PSW-Multi Series

Dual-channel/Triple-channel Programmable Switching DC Power Supply

FEATURES

- Multi-channel: Maximum 720W for Dual-channel Module and Maximum 1080W for Triple-channel Models; The PSW-Multi Series Aslo Features a New Built-in Function That Allows Individualor Synchronizd Output Control of Eachvoltage Module Output Latency Between Channels with the Same Voltage Module is Less Than 0.1ms
- Multiple Voltage Combinations: Low Voltage Combinations Can be Selected From 30V/40V/80V/160V; High Voltage Combinations Can be Selected From 250V/800V
- Advanced Web Server: Executes SCPI Commands; Web Controls Through Server; Data Log; Edit Sequence
- CC/CV Priority Mode Selection is Ideal for Battery and LED Industries
- Adjustable Rising and Falling Slew Rate
- 720W/1080W Adopt 1/3, 1/2 Rack Mount Frame Designs (Standard EIA/JIS)
- Standard Communications Interfaces: LAN, USB, External Analog Remote Control Terminal
- Optional Communications Interfaces: GPIB-USB Adapter, RS232-USB Cable
- Support LabVIEW Driver

GW INSTEK

Simply Reliable

Second to None, Dominating Mid/Low Power Ranges

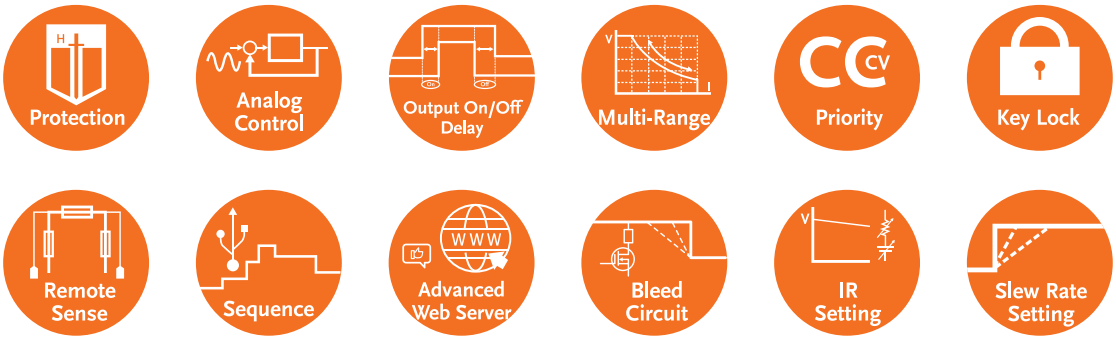
PSW-Multi Series is a dual-channel or triple-channel wide range output programmable switching DC power supply. The maximum output power can reach 1080W. There are 13 dual-channel models with a rated power of 720W, and 24 triple-channel models with a rated power of 1080W. The rated voltages of low voltage modules are 30V, 40V, 80V, 160V. The rated voltages of high voltage modules are 250V and 800V.

The CV/CC priority selection of the PSW-Multi Series is a very useful feature for DUT protection. The conventional power supply normally operates under CV mode when the power output is turned on. This could bring a high inrush current to the capacitive load or current-intensive load at the power output-on stage. Taking the I-V curve verification of LED as an example, it becomes a very challenging task to perform this measurement using a conventional power supply.
With LED connected to a power supply under CV mode as the initial setting, when the power output is turned on and the voltage rises to the LED forward voltage, the current will suddenly peak up and exceed the preset value of current limit. Upon detecting this high current, the power supply starts the transition from CV mode to CC mode. Though the current becomes stable after the CC mode being activated, the current spike occurred at the CV and CC crossover point may possibly damage the DUT. At the power output-on stage, the PSW-Multi Series is able to operate under CC priority to limit the current spike occurred at the threshold voltage and therefore protects DUT from the inrush current damage.

The adjustable slew rate of the PSW-Multi Series allows users to set for either output voltage or output current, a specific rise time from low to high level transition, and a specific fall time from high to low level transition. This facilitates the characteristic verification of a DUT during voltage or current level changes with controllable slew rates. Most manufacturing tests of lighting device or large capacitor during power output-on are associated with the occurrence of high surge current, which can greatly reduce the life time of the DUT. To prevent inrush current from damaging current-intensive devices, a smooth and slow voltage transition during power On-Off can significantly reduce the pike current and protect the device from high current damage.

