



DC Power Supplies

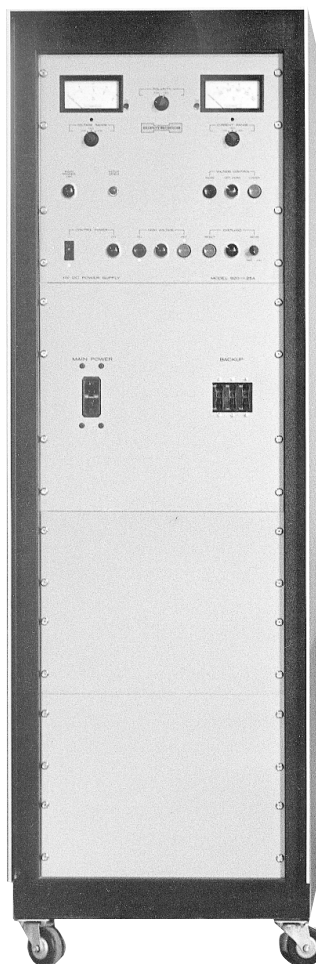
DESCRIPTION

Hipotronics manufactures a complete line of High Voltage Power Supplies with continuously adjustable output voltages for Electrostatic Systems, Accelerators, Lasers, High Voltage Power Sources, X-Ray Systems, Precipitators, DC Transmission Line Components and more. All units are conservatively designed for continuous use and are supplied with Fully Instrumented Control Consoles. High voltage section of oil insulated units are also available without controls.

Rated current is available from zero to maximum voltage and all power supplies feature solid state rectifiers, meter calibration, potentiometers and surge/transient protection of meters, relays and voltage regulators. Controls include a meter polarity reversing switch and rotary output-voltage control in addition to input power and overload circuits.

SPECIAL APPLICATIONS

Modified units can be supplied with thyristor regulators for capacitor charging applications as well as crowbar circuits, high energy discharge solenoids, line regulators, special control functions, and special packaging.



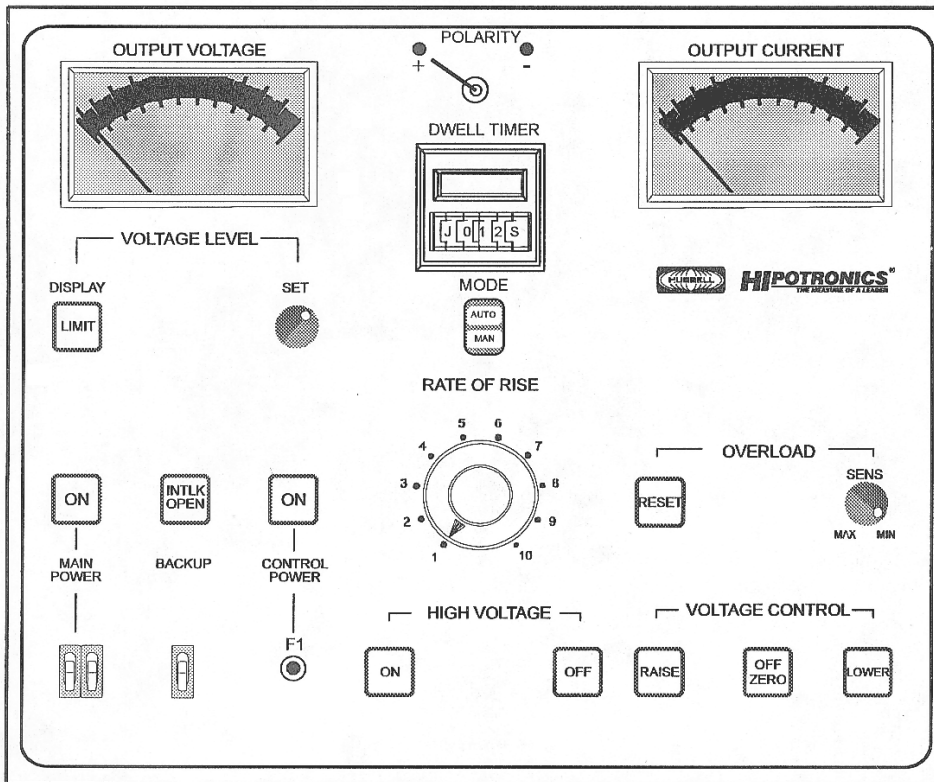
HIGH POWER — DC POWER SUPPLIES

The high power range of supplies are either air or oil insulated. The oil insulated units are shipped ready-for-use with transformer oil. In addition, the controls feature output on/off pushbuttons, fast response overloads, and input circuit breaker/switch. The output connected voltmeter and ammeter in the return leg of rectifier circuit are both triple range.

