HITEK POWER OL600W SERIES

600 W HIGH VOLTAGE POWER SUPPLIES

The HiTek Power® OL600W series range of single output high voltage power supplies meets the exacting requirements found in electron beam, ion beam, and x-ray systems, as well as ion and chemical vapor deposition, electrostatic precipitation, and other 24/7 production processes.

PRODUCT HIGHLIGHTS

- Output voltages from 1 to 80 kV available with customer-defined derivatives upon request
- High packing density: 600 W in 1U (80 kV 2U)
- High stability
- Exceptional reliability
- Arc count and extinguish (ACE)
- Full local and remote control monitoring
- Voltage or current control
- Complies with SEMI F47 standard
- CE marked for EU LV directive 2006/95/EC
- RoHS compliant to EU directive 2011/65/EU
- Custom options available

TYPICAL APPLICATIONS

- Electron beam
- Ion beam
- X-ray
- Lasers
- HV pulse generator bias
- HV amplifier bias
- Electrostatic precipitation
- Chemical purification

ELECTRICAL SPECIFICATIONS

Specifications	
Output Power	600 W max at full rated output voltage and current
Output Voltage	Units available with max output from 1 to 80 kV
Output Current	Up to 600 mA for 1 kV and 7.5 mA for 80 kV
Input Voltage	185 to 255 VAC or 103 to 127 VAC (auto range selection). Range does not change after power up.
	47 to 63 Hz single phase and earth
Input Current	Not exceeding 6 Arms (185 to 255 VAC)
	Not exceeding 12 Arms (103 to 127 VAC)
Polarity	Positive or negative to order
Specification Range	Specifications apply above 5% of rated output voltage
Voltage Ripple	
Voltage Mode	< 0.1% of rated output voltage +2 Vpk to pk
	< 0.02% of rated output voltage +0.5 Vrms
Current Mode	< 0.5% of rated output voltage +2 Vpk to pk
	< 0.1% of rated output voltage +0.5 Vrms
Voltage Regulation	
Line	< 0.05% ±0.5 V change in output voltage for a 10% change in line voltage
Load	< 0.05% ±0.5 V change in output voltage for 0 to 100% change in load current
Current Regulation	
Line	< 0.5% of rated output current for a 10% change in line voltage
Load	< 0.5% of rated output current for 0 to 100% change in output voltage
Recovery Time	< 500 ms to within 0.1% of previous operating level following a short circuit or arc.
	Max overshoot 2% of rated output voltage.
Temperature Coefficient	< 100 ppm/°C
Drift	< 0.1% in 8 h after 3 h warmup at constant load, line, and temperature
Efficiency	> 75%
Protection	Over temperature
	Over voltage
	Fan failure
	Current limit
	Series output resistance
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.

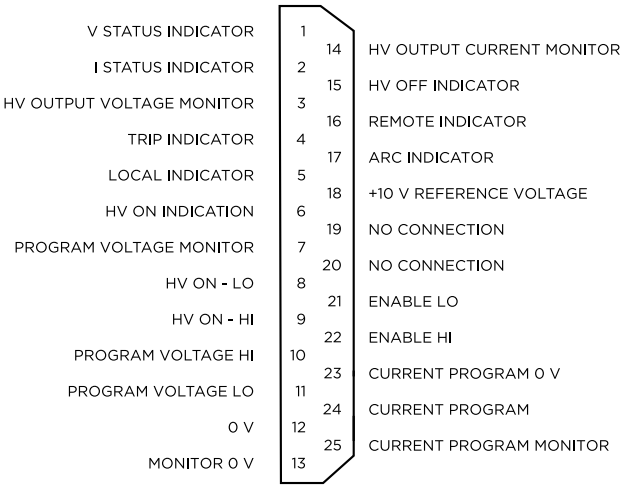
ELECTRICAL SPECIFICATIONS (CONTINUTED)

Environmental	
Operating Temperature	0 to 40°C (32 to 140°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)
Humidity	80% max relative humidity up to 31°C (37°F) reducing linearly to 50% at 40°C (104°F). Non-condensing.
Altitude	Sea level to 2000 m (6500')
Safety	CE marked to meet the requirements of the Low Voltage Directive, 2006/95/EC, by complying with BS EN61010-1 when installed as a component part of compliant equipment.
Safety Class	Equipment Class 1
Usage	Indoor use only
Installation Category	II (BS EN61010)
Pollution Degree	2 (BS EN61010)

Physical Specifications	
Portability	Non-portable
EMC	Intended for installation as a component of a system and designed to meet:
	BS EN55022 class B for conducted and radiated emissions
	BS EN61000-4-2 ESD – levels ±4 kV contact, ±8 kV air discharge
	BS EN61000-4-4 Fast transients on mains input – levels ±2 kV
	BS EN61000-4-5 Surges – levels ±2 kV line to earth, ±1 kV line to line
	BS EN61000-4-8 Magnetic fields – levels 30 A/m at 50/60 Hz
	BS EN61000-4-11 Voltage dips, interruptions
	The unit will not trip and recovers to normal operation after a disturbance as defined in SEMI F47.
	The EMC performance of the power supply can only be fully assessed when installed within and as part of the final system.
RoHS	Meets the requirements of EU Directive 2011/65/EU on the Restriction of use of certain Hazardous Substances (RoHS) in electrical and electronic equipment.
Metering	Provided as part of an alphanumeric display. Voltages are displayed with a resolution > 0.5% of rated output. Current is displayed with a resolution of > 1.5% of rated output. Voltage and current set values can be displayed by pressing the relevant control potentiometer.
Status Indication	Uses the alphanumeric display to show the reason for any trip condition.
Cooling	Fan assisted with fan fail detection. Air inlets at the rear of the unit, exhaust on the side panels and top cover. Min air flow required is 3 m/s at the input to the fan.
	For slide mounting, a 15 mm gap shall be provided above the unit for air exhaust if the side air vents are blocked.
	For shelf mounting the 1 U, no gap is required above or below the unit provided the side air vents are clear by at least 15 mm. The 2 U requires a 15mm gap above the unit as well.