The OVP and OCP are provided with the PSW-Multi Series. Both OVP and OCP levels can be selected, with default level set at 110%, of the rated voltage/current of the power supply. When any of the protection levels is tripped, the power output will be switched off to protect the DUT. The PSW-Multi Series provides USB Host/Device and LAN interfaces as standard, GPIB-USB adapter and RS232-USB cable as optional. The LabVIEW driver and the Data Logging PC software are supported on all the available interfaces. An analog control/monitoring connector is also available on the rear panel for external control of power On/Off and external monitoring of power output Voltage and Current.

THE SPECIAL FUNCTIONS ARE AS FOLLOWS



The advanced web server, a unique function of the PSW-Multi Series, can directly execute SCPI commands through the browser and control the PSW-Multi Series power supply. The data log has an interval of 1 second. It can edit output sequence. Wide-range output: Provides a wide range of voltage/current outputs under the same rated power. One power supply has the total capability of multiple power supplies.
Bleed Circuit: Accelerates the voltage fall time. Sequence: Saves the output sequence in a USB flash drive to directly control the power supply to execute the automatic test sequence. The CV/CC priority mode of PSW-Multi Series is a very useful feature for protecting the DUT. Conventional power supplies usually operate in CV mode when outputting. During power output, capacitive loads or current-intensive loads can cause inrush currents. Taking the I-V verification curve of an LED as an example, it would be challenging to measure it using a conventional power supply. In the initial state, a conventional power supply operates in CV mode. When the output voltage exceeds the forward voltage of the LED, the current will instantaneously flow, surpassing the default current limit value. Even when the current becomes stable after switching to CC mode, the crossover point between CV and CC can still potentially damage the DUT. However, the PSW-Multi Series is capable of operating in CC mode during power output to suppress inrush currents and prevent damage to the DUT when the voltage instantaneously conducts. Adjustable slew rate allows users to set the rise and fall times of voltage or current. By controlling the slew rate settings, it becomes convenient to verify the DUT under varying voltage or current conditions. In manufacturing tests for lighting devices or large capacitors, power output often generates significant inrush currents, which can greatly reduce the lifespan of the DUT. To prevent damage caused by inrush currents, a slow voltage output significantly reduces the harm caused by inrush currents, thereby achieving device protection. The OVP and OCP functions provided by the PSW-Multi Series can be self-defined and the default value is 110% of the rated value. When the protection setting is triggered, the output will be turned off to protect the DUT. USB and LAN are standard communications interfaces of PSW-Multi Series, while GPIB-USB and RS232-USB are optional accessories. All interfaces support LabVIEW driver and Data Logging PC software.

PANEL INTRODUCTION

CE | GPIB | USB | LabVIEW Driver | Analog Control | LAN

1. Voltage Knob
2. Current Knob
3. Output Key
4. Function Keys
5. USB A Port
6. Display
7. Power Switch
8. Analog Control Connector
9. Output Terminal (+)
10. Sense Terminal(+/-)
11. Output Terminal (-)
12. Fan
13. AC Input
14. LAN Port

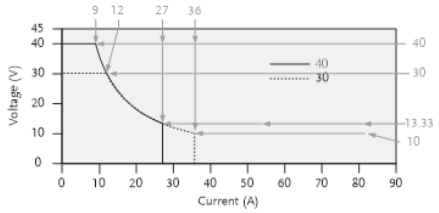
DUAL-CHANNEL MODELS ARE AS FOLLOWS

MODEL	CH1	CH2	SIZE
PSW-720L11	30.00V	30.00V	1/3 Rack 3U
PSW-720L12	30.00V	40.00V	1/3 Rack 3U
PSW-720L14	30.00V	80.00V	1/3 Rack 3U
PSW-720L15	30.00V	160.0V	1/3 Rack 3U
PSW-720L22	40.00V	40.00V	1/3 Rack 3U
PSW-720L24	40.00V	80.00V	1/3 Rack 3U
PSW-720L25	40.00V	160.0V	1/3 Rack 3U
PSW-720L44	80.00V	80.00V	1/3 Rack 3U
PSW-720L45	80.00V	160.0V	1/3 Rack 3U
PSW-720L55	160.0V	160.0V	1/3 Rack 3U
PSW-720H66	250.0V	250.0V	1/3 Rack 3U
PSW-720H68	250.0V	800.0V	1/3 Rack 3U
PSW-720H88	800.0V	800.0V	1/3 Rack 3U

