

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



PLANET PS-PWR-CRPS series includes PWR-CRPS920, PWR-CRPS1200, and PWR-CRPS2000 Power Supply Units, which offer power outputs of 920W, 1200W and 2000W, respectively. These units operate within a voltage range of 100-240VAC and are designed for high efficiency and reliable performance. They come equipped with features such as overcurrent protection, hot-plug capability, and cooling fans, ensuring stable operation and safety in various conditions. The series complies with multiple international safety and EMC standards, making it suitable for use in diverse environments.

Model Name	Power Supply	Power Output Mode
PWR-CRPS920	920W CRPS Power Supply, 100-240VAC	(Pins 1, 2, 3, 6 + Pins 4, 5, 7, 8)
PWR-CRPS1200	1200W CRPS Power Supply, 100-240VAC	
PWR-CRPS2000	2000W CRPS Power Supply, 100-240VAC	(Pins 1, 2, 3, 6)

Wide Input Voltage Range

- Supports a voltage range of 100-240VAC, accommodating both low and high line voltage inputs, ensuring compatibility with various power grids globally.

High Output Efficiency

- Delivers stable performance with high output efficiency, regulated voltage, low noise and ripple levels, which are critical for maintaining the performance of connected equipment.

Comprehensive Protection Mechanisms

- Equipped with overcurrent, overvoltage, and short-circuit protection, as well as low input voltage protection, it prevents damage to the power supply and connected devices, thus enhancing reliability.

Hot-Plug Capability

- Supports hot-plug operations, allowing for the power supplies to be added or replaced without shutting down the system. This feature is essential for maintaining uptime in critical applications.

Compliance with Safety and EMC Standards

- Adheres to various international safety certifications (such as UL60950-1 and IEC60950-1) and EMC standards (such as EN55022 and FCC) to ensure safe and interference-free operation in different regulatory environments.

These features make the PS-PWR-CRPS series power supplies robust, reliable, and versatile for various applications requiring stable and efficient power delivery.

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

Specifications

■ Input Characteristics

Model	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)			6 Arms		
Frequency	47 Hz	50/60	63 Hz		
HVDC (240V)	190	240	310	180Vdc~190Vdc	170Vdc~180Vdc
DC in Current		6 Arms			

Model	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			

Model	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

Model	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	-

Note: The 54.5V main output voltage should be adjusted to $54.1 \pm 0.1V$ at an 8.44A load.

Model	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
Undershoot	5%	
Peak	-	

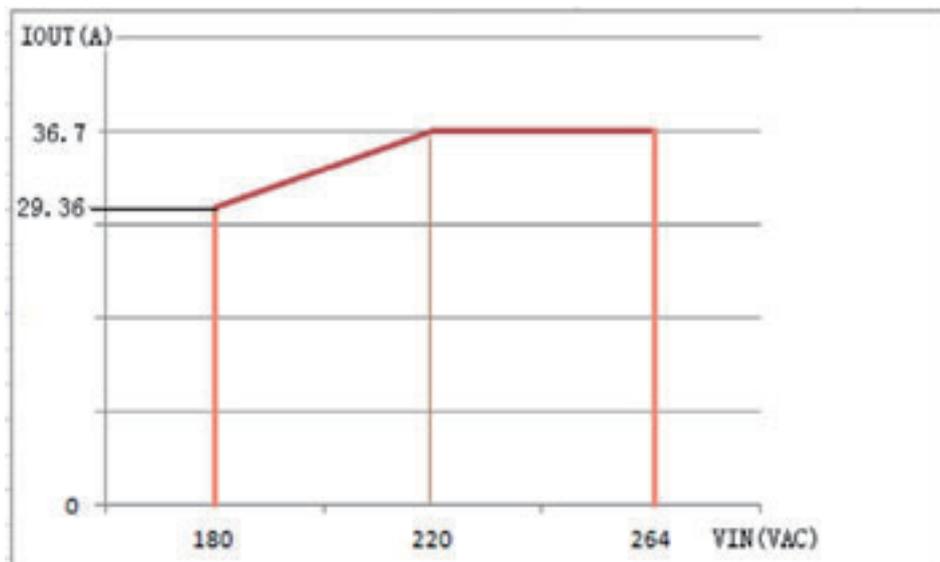
Notes:

1. The 54.5V main output voltage should be adjusted to $54.5 \pm 0.3V$ at a 22A load.
2. The peak combined power for all outputs is 2400W for 50ms at 180Vac~264Vac (sustained at 1200W for more than 200ms). The peak combined power for all outputs is 2000W for 30ms at 90Vac~132Vac (sustained at 1000W for more than 200ms).
3. The length of time for peak power can be supported based on the thermal sensor and the assertion of the PS_ALERT# signal. The minimum peak power duration is 50ms without asserting the PS_ALERT# signal at the maximum operating temperature.

