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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**

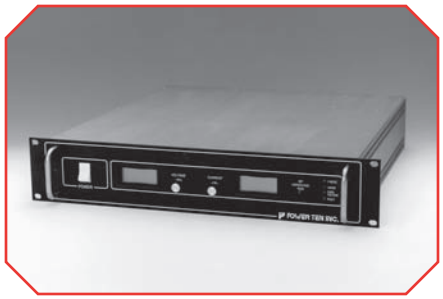
Over 93 different output voltage and current combinations are available as standard products.

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 ±2% of set voltage within 10 msec.

Stability
±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 VAC[1]
P63C and P66C
190-253 VAC[2]

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

Power Ten: Data Tables

Model	Output DC		Output P-P Ripple[1]
	Volts	Amps	
P62 Series: 2 kW to 3 kW[2]			
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.*

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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).

Power Ten: Programming Options

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: ± (0.1% + 0.1% of maximum output voltage)
Current: ± (0.1% + 0.4% of maximum output voltage)*

Overvoltage Protection:

± (0.5% + 0.5% of maximum output voltage)

Readback Resolution

Voltage and Current: ± 0.03% of full scale

Readback Accuracy

Voltage: ± (0.1% + 0.15% of full scale output voltage)
Current: ± (0.1% + 0.4% 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

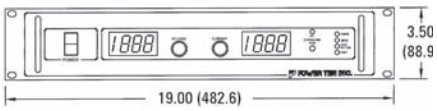
Isolated Analog Option

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

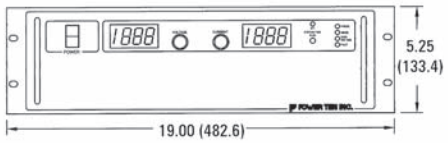
This control isolation option for all Power Ten power supply models fully isolates the remote control signals. This isolation allows users to control power supplies not connected to a common ground. In addition, in systems with high ambient noise or with large ground loop currents the control ground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

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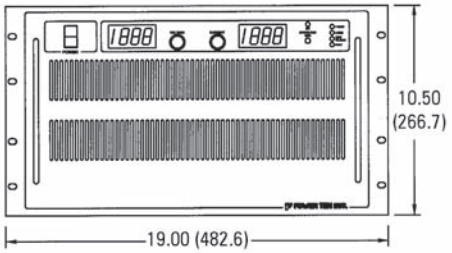
P 62 Series



P 63 Series



P 66 Series



Dimensions in inches (millimeters)

Model Configuration

X X X X - XXXXXX - XX

Series Prefix
P = Power Ten Standard Model
R = IEEE 488.2 and RS 232
C = Custom Model

DC Output Range
6 = 2 kW - 20 kW

Chassis Height
2 = 3.5″
3 = 5.25″
6 = 10.5″

Input Line Voltage

A = 100-132 VAC	50/60 Hz	1PH,	2-Wire + GND
B = 190-253 VAC	50/60 Hz	1PH,	2-Wire + GND
C = 190-253 VAC	50/60 Hz	3PH,	3-Wire + GND
D = 360-440 VAC	50/60 Hz	3PH,	3-Wire + GND
E = 432-528 VAC	50/60 Hz	3PH,	3-Wire + GND

Model Number (DC Output Voltage + Current = Model Number)
Example: 10V @ 1000A = 101000 (See table)

Modifications
A - ZZ
AB = Isolated Analog

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