FAST-PS-M

Monopolar Multi-Interface Digital Voltage- and Current-controlled Fast Power Supply

FAST-PS-M

- **The FAST-PS-M series is a new series of fast power supplies with dual interface for standard 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
- **60A-10V**, **75A-8V** and **100A-6V** models
- 10/100/1000 Mbit Ethernet interface
- 2x Fast SFP interface (10 kHz update)
- Current and Voltage regulation
- High stability with ELICS
- Analog control and Trigger - *optional*
- Low noise
- Configurable Digital control loop
- Internal protections and auxiliary readbacks
- Extended input range (90-260VAC)
- Local display and control
- **VISUAL-PS** free software available

APPLICATIONS

- Magnet Power Supplies
- Laboratory Equipment
- Current or Voltage Control

The FAST-PS-M series is the new generation of monopolar 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. Models rated at **600 W** and currents up to **100 A** are commercially available.

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 "standard" 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 systems where higher performances are needed.

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.

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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 Electronic Instrumentation
- FMC & MTCA.4 – MicroTCA for Physics

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Technical Specifications — FAST-PS-M Series

	6010	7508	1006
Regulation Type	Current- or Voltage- Control		
Output current range	60 A	75 A	100 A
Output voltage range	10 V	8 V	6 V
Maximum output power	up to 600 W		
Current setting resolution	18 bit		
Voltage setting resolution	18 bit		
Output current readback	24 bit		
Output voltage readback	24 bit		
Output current ripple*	30 ppm / FS		
Output current stability	50 ppm / FS		
Output voltage stability	50 ppm / FS		
Switching Frequency	300 kHz (equivalent)		
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 Over-Temperature Over-Current Over-Voltage Earth Fault Current Regulation Fault Excessive Current Ripple DCCT OK		
Hardware protections	Input Fuses Earth Fuse Over-Voltage		
Auxiliary ADC Read-Backs	DC Link Voltage Ground Leakage Current Temperature		
Cooling	On-Module Self-Regulated Fans		
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 Analog Control Input (1 kHz BW) - *optional*		
Dimensions	19"– 1U – 365 mm (W x H x D)		
Input Voltage	90/260 V(AC) (47-63 Hz)		
Efficiency	up to 85 %		
Power Factor	> 0.95		
Local Control / Monitor	Graphic Display and Encoder 6 LEDs		

* measured on 1mH load

Linux OS Embedded

EPICS IOC

0-FLUCS Technology

Ordering Options

FASTPSM6010A	FAST-PS-M 6010	**FAST-PS-M 6010** – Current- and Voltage-Controlled Digital Power Supply 60A@10V
FASTPSM7508A	FAST-PS-M 7508	**FAST-PS-M 7508** – Current- and Voltage-Controlled Digital Power Supply 75A@8V
FASTPSM1006A	FAST-PS-M 1006	**FAST-PS-M 1006** – Current- and Voltage-Controlled Digital Power Supply 100A@6V
FASTPSACINXA	FAST-PS-AN-IN	FAST-PS-M Analog Control Input (0-10V) on BNC connector – *optional – 1-kHz Bandwidth*
FASTPSTRINXA	FAST-PS-TR-IN	FAST-PS-M Trigger Input on BNC connector - *optional*

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