FAST-PS-1K5

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

FAST-PS-1K5

- **Digital control loop – adapt the power supply to any load condition in both Current- and Voltage-controlled modes**
- **Low-noise and the lowest temperature dependence on the market at 1 ppm/K**
- **Quench protection for superconducting magnet applications**

FEATURES

- 19” – 2U stand-alone crate
- Models up to 100 A and up to 100 V
- Configurable digital control loop
- 10/100/1000 Ethernet interface
- PARALLEL operation
- Current or Voltage regulation
- Low noise and Ripple - 0-FLUCS DCCT
- < 1 ppm/K temperature dependence
- Excellent long-term stability
- Quench protection for SC magnets
- External Analog Control and Temperature Sensor Inputs
- Fast SFP interface (10 kHz update)
- Embedded Linux OS
- **VISUAL-PS** free software available

APPLICATIONS

- Particle Accelerator
- Superconducting Magnets
- Military and Aerospace
- Industrial / Plant Operation
- Battery, Supercapacitor, Fuel Cell Testing
- Motor & Magnet Drives
- PV Cell Testing
- Medical Imaging

The FAST-PS-1K5 series is the new generation of bipolar power supplies by CAEN ELS and it is designed in order to have state-of-the-art performances both in current- and voltage-control modes. Models **up to 100 A** and **up to 100 V** are available in order to satisfy any need.

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 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 FAST-PS-1K5 can be controlled either in **current-** or **voltage-control** modes and both control loops can be remotely configured.

Internal protections – e.g. over-voltage, over-current - are implemented as well as external interlocks are present. A **quench protection** feature is embedded in order to use these power units with superconducting magnets.

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 in order to set or monitor the main parameters and status of the power supply.

CAENels
Gear For Science

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

CAEN ELS s.r.l.
via Vetraia 11
55049 – Viareggio (LU)
Italy

info@caenels.com
www.caenels.com

www.caenels.com

Linux OS Embedded

EPICS IOC

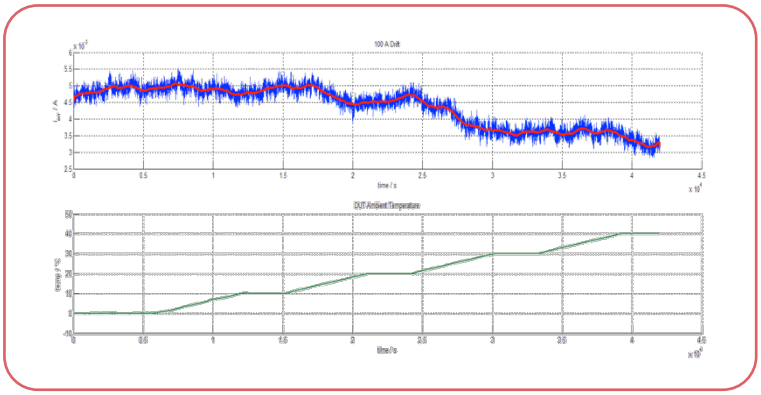
ELUCS Current Transducers

Technical Specifications

	FAST-PS-1K5			
	15-100	30-50	50-30	100-15
Output Current	±15 A	±30 A	±50 A	±100 A
Output Voltage	±100 V	±50 V	±30 V	±15 V
Maximum Output Power	1.500 W			
Topology	Bipolar			
Control Mode	Current (CC) and Voltage (CV) Control			
Floating Output	Up to 200 V			
Remote Sensing	Up to 500 mV			
Current Sensing	ELUCS High-Precision Current Transducers			
Analog Control Input	Yes			
Current Setting Resolution	150 µA	250 µA	400 µA	800 µA
Voltage Setting Resolution	1 mV	500 µV	300 µV	150 µV
Output Readback Resolution	24-bit			
Noise + Ripple (RMS)	< 0.01 % on resistive load < 0.005 % on 1 mH load			
Temperature Coefficient	< 0.0002 % / K (CC mode) < 0.005 % / K (CV mode)			
Long Term Stability (8 h)	< 0.0005 % / K (CC mode) < 0.005 % / K (CV mode)			
Accuracy	< 0.01 % (CC mode) < 0.05 % (CV mode)			
Analog Bandwidth (-3 dB)	> 2 kHz			
Control/Communication Interface	Ethernet TCP-IP SFP/SFP+			
Local Control	Colour display with multi-function navigation switch			
External Signals	2 External Interlocks 2 Status signals – 1 magnetic relay and 1 solid state Trigger Input Analog Control Input (BW = 1 kHz) External Temperature Sensor			
Extra Features	Waveform execution Quench Protection Remote Firmware Update Linux OS on-board			
Mechanical Dimensions (L × W × H)	19" x 2U x 550 cm			
Operating Temperature	0 … 45 °C			

FAST-PS-1K5

*The HIGHEST STABILITY on the market at **less than 1 ppm/K***



Ordering Options

FASTPS015100	FAST-PS-1K5 15-100	1.5-kW Fast High-Stability Current- and Voltage-Controlled Digital Power Supply ±15A@±100V
FASTPS030050	FAST-PS-1K5 30-50	1.5-kW Fast High-Stability Current- and Voltage-Controlled Digital Power Supply ±30A@±50V
FASTPS050030	FAST-PS-1K5 50-30	1.5-kW Fast High-Stability Current- and Voltage-Controlled Digital Power Supply ±50A@±30V
FASTPS100015	FAST-PS-1K5 100-15	1.5-kW Fast High-Stability Current- and Voltage-Controlled Digital Power Supply ±100A@±15V

CAENels
Gear For Science

Rev 1.0 – Printed in January 2016.