INTERFACE

Remote control 25-way female D-type connector:

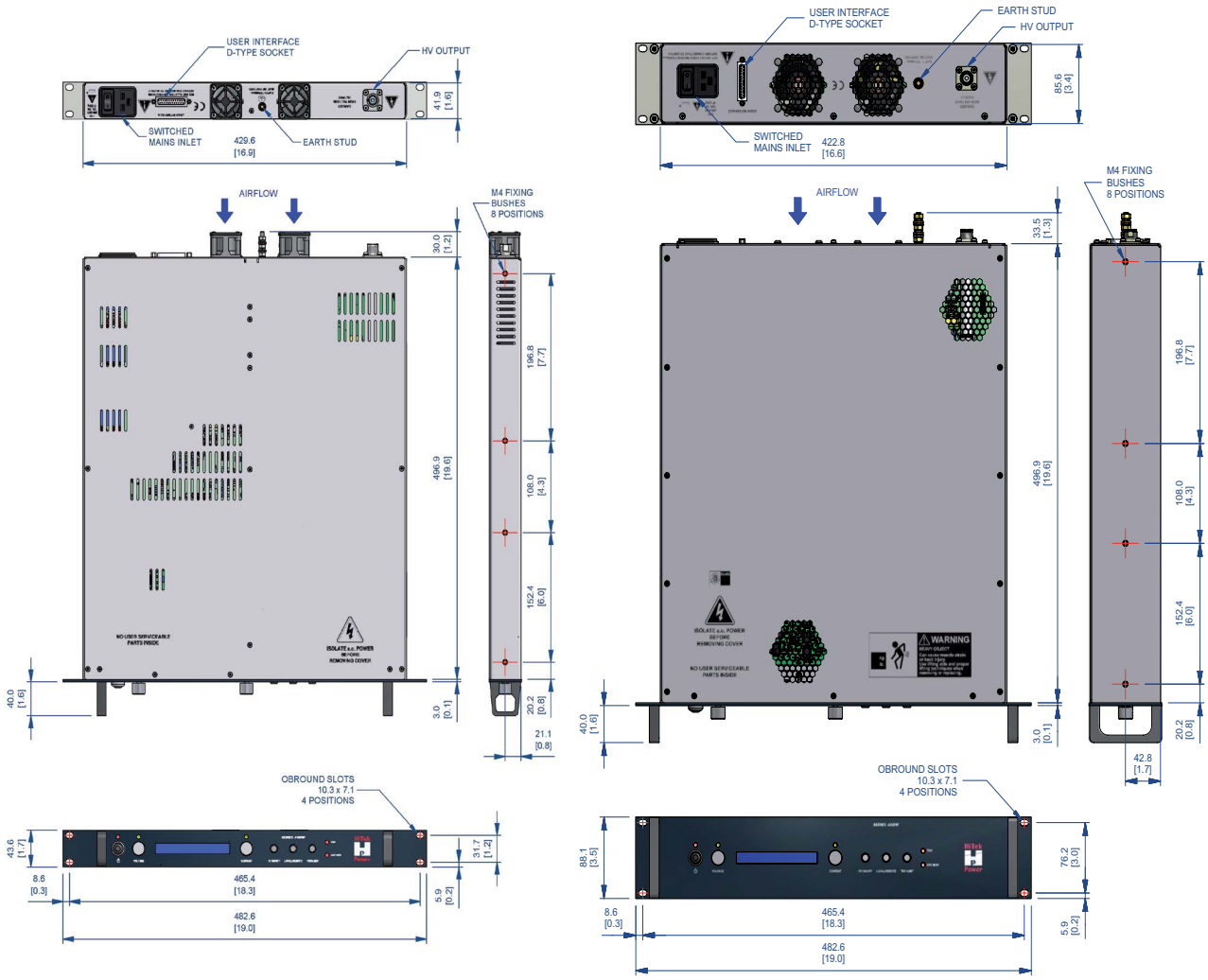


All logical indicators are open collector outputs rated at 16 V (max) in the off state. An internal 100 Ω resistor is connected in series with the open collector transistor. The pull down voltage is 0.9 V plus the internal resistor drop. The rated current is 10 mA.

All analog voltage and current monitors are 0 to +10 V ±0.5% ±20 mV, with respect to pin 13, representing 0 to rated output. Signal impedance < 100 Ω and minimum external load resistance is 2 kΩ.

All analog voltage and current inputs are 0 to +10 V on the HI input with respect to the LO input representing 0 V to rated output ±0.2% of setting ±0.1% of rating. Input impedance > 50 kΩ.

MECHANICAL SPECIFICATIONS



Note: Drawing dimensions are in mm (")

Construction	
Weight	6.5 kg for units up to 60 kV
	8 kg for the 80 kV unit
Connections	All Connections are mounted on the rear panel
Mains	IEC320-C20 16 A with integrated two pole switch
Safety Earth	M5 stud
HV Output	Proprietary coaxial connector
Front Panel	Stoving enamel trimite full gloss S60/9 color blue
	RAL5011 as standard

ORDER INFORMATION

For ordering information and to find a solution for your exact requirements, please contact your local Advanced Energy sales representative.

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.

Advanced Energy

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