PSU Series Specifications

Model		PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
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	400	360	240	200	152	100	76	60	50	38	30	20	10	7.6	5.2
Rated output power		W	2400	2880	3000	3000	3040	3000	3040	3000	3000	3040	3000	3000	3000	3040	3120

Constant Voltage Mode		PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
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	75	100	100	120	300	300	500
	r.m.s. (*7)	mV	10	10	10	10	10	10	10	10	10	15	15	25	35	35	120
Temperature coefficient		ppm/℃	100ppm/℃ 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 snese 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	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)		ms	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Constant Current Mode		PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Line regulation (*3)		mA	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	850	800	650	590	520	290	185	137	107	85	69	58	30	20	15
Temperature coefficient		ppm/℃	100ppm/℃ 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	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
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	80	125	150	200	300	400	500	600	800	1000	1500	3000	4000	6000
Over current protection (OCP)	Setting range	A	5 - 440	5-396	5 - 262	5 - 220	5 - 167.2	5 - 110	5 - 83.6	5 - 66	5 - 55	3.8 - 41.8	3 - 33	2 - 22	1 - 11	0.76 - 8.36	0.52 - 5.72
	Setting accuracy	A	8	7.2	4.8	4	3.04	2	1.52	1.2	1	0.76	0.6	0.4	0.2	0.152	0.104
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	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Display, 4 digits	Voltage accuracy	0.1% +	mV	12	16	25	30	40	60	80	100	120	160	200	300	600	800	1200
	Current accuracy	0.2% +	mA	1200	1080	720	600	456	300	228	180	150	114	90	60	30	22.8	15.6
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	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
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	400	360	240	200	152	100	76	60	50	38	30	20	10	7.6	5.2
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	12	12	8	6.6	5	3.4	2.4	2	1.6	1.3	1	0.68	0.38	0.26	0.18
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	800	720	480	400	304	200	152	120	100	76	60	40	20	15.2	10.4
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	12	12	8	6.6	5	3.4	2.4	2	1.6	1.3	1	0.68	0.38	0.26	0.18

Input Characteristics		PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Norminal input rating			B type : 1P2W 200V models														
Input voltage range			B type : 1P2W 170-265Vac														
Input frequency range			47Hz ~ 63Hz														
Maximum input current	200Vac	A	B type : 22A														
Inrush current			B type : 1P2W 200V models Less than 100A.														
Power factor	200Vac		0.98 @1 Phase 200Vac														
Efficiency (*13)		%	78.5	81	85	85	86	86	87	87	87	87	87	87	87	87	87
Hold-up time			20ms or greater														

Interface Capabilities		PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
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	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Operaing 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	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Weight	main unit only	kg	Less than 20kg														
Dimensions	(W×H×D)	mm^3	423×87.2×447.2														
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.

(*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) At rated output power.

(*14) If install the front panel filter kit, the temperature is guaranteed to 40˚C.