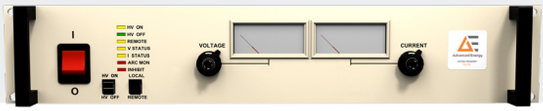
# HITEK POWER OL1K SERIES

## HIGH VOLTAGE POWER SUPPLY




The HiTek Power® OL1K Series range of single output high voltage power supplies meets the exacting requirements found in electron and ion beam systems, ion implantation and X-ray equipment. Designed using the latest power switching IGBTs to ensure efficient and reliable operation over the full operating range, the OL1K Series will give excellent performance in the most severe of electrical environments.

### PRODUCT HIGHLIGHTS

- 1 kW of output power
- Output voltages from 1 to 60 kV available with customer-defined derivatives upon request
- Positive or Negative polarity to order
- Analogue meter or blank front panel options
- IGBT switch mode technology
- Local or remote operation
- Marked for EU LV Directive 73/23/EEC

## SPECIFICATIONS

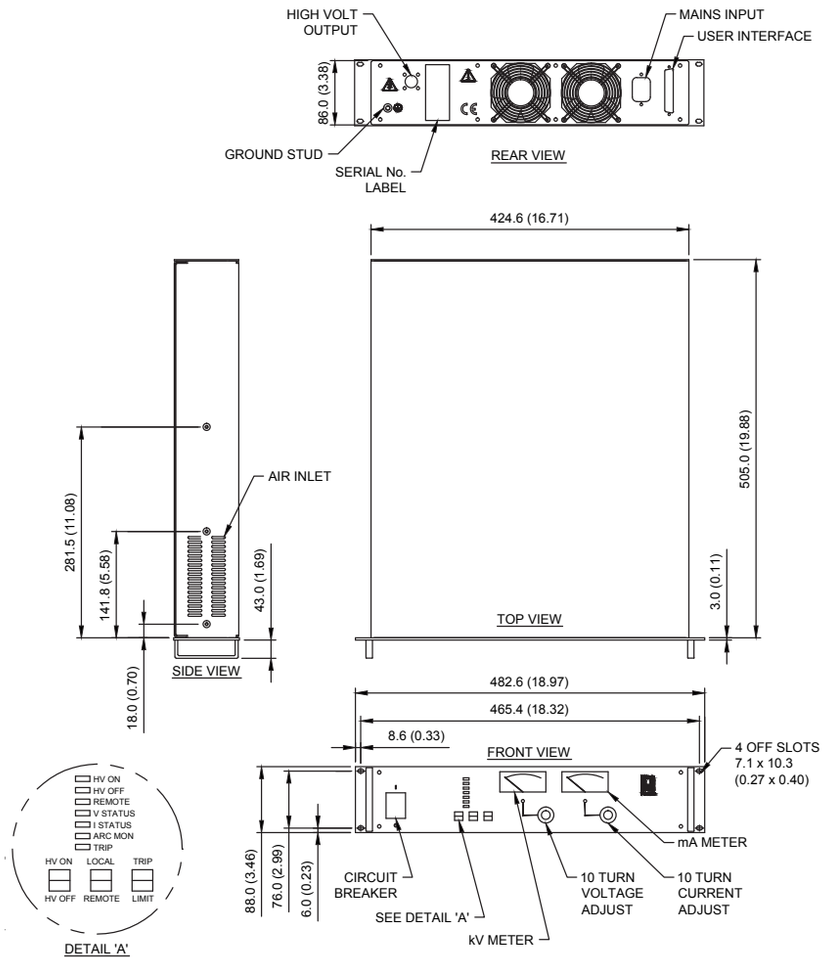
| Electrical Specifications | |
|---|---|
| Output Power | 1 kW maximum at full rated output voltage and current |
| Output Voltage | Units available with maximum output voltages from 1 to 60kV |
| Output Current | Up to 1 A for 1 kV and 16 mA for 60 kV |
| Input Voltage | 187 VAC to 255 VAC 47-63 Hz single phase plus protective earth |
| Input Current | Less than 12 A |
| Polarity | Positive or negative to order |
| Specification Range | Specifications apply above 5% of rated output voltage. The output can be controlled down to less than 0.25% of rated output voltage. |
| Recovery Time | Less than 500 ms to within 0.1% of previous operating level following a short circuit or arc. Maximum overshoot 2% of rated output voltage. |
| Temperature Coefficient | Less than 200 ppm/°C |
| Drift | Less than 0.02% per hour after 1 hour warm up |
| Operating Temperature | 0°C to +40°C |
| Storage Temperature | -20°C to +70°C |
| Humidity | 80% maximum relative humidity up to 31°C, reducing linearly to 50% at 40°C. Non-condensing (ref BS EN61010-1) |
| Altitude | Sea level up to 2000 metres (6500 feet) |
| Installation Category | II (BS EN61010-1) |
| Pollution Degree | 2 (BS EN61010-1) |
| Usage | Indoor use only |
| Protection | The units are fully protected against over-temperature and overcurrent, peak arc current is resistively limited. |
| Arc Count and Extinguish | 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 to 25 arcs in any 5 second period. |
| Cooling | Fan assisted, air is drawn in via side panel vents and exits at the rear of the unit. Minimum airflow required is 3m/s. Ambient air around the unit must not exceed 40°C. |
| Safety | The Series OL1K meets the requirements of the Low Voltage Directive, 2006/95/EC, by complying with BS EN61010-1:2001 when installed as a component part of compliant equipment. It is CE marked accordingly. |
| Safety Class | Equipment Class 1 |
| EMC[1] | EN55022 Class B for conducted and radiated emissions |
| | EN61000-4-2 ESD - levels ±4 kV contact, ±8 kV air discharge |
| | EN61000-4-4 Fast transients on mains input - levels ±2 kV |
| | EN61000-4-5 surges - levels ±2 kV line to earth, ±1 kV line to line |
| | EN61000-4-8 magnetic fields - levels 30 A/m at 50/60 Hz |
| | EN61000-4-11 voltage dips, interruptions |
| RoHS | The OL1K 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. |
| **Voltage Ripple** | |
| Voltage Mode | Less than 0.1% of rated output voltage +2 V, peak to peak |
| Current Mode | Less than 0.5% of rated output voltage peak to peak |

