

- Notes:
- \*1. Minimum voltage is guaranteed to maximum 0.2% of the rated output voltage.
  - \*2. Minimum current is guaranteed to maximum 0.4% of the rated output current.
  - \*3. At 85~132Vac or 170~265Vac, constant load.
  - \*4. From No-load to Full-load, constant input voltage. Measured at the sensing point in Remote Sense.
  - \*5. Measure with JEITA RC-9131B (1:1) probe
  - \*6. Measurement frequency bandwidth is 10Hz to 20MHz.
  - \*7. Measurement frequency bandwidth is 5Hz to 1MHz.
  - \*8. From 10% to 90% of rated output voltage, with rated resistive load.
  - \*9. From 90% to 10% of rated output voltage, with rated resistive load.

- \*10. Time for output voltage to recover within 0.5% of its rated output for a load change from 10 to 90% of its rated output current. Voltage set point from 10% to 100% of rated output.
- \*11. For load voltage change, equal to the unit voltage rating, constant input voltage.
- \*12. For 6V~20V model the ripple is measured at 2V ~ rated output voltage and full output current. For other models, the ripple is measured at 10~100% output voltage and full output current.
- \*13. At rated output power.
- \*14. If install the front panel filter kit, the temperature is guaranteed to 40°C.

#### ORDERING INFORMATION

PSU 6-200	1200W	Programmable Switching DC Power Supply
PSU 8-180	1440W	Programmable Switching DC Power Supply
PSU 12.5-120	1500W	Programmable Switching DC Power Supply
PSU 15-100	1500W	Programmable Switching DC Power Supply
PSU 20-76	1520W	Programmable Switching DC Power Supply
PSU 30-50	1500W	Programmable Switching DC Power Supply
PSU 40-38	1520W	Programmable Switching DC Power Supply
PSU 50-30	1500W	Programmable Switching DC Power Supply
PSU 60-25	1500W	Programmable Switching DC Power Supply
PSU 80-19	1520W	Programmable Switching DC Power Supply
PSU 100-15	1500W	Programmable Switching DC Power Supply
PSU 150-10	1500W	Programmable Switching DC Power Supply
PSU 300-5	1500W	Programmable Switching DC Power Supply
PSU 400-3.8	1520W	Programmable Switching DC Power Supply
PSU 600-2.6	1560W	Programmable Switching DC Power Supply

#### ACCESSORIES

CD-ROM x 1 (User Manual, Programming Manual), Output terminal cover x 1, Analog connector plug kit x1, Output terminal M8 bolt set(6V~60V model), Input terminal cover x 1, 1U Handle(RoHS), 1U Bracket(LEFT, RoHS), 1U Bracket (RIGHT, RoHS), Power Cord(10A) provided for certain regions only

#### OPTIONAL ACCESSORIES

PSU-01B	Bus bar for 2 units in parallel connection	GTL-246	USB Cable, USB 2.0A-B Type Cable, 4P
PSU-01C	Cable for 2 units in parallel connection	GTL-258	GPIB Cable, 2000mm
PSU-02B	Bus bar for 3 units in parallel connection	GTL-259	RS-232 Cable with DB9 connector to RJ45
PSU-02C	Cable for 3 units in parallel connection	GTL-260	RS-485 Cable with DB9 connector to RJ45
PSU-03B	Bus bar for 4 units in parallel connection	GTL-262	RS-485 Slave cable
PSU-03C	Cable for 4 units in parallel connection		
PSU-232	RS232 Cable with DB9 connector kit		
PSU-485	RS485 Cable with DB9 connector kit		
PSU-001	Front panel filter kit(factory Installed)		
PSU-01A	Joins a vertical stack of 2 PSU units together. 2U-sized handles x2, joining plates x2		
PSU-02A	Joins a vertical stack of 3 PSU units together. 3U-sized handles x2, joining plates x2		
PSU-03A	Joins a vertical stack of 4 PSU units together. 4U-sized handles x2, joining plates x2		
PSU-ISO-I	Isolate current remote control card(factory option)		
PSU-ISO-V	Isolate voltage remote control card(factory option)		
PSU-GPIB	GPIB Interface card (factory option)		
GRM-001	Slide bracket 2pcs/set ,PSU option		
GPW-001	UL/CSA power cord 3m ,PSU option		
GPW-002	VDE power cord 3m, PSU option		
GPW-003	PSE power cord 3m, PSU option		

