**Application:**
Bipolar Lens Supplies, Mass Spectrometers, Focus & High Voltage Bias, High Voltage Amplifiers, E-Chucks
- 1kV, 2.5kV, 3kV, 5kV, 8kV, 10kV, [15kV consult factory]
- Through Zero voltage programming & settling
- Fast reversing, slewing & settling
- Differential Control input
- High Voltage Amplifier
- High Stability, temp-co <25ppm/ºC)
- Flashover & short circuit protected

The HPZ range is a unique family of high voltage power supplies, extending the operation and versatility of Applied Kilovolts High Precision HP series. The HPZ units feature very fast slewing and settling times, together with the ability to slew cleanly through zero. With a differential control input, they operate like a high voltage amplifier with very tight temperature co-efficient of <25ppm/ºC. Note – the HPZ range also features a 4 quadrant output stage, so the unit can source or sink up to its maximum output current, in either polarity.

**Electrical Specification**

<table>
<thead>
<tr>
<th>Unit Type</th>
<th>Output Voltage</th>
<th>O/P Current</th>
<th>Ripple at Full Load</th>
<th>Slewing &amp; Settling Time, -FS to +FS</th>
<th>Size (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP001ZIP025</td>
<td>-1kV to +1kV</td>
<td>1mA</td>
<td>55mV (pk to pk)</td>
<td>20mSec</td>
<td>159 x 184.5 x 47</td>
<td>2.3</td>
</tr>
<tr>
<td>HP2.5ZIP025</td>
<td>-2.5 kV to +2.5 kV</td>
<td>400µA</td>
<td>65mV (pk to pk)</td>
<td>40msec</td>
<td>159 x 184.5 x 47</td>
<td>2.3</td>
</tr>
<tr>
<td>HP003ZIP025</td>
<td>-3kV to +3kV</td>
<td>400µA</td>
<td>75mV (pk to pk)</td>
<td>40msec</td>
<td>159 x 184.5 x 47</td>
<td>2.3</td>
</tr>
<tr>
<td>HP005ZIP025</td>
<td>-5kV to +5kV</td>
<td>400µA</td>
<td>170mV (pk to pk)</td>
<td>40msec</td>
<td>159 x 184.5 x 47</td>
<td>2.3</td>
</tr>
<tr>
<td>HP008ZIP025</td>
<td>-8kV to +8kV</td>
<td>400µA</td>
<td>300mV (pk to pk)</td>
<td>40msec</td>
<td>159 x 184.5 x 47</td>
<td>2.3</td>
</tr>
<tr>
<td>HP010ZIP025</td>
<td>-10kV to +10kV</td>
<td>400µA</td>
<td>300mV (pk to pk)</td>
<td>50msec</td>
<td>159 x 184.5 x 47</td>
<td>2.3</td>
</tr>
</tbody>
</table>

**Input**
+24V dc ±10%  <1A. 0V input common to HV return and chassis.

**Control of output**
0V to ±10V for 0% to ±100% ±2%, (Zin = 200Kohm) 0V to +10V plus Polarity see option potentiometer options not available

**Voltage monitor**
-10V to +10V ±2% for -100% to +100%. (Zout= 10k)

**Polarity Control — OPTION**
Low <0.8V = +ve, High >2.5V or oc =-ve

**Precision Current Monitor**
-10V to +10V ±2%, Offset ±0.1% of FS for -100% to +100%. (Zout= 10k)

**Output Temperature Co-efficient**
<25ppm/ºC

**Drift (after 1 hour warm up)**
<0.01% per hour, <0.05% over an 8 hour period

**Line regulation**
<10ppm for 1V change in input voltage

**Load regulation**
<10ppm for 100µA to maximum load

**Protection (all outputs)**
Protected against intermittent arcing and continued short circuit to ground
**Mechanical Specification**

Mountings

4 off M3 blind fasteners—see outline drg

Input & control

Berg 20Way IDC header Part No 65863-069 for use with ribbon cable.

Outputs

By 0.5m screened (shielded) lead type URM43

**Environmental Specification**

Temperature, operating

+10°C to +50°C.

Humidity (RH) <31°C 80% maximum

Temperature, storage

-35°C to +85°C.

Humidity (RH) >30°C Decrease linearly to 50°C

Altitude, operating

Up to 2,000m.

Altitude, storage

Up to 18,000m

The unit is to be supplied from a current limited supply providing 24Vdc, impulse limited to overvoltage Category I (of IEC60364-4-443) . For use in an environment of pollution degree 2.

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**Pin Assignment**

1. +24V dc input  
2. nc  
3. +24V dc input  
4. Voltage Monitor o/p  
5. +24V dc input  
6. Current Monitor o/p  
7. +24V dc input  
8. Voltage Control i/p  
9. +24V dc input  
10. Control Return  
11. Supply 0V  
12. Supply 0V  
13. Supply 0V  
14. Signal ground  
15. Supply 0V  
16. nc  
17. Supply 0V  
18. nc  
19. Supply 0V  
20. nc

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**Notes:**

1. The input connector pins are not rated at the full input current of the power supply. Please use at least 2 pins in parallel for the +24V power supply input & the power ground.

2. Control input is fully differential, but -0.6V > Control Return > +0.6V

3. Polarity Option – height increases to 52mm:
   
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**Part Number Selection**

<table>
<thead>
<tr>
<th>Series Code</th>
<th>HP</th>
<th>o/p kV</th>
<th>Polarity</th>
<th>Options Code</th>
<th>Temp Co</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>1.0kV</td>
<td>Z= Thu Zero</td>
<td>IP= no options</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>2.5kV</td>
<td>R if Pol option</td>
<td>OP= Polarity Option fitted</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example: HP2.5ZIP025 = 10kV version with no options fitted.

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