

Specifications of PSW-series

PSW-360W						
Model	PSW	30-36	80-13.5	160-7.2	250-4.5	800-1.44
Rated Output Voltage	V	30	80	160	250	800
Rated Output Current	A	36	13.5	7.2	4.5	1.44
Rated Output Power	W	360	360	360	360	360
Power Ratio	--	3	3	3.2	3.125	3.2
Constant Voltage Mode	PSW	30-36	80-13.5	160-7.2	250-4.5	800-1.44
Line Regulation (*1)	mV	18	43	83	128	403
Load Regulation (*2)	mV	20	45	85	130	405
Ripple and Noise (*3)						
p-p (*4)	mV	60	60	60	80	150
r.m.s (*5)	mV	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	1	1
Rise Time (*6)						
Rated Load	ms	50	50	100	100	150
No Load	ms	50	50	100	100	150
Fall Time (*7)						
Rated Load	ms	50	50	100	150	300
No Load	ms	500	500	1000	1200	2000
Transient response time (*8)	ms	1	1	2	2	2
Constant Current Mode	PSW	30-36	80-13.5	160-7.2	250-4.5	800-1.44
Line regulation (*1)	mA	41	18.5	12.2	9.5	6.44
Load regulation (*9)	mA	41	18.5	12.2	9.5	6.44
Ripple and noise						
r.m.s (*5)	mA	72	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	80-13.5	160-7.2	250-4.5	800-1.44
Over voltage protection (OVP)						
Setting range	V	3-33	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	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	80-13.5	160-7.2	250-4.5	800-1.44
Display, 4 digits						
Voltage accuracy 0.1% +	mV	20	20	100	200	400
Current accuracy 0.1% +	mA	40	20	5	5	2
Programming and Measurement (Interface)	PSW	30-36	80-13.5	160-7.2	250-4.5	800-1.44
Voltage programming accuracy 0.1% +	mV	10	10	100	200	400
Current programming accuracy 0.1% +	mA	30	10	5	5	2

Voltage programming resolution	mV	1	2	3	5	14
Current programming resolution	mA	1	1	1	1	1
Voltage measurement accuracy 0.1% +	mV	10	10	100	200	400
Current measurement accuracy 0.1% +	mA	30	10	5	5	2
Voltage measurement resolution	mV	1	2	3	5	14
Current measurement resolution	mA	1	1	1	1	1
PSW-720W						
Model	PSW	30-72	80-27	160-14.4	250-9	800-2.88
Rated Output Voltage	V	30	80	160	250	800
Rated Output Current	A	72	27	14.4	9	2.88
Rated Output Power	W	720	720	720	720	720
Power Ratio	--	3	3	3.2	3.125	3.2
Constant Voltage Mode	PSW	30-72	80-27	160-14.4	250-9	800-2.88
Line Regulation (*1)	mV	18	43	83	128	403
Load Regulation (*2)	mV	20	45	85	130	405
Ripple and Noise (*3)						
p-p (*4)	mV	80	80	80	100	200
r.m.s (*5)	mV	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	1	1
Rise Time (*6)						
Rated Load	ms	50	50	100	100	150
No Load	ms	50	50	100	100	150
Fall Time (*7)						
Rated Load	ms	50	50	100	150	300
No Load	ms	500	500	1000	1200	2000
Transient response time (*8)	ms	1	1	2	2	2
Constant Current Mode	PSW	30-72	80-27	160-14.4	250-9	800-2.88
Line regulation (*1)	mA	77	32	19.4	14	7.88
Load regulation (*9)	mA	77	32	19.4	14	7.88
Ripple and noise						
r.m.s (*5)	mA	144	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	80-27	160-14.4	250-9	800-2.88
Over voltage protection (OVP)						
Setting range	V	3-33	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	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	80-27	160-14.4	250-9	800-2.88
Display, 4 digits						
Voltage accuracy 0.1% +	mV	20	20	100	200	400

Current accuracy 0.1% +	mA	70	40	30	10	4
Programming and Measurement (Interface)	PSW	30-72	80-27	160-14.4	250-9	800-2.88
Voltage programming accuracy 0.1% +	mV	10	10	100	200	400
Current programming accuracy 0.1% +	mA	60	30	15	10	4
Voltage programming resolution	mV	1	2	3	5	14
Current programming resolution	mA	2	2	2	1	1
Voltage measurement accuracy 0.1% +	mV	10	10	100	200	400
Current measurement accuracy 0.1% +	mA	60	30	15	10	4
Voltage measurement resolution	mV	1	2	3	5	14
Current measurement resolution	mA	2	2	2	1	1
PSW-1080W						
Model	PSW	30-108	80-40.5	160-21.6	250-13.5	800-4.32
Rated Output Voltage	V	30	80	160	250	800
Rated Output Current	A	108	40.5	21.6	13.5	4.32
Rated Output Power	W	1080	1080	1080	1080	1080
Power Ratio	--	3	3	3.2	3.125	3.2
Constant Voltage Mode	PSW	30-108	80-40.5	160-21.6	250-13.5	800-4.32
Line Regulation (*1)	mV	18	43	83	128	403
Load Regulation (*2)	mV	20	45	85	130	405
Ripple and Noise (*3)						
p-p (*4)	mV	100	100	100	120	200
r.m.s (*5)	mV	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	1	1
Rise Time (*6)						
Rated Load	ms	50	50	100	100	150
No Load	ms	50	50	100	100	150
Fall Time (*7)						
Rated Load	ms	50	50	100	150	300
No Load	ms	500	500	1000	1200	2000
Transient response time (*8)	ms	1	1	2	2	2
Constant Current Mode	PSW	30-108	80-40.5	160-21.6	250-13.5	800-4.32
Line regulation (*1)	mA	113	45.5	26.6	18.5	9.32
Load regulation (*9)	mA	113	45.5	26.6	18.5	9.32
Ripple and noise						
r.m.s (*5)	mA	216	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	80-40.5	160-21.6	250-13.5	800-4.32
Over voltage protection (OVP)						
Setting range	V	3-33	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	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	80-40.5	160-21.6	250-13.5	800-4.32
Display, 4 digits						
Voltage accuracy 0.1% +	mV	20	20	100	200	400
Current accuracy 0.1% +	mA	100	50	30	20	6
Programming and Measurement (Interface)	PSW	30-108	80-40.5	160-21.6	250-13.5	800-4.32
Voltage programming accuracy 0.1% +	mV	10	10	100	200	400
Current programming accuracy 0.1% +	mA	100	40	20	15	6
Voltage programming resolution	mV	1	2	3	5	14
Current programming resolution	mA	3	3	3	1	1
Voltage measurement accuracy 0.1% +	mV	10	10	100	200	400
Current measurement accuracy 0.1% +	mA	100	40	20	15	6
Voltage measurement resolution	mV	1	2	3	5	14
Current measurement resolution	mA	3	3	3	1	1
Common Specification						
Input Characteristics	PSW	30V	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	79	79	80
200Vac	%	79	80	81	81	82
Hold-up time		20ms or greater				
Analog Programming and Monitoring	PSW	30V	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	± 2	± 2
Output current monitor						

Accuracy	%	±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	80V	160V	250V	800V
Parallel number	Units	3	3	3	3	3
Series Number	Units	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 ³	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, 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, 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.