Model	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:

2. The 54.5V main output voltage should be adjusted to $54.5 \pm 0.3V$ at an 18.35A load.
3. Power derating (The relationship between input and output power)



■ Output Electrical Characteristics

The power supply has the current limit to prevent the outputs from exceeding the values shown in the table below. If the current limit is exceeded, 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 auto-recover after removing the OCP limit.

Model	PWR-CRPS920	
Output	+54.5V	
Input Voltage Range	90 – 264VAC	
Over Current Limits	18.6A min; 25.6A max	

Model	PWR-CRPS1200	
Output	+54.5V	+54.5V
Input Voltage Range	90 – 132VAC	180 – 264VAC
Over Current Limits	20A min; 26A max	24A min; 32A max

Model	PWR-CRPS2000	
Output	+54.5V	+54.5V
Input Voltage Range	90 – 136VAC	180 – 264VAC
Over Current Limits	20.2A min; 27.5A max	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 according to IEC60950-1 (Including all country national deviations)
- CB Certificate & Report according to IEC62368-1 (Including 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 marketplace. The power supply is to have a minimum of 6dB margin to Class A Limits to meet 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 humidity	5-90% (non-condensing)		
4	Storage humidity	5-95% (non-condensing)		
5	Altitude	≤5000	M	Normal Work

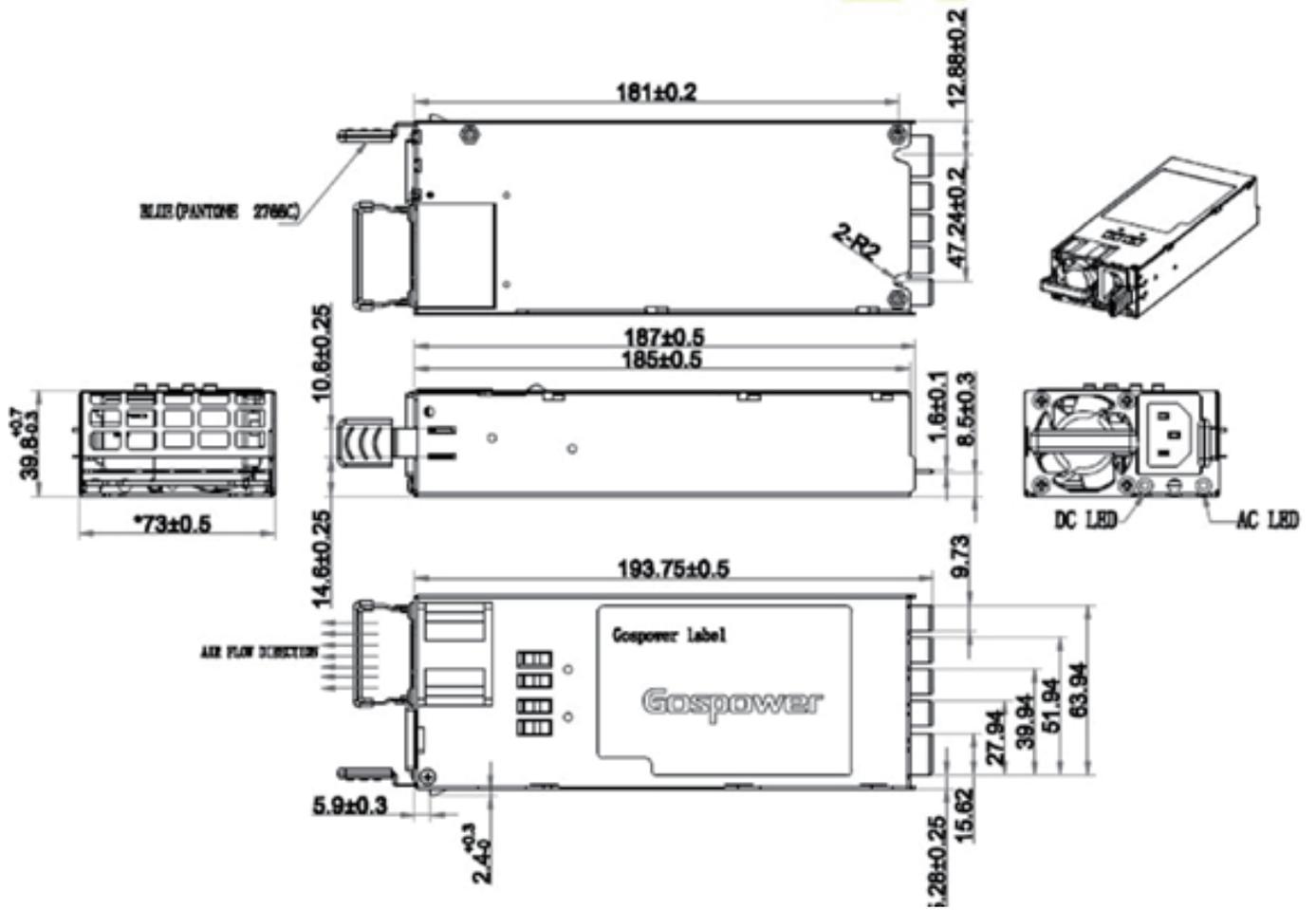
■ Environment Test and Reliability Requirements

