



### APPLICATIONS

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

### PERFORMANCES

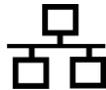
- Wide range of current AC and DC
- Parallel connection allowed
- One insulated output:
  - From mains
  - From analog input
- 50 dB dynamic range
- Build-up time of the current < 1 ms
- "Open loop" protection
- Includes an AF synthesizer from 20 to 5 kHz
- Very low distortion < 0.3%
- Low noise S/B > 80 dB
- High accuracy < 0.2%
- High stability < 0.1%



Non-contractual picture



TOUCHSCREEN



ETHERNET



RS232

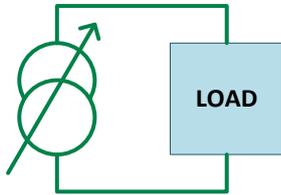
### DESCRIPTION

- The AC and DC current generator "POC-1200" is built using a power bloc in linear technology and a **current regulation** or a **voltage regulation**. It is suitable for any application that requires an accurate and stable output, including when there is a load impedance variation.
- Thanks to the linear technology, it generates almost no electrical pollution and can be used in anechoic chamber.
- Its 0-24V insulated digital bus allow a use directly controlled by a PLC on a production line.
- Several generators can be connected in parallel to increase the output current (in current regulation).
- Entirely self-sufficient thanks to its touch-screen control / command card, it also can be remotely controlled for an easy integration into an automatic system using the TCP/IP Protocol on an Ethernet link, or SCPI on a RS232 link.



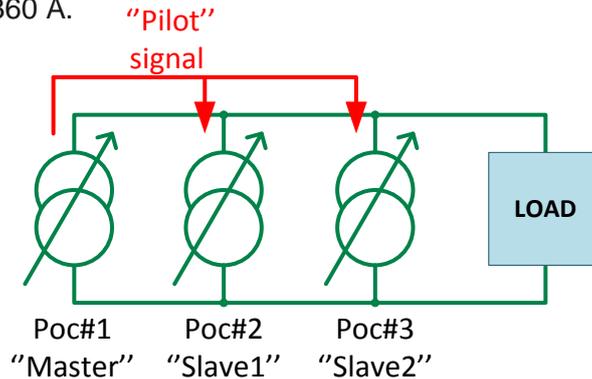
## APPLICATIONS

### Single-phase use



The "POC-1200" generator can be used alone to test all kind of loads like fuse, relay contact, circuit-breaker pole...

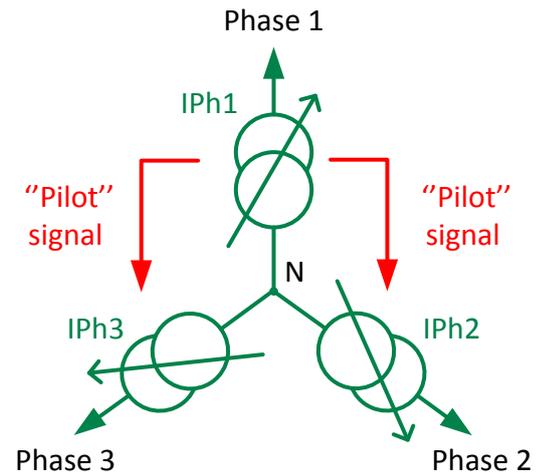
Up to three "POC-1200" can be connected in parallel to increase the current up to 360 A.



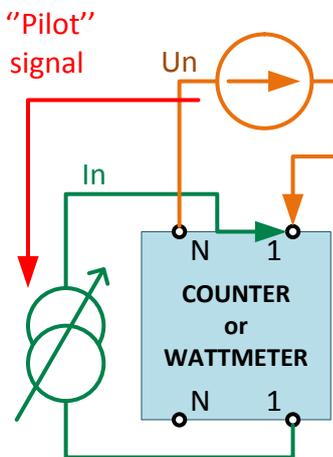
### Balanced three-phase use: test of differential, three-pole and four-pole breakers

Three generators "POC-1200" can be associated to create a three-phase current generator:

- The "cold poles" are connected to each other
- The POC-1200 "Phase 1" generate "Pilot" signals for POC-1200 "phase 2" and POC-1200 "phase 3".  
Dephasing can be fixed to 120° between phases or modified to create unbalanced systems



### Single-phase fictive power generator



Used with a voltage source, the POC-1200 allows to control and calibrate electric meter and wattmeter.

Its output is isolated from ground, which allows a 350 VRMS voltage between the output and ground (or mechanical grounding).