There are numerous protection features provided in these power supplies including input and backup breakers, adjustable overload relay (10-110% of rated current), fast overload sensor, zero-start interlock plus provision for external safety interlock, current-limiting resistor in output circuit, output shorting solenoid (and/or stiff resistive bleeders) and fuse or circuit breaker protection of controls.

Standard high power supplies are available from 1 kW to 50 kW and 1 kV to 300 kV and are furnished with shielded coaxial output cable.

CONTROLS — TYPICAL FOR ALL HIGH POWER UNITS



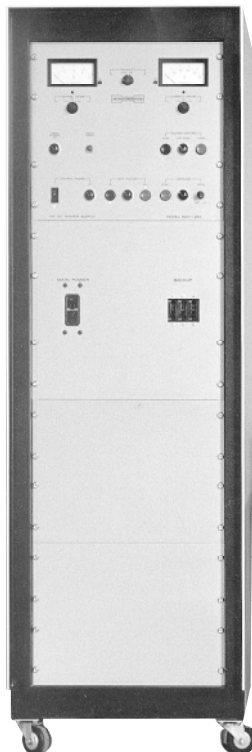
Panel Detail

CONTROL UNITS

HIGH VOLTAGE SECTIONS



Rack Mounted Control Unit



Cabinet Control Unit

Square High Voltage Section



High Voltage section can be square, round or incorporated in control.



SPECIFICATIONS FOR 1 KW HIGH POWER DC POWER SUPPLIES

MODEL NO.	801-1A	850-20	875-13	8100-5	8100-10
INPUT					
VOLTAGE	120 V 50/60 Hz SINGLE PHASE*				
CURRENT	12A				
OUTPUT					
VOLTAGE - kV	1	50	75	100	100
CURRENT - mA	1A	20	13	5	10
REGULATION	15% NL-FL				
RIPPLE	2% rms				
ACCURACY	2% FS				
CONTROL UNIT					
TYPE	RACK MOUNT				
HEIGHT	12.25 in (311 mm)				
WIDTH	19 in (483 mm)				
DEPTH	15 in (381 mm)	9.75 in (248 mm)			
WEIGHT	60 lb (27 kg)	35 lb (16 kg)			
HIGH VOLTAGE SECTION					
INSULATION	AIR	OIL			
HEIGHT	IN CONTROL UNIT	11 in (279 mm)			18 in (457 mm)
WIDTH		DIAMETER			18 in (457 mm)
DEPTH		15 in (381 mm)			18 in (457 mm)
WEIGHT		92 lb (42 kg)			250 lb (113 kg)

*220 Volts, 50 Hertz also available

SPECIFICATIONS FOR 2.5 KW HIGH POWER DC POWER SUPPLIES

MODEL NO.	801-2.5A	803-830	805-500	810-250	825-100	850-50	875-33	8100-25	8120-20	8150-16.5	8200-12.5	8250-10	8300-8	
INPUT														
VOLTAGE	120 V 50/60 Hz SINGLE PHASE*													
CURRENT	25A													
OUTPUT														
VOLTAGE - kV	1	3	5	10	25	50	75	100	120	150	200	250	300	
CURRENT - mA	2.5A	830	500	250	100	50	33	25	20	16	12.5	10	8	
REGULATION	15% NL-FL													
RIPPLE	2% rms													
ACCURACY	2% FS													
CONTROL UNIT														
TYPE	CABINET						RACK MOUNT							
HEIGHT	49 in (1245 mm)						17.5 in (445 mm)							
WIDTH	23 in (584 mm)						19 in (483 mm)							
DEPTH	24 in (610 mm)						15 in (381 mm)							
WEIGHT	375 lb (170 kg)						75 lb (34 kg)							
HIGH VOLTAGE SECTION														
INSULATION	AIR						OIL							
HEIGHT	IN CONTROL UNIT						15 in. (381 mm)	17 in. (432 mm)	32 in (813 mm)			54 in (1372 mm)	64 in (1626 mm)	36 in (914 mm)
WIDTH							17 in (432 mm)	19.5 in (495 mm)	DIAMETER			DIA	DIA	36 in (914 mm)
DEPTH							14 in (356 mm)	23 in (584 mm)	21 in (533 mm)			27 in (686 mm)	29 in (737 mm)	68 in (1727 mm)
WEIGHT							300 lb (136 kg)	450 lb (204 kg)	485 lb (220 kg)		500 lb (227 kg)	1750 lb (794 kg)	1950 lb (885 kg)	3000 lb (1361 kg)

