Linux OS

Embedded EPICS IOC

Waveform Generation

Embedded Oscilloscope

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

FAST-PS-M

Your **DIGITAL POWER ELECTRONICS** Partner.

- **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**
- **30A-30V, 60A-10V, 75A-8V and 100A-6V**
- **10/100/1000 Mbit Ethernet interface**
- **2x Fast SFP interface (10 kHz update)**
- **Current and Voltage regulation**
- **High stability with** FLUCS
- **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**
- **Embedded Web-server**
- **Embedded AWG and 4-channel Oscilloscope**

APPLICATIONS

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

FAST-PS-M. 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 **900 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.

About Us

ELS Instruments (formely 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

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0-FLUCS Technology

Technical Specifications

FAST-PS-M

	3030	6010	7508	1006
Regulation Type	Current-or- Voltage-Control			
Output Current Range	30 A	60 A	75 A	100 A
Output Voltage Range	30 V	10 V	8V	6V
Rated Output Power	900 W	600 W	600W	600 W
Current setting resolution	18 bit			
Voltage setting resolution	18 bit			
Current Readback	24 bit			
Voltage Readback	24 bit			
Output current ripple*	30ppm / FS			
Output current stability	50ppm / FS			
Output voltage stability	50ppm / FS			
Equiv. Switching Frequency	300 KHz (equivalent)			
Max Current/Voltage update	10KHz			
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			
Connections	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 (W x H x D)	600W models: 19"– 1U – 425 mm (including connectors) 900W models: 19"– 1U – 466 mm (including connectors)			
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			

Ordering Code	Acronym	Description
FASTPSM3030A	FAST-PS-M 3030-900	FAST-PS-M 3030-900 – Current- and Voltage-Controlled Digital Power Supply 30A@30V (900W max)
FASTPSM6010A	FAST-PS-M 6010	FAST-PS-M 6010 – Current- and Voltage-Controlled Digital Power Supply 60A@10V (600W max)
FASTPSM7508A	FAST-PS-M 7508	FAST-PS-M 7508 – Current- and Voltage-Controlled Digital Power Supply 75A@8V (600W max)
FASTPSM1006A	FAST-PS-M 1006	FAST-PS-M 1006 – Current- and Voltage-Controlled Digital Power Supply 100A@6V (600W max)
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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