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Power Ten: High Power DC Power Supplies

Power Ten supplies are the first choice for semiconductor burn-in systems worldwide and are providing solutions to high power DC voltage requirements in many other diverse applications. These include:

- Process Control
- Production Test
- ATE
- Ion Implant
- High Power Lasers
- Medical Systems
- Electromagnets
- Battery Chargers
- Radar Systems
- Research / Labs

Over 93 different output voltage and current combinations are available as standard products.

All power supply designs from Power Ten employ the most reliable, efficient and cost-effective switching technology – including pulse width modulation (PWM) and zero crossing topology to achieve both high-efficiency and high-density packaging. A 10kW model is available in only a 5-1/4" high (3U), rackmounted configuration.

Product quality starts with engineering as a design criteria and is ensured by our highly trained staff of manufacturing and test personnel. Long-term reliability is achieved by care in the derating of components combined with a conservative approach to mechanical and thermal design.

2 kW and 3 kW

- Single Phase & Three Phase Models
- Low Peak-to-Peak Ripple & Noise
- CE & TUV
- Optional IEEE 488.2 and RS 232 Remote Programming with SCPI Protocol



3.3 kW, 6.6 kW and 10 kW

- 3-Phase Input Power
- Low Peak-to-Peak Ripple & Noise
- CE & TUV
- Optional IEEE 488.2 and RS 232 Remote Programming with SCPI Protocol



13 kW, 16.5 kW and 20 kW

- 3-Phase Input Power
- Low Peak-to-Peak Ripple & Noise
- CE & TUV
- Optional IEEE 488.2 and RS 232 Remote Programming with SCPI Protocol



Power Ten: Common Specifications

Common Specifications

Regulation (Line or Load)

Voltage: 0.1% of maximum rated output

Current: 0.5% of maximum rated output

Transient Response

A 30% current step load will recover to within $\pm 2\%$ of set voltage within 10 msec.

Stability

$\pm 0.05\%$ of set point per 8 hours after 30 minutes warm-up at fixed line, load and temperature.

Temperature Coefficient

0.02%/°C of rated output voltage

0.03%/°C of rated output current

Operating Temperature

0 to +50° C, No derating

Storage Temperature

-20 to +70°C

Cooling

Internal fans

Controls (Front Panel)

On/Off switch, DC volts adjust, DC amps adjust, OVP preset adjust (limit set)

Meters/Indicators

LCD DC voltmeter, ammeter and OVP limit set. LED indicators for voltage mode, current mode. OVP fault and fault

Built-In Protection

Over Voltage, Current limit Fold back, Over Temperature, Brown Out, Turn On Surge Limit, Slow Start

Remote Control/Monitor (Rear Panel)

On/Off control via contact closure, 6-120 VDC, TTL or CMOS switch, output voltage and current monitor, OVP limit set, summary fault status on P60 Series.

Remote Programming

Voltage (0 to 100%) Current (0 to 100%)

Resistive: 0-5K ohms 0-5K ohms

Voltage: 0-5 VDC or 10 VDC 0-5 VDC or 10 VDC

Optional IEEE 488.2 and RS 232 Programming with SCPI protocol.

Remote Sensing:

Terminals provided to sense output voltage at load

Operational Features:

Master/Slave, Series, Parallel

Primary Power (Standard)

P62B Series

190-253 VAC¹

P63C and P66C

190-253 VAC²

Web Site

For information regarding installation, operation and maintenance, visit our web site at:

www.elgar.com

¹ May be ordered as Single or 3-Phase

(3 phase 3 kW only)

² Optional Inputs: 360-440 VAC and 432-528 VAC

P 62 Series

Input Voltage

190 – 253 VAC, 47 – 63 Hz

Input Current (Typical)

	Single Phase @ 230 VAC	3-Phase @ 208 VAC
At 2.0 kW Output:	15 A	
At 3.0 kW Output:	21 A	15 A

Physical

Weight: 45 Lbs.

Dimensions: 19" (W) X 3-1/2" (H) X 18" (D)

AC Input Interface:

Single Phase: 2 wire + GND
(#8-32 threaded studs)
Three Phase: 3 wire + GND
(#8-32 threaded studs)

DC Output Interface: Bus bars with 0.375" interface holes for output ≤ 60 VDC. Two position barrier strip for output ≥ 80 VDC

Control/Monitor Interface:

DB 25-pin female connector

P 63 Series

Input Voltage

190-253 VAC, 47-63 Hz (Standard)
360-440 VAC, 47-63 Hz (Option)
432-528 VAC, 47-63 Hz (Option)

Input Current @ 208 VAC (Typical)

At 3.3 kW Output: 15 A
At 6.6 kW Output: 28 A
At 10.0 kW Output: 41 A
Operates from Delta or Wye Source

Physical

Weight: 3.3 kW: 40 Lbs.
6.6 kW: 60 Lbs.
10.0 kW: 80 Lbs.

