

BP series

Programmable Precision
DC Power Supply

5 kW - 75 kW /

0-40 V up to 0-600 V



Bulk Power Applications
ATE Equipment
High Power Burn-In
Electro-Magnets
OEM

GLASSMAN 
europe

www.glassman europe.co.uk

Introduction

The **BP series** represents the next generation of high power programmable DC power supplies. Designed for exceptional load transient response, low noise and a very high power density, which is further enhanced by an ability to be stacked without any clearance requirements between units.

The BP series is effectively a very compact, yet highly efficient 5kW dc power module, which can be configured together with similar modules within a single 3U chassis,

to produce a total output power capability of up to 15kW. Multiple chassis can then be easily paralleled to achieve output power levels of up to 75kW, whilst still operating within specified limits. Paralleled units operate like one single power supply, providing total system current.

The BP series is available in two control versions, the BPA has basic analogue controls, while the BPI provides intelligent control features:

Options and Accessories

BPI: Advanced Intelligent Control

The BPI combines onboard intelligent controls with the outstanding power electronics common to all BP family supplies. These controls enable sophisticated sequencing, constant power mode and save/recall of instrument settings. Looping of sequences makes the BPI ideal for repetitive testing. An impressive vacuum fluorescent graphical display in eight languages, context sensitive “soft” keys and front panel keyboard simplify programming of the BPI.

BPA: Outstanding Value - Analogue Control

The BPA, with its industry leading price performance, is available for customers requiring simple front panel analogue controls or external control. With the same high performance power electronics as the BPI, the BPA provides essential features like ten turn potentiometers for setting voltage and current, 3 1/2 digit LED readout plus front panel over-voltage protection (OVP) preview/adjustment and reset.

Comparison Chart

Feature	BPA	BPI
Modular Design	•	•
Fast Load Transient Response	•	•
Parallelable	•	•
Analogue & Digital Summing	Optional	•
Direct Front Panel V/I Control	•	•
3 1/2 Digit LED Readout	•	
Graphics Display		•
Sequencing		•
Save/Recall Setups		•
System Power Readouts		•
Constant Power Mode		•
GPIB/RS-232C	Optional	RS-232C Std GPIB Optional
LXI Compliant Ethernet	Optional	Optional

Input Options:

- 187 - 242VAC, 3 Phase
- 342 - 440VAC, 3 Phase
- 396 - 528VAC, 3 Phase

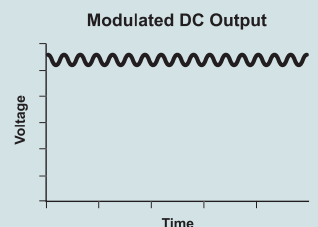
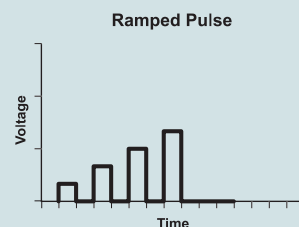
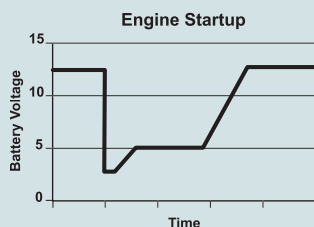
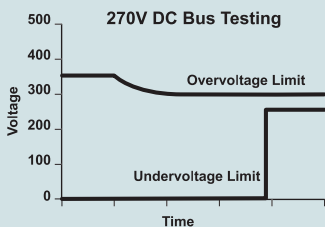
Remote Control Options:

- GPIB + RS-232C
- Ethernet + RS-232C
- Isolated Analogue Control
- Shaft Locks (BPA series only)

Contact us for other combinations



Advanced Power Simulation



Key Features

- High Power Density: Up to 15 kW in a 3U chassis
- Wide Voltage Range: 0-40V up to 0-600V, in increments of 5 kW from 5 to 15kW
- Fast Load Transient Response: Protection from undesired voltage excursions
- Low Ripple and Noise: Suitable for the most sensitive applications
- Parallelable up to 75kW: Expandable as your requirement grows
- Modular Design: Upgradeable for the ultimate in investment protection.
- Sequencing: Program custom waveforms
- Easy-to-read Fluorescent Display: BPI supports English, French, German, Italian, Spanish, Chinese, Japanese, and Korean languages
- 16-bit Resolution: Optional GPIB + RS-232C or Ethernet provides precise control
- Ethernet Control: LXI Class C compliant communication with integrated web server
- Direct Relay Control: Control output and sense isolation relays, along with polarity relays. (Ethernet Option Only)
- Hardware Trigger: Ethernet Option Only
- 3 Year Warranty

Typical Applications

Process Control

Whether you are controlling ion beams for the manufacture of semiconductors, or driving a current through electrolyte for precise control in a plating process, the BP series is an ideal choice with its small size, reliable modular design and standard analogue programmability. Direct control of V and I along with monitoring of the actual voltage and current, provides a simple interface for your PLC or other type of analogue controller.

