



GW Instek PSW-40V Series

Multi-Range DC Power Supply

New Product Announcement

This document allows GW Instek's partners to quickly grasp product's main features and ordering information.

40V PSW-Series Multi-Range DC Power Supply

New Product Announcement

GW Instek has incorporated a 40V output voltage selection into the existing PSW series product line by introducing three new models featuring power capacities of 360W, 720W and 1080W. After adding these three new models to the family, the PSW series now has a total of 18 models with rated voltages of 30V, 40V, 80V, 160V, 250V and 800V, and maximum output powers of 360W, 720W and 1080W respectively. Inheriting all the advantages of the PSW series multi-range programmable switching DC power supply, the new 40V models make the voltage/current combination under the existing rated powers more flexible.

The PSW-40V series is a regulated switching DC power supply built upon a high power-efficiency platform containing the technology of Interleaved Power Factor Corrector and Interleaved DC/DC converter. Owing to this dual-stage design, the PSW series can reduce the heat generated during internal power transformation and deliver a 1kW power output within a very compact unit. The PWM-based topology allows each PSW power supply to broaden its operating range determined by the rated output power and its voltage and current ratings.

PSW-SERIES Multi-Range DC Power Supply

■ New Model and Power Rating

In addition to the existing models, three new models of the PSW-40V series are launching to the market covering three power ranges shown as below :

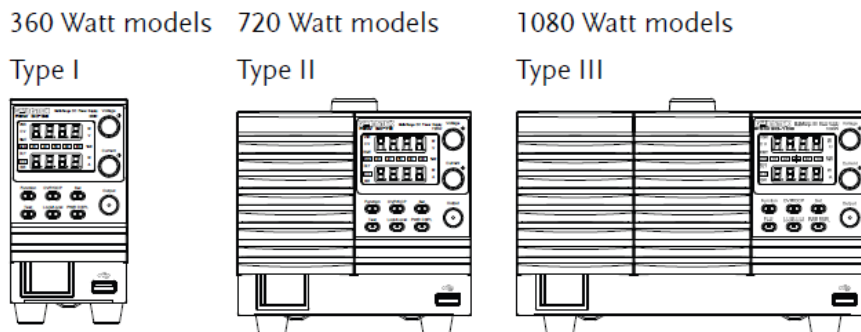
Type I (360Watt), Type II (720Watt), Type III (1080Watt)

NEW Models

PSW 40-27, 360W single output with 40V Max. Voltage and 27 A Max. Current within operation area

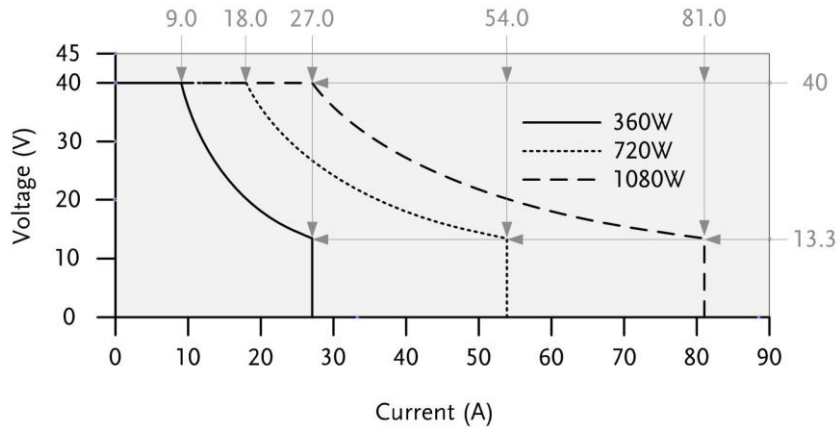
PSW 40-54, 720W single output with 40V Max. Voltage and 54 A Max. Current within operation area

PSW 40-81, 1080W single output with 40V Max. Voltage and 81 A Max. Current within operation area



■ **Multi-range Power Operation**

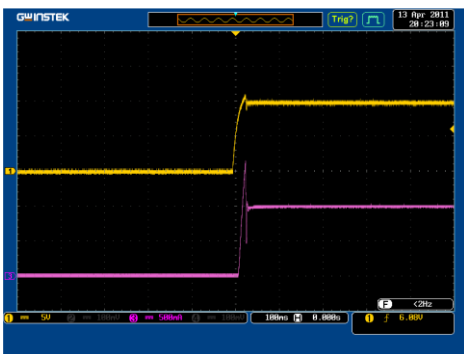
When the total output (Current x Voltage output) is less than the rated power output, it will operate as a typical Constant Current (C.C) and Constant Voltage (C.V) power supply. However, when the power supply determined by the total output power exceeds the rated power output, the effective output is actually limited within the operation area of the unit.