#### FREE DOWNLOAD

Driver LabView Driver

Specifications subject to change without notice. PSU-SeriesGD1BH

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**GW INSTEK**  
 Simply Reliable



# PSU-Series

## Programmable Switching D.C. Power Supply



1-800-517-8431

5 Commonwealth Ave  
 Woburn, MA 01801  
 Phone 781-665-1400  
 Toll Free 1-800-517-8431

Visit us at [www.TestEquipmentDepot.com](http://www.TestEquipmentDepot.com)

### FEATURES

- Voltage Output : 6V/8V/12.5V/15V/20V/30V/40V/50V/60V/80V/100V/150V/300V/400V/600V
- Power Output : 1200W ~ 1560W
- C.V/C.C Priority Mode
- Adjustable Voltage/Current Rise and Fall Time
- Series/Parallel Connection : Max. 2 units(Models Under 300V)/4 units of The Same Model
- High Efficiency and High Power Density
- 1U Height and 19"Rack Mount Size
- Three sets of Preset Function
- Bleeder Control Function
- Internal Resistance Function
- Panel Lock Function
- Protection : OVP, OCP, OHP,UVL, AC Fail, FAN Fail
- Standard : USB, LAN, RS-232, RS-485, Analog Control
- Option : GPIB, Isolated Analog Interface(Voltage Control/Current Control)

**GW INSTEK**  
 Simply Reliable

GW Instek PSU-Series, a DC power supply with high power density design, is 1U in height and compatible with 19" Rack Mount Size. The series is suitable for test system installation or system integration by flexibly selecting models for the integration into the existing test system. The PSU-Series, featuring superior voltage and current control functions, comprises fifteen models with output voltage/current ranging from 6V/200A to 600V/2.6A. The Series is suitable for different test conditions and DUTs, including electronic components testing, micro resistors, relays, shunt resistors, 12V/24V/48V battery simulation, and automotive electronic device testing.

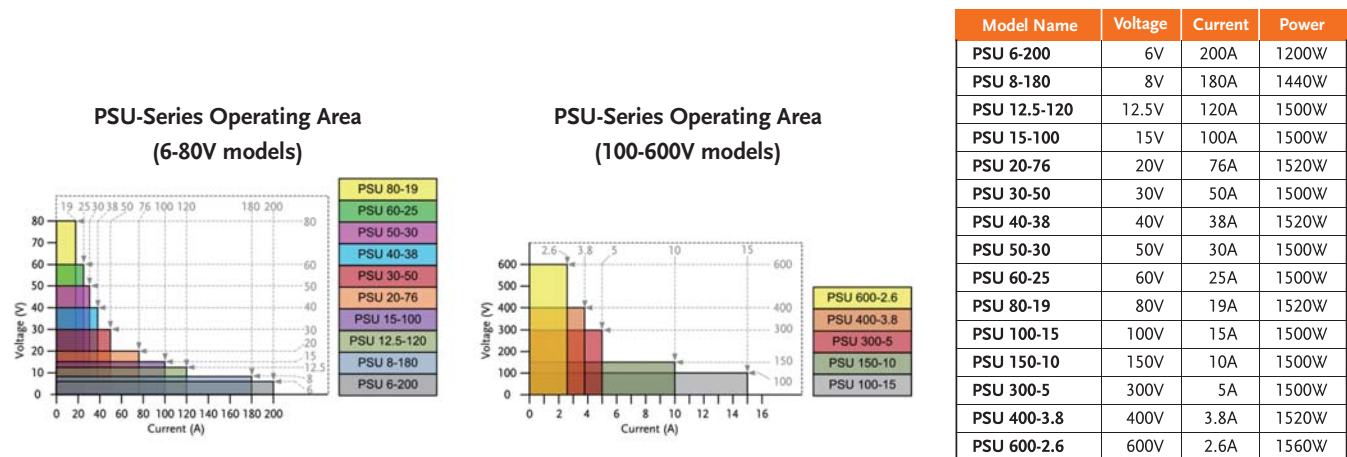
The PSU-HV series is ideal for the primary input of DC/DC converter and servomotor production application. PSU is often integrated into component test systems such as aging test equipment for capacitors; 600V DC bias applications; aging test equipment for diode; semiconductor production equipment; automotive electronics; and ECU for V8 engine or V12 engine, etc.