1 The Series OL1K is intended for installation as a component of a system and is designed to meet these requirements.
The unit will not trip and recovers to normal operation after a disturbance as defined in SEMI F47-0706.
The EMC performance of the power supply can only be fully assessed when installed within, and as a part of, the final system.

## SPECIFICATIONS

| Electrical Specifications | |
|---|---|
| **Voltage Regulation** | |
| Line | Less than 0.05% +1 V change in output voltage for a 10% change in line voltage |
| Load | Less than 0.05% +1 V change in output voltage for a 0 to 100% change in load current. |
| **Current Regulation** | |
| Line | Less than 0.5% of rated output current for a 10% change in line voltage |
| Load | Less than 0.5% change of rated output current for a 0 to 100% change in output voltage |

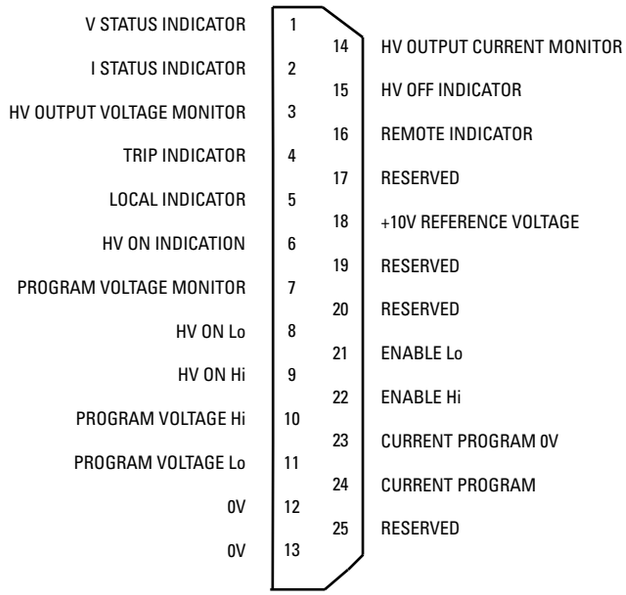
| Mechanical Specifications | |
|---|---|
| Dimensions | See outline drawing |
| Weight | 14 kg |
| Connections | All connections are mounted on the rear panel |
| Mains | IEC320 |
| Safety earth | M6 stud |
| HV output | Proprietary coaxial connector, 2 m cable provided |
| Front panel | Stoving enamel trimite full gloss S60/6 colour cream R87177 as standard |



## INTERFACE

### Remote Control Interface Connections:

The OL1K series is fitted with an analogue remote control interface, controlled via a 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.

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 is less than 100 Ω and minimum external load resistance is 2 kΩ.

All analogue 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 is greater than 50 kΩ.

## ORDERING INFORMATION

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


Advanced Energy

For international contact information, visit advancedenergy.com.

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