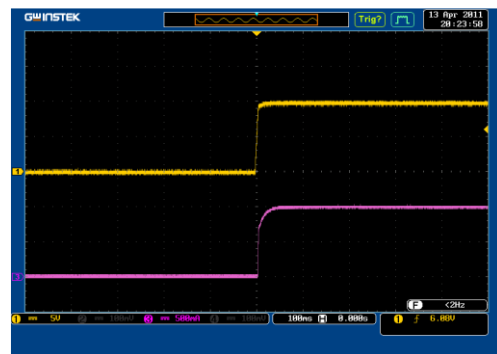
The operation area of a Multi-Range Power Supply (40V Power Rating)

■ **CC and CV Priority Selection**

The PSW series provides CC Mode and CV Mode to fit various applications in the general purpose market. To get into critical application niches, however, the power supply needs to provide advanced features to meet the specific requirements. The CC and CV Priority enable the power supply to run under CC priority, rather than normal CV priority, at the output-on stage.



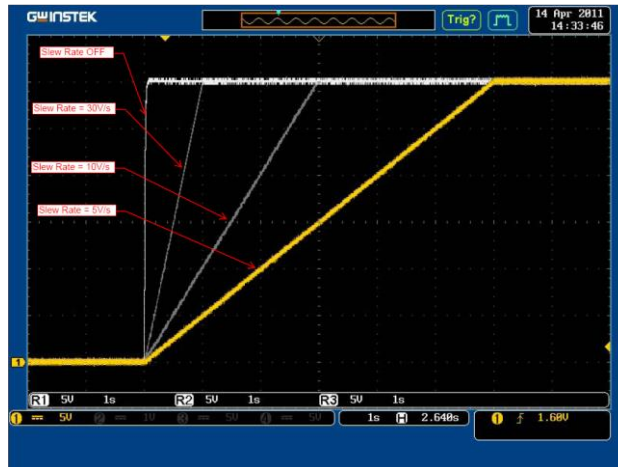
The Inrush Current and Surge Voltage occur at LED Forward Voltage (Vf) under CV Priority



The CC Priority feature effectively limit the occurrence of Inrush Current and Surge Voltage when the supplied voltage rises to the LED Forward Voltage

■ **Adjustable Slew Rate**

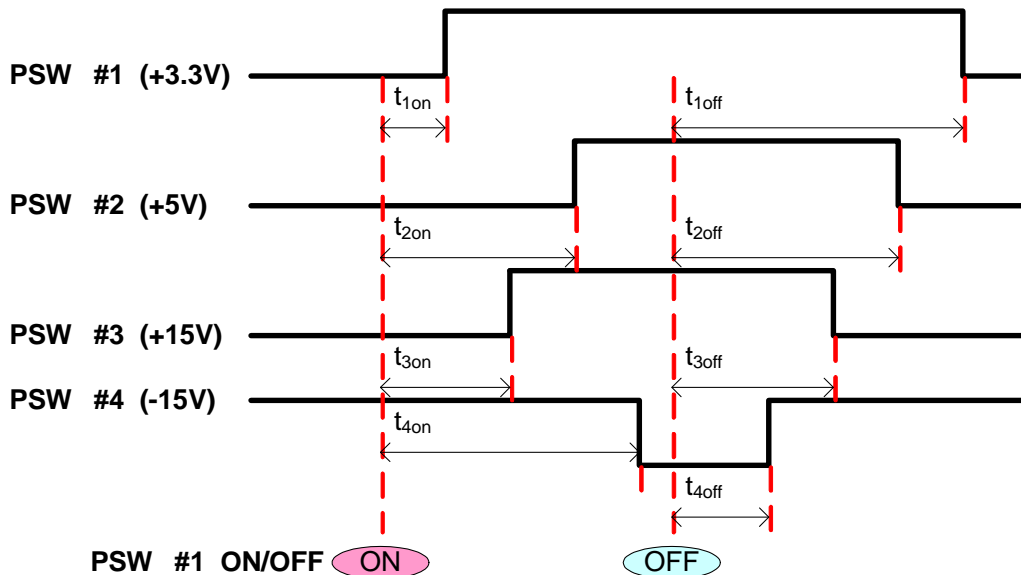
The PSW series has adjustable slew rates for the level transition of both Current and Voltage. This gives the PSW series power supply the ability to set specific rise time and fall time of the Voltage and Current drawn from the power supply to verify DUT performance during the Voltage / Current level transition. The feature also provides the benefit to slow down the voltage transition at the power output-on to protect DUT from inrush current damage. This is especially useful for the test of heavy-current-drawn devices like capacitors.