Dimensions: 19" (W) X 5.25" (H) X 22" (D)

AC Input Interface: 3 wire + GND (#10-32 threaded studs) (208 VAC)

DC Output Interface: Bus bars with 0.390" interface holes for output ≤ 50 VDC.

Control/Monitor Interface:

DB 25-pin female connector

P 66 Series

Input Voltage

190-253 VAC, 47-63 Hz (Standard)
360-440 VAC, 47-63 Hz (Option)
432-528 VAC, 47-63 Hz (Option)

Input Current @ 208 VAC (Typical)

At 13 kW Output: 54 A
At 16.5 kW Output: 67 A
At 20 kW Output: 80 A
Operates from Delta or Wye Source

Physical

Weight: 13 kW: 120 Lbs.
16.5 kW: 140 Lbs.
20 kW: 160 Lbs.

Dimensions: 19" (W) X 10.5" (H) X 22" (D)

AC Input Interface:

3 wire + GND (#1/4-20 threaded studs) (208 VAC)

DC Output Interface: Bus bars with 0.410" interface holes for output ≤ 50 VDC.

Control/Monitor Interface:

DB 25-pin female connector

Model	Output DC		Output P-P Ripple ¹
	Volts	Amps	
P62 Series: 2 kW to 3 kW²			
P62B-5325	0-5	325	50 mV
P62B-8250	0-8	250	50 mV
P62B-8350	0-8	350	50 mV
P62B-10200	0-10	200	50 mV
P62B-10300	0-10	300	50 mV
P62B-15130	0-15	130	50 mV
P62B-15200	0-15	200	50 mV
P62B-20100	0-20	100	75 mV
P62B-20150	0-20	150	75 mV
P62B-3066	0-30	66	75 mV
P62B-30100	0-30	100	75 mV
P62B-4050	0-40	50	75 mV
P62B-4075	0-40	75	75 mV
P62B-5040	0-50	40	75 mV
P62B-5060	0-50	60	75 mV
P62B-6033	0-60	33	75 mV
P62B-6050	0-60	50	75 mV
P62B-8025	0-80	25	100 mV
P62B-8037	0-80	37	100 mV
P62B-10020	0-100	20	125 mV
P62B-10030	0-100	30	125 mV
P62B-12016	0-120	16	135 mV
P62B-12025	0-120	25	135 mV
P62B-15013	0-150	13	150 mV
P62B-15020	0-150	20	150 mV
P62B-20010	0-200	10	175 mV
P62B-20015	0-200	15	175 mV
P62B-2508	0-250	8	200 mV
P62B-25012	0-250	12	200 mV
P62B-3006.6	0-300	6.6	200 mV
P62B-30010	0-300	10	200 mV
P62B-4005	0-400	5	225 mV
P62B-4007.5	0-400	7.5	225 mV

Model	Output DC		Output P-P Ripple ¹
	Volts	Amps	
P63 Series: 3.3 kW to 10 kW*			
P63C-5500	0-5	500	50 mV
P63C-51000	0-5	1000	50 mV
P63C-51500	0-5	1500	50 mV
P63C-8400	0-8	400	50 mV
P63C-8800	0-8	800	50 mV
P63C-81200	0-8	1200	50 mV
P63C-10330	0-10	330	50 mV
P63C-10660	0-10	660	50 mV
P63C-101000	0-10	1000	50 mV
P63C-12.5265	0-12.5	265	50 mV
P63C-12.5530	0-12.5	530	50 mV
P63C-12.5800	0-12.5	800	50 mV
P63C-15220	0-15	220	50 mV
P63C-15440	0-15	440	50 mV
P63C-15660	0-15	660	50 mV
P63C-20166	0-20	166	75 mV
P63C-20330	0-20	330	75 mV
P63C-20500	0-20	500	75 mV
P63C-25134	0-25	132	75 mV
P63C-25265	0-25	265	75 mV
P63C-25400	0-25	400	75 mV
P63C-30110	0-30	110	75 mV
P63C-30220	0-30	220	75 mV
P63C-30330	0-30	330	75 mV
P63C-4083	0-40	83	75 mV
P63C-40166	0-40	166	75 mV
P63C-40250	0-40	250	75 mV
P63C-5066	0-50	66	75 mV
P63C-50133	0-50	133	75 mV
P63C-50200	0-50	200	75 mV

