

Product Specifications

920W/1200W/2000W CRPS Power Supply, 100-240VAC

PWR-CRPS920/PWR-CRPS1200/PWR-CRPS2000

Version 1.0

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Change History:

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Author	Ricebean	Editor:	Mark Kao
Reviewed by:	Kent Kang	Approved by:	Kent Kang

1. Introduction

➤ Image



➤ Overview

PLANET PWR-CRPS Series are CRPS powers with input AC connector. It adopts the latest circuit design, obtaining compact structure, reliable performance and high PF. It provides stable performance, high output efficiency and wide input voltage range. The power is characterized with protections for low input voltage, output short circuit, over current and over voltage, backup for parallel operation and hot plug, equipped with a cooling fan. The following models come with the PWR-CRPS power supply units:

Model Name	Power Supply
PWR-CRPS920	920W CRPS Power Supply, 100-240VAC
PWR-CRPS1200	1200W CRPS Power Supply, 100-240VAC
PWR-CRPS2000	2000W CRPS Power Supply, 100-240VAC

The PWR-CRPS Series is designed in accordance with Safety Certification, meeting the requirements of Information Technology Equipment Security.

2. Technical Index

➤ Input Characteristics

PWR-CRPS920

Parameter	Min	Rated	Max	Start Up VAC	Power Off VAC
Voltage (Low line)	90 Vrms	100-127 Vrms	136 Vrms	85Vac~90Vac	75Vac~85Vac
Current (Low line)			12 Arms		
Voltage (High line)	180 Vrms	200-240 Vrms	264 Vrms		
Current (High line)			6Arms		
Frequency	47 Hz	50/60	63 Hz		
HVDC (240V)	190	240	310	180Vdc~190Vdc	170Vdc~180Vdc
DC in Current		6 Arms			

PWR-CRPS1200

Parameter	Min	Rated	Max	Start Up VAC	Power Off VAC
Voltage (Low line)	90 Vrms	100-127 Vrms	136 Vrms	85Vac~90Vac	75Vac~85Vac
Current (Low line)			13 Arms		
Voltage (High line)	180 Vrms	200-240 Vrms	264 Vrms		
Current (High line)			8.5Arms		
Frequency	47 Hz	50/60	63 Hz		
HVDC (240V)	190	240	310	180Vdc~190Vdc	170Vdc~180Vdc
DC in Current		8 Arms			

PWR-CRPS2000

Parameter	Min	Rated	Max	Start Up VAC	Power Off VAC
Voltage (Low line)	90 Vrms	100-127 Vrms	136 Vrms	85Vac~90Vac	75Vac~85Vac
Current (Low line)			13 Arms		
Voltage (High line)	180 Vrms	200-240 Vrms	264 Vrms		
Current (High line)			10Arms		
Frequency	47 Hz	50/60	63 Hz		
HVDC (240V)	190	240	310	180Vdc~190Vdc	170Vdc~180Vdc
DC in Current		10 Arms			

➤ Output Electrical Characteristics

PWR-CRPS920

Parameter	+54.5V Output
Voltage	54.5VDC Notes 1
Minimum Current	0A
Maximum Current	16.88A
Line Regulation	+/-1%
Load Regulation	+/-3%
Noise and Ripple	540mVp-p
Overshoot	5%
Undershoot	5%
Peak	-

Notes: 1. 54.5V main output voltage should be adjusted to 54.1+/-0.1V at 8.44A load.

PWR-CRPS1200

Parameter	+54.5V Output	+54.5V Output
Voltage	54.5VDC Note 2	54.5VDC Note 2
Minimum Current	0A	0A
Maximum Current	18.36A	22A
Line Regulation	+/-1%	+/-1%
Load Regulation	+/-3%	+/-3%
Noise and Ripple	540mVp-p	540mVp-p
Overshoot	5%	5%
Undershoot	5%	5%
AC Input Voltage Range	90~132VAC	180~264VAC
Peak	Notes 3 and 4	Notes 3 and 4

Notes:

2. 54.5V main output voltage should be adjusted to 54.5+/-0.3V at 22A load
3. Peak combined power for all outputs is 2400W 50msec/180Vac~264Vac(@1200W; more than 200ms is sustained). Peak combined power for all outputs is 2000W 30msec/90Vac~132Vac(@1000W; more than 200ms is sustained)
4. Length of time for peak power can be supported based on thermal sensor and assertion of the PS_ALERT# signal. Minimum peak power duration is 50 msec without asserting the PS_ALERT# signal at the maximum

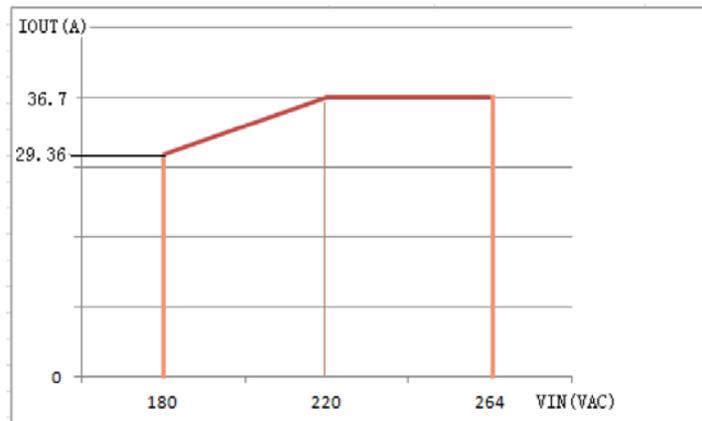
operating temperature.

PWR-CRPS2000

Parameter	+54.5V Output	+54.5V Output	+54.5V Output
Voltage	54.5VDC Note 5	54.5VDC Note 5	54.5VDC Note 5
Minimum Current	0A	0A	0A
Maximum Current	18.36A	29.36A	36.7A
Line Regulation	+/-1%	+/-1%	+/-1%
Load Regulation	+/-3%	+/-3%	+/-3%
Noise and Ripple	540mVp-p	540mVp-p	540mVp-p
Overshoot	5%	5%	5%
Undershoot	5%	5%	5%
AC Input Voltage Range	90~136VAC	180~220VAC	220~264VAC
Peak	-	Note 6	Note 6

Notes:

- 5. 54.5V main output voltage should be adjusted to 54.5+/-0.3V at 18.35A load
- 6. Power derating (The relationship between input and output power)



➤ **Protection -- Over Current Protection (OCP)**

The power supply has the current limit to preventing the outputs from exceeding the values shown in table below. If the current limit exceeds, the power supply will shut down and will be off the latch. The latch will be cleared by toggling the PS_ON# signal or by an AC power interruption. The power supply will not be damaged from repeated power cycling in this condition. VSSO will be auto-recovered after removing OCP limit.

PWR-CRPS920

Output	Input Voltage Range	Over Current Limits
+54.5V	90 – 264VAC	18.6Amin; 25.6Amax

PWR-CRPS1200

Output	Input Voltage Range	Over Current Limits
+54.5V	90 – 132VAC	20A min; 26A max
+54.5V	180 – 264VAC	24A min; 32A max

PWR-CRPS2000

Output	Input Voltage Range	Over Current Limits
+54.5V	90 – 136VAC	20.2A min; 27.5A max
+54.5V	180 – 264VAC	40.3A min; 55A max

➤ **Insulation and Safety standard**

- UL60950-1/CSA 60950-1 (USA / Canada)
- IEC60950-1 (International)
- UL62368-1/CSA 62368-1 (USA / Canada)
- IEC62368-1 (international)
- CB Certificate & Report, IEC60950-1 (Report to include all country national deviations)
- CB Certificate & Report, IEC62368-1 (Report to include all country national deviations)

➤ **EMC**

Note: The product is required to comply with Class A emission requirements as the end system that it is configured into is intended for a commercial environment and market place. Power supply is to have minimum of 6dB margin to Class A Limits to support customer's margin requirements.