The adjustable rise time of the PSW-Series

■ **Output On/Off Delay**

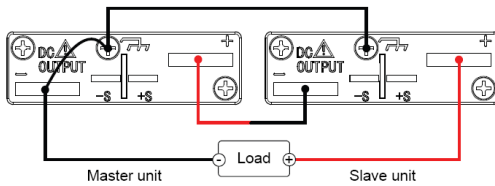
The output on/off delay feature enables the setting at a specific time delay for output on after the power supply output is turned on, and a specific time delay for output off after the power supply output is turned off. When multiple PSW units are used, the on/off delay time of each unit can be set respectively referring to fix time points. This multiple-output control can be done through the Analog Control terminal at the rear panel or through the PC programming with standard commands.



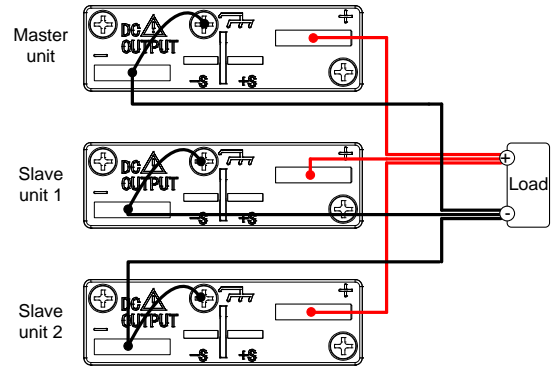
The example of output on/off delay control among multiple outputs of the PSW units

■ **Series and Parallel Connections**

To increase power output capacity, the PSW series can be connected in series mode to perform double voltage rating or in parallel mode to perform triple current rating for each model. With Multi-Range feature and Series/Parallel connection capability, the PSW series is a high power density and cost-effective equipment for the tests of DC power modules, batteries and components in a broad power range.



Series Connection



Parallel Connection

■ **Protection Mode**

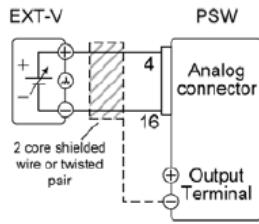
Over Voltage Protection (OVP) and Over Current Protection (OCP) are provided as standard within every model of PSW series to prevent a high voltage/current from damaging the load, whilst the Over Temperature Protection on the PSW Series is to protect the power supply from overheating burnt-out. When the Power Switch Trip setting being activated, the power supply will automatically shut down in case of any protections has been tripped. The OVP and OCP levels are selectable in the range of 10% to 110% of the rated output voltage / current of the power supply. The default setting of OVP and OCP level is 10% up of the maximum rating of each model.

■ **Panel Lock Mode**

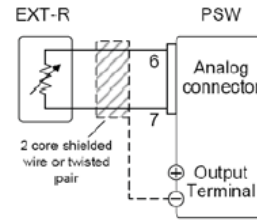
The panel lock feature is designed to avoid the original settings being changed accidentally. When the power supply turns into PC remote control mode, the panel will be locked automatically; or preventing any operation mistake, users can manually press the “Lock/Local” key to lock the panel. Likewise, if users would like to unlock the panel, then they can press the same button to dissolve the locked panel.

■ **External Analog Remote Control**

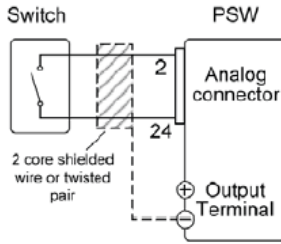
On the rear panel of the PSW series power supply, a 26-pin Analog Control connector is available to perform lots of remote control and monitoring functions. The output voltage and current can be set using external voltage or resistance. The power supply output on/off and main power shut-down can also be controlled using external switches. This Analog Control Connector is complied with the Mil 26 pin connector (OMRON XG4 IDC plug) standard.



