

PSW-Series Specifications

The specifications apply when the PSW-Series is powered on for at least 30 minutes under +20°C~+30°C.

360W
(1/6 Rack)

FRONT



REAR



720W
(1/3 Rack)



1080W
(1/2 Rack)



30V/40V/80V/160V



250V/800V

PSW-360W							
Model	PSW	30-36	40-27	80-13.5	160-7.2	250-4.5	800-1.44
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	PSW	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/°C	100ppm/°C of rated output voltage, after a 30 minute warm-up.					
Remote sense compensation voltage	V/wire	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	PSW	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 (*5)	mA	72	54	27	15	10	5
Temperature coefficient	ppm/°C	200ppm/°C of rated output current, after a 30 minute warm-up.					
Protection Function	PSW	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					
Front Panel	PSW	30-36	40-27	80-13.5	160-7.2	250-4.5	800-1.44
Display, 4 digits							
Voltage accuracy 0.1% +	mV	20	20	20	100	200	400
Current accuracy 0.1% +	mA	40	30	20	5	5	2
Programming and Measurement (Interface)	PSW	30-36	40-27	80-13.5	160-7.2	250-4.5	800-1.44
Voltage programming accuracy 0.1% +	mV	10	10	10	100	200	400
Current programming accuracy 0.1% +	mA	30	20	10	5	5	2
Voltage programming resolution	mV	1	1	2	3	5	14
Current programming resolution	mA	1	1	1	1	1	1
Voltage measurement accuracy 0.1% +	mV	10	10	10	100	200	400
Current measurement accuracy 0.1% +	mA	30	20	10	5	5	2
Voltage measurement resolution	mV	1	1	2	3	5	14

Current measurement resolution	mA	1	1	1	1	1	1
PSW-720W							
Model	PSW	30-72	40-54	80-27	160-14.4	250-9	800-2.88
Rated Output Voltage	V	30	40	80	160	250	800
Rated Output Current	A	72	54	27	14.4	9	2.88
Rated Output Power	W	720	720	720	720	720	720
Power Ratio	--	3	3	3	3.2	3.125	3.2
Constant Voltage Mode	PSW	30-72	40-54	80-27	160-14.4	250-9	800-2.88
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	80	80	80	80	100	200
r.m.s (*5)	mV	11	11	11	15	15	30
Temperature coefficient	ppm/°C	100ppm/°C of rated output voltage, after a 30 minute warm-up.					
Remote sense compensation voltage	V/wire	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	PSW	30-72	40-54	80-27	160-14.4	250-9	800-2.88
Line regulation (*1)	mA	77	59	32	19.4	14	7.88
Load regulation (*9)	mA	77	59	32	19.4	14	7.88
Ripple and noise							
r.m.s (*5)	mA	144	108	54	30	20	10
Temperature coefficient	ppm/°C	200ppm/°C of rated output current, after a 30 minute warm-up.					
Protection Function	PSW	30-72	40-54	80-27	160-14.4	250-9	800-2.88
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	5-79.2	5-59.4	2.7-29.7	1.44-15.84	0.9-9.9	0.288-3.168
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					
Front Panel	PSW	30-72	40-54	80-27	160-14.4	250-9	800-2.88
Display, 4 digits							
Voltage accuracy 0.1% +	mV	20	20	20	100	200	400
Current accuracy 0.1% +	mA	70	60	40	30	10	4
Programming and Measurement (Interface)	PSW	30-72	40-54	80-27	160-14.4	250-9	800-2.88
Voltage programming accuracy 0.1% +	mV	10	10	10	100	200	400
Current programming accuracy 0.1% +	mA	60	50	30	15	10	4
Voltage programming resolution	mV	1	1	2	3	5	14
Current programming resolution	mA	2	2	2	2	1	1
Voltage measurement accuracy 0.1% +	mV	10	10	10	100	200	400

