High Voltage Power Supplies

PS300 Series — DC high voltage power supplies to 20 kV

The PS300 Series High Voltage Power Supplies — rugged, compact, reliable instruments for just about any high voltage application.

With up to 20 kV output capability, a GPIB computer interface, and 0.001 % voltage regulation, these high voltage power supplies have become the industry standard.

There are several models to choose from, with outputs ranging from 1.25 kV to 20 kV.

<table>
<thead>
<tr>
<th>Model</th>
<th>Output Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS310</td>
<td>0 to ±1.25 kV</td>
<td>20 mA</td>
</tr>
<tr>
<td>PS325</td>
<td>0 to ±2.5 kV</td>
<td>10 mA</td>
</tr>
<tr>
<td>PS350</td>
<td>0 to ±5 kV</td>
<td>5 mA</td>
</tr>
<tr>
<td>PS355</td>
<td>0 to –10 kV</td>
<td>1 mA</td>
</tr>
<tr>
<td>PS365</td>
<td>0 to +10 kV</td>
<td>1 mA</td>
</tr>
<tr>
<td>PS370</td>
<td>0 to –20 kV</td>
<td>0.5 mA</td>
</tr>
<tr>
<td>PS375</td>
<td>0 to +20 kV</td>
<td>0.5 mA</td>
</tr>
</tbody>
</table>

The PS310, PS325 and PS350 are dual-polarity, 25 W supplies, while the PS355, PS365, PS370 and PS375 are single-polarity, 10 W supplies. All of the instruments are arc and short-circuit protected with separate programmable hard and soft current limits, making it possible to use them as constant current sources.
**The Right Features**

Whichever model you choose, you’ll appreciate the convenience and versatility of the PS300 Series. Two large LED displays monitor the output voltage and current being delivered to your load. Overload reset, limit and trip status, local/remote state, and high voltage enable are also displayed, so you can monitor the instrument status at a glance. A highly visible red LED always indicates when the high voltage is on.

**Easy to Use**

Operation is simple. The parameter being adjusted or set is displayed separately and can be entered without affecting the actual output voltage. Up to nine instrument configurations can be stored and recalled at any time, making it easy to run multiple tests.

**Analog Monitoring and Control**

A rear-panel analog input allows the high voltage output to be programmed by a 0 to 10 VDC signal. Two rear-panel analog outputs provide output voltage and current monitoring capabilities. These outputs drive up to 10 mA of current and have 1 Ω output impedance.

**Performance and Value**

The PS300 Series High Voltage Power Supplies are as useful in the R&D lab as they are in automated test applications. Wherever you are using them, the PS300 Series provide proven reliability and performance at a very affordable price.
## PS300 Series Specifications

### Model Output Voltage Max. Current

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage Range</th>
<th>Max Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS310</td>
<td>±12 V to ±1.25 kV</td>
<td>20 mA</td>
</tr>
<tr>
<td>PS325</td>
<td>±25 V to ±2.5 kV</td>
<td>10 mA</td>
</tr>
<tr>
<td>PS350</td>
<td>±50 V to ±5.0 kV</td>
<td>5 mA</td>
</tr>
<tr>
<td>PS355</td>
<td>-100 V to -10 kV</td>
<td>1 mA</td>
</tr>
<tr>
<td>PS365</td>
<td>+100 V to +10 kV</td>
<td>1 mA</td>
</tr>
<tr>
<td>PS370</td>
<td>-100 V to -20 kV</td>
<td>500 µA</td>
</tr>
<tr>
<td>PS375</td>
<td>+100 V to +20 kV</td>
<td>500 µA</td>
</tr>
</tbody>
</table>

### Voltage Output
- **Voltage set accuracy**: 0.01% ± 0.05% of full scale
- **Volt. display accuracy**: ± 1 V, typ. (± 2 V, max.)
- **Voltage resolution**: 1 V (set and display)
- **Voltage resettability**: 1 V
- **Voltage limit range**: 0 to 100% of full scale
- **Voltage regulation**: 0.001% for ±10% line change, 0.005% for 100% load change

Specifications apply for >0.5% (full load) to >1% (no load) of full-scale voltage.