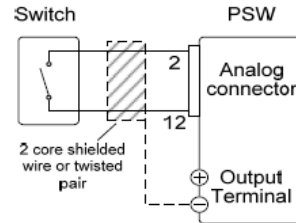
External Voltage Control of the Voltage Output



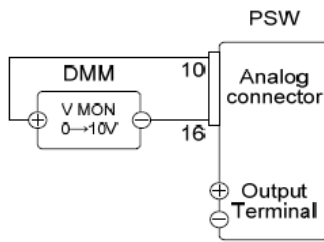
External Resistance control of the Voltage Output



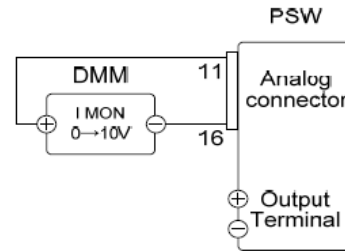
External Switch Control of the Output On/Off



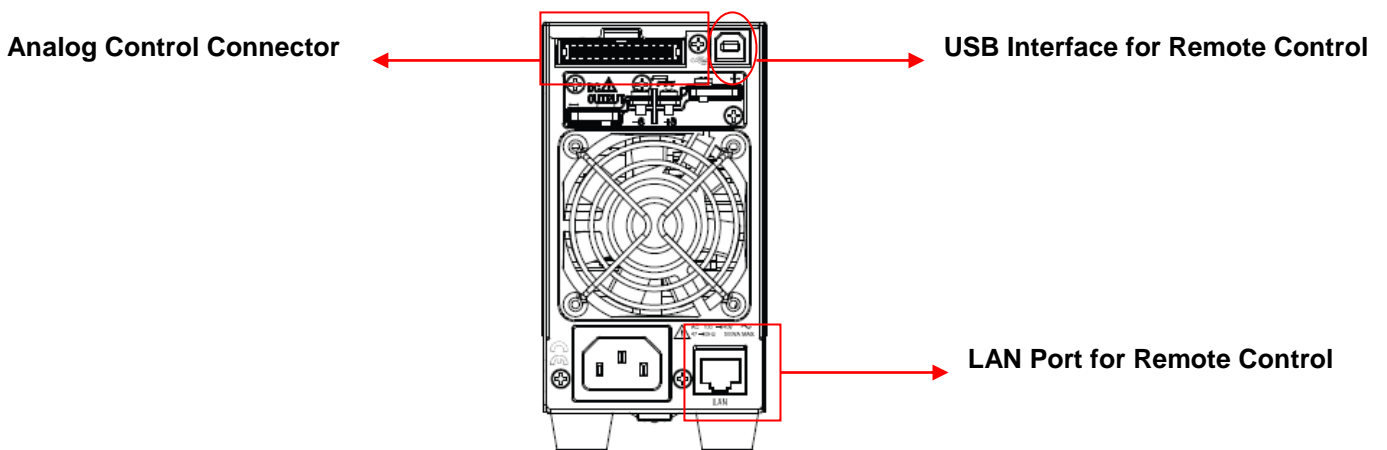
External Switch Control of the Main Power Shut-down



External DMM Monitoring of the Output Voltage



External DMM Monitoring of the Output Current



Rear Panel for PSW-Series

Features Comparison Table

	GW INSTEK	GW INSTEK	KIKUSUI
	PSW-Series	PSH-Series	PAS-Series
Multi Range Output (V & I)	V	X	X
Digital Panel Control (with Function Key)	V	V	V
PF Up to 0.95 (with 120VAC Input)	V	X	V
High Speed Programming Interface	V	X	V
Series & Parallel Operation	V	X	V
External Analog Control Interface	V	X	V
Multi Interface RS-232 / USB / LAN (Standard)	USB/LAN	RS-232/GPIB(Opt)	RS-232/RS485
GPIB Interface (Opt)	V	V	V
Labview Driver	V	V	X
CE Certificate	V	V	V
Protection : OPP 、 OVP 、 OTP	V	V	V