Utilizing same model units of the PSU-Series to conduct series and parallel connections can increase total output power, total current or total voltage. The wide voltage and current output ranges of the PSU-Series can fully satisfy various voltage and current measurement requirements. The PSU-Series is a single power output DC programmable power supply, which outputs 1200W to 1560W. The PSU-Series provides maximum 2 units in series connection (models under 300V) to achieve maximum 600V or 4 units in parallel connection to obtain maximum 800A and the maximum output power of 6.24 kilowatts.

The PSU-Series allows settings for CC priority or CV priority. Under CC or CV mode, users can adjust slew rate for output voltage or current based upon test requirements. There are two kinds of slew rate settings: high speed priority and slew rate priority. High speed priority sets slew rate at the maximum speed to reach CC or CV mode. Slew rate priority allows users to set slew rate for CC or CV mode in order to control rise or fall slew rate. Slew rate priority mode is ideal for motor tests by adjusting the rise time of output voltage to protect DUT from being damaged by inrush current occurred at turn-on.

Comparing with other 1U power supplies available in the market, PSU supports a most complete array of interfaces, including USB, LAN, RS-232, RS-485, analog control interface, GPIB (option), isolated analog interface (voltage control), and isolated analog interface (current control). Via the multi-drop mode, PSU will not need any switch/hub and GPIB cable for remote control and slave unit augmentation when using LAN, USB or GPIB. This feature can help users save costs on augmentation equipment for connecting slave while using LAN or USB.

The PSU-Series provides users with flexible settings of High/Low Level or Trigger input/Trigger output signals with pulse width of 1 ~ 60ms. Trigger input controls PSU to output or upload preset voltage, current and memory parameters. While outputting or uploading preset voltage, current and memory parameters PSU can produce corresponding Trigger output signals.

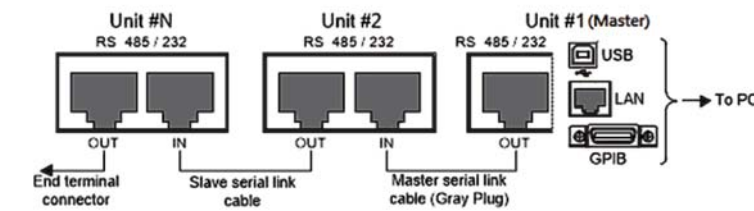


### A. SERIES/PARALLEL OPERATION AND HIGH POWER DENSITY

Series Connection	1 unit	2 units	3 units	4 units
Height of sets	1U	2U	3U	4U
PSU 6-200	6V 200A	12V 200A	6V 600A	6V 800A
PSU 8-180	8V 180A	16V 180A	8V 540A	8V 720A
PSU 12.5-120	12.5V 120A	25V 120A	12.5V 240A	12.5V 480A
PSU 15-100	15V 100A	30V 100A	15V 300A	15V 400A
PSU 20-76	20V 76A	40V 76A	20V 152A	20V 200A
PSU 30-50	30V 50A	60V 50A	30V 100A	30V 200A
PSU 40-38	40V 38A	80V 38A	40V 76A	40V 114A
PSU 50-30	50V 30A	100V 30A	50V 60A	50V 90A
PSU 60-25	60V 25A	120V 25A	60V 50A	60V 75A
PSU 80-19	80V 19A	160V 19A	80V 38A	80V 57A
PSU 100-15	100V 15A	200V 15A	100V 30A	100V 45A
PSU 150-10	150V 10A	300V 10A	150V 20A	150V 30A
PSU 300-5	300V 5A	600V 5A	300V 10A	300V 15A
PSU 400-3.8	400V 3.8A	NA	400V 7.6A	400V 11.4A
PSU 600-2.6	600V 2.6A	NA	600V 5.2A	600V 7.8A

To augment output power, the PSU-series can realize two-fold rated power (models under 300V) via 2 same model units in series connection; and four-fold rated power via 4 same model units in parallel connection so as to satisfy customers with large voltage and large current requirements. 2U height units in series connection can achieve maximum 600V output. 4U height units in parallel connection can output maximum 800A and 6240W.