## 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 SCPI instructions or using our OPS software.

## SOFTWARE POSSIBILITIES

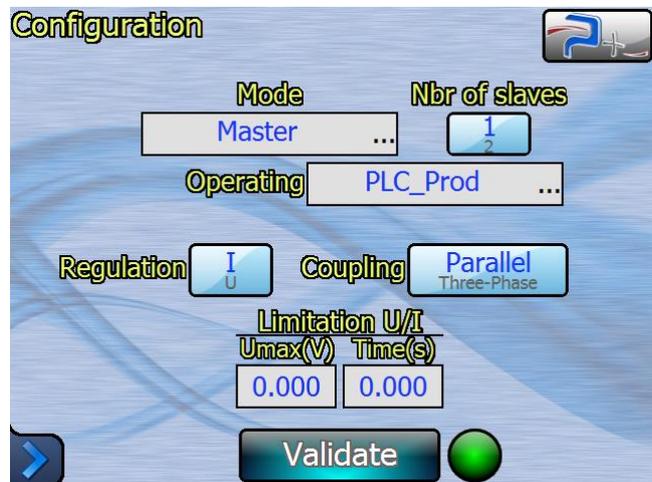
The software has several main screens:

- Configuration screen
- Static screen
- Measurement screen
- Sequence screen

### CONFIGURATION screen

The configuration screen allows to create a network with several generators, working as "Master / Slave".

This screen also allows to select the number of slaves and their coupling, the regulation mode "U" (voltage) or "I" (current) and the limitations in voltage or current regulations.





### STATIC screen (Single-Phase)

The user programs here:

- The output relay, ON or OFF,
- The frequency,
- The current or voltage value.



Exemple in Three-Phase configuration

### SEQUENCE screen

The user can program a sequence made of up to 9 steps in amplitude, frequency and duration.

Each step can be enabled or disabled.

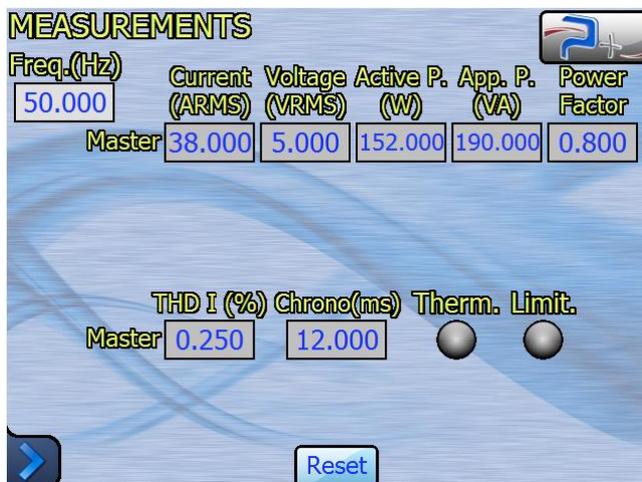
The sequence can be stored in the flash memory in the generator.

It can be executed several times with a delay between each execution.

Act.	Current (A)	Freq. (Hz)	Time(s)	Status	
1	50.000	50.000	0.200	<input type="checkbox"/>	AS
2	44.000	45.000	2.000	<input type="checkbox"/>	
3	30.000	100.000	0.200	<input type="checkbox"/>	
4	0.000	0.000	0.000	<input type="checkbox"/>	
5	0.000	0.000	0.000	<input type="checkbox"/>	
6	0.000	0.000	0.000	<input type="checkbox"/>	
7	0.000	0.000	0.000	<input type="checkbox"/>	
8	0.000	0.000	0.000	<input type="checkbox"/>	
9	0.000	0.000	0.000	<input type="checkbox"/>	

Repeat (0=∞) 1  
Delay(s) 0.000

Start Stop



### MEASUREMENT screen

As the generator includes an acquisition board, this screen shows:

- The frequency,
- The current and voltage value,
- The power, active, apparent and the power factor (exact measurement of the cosine of dephasing between voltage and current),
- Distortion,
- Generation duration (useful parameter when testing breakers).

### FEATURES

<b>OUTPUT: POWER</b>	
Power	
Rated power	1200 VA
Output	Direct (without transformer)
Regulation	Voltage or Current selectable on front panel
Load impedance	
Minimum value (1)	1 mΩ
Ranges Voltage-Current	
Voltage	0-10 VRMS
Current	0-120 ARMS
Voltage / Current frequency	
Frequency range	25 to 5000 Hz
Resolution	0.1 Hz
Voltage / Current accuracy	
Typical	0.1% of range + 0.1% of programmed value
Distortion at full power	
Max	< 0.3%
Output regulation for a mains variation of +6% -10%	
Max	< 0.1% of rated voltage or current
Noise	
Max RMS	0.02% of rated voltage or current
Max peak to peak	0.2% of rated voltage or current
Time necessary to obtain a stabilized current amplitude	
Max	½ period
Variation regarding temperature	
Typical	50 ppm/°C
Stability after 15 minutes of operation	
Max	< 0.1% of rated current
Insulation of output versus case ground	
Measured at 500 VDC	> 100 MΩ

**Notes:**



- (1) Using current regulation, in no way the load resistance of the current generator shall be less than this value, otherwise the device could be damaged.