- FCC/ICES-003 - Emissions (USA/Canada) Verification CISPR 22 – Emissions (International)
- EN55022 – Conducted & Radiated Emissions (Europe)
- EN55024 - Immunity (Europe)
 - EN61000-4-2 Electrostatic Discharge
 - EN61000-4-3 Radiated susceptibility
 - EN61000-4-4 Electrical Fast Transients/ burst
 - EN61000-4-5 Surge
 - EN61000-4-6 Conducted susceptibility
 - EN61000-4-8 Power Frequency Magnetic Field
 - EN61000-4-11 Voltage Dips and Interruption
- *EN61000-3-2 – Power Harmonics (Europe)
- *EN61000-3-3 – Voltage Fluctuation and Flicker (Europe)
- CE – EMC Directive 2004/108/EC* and 2014/30/EU (Europe)
 - *Directive 2004/108/EC was repealed with effect from 20 April 2016.
- VCCI (Japan)
- AS/NZS CISPR 22 (Australia / New Zealand)
- GB 9254 – (EMC) Certification (China)
- GB 17625.1 - (Harmonics) CNCA Certification (China)

➤ **Applicable Environment**

No.	Item	Technical Indexes	Unit	Notes
1	Operating temperature	-5 to +55	°C	Typical Value
2	Storage temperature	-40 to +70	°C	Typical Value
3	Operating	5 – 90% (non-condensing)		

	humidity			
4	Storage humidity	5—95% (non-condensing)		
5	Altitude	≤5000	M	normal work

➤ **Environment Test and Reliability Requirements**

No.	Item	Technical Indexes	Notes
1	Work in high temperature	+55°C 8hrs	Standard
2	Work in normal temperature	+25°C 8hrs	Standard
3	Work in low temperature	-5°C 8hrs	Standard
4	High-temperature storage	+70°C 24hrs	Standard
5	Low-temperature storage	-40°C 24hrs	Standard
6	High-low temperature circular test		Standard
7	MTBF	200000h	Typical value 25°C
8	Vibration	Non-operating Sine sweep: 5Hz to 200Hz @ 1gRMS at 1 octave/min; dwell 15 min at each of 3 resonant points; Random profile: 5Hz @ 0.01g ² /Hz to 20Hz @ 0.02g ² /Hz (slope up); 20Hz to 500Hz @ 0.02g ² /Hz (flat); Input acceleration = 3.13gRMS; 10 min. per axis for 3 axis on all samples	Standard

➤ **Mechanical Structure**

No.	Item	Technical requirements	Unit	Notes
1	Dimensions (D×W×H)(mm)	185×73×39.8	mm	(D×W×H)(mm)

BACK SIDE			TOP SIDE		
Name	BACK SIDE		Name	TOP SIDE	
PIN	SIGNAL	FUNCTION	PIN	SIGNAL	FUNCTION
P1	+12V_VRTN	Ground for signal using only.	P5	+12V_VRTN	Ground for signal using Only.
P2	NC	NC without gold finger.	P6	NC	NC without gold finger.
P3	+54.5V_VRTN	+54.5V return	P7	+54.5V_VRTN	+54.5V return
P4	+54.5V	+54.5V main output.	P8	+54.5V	+54.5V main output.
S1	NC	NC without gold finger.	S13	NC	NC without gold finger.
S2	AC_OK	Power good signal input	S14	PS_PRESENT#	Power supply present signal.
S3	NC	NC without gold finger.	S15	A0	I2C address bit 0.
S4	PS_ALERT#	Power supply Alert to system output signal.	S16	NC	NC without gold finger.
S5	SDA	I2C serial data.	S17	VSSO	+12V auxiliary power output with oring-diode.
S6	SCL	I2C serial clock.	S18	EEPROM-WP	PSU write the EEPROM data only using, floating this pin at PDB.
S7	PS_KILL	For PSU hot swap signal.	S19	NC	NC without gold finger.
S8	PS_ON#	Power enable input signal.	S20	NC	NC without gold finger.
S9	PW_OK	Power good signal output.	S21	PDB failed	Backplane or system shutdown input signal.
S10	A1	I2C address bit 1.	S22	NC	Isolation pin, without gold finger.
S11	NC	Isolation pin, without gold finger.	S23	NC	Isolation pin, without gold finger.
S12	NC	Isolation pin, without gold finger.	S24	+54.5V VIBUS	+54.5V main output current shared bus.