*220 Volts, 50 Hertz also available

SPECIFICATIONS FOR 5 KW HIGH POWER DC POWER SUPPLIES

MODEL NO.	801- 5A	803- 1.66 A	805- 1A	810- 500	825- 200	850- 100	875- 67	8100- 50	8120- 41.5	8150- 33.3	8200- 25	8250- 20	8300- 16.8		
INPUT															
VOLTAGE	208/230 V 50/60 Hz THREE PHASE*						120 V 50/60 Hz SINGLE PHASE*								
CURRENT	15A						25A								
OUTPUT															
VOLTAGE - kV	1	3	5	10	25	50	75	100	120	150	200	250	300		
CURRENT - mA	5A	1.66A	1A	500	200	100	67	50	41.5	33.3	25	20	16.6		
REGULATION	10% NL-FL						15% NL-FL								
RIPPLE	5% rms (1% OPTIONAL)						2% rms								
ACCURACY	2% FS														
CONTROL UNIT															
TYPE	CABINET						RACK MOUNT								
HEIGHT	49 in (1245 mm)						17.5 in (445 mm)								
WIDTH	23 in (584 mm)						19 in (483 mm)								
DEPTH	24 in (610 mm)						17 in (432 mm)								
WEIGHT	450 lb (204 kg)						105 lb (48 kg)								
HIGH VOLTAGE SECTION INSULATION	AIR						OIL								
HEIGHT	IN CONTROL UNIT						32 in (813 mm)			60 in (1524 mm)			36 in (914 mm)		
WIDTH							DIAMETER				DIAMETER				36 in (914 mm)
DEPTH							21 in (533 mm)				29 in (737 mm)				64 in (1626 mm)
WEIGHT							570 lb (258 kg)	600 lb (272 kg)	950 lb (431 kg)	975 lb (442 kg)	2800 lb (1270 kg)	3200 lb (1452 kg)	3300 lb (1497 kg)	4700 lb (2132 kg)	

* 380 or 415 Volts, 50 Hertz, three phase also available

**380 or 415 Volts, 50 Hertz, single phase also available

SPECIFICATIONS FOR 10 KW HIGH POWER DC POWER SUPPLIES

MODEL NO.	801- 10A	803- 3.3 A	805- 2A	810- 1A	825- 400	850- 200	875- 130	8100- 100	8120- 80	8150- 65	8200- 50	8250- 40	8300- 33					
INPUT																		
VOLTAGE	208/230 V 50/60 Hz THREE PHASE*						480 V 50/60 Hz SINGLE PHASE**											
CURRENT	30A						25A											
OUTPUT																		
VOLTAGE - kV	1	3	5	10	25	50	75	100	120	150	200	250	300					
CURRENT - mA	10A	3.3A	2A	1A	400	200	130	100	80	65	50	40	33					
REGULATION	10% NL-FL						18% NL-FL											
RIPPLE	5% rms (1% OPTIONAL)						2% rms											
ACCURACY	2% FS																	
CONTROL UNIT																		
TYPE	CABINET																	
HEIGHT	70 in (1778 mm)																	
WIDTH	23 in (584 mm)																	
DEPTH	25 in (635 mm)																	
WEIGHT	600 lb (272 kg)						225 lb (101 kg)											
HIGH VOLTAGE SECTION INSULATION	AIR						OIL											
HEIGHT	IN CONTROL UNIT						20 in (508 mm)		30 in (762 mm)		32 in (813 mm)	54 in (1372 mm)	65 in (1651mm)	48 in (1219mm)				
WIDTH							30 in (762 mm)		40 in (1016 mm)		40 in (1016 mm)		DIAMETER		48 in (1219mm)			
DEPTH							20 in (508 mm)		25 in (635 mm)		25 in (635 mm)		27 in (686 mm)	29 in (737 mm)		70 in (1778mm)		
WEIGHT							1050 lb (476 kg)	1100 lb (499 kg)	2450 lb (1111 kg)	2500 lb (1134 kg)	3100 lb (1406 kg)	3200 lb (1452 kg)	3300 lb (1497 kg)	5500 lb (2495 kg)				