Features , Advantage and Customer Benefits

Features	Advantages	Customers' Benefits
Offer six basic voltage output ranges 30/40/80/160/250/800V	Broader selection models.	Select the most suitable Power Supply Equipment best complying with their requirements.
Wider Range of Constant Power Output	Under Constant Power Condition, [Low Voltage/High Current] or [High Voltage/Low Current] can both be performed.	Apply to the test of different battery packs (in parallel and series).
Adjustable Rise and Fall Slew Rate Settings	The steeper slew rate increases the voltage test combinations during a certain time period.	Enhance the test efficiency.
Extend the capacity by connecting two units in series or three units in parallel.	Provide higher voltage and current output capacity.	Enhance the utilization efficiency of equipment.
CV & CC Priority Setting	CC Priority mode can be selected to inhibit the automatic-switch-to-CV-mode caused while the voltage or current is deviated from the original settings.	Avoid the damage caused by the inrush current under CV mode occurred during switching DUT(e.g.LED) from OFF to ON.
Multiple Users Connecting Interfaces: USB / LAN / USB to GPIB(Opt)	Multiple PC interfaces enable users to execute remote control.	Fulfill the existing testing system as well as the future development for users.

Key Dates for Product Announcement

1. Distributor Announcement (August 18, 22')
2. Global Market Announcement (August 18, 22')
3. Mass quantity orders fulfillment (August 18, 22')

Service Policy

1. **1 year warranty.** PSW Series Multi-Range DC Power Supply carries a standard warranty for 1 year.
2. **Service Support.** The service instructions in the Service Manual will help distributors repairing damage units promptly. The parts-swapping service support is provided by Good Will Instrument to facilitate the repair jobs done at the distributor's site.
3. **Marcom Material and Service Manual download through Website.** Good Will Instrument continues to provide after sales support through its website. The most updated version of service manual and Marcom material of PSW-Series will be posted on the distributor zone of GW Instek's website at <https://www.gwinstek.com/>.

Should you have any questions on the new models of the PSW series announcement, please don't hesitate to contact us

Sincerely Yours;

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Website



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LinkedIn

Specifications :

