

NGPS

New Generation Power Supplies



**EPICS IOC
Embedded**



**Linux OS
Embedded**


The NGPS series is a new series of power supplies with high stability and low noise for the most demanding accelerator applications – e.g. dipoles, quadrupoles, sextupoles.

Current and Voltage digital control loop: easy to be configured on different loads.

Stand-alone unit with local control and internal self-cooling by air convection.

Best-in-Class Temperature Coefficient combined with fast dynamic response.


Features

- 19" – 3U stand-alone unit
- Different current and voltage ratings
- up to 200 A – 50 V (10 kW)
- 10/100/1000 Ethernet interface
- 2x Fast SFP interface (10 kHz update)
- Current or Voltage regulation
- Low noise and Ripple –  transducers for current-sensing
- 1 ppm/K grade ("HS" version)
- High temperature and long-term stability
- Configurable digital control loop
- Internal protections and auxiliary readbacks
- Local display and control
- Embedded OS and EPICS IOC
- Dedicated software application

Applications

- Magnet Power Supply
- Laboratory Equipment
- Fast Current or Voltage control

The NGPS – New Generation Power Supply – series is set of power converters that combines know-how and technology to a power supply with outstanding performances and functionalities.

High-efficiency, low-noise and extreme temperature and long-term stability, obtained by the use of a DCCT of the  technology allow the NGPS units to be the perfect fit for high demanding applications – e.g. particle physics and medical accelerator magnets.

The control loops of current and voltage are performed via a combined FPGA – DSP – ARM technology that enables to obtain the desired dynamic response with any type of different load connected to the power unit.

An internal Operative System (Linux OS) and EPICS IOC make the integration of

of this power supply straightforward in any control system and installation.

Communication can be performed via a standard TCP-IP Gigabit Ethernet connection and simultaneously via two fast SFP links (optical or electrical) that enable for the update rate of the output current to reach and unprecedented 10 kHz value for a 10-kW power supply unit.





Dipole, quadrupole and sextupole magnets are typical applications of these power supply units that guarantee the high performances in terms of stability and noise as well of remote controlling and control system integration.

Internal protections against over-voltage (i.e. magnet stored energy), excessive current ripple, regulation fault, external interlocks, over temperature and ground current are implemented into the system with the same configurability level and easiness of use that



About CAEN ELS

CAEN ELS is a leading company in the design of power supplies and state-of-the-art complete electronic systems for the Physics research world, having its main focus on dedicated solutions for the particle accelerator community.

-  Power Supply Systems
-  Precision Current Measurements
-  Beamline Electronic Instrumentation
-  FMC & MTCA.4 – MicroTCA for Physics





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About OCEM

OCEM is a leading company in power electronics for scientific and industrial research, with a flexible customer-oriented approach and main commitment in Plasma physics, Particle accelerators, Superconductivity, Radio Frequency Systems, Transportation, Food processing and Medical Particle Therapy.

-  Magnet Power Supplies
-  High-Voltage Power Supplies
-  RF Systems
-  Turn-key Systems

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all of CAEN ELS and OCEM power supplies have always presented.

A dedicated software application is supplied with the units to easily configure and control the NGPS.

Commercially available models rated at 5 kW and 10 kW, with currents up to currents up to 200 A are available.

Ratings and requirements can be also matched upon customer's specifications and requests.

Technical Specifications	NGPS series
Regulation Type	Current- or Voltage- Control
Output current range	100 A 200 A
Maximum output voltage	50 V
Maximum output power	up to 10 kW
Power Factor	> 0.9
Efficiency	> 90 %
Current and Voltage resolution	20 bit
Closed-loop Bandwidth	> 100 Hz
Cooling	Forced Air Convection
Temperature Stability	5 ppm / K 1 ppm/K – "HS" version
Max Current/Voltage update rate	10 kHz
Mechanical Dimensions	19" x 3 U x 550 mm
Interfaces	10/100/1000 TCP-IP Ethernet Two (2) SFP <i>other interfaces available upon request</i>
External Interlocks/States	user-configurable "dry" contacts relay (magnetic contacts, NO and NC)
Other Features	Firmware remote update Interlock configurability Adaptable thresholds for trips and interlocks



0-FLUCS Technology

Ordering Options

NGPS 100-50	NGPS 100-50 – 5 kW Current- and Voltage-Controlled Digital Power Supply 100A@50V (5 kW)
NGPS 200-50	NGPS 200-50 – 10 kW Current- and Voltage-Controlled Digital Power Supply 200A@50V (10 kW)