

## HPD Series

300 Watts with Linear Performance

Voltage Range: 0-15 VDC to 0-60 VDC

Current Range: 0-20 A to 0-5 A

Low noise and ripple

Excellent line/load regulation

Constant voltage or constant current operation with automatic crossover and mode indication

Current limit

Front and rear outputs standard

LabWindows® drivers

Remote sense

CE, CSA approvals



The HPD Series stands for „High Power Density“, providing 300 watts in a quarter-rack wide chassis.

The HPD uses switch-mode technology combined with linear post regulation to provide performance comparable to an all-linear design. Excellent line and load regulation is matched by low noise and good transient response.

This series is available in singles and duals in a single package for benchtop use.

For systems applications, multiple units can also be rack mounted in one to four unit configurations for up to four independent 300 watt outputs. Further, the 300 watt HPD can be combined in mix and match rack combinations with the quarter-rack 60 watt XT Series or 500W XPD units.

### General Specifications (Specifications are subject to change without notice.)

Operational AC Input Voltage	Single unit: 104-127 VAC at 6 Arms; Dual Unit: 104-127 VAC at 12 Arms, 47-63 Hz
Switching Frequency	Nominal 100 kHz
Voltage Mode Transient Response Time	<500 $\mu$ s recovery to 50 mV band for $\pm$ 50% load change in the range of 25% to 100% of the rated load
Operating Ambient Temperature	0 to 30° C for full rated output. Above 30° C, derate output linearly to zero at 70° C.
Storage Temperature Range	-55 to 85° C
Humidity Range	0 to 80% RH, non-condensing
Front Panel Voltage and Current Control	10-turn voltage and 1-turn current potentiometers (10-turn current optional)
Front Panel Voltage Control Resolution	0.02% of maximum voltage
AC Input Connector Type	IEC 320 connector
Weight (one unit)	Approximately 3.5 kg (7.7 lb.)
Approvals	CE-marked units meet standards: EN55011 (Group 1 Class A), EN50081-2, EN50082-1, and IEC 1010-1, NRTL/C, CSA certified

### Analog Programming (With optional APG interface installed.)

Remote On/Off and Interlock	2-25 V signal or TTL-compatible input, selectable logic
Remote Analog Programming Option	0-10 VDC for 0-100% of rated voltage or current $\pm$ 1.0%, 0-10 k $\Omega$ for 0-100% of rated voltage or current $\pm$ 1.0%
Remote Monitoring	0-10 VDC for 0-100% of rated voltage or current $\pm$ 1.0%
Over Voltage Protection Trip Range	3 V to full output +10%
Tracking Accuracy	$\pm$ 1% for series operation

Contact Zentro-Elektrik for complete product specifications.

**Electrical Specifications<sup>1</sup>** (Specifications are subject to change without notice.)

Model	HPD 15-20	HPD 30-10	HPD 60-5
<b>Output Ratings:</b>			
Output Voltage	0-15 V	0-30 V	0-60 V
Output Current	0-20 A	0-10 A	0-5 A
Output Power	300 W	300 W	300 W
<b>Line Regulation:<sup>2</sup></b>			
Voltage (0.01% of $V_{max}$ + 2 mV)	3.5 mV	5 mV	8 mV
Current (0.01% of $I_{max}$ + 1 mA)	3 mA	2 mA	1.5 mA
<b>Load Regulation:<sup>3</sup></b>			
Voltage (0.01% of $V_{max}$ + 2 mV)	3.5 mV	5 mV	8 mV
Current (0.01% of $I_{max}$ + 1 mA)	3 mA	2 mA	1.5 mA
<b>Meter Accuracy:</b>			
Voltage (1% of $V_{max}$ + 1 count)	0.25 V	0.4 V	0.7 V
Current (1% of $I_{max}$ + 1 count)	0.3 A	0.2 A	0.06 A
<b>Output Noise &amp; Ripple:</b>			
rms	5 mV	5 mV	5 mV
p-p (0-20 MHz)	100 mV	100 mV	100 mV
<b>Drift (8 hours):<sup>4</sup></b>			
Voltage (0.02% of $V_{max}$ )	3 mV	6 mV	12 mV
Current (0.03% of $I_{max}$ )	6 mA	3 mA	1.5 mA
<b>Temperature Coefficient:<sup>5</sup></b>			
Voltage (0.015% of $V_{max}/^{\circ}\text{C}$ )	2.25 mV	4.5 mV	9 mV
Current (0.02% of $I_{max}/^{\circ}\text{C}$ )	4 mA	2 mA	1 mA

<sup>1</sup> Specifications indicate typical performance at  $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , nominal line input of 120 VAC.

<sup>2</sup> For input voltage variation over the AC input voltage range, with constant rated load.

<sup>3</sup> For 0-100% load variation, with constant nominal line voltage.

<sup>4</sup> Maximum drift over 8 hours with constant line, load, and temperature, after 60-minute warm-up.

<sup>5</sup> Change in output per  $^{\circ}\text{C}$  change in ambient temperature, with constant line and load.

**Options**

<b>GPIB-HPD</b>	GPIB Interface card (16-bit)
<b>RS-232-HPD</b>	RS-232 Interface card (16-bit)
<b>APG-HPD</b>	Analog programming interface card
<b>M2</b>	200-250 VAC Input (50/60 Hz)
<b>M2S</b>	Switch selectable input 110 VAC or 220 VAC
<b>M11</b>	10-turn current potentiometer
<b>M13A</b>	Locking knobs for front panel controls
<b>RM-XHS</b>	19-inch rack mount kit for up to 4-HPD, XPD or XT power supplies

Contact Zentro-Elektrik for custom voltage and current combinations, dual configurations, and other options.