

# Programmable Switching D.C. Power Supply (Multi-Range D.C. Power Supply)



NEW

## PSW-Series



### FEATURES

- \* Voltage Rating : 30V/80V, Output Power Rating : 360W~1080W
- \* Constant Power Output for Multi-Range ( V & I ) Operation
- \* C.V / C.C Priority ; Particularly Suitable for the Battery and LED Industry
- \* Adjustable Slew Rate
- \* Series and Parallel Operation (2 units in Series/3 units in Parallel Maximum)
- \* High Efficiency and High Power Density
- \* 1/2, 1/3, 1/6 Rack Mount Size Design ( EIA/JIS Standard ) for 360W
- \* Standard Interface : LAN, USB, Analog Control Interface
- \* Optional Interface : GPIB-USB Adaptor
- \* LabVIEW Driver



**PSW 80-40.5** (0~80V, 0~40.5A, 1080W)



**PSW 80-27** (0~80V, 0~27A, 720W)



**PSW 30-36** (0~30V, 0~36A, 360W)

The PSW-Series is a single output multi-range programmable switching DC Power Supply covering a power range up to 1080W. This series of products include six models with the combination of 30V and 80V rated voltages and 360W, 720W and 1080W maximum output powers. The multi-range feature allows the flexible and efficient configuration of voltage and current within the rated power range. As the PSW-Series can be connected in series for maximum 2 units or in parallel for maximum 3 units, the capability of connecting multiple PSW-Series units for higher voltage or higher current output provides a broad coverage of applications. With the flexibility of multi-range power utilization and series/parallel connection, the PSW-Series significantly reduces the user's investment for various power supply products to accommodate the projects with different power requirements.

The C.V/C.C priority selection of the PSW-Series is a very useful feature for DUT protection. The conventional power supply normally operates under C.V 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 C.V 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 C.V mode to C.C mode. Though the current becomes stable after the C.C mode is activated, the current spike occurred at the C.V and C.C crossover point may possibly damage the DUT. At the power output-on stage, the PSW-Series is able to run under C.C 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-Series allows user to set for either output voltage or output current a specific rise time at the low to high level transition, and a specific fall time at the high to low level transition. This facilitates the characteristic verification of a DUT during voltage or current level changes with controllable slew rates. The manufacturing tests of lighting device or large capacitance capacitor during power output-on are mostly 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 spike current and protect the device from high current damage.

The OVP and OCP protections are provided with the PSW-Series. Both OVP and OCP levels can be selected within the range of 10% to 110%, 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-Series provides USB Host/Device and LAN interfaces as standard and GPIB-USB adaptor as optional. The LabView driver and the Data Logging PC software are supported on all the interfaces available. An analog control/monitoring connector is also available at the rear panel for external control of power On/Off and external monitoring of power output Voltage and Current.

### PARALLEL OPERATION ( 3 UNITS )

MODEL	SINGLE UNIT	2 UNITS	3 UNITS
PSW 30-36	30V/36A	30V/72A	30V/108A
PSW 30-72	30V/72A	30V/144A	30V/216A
PSW 30-108	30V/108A	30V/216A	30V/324A
PSW 80-13.5	80V/13.5A	80V/27A	80V/40.5A
PSW 80-27	80V/27A	80V/54A	80V/81A
PSW 80-40.5	80V/40.5A	80V/81A	80V/121.5A
PSW 160-7.2	160V/7.2A	160V/14.4A	160V/21.6A
PSW 160-14.4	160V/14.4A	160V/28.8A	160V/43.2A
PSW 160-21.6	160V/21.6A	160V/43.2A	160V/64.8A

### SERIES OPERATION ( 2 UNITS )

MODEL	SINGLE UNIT	2 UNITS
PSW 30-36	30V/36A	60V/36A
PSW 30-72	30V/72A	60V/72A
PSW 30-108	30V/108A	60V/108A
PSW 80-13.5	80V/13.5A	160V/13.5A
PSW 80-27	80V/27A	160V/27A
PSW 80-40.5	80V/40.5A	160V/40.5A
PSW 160-7.2	160V/7.2A	320V/7.2A
PSW 160-14.4	160V/14.4A	320V/14.4A
PSW 160-21.6	160V/21.6A	320V/21.6A