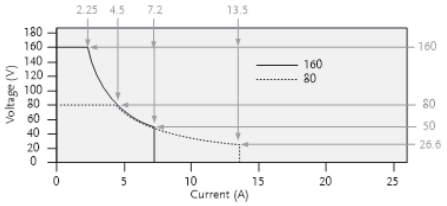
TRIPLE-CHANNEL MODELS ARE AS FOLLOWS

MODEL	CH1	CH2	CH3	SIZE
PSW-1080L111	30.00V	30.00V	30.00V	1/2 Rack 3U
PSW-1080L112	30.00V	30.00V	40.00V	1/2 Rack 3U
PSW-1080L114	30.00V	30.00V	80.00V	1/2 Rack 3U
PSW-1080L115	30.00V	30.00V	160.0V	1/2 Rack 3U
PSW-1080L122	30.00V	40.00V	40.00V	1/2 Rack 3U
PSW-1080L124	30.00V	40.00V	80.00V	1/2 Rack 3U
PSW-1080L125	30.00V	40.00V	160.0V	1/2 Rack 3U
PSW-1080L144	30.00V	80.00V	80.00V	1/2 Rack 3U
PSW-1080L145	30.00V	80.00V	160.0V	1/2 Rack 3U
PSW-1080L155	30.00V	160.0V	160.0V	1/2 Rack 3U
PSW-1080L222	40.00V	40.00V	40.00V	1/2 Rack 3U
PSW-1080L224	40.00V	40.00V	80.00V	1/2 Rack 3U
PSW-1080L225	40.00V	40.00V	160.0V	1/2 Rack 3U
PSW-1080L244	40.00V	80.00V	80.00V	1/2 Rack 3U
PSW-1080L245	40.00V	80.00V	160.0V	1/2 Rack 3U
PSW-1080L255	40.00V	160.0V	160.0V	1/2 Rack 3U
PSW-1080L444	80.00V	80.00V	80.0V	1/2 Rack 3U
PSW-1080L445	80.00V	80.00V	160.0V	1/2 Rack 3U
PSW-1080L455	80.00V	160.0V	160.0V	1/2 Rack 3U
PSW-1080L555	160.0V	160.0V	160.0V	1/2 Rack 3U
PSW-1080H666	250.0V	250.0V	250.0V	1/2 Rack 3U
PSW-1080H668	250.0V	250.0V	800.0V	1/2 Rack 3U
PSW-1080H688	250.0V	800.0V	800.0V	1/2 Rack 3U
PSW-1080H888	800.0V	800.0V	800.0V	1/2 Rack 3U

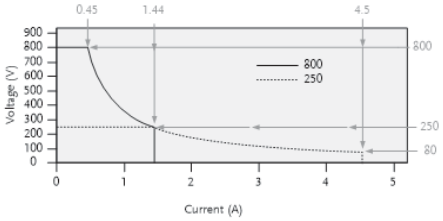
A. MULTI-RANGE OPERATION



PSW 30V/40V Series Operating Area



PSW 80V/160V Series Operating Area



PSW 250V/800V Series Operating Area

When the power supply is configured that the total output (Current x Voltage output) is less than the rated power output, it functions as a typical Constant Current (CC) and Constant Voltage (CV) power supply.

However, when the power supply is configured such that the total output power (Current x Voltage Output) exceeds the rated power output, the effective output is actually limited to the operation area of the unit.

B. MULTI-CHANNEL

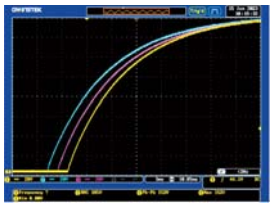


Figure 1

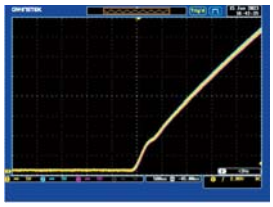


Figure 2

Multi-Channel, Dual-channel or triple-channel; the output latency between channels for same voltage module is less than 0.1ms.

When using a single-channel power supply for parallel multiple voltage output testing, there are different delays and slew rate settings, resulting in longer voltage output delay times and lack of control. The PSW-Multi Series features a built-in synchronous output control function (F130) that allow Dual-channel or triple-channel; the output latency between channels for same voltage module is less than 0.1ms.