### B. REMOTE PROGRAM CONTROL (UP TO 31 UNITS CONNECTION)

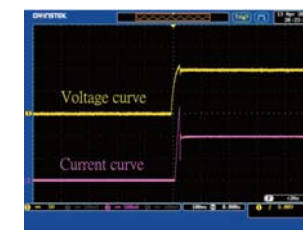


Provide RS-232, RS-485, USB, GPIB and LAN for PC to remote control Master PSU-Series. RJ-45 connector on the rear panel can connect up to 31 units.

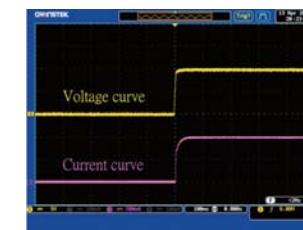
LAN or USB remote control and augmenting slave units by using PSU-Series multi-drop mode will no longer need any switch/hub that can help customers save equipment costs.

\* For the detailed information please refer to User Manual

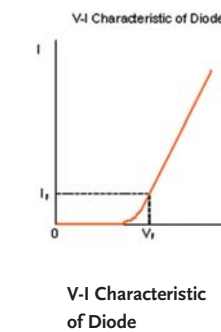
### C. C.V/C.C PRIORITY MODE



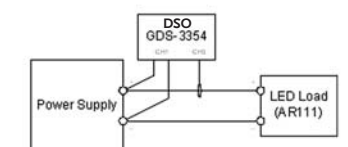
Under the conventional C.V mode, inrush current and surge voltage appeared at forward voltage (V<sub>f</sub>) of LED.



Under C.C priority mode, inrush current and surge voltage are effectively restrained.



V-I Characteristic of Diode



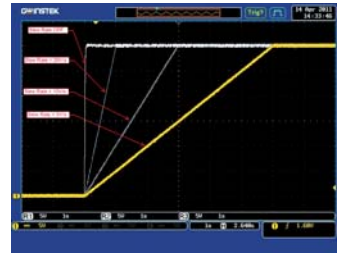
Using GDS-3354 DSO to Test LED Operation Under C.V Priority and C.C Priority Respectively

Conventional power supplies under the CV priority mode will produce inrush current and surge voltage at turn-on. The PSU-series has CV and CC priority modes.

The CC priority mode can prevent inrush current and surge voltage from occurring at turn-on to protect DUT.

#### D. ADJUSTABLE SLEW RATE

VOLTAGE SLEW RATE	CURRENT SLEW RATE
0.001V~0.060V/msec (PSU 6-200)	0.001A~2.000A / msec (PSU 6-200)
0.001V~0.080V/msec(PSU 8-180)	0.001A~1.800A / msec (PSU 8-180)
0.001V~0.125V/msec (PSU 12.5-120)	0.001A~1.200A / msec (PSU 12.5-120)
0.001V~0.150V/msec(PSU 15-100)	0.001A~1.000A / msec(PSU 15-100)
0.001V~0.200V/msec (PSU 20-76)	0.001A~0.760A / msec (PSU 20-76)
0.001V~0.300V/msec(PSU 30-50)	0.001A~0.500A / msec(PSU 30-50)
0.001V~0.400V/msec (PSU 40-38)	0.001A~0.380A / msec (PSU 40-38)
0.001V~0.500V/msec(PSU 50-30)	0.001A~0.300A / msec(PSU 50-30)
0.001V~0.600V/msec (PSU 60-25)	0.001A~0.250A / msec (PSU 60-25)
0.001V~0.800V/msec(PSU 80-19)	0.001A~0.190A / msec(PSU 80-19)
0.001V~1.000V/msec (PSU 100-15)	0.001A~0.150A / msec (PSU 100-15)
0.001V~1.500V/msec (PSU 150-10)	0.001A~0.100A / msec (PSU 150-10)
0.001V~1.500V/msec (PSU 300-5)	0.001A~0.025A / msec (PSU 300-5)
0.001V~2.000V/msec (PSU 400-3.8)	0.001A~0.008A / msec (PSU 400-3.8)
0.001V~2.400V/msec (PSU 600-2.6)	0.001A~0.006A / msec (PSU 600-2.6)



Adjustable Voltage Slew Rate

The PSU series can adjust slew rate for current and voltage. Via setting the rise and fall time of voltage and current, users can verify DUT's characteristics during voltage and current variation.

