

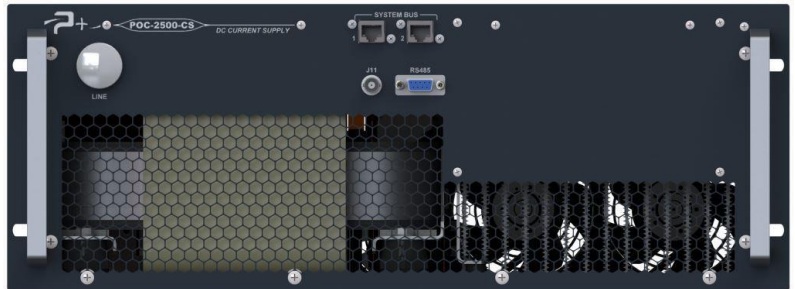


### APPLICATIONS

- Normative tests of breakers
- Endurance tests
- Current relays tests
- Calibration of current sensor and wattmeter
- Generation of magnetic field

### PERFORMANCES

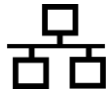
- Up to 1200 ADC without change of range
- Parallel connection allowed up to 20 modules (24 000 A)
- High accuracy < 0.5%
- High efficiency: > 82%
- Transients:
  - Rise time 10%-90% < 1 ms
  - Fall time 90%-10% < 1 ms
- Dynamic ramp control
- Polarity change included (output +1200 A or -1200 A)



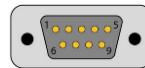
*Non-contractual pictures*



**TOUCHSCREEN**



**ETHERNET**



**RS485**

### DESCRIPTION

The POC-2500 rack is an AC to DC converter regulated in current. Built around an entirely digital core, it is made of three cascading floors:

- An AC-DC circuit around a transformer and rectifiers ensures the insulation of the output from the mains input,
- A DC-DC converter interlaced around MOS transistors and smoothing selfs ensures the generation and regulation of the current,
- A strong-current relay allows the hot pole to disconnect,
- The cold pole of the exit is connected to the ground (non-floating).

This converter can be paralleled with up to 20 others, to create any type of network in the 0-24,000 ADC (max) range.

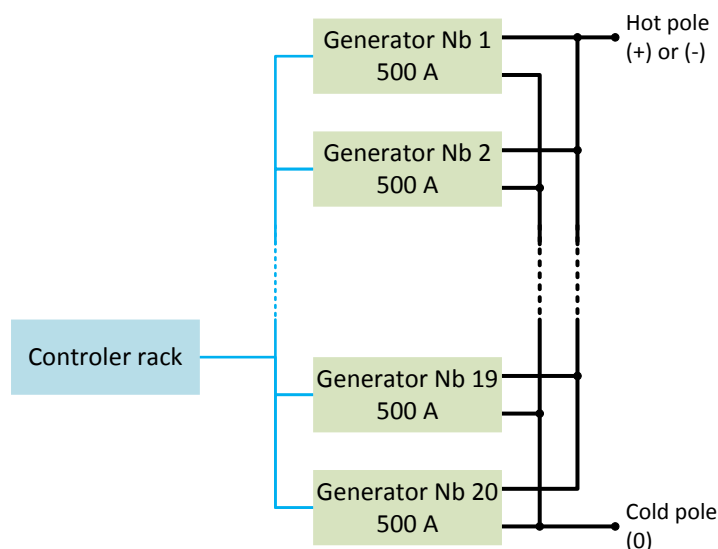
With an insulated analog output image of the current, this generator can be used in a PHIL system (**P**ower **H**ardware **I**n the **L**oop).

Robust and reliable: with permanent measurements of voltage, current, temperature of power parts, this generator is tolerant to severe conditions of use, and particularly suitable for use in the laboratory.

Combined with a touch-screen control rack, this generator can be remote by Ethernet or RS 485 buses using TCP/IP and ModBus protocols.



### COUPLING



These generators can be coupled in parallel to reach a set with a higher output current.

