

GW Instek

PSB-2000 Series

Multi-Range Bench-Top DC Power Supply

I. Description

The PSB-2000 series, which is a high power density, programmable and multi-range output DC power supply. There are six models in the series including one power booster unit. The PSB-2000 series has the output voltage of 0~80V and 0~800V, and the output power ranges of 0~400W and 0~800W. The multi-range output functionality facilitates flexible collocations of higher voltage and larger current under the rated power range. Both series and parallel connections can be applied to the PSB-2000 series to fulfill the requirements of higher power output range.

The PSB-2000 series provides three sets of preset function keys to memorize regularly used settings of voltage, current and power that users can recall rapidly. The sequence function, via RS232C, USB interface or optional GPIB interface, can connect with the computer to produce output power defined by sequence of a series of set voltage and current steps that are defined by the computer. This function is often used to establish a standard test procedure for the verification of the influence on DUTs done by the swiftly changing operating conditions.

The PSB-2000 series protects over voltage and over current. The power supply output function will be shut down to protect DUTs while the protection mechanism is triggered to function. When conducting battery charging operation, the Hi-W mode of the PSB-2000 series will prevent reverse current from damaging power supply. The PSB-2000 series provides analog control and analog monitor interfaces on the rear panel to control PSB-2000 output via the external voltage or to externally monitor voltage and current output status of power supply. PSB-2000 panel can be rotated 90 degree angle suitable for vertical or horizontal position to accommodate the ideal space utilization.

II. Features

- Output Voltage Rating: 80V/800V
- Output Power Rating: 400W~800W
- Constant Power Output for Multi-Range(V&I) Operation
- Series and Parallel Operation(2 Units in Series or 4 Units in parallel Maximum)
- Sequence function edited by PC will be controlled through power supply optional interface
- Standard Interface: RS-232C / USB / Analog Control Interface
- Optional Interface: GPIB