Additionally, slew rate adjustment can mitigate voltage shift to effectively prevent DUT from being damaged by inrush current. This function is ideal for tests such as capacitive load and motor.

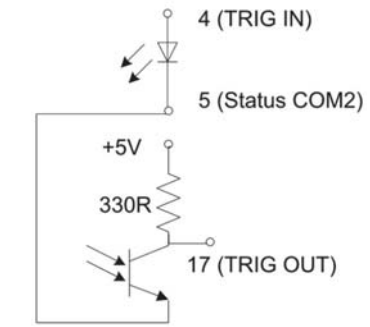
#### E. OVP, OCP AND UVL

##### SETTING RANGE

MODEL	OCP	OVP	UVL
PSU 6-200	5 ~ 220A	0.6 ~ 6.6V	0 ~ 6.3V
PSU 8-180	5 ~ 198A	0.8 ~ 8.8V	0 ~ 8.4V
PSU 12.5-120	5 ~ 132A	1.25 ~ 13.75V	0 ~ 13.12V
PSU 15-100	5 ~ 110A	1.5 ~ 16.5V	0 ~ 15.75V
PSU 20-76	5 ~ 83.6A	2 ~ 22V	0 ~ 21V
PSU 30-50	5 ~ 55A	3 ~ 33V	0 ~ 31.5V
PSU 40-38	3.8 ~ 41.8A	4 ~ 44V	0 ~ 42V
PSU 50-30	3 ~ 33A	5 ~ 55V	0 ~ 52.5V
PSU 60-25	2.5 ~ 27.5A	5 ~ 66V	0 ~ 63V
PSU 80-19	1.9 ~ 20.9A	5 ~ 88V	0 ~ 84V
PSU 100-15	1.5 ~ 16.5A	5 ~ 110V	0 ~ 105V
PSU 150-10	1 ~ 11A	5 ~ 165V	0 ~ 157.5V
PSU 300-5	0.5 ~ 5.5A	5 ~ 330V	0 ~ 315V
PSU 400-3.8	0.38 ~ 4.18A	5 ~ 440V	0 ~ 420V
PSU 600-2.6	0.26 ~ 2.86A	5 ~ 660V	0 ~ 630V

Once the voltage or current output exceeds the preset level of OVP or OCP, PSU will shut down output to protect DUT. UVL is for users to set the minimum output voltage from the output terminal.

#### F. TRIGGER CONTROL (TRIGGER INPUT/TRIGGER OUTPUT)



PSU-series provides users with complete trigger input and trigger output functions so as to flexibly control PSU-series. Each function is elaborated as follows.

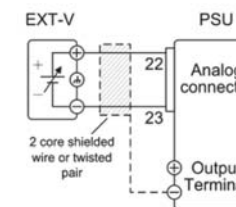
##### Trigger Input function :

1. Allow users to set the effective pulse width from 0~60ms for trigger input (0: the LOW or HIGH signal of DC level for trigger input)
2. Receive trigger input to control PSU-series output or to output preset voltage and current.
3. Receive trigger input to upload preset memory parameters.

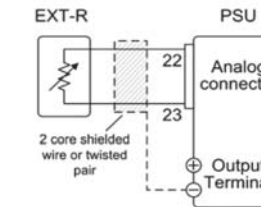
##### Trigger Output function :

1. Allow users to set the effective pulse width from 0~60ms for trigger output (0: the LOW or HIGH signal of DC level for trigger output)
2. Set LOW or HIGH for output DC level
3. PSU produces trigger output signal when setting output or changing preset value or uploading preset memory parameters.

