COMPACT HIGH VOLTAGE POWER SUPPLY

SERIES OL1K

FEATURES
- 1000 Watts of output power
- Outputs available from 1kV to 60kV
- Positive or negative polarity
- Digital or analogue meter options
- OEM version available
- Compact size
- Lightweight - from 14kg
- IGBT Switch mode technology
- Local or remote operation
- CE Marked

APPLICATIONS
- X-ray equipment
- Electron microscopes
- Ion implantation
- Cable testing
- General bench PSU requirements
- Insulation testing
- Multi-CRT video displays
DESCRIPTION

The Series OL1K incorporates the latest switch-mode technology to achieve a high performance and excellent reliability within a compact and lightweight assembly. The design utilises high frequency, IGBT switching techniques, incorporating third generation IGBTs switched at 35kHz, to achieve a high power to volume ratio. This results in cooler operation and thus increased reliability.

Front Panel: A choice of either analogue or digital LCD meters is available, or a blank panel for OEM applications.

Local/Remote Control: The power supply units may be operated in either Local or Remote mode, selectable by means of a toggle switch mounted on the front panel. Remote operation is via a 25-way ‘D’ type connector situated on the rear panel. The power supply can be fitted with a user interface card which can be customised to suit specific user requirements.

High Voltage Assembly: The HV assembly is available air-insulated up to 40kV. An encapsulated version is available for the arduous electrical conditions to be found in an ion implanter or similar environments, where output short circuits are commonplace.

Protection: All models are protected against damage from over-current, over-temperature and output short circuit.

Voltage & Current Control: Fully adjustable voltage and current control loops with automatic crossover ensure maximum flexibility.

Construction: Designed to fit a standard 19" rack with facility to fit standard slides.

Safety: These units meet the requirements of the Low Voltage Directive (LVD) 73/23/EEC by complying with EN60950. Furthermore, all components and materials used meet or exceed the requirements of UL94-V2 for flammability. The power supplies described in this data sheet should only be used by personnel who have received the appropriate training and who are fully aware of the hazards that exist when connecting and operating high voltage equipment.

SPECIFICATION

Input: 187V to 264V AC

Output Power: 1000W. See table opposite.

Output Voltage: See table opposite.

Output Polarity: Positive or negative to order.

Line Regulation: 0.05% of rated max output voltage for 10% line change.

Load Regulation: Voltage mode: 0.05% of rated output voltage +1V for 0 to 100% change in current.

Ripple: 0.1% pk to pk (0.035% rms) of rated voltage +2V, peak to peak.

Temperature Coefficient: <200ppm°C.

Transient Recovery: Overshoot: less than 2% of rated output voltage.

Rate of Rise: Factory set to 1 second (time taken to reach rated output voltage after operation of HV ON).

Operational Temperature: 0°C to +40°C.

Storage Temperature: -20°C to +85°C.

Humidity: Up to 95% relative humidity non-condensing.

Altitude: Sea level up to 2000 metres.

User Enable: HV output is inhibited when not enabled.

Protection: 1) Over-temperature trip.

EMC: This component power supply is designed to meet the following standards: emissions to EN55022 Class B, ESD to EN61000-4-2 and transients to EN61000-4-4.
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Efficiency: Better than 80% at full power.

Cooling: Fan cooled.

Local Controls/Indicators: Mains (Line) ON/OFF circuit breaker, HV ON/OFF switch, Local/Remote switch, Trip/Limit switch, HV OFF indicator, HV ON indicator, Remote indicator, Trip indicator, Voltage and Current Mode indicators, voltage demand potentiometer, current demand potentiometer, digital or analogue output voltage meter, digital or analogue output current meter.

Remote Controls: Connections are made via a 25-way D-type connector situated on the rear panel.
HV ON/OFF Control, HV ON status, HV OFF status, User Enable, Trip status.
Voltage Demand: 0 to +10V for 0 to 100% +/- 1% of rated voltage.
Current Demand: 0 to +10V for 0 to 100% +/- 1% of rated current.
Voltage Reference: +10V at 5mA maximum load.
Voltage Monitor: 0 to +10V for 0 to 100%, 1% accuracy, 100R source.
Current Monitor: 0 to +10V for 0 to 100%, 2% accuracy, 100R source.
Voltage Demand Monitor: 0 to +10V for 0 to 100%, 1% accuracy, 100R source.

Weight: 14kg (air insulated HV assembly), 19kg (encapsulated HV assembly)
Connections: All connectors are mounted on the rear panel.
Mains input: CE222/IEC320 Euroconnector cable, supplied with unit
HV Output: 2m coaxial cable fitted with UHF style connector, supplied with psu.
User interface: 25 way 'D' type with backshell, supplied with unit.
Earthing: M6 earth stud.

OUTPUTS & ORDERING INFORMATION:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>OUTPUT VOLTAGE (max)</th>
<th>OUTPUT CURRENT (max)</th>
<th>UNIT HEIGHT (mm in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OL1K/102</td>
<td>1kV</td>
<td>1A</td>
<td>133 (5.25)</td>
</tr>
<tr>
<td>OL1K/202</td>
<td>2kV</td>
<td>500mA</td>
<td>133 (5.25)</td>
</tr>
<tr>
<td>OL1K/502</td>
<td>5kV</td>
<td>200mA</td>
<td>133 (5.25)</td>
</tr>
<tr>
<td>OL1K/103</td>
<td>10kV</td>
<td>100mA</td>
<td>133 (5.25)</td>
</tr>
<tr>
<td>OL1K/203</td>
<td>20kV</td>
<td>50mA</td>
<td>133 (5.25)</td>
</tr>
<tr>
<td>OL1K/303</td>
<td>30kV</td>
<td>33mA</td>
<td>133 (5.25)</td>
</tr>
<tr>
<td>OL1K/403</td>
<td>40kV</td>
<td>25mA</td>
<td>133 (5.25)</td>
</tr>
<tr>
<td>OL1K/603</td>
<td>60kV</td>
<td>16mA</td>
<td>177 (7.0)</td>
</tr>
</tbody>
</table>

Consult factory for other voltages.

PART NUMBERING SYSTEM:

OL1K: / 

First Decision: Output Voltage
See table above

Fourth Decision: Omit for air spaced HV section

E for encapsulated

Third Decision: 

Analogue meter A
Digital meters D
Blank front panel B - remote control only

Second Decision: 

Positive Polarity P
Negative Polarity N
COMPACT
HIGH VOLTAGE
POWER SUPPLY

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SPECIFICATION

OUTLINE DRAWING

Design developments may result in specification changes.