SPECIFICATIONS									
	PSW 30-36	PSW 30-72	PSW 30-108	PSW 40-27	PSW 40-54	PSW 40-81	PSW 80-13.5	PSW 80-27	PSW 80-40.5
OUTPUT RATING									
Voltage	0 ~ 30V	0 ~ 30V	0 ~ 30V	0 ~ 40V	0 ~ 40V	0 ~ 40V	0 ~ 80V	0 ~ 80V	0 ~ 80V
Current	0 ~ 36A	0 ~ 72A	0 ~ 108A	0 ~ 27A	0 ~ 54A	0 ~ 81A	0 ~ 13.5A	0 ~ 27A	0 ~ 40.5A
Power	360W	720W	1080W	360W	720W	1080W	360W	720W	1080W
REGULATION(CV)									
Load Line	20mV 18mV	20mV 18mV	20mV 18mV	25mV 23mV	25mV 23mV	25mV 23mV	45mV 43mV	45mV 43mV	45mV 43mV
REGULATION(CC)									
Load Line	41mA 41mA	77mA 77mA	113mA 113mA	32mA 32mA	59mA 59mA	86mA 86mA	18.5mA 18.5mA	32mA 32mA	45.5mA 45.5mA
RIPPLE & NOISE (Noise Bandwidth 20MHz; Ripple Bandwidth=1MHz)									
CV p-p	60mV	80mV	100mV	60mV	80mV	100mV	60mV	80mV	100mV
CV rms	7mV	11mV	14mV	7mV	11mV	14mV	7mV	11mV	14mV
CC rms	72mA	144mA	216mA	54mA	108mA	162mA	27mA	54mA	81mA
PROGRAMMING ACCURACY									
Voltage	0.1% +10mV	0.1% +10mV	0.1% +10mV	0.1%+10mV	0.1%+10mV	0.1%+10mV	0.1% +10mV	0.1% +10mV	0.1% +10mV
Current	0.1% + 30mA	0.1% + 60mA	0.1% + 100mA	0.1%+20mA	0.1%+50mA	0.1%+80mA	0.1% + 10mA	0.1% + 30mA	0.1% + 40mA
MEASUREMENT ACCURACY									
Voltage	0.1% +10mV	0.1% +10mV	0.1% +10mV	0.1%+10mV	0.1%+10mV	0.1%+10mV	0.1% +10mV	0.1% +10mV	0.1% +10mV
Current	0.1% +30mA	0.1% +60mA	0.1% +100mA	0.1%+20mA	0.1%+50mA	0.1%+80mA	0.1% +10mA	0.1% +30mA	0.1% +40mA
RESPONSE TIME									
Raise Time	50ms	50ms	50ms	50ms	50ms	50ms	50ms	50ms	50ms
Fall Time(Full Load)	50ms	50ms	50ms	50ms	50ms	50ms	50ms	50ms	50ms
Fall Time(No Load)	500ms	500ms	500ms	500ms	500ms	500ms	500ms	500ms	500ms
Load Transient Recover Time (Load change from 50~100%)	1ms	1ms	1ms	1ms	1ms	1ms	1ms	1ms	1ms
PROGRAMMING RESOLUTION (By PC Remote Control Mode)									
Voltage	1mV	1mV	1mV	1mV	1mV	1mV	2mV	2mV	2mV
Current	1mA	2mA	3mA	1mA	2mA	3mA	1mA	2mA	3mA
MEASUREMENT RESOLUTION (By PC Remote Control Mode)									
Voltage	1mV	1mV	1mV	1mV	1mV	1mV	2mV	2mV	2mV
Current	1mA	2mA	3mA	1mA	2mA	3mA	1mA	2mA	3mA
SERIES AND PARALLEL CAPABILITY									
Parallel Operation	Up to 3 units including the master unit								
Series Operation	Up to 2 units including the master unit								
PROTECTION FUNCTION									
OVP	3~33V	3~33V	3~33V	4 ~ 44V	4 ~ 44V	4 ~ 44V	8~88V	8~88V	8~88V
OCP	3.6 ~39.6A	5~79.2A	5~118.8A	2.7 ~ 29.7A	5 ~ 59.4A	5 ~ 89.1A	1.35~14.85A	2.7~29.7A	4.05~44.55A
OHP	Activated by elevated internal temperatures								
FRONT PANEL DISPLAY ACCURACY, 4 digits									
Voltage	0.1%±20mV	0.1%±20mV	0.1%±20mV	0.1%+20mV	0.1%+20mV	0.1%+20mV	0.1%±20mV	0.1%±20mV	0.1%±20mV
Current	0.1%±40mA	0.1%±70mA	0.1%±100mA	0.1%+30mA	0.1%+60mA	0.1%+80mA	0.1%±20mA	0.1%±40mA	0.1%±50mA
ENVIRONMENT CONDITION									
Operation Temp	0°C ~ 50°C								
Storage Temp	-25°C ~ 70°C								
Operating Humidity	20% ~ 85% RH; No condensation								
Storage Humidity	90% RH or Less; No condensation								
READ BACK TEMP COEFFICIENT									
Voltage	100ppm/°C of rated output voltage : after a 30 minute warm-up								
Current	200ppm/°C of rated output current : after a 30 minute warm-up								
OTHER									
Analog Control Interface	Yes USB/LAN/GPIB-USB(Optional)/RS232-USB(Optional)								
Fan	With thermal sensing control								
POWER SOURCE	85VAC~265VAC, 47~63Hz, single phase								
DIMENSIONS & WEIGHT	71 (W)x124 (H) x350 (D) mm ; Approx. 3kg	142 (W)x124 (H) x350 (D) mm ; Approx. 5.3kg	214 (W)x124 (H) x350 (D) mm ; Approx. 7.5kg	71 (W)x124 (H) x350 (D) mm ; Approx. 3kg	142 (W)x124 (H) x350 (D) mm ; Approx. 5.3kg	214 (W)x124 (H) x350 (D) mm ; Approx. 7.5kg	71 (W)x124 (H) x350 (D) mm ; Approx. 3kg	142 (W)x124 (H) x350 (D) mm ; Approx. 5.3kg	214 (W)x124 (H) x350 (D) mm ; Approx. 7.5kg