OUTPUT: TIME AND FREQUENCY	
Bandwidth	
Full scale (2)	25 Hz to 5000 Hz
Small signals at -3 dB	25 kHz
Variation time of full scale using a square pilot signal	
Rise time 10% / 90%	< 10 $\mu$ s (voltage regulation) < 50 $\mu$ s (current regulation)
Fall time 10% / 90%	< 10 $\mu$ s (voltage regulation) < 50 $\mu$ s (current regulation)
Transfer time	< 10 $\mu$ s (voltage regulation) < 50 $\mu$ s (current regulation)

**Notes:**

- (3) Amplifiers are able to generate a signal at 5 kHz.  
At 5 kHz, amplitude is reduced of around 15%:

OUTPUT: IMAGES AND MEASURES	
Images outputs (3)	
Voltage image	0~ $\pm$ 10 V peak
Current image	0~ $\pm$ 10 V peak
Typical accuracy of measurement on touchscreen	
Voltage measure	0.3% of range + 0.3% of measured value
Current measure	0.3% of range + 0.3% of measured value

**Notes:**

- (4) Analog outputs "Image" are insulated of power outputs.

INPUT: AMPLITUDE AND FREQUENCY	
Input signal amplitude (external generator)	
Insulation (4)	> 10 M $\Omega$
Voltage (full output scale)	7,07 VRMS / $\pm$ 10V peak
Max voltage	$\pm$ 15 V peak
Input impedance	10 k $\Omega$
Input signal frequency	
Fundamental	25 to 5000 Hz
Harmonics (small signals)	Max 50 kHz

**Notes:**

- (5) "Pilot" analog inputs are insulated from power outputs.



<b>MAINS POWER SUPPLY</b>	
Mains network	
Number of phases	Single-Phase + Neutral + Earth
Voltage	230 VRMS ±10%
Frequency	47 - 63 Hz
Input current	
Max at full output power	9 ARMS
Protection	Magneto-thermal breaker
Dielectric strength mains input versus outputs connected to case ground	
Measured at 2500 VRMS / 50Hz	Current < 10 mA

<b>MECANICAL</b>	
Material and surface treatment	
Front panel	Aluminum painted RAL7021
Rear panel	Aluminum anodized black
Dimensions and weight	
Width	483 mm (19 inches)
Depth	600 mm
Height	222 mm (5U)
Weight	60 kg
Power connections	
Mains on amplifier rack	Plug MARECHAL 01N8017 (provided)
	Cover MARECHAL 01NA401710 (provided)
Current output	Copper bars

<b>ENVIRONMENTAL</b>	
Temperature and humidity	
Stockage temperature	-10°C à +85°C
Operation temperature	+0°C à +40°C
Humidity	10% - 90% non-condensing
Noise (fans at full speed)	
Measured at 1 m	< 70 dBA
Marking	
Marking	CE
Protection	IP20

### PROTECTIONS

#### In voltage regulation, against overload: current limitation

Amplifiers in linear technology can generate up to four times their rated power during short time. They are using a voltage regulation with current limitation: if current is higher than programmed value, a timer starts. At the end of a programmable time between 0.1 and 5 seconds, output voltage decreases to limit current to the programmed value.

#### In voltage regulation, against short-circuit on output: automatic output switch-off

Output is switched off on all phases et must be reactivated using touchscreen or an external command.

#### In Current regulation, 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.

#### In both regulation modes, 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.

### WARNING



In current regulation, when using generator with high output frequency, user must beforehand calculate the impedance of the load including the impedance of the cables. For example, a common cable may have an inductance of 10  $\mu\text{H}$  / m.

At 5000 Hz, it means an impedance of:  $10 \cdot 10^{-6} \times 2 \times \pi \times 5000 = 0.314 \Omega$  / m

At high frequency, we recommend to use cables with very low inductance and wired using a specific way. Please consult us for recommendations.

### ORDER INFORMATION

#### POC-1200-AC-DC-10V-120A

Voltage and Current generator

### DELIVERIES

The generator is delivered with its mains cable, its user manual, its performances list (acceptance test report), its UE declaration.

Specification may change without notice