SPECIFICATIONS									
	PSW 30-36	PSW 30-72	PSW 30-108	PSW 80-13.5	PSW 80-27	PSW 80-40.5	PSW 160-7.2	PSW 160-14.4	PSW 160-21.6
OUTPUT RATING									
Voltage	0 ~ 30V	0 ~ 30V	0 ~ 30V	0 ~ 80V	0 ~ 80V	0 ~ 80V	0 ~ 160V	0 ~ 160V	0 ~ 160V
Current	0 ~ 36A	0 ~ 72A	0 ~ 108A	0 ~ 13.5A	0 ~ 27A	0 ~ 40.5A	0 ~ 7.2A	0 ~ 14.4A	0 ~ 21.6A
Power	360W	720W	1080W	360W	720W	1080W	360W	720W	1080W
REGULATION(CV)									
Load Line	0.05% of rating +5mV 0.05% of rating +3mV								
REGULATION(CC)									
Load Line	0.1% of rating +5mA 0.1% of rating +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	12mV	15mV	20mV
CC rms	72mA	144mA	216mA	27mA	54mA	81mA	15mA	30mA	45mA
PROGRAMMING ACCURACY									
Voltage	0.05% +10mV	0.05% +10mV	0.1% +10mV	0.05% +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% + 30mA	0.1% + 30mA	0.1% + 40mA	0.1% + 5mA	0.1% +15mA	0.1% +20mA
READBACK ACCURACY									
Voltage	0.1% +10mV	0.1% +60mV	0.1% +10mV	0.1% +10mV	0.1% +10mV	0.1% +10mV	0.1% +20mV	0.1% +10mV	0.1% +10mV
Current	0.1% +30mA	0.1% +30mA	0.1% +100mA	0.1% +10mA	0.1% +30mA	0.1% +40mA	0.1% +5mA	0.1% +15mA	0.1% +20mA
RESPONSE TIME									
Raise Time	50ms	50ms	50ms	50ms	50ms	50ms	100ms	100ms	100ms
Fall Time(Full Load)	50ms	50ms	50ms	50ms	50ms	50ms	100ms	100ms	100ms
Fall Time(No Load)	500ms	500ms	500ms	500ms	500ms	500ms	1000ms	1000ms	1000ms
Load Transient	1ms	1ms	1ms	1ms	1ms	1ms	2ms	2ms	2ms
Recover Time (Load change from 50~100%)									
PROGRAMMING RESOLUTION (By PC Remote Control Mode)									
Voltage	1mV	1mV	1mV	1mV	1mV	1mV	3mV	3mV	3mV
Current	1mA	2mA	3mA	1mA	2mA	3mA	1mA	2mA	3mA
MEASUREMENT RESOLUTION (By PC Remote Control Mode)									
Voltage	1mV	1mV	1mV	1mV	1mV	1mV	3mV	3mV	3mV
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	10% to 110% of rated output voltage range								
OCP	10% to 110% of rated output current range								
OHP	Activated by elecated internal temperatures								
FRONT PANEL DISPLAY ACCURACY									
Voltage	0.1%±2digits	0.1%±2digits	0.1%±2digits	0.1%±2digits	0.1%±2digits	0.1%±2digits	0.1%±1digits	0.1%±1digits	0.1%±1digits
Current	0.1%±4digits	0.1%±7digits	0.1%±1digits	0.1%±2digits	0.1%±4digits	0.1%±5digits	0.1%±5digits	0.1%±3digits	0.1%±3digits
ENVIRONMENT CONDITION									
Operation Temp	0℃ ~ 50 ℃								
Storage Temp	-25℃ ~ 70 ℃								
Operating Humidity	20% ~ 85% RH								
Storage Humidity	90% RH or Less								
READ BACK TEMP WEFFICIENT									
Voltage	100ppm/℃								
Current	200ppm/℃								
OTHER									
Analog Control Interface	Yes USB/LAN/GPIB(Option)								
Fan	With thermal sensing control								
POWER SOURCE	85VAC~265VAC, 50/60Hz, single phase								
DIMENSIONS & WEIGHT	71(W)x124(H) x350(D) mm ; Approx. 3kg	142.5(W)x124(H) x350(D)mm ; Approx. 5kg	214(W)x124(H) x350(D) mm ; Approx. 7kg	71(W)x124(H) x350(D) mm ; Approx. 3kg	142.5(W)x124(H) x350(D) mm ; Approx. 5kg	214(W)x124(H) x350(D) mm ; Approx. 7kg	71(W)x124(H) x350(D) mm ; Approx. 3kg	142.5(W)x124(H) x350(D) mm ; Approx. 5kg	214(W)x124(H) x350(D) mm ; Approx. 7kg