It can fulfill diverse testing applications, for example: multi-channel digital device testing, electronic circuit verification, battery charging and discharging testing, and more.

When using a single-channel power supply with three units connected in parallel through the backplane for synchronized output, each unit will experience a voltage output latency of approximately 5 to 10 ms. (Figure 1)

The waveform of PSW-Multi Series in triple-channel synchronized output mode exhibits voltage output latency times less than 0.1 ms for each channel (with the same voltage model) (Figure 2)

C. ADVANCED WEB SERVER

Figure 1

Figure 2

Figure 3

Figure 4

SCPI commands can be issued directly on the browser, examples are as follows: Direct control of PSW-Multi series power supplies on the browser. (Figure 1)

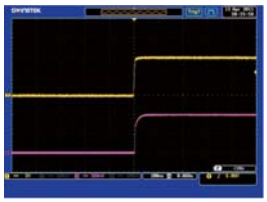
Data Log can be performed on the browser. For standard web server, the fastest data log time interval is 1 second. PSW-Multi series also provide paid version (active by option license key), the fastest data log time interval is 0.1 seconds and the data save to USB drive directly. (Figure 2)

Sequences can be edited on the browser. (Figure 3)

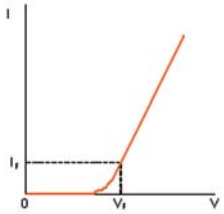
The above advanced web server functions are new functions of PSW-Multi. Currently, there is no plan to update the advanced web server in the existing PSW-Series (Single Channel). (Figure 4)

D. CV / CC PRIORITY SELECTION

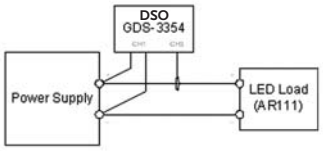
The Inrush Current and Surge Voltage occur at LED Forward Voltage(Vf)Under C.V Priority



The CC Priority Feature Effectively Limits the Occurrence of Inrush Current and Surge Voltage when the Supplied Voltage Rises to the LED Forward Voltage



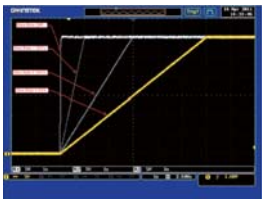
V-I Characteristic of Diode



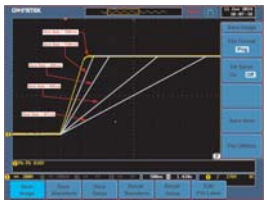
Using GDS-3354 DSO to Test LED Operation Under CV Priority and CC Priority Respectively

The PSW-Multi 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 Selection enable the power supply to run under CC priority, rather than normal CV priority, at the output-on stage.

E. ADJUSTABLE SLEW RATE



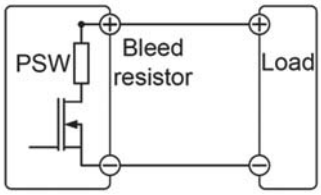
The Adjustable Rise Time of the PSW 30V Module



The Adjustable Rise Time of the PSW 800V Module

The PSW-Multi Series has adjustable slew rates for the level transition of both Current and Voltage. This gives the PSW-Multi 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.

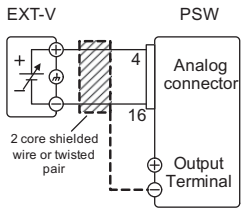
F. BLEEDER CONTROL



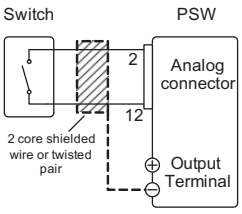
PSW-Multi Series Built-in Bleed Resistor

The PSW-Multi Series employs a bleed resistor in parallel with the output terminal. Bleed resistor is designed to dissipatch the power from the power supply filter capacitors when power is turned off and 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.