Model	Output DC		Output P-P Ripple ¹
	Volts	Amps	
P66 Series: 13.3 kW to 20 kW*			
P66C-52000	0-5	2000	50 mV
P66C-52500	0-5	2500	50 mV
P66C-53000	0-5	3000	50 mV
P66C-81600	0-8	1600	50 mV
P66C-82000	0-8	2000	50 mV
P66C-82400	0-8	2400	50 mV
P66C-101300	0-10	1300	50 mV
P66C-101650	0-10	1650	50 mV
P66C-102000	0-10	2000	50 mV
P66C-12.51060	0-12.5	1060	50 mV
P66C-12.51325	0-12.5	1325	50 mV
P66C-12.51600	0-12.5	1600	50 mV
P66C-15880	0-15	880	50 mV
P66C-151100	0-15	1100	50 mV
P66C-151320	0-15	1320	50 mV
P66C-20665	0-20	665	75 mV
P66C-20830	0-20	830	75 mV
P66C-201000	0-20	1000	75 mV
P66C-25520	0-25	520	75 mV
P66C-25650	0-25	650	75 mV
P66C-25800	0-25	800	75 mV
P66C-30440	0-30	440	75 mV
P66C-30550	0-30	550	75 mV
P66C-30660	0-30	660	75 mV
P66C-40330	0-40	330	75 mV
P66C-40415	0-40	415	75 mV
P66C-40500	0-40	500	75 mV
P66C-50265	0-50	265	75 mV
P66C-50330	0-50	330	75 mV
P66C-50400	0-50	400	75 mV

*Note: For high voltage models 60V and above see SGA Series.

Available from:



Measurably better value

Thurlby Thandar Instruments Ltd. Glebe Road, Huntingdon, Cambs. PE29 7DR U.K.
 Tel: 01480 412451, Fax: 01480 450409, e-mail: sales@tti.co.uk
 Web: www.tti.co.uk

¹ Peak-to-peak ripple and noise is over the entire range of the power supply as measured in the voltage mode at the end of a 6-foot cable across a 1µf film capacitor into a resistive load. Low noise option available on ≤60 V models. Please contact the factory.

² Available with 3-phase input option (3 kW only).

Remote Computer Programming Options

IEEE 488.2 and RS 232 Interface Option enables the power supply to be operated from a computer with full remote programming control and monitoring. The slave interface option allows multichannel control from a single bus address.

Programming Resolution

Voltage: 0.03% of full scale
 Current: 0.03% of full scale
 Over voltage Protection: 0.03% of full scale
 (full scale is 120% of maximum output voltage)

Programming Accuracy

Voltage: $\pm (0.1\% + 0.1\% \text{ of maximum output voltage})$
 Current: $\pm (0.1\% + 0.4\% \text{ of maximum output voltage})^*$

Overvoltage Protection:

$\pm (0.5\% + 0.5\% \text{ of maximum output voltage})$

Readback Resolution

Voltage and Current: $\pm 0.03\%$ of full scale

Readback Accuracy

Voltage: $\pm (0.1\% + 0.15\% \text{ of full scale output voltage})$
 Current: $\pm (0.1\% + 0.4\% \text{ of full scale output current})^*$

* After 30 minutes operation with fixed line, load and temperature.

Programmable Functions

- Output Voltage and Current
- Soft Limits for Voltage and Current
- Over Voltage Protection
- Output Enable/Disable
- Maskable Fault Interrupt
- Hold and Trigger

Readback Functions

- Actual Measured Voltage and Current
- Voltage and Current Settings
- Soft Voltage and Current Limits
- Over Voltage Protection Setting
- Status and Accumulated Status Registers
- Programming Error Codes
- Fault Codes
- Manufacturer, Power Supply Model and Firmware Version Identification

Isolated Analog Option

- Fully Isolates Control Inputs
- Eliminates System Ground-Loops
- Specifications
 - Input to Output Isolation: 500V
 - Linearity Control to Power Output: $\pm 1\%$ (20-100% of Output)
 - Isolation Mode Rejection: 10 KV/ μ S
 - Isolation Mode Rejection Ratio: > 100 dB

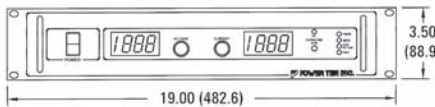
This control isolation option for all Power Ten power supply models fully isolates the remote control signals. This isolation allows users to control power supplies not connected to a common ground. In addition, in systems with high ambient noise or with large ground loop currents the control ground can be isolated from the power ground eliminating problems.



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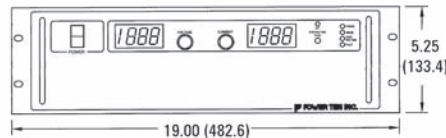
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P 62 Series

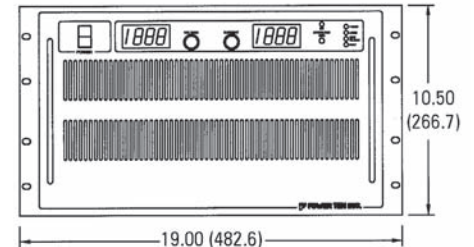


Dimensions in inches (millimeters)

P 63 Series



P 66 Series



Model Configuration

