

## PSU-Series Specifications

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

Model		PSU	6-200	12.5-120	20-76	40-38	60-25	100-15	150-10	300-5	400-3.8	600-2.6
<b>Output ratings</b>												
Rated output voltage (*1)		V	6	12.5	20	40	60	100	150	300	400	600
Rated output current (*2)		A	200	120	76	38	25	15	10	5	3.8	2.6
Rated output power		W	1200	1500	1520	1520	1500	1500	1500	1500	1520	1560
<b>Ripple and noise(*5)</b>												
CVp-p( 10 ~ 20MHz)	p-p (*6)	mV	60	60	60	60	60	80	100	150	200	300
CVrms(5Hz ~ 1MHz)	r.m.s. (*7)	mV	8	8	8	8	8	8	10	25	40	60
CCrms(5Hz ~ 1MHz)	r.m.s.(*12)	mA	400	240	152	95	75	45	35	25	17	12
<b>Load regulation</b>												
Voltage(*4)		mV	2.6	3.25	4	6	8	12	17	32	42	62
Current(*11)		mA	45	29	20.2	12.6	10	8	7	6	5.76	5.52
<b>Line regulation</b>												
Voltage(*3)		mV	2.6	3.25	4	6	8	12	17	32	42	62
Current(*3)		mA	22	14	9.6	5.8	4.5	3.5	3	2.5	2.38	2.26
<b>Analog Programming and Monitoring</b>												
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: $\pm 1\%$ of rated output voltage.									
External resistor control output current			Accuracy and linearity: $\pm 1.5\%$ of rated output current.									
Output voltage monitor			Accuracy: $\pm 1\%$									
Output current monitor			Accuracy: $\pm 1\%$									
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									
Alarm clear control			Clear alarms with 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.									
Trigger out			Maximum low level output = 0.8V; minimum high level output = 2V; Maximum source current = 8mA.									
Trigger in			Maximum low level input voltage = 0.8V; minimum high level input voltage = 2V, Maximum sink current = 8mA.									
<b>Front Panel</b>												
Display, 4 digits, Voltage accuracy	0.1% +	mV	12	25	40	80	120	200	300	600	800	1200
Current accuracy	0.2% +	mA	600	360	228	114	75	45	30	15	11.4	7.8
Indications			GREEN LED's: CV, CC, V, A, VSR, ISR, DLY, RMT, LAN, M1, M2, M3, RUN, Output ON									
			RED LED's: ALM, ERR									
Buttons			Lock/Local(Unlock), PROT(ALM_CLR), Function(M1), Test(M2), Set(M3), Shift, Output									
Knobs			Voltage, Current									

USB port			Type A USB connector									
<b>Transient response time (*10)</b>												
Transient response time		ms	1.5	1	1	1	1	1	2	2	2	2
<b>Output response time</b>												
Rise time (*8)	Rated load	ms	80	80	80	80	80	150	150	150	200	250
	No load	ms	80	80	80	80	80	150	150	150	200	250
Fall time(*9)	Rated load	ms	10	50	50	80	80	150	150	150	200	250
	No load	ms	500	700	800	1000	1100	1500	2000	2500	3000	4000
<b>Programming and Measurements (RS-232/485, USB, LAN, GPIB)</b>												
Output voltage programming accuracy	0.05% +	mV	3	6.25	10	20	30	50	75	150	200	300
Output current programming accuracy	0.2% +	mA	200	120	76	38	25	15	10	5	3.8	2.6
Output voltage programming resolution		mV	0.2	0.4	0.7	1.3	2	3.4	5.2	10.2	13.6	20.4
Output current programming resolution		mA	6	4	2.5	1.2	0.8	0.5	0.34	0.19	0.13	0.09
Output voltage measurement accuracy	0.1% +	mV	6	12.5	20	40	60	100	150	300	400	600
Output current measurement accuracy	0.2% +	mA	400	240	152	76	50	30	20	10	7.6	5.2
Output voltage measurement resolution		mV	0.2	0.4	0.7	1.3	2	3.4	5.2	10.2	13.6	20.4
Output current measurement resolution		mA	6	4	2.5	1.2	0.8	0.5	0.34	0.19	0.13	0.09
<b>Temperature coefficient</b>												
Voltage		ppm/ °C	100ppm/°C after a 30 minute warm-up									
Current		ppm/ °C	100ppm/°C after a 30 minute warm-up									
<b>Remote sense compensation voltage(single wire)</b>												
voltage		V	1	1	1	2	3	5	5	5	5	5
<b>Protection Function</b>												
Over voltage protection(OVP)	Setting range	V	0.6 - 6.6	1.25 - 13.75	2 - 22	4 - 44	5 - 66	5 - 110	5 - 165	5 - 330	5 - 440	5 - 660
	Setting accuracy	mV	60	125	200	400	600	1000	1500	3000	4000	6000
Over current protection(OCP)	Setting range	A	5 - 220	5 - 132	5 - 83.6	3.8 - 41.8	2.5 - 27.5	1.5 - 16.5	1月11日	0.5 - 5.5	0.38 - 4.18	0.26 - 2.86
	Setting accuracy	mA	4000	2400	1520	760	500	300	200	100	76	52
Under voltage limit(UVL)	Setting range		0 - 6.3	0 - 13.12	0 - 21	0 - 42	0 - 63	0 - 105	0 - 157.5	0 - 315	0 - 420	0 - 630
Over temperature protection(OHP)	Operation		Turn the output off.									
Incorrect sensing connection protection (SENSE)	Operation		Turn the output off.									
Low AC input protection (AC-FAIL)	Operation		Turn the output off.									
Shutdown (SD)	Operation		Turn the output off.									
Power limit (POWER LIMIT)	Operation		Over power limit.									
	Value (fixed)		Approx. 105% of rated output power									
<b>Interface Capabilities</b>												
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									
RS-232 / RS-485			Complies with the EIA232D / EIA485 Specifications									
GPIB (Factory Option)			SCPI - 1993, IEEE 488.2 compliant interface									