Up to 20 generators can be connected in parallel to deliver a permanent current of 10,000 ADC and a maximum current of 24,000 ADC during one minute.

### PROTECTIONS

#### Against overvoltage: automatic output switch-off

If output voltage exceeds the max available value, output is switched off and must be reactivated using touchscreen or an external command.

#### Against open circuit on output: automatic output switch-off

If output circuit is open, output is switched off and must be reactivated using touchscreen or an external command.

#### Against overtemperature: automatic output switch-off

A temperature sensor is installed on each power part. It switches off output in case of overheating. After cooling, output must be reactivated using touchscreen or an external command.

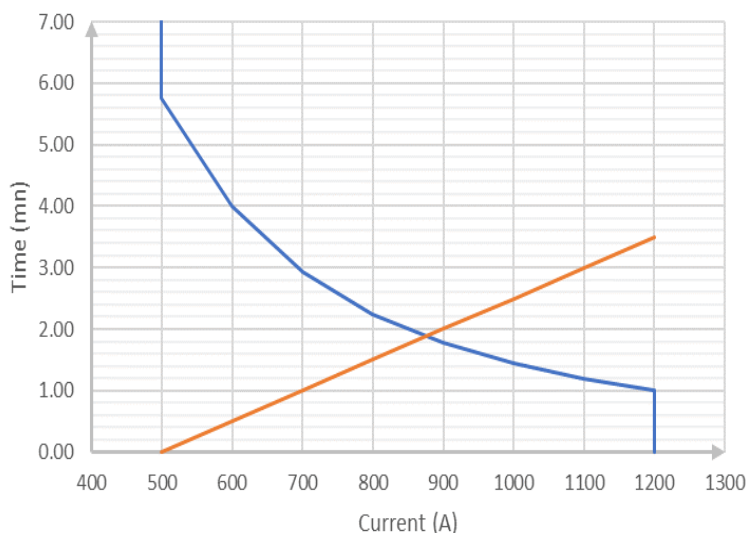
### OPERATING DURATION (load factor)

The use of a module is limited to avoid a heating of the power components that could cause an overheating shutdown.

However, a rest time must be respected between each generation to allow proper cooling of the power elements.

The diagram opposite shows:

- **Blue Trace:** The maximum duration of a generation depending on the current
- **Orange Trace:** the MINIMUM rest time between two generations depending on the current



### THE CONTROL RACK OF THE GENERATOR

This rack includes a control / command board equipped with a touchscreen which drives the generators using a high speed digital link.

Only one rack is required for a system.



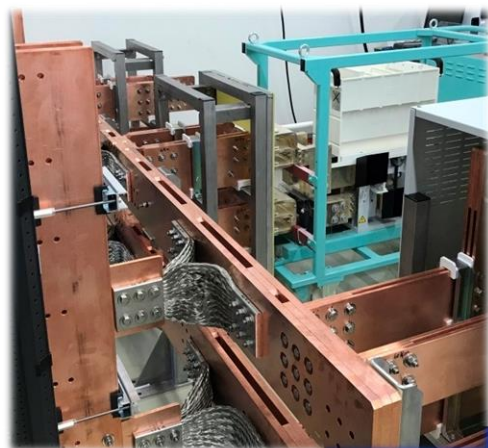
Example of rack with its touchscreen on front panel

### HOW TO PILOT THE GENERATOR

The current generator is equipped with a control/command card with touchscreen. It has two operating modes:

- **Local control:**  
The control/command card with touchscreen on front panel allows access to all the commands and display of the measurements.
- **Remote control through communication protocol:**  
An Ethernet TCP/IP interface and a RS232 interface allow the remote control with a PC. The generator can be directly controlled via TCP/IP or ASCII instructions or using our OPS software.