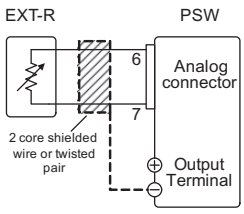
G. EXTERNAL ANALOG REMOTE CONTROL



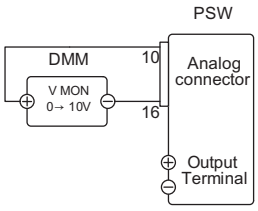
External Voltage Control of the Voltage Output



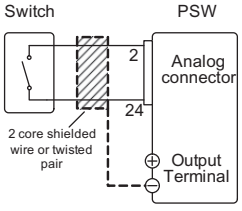
External Switch Control of the Main Power Shut-down



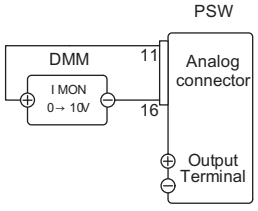
External Resistance control of the Voltage Output



External DMM Monitoring of the Output Voltage



External Switch Control of the Output On/Off



External DMM Monitoring of the Output Current

On the rear panel of the PSW-Multi 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.

H. VARIOUS INTERFACES SUPPORT & EXTENDED TERMINAL BOX

Rear Panel for PSW-Multi Series

GUG-001

GPIB to USB Adapter

GET-001

Extended Terminal (for PSW 30V/40V/80V/160V)

GET-002

Extended Terminal (for PSW 250V/800V)

GET-005

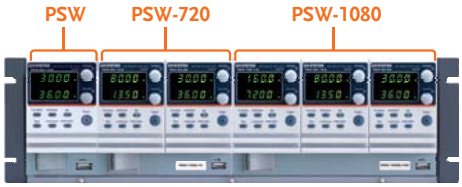
Extended European Terminal (for PSW 30V/40V/80V/160V)

The PSW-Multi Series provides USB Host port in the front panel for easy access of stored data, such as test script program. In the rear panel, a USB Device port is available for remote control or I & V data logging of power output through a PC controller. The LAN interface, which meets DHCP standard, is provided as a standard feature of the PSW-Multi Series for system communications and ATE applications.

An Extender Terminal box (P/N: GET-001/GET-002/GET-005) is provided as optional accessory to extend the power output form the rear panel to the front side. This extender terminal gives R&D or QC engineers convenience to do the jobs without frequently reaching the output terminal at the rear side of the PSW-Multi Series.

I. USING THE RACK MOUNT KIT

Rack Mount Kit GRA-410-J (JIS)

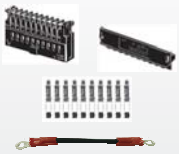


Rack Mount Kit GRA-410-E (EIA)

The PSW-Multi Series has an optional Rack Mount Kit (GW Instek part number: [JIS] GRA-410-J, [EIA] GRA-410-E[EIA]) that can be used to hold 6x PSW models, 3x PSW-720 models, 2x PSW-1080 models or a combination of all models (1x PSW, 1x PSW-720 and 1x PSW-1080).