Product Development

Testing & Burn-in of DC-DC converters, laser diodes, automotive systems, semiconductor components and aircraft flight hardware are just a few of the items being tested using the BP product family. From simple front panel control to complex test sequences for compliance testing, the BP series will keep pace with your changing application needs.

Research

A research environment presents some of the most demanding requirements on your test instrumentation. Equipment that is sufficient today, may not meet the needs of the next project. With the BP series this is no longer a problem. The modular design allows you to easily upgrade to higher power levels in the future, or parallel units to achieve up to 75kW. With the sophisticated sequencing capability of the BPI model, you can build an infinite variety of test or diagnostic programs and have them execute directly from the power supply.

Automotive Component Test

The 16-bit resolution and Ethernet enabled hardware triggering allows for detailed sequencing associated with battery fluctuation simulation. The tight load regulation capability of the BP series makes it a superior source for validation and acceptance testing and burn-in of automotive components. The 40V models, in particular, provide a full range of testing to simulate battery conditions. Margin testing of components, such as electronic control units (ECU) and electromechanical components, is easily achieved.

Rackmount ATE Systems

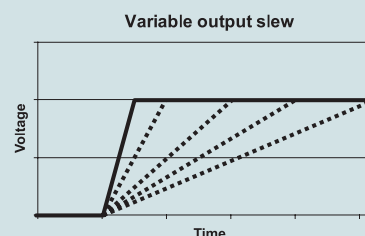
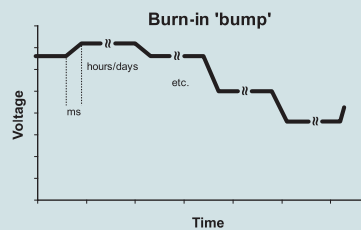
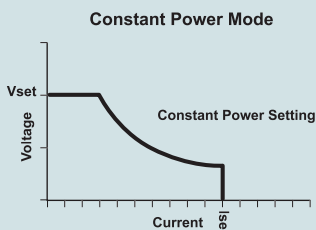
The high power density of the BP series makes it ideal for ATE system integration. The wide variety of voltage and current combinations allows multiple voltage outputs within a small space. The wide variety of control methods possible, allows easy integration into legacy systems as well as state of the art high speed systems.

Battery Charging

The BP series provides high accuracy voltage output to optimise battery charging. Battery charging requires high accuracy voltage and stable current output. With the remote interface options, the charging process can easily be automated for volume production.

Other typical applications include:

- Burn-In
- Materials Research
- Product Validation
- Rackmount ATE Systems
- Compliance Testing
- Process Control
- Automotive Electronics
- Battery Charging



BPI model provides constant power mode allowing independent setting of the max voltage, current and power

Product Specifications

Common	
Remote Sense	Load-line loss compensation for models ≤ 100 V is 10% above full scale voltage total (5% per load-line), and models > 100 V is 4% above full scale voltage total (2% per load-line)
Parallel Operation	Up to 5 units may be paralleled for additional current within the power supply single-unit specifications, with exception of the DC output current set accuracy. Additional paralleled BP units will add 0.3% inaccuracy per unit. To parallel more than 5 units, contact factory
Series Operation	Up to 2 units (see Output Float Voltage)

Output: Voltage and Current Ranges								
Power	3U			6U*			Ripple & Noise	
	5 kW	10 kW	15 kW	20 kW	25 kW	30 kW	rms (20 Hz- 300 kHz)	p-p (20 Hz- 20 MHz)
Voltage	Current							
40	125	250	375	500	625	750	20 mV	75 mV
60	83	167	250	333	417	500	20 mV	75 mV
80	63	125	188	250	313	375	20 mV	100 mV
100	50	100	150	200	250	300	20 mV	100 mV
160	31	63	94	125	156	188	25 mV	150 mV
200	25	50	75	100	125	150	25 mV	175 mV
250	20	40	60	80	100	120	30 mV	200 mV
330	15	30	45	61	76	91	30 mV	200 mV
400	12	25	38	50	63	75	30 mV	300 mV
600	8	17	25	33	42	50	60 mV	350 mV

