CAENels
Gear For Science

Product Overview

Linux OS

Embedded EPICS IOC

Waveform Generation

Embedded Oscilloscope

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

Your **DIGITAL POWER ELECTRONICS** Partner.

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**
- **Optional 19"-1U crate for full 4-quadrant operation of the unit at full-power**
- **Embedded Web-Server, 4-channel Oscilloscope and Waveform Generation**

FEATURES

- **19"-2U stand-alone crate**
- **Models up to 100 A and up to 100 V**
- **Configurable digital control loop**
- **PARALLEL operation**
- **19"-1U optional crate for FULL 4-QUADRANT operation** NEW!
- **Current or Voltage regulation**
- **< 1 ppm/K temperature dependence**
- **Excellent long-term stability**
- **External Analog Control and Temperature Sensor Inputs**
- **Fast SFP interface (10 kHz update)**
- **Waveform Generation at 100 ksps**
- **Embedded 4-channel Oscilloscope**
- **Embedded Web-Server**
- **External Interlock and Status Signals**
- **Local Display and Controls**
- **10/100/1000 Mbit Ethernet**

APPLICATIONS

- **Particle Accelerators**
- **Superconducting Magnets**
- **Industrial / Plant Operation**
- **Battery, Supercapacitor, Fuel Cell Testing**
- **Motor & Magnet Drives**
- **PV Cell Testing**
- **Medical Imaging**

FAST-PS-1K5. 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. An optional 1U crate is available to enable the **4-Quadrant operation** at the 1.5 kW full-power

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.

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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 Electronics Instrumentation
- FMC and MicroTCA

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Ordering Codes

Ordering Code	Acronym
FASTPS015100	FAST-PS-1K5 15-100
Description	
1.5-kW Fast High-Stability Current- and Voltage-Controlled Digital Power Supply ±15 A @ ±100 V	

Ordering Code	Acronym
FASTPS030050	FAST-PS-1K5 30-50
Description	
1.5-kW Fast High-Stability Current- and Voltage-Controlled Digital Power Supply ±30 A @ ±50 V	

Ordering Code	Acronym
FASTPS050030	FAST-PS-1K5 50-30
Description	
1.5-kW Fast High-Stability Current- and Voltage-Controlled Digital Power Supply ±50 A @ ±30 V	

Ordering Code	Acronym
FASTPS100015	FAST-PS-1K5 100-15
Description	
1.5-kW Fast High-Stability Current- and Voltage-Controlled Digital Power Supply ±100 A @ ±15 V	

4-Quadrant Optional Units

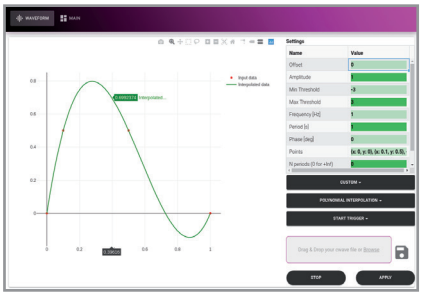
Ordering Code	Acronym
F1K5D4050030	F1K5-DISS-50-30
Description: 4-Quadrant Operation Crate for FAST-PS-1K5 50 A - 30 V	

Ordering Code	Acronym
F1K5D4100015	F1K5-DISS-100-15
Description: 4-Quadrant Operation Crate for FAST-PS-1K5 100 A - 15 V	

FAST-PS-1K5

Technical Specifications	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 **4-Quadrant with optional unit**			
Control Mode	Current (CC) and Voltage (CV) Control			
Floating Output	Up to 200 V			
Remote Sensing	Up to 500 mV			
Current Sensing	0-FLUCS 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 with 4-Quadrant Dissipative Unit - *optional*



Embedded WAVEFORM GENERATOR

Embedded 4-channel OSCILLOSCOPE

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