

PSU Series Specifications

Model	PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Rated output voltage (*1)	V	6	8	12.5	15	20	30	40	50	60	80	100	150	300	400	600
Rated output current (*2)	A	600	540	360	300	228	150	114	90	75	57	45	30	15	11.4	7.8
Rated output power	W	3600	4320	4500	4500	4560	4500	4560	4500	4500	4560	4500	4500	4500	4560	4680

Constant Voltage Mode		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Line regulation (*3)		mV	0.01% of rated output voltage +2mV														
Load regulation (*4)		mV	0.01% of rated output voltage +5mV														
Ripple and noise (*5)	p-p (*6)	mV	75	75	75	75	75	75	75	75	100	100	120	300	300	500	
	r.m.s. (*7)	mV	10	10	10	10	10	10	10	10	15	15	25	35	35	120	
Temperature coefficient		ppm/°C	100ppm/°C after a 30 minute warm-up														
Temperature stability			0.05% of rated output voltage over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.														
Warm-up drift			Less than 0.05% of rated output voltage +2mV over 30 minutes following power on.														
Remote sense compensation voltage (single wire)	V		1	1	1	1	1	1.5	2	2	3	4	5	5	5	5	5
Rise time (*8)	No load	ms	80	80	80	80	80	80	80	80	80	150	150	150	150	200	250
Fall time (*9)	Rated load	ms	10	50	50	50	50	80	80	80	150	150	150	150	200	250	
	No load	ms	500	600	700	700	800	900	1000	1100	1100	1200	1500	2000	2500	3000	4000
Transient response time (*10)	No load	ms	3	3	3	3	3	3	3	3	3	3	3	3	3	3	

Constant Current Mode		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8		
Line regulation (*3)		mA	0.1% of rated output current			0.05% of rated output current													
Load regulation (*11)		mA	0.5% of rated output current										1% of rated output current						
Load regulation thermal drift			Less than 0.1% of rated output current over 30 minutes following load change.																
Ripple and noise (*12)	r.m.s.	mA	1400	1315	1060	987	900	472	275	191	138	110	92	81	30	20	15		
Temperature coefficient		ppm/°C	100ppm/°C after a 30 minute warm-up																
Temperature stability			0.05% of rated output current over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.																
Warm-up drift			6-15V model : Less than 0.5% rated output current over 30 minutes following power on. 20-600V model : Less than 0.25% rated output current over 30 minutes following power on.																

Protection Function		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Over voltage protection (OVP)	Setting range	V	0.6 - 6.6	0.8-8.8	1.25 - 13.75	1.5 - 16.5	2 - 22	3 - 33	4 - 44	5 - 55	5 - 66	5 - 88	5 - 110	5 - 165	5 - 330	5 - 440	5 - 660
	Setting accuracy	mV	60	150	125	150	200	300	400	500	600	800	1000	1500	3000	4000	6000
Over current protection (OCP)	Setting range	A	5 - 660	5-594	5 - 396	5 - 330	5 - 250.8	5 - 165	5 - 125.4	5 - 99	5 - 82.5	5 - 62.7	4.5 - 49.5	3 - 33	1.5 - 16.5	1.14 - 12.54	0.78 - 8.58
	Setting accuracy	A	12	10.8	7.2	6	4.56	3	2.28	1.8	1.5	1.04	0.9	0.6	0.3	0.228	0.156
Under voltage limit (UVL)	Setting range		0 - 6.3	0 - 8.4	0 - 13.12	0 - 15.75	0 - 21	0 - 31.5	0 - 42	0 - 52.5	0 - 63	0 - 84	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														

Front Panel		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Display, 4 digits	Voltage accuracy	mV	12	16	25	30	40	60	80	100	120	160	200	300	600	800	1200
	Current accuracy	mA	1800	1620	1080	900	684	450	342	270	225	171	135	90	45	34.2	23.4
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														

Programming and Measurement (RS-232/485, USB, LAN, GPIB)		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Output voltage programming accuracy	0.05% +	mV	3	4	6.25	7.5	10	15	20	25	30	40	50	75	150	200	300
Output current programming accuracy	0.2% +	mA	600	540	360	300	228	150	114	90	75	57	45	30	15	11.4	7.8
Output voltage programming resolution		mV	0.2	0.27	0.4	0.5	0.7	1	1.3	1.7	2	2.7	3.4	5.2	10.2	13.6	20.4
Output current programming resolution		mA	18	18	12	9.9	7.5	5.1	3.6	3	2.4	1.95	1.5	1.02	0.57	0.39	0.27
Output voltage measurement accuracy	0.1% +	mV	6	8	12.5	15	20	30	40	50	60	80	100	150	300	400	600
Output current measurement accuracy	0.2% +	mA	1200	1080	720	600	456	300	228	180	150	114	90	60	30	22.8	15.6
Output voltage measurement resolution		mV	0.2	0.27	0.4	0.5	0.7	1	1.3	1.7	2	2.7	3.4	5.2	10.2	13.6	20.4
Output current measurement resolution		mA	18	18	12	9.9	7.5	5.1	3.6	3	2.4	1.95	1.5	1.02	0.57	0.39	0.27

Input Characteristics		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8	
Normal input rating			B type : 1P2W 200V models · C type : 3P3W 200V models · D type : 3P4W 400V models															
Input voltage range			B type : 1P2W 170-265Vac · C type : 3P3W 180-253Vac · D type : 3P4W 360-440Vac															
Input frequency range			47Hz ~ 63Hz															
Maximum input current	200Vac / 400Vac	A	B type : 33A · C type : 19A · D type 11A															
Inrush current			B type : 1P2W 200V models Less than 150A. C type : 3P3W 200V model Less than 100A. D type : 3P4W 400V model Less than 50A.															
Power factor	200Vac / 400Vac		0.98 @1 Phase 200Vac / 0.95 @ 3 Phase 200/400Vac															
Efficiency (*13)		%	78.5	81	85	85	86	86	87	87	87	87	87	87	87	87	87	87
Hold-up time			20ms or greater															

Interface Capabilities		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
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														

Environmental Conditions		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Operating temperature			0 °C to 50 °C (*14)														
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		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Weight	main unit only	kg	Less than 28.7kg														
Dimensions	(W×H×D)	mm <sup>3</sup>	423×130.8×447.2														
Cooling			Forced air cooling by internal fan.														
EMC																	
Safety																	
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 resistance			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) Single phase 200V models: 170-265Vac. Three phase 200V models : 180-253vac. Three phase 400V models : 360-440Vac.
- (\*4) From No-load to Full-load, constant input voltage. Measured at the sensing point in Remote Sense.
- (\*5) Measured at rated output voltage and current with JEITA RC-9131B 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 2% of its rated output for a load change from 50 to 100% 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~20V model the ripple is measured at 2V ~ rated output voltage and full output current. For other models, the ripple is measured at 10 ~ 100% output voltage and full output current.
- (\*13) Single phase and three phase 200V models : at 200Vac input voltage. Three phase 400V models : at 400Vac input voltage. At rated output power.
- (\*14) If install the front panel filter kit, the temperature is guaranteed to 40 °C.