### SYSTEM EXAMPLE



System including 20 modules to generate 24,000 ADC during one minute



### FEATURES

<b>OUTPUT: POWER</b>	
Permanent power	
Rated power	2500 W
Rated current (only one range)	500 ADC
Max output voltage	5 VDC
Efficiency at full power	82%
Max power	
Max power	6000 W
Max duration (With a load factor of 1/4)	ONE minute, repetitive
Max current	1200 ADC
Max output voltage	5 VDC
Efficiency at max power	67%
Accuracy	
Voltage	0.5% of full scale
Current	0.5% of full scale (1 A)
Output regulation for a mains variation of +6% -10%	
Max	< 0.5% of rated current
Output regulation for a current variation of 0 to 100%	
Max	< 0.5% of rated current
Switching frequency	
Fixed	20 kHz
Variation regarding temperature	
Typical	50 ppm/°C
Max	1000 ppm/°C
Stability after 15 minutes of operation	
Max	< 0.5% of rated current
Insulation of output versus case ground	
Measured at 1500 VDC	> 10 MΩ

<b>MEASUREMENTS AND IMAGES</b>	
Measurements accuracy	
Voltage	0.5% of full scale
Current	0.5% of full scale
Current output image	
Insulation	> 10 MΩ
Scale factor	10 mADC for 1500 ADC
Load impedance	100 Ω max



TIME VARIATIONS AND RIPPLE	
Time variations	
Rise time 10% to 90% of max current	< 1 ms
Programming range of the rise time	0 to 150 A/ms
Fall time 90% to 10% of max current	< 1 ms
Ripple	
At 500 ADC	< 0.1%
At 1000 ADC	< 0.3%

MAINS POWER SUPPLY	
Mains for generator	
Number of phases	Three-Phase without Neutral + Earth
Voltage / Frequency	400 VRMS between phases $\pm 10\%$ / 47 to 63 Hz
Max current at full output power	15 ARMS per phase
Protection	Magneto-thermal breaker
Mains for control rack	
Number of phases	Single-Phase + Neutral + Earth
Voltage / Frequency	230 VRMS $\pm 10\%$ / 47 to 63 Hz
Max current at full output power	2 ARMS per phase
Protection	Delayed fuse
Dielectric strength mains input versus outputs connected to case ground	
Measured at 1500 VRMS / 50Hz	Current < 10 mA

MECANICAL AND ENVIRONMENTAL	
Material and surface treatment	
Front panel	Aluminum painted RAL7021
Dimensions and weight	
Width x Height x Depth (generator)	483 mm (19") x 222 mm (5U) x 600 mm
Width x Height x Depth (control rack)	483 mm (19") x 133 mm (3U) x 300 mm
Weight (generator)	78 kg
Weight (control rack)	7 kg
Temperature and humidity	
Stockage temperature	-20°C à +60°C
Operation temperature	+0°C à +40°C
Humidity	20% - 80% non-condensing
Noise (fans at full speed)	
Measured at 1 m	< 70 dBA
Marking	
Marking	CE
Protection	IP20

### PROVIDING OF PARALLELIZATION OF GENERATORS

Installation in a cabinet of several racks with output power connections can be provided.



Using a cabinet height of 33U (1500 mm), the “Master” cabinet includes up to six generators and the control rack. Mains connections and output current connections are provided. User has only to install the generators and connect them using provided accessories.

For bigger systems, the “Master” cabinet is completed by “Slave” cabinets. Each “Slave” cabinet includes up to seven generators. Mains connections and output current connections are provided. User has only to install the generators and connect them using provided accessories.



### SALES REFERENCES

#### **POC-2500-DC-500A-5V**

Current generator rack

#### **TIROIR DE COMMANDE POC-2500-DC**

Control rack

#### **POC-15000-DC-3000A-5V MAITRE**

Cabinet for control rack and up to **six** current generators  
Including mains and output power connections

#### **POC-17500-DC-3500A-5V ESCLAVE**

Cabinet for up to **seven** current generators  
Including mains and output power connections

Specification may change without notice