- **Output ripple (rms)**:
  - (25 W models): <0.002% of full scale
  - (10 W models): <0.01% of full scale
- **Current limit range**: 0 to 105% of full scale
- **Trip current**: 10 µA (min.)
- **Trip response time**: <10 ms
- **Current set accuracy**:
  - (25 W models): 0.01% ± 0.05% of full scale
  - (10 W models): 1% ± 0.05% of full scale
- **Current resolution**: 10 µA (PS310 and PS325)
  - (PS310 and PS325): 1 µA (all other models)
- **Current display accuracy**:
  - (PS310 and PS325): ±10 µA (typ.), ±20 µA (max.)
  - (all other models): ±1 µA (typ.), ±2 µA (max.)
- **Stability**: 0.01%/hr., <0.03%/per 8 hrs.
- **Temperature drift**: 50 ppm/°C, 0 to 50 °C (typ.)
- **Protection**: Arc and short circuit protected
  - (Programmable voltage limit, current limit, and current trip)
- **Recovery time**: 12 ms for 40% step change in load current (typ.)
- **Discharge time**: <6 s (to <1% of full-scale voltage with no load, typ.)

### Monitor Outputs
- **Output scale**: 0 to +10 V for 0 to full-scale output regardless of polarity
- **Current rating**: 10 mA (max.)
- **Output impedance**: <1 Ω
- **Accuracy**: 0.2% of full scale
- **Update rate**: 8 Hz

### External Voltage Set
- **Input scale**: 0 to +10 V for 0 to full-scale output regardless of polarity
- **Input impedance**: 1 MΩ
- **Accuracy**: 0.2% of full scale
- **Update rate**: 16 Hz
- **Output slew rate**: <0.3 s for 0 to full scale under full load

### Mechanical
- **HV connector**:
  - PS310/325/350: Kings type 1704-1
  - PS355/365: Kings type 1064-1
  - PS370/375: Kings type 1764-1
- **Mating connector**:
  - PS310/325/350: Kings type 1705-1
  - PS355/365: Kings type 1065-1
  - PS370/375: Kings type 1765-1
- **Dimensions, weight**: 8.1” × 3.5” × 16” (WHD), 8 lbs.
- **Power**: 50 W, 100/120/220/240 VAC, 50 Hz/60 Hz
- **Warranty**: One year parts and labor on defects in materials or workmanship

### Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS310</td>
<td>±1.25 kV DC power supply</td>
<td>$1395</td>
</tr>
<tr>
<td>PS325</td>
<td>±2.5 kV DC power supply</td>
<td>$1395</td>
</tr>
<tr>
<td>PS350</td>
<td>±5.0 kV DC power supply</td>
<td>$1395</td>
</tr>
<tr>
<td>PS355</td>
<td>–10 kV supply w/ GPIB &amp; RS-232</td>
<td>$2250</td>
</tr>
<tr>
<td>PS365</td>
<td>+10 kV supply w/ GPIB &amp; RS-232</td>
<td>$2250</td>
</tr>
<tr>
<td>PS370</td>
<td>–20 kV supply w/ GPIB &amp; RS-232</td>
<td>$2250</td>
</tr>
<tr>
<td>PS375</td>
<td>+20 kV supply w/ GPIB &amp; RS-232</td>
<td>$2250</td>
</tr>
<tr>
<td>PS380</td>
<td>–20 kV to 20 kV power supply</td>
<td>$695</td>
</tr>
<tr>
<td>PS385</td>
<td>+20 kV to 20 kV power supply</td>
<td>$695</td>
</tr>
</tbody>
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Stanford Research Systems
phone: (408)744-9040
www.thinkSRS.com