



HVPS/SC

10 kV Power Supply with Integrated Source Control

POWERFUL PERFORMANCE IN A COMPACT DESIGN

HVPS/SC is a solid state high voltage power supply with an integrated source controller used in electron beam (e-beam) vacuum deposition systems. Its revolutionary design makes it one of the smallest, most efficient, and feature packed high voltage power supplies on the market.

POWERFUL PERFORMANCE

HVPS/SC has adjustable output voltage from 4 to 10.2 kV and adjustable emission current from 10 to 999 mA. This makes it compatible with a variety of electron beam guns. Zero voltage switching (ZVS) technology and near unity power factor help make the HVPS/SC over 90% efficient with less than 1% emission current ripple for a precise and reliable electron beam.

BUILT TO LAST

HVPS/SC is rugged and reliable. Designed for continuous duty and/or continuous arcing, full arc recovery can be achieved in just 15 ms. A low stored energy of less than 2 Joules of energy at 10 kW helps quickly dissipate arcs with minimal effect on rate control. Each HVPS/SC is fully tested and burned-in to ensure proper operation and durability.

COMPACT DESIGN AND EASY INTEGRATION

HVPS/SC combines a power supply and source controller with a direct-to-filament design, eliminating the need for an external filament transformer. This space-saving design uses less than half the rack space of most competitive power supplies and source controllers and makes integration into the tool easy. Connection to a PC or PLC can be made through standard USB, RS-232, and RS-485 connections.

FEATURES AT A GLANCE

- 4 – 10.2 kV output voltage, 10 to 999 mA emission current output
- Ultra-low stored energy (less than 2 J @ 10 kW output)
- 12 V, 70 A integrated filament supply to regulate emission
- Near unity power factor and >90% efficient
- Accurate: <1% ripple and regulation
- Fast arc response: full arc recovery in about 15 ms
- Rugged: rated for continuous duty and continuous arcing, or anything in between
- Short circuit/over-heating/over voltage protection
- Compact: 3 U height
- Programmable arc rate threshold and arc delay
- Integrated source control (filament current supply) and filament transformer for easy installation
- Integrated power line filter

SPECIFICATIONS

Electron beam gun outputs	One
Emission current	10 to 999 mA
HV output voltage	4k – 10.2 kV (negative relative to ground)
Filament current range	0 – 70 Amps, 12V
Filament current regulation	Less than 1%
Energy storage	Less than 2 J at 10 kW output
Ripple and regulation	Less than 1%
Arc event response	Full recovery in about 15 ms
Short circuit protection	Yes
Over-voltage protection	Yes
Over-heating protection	Yes
User interface	240 x 64 backlit high-contrast, long-life LCD, seven status indicators Spin knob, dedicated system keys
Interface input rating	5-36 V (ac) • V (dc) isolated or grounded non-isolated, contact closure
Digital input functions	Door/Safety Interlock, Remote Mode, Remote On, Vac and Water interlocks
Filament output	Supply cable
Analog input	0 – 10 V emission current control input
Analog outputs (2)	0 – 10 V indicating 0 – 1000 mA 0 – 10 V indicating 0 –10 kV
Relay rating/output functions	SPST, 30 V (dc) or RMS, 2 Amp, Power Supply On, Power Supply Ready
Communications	USB, RS-232/RS-485
Operating temperature	10° to 40°C
Cooling	Forced air, two internal fans
Size	Front panel: (H x W) Standard 3U height, full rack width 13.21 x 48.26 cm (5.2 x 19.0 in.) Case: (H x W x D) 13.21 x 43.43 x 43.69 cm (5.2 x 17.1 x 17.2 in.)
Weight	22.7 kg (50 lb.)
Input power	3-phase, 208 or 400 V
Power factor	0.99 (near unity)
Compliance	CE, RoHS

ORDERING INFORMATION

HVPS/SC-208	HVPS/SC High Voltage Power Supply (Low mains voltage – 200-240 V)
HVPS/SC-400	HVPS/SC High Voltage Power Supply (High mains voltage – 380-400 V)