SPECIFICATIONS									
	PSW 160-7.2	PSW 160-14.4	PSW 160-21.6	PSW 250-4.5	PSW 250-9	PSW 250-13.5	PSW 800-1.44	PSW 800-2.88	PSW 800-4.32
OUTPUT RATING									
Voltage	0 ~ 160V	0 ~ 160V	0 ~ 160V	0 ~ 250V	0 ~ 250V	0 ~ 250V	0 ~ 800V	0 ~ 800V	0 ~ 800V
Current	0 ~ 7.2A	0 ~ 14.4A	0 ~ 21.6A	0 ~ 4.5A	0 ~ 9A	0 ~ 13.5A	0 ~ 1.44A	0 ~ 2.88A	0 ~ 4.32A
Power	360W	720W	1080W	360W	720W	1080W	360W	720W	1080W
REGULATION(CV)									
Load Line	85mV 83mV	85mV 83mV	85mV 83mV	130mV 128mV	130mV 128mV	130mV 128mV	405mV 403mV	405mV 403mV	405mV 403mV
REGULATION(CC)									
Load Line	12.2mA 12.2mA	19.4mA 19.4mA	26.6mA 26.6mA	9.5mA 9.5mA	14mA 14mA	18.5mA 18.5mA	6.44mA 6.44mA	7.88mA 7.88mA	9.32mA 9.32mA
RIPPLE & NOISE (Noise Bandwidth 20MHz; Ripple Bandwidth=1MHz)									
CV p-p	60mV	80mV	100mV	80mV	100mV	120mV	150mV	200mV	200mV
CV rms	12mV	15mV	20mV	15mV	15mV	15mV	30mV	30mV	30mV
CC rms	15mA	30mA	45mA	10mA	20mA	30mA	5mA	10mA	15mA
PROGRAMMING ACCURACY									
Voltage	0.1% +100mV	0.1% +100mV	0.1% +100mV	0.1% +200mV	0.1% +200mV	0.1% +200mV	0.1% +400mV	0.1% +400mV	0.1% +400mV
Current	0.1% +5mA	0.1% +15mA	0.1% +20mA	0.1% +5mA	0.1% +10mA	0.1% +15mA	0.1% +2mA	0.1% +4mA	0.1% +6mA
MEASUREMENT ACCURACY									
Voltage	0.1% +100mV	0.1% +100mV	0.1% +100mV	0.1% +200mV	0.1% +200mV	0.1% +200mV	0.1% +400mV	0.1% +400mV	0.1% +400mV
Current	0.1% +5mA	0.1% +15mA	0.1% +20mA	0.1% +5mA	0.1% +10mA	0.1% +15mA	0.1% +2mA	0.1% +4mA	0.1% +6mA
RESPONSE TIME									
Raise Time	100ms	100ms	100ms	100ms	100ms	100ms	150ms	150ms	150ms
Fall Time(Full Load)	100ms	100ms	100ms	150ms	150ms	150ms	300ms	300ms	300ms
Fall Time(No Load)	1000ms	1000ms	1000ms	1200ms	1200ms	1200ms	2000ms	2000ms	2000ms
Load Transient Recover Time (Load change from 50~100%)	2ms	2ms	2ms	2ms	2ms	2ms	2ms	2ms	2ms
PROGRAMMING RESOLUTION (By PC Remote Control Mode)									
Voltage	3mV	3mV	3mV	5mV	5mV	5mV	14mV	14mV	14mV
Current	1mA	2mA	3mA	1mA	1mA	1mA	1mA	1mA	1mA
MEASUREMENT RESOLUTION (By PC Remote Control Mode)									
Voltage	3mV	3mV	3mV	5mV	5mV	5mV	14mV	14mV	14mV
Current	1mA	2mA	3mA	1mA	1mA	1mA	1mA	1mA	1mA
SERIES AND PARALLEL CAPABILITY									
Parallel Operation	Up to 3 units including the master unit			3	3	3	3	3	3
Series Operation	Up to 2 units including the master unit			N/A	N/A	N/A	N/A	N/A	N/A
PROTECTION FUNCTION									
OVP	16~176V	16~176V	16~176V	20~275V	20~275V	20~275V	20~880V	20~880V	20~880V
OCP	0.72~7.92A	1.44~15.84A	2.16~23.76A	0.45~4.95A	0.9~9.9A	1.35~14.85A	0.144~1.584A	0.288~3.168A	0.432~4.752
OHP	Activated by elevated internal temperatures								
FRONT PANEL DISPLAY ACCURACY, 4 digits									
Voltage	0.1%±100mV	0.1%±100mV	0.1%±100mV	0.1%±200mV	0.1%±200mV	0.1%±200mV	0.1%±400mV	0.1%±400mV	0.1%±400mV
Current	0.1%±5mA	0.1%±30mA	0.1%±30mA	0.1%±5mA	0.1%±10mA	0.1%±20mA	0.1%±2mA	0.1%±4mA	0.1%±6mA
ENVIRONMENT CONDITION									
Operation Temp	0°C ~ 50°C								
Storage Temp	-25°C ~ 70°C								
Operating Humidity	20% ~ 85% RH; No condensation								
Storage Humidity	90% RH or Less; No condensation								
READ BACK TEMP COEFFICIENT									
Voltage	100ppm/°C of rated output voltage : after a 30 minute warm-up								
Current	200ppm/°C of rated output current : after a 30 minute warm-up								
OTHER									
Analog Control Interface	Yes USB/LAN/GPIB-USB(Optional)/RS232-USB(Optional) With thermal sensing control								
Fan									
POWER SOURCE	85VAC~265VAC, 47~63Hz, single phase								
DIMENSIONS & WEIGHT	71(W)x124(H) x350(D) mm ; Approx. 3kg	142(W)x124(H) x350(D) mm ; Approx. 5.3kg	214(W)x124(H) x350(D) mm ; Approx. 7.5kg	71(W)x124(H) x350(D) mm ; Approx. 3kg	142(W)x124(H) x350(D) mm ; Approx. 5.3kg	214(W)x124(H) x350(D) mm ; Approx. 7.5kg	71(W)x124(H) x350(D) mm ; Approx. 3kg	142(W)x124(H) x350(D) mm ; Approx. 5.3kg	214(W)x124(H) x350(D) mm ; Approx. 7.5kg

