PG Series 500/1000 Watt Regulated High Voltage DC Power Supplies PG-LR Series

250/500 Watt Low Ripple Regulated High Voltage DC Power Supplies

100 kV to 400 kV

Overload Protected



The PG Series is available in two configurations ... as a standard PG Series supply or as an ultra-low ripple PG-LR Series for demanding applications, such as particle accelerators. Shown is the dual-stack PG-LR Series with remote control unit. One stack serves as a high voltage multiplier while the second stack provides an additional low-pass ripple filter and a shielded DC feedback network. The standard PG Series is supplied with only the multiplier stack and remote control unit.

## **Features:**

**Pulse-Width Modulation**. Off-the-line pulse-width modulation provides high efficiency and a reduced parts count for improved reliability.

**Air Insulation**. Both PG series feature "air" as the primary dielectric medium. No oil or encapsulation is used that could impede serviceability or increase weight.

Constant Voltage/Constant Current Operation. Automatic crossover from constant-voltage to constant-current regulation serves to protect the supplies from overloads, arcs, and short circuits. Tight Regulation. Voltage regulation is better than 0.005% for allowable line and load variations. Current regulation is better than 100  $\mu$ A from short circuit to rated voltage.

**Ripple**. Standard models better than 0.1% at full load. For the extremely low ripple values of the PG-LR series, see the models chart.

Warranty. Standard power supplies are warranted for three years; OEM and modified power supplies are warranted for one year. A formal warranty statement is available.

Designing Solutions for High Voltage Power Supply Applications
GLASSMAN HIGH VOLTAGE INC.

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## **Specifications**

(From 5% to 100% rated voltage. All units operate down to zero output with very slight degradation of performance.) Input: (Series) PG: 105-125 V RMS, single-phase, 48-63 Hz, <15 A. (Series) PG-LR: 187-230 V RMS, 3-phase, 48-63 Hz, < 5 A per phase. Efficiency: Typically 75% at full load. **Output:** Continuous, stable adjustment, from 0 to rated voltage or current by panel mounted 10-turn potentiometers with 0.05% resolution, or by external 0 to 10 V signals is provided. Linearity is <1% of rated. Accuracy is 1% of rated +1% of setting. Repeatability is <0.1%of rated.

Voltage Regulation: Better than 0.005% + 1 V, line or load.

**Ripple**: Better than 0.1% of rated voltage at full load. *Series PG-LR*: See models chart.

Current Regulation: Better than 100  $\mu$ A from short circuit to rated voltage for any load condition; 0.005% + 1  $\mu$ A for line variations.

**Voltage/Current Monitor**: Zero to +10 V signal for zero to rated voltage/current. **Stability**: 0.01% +/1 V per hour after 1/2 hour warmup, 0.05% + 2 V per 8 hours. **Temperature Coefficient**: 0.01% per degree C + 1 V.

Ambient Temperature:

-20 to +60 degree C, operating; -40 to +85 degree C, non-operating. **Polarity:** Available with either positive, negative, or reversible polarity with respect to chassis ground.

**Protection:** Automatic current regulation protects the power supply against all overload conditions, including arcs and short circuits. Fuses, surge-limiting resistors, and low energy components provide the ultimate protection.

External Interlock: Open off, closed on.

## Options

Symbol	Description
220	210-250 V input, 48-63 Hz (Series PG only)

	(Series FG Only)
100	90-110 V input, 48-63 Hz
	$(\mathbf{C} \cdot \mathbf{r}^{\dagger} \cdot \mathbf{r} \cdot \mathbf{D} \mathbf{C}^{\dagger} \cdot \mathbf{r} \cdot \mathbf{l} \cdot \mathbf{r})$

- (Series PG only) 400Hz 400 Hz input (Series PG only)
- B Bi-polar operation. Two supplies, with same voltage rating and opposite polarity, may be operated singlely or as a bi-polar pair.
- CT Current trip. Power supply trips off when the load current reaches the programmed level. This option has a rear panel switch that selects either "trip" operation or current limiting.
- DM 4-1/2 digit voltage and current displays.
- TTL TTL compatible high voltage enable.

## **Series PG Models**

Positive Polarity	Negative Polarity	Reversible Polarity	Output Voltage	Output Current	Panel Height	Stack Height
PG100P5	PG100N5	PG100R5	0-100 kV	0-5 mA	5.25 in	24.625 in
PG100P10	PG100N10	PG100R10	0-100 kV	0-10 mA	5.25 in	24.625 in
PG150P3	PG150N3	PG150R3	0-150 kV	0-3 mA	5.25 in	32.375 in
PG150P6	PG150N6	PG150R6	0-150 kV	0-6 mA	5.25 in	32.375 in
PG200P2.5	PG200N2.5	PG200R2.5	0-200 kV	0-2.5 mA	5.25 in	37.375 in
PG200P5	PG200N5	PG200R5	0-200 kV	0-5 mA	5.25 in	37.375 in
PG250P1	PG250N1	PG250R1	0-250 kV	0-1 mA	5.25 in	43.625 in
PG250P2	PG250N2	PG250R2	0-250 kV	0-2 mA	5.25 in	43.625 in
PG300P1	PG300N1	PG300R1	0-300 kV	0-1 mA	5.25 in	53.375 in
PG300P2	PG300N2	PG300R2	0-300 kV	0-2 mA	5.25 in	53.375 in
PG400P1	PG400N1	PG400R1	0-400 kV	0-1 mA	5.25 in	62.625 in

Series PG-LR Models	(same i	nanel	and	stack	heights	as	above	۱
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Positive	Negative	Output	Output	Ripple	(V p-p)
Polarity	Polarity	Voltage	Current	Тур.	Max.
PG100P2.5-LR	PG100N2.5-LR	0-100 kV	0-2.5 mA	2	4.5
PG100P5-LR	PG100N5-LR	0-100 kV	0-5 mA	4	7
PG150P2-LR	PG150N2-LR	0-150 kV	0-2 mA	3	5
PG150P3-LR	PG150N3-LR	0-150 kV	0-3 mA	6	9
PG200P1-LR	PG200N1-LR	0-200 kV	0-1 mA	3.5	5
PG200P2-LR	PG200N2-LR	0-200 kV	0-2 mA	7	10
PG250P1-LR	PG250N1-LR	0-250 kV	0-1 mA	4.5	6.5
PG250P2-LR	PG250N2-LR	0-250 kV	0-2 mA	8.5	12.5
PG300P1-LR	PG300N1-LR	0-300 kV	0-1 mA	5	7.5
PG300P2-LR	PG300N2-LR	0-300 kV	0-2 mA	10	15
PG400P1-LR	PG400N1-LR	0-400 kV	0-1 mA	7	10



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