



## FAST-PS Series

### Bipolar Multi-Interface Digital Voltage- and Current-controlled Fast Power Supply

**100W 200W  
400W 600W**

The FAST-PS series is a new series of fast power supplies with dual interface for slow and fast control of the output current and/or voltage.

Current and Voltage digital control loop for easiness of configuration on different loads.

Stand-alone unit with local control, extended input range and internal self-cooling by air convection.

#### Features

- 19" – 1U stand-alone crate
- Different current and voltage ratings
- 10/100/1000 Ethernet interface
- 2x Fast SFP interface (10 kHz update)
- Current or Voltage regulation
- High analog bandwidth
- Low noise
- Configurable Digital control loop
- Internal protections and auxiliary readbacks
- Extended input range (90-260VAC)
- Local display and control

#### Applications

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

The FAST-PS series is the new generation of bipolar power supplies by CAEN ELS and it was designed in order to have state-of-the-art performances both in current- and voltage-control modes.

The 10/100/1000 Ethernet connection and the two SFP slots (which can be used as electrical or optical communication channels) allow to control the power converter in two different modes: the "slow" interface over the Ethernet (up to 1 kHz) is intended in cases where the power supply has to be controlled at lower rates and/or to set and monitor general parameters of the unit. The "fast" interface over the SFP allows to run feedback loops and fast corrections by reaching a maximum update rate of 10 kHz.

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.

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

Low noise and high bandwidth are just two of the main features of these power converters that are the ideal upgrade for the SY2604 and SY3634 system modules.





Internal protections – e.g. over-voltage, over-current - are implemented as well as external interlocks are present.

The units can be also locally controlled via a display and a local interface in order to set or monitor the main parameters and status of the power supply.

Different output current, voltage and power ratings are commercially available.

#### 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.

-  Magnet Power Supply Systems
-  Beamline Electronic Instrumentation
-  Precision Current Transducers
-  MTCA.4 – MicroTCA for Physics

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## Technical Specifications

## FAST-PS Series

Regulation Type	Current- or Voltage- Control
Output current range	± 5 A ± 10 A ± 20 A ± 30 A
Output voltage range	± 20 V ± 40 V ± 80 V
Maximum output power	up to 600 W
Current setting resolution	18 bit
Voltage setting resolution	18 bit
Output current readback	20 bit
Output voltage readback	20 bit
Output current ripple*	30 ppm / FS
Output current stability	50 ppm / FS
Output voltage stability	50 ppm / FS
Switching Frequency	100 kHz
Closed Loop Bandwidth	>10 kHz
Max Current/Voltage update rate	10 kHz
Accuracy	0.05%
External Interlocks/States	2 Inputs: user-configurable "dry" contacts 1 Outputs: relay (2 magnetic contacts)
Internal Interlocks	DC Link Under-Voltage MOSFETs Over-Temperature Over-Current Over-Voltage Earth Fault Current Regulation Fault Excessive Current Ripple
Hardware protections	Input Fuses Earth Fuse Over-Voltage
Auxiliary ADC Read-Backs	DC Link Voltage Ground Leakage Current MOSFETs Temperature Shunt Temperature
Cooling	On-Module Self-Regulated Fans
Drivers	EPICS / TANGO
Connection	1 x Ethernet 10/100/100 2 x SFP ports
Extra-Features	Point-by-Point Current Waveform Loading User-definable interlock thresholds, active levels and timings Firmware Remote Updates
Dimensions	19"– 1U – 365 mm (W x H x D)
Input Voltage	90/260 V(AC) (47-63 Hz)
Local Control / Monitor	Graphic Display and Encoder 6 LEDs

\* measured on 1mH load

## Ordering Options

FASTPS052001	<b>FAST-PS 0520-100</b>	<b>FAST-PS 0520-100</b> - Fast Corrector Current- and Voltage-Controlled Digital Power Supply ±5A@±20V (100W max)
FASTPS054002	<b>FAST-PS 0540-200</b>	<b>FAST-PS 0540-200</b> - Fast Corrector Current- and Voltage-Controlled Digital Power Supply ±5A@±40V (200W max)
FASTPS102002	<b>FAST-PS 1020-200</b>	<b>FAST-PS 1020-200</b> - Fast Corrector Current- and Voltage-Controlled Digital Power Supply ±10A@±20V (200W max)
FASTPS058004	<b>FAST-PS 0580-400</b>	<b>FAST-PS 0580-400</b> - Fast Corrector Current- and Voltage-Controlled Digital Power Supply ±5A@±80V (400W max)
FASTPS104004	<b>FAST-PS 1040-400</b>	<b>FAST-PS 1040-400</b> - Fast Corrector Current- and Voltage-Controlled Digital Power Supply ±10A@±40V (400W max)
FASTPS202004	<b>FAST-PS 2020-400</b>	<b>FAST-PS 2020-400</b> - Fast Corrector Current- and Voltage-Controlled Digital Power Supply ±20A@±20V (400W max)
FASTPS204006	<b>FAST-PS 2040-600</b>	<b>FAST-PS 2040-600</b> - Fast Corrector Current- and Voltage-Controlled Digital Power Supply ±20A@±40V (600W max)
FASTPS302006	<b>FAST-PS 3020-600</b>	<b>FAST-PS 3020-600</b> - Fast Corrector Current- and Voltage-Controlled Digital Power Supply ±30A@±20V (600W max)