

## **HIGH VOLTAGE CHARGERS** **2500-5000 J/s Series** **From 300 V to 120 kV Output Voltage**



- Voltage & Current Outputs continuously adjustable from 0 to full scale
- High precision regulation
- Total protection against arcs, overloads and short circuits
- Over Temperature protection
- High reliability & efficiency
- Double Resonance Technology (ZVC)
- V & C Setting and Monitoring from front panel or remote
- Automatic crossover
- Over Current Limitation and protection functions
- Remote, Inhibit & Interlock functions
- Polarity display and 3 ½ digit displays
- Safety switch key
- Master-slaves architecture



**CCR12 - P- 4000**  
0 to +12kV, 4000 J/s  
Non- contractual photo

\* 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 45 000 V generator based on 3000 J/s model. In this case, you will get an Output Voltage adjustable from 0 to 45 000 V and an Output Current from 0 to 133.3 Ma



### Description

High Voltage CCR models are designed to charge capacitors and pulse forming networks (PFN). They operate as constant current sources. As they integrate both double resonant technology and efficient components, these chargers 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 (3U, 5U or 7U) or 19" cabinet with lifting rings and wheels. Four ranges of charge rates from 2500 J/s to 5000 J/s are offered in this series. Designed to operate without damage or interruption in rugged environments, they support an intensive use 24 hours per day, 7days per week. HV block can operate in the air up to 15KV models. It is merged in an oil tank for 24KV models and above.



### Options

- Other Voltage and Current values available with no extracost\*
- Reversibility and Floating outputs
- 4 ½ digit display
- Non instrumented version
- Automatic Inhibit when discharging
- RS232, GPIB and PROFIBUS interfaces
- Optic fibre transmission
- LABVIEW driver
- Relay interface
- Insulated Remote Interface
- Repetition Frequency > 10 Hz
- Customer Remote Adaptation
- Single or multichannel consol unit
- Safety signs and devices alerting to hazard
- Tropicalization
- Transportable "all terrain" container
- Specific AC or DC main power inputs
- OEM version

*Any Special requests can be considered*



# Electrical Specifications

### Output Voltage and Output Current:

Both Voltage Output and Current Output are continuously adjustable from 0 to 100 % (full scale)  
**In local mode:** by using 10 turns potentiometers resolution 0.05%  
**In remote mode:** by an external 0 to 10 V

### Reproducibility (pulse to pulse voltage variation):

**Load Regulation:** ± 0.25 % (Frequency < 10 Hz)  
**Line Regulation:** ± 0.1 % ( for Main Voltage ± 10 %)

### Current regulation:

**Load Regulation:** ± 0.05 % (for 0 – 100 % load)  
**Line Regulation:** ± 0.05 % (for Main Voltage ± 10 %)

### Voltage Holding: 0.25 % p-p (better on request)

### Stored Energy: 0.2J/kJ

### Efficiency: > 90 % full load

### Protections: Against short circuit & HV arc to ground Shutdown on Overtemperature, & open interlock

### Stability (after one hour warm-up): 0.01 % / hour, 0.03 % / 8 hours of operating with constant load and ambient temperature.

### Temperature Coefficient: 100 ppm/°C

### Operating Temperature: from 0 to 40 °C

### Air Cooling

### Mains Voltage: 400 VAC ± 10 % 47 – 63 Hz 3 Phases + Earth

### Inrush current: limited to full power operating current

### Power factor: > 0.98

### Calibration: with probes periodically approved by Authorized Measurement Laboratories

### CE Marking



# Physical description



Non-contractual photos

	5U – 19" Rack	7U–19" Rack	19" Cabinet
Dimensions	H222xW483xD480 mm or	H222xW483xD600 mm	Height : from 12 to 30 HU Depth : 600 mm
	H222xW483xD600 mm		

Voltage	CCR 2500 J/s Series		CCR 3000 J/s Series		CCR 4000 J/s Series		CCR 5000 J/s Series	
	A	Model	A	Model	A	Model	A	Model
< 1kV		ON REQUEST		ON REQUEST		ON REQUEST		ON REQUEST
1 kV	5,00	CCR1-(P/N/R)-2500	6,00	CCR1-(P/N/R)-3000	8,00	CCR1-(P/N/R)-4000	10,00	CCR1-(P/N/R)-5000
2.5 kV	2,00	CCR2,5-(P/N/R)-2500	2,40	CCR2,5-(P/N/R)-3000	3,20	CCR2,5-(P/N/R)-4000	4,00	CCR2,5-(P/N/R)-5000
5 kV	1,00	CCR5-(P/N/R)-2500	1,20	CCR5-(P/N/R)-3000	1,60	CCR5-(P/N/R)-4000	2,00	CCR5-(P/N/R)-5000
10 kV	0,50	CCR10-(P/N/R)-2500	0,60	CCR10-(P/N/R)-3000	0,80	CCR10-(P/N/R)-4000	1,00	CCR10-(P/N/R)-5000
15 kV	0,33	CCR15-(P/N/R)-2500	0,40	CCR15-(P/N/R)-3000	0,53	CCR15-(P/N/R)-4000	0,67	CCR15-(P/N/R)-5000
20 kV	0,25	CCR20-(P/N/R)-2500	0,30	CCR20-(P/N/R)-3000	0,40	CCR20-(P/N/R)-4000	0,50	CCR20-(P/N/R)-5000
30 kV	0,17	CCR30-(P/N/R)-2500	0,20	CCR30-(P/N/R)-3000	0,27	CCR30-(P/N/R)-4000	0,33	CCR30-(P/N/R)-5000
40 kV	0,13	CCR40-(P/N/R)-2500	0,15	CCR40-(P/N/R)-3000	0,20	CCR40-(P/N/R)-4000	0,25	CCR40-(P/N/R)-5000
50 kV	0,10	CCR50-(P/N/R)-2500	0,12	CCR50-(P/N/R)-3000	0,16	CCR50-(P/N/R)-4000	0,20	CCR50-(P/N/R)-5000
60 kV	0,08	CCR60-(P/N/R)-2500	0,10	CCR60-(P/N/R)-3000	0,13	CCR60-(P/N/R)-4000	0,17	CCR60-(P/N/R)-5000
80 kV	0,06	CCR80-(P/N/R)-2500	0,08	CCR80-(P/N/R)-3000	0,10	CCR80-(P/N/R)-4000	0,13	CCR80-(P/N/R)-5000
100 kV	0,05	CCR100-(P/N/R)-2500	0,06	CCR100-(P/N/R)-3000	0,08	CCR100-(P/N/R)-4000	0,10	CCR100-(P/N/R)-5000
120 kV	0,04	CCR120-(P/N)-2500	0,05	CCR120-(P/N)-3000	0,07	CCR120-(P/N)-4000	0,08	CCR120-(P/N)-5000

**Polarity:** P – Positive, N – Negative, F – Floating outputs & R – Reversibility as options

**Higher Voltage:** Contact us

All our chargers are delivered with - HV Output: Connector and 3 meters cable  
 - Mains Input: 400 VAC models: 4 pins female connector

Example of Reference : CCR 80 N 3000

Mode	CCR model (Capacitor charger Regulation)
Voltage	Adjustable from 0 to 80 kV
Polarity	Negative Polarity
J/s	3000 J/s charging power

Our chargers are supposed to be used in following conditions:

- Complete discharge
- Max. frequency : 10 Hz
- Capacitor Load

If it is used in other conditions, please fill our charger formulary.