* By way of paralleling 5 kW, 10 kW & 15 kW supplies
For higher power configurations please consult our sales team

Input	
Nominal Voltage 3 phase, 3 wire + ground	208/220 VAC (operating range 187 - 242 VAC) 380/400 VAC (operating range 342 - 440 VAC) 440/480 VAC (operating range 396 - 528 VAC)* *Optional
Frequency	47 - 63Hz
Power Factor	>0.9 typical at 208/220 VAC input >0.78 typical at 380/400 VAC input >0.69 typical at 440/480 VAC input
Protection	1/2 cycle ride-through on all three phases, 3 cycle ride through on single phase; missing phase shutdown

Output	
Ripple & Noise (Voltage Mode)	Ripple and noise, typical, measured at full load, nominal AC input. Noise measured with 6 ft. cable, 1 μ f at load
Ripple (Current Mode)	\pm +/- 0.04% of full scale rms current
DC Voltage Slew Rate	100 ms 5-95% of full scale typical (Contact factory for model specific slew rates)
DC Current Slew Rate	45A / ms typical
Line Regulation	(\pm 10% of nominal AC input, constant load) Voltage Mode: +/- 0.01% of full scale Current Mode: +/- 0.05% of full scale
Load Regulation	(no load to full load, nominal AC input) Voltage Mode: +/- 0.02% of full scale Current Mode: +/- 0.1% of full scale
Load Transient Response	Recovers within 1ms to +/-0.75% of steadystate output for a 50% to 100% or 100% to 50% load change
Efficiency	87% typical at nominal line and max load
Stability	\pm 0.05% of set point after 8 hrs. warm-up at fixed line, load and temperature
Temperature Coefficient	0.02%/ C of max. output voltage rating for voltage set point 0.03%/ C of max. output current rating for current set point
Output Float Voltage	Negative terminal within +/- 150 V of chassis potential

Environmental	
Operating Temp.	0 to 50°C
Storage Temp.	-25°C to 65°C
Humidity Range	Relative humidity up to 95% non-condensing, 0°C - 50°C
Altitude	Operating full power available up to 5,000 ft. (-1,500m), derate 10% of full power for every 1,000 feet higher; non-operating to 40,000 ft. (-12,000 m)
Cooling	Front and side air inlet, rear exhaust Units may be stacked without spacing
Regulatory	Certified to UL/CSA 61010 and IEC/EN 61010-1, CE Compliant, Semi-F47 Compliant

Physical	
Dimensions	Width: 19.00" (48.3 cm), Depth 25.0" (63.5 cm) Height: 5-15 kW units: 3U - 5.25" rack mount (13.34 cm) 20-30 kW units: 6U - 10.5" rack mount (26.67 cm)
Weight	3U < 80 lbs. (36 kg)

Programming & Read-back Specifications					
	Programming		Read-Back / Monitoring		
	Accuracy	Resolution	Accuracy	Resolution	
Front Panel Display	BPA: +/- (0.5%fs + 1 digit) BPI, Voltage: +/- 0.1% of full scale BPI, Current: +/- 0.4% of full scale	BPA: 3.5 digits BPI: 4.0 digits	BPA: +/- (0.5%fs + 1 digit) BPI, Voltage: +/- 0.1% of full scale BPI, Current: +/- 0.4% of full scale	BPA: 3.5 digits BPI: 4.0 digits	Knob control & Display read-back
Remote Analogue Interface	Voltage: +/-0.25% of full scale for 0-5 V range, +/-0.5% of full scale for 0-10 V range. Current: 0.8% of full scale	NA	+/-1.0% of full scale (0 - 10V)	NA	25-pin D-sub connector (0-5 V or 0-10 V)
Remote Digital Interface	Voltage: +/- 0.1% of full scale, Current: +/- 0.4% of full scale	+/-0.002% of full scale	Voltage: +/- 0.15% of full scale, Current: +/- 0.4% of full scale	+/-0.002% of full scale	RS-232C (Standard on BPI), Optional GPIB and Optional LXI Compliant 10/100 base-T Ethernet (see Options)
OVP	+/- 1% of full scale	+/-0.002% of full scale	-	-	Programming range: 5-110% Configured from front panel, remote analogue or via optional digital inputs
User I/O	Disconnect & Polarity-reversal relay control (Only available with Ethernet Option)				Digital 10-pin Molex type connector
Software	IVI & CVI drivers available				

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