OPTIONAL ASSESSORIES

PSW-001



PSW-002

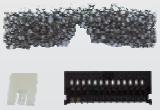
PSW-003

PSW-004

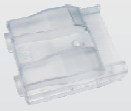
GUG-001

GTL-130

PSW-008



PSW-009



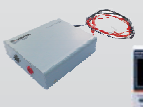
PSW-011

PSW-012

GUR-001A

GUR-001B

GET-001



GET-002

GET-005

SPECIFICATIONS

Module Type			1	2	4	5	6	8
H/L Voltage Classicfication		—	L	L	L	L	H	H
Rated output voltage		V	30	40	80	160	250	800
Rated output current		A	36	27	13.5	7.2	4.5	1.44
Rated output power		W	360	360	360	360	360	360
Power ratio		—	3	3	3	3.2	3.125	3.2
Constant Voltage Mode			**30-36**	**40-27**	**80-13.5**	**160-7.2**	**250-4.5**	**800-1.44**
Line regulation (*1)		mV	18	23	43	83	128	403
Load regulation (*2)		mV	20	25	45	85	130	405
Ripple and noise (*3)	p-p (*4)	mV	60	60	60	60	80	150
	r.m.s. (*5)	mV	7	7	7	12	15	30
Temperature coefficient		ppm/℃	100ppm/°C of rated output voltage, after a 30 minute warm-up					
Remote snese compensation voltage (single wire)		V	0.6	0.6	0.6	0.6	1	1
Rise time (*6)	Rated load	ms	50	50	50	100	100	150
	No load	ms	50	50	50	100	100	150
Fall time (*7)	Rated load	ms	50	50	50	100	150	300
	No load	ms	500	500	500	1000	1200	2000
Transient response time (*8)		ms	1	1	1	2	2	2
Constant Current Mode			**30-36**	**40-27**	**80-13.5**	**160-7.2**	**250-4.5**	**800-1.44**
Line regulation (*1)		mA	41	32	18.5	12.2	9.5	6.44
Load regulation (*9)		mA	41	32	18.5	12.2	9.5	6.44
Ripple and noise	r.m.s.	mA	72	54	27	15	10	5
Temperature coefficient		ppm/℃	200ppm/°C of rated output current, after a 30 minute warm-up					
Protection Function			**30-36**	**40-27**	**80-13.5**	**160-7.2**	**250-4.5**	**800-1.44**
Over voltage protection (OVP)	Setting range	V	3-33	4-44	8-88	16-176	20-275	20-880
	Setting accuracy		± (2% of rated output voltage)					
Over current protection (OCP)	Setting range	A	3.6-39.6	2.7-29.7	1.35-14.85	0.72-7.92	0.45-4.95	0.144-1.584
	Setting accuracy		± (2% of rated output current)					
Over temperature protection (OTP)	Operation		Turn the output off					
Low AC input protection (AC-FAIL)	Operation		Turn the output off					
Power limit (POWER LIMIT)	Operation		Over power limit.					
	Value (fixed)		Approx. 105% of rated output power					
Analog Programming and Monitoring			**30-36**	**40-27**	**80-13.5**	**160-7.2**	**250-4.5**	**800-1.44**
External voltage control output voltage	at 23 °C ± 5 °C		Accuracy and linearity: ±0.5% of rated output voltage.					
External voltage control output current	at 23 °C ± 5 °C		Accuracy and linearity: ±1% of rated output current.					
External resistor control output voltage	at 23 °C ± 5 °C		Accuracy and linearity: ±1.5% of rated output voltage.					
External resistor control output current	at 23 °C ± 5 °C		Accuracy and linearity: ±1.5% of rated output current.					
Output voltage monitor	at 23 °C ± 5 °C		Accuracy: ±1%				Accuracy: ±2%	
Output current monitor	at 23 °C ± 5 °C		Accuracy: ±1%				Accuracy: ±2%	
Shutdown control			Turns the output off with a LOW (0V to 0.5V) or short-circuit					
Output on/off control			Possible logic selections: Turn the output on using a LOW (0V to 0.5V) or short-circuit, turn the output off using a HIGH (4.5V to 5V) or open-circuit. Turn the output on using a HIGH (4.5V to 5V) or open-circuit, turn the output off using a LOW (0V to 0.5V) or short-circuit.					
CV/CC/ALM/PWR ON/OUT ON indicator			Photocoupler open collector output; Maximum voltage 30V, maximum sink current 8mA.					
Front Panel			**30-36**	**40-27**	**80-13.5**	**160-7.2**	**250-4.5**	**800-1.44**
Display, 4 digits Voltage accuracy	at 23 °C ± 5 °C; ± (0.1% +	mV	20	20	20	100	200	400
Current accuracy	at 23 °C ± 5 °C; ± (0.1% +	mA	40	30	20	5	5	2
Indications			GREEN LED's: CV, CC, VSR, ISR, DLY, RMT, 20, 40, 60, 80, 100, %W, W, V, A					
			RED LED's: ALM					
Buttons			Function, OVP/OCP, Set, Test, Lock/Local, PWR DSPL, Output					
Knobs			Voltage, Current					
USB port			Type A USB connector					
Programming and Measurement (USB, LAN, GPIB)			**30-36**	**40-27**	**80-13.5**	**160-7.2**	**250-4.5**	**800-1.44**
Output voltage programming accuracy	at 23 °C ± 5 °C; ± (0.1% +	mV	10	10	10	100	200	400
Output current programming accuracy	at 23 °C ± 5 °C; ± (0.1% +	mA	30	20	10	5	5	2
Output voltage programming resolution		mV	1	1	2	3	5	14
Output current programming resolution		mA	1	1	1	1	1	1
Output voltage measurement accuracy	at 23 °C ± 5 °C; ± (0.1% +	mV	10	10	10	100	200	400
Output current measurement accuracy	at 23 °C ± 5 °C; ± (0.1% +	mA	30	20	10	5	5	2
Output voltage measurement resolution		mV	1	1	2	3	5	14
Output current measurement resolution		mA	1	1	1	1	1	1
Input Characteristics			**30-36**	**40-27**	**80-13.5**	**160-7.2**	**250-4.5**	**800-1.44**
Efficiency	100Vac	%	77	78	78	79	79	80
	200Vac	%	79	80	80	81	81	82
Input Characteristics			**Dual Channel**			**Triple Channel**		
Norminal input rating			100Vac to 240Vac, 50Hz to 60Hz, single phase					
Input voltage range			85Vac ~ 265Vac					
Input frequency range			47Hz ~ 63Hz					
Maximum input current	100Vac	A	10			15		
	200Vac	A	5			7.5		
Inrush current			Less than 50A			Less than 75A		
Maximum input power		VA	1000			1500		
Power factor	100Vac		0.99					
	200Vac		0.97					
Hold-up time			20ms or greater					
Interface Capabilities			**Dual Channel**			**Triple Channel**		
USB			TypeA: Host, TypeB: Slave, Speed: 1.1/2.0, USB Class: CDC(Communications Device Class)					
LAN			MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask					
GPIB			Optional: GUG-001 (GPIB to USB Adapter)					
Environmental Conditions			**Dual Channel**			**Triple Channel**		
Operaing temperature			0˚C to 50˚C					
Storage temperature			-25˚C to 70˚C					
Operating humidity			20% to 85% RH; No condensation					
Storage humidity			90% RH or less; No condensation					
Altitude			Maximum 2000m					
General Specifications			**Dual Channel**			**Triple Channel**		
Weight	main unit only	kg	Approx. 5.4kg			Approx. 7.7kg		
Dimensions	(W×H×D)	mm	142 x 124 x 350			214 x 124 x 350		
Cooling			Forced air cooling by internal fan					
EMC			Complies with the European EMC directive for Class A test and measurement products					
Safety			Complies with the European Low Voltage Directive and carries the CE-marking					
Withstand voltage	Between input and chassis		No abnormalities at 1500 Vac for 1 minute					
	Between input and output		No abnormalities at 3000 Vac for 1 minute					
	Between output and chassis		No abnormalities at 500 Vdc for 1 minute for 30V, 40V, 80V, 160V models No abnormalities at 1500 Vdc for 1 minute for 250V, 800V models					
Insulation resistance	Between input and chassis		500 Vdc, 100 MΩ or more					
	Between input and output		500 Vdc, 100 MΩ or more					
	Between output and chassis		500 Vdc, 100 MΩ or more for 30V, 40V, 80V, 160V and 250V models 1000 Vdc, 100 MΩ or more for 800V models					