* 380 or 415 Volts, 50 Hertz, three phase also available

**380 or 415 Volts, 50 Hertz, single phase also available

SPECIFICATIONS FOR 15 KW HIGH POWER DC POWER SUPPLIES

MODEL NO.	801-15A	803-5 A	805-3A	810-1.5A	825-600	850-300	875-200	8100-150	8120-125	8150-100	8200-75	8250-60	8300-50
INPUT													
VOLTAGE	480 V 50/60 Hz THREE PHASE*					480 V 50/60 Hz SINGLE PHASE**							
CURRENT	20A					32A							
OUTPUT													
VOLTAGE - kV	1	3	5	10	25	50	75	100	120	150	200	250	300
CURRENT - mA	15A	5A	3A	1.5A	600	300	200	150	125	100	75	60	50
REGULATION	10% NL-FL					18% NL-FL							
RIPPLE	5% rms (1% OPTIONAL)					2% rms							
ACCURACY	2% FS												
CONTROL UNIT													
TYPE	CABINET												
HEIGHT	70 in (1778 mm)												
WIDTH	23 in (584 mm)												
DEPTH	25 in (635 mm)												
WEIGHT	750 lb (340 kg)					420 lb (191 kg)							
HIGH VOLTAGE SECTION													
INSULATION	AIR					OIL							
HEIGHT	IN CONTROL UNIT					25 in (635 mm)	30 in (762 mm)	32 in (813 mm)	36 in (914 mm)	48 in (1219mm)			
WIDTH						35 in (889 mm)	40 in (1016 mm)		36 in (914 mm)	48 in (1219mm)			
DEPTH						25 in (635 mm)		28 in (711 mm)	64 in (1626mm)	70 in (1778mm)			
WEIGHT						1550 lb (703 kg)	1650 lb (748 kg)	2850 lb (1293 kg)	2900 lb (1315 kg)	3700 lb (1678 kg)	3800 lb (1724 kg)	4700 lb (2132 kg)	5500 lb (2495 kg)

* 380 or 415 Volts, 50 Hertz, three phase also available

**380 or 415 Volts, 50 Hertz, single phase also available

SPECIFICATIONS FOR 25 KW HIGH POWER DC POWER SUPPLIES

MODEL NO.	801-25A	803-8.3	805-5A	810-2.5A	825-1A	850-500	875-335	8100-250	8120-200	8150-170	8200-125	8300-80
INPUT											480 V 50/60 Hz*	
VOLTAGE	480 V 50/60 Hz THREE PHASE*										SINGLE PHASE	
CURRENT	32A										54A	
OUTPUT												
VOLTAGE - kV	1	3	5	10	25	50	75	100	120	150	200	300
CURRENT - mA	25A	8.8A	5A	2.5A	1A	500	335	250	200	170	125	80
REGULATION	10% NL-FL										18%	
RIPPLE	5% rms (1% OPTIONAL)										2% rms	
ACCURACY	2% FS											
CONTROL UNIT												
TYPE	CABINET											
HEIGHT	72 in (1829 mm)					70 in (1778 mm)						
WIDTH	25 in (635 mm)					23 in (584 mm)						
DEPTH	30 in (762 mm)					25 in (635 mm)						
WEIGHT	1250 lb (567 kg)					500 lb (227 kg)						
HIGH VOLTAGE SECTION												
INSULATION	AIR					OIL						
HEIGHT	IN CONTROL UNIT					33 in (838 mm)	30 in (762 mm)	32 in (813 mm)	35 in (869 mm)	48 in (1219 mm)		
WIDTH						29 in (737 mm)	40 in (1016 mm)		44 in (1118 mm)	54 in (1372 mm)		
DEPTH						17 in (432 mm)	25 in (635 mm)	28 in (711 mm)	30 in (762 mm)	40 in (1016 mm)		
WEIGHT						3100 lb (1406 kg)	3200 lb (1452 kg)	4400 lb (1996 kg)	4600 lb (2087 kg)	5000 lb (2268 kg)	5200 lb (2359 kg)	6000 lb (2722 kg)

