugged environments, they support an intensive use 24 hours per day, 7 days per week.

HV block can operate in the air up to 20 kV models. It is merged in an oil tank for higher Voltage models.

Much higher powers can be reached by using a master/slaves architecture or control-unit. With its low cost per J/s, this series is particularly well adapted in applications looking for power and performance at affordable prices.



Electrical specifications

Output Voltage and output Current

Both Voltage Output and Current Output are continuously adjustable from 0 to 100 % (full scale)

Local mode: with 10 turns potentiometers *resolution 0.05%*

Remote mode: by an external 0 to 10 V

Maximum frequency

In standard : **10 Hz**

On request : **up to 1 kHz** depending on the application*

Reproducibility* (pulse to pulse voltage variation)

For frequencies ≤ 10 Hz : $\pm 0.05\%$ *better on request*

For $\pm 10\%$ mains voltage : $\pm 0.05\%$

Voltage holding: **0.1% p-p** (*better on request*)

Stored energy: **0.2J/kJ**

Protections

Against short circuit

HV arc to ground

Shutdown on Over temperature

Open interlock

Warm up shift of voltage (after one hour warm-up)

0.01 % / hour, operating at constant load and ambient temperature

Temperature coefficient: **100 ppm/°C**

Operating temperature: from **0 to 50°C**

Efficiency: **> 90 % at full load**

Air cooling by air

Dust filter fans on front panel

Easily removable filters for cleaning

Mains voltage

400 VAC $\pm 10\%$ 47-63 Hz 3 Phase + Earth

Power factor: **≥ 0.9 at full load**

Inrush current: limited to full power operating current

Calibration: with probes periodically approved by Authorized Measurement Laboratories

CE Certification

* For fixed polarity

Options

- ✓ Other voltage and current values available with no extra cost
- ✓ Easy parallel operation (For frequencies ≤ 10 Hz)
- ✓ Reversibility
- ✓ Floating outputs (unipolar or bipolar)
- ✓ Non instrumented front panel
- ✓ Automatic inhibit when discharging
- ✓ RS232, Ethernet and Profibus interfaces
- ✓ Optical fibre transmission kit with RS232 or Ethernet
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- ✓ Repetition frequency > 10 Hz : no extra cost
- ✓ Multichannel control unit
- ✓ Zero floating
- ✓ Tropicalization
- ✓ Transportable "all terrain" container
- ✓ Specific AC or DC mains power inputs
- ✓ OEM Design on request
- ✓ Remote front panel

Any special requests can be considered

Possible restrictions when multiple options (please contact our sales department for more details)

Our chargers are designed to be used in standard under the following conditions :

- Complete discharge
- Max. frequency : 10 Hz
- Capacitor Load
- Reversal Voltage $\leq 10\%$ of V_{max} for a charging time between 0.1s and 5s

If the charger is used in other conditions, please fill in our charger form.

Physical description

Non-contractual photo



	5U – 19" Rack	7U–19" Rack	10 U – 19" Rack	19" Cabinet
Dimensions	H222xW483xD600 mm	H311xW483xD600 mm	H 444xW483xD600 mm	Height : from 12 to 42 HU Depth : 800 mm

Voltage	CCR 5 kJ/s Series		CCR 7.5 kJ/s Series		CCR 10 kJ/s Series		CCR 15kJ/s Series		CCR 20kJ/s Series	
	Current	Model	Current	Model	Current	Model	Current	Model	Current	Model
< 1kV	CONTACT US									
1 kV	10.00 A	CCR1KV-5KJ	15.00 A	CCR1KV-7.5KJ	20.00 A	CCR1KV-10KJ	30.00 A	CCR1KV-15KJ	40.00 A	CCR1KV-20KJ
2.5 kV	4.00 A	CCR2.5KV-5KJ	6.00 A	CCR2.5KV-7.5KJ	8.00 A	CCR2.5KV-10KJ	12.00 A	CCR2,5KV-15KJ	16.00 A	CCR2.5KV-20KJ
5 kV	2.00 A	CCR5KV-5KJ	3.00 A	CCR5KV-7.5KJ	4.00 A	CCR5KV-10KJ	6.00 A	CCR5KV-15KJ	8.00 A	CCR5KV-20KJ
10 kV	1.00 A	CCR10KV-5KJ	1.50 A	CCR10KV-7.5KJ	2.00 A	CCR10KV-10KJ	3.00 A	CCR10KV-15KJ	4.00 A	CCR10KV-20KJ
15 kV	670 mA	CCR15KV-5KJ	1.00 A	CCR15KV-7.5KJ	1.33 A	CCR15KV-10KJ	2.00 A	CCR15KV-15KJ	2.67 A	CCR15KV-20KJ
20 kV	500 mA	CCR20KV-5KJ	750 mA	CCR20KV-7.5KJ	1,00 A	CCR20KV-10KJ	1.50 A	CCR20KV-15KJ	2.00 A	CCR20KV-20KJ
25 kV	400 mA	CCR25KV-5KJ	600 mA	CCR20KV-7.5KJ	800 mA	CCR25KV-10KJ	1.20 A	CCR25KV-15KJ	1.60 A	CCR25KV-20KJ
30 kV	330 mA	CCR30KV-5KJ	500 mA	CCR30KV-7.5KJ	667 mA	CCR30KV-10KJ	1.00 A	CCR30KV-15KJ	1.33 A	CCR30KV-20KJ
40 kV	250 mA	CCR40KV-5KJ	375 mA	CCR40KV-7.5KJ	500 mA	CCR40KV-10KJ	750 mA	CCR40KV-15KJ	1.00 A	CCR40KV-20KJ
50 kV	200 mA	CCR50KV-5KJ	300 mA	CCR50KV-7.5KJ	400 mA	CCR50KV-10KJ	600 mA	CCR50KV-15KJ	800mA	CCR50KV-20KJ
60 kV	170 mA	CCR60KV-5KJ	250 mA	CCR60KV-7.5KJ	333 mA	CCR60KV-10KJ	500 mA	CCR60KV-15KJ	667 mA	CCR60KV-20KJ
80 kV	130 mA	CCR80KV-5KJ	188 mA	CCR80KV-7.5KJ	250 mA	CCR80KV-10KJ	375 mA	CCR80KV-15KJ	500 mA	CCR80KV-20KJ
100 kV	100 mA	CCR100KV-5KJ	150 mA	CCR100KV-7.5KJ	200 mA	CCR100KV-10KJ	300 mA	CCR100KV-15KJ	400 mA	CCR100KV-20KJ
120 kV	80 mA	CCR120KV-5KJ	125 mA	CCR120KV-7.5KJ	167 mA	CCR120KV-10KJ	CONTACT US			
150 kV	CONTACT US									
200 kV										
> 200 kV										

Polarity can be positive, negative, reversible (option) or floating (option)
 Floating or reversibility options can modify the size of the unit

Example of reference : **CCR 50KV-20KJ**

Mode : **CCR** model (Capacitor charger)
 Voltage : Adjustable from 0 to **50 kV**
 J/s : **20 kJ/s** charging power

HV connectors and cables available

All our generators are delivered with :

HV output:
 HV connector and 3 meters HV cable

Mains input:
 4 pins feed-through terminal