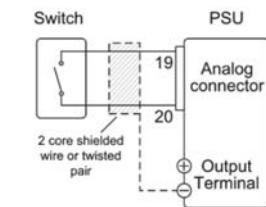
#### G. EXTERNAL ANALOG CONTROL FUNCTION



- Pin23 → EXT-V (-)
- Pin22 → EXT-V (+)
- Wire shield → negative (-) output terminal



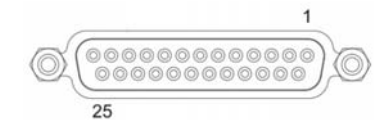
- Pin22 → EXT-R
- Pin23 → EXT-R
- Wire shield → negative (-) output terminal



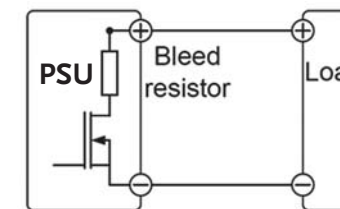
- Pin19 → Switch
- Pin20 → Switch
- Wire shield → negative (-) output terminal

##### External Voltage Controls Voltage Range External Resistance Controls Voltage Range External On-off to Control Output, on or off

The rear panel of the PSU-series has an analog control terminal. The external analog control interface allows external voltage or resistance to control voltage and current output; and allows power supply to output or to be turned on and off. The diagram on the upper shows typical connection methods for external control applications. For more detailed connection information please refers to user manual.



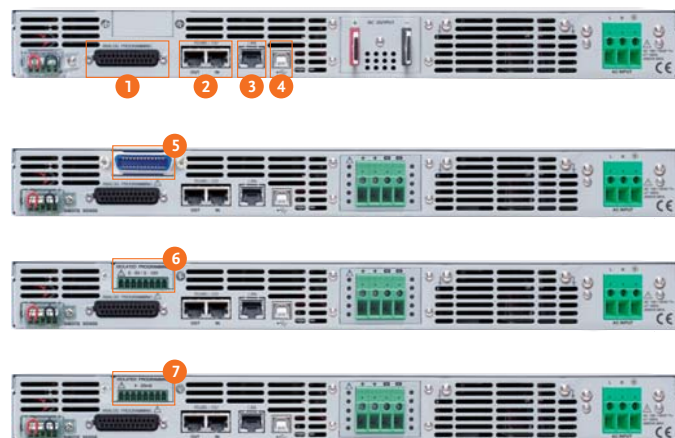
#### H. BLEEDER CONTROL



PSU-Series Built-in Bleed Resistor

The PSU-Series employs a bleed resistor in parallel with the output terminal. Bleed resistor is designed to dispatch the power from the power supply filter capacitors when power is turned off or the load is disconnected. Without a bleed resistor, power terminal may remain charged on the filter capacitors for some time and be potentially hazardous. In addition, bleed resistor also allows for smoother voltage regulation of the power supply as the bleed resistor acts as a minimum voltage load. The bleed resistance can be turned on or off using the configuration setting.

## I. VARIOUS INTERFACES SUPPORT



1. Analog Control Interface
2. RS485/RS232 Interface for Remote Control
3. LAN Port for System Communication
4. USB Interface for Remote Control
5. GPIB Interface for Remote Control
6. Isolate Voltage Remote Control Card
7. Isolate Current Remote Control Card

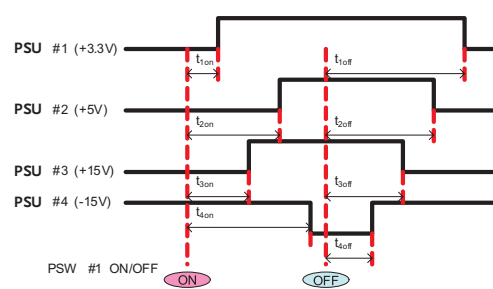
## J. USING THE RACK MOUNT KIT



Rack Mount Kit for PSU-Series EIA & JIS

The rack mount kit of the PSU-Series supports both EIA and JIS standards. A standard rack can accommodate one unit of the PSU-Series.