Notes : *1: At 85 ~ 132Vac or 170 ~ 265Vac, constant load.
*2: From No-load to Full-load, constant input voltage. Measured at the sensing point in Remote Sense.
*3: Measure with JEITA RC-9131B (1:1) probe
*4: Measurement frequency bandwidth is 10Hz to 20MHz.
*5: Measurement frequency bandwidth is 5Hz to 1MHz.
*6: From 10% to 90% of rated output voltage, with rated resistive load.
*7: From 90% to 10% of rated output voltage, with rated resistive load.
*8: Time for output voltage to recover within 0.1% + 10mV of its rated output for a load change from 50 to 100% of its rated output current.
*9: For load voltage change, equal to the unit voltage rating, constant input voltage.

ORDERING INFORMATION

Dual Channel Model

PSW-720L11	30V/36A*2 720W Multi-Range D.C. Power Supply
PSW-720L12	30V/36A*1 40V/27A*1 720W Multi-Range D.C. Power Supply
PSW-720L14	30V/36A*1 80V/13.5A*1 720W Multi-Range D.C. Power Supply
PSW-720L15	30V/36A*1 160V/7.2A*1 720W Multi-Range D.C. Power Supply
PSW-720L22	40V/27A*2 720W Multi-Range D.C. Power Supply
PSW-720L24	40V/27A*1 80V/13.5A*1 720W Multi-Range D.C. Power Supply
PSW-720L25	40V/27A*1 160V/7.2A*1 720W Multi-Range D.C. Power Supply
PSW-720L44	80V/13.5A*2 720W Multi-Range D.C. Power Supply
PSW-720L45	80V/13.5A*1 160V/7.2A*1 720W Multi-Range D.C. Power Supply
PSW-720L55	160V/7.2A*2 720W Multi-Range D.C. Power Supply
PSW-720H66	250V/4.5A*2 720W Multi-Range D.C. Power Supply
PSW-720H68	250V/4.5A*1 800V/1.44A*1 720W Multi-Range D.C. Power Supply
PSW-720H88	800V/1.44A*2 720W Multi-Range D.C. Power Supply