III. Specifications

Model Number	PSB-2400L	PSB-2800L	PSB-2400L2	PSB-2400H	PSB-2800H	PSB-2800LS
OUTPUT RATING						
Channel Number	1	1	2	1	1	N/A
Voltage	0~80V	0~80V	0~80V x 2	0~800V	0~800V	80V
Current	0~40A	0~80A	0~40A x 2	0~3A	0~6A	80A
Output Power (Max)	400W	800W	800W	400W	800W	800W
REGULATION (CV)						
Load	0.01%± 3mV of rating voltage			0.01%± 30mV of rating voltage		N/A
Line	0.01%± 2mV of rating voltage			0.01%± 20mV of rating voltage		
REGULATION (CC)						
Load	0.02%± 3mA of rating current			0.05%± 15mA of rating current		N/A
Line	0.01%± 2mA of rating current			0.05%± 10mA of rating current		
RIPPLE & NOISE (Noise Bandwidth 20MHz ; Ripple Bandwidth = 1MHz)						
CV p-p	90mV	150mV	90mV	250mV (only output voltage measures more than 1% of rated voltage)	300mV (only output voltage measures more than 1% of rated voltage)	N/A
CV rms	4mV	6mV	4mV	20mV (When current measures<2A)	25mV (When current measures<2A)	
CC rms	30mA	60mA	30mA	35mV (When current measures>2A)	40mV (When current measures>2A)	
PROGRAMMING ACCURACY						
Voltage	0.1% setting±2digit			± 10W (only output voltage measures more than 1% of rated voltage)		N/A
Current	0.2% setting±2digit					
Power	± 10W					
REARBACK ACCURACY						
Voltage	0.2% reading±2digit			0.2% reading±2digit		N/A
Current	0.3% reading±2digit			0.3% reading±2digit		
Power	0.5% reading±5digit			0.5% reading±Vout x 40Ma		
RESPONSE TIME						
Raise Time (Full Load / No load)	50ms			200ms		N/A
Fall Time(Full load)	100ms			500ms		
Fall Time(No load)	500ms			1000ms		
Load Transient Recover Time (Load change from 50 to 100%)	1ms			7ms		
PROGRAMMING RESOLUTION						
Voltage	10mV			100mV		N/A
Current	10mA			10mA		
Power	10W			10W		
MEASUREMENT RESOLUTION						
Voltage	10mV			100mV		N/A
Current	10mA			10mA		
Power	10W			10W		
SERIES AND PARALLEL CAPABILITY (All number of units includes Master unit)						
Series Operation	Up to 2 Units	Up to 2 Units	Up to 2 Units	N/A	N/A	For PSB-2800L Only
Parallel Operation	Up to 4 Units	Up to 4 Units	N/A	Up to 2 Units	Up to 2 Units	
Parallel Operation with PSB-2800LS (Booster Unit)	N/A	Up to 4 Units	N/A	N/A	N/A	
PROTECTION FUNCTION						
OVP (Fixed)	Output off with 110% of rating output voltage			Output off when output voltage exceed 110% of rated voltage		N/A
OVP (Variable)	Output off when operating Setting range : 1V ~ 84V with front panel			Pre-settable in range from 10V to 840V om front panel.		
OCP (Fixed)	Output off with 110% of rating output current			Output off when output voltage exceed 110% of rated voltage		
OCP (Variable)	Output off when operating Setting range : 1A ~ 42A (84A for model)			Pre-settable in range from 0.1A to 6.30A om front panel.		
OHP	Output off above heat sink setting temperatur			Output off at the internal heat sink temperatur		
ENVIRONMENT CONDITION						
Operation Temp	0°C to 40°C			0°C to +40°C		N/A
Storage Temp	- 20°C to 70°C			- 20°C to 70°C		
Operating Humidity	30% to 80% RH (no dew condensation)			30% to 80% RH (no dew condensation)		
Storage Humidity	30% to 80% RH (no dew condensation)			30% to 80% RH (no dew condensation)		
OTHER						
Cooling method	Forced air-cooling with fan motor					
Power consumption / factor	560 VA / 0.99	1120 VA / 0.99	1120 VA / 0.99	560 VA / 0.99	1120 VA / 0.99	1120VA / 0.99
Inrush Current	35A Max	70A Max	70A Max	35A Max	70A Max	70A Max
Power Source	100VAC ~ 240VAC, 50/60Hz, Single phase					
Interface (Standard)	RS-232C / USB					N/A
Interface (Optional)	GPIB					N/A
Analog Control	Yes					N/A
Dimension	210(W) x 124(H) x 290(D)mm					
Weight	Approx.5kg	Approx.7kg	Approx.7kg	Approx.5kg	Approx.6kg	Approx.7kg

IV. Accessories

1. Standard Accessories

- User Manual (CD) x 1
- AC Power Cord x 1
- External Control Connector (26pin)
- Screws for output terminals on rear panel
- Protection covers for output terminals on rear panel
- Protection caps for output terminals on the front panel
- GND Cable
- USB Cable (For Model Number: PSB-2400L;PSB-2800L;PSB-2400L2;PSB-2400H;PSB-2800H)
- Local Bus (For Model Number: PSB-2400L;PSB-2800L;PSB-2400L2; PSB-2400H;PSB-2800H)

2. Optional Accessories

- **PSB-001** GPIB Card
- **PSB-003** Parallel connection kit (for horizontal installation)
Kit includes: (PSB-007 Joint Kit,Horizontal bus bar x 2 , PSB-005 x1)
- **PSB-004** Parallel connection kit (for vertical installation)
Kit includes: (PSB-007 Joint Kit, Vertical bus bar x 2, PSB-005 x 1)
- **PSB-005** Parallel Connection Signal Cable
- **PSB-006** Serial Connection Signal Cable
- **PSB-007** Joint Kit: Includes 4 joining plates, [M3x6]screws x 4 ; [M3x8]screw x 2;

V. Ordering information

- PSB- 2400L** (0~80V/ 0~40A / 400W) Multi-Range DC Power Supply
PSB-2800L (0~80V / 0~80A / 800W) Multi-Range DC Power Supply
PSB-2400L2 (0~80V x 2 / 0~40A x 2 / 800W) Multi-Range DC Power Supply
PSB-2400H (0~800V / 0~40A / 400W) Multi-Range DC Power Supply
PSB-2800H (0~800V / 0~80A / 800W) Multi-Range DC Power Supply
PSB-2800LS 800W Slave (Booster) Unit For Current Extension Only