Specifications subject to change without notice. SW-000GD5BH

Ordering Information

PSW 40-27	(0~40V / 0~27A / 360W) Multi-Range DC Power Supply Part Number: 01SW402700GT EAN Code: 4713008674017
PSW 40-54	(0~40V / 0~54A / 720W) Multi-Range DC Power Supply Part Number: 01SW405400GT EAN Code: 4713008674024
PSW 40-81	(0~40V / 0~81A / 1080W) Multi-Range DC Power Supply Part Number: 01SW408100GT EAN Code: 4713008674031

Accessories :

CD-ROM x 1(Programming Manual, User Manual), GTL-123 Test Lead x 1(for PSW 30V/40V/80V/160V), Power Cord x 1(Region dependent), GTL-240 USB Cable " L " Type x 1,

PSW-004 Basic Accessories Kit x 1(for PSW 30V/40V/80V/160V), Includes : M4 Terminal screws and washers x 2, Air Filter x 1, Analog control protection dummy x 1, Analog control lock lever x 1, M8 terminal bolts, nuts and washers x 2

PSW-008 Basic Accessories kit for PSW 250V/800V models

PSW-009 Output terminal cover for 30V/40V/80V/160V models

PSW-011 Output terminal cover for 250V/800V models

PSW-012 High voltage output terminal for 250V/800V model

Optional Accessories :

PSW-001 Accessory Kit

PSW-002 Simple IDC Tool

PSW-003 Contact Removal Tool

PSW-005 Cable for 2 Units of PSW-Series in Series Mode Connection (for PSW 30V/40V/80V/160V)

PSW-006 Cable for 2 Units of PSW-Series in Parallel Mode Connection

PSW-007 Cable for 3 Units of PSW-Series in Parallel Mode Connection

PSW-010 Large filter (Type II/III)

GET-001 Extended Terminal with max. 30A (for PSW 30V/40V/80V/160V)

GET-002 Extended Terminal with max. 10A (for PSW 250V/800V)

GET-005 Extended European Terminal with max. 20A (for PSW 30V/40V/80V/160V)

GTL-130 Test lead: 2 x red, 2 x black (for PSW 250V/800V)

GTL-248 GPIB Cable, Double Shielded, 2000mm

GTL-250 GPIB Cable, Double Shielded, 600mm

GRA-410-J Rack Mount Adaptor

GRA-410-E Rack Mount Adaptor

GUG-001 GPIB to USB Adaptor

GUR-001A Extended Terminal