Triple Channel Model

PSW-1080L111	30V/36A*3 1080W Multi-Range D.C. Power Supply
PSW-1080L112	30V/36A*2 40V/27A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L114	30V/36A*2 80V/13.5A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L115	30V/36A*2 160V/7.2A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L122	30V/36A*1 40V/27A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L124	30V/36A*1 40V/27A*1 80V/13.5A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L125	30V/36A*1 40V/27A*1 160V/7.2A 1080W Multi-Range D.C. Power Supply
PSW-1080L144	30V/36A*1 80V/13.5A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L145	30V/36A*1 80V/13.5A*1 160V/7.2A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L155	30V/36A*1 160V/7.2A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L222	40V/27A*3 1080W Multi-Range D.C. Power Supply
PSW-1080L224	40V/27A*2 80V/13.5A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L225	40V/27A*2 160V/7.2A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L244	40V/27A*1 80V/13.5A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L245	40V/27A*1 80V/13.5A*1 160V/7.2A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L255	40V/27A*1 160V/7.2A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L444	80V/13.5A*3 1080W Multi-Range D.C. Power Supply
PSW-1080L445	80V/13.5A*2 160V/7.2A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L455	80V/13.5A*1 160V/7.2A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L555	160V/7.2A*3 1080W Multi-Range D.C. Power Supply
PSW-1080H666	250V/4.5A*3 1080W Multi-Range D.C. Power Supply
PSW-1080H668	250V/4.5A*2 800V/1.44A*1 1080W Multi-Range D.C. Power Supply
PSW-1080H688	250V/4.5A*1 800V/1.44A*2 1080W Multi-Range D.C. Power Supply
PSW-1080H888	800V/1.44A*3 1080W Multi-Range D.C. Power Supply

Apart from the differences in output type, each unit differs at output channels and voltage.
The PSW-720 is dual channel output and PSW-1080 is triple channel output.

ACCESSORIES

Power Cord x1 (Region dependent)

GTL-123	Test Lead x 1 (30V/40V/80V/160V low voltage module per channel)
GTL-240	USB Cable"L" Type
PSW-004	Basic Accessories Kit (30V/40V/80V/160V low voltage module)
PSW-008	Basic Accessories Kit (250V/800V high voltage module)
PSW-009	Output terminal cover (30V/40V/80V/160V low voltage module)
PSW-011	Output terminal cover (250V/800V high voltage module)
PSW-012	High voltage output terminal (250V/800V high voltage module)

OPTIONAL ACCESSORIES

PSW-001	Accessory Kit
PSW-002	Simple IDC Tool
PSW-003	Contact Removal Tool
GUG-001	GPIB to USB Adaptor
GRA-410-J	Rack Mount Kit (JIS)
GRA-410-E	Rack Mount Kit (KIA)
GET-001	Extended Terminal with max. 30A (30V/40V/80V/160V low voltage module)
GET-002	Extended Terminal with max. 10A (250V/800V high voltage module)
GET-005	Extended European Terminal with max. 20A (30V/40V/80V/160V low voltage module)
GTL-130	Test Lead: 2x red, 2x black (250V/800V high voltage module)
GTL-248	GPIB Cable, 2000mm
GTL-250	GPIB Cable, 600mm
GUR-001A	USB to RS-232 Cable (M3), 3000mm
GUR-001B	USB to RS-232 Cable (#4-40 UNC), 3000mm

Two-channel Models Rear Panel

Two-channel Models Front Panel

Three-channel Models Rear Panel

Three-channel Models Front Panel

PRIMARY APPLICATIONS

Multi-channel Power Supplies are Widely Used in Various Fields:

* **Electronics Product Development and Testing**
* **Automated Production Lines**
* **Laboratory Equipment Driving**
* **Industrial Control Systems**
* **Automotive Electronic Testing**

USB	LAN	GPIB
Standard	Standard	Optional

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