Isolated Analog Control Interface (Factory Option)			
Voltage Control			Using 0-5V or 0-10V signals for programming and measurement
Current Control			Using 4-20mA current signals for programming and measurement
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
Input Characteristics			
Nominal input rating			100Vac to 240Vac, 50Hz to 60Hz, single phase
Input voltage range			85Vac ~ 265Vac
Input frequency range			47Hz ~ 63Hz
Maximum input current	100Vac / 200Vac	A	21 / 11
Inrush current			Less than 50A.
Maximum input power		VA	2000
Power factor	100Vac / 200Vac		0.99 / 0.98
Efficiency (*13)	100Vac / 200Vac	%	77 / 79   82 / 85   83 / 86   84 / 87   84 / 87   84 / 87   84 / 87   84 / 87   84 / 87
Hold-up time			20ms or greater
General			
Weight	main unit only	kg	Less than 8.7kg
Dimensions	(W×H×D)	mm <sup>3</sup>	423×43.6×447.2
Cooling			Forced air cooling by internal fan.
EMC			Complies with the European EMC directive 89/336/EEC for Class A test and measurement products.
Safety			Complies with the European Low Voltage Directive 73/23/EEC and carries the CE-marking.
Withstand voltage			AC to Chassis : 1500Vac / 1min
			AC to Output terminal : 3000Vac / 1min
			Vout ≤ 150V
			Output terminal to Chassis : 1000Vdc / 1min
			150 < Vout ≤ 600
			Output terminal to Chassis : 1500Vdc / 1min
Insulation resistances			Chassis and output terminal; chassis and AC input; AC input and output terminal: 100MΩ or more (DC 1000V)

**Notes:**

- (\*1) Minimum voltage is guaranteed to maximum 0.2% of the rated output voltage.
- (\*2) Minimum current is guaranteed to maximum 0.4% of the rated output current.
- (\*3) At 85 ~ 132Vac or 170 ~ 265Vac, constant load.
- (\*4) From No-load to Full-load, constant input voltage. Measured at the sensing point in Remote Sense.
- (\*5) Measure with JEITA RC-9131B (1:1) probe
- (\*6) Measurement frequency bandwidth is 10Hz to 20MHz.

(\*7) Measurement frequency bandwidth is 5Hz to 1MHz.

(\*8) From 10% to 90% of rated output voltage, with rated resistive load.

(\*9) From 90% to 10% of rated output voltage, with rated resistive load.

(\*10) Time for output voltage to recover within 0.5% of its rated output for a load change from 10 to 90% of its rated output current. Voltage set point from 10% to 100% of rated output.

(\*11) For load voltage change, equal to the unit voltage rating, constant input voltage.

(\*12) For 6V model the ripple is measured at 2 ~ 6V output voltage and full output current. For other models, the ripple is measured at 10 ~ 100% output voltage and full output current.

(\*13) At rated output power.