*380 or 415 Volt, 50 Hertz also available

SPECIFICATIONS FOR 50 KW HIGH POWER DC POWER SUPPLIES

MODEL NO.	801- 50A	803- 16.6A	805- 10A	810- 5A	825- 2A	850- 1A	875- 670	8100- 500	8120- 420	8150- 335	8200- 250	8300- 165		
INPUT														
VOLTAGE	480 V 50/60 Hz THREE PHASE*										480 V 50/60 Hz* SINGLE PHASE			
CURRENT	64A										110A			
OUTPUT														
VOLTAGE - kV	1	3	5	10	25	50	75	100	120	150	200	300		
CURRENT - mA	50A	16.6A	10A	5A	2A	1A	670	500	420	335	250	165		
REGULATION	10% NL-FL										18%			
RIPPLE	5% rms (1% OPTIONAL)										2% rms			
ACCURACY	2% FS													
CONTROL UNIT														
TYPE	CABINET													
HEIGHT	70 in (1778 mm)													
WIDTH	23 in (584 mm)													
DEPTH	25 in (635 mm)													
WEIGHT	850 lb (386 kg)													
HIGH VOLTAGE SECTION														
INSULATION	AIR						OIL							
HEIGHT	70 in (1778 mm)			30 in (762 mm)			32 in (813 mm)	35 in (869 mm)		48 in (1219 mm)				
WIDTH	23 in (584 mm)			40 in (1016 mm)			44 in (1118 mm)		54 in (1372 mm)					
DEPTH	25 in (635 mm)			28 in (711 mm)			30 in (762 mm)		40 in (1016 mm)					
WEIGHT	2500 lb 1000 lb (454 kg)			5400 lb (2449 kg)		5600 lb (2540 kg)		6200 lb (2812 kg)		6250 lb (2835 kg)		6500 lb (2948 kg)		7000 lb (3175 kg)

*380 or 415 Volt, 50 Hertz also available

OPTIONS — HIGH POWER MODELS

METER RELAYS

Over-voltage and/or over-current protection. Turns off HV section and lights indicator lamps at preset levels. On motorized systems, stops voltage rise at preset level.

LINE REACTOR

Panel switch bypasses overload circuit and inserts line reactor in series with HV transformer. Limits output to rated current. Useful in capacitor charging and other applications where constant current is desired.

DWELL TIMER

Sounds buzzer after timing out. Manually switched ON and OFF. For manual controls units.

HIGH VOLTAGE WARNING CIRCUIT

120 V 250 VA terminals inside control unit for connection of external warning lamps. Alternate ON and OFF at 1-2 second intervals when HV is ON.

MEMORY KV METER

Additional meter. Records voltage at which test sample failed. Normally used only on motorized units.

MOTORIZED OUTPUT CONTROLS

NOTE: The time required for the output to rise from zero to rated voltage is optional and may be 15, 30, or 60 seconds. **Rated speed** (V/s) is the rated voltage divided by the rise time.

MANUAL, SINGLE SPEED

With HV switch ON, the output of the variable transformer is driven at rated speed while a RAISE or LOWER pushbutton is continuously depressed. When HV is switched OFF or in the event of failure, HV output is disconnected and the transformer is returned to the ZERO output position at rated speed. OFF ZERO panel lamp will glow until the zero position is attained. Standard on 50 kW units.

MANUAL, 10:1 SPEED

Same as Manual, Single Speed except that RAISE and LOWER is adjustable from 10 to 100% rated speed. Returns to ZERO at rated speed.

AUTOMATIC, SINGLE SPEED

Operable in either MANUAL or AUTOMATIC mode. In automatic mode, when HV is turned ON the output voltage ramps at rated speed to preset voltage, dwells, then ramps to ZERO and turns off HV. In event of failure, HV is turned OFF and motor drives variable transformer to ZERO output. Adjustable meter relay and dwell timer included.

AUTOMATIC, 10:1 SPEED

Same as Automatic, Single Speed except that rate of rise is adjustable from 10 to 100% rated speed.

NOTES

- Specifications including weights and dimensions are subject to change without notice
- On high power units (25 kW and 50 kW) specifications provided herein are estimates only. Exact data will be provided after receipt of order.

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NOTE: Because Hipotronics has a policy of continuous product improvement, it reserves the right to change design and specifications without notice.