

HITEK POWER XR1000

1 KW X-RAY POWER SUPPLY MODULE

The HiTek Power® XR1000 series is a component power supply for industrial x-ray systems, elemental analysis equipment, x-ray diffraction spectrometers, and materials process monitoring applications. It incorporates a floating filament supply that is automatically controlled by the integral beam loop. It is based on the proven HiTek Power IGBT converter, ensuring high efficiency and reliable operation. The XR1000 units are available with either an analog or RS-232 control interface.

PRODUCT HIGHLIGHTS

- 1 kW of output power
- Extensive tube protection facilities
- Robust IGBT converter design
- Short-circuit and overload protection
- High stability
- High-accuracy BEAM CURRENT control
- Low ripple
- Analog or RS-232 interface
- CE Marked for EU LV Directive 2006/95/EC

TYPICAL APPLICATIONS

- X-Ray Fluorescence (XRF)
- X-Ray Diffraction (XRD)
- X-Ray Reflectivity (XRR)
- X-Ray Imaging (XRI)

ELECTRICAL SPECIFICATIONS

Output Power	1 kW, max, at full rated output voltage and current			
Output Voltage	0 to -60 kV or 0 to -90 kV			
Output Current	60 kV unit: 0 to 16 mA			
	90 kV unit: 0 to 11 mA			
Input Voltage	230 VAC ±10% (207 to 253 VAC) 47 to 63 Hz, single phase and earth			
Input Current	Not exceeding 12A _{rms}			
Polarity	Negative			
Specification Range	Specifications apply above 5% of rated output voltage and current			
Ripple	< 0.25% of setting plus 0.25% of rating, peak to peak			
Arc Count and Extinguish (ACE)	Each time the ACE system detects an arc, it blanks the supply off for a brief period to extinguish the arc. The unit is then allowed to recover. If more arcs occur, they are counted to determine the arc rate; if this exceeds a safe level, the power supply is shut down. The parameters are factory set.			
Metering	Provided as part of an alphanumeric display; Voltages are displayed with a resolution better than 0.5% of rated output. Current is displayed with a resolution of better than 1.5% of rated output			
Status Indication	The alphanumeric display shows the status of the interlock and the reason for any trip condition.			
Voltage Regulation				
Line	< 0.05% change in output voltage for a 10% change in line voltage			
Static Load	< 0.05% change in output voltage for a 5 to 100% change in output current			
Dynamic Load	$< 5\%\ change\ in\ output\ voltage\ for\ a\ 5\ to\ 100\%\ change\ in\ output\ current,\ recovery\ to\ within\ 1\%\ of\ previous\ setting\ within\ 200\ msec$			
Beam Current Regulation				
Line	< 0.05% change in output current for a 10% change in line voltage			
Load	< 0.05% change in output current for a 60% change in rated output voltage			
Stability and Drift				
Temperature Coefficient	<100 ppm/°C			
Drift	< 0.1% of rating over an eight-hour period after 30 min warmup			
Filament Specification				
Voltage	8 VDC, max, referenced to the negative output voltage			
Current	0.5 to 5 ADC			
Environmental				
Operating Temperature	0 to +40°C (50 to 104°F)			
Storage Temperature	-20 to +70°C (-4 to 158°F)			
Humidity	80% max relative humidity up to 31°C (88°F), reducing linearly to 50% at 40°C (104°F); non-condensing (ref BS EN61010-1)			
Altitude	Sea level to 2000 m (6500')			
Cooling	Fan assisted with fan fail detection. Air inlets at the sides of the unit with exhaust on the rear panel. Minimum air flow required is 3 m/sec at the air intake on the side panels.			
Usage	Indoor use only			
Installation Category	II (BS EN61010)			
Pollution Degree	2 (BS EN61010)			
Portability	Non-portable			



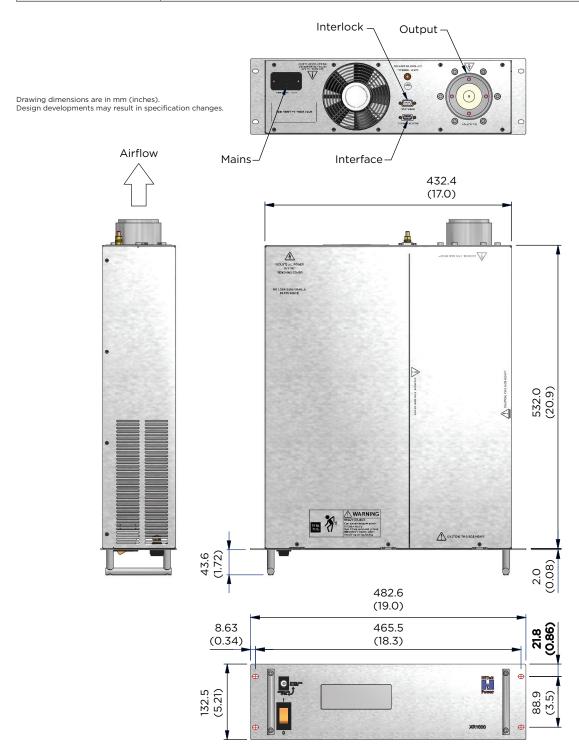
ELECTRICAL SPECIFICATIONS (CONTINUED)