Current measurement accuracy 0.1% +	mA	60	50	30	15	10	4
Voltage measurement resolution	mV	1	1	2	3	5	14
Current measurement resolution	mA	2	2	2	2	1	1
PSW-1080W							
Model	PSW	30-108	40-81	80-40.5	160-21.6	250-13.5	800-4.32
Rated Output Voltage	V	30	40	80	160	250	800
Rated Output Current	A	108	81	40.5	21.6	13.5	4.32
Rated Output Power	W	1080	1080	1080	1080	1080	1080
Power Ratio	--	3	3	3	3.2	3.125	3.2
Constant Voltage Mode	PSW	30-108	40-81	80-40.5	160-21.6	250-13.5	800-4.32
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	100	100	100	100	120	200
r.m.s (*5)	mV	14	14	14	20	15	30
Temperature coefficient	ppm/°C	100ppm/°C of rated output voltage, after a 30 minute warm-up.					
Remote sense compensation voltage	V/wire	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	PSW	30-108	40-81	80-40.5	160-21.6	250-13.5	800-4.32
Line regulation (*1)	mA	113	86	45.5	26.6	18.5	9.32
Load regulation (*9)	mA	113	86	45.5	26.6	18.5	9.32
Ripple and noise							
r.m.s (*5)	mA	216	162	81	45	30	15
Temperature coefficient	ppm/°C	200ppm/°C of rated output current, after a 30 minute warm-up.					
Protection Function	PSW	30-108	40-81	80-40.5	160-21.6	250-13.5	800-4.32
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	5-118.8	5-89.1	4.05-44.55	2.16-23.76	1.35-14.85	0.432-4.752
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					
Front Panel	PSW	30-108	40-81	80-40.5	160-21.6	250-13.5	800-4.32
Display, 4 digits							
Voltage accuracy 0.1% +	mV	20	20	20	100	200	400
Current accuracy 0.1% +	mA	100	80	50	30	20	6
Programming and Measurement (Interface)	PSW	30-108	40-81	80-40.5	160-21.6	250-13.5	800-4.32
Voltage programming accuracy 0.1% +	mV	10	10	10	100	200	400
Current programming accuracy 0.1% +	mA	100	80	40	20	15	6
Voltage programming resolution	mV	1	1	2	3	5	14

Current programming resolution	mA	3	3	3	3	1	1	
Voltage measurement accuracy 0.1% +	mV	10	10	10	100	200	400	
Current measurement accuracy 0.1% +	mA	100	80	40	20	15	6	
Voltage measurement resolution	mV	1	1	2	3	5	14	
Current measurement resolution	mA	3	3	3	3	1	1	
Common Specification								
Input Characteristics		PSW	30V	40V	80V	160V	250V	800V
Nominal input rating		100Vac to 240Vac, 50Hz to 60Hz, single phase						
Input voltage range		85Vac ~ 265Vac						
Input voltage range		47Hz ~ 63Hz						
Maximum input current								
100Vac	A	360W: 5A, 720W: 10A, 1080W: 15A						
200Vac	A	360W: 2.5A, 720W: 5A, 1080W: 7.5A						
Inrush current		A	< 25A for 360W, < 50A for 720W, < 75A for 1080W					
Maximum input power		VA	360W: 500VA, 720W: 1000VA, 1080W: 1500VA					
Power factor								
100Vac		0.99						
200Vac		0.97						
Efficiency								
100Vac	%	77	78	78	79	79	80	
200Vac	%	79	80	80	81	81	82	
Hold-up time		20ms or greater						
Analog Programming and Monitoring		PSW	30V	40V	80V	160V	250V	800V
External voltage control output voltage		Accuracy and linearity: $\pm 0.5\%$ of rated output voltage.						
External voltage control output current		Accuracy and linearity: $\pm 1\%$ of rated output current.						
External resistor control output voltage		Accuracy and linearity: $\pm 1.5\%$ of rated output voltage.						
External resistor control output current		Accuracy and linearity: $\pm 1.5\%$ of rated output current.						
Output voltage monitor								
Accuracy	%	± 1	± 1	± 1	± 1	± 2	± 2	
Output current monitor								
Accuracy	%	± 1	± 1	± 1	± 1	± 2	± 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.						
Series and Parallel Capability		PSW	30V	40V	80V	160V	250V	800V
Parallel number		Units	3	3	3	3	3	3
Series Number		Units	2	2	2	2	None	None
Front Panel								
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						
Interface Capabilities								
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		
Operating 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		
Weight (main unit only)	kg	Approx. 3kg for 360W, Approx. 5.3kg for 720W, Approx. 7.5kg for 1080W
Dimensions (WxHxD)	mm	360W: 71×124×350mm, 720W: 142×124×350mm, 1080W: 214×124×350mm
Cooling		Forced air cooling by internal fan.
EMC		Complies with the European EMC directive 2004/108 /EC for Class A test and measurement products.
Safety		Complies with the European Low Voltage Directive 2006 /95/EC 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, 100MΩ or more
		Between input and output: 500 Vdc, 100MΩ or more
		Between output and chassis: 500 Vdc, 100MΩ or more for 30V, 40V, 80V, 160V and 250V models. 1000Vdc, 100MΩ 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.