## K. OUTPUT ON / OFF DELAY



The Example of Output On/Off Delay Control Among Multiple Outputs of the PSU Units

The Output On/Off delay feature enables the setting of a specific time delay for output on after the power supply output is turned on, and a specific time delay for output off after the power supply output is turned off. When multiple PSU units are used, the On/Off

delay time of each unit can be set respectively referring to fix time points. This multiple-output control can be done through the analog control terminal at rear panel or through the PC programming with standard commands.

## PANEL INTRODUCTION



- |                                       |                              |  |
|---------------------------------------|------------------------------|--|
| 1. AC Power Switch (AC Power On/Off)  | 7. DC Output Terminal        | 12. Option Slot for (Selection One of Three) GPIB Interface Card/Isolate Voltage Remote Control Card/Isolate Current Remote Control Card |
| 2. USB A Port                         | 8. USB                       |  |
| 3. Voltage Knob                       | 9. LAN                       |  |
| 4. Display Area                       | 10. RS 485/RS 232            |  |
| 5. Current Knob                       | 11. Analog Control Interface | 13. Remote Sense   |
| 6. AC Input (HV:Wire Clamp Connector) |                              |  |

## OPTIONAL ASSESSORIES

<b>PSU-001</b> Front panel filter kit (factory Installed) 	<b>PSU-01C</b> Cable for 2 units in parallel connection 	<b>PSU-02C</b> Cable for 3 units in parallel connection 	<b>GPW-001</b> UL/CSA power cord 3m, PSU option 	<b>PSU-01A</b> Joins a vertical stack of 2 PSU units together. 2U-sized handles x2, joining plates x2 
<b>PSU-01B</b> Bus bar for 2 units in parallel connection 	<b>PSU-232</b> RS232 Cable with DB9 connector kit 	<b>PSU-03B</b> Bus bar for 4 units in parallel connection 	<b>GPW-002</b> VDE power cord 3m, PSU option 	<b>PSU-02A</b> Joins a vertical stack of 3 PSU units together. 3U-sized handles x2, joining plates x2 
<b>PSU-02B</b> Bus bar for 3 units in parallel connection 	<b>PSU-485</b> RS485 Cable with DB9 connector kit 	<b>PSU-03C</b> Cable for 4 units in parallel connection 	<b>GPW-003</b> PSE power cord 3m, PSU option 	<b>PSU-03A</b> Joins a vertical stack of 4 PSU units together. 4U-sized handles x2, joining plates x2 
<b>GRM-001</b> Slide bracket 2pcs/set, PSU option 				

Table with 10 columns: MODEL, PSU 6-200, PSU 8-180, PSU 12.5-120, PSU 15-100, PSU 20-76, PSU 30-50, PSU 40-38, PSU 50-30. Rows include SPECIFICATIONS, OUTPUT RATINGS, RIPPLE AND NOISE, LOAD REGULATION, LINE REGULATION, ANALOG PROGRAMMING AND MONITORING, FRONT PANEL, TRANSIENT RESPONSE TIME, OUTPUT RESPONSE TIME, PROGRAMMING AND MEASUREMENTS, TEMPERATURE COEFFICIENCY, REMOTE SENSE COMPENSATION VOLTAGE, PROTECTION FUNCTION, INTERFACE CAPABILITIES, ISOLATED ANALOG CONTROL INTERFACE, ENVIRONMENTAL CONDITIONS, INPUT CHARACTERISTICS, and DIMENSIONS & WEIGHT.

Table with 10 columns: MODEL, PSU 60-25, PSU 80-19, PSU 100-15, PSU 150-10, PSU 300-5, PSU 400-3.8, PSU 600-2.6. Rows include SPECIFICATIONS, OUTPUT RATINGS, RIPPLE AND NOISE, LOAD REGULATION, LINE REGULATION, ANALOG PROGRAMMING AND MONITORING, FRONT PANEL, TRANSIENT RESPONSE TIME, OUTPUT RESPONSE TIME, PROGRAMMING AND MEASUREMENTS, TEMPERATURE COEFFICIENCY, REMOTE SENSE COMPENSATION VOLTAGE, PROTECTION FUNCTION, INTERFACE CAPABILITIES, ISOLATED ANALOG CONTROL INTERFACE, ENVIRONMENTAL CONDITIONS, INPUT CHARACTERISTICS, and DIMENSIONS & WEIGHT.