Safety, Protection, and Compliance			
EMC	This power supply is intended for installation as part of a system. Basic EMC filtering is provided.		
RoHS	The XR1000 is currently built to non-RoHS standard. This unit can, however, be configured to meet the requirements of RoHS where significant customer demand requires it, although please note that this will have an impact on delivery timescales.		
Protection	Over-temperature		
	Over-voltage		
	Fan failure detection		
	Filament current limit		
	Series output resistance		
Safety	Meets the requirements of the Low Voltage Directive (LVD), 2006/95/EC, by complying with BS EN61010-1 when installed as a component part of other equipment and is CE marked accordingly		
Safety Class	Equipment class 1		



MECHANICAL SPECIFICATIONS

Dimensions	See outline drawing below
Weight	33 kg (73 lb)



INTERFACE

Connections				
Mains	IEC320-C2016 A			
Safety Earth	M5 stud			
HV Output	R10, 100 kV receptacle on rear of unit (cable available separately)			
	Terminal C: HV output			
	Terminal L: Filament			
	Terminal S: No connection			
Remote Interlock 9-Way, male, D-Type Connector	X-RAY ENABLED NO INTERLOCK X-RAY ENABLED INTERLOCK Y-RAY ENABLED NO INTERLOCK X-RAY ENABLED NO INTERLOCK Y-RAY ENABLED NO NO CONNECTION			
	X-ray enabled and HV output are both a set of isolated changeover contacts. Interlock is an input; shorting the pins closes the interlock.			
Digital Remote Control 9-Way, Female, D-Type Connector	THE CONTRACTION			
	RS-232 Interface 9600 Baud, 8 bit, 1 start, 1 stop, no parity			
Analog Remote Control 25-Way, Female, D-Type connector	OVER-VOLTAGE INDICATION OVER-TEMPERATURE INDICATION kv MONITOR kv MONITOR TRIP INDICATION HV ON/OFF HI MA PROGRAM MONITOR kv PROGRAM MONITOR kv PROGRAM MONITOR kv PROGRAM MONITOR FILAMENT V MONITOR FILAMENT V MONITOR HV ON/OFF LO kv DEMAND INTERLOCK CLOSED INDICATION NO CONNECTION NO CONNECTION NO CONNECTION 13 TAMA MONITOR BEAM I DEMAND TILAMENT I LIMIT EXCESSIVE ARCING INDICATION FILAMENT STANDBY HI FILAMENT I MONITOR FILAMENT I MONITOR FILAMENT I LIMIT INDICATION O V MA LIMIT O V			



HITEK POWER XR1000 SERIES

ORDERING INFORMATION

Model	Output Voltage	Output Current
XR1000/603	-60 kV	-16 mA
XR1000/903	-90 kV	-11 mA

All logical indicators are open collector outputs rated at 16 V (max) in the off state. An internal 100 Ω resistor is connected in series with the open collector transistor. The pull down voltage is 0.9 V plus the internal resistor drop. The rated current is 10 mA.

All analog voltage and current monitors are 0 V to +10 V \pm 0.5% \pm 20 mV, with respect to 0 V, representing 0 to rated output. Signal impedance is less than 100 Ω and min imum external load resistance is 2 k Ω .

All analog voltage and current inputs are 0 to *10 V with respect 0 V, representing 0 V to rated output $\pm 0.2\%$ of setting $\pm 0.1\%$ of rating. Input impedance is greater than 50 k Ω .



ABOUT ADVANCED ENERGY

Since 1981, Advanced Energy (AE) has perfected how power performs for its customers. For both end users and OEMs, AE's comprehensive portfolio of standard and custom high voltage components precisely match system specifications to deliver unparalleled energy, quality, and performance. Through close customer collaboration, design expertise, application insight, and world-class support, AE creates successful partnerships and enables customers to push the boundaries of innovation and stay ahead of evolving market needs.

PRECISION | POWER | PERFORMANCE



CAUTION: High Voltage Read and understand all documentation before you install, operate, or maintain Advanced Energy high voltage power supplies. Follow all safety instructions and precautions to protect against property damage and serious or possibly fatal bodily injury. Never defeat safety interlocks or grounds.

For international contact information, visit advanced-energy.com.

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многоканальный

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001 Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

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Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

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