

Linux OS



Embedded EPICS IOC



Waveform Generation



Embedded Oscilloscope



10-kW New Generation
High-Stability Digital Controlled
Power Supply Series

NGPS

Your **DIGITAL**
POWER ELECTRONICS
Partner.

- Digital control loop - adapt the power supply to any load condition in both Current- and Voltage-controlled modes
- Best-in-Class Temperature Coefficient combined with fast dynamic response
- Easy paralleling via front-panel SFP links
- Embedded Web-Server, 4-channel Oscilloscope and Waveform Generation for easy remote operation

FEATURES

- 19"-3U stand-alone crate
- 100 A-100 V, 200 A-50 V, 300 A-30 V
- Configurable digital control loop
- **PARALLEL operation up to 40 kW**
- Current or Voltage regulation
- 1 ppm/°C temperature dependence
- Excellent long-term stability
- External Analog Control and Auxiliary Analog Inputs
- Waveform Generation at 40 kps
- Embedded 4-channel Oscilloscope
- **Embedded Web-Server**
- External Interlock and Status Signals
- Local Display and Controls
- 10/100/1000 Mbit Ethernet
- Fast SFP interface (10 kHz update)
- **Water-cooled models available**
- Co-designed with **OCEM** POWER ELECTRONICS

APPLICATIONS

- Particle Accelerators
- Medical Accelerators
- Industrial / Plant Operation
- Battery, Supercapacitor, Fuel Cell Testing
- PV Cell Testing
- Medical Imaging

NGPS. The NGPS - New Generation Power Supply - series is a set of power converters that combines know-how and technology to a power supply with outstanding performance and functionalities. Models rated at **100 A / 100 V, 140 A / 50 V, 200 A / 50 V** and **300 A / 30 V** are commercially available and can be paralleled up to 40 kW - e.g. 400 A / 100 V or 800 A / 50 V. Different ratings as well as water-cooled versions are available upon request.

The use of a 0-FLUCS DCCT as the sensing element, combined with thermal stabilized electronic sections, make this power supply have the lowest temperature dependence on the market at less than 1 ppm/K.

The **10/100/1000 Ethernet** connection and the two SFP slots allow controlling the power converter in different modes. The paralleling of the units can be also performed via the fast SFP links

on the front panel (accessories are available for ordering).

The control loop, as for most of CAEN ELS power supplies, is digital in order to obtain the maximum flexibility and easiness of configuration to any connected load - e.g. resistive, capacitive or inductive.

The NGPS can be controlled either in **current-** or **voltage-control** modes and both control loops can be remotely configured.

Several **internal protections** are implemented and can be configured depending on the application.

Features like **waveform**, triggers, etc. are also present in these state-of-the-art units that also embed a Linux OS to give the maximum flexibility.

The units can be also locally controlled via a display and a local interface. performance and functionalities.

The units also have an **embedded oscilloscope** function that allows

About Us

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 and high-end industrial applications.

- Power Supply Systems
- Precision Current Measurements
- Beamline Electronics Instrumentation
- FMC and MicroTCA

CAEN ELS s.r.l.

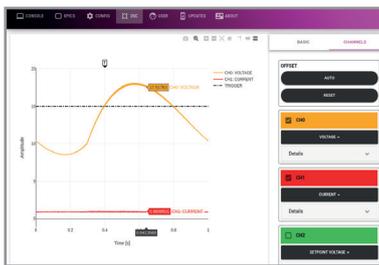
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Embedded WAVEFORM GENERATOR



Embedded 4-channel OSCILLOSCOPE



monitoring up to four (4) different values - e.g. current, voltage, etc. - with a sampling rate of 40 kHz by using an internal DMA.

An extra analog input on a BNC, spanning from 0 V to 10 V and with a bandwidth of 1 kHz, is also provided for compatibility with older

systems where a DAC was used in order to control the power unit. These units can be operated with the **Polarity Inverters** by CAEN ELS rated at 200 A, 420 A and 630 A (please visit www.caenels.com for more information).

Technical Specifications

NGPS

	100-100E	140-50E	200-50E	300-30E
Output Current Range	100 A	140 A	200 A	300 A
Output Voltage Range	100 V	50 V	50 V	30 V
Rated Output Power	10 kW	7 kW	10 kW	9 kW
Regulation Type	Constant Current (CC) or Constant Voltage (CV)			
Output Insulation	500 V			
Output Setting Resolution - CC/CV	> 19 bit			
Output Readout Resolution	24 bit			
CC Closed Loop Bandwidth (-3 dB)	> 100 Hz			
CV Closed Loop Bandwidth (-3 dB)	> 200 Hz			
Output Accuracy in CC	< 0.01 %			
Output Accuracy in CV	< 0.05 %			
Remote Sensing Compensation	up to 2 V			
Operating Current Range	2 - 100 %			
Temperature Stability	< 0.0002 %/K in CC mode < 0.005 %/K in CV mode			
Cooling	Forced air convection (optional water-cooling available)			
Efficiency	> 90 %			
Power Factor (at full-load)	> 0.92			
PARALLELING Option	up to 4 modules - via front SFP optical links			
Input Ratings	Three-phase 400 VAC ± 10 %, 50/60 Hz			
Operating Ambient Temperature	0 ... 40 °C			
Mechanical Dimensions	19" x 3U x 647 mm (including connectors)			
Weight	< 28 kg			
Communication Interfaces	1 x Ethernet 10/100/1000 Mbit TCP-IP and UDP 2 x SFP/SFP+ ports			
Internal Interlocks	Over-Temperature MOV Input Over-Voltage Main circuit-breaker for Over-Current Output Free-Wheeling Diodes Output Over-Current and Over-Voltage Earth Current Leakage Input Phase-Loss (DC-Link Under-Voltage)			
External Interlock/States	Input: 4 x user-configurable dry-contacts Output: 1 x solid-state relay + 1 x magnetic relay			
External Signals	Analog Control Input (0-10 V) Trigger Input			

Ordering Options - please refer to www.caenels.com for additional models and/or options

Ordering Code	Model	Description
NGPS100100EX	NGPS 100-100E	NGPS 100-100 - 10-kW, High-stability Digital PS 100A@100V (10 kW) -
NGPS140050EX	NGPS 140-50E	NGPS 140-50 - 7-kW, High-stability Digital PS 140A@50V (7 kW) - 400VAC
NGPS200050EX	NGPS 200-50E	NGPS 200-50 - 10-kW, High-stability Digital PS 200A@50V (10 kW) - 400VAC
NGPS300030EX	NGPS 300-30E	NGPS 300-30 - 9-kW, High-stability Digital PS 300A@30V (9 kW) - 400VAC