No.	Item	Technical Indexes	Unit	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	<p>Non-operating Sine Sweep: 5Hz to 200Hz@1gRMS at 1 octave/min; dwell 15 min at each of 3 resonant points;</p> <p>Random Profile: 5Hz@0.01g²/Hz to 20Hz@0.02g²/Hz (slope up); 20Hz to 500Hz@0.02g²/Hz (flat); Input acceleration = 3.13gRMS; 10 min. per axis for 3 axis on all samples</p>		Standard

■ Mechanical Structure

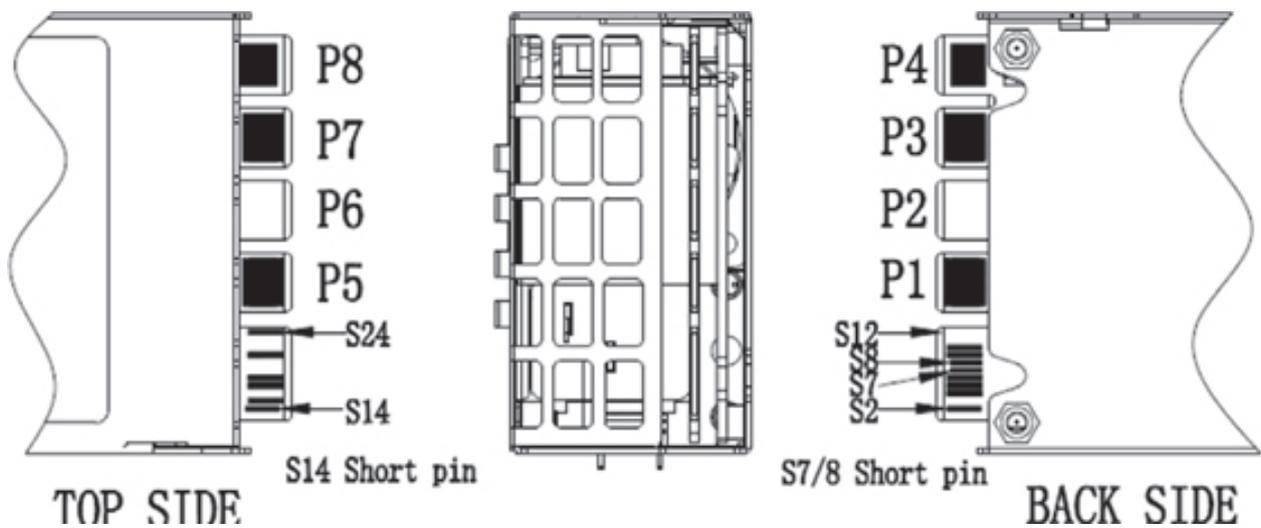
No.	Item	Technical requirements	Unit	Notes
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2	Storage temperature	-40 to +70	°C	Typical Value
3	Operating humidity	5-90% (non-condensing)		
4	Storage humidity	5-95% (non-condensing)		
5	Altitude	≤5000	M	Normal Work

■ Dimensions & Port Definitions



Dimensions (W x D x H): 185x73.5x39.8 mm

■ Pin over out connector



Name		BACK SIDE		Name		TOP SIDE	
PIN	SIGNAL	FUNCTION	PIN	SIGNAL	FUNCTION	PIN	SIGNAL
P1	+12V_VRTN	Ground for signal use only	P5	+12V_VRTN	Ground for signal use only		
P2	NC	NC without a gold finger	P6	NC	NC without a 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 a gold finger	S13	NC	NC without a gold finger		
S2	AC_OK	Power good signal input	S14	PS_PRESENT#	Power supply present signal		
S3	NC	NC without a gold finger	S15	A0	I2C address bit 0		
S4	PS_ALERT#	Power supply alert to system output signal	S16	NC	NC without a 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 writes the EEPROM data by floating this pin at PDB		
S7	PS_KILL	For PSU hot swap signal	S19	NC	NC without a gold finger		
S8	PS_ON#	Power enable input signal	S20	NC	NC without a 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 a gold finger	S23	NC	Isolation pin, without a gold finger		
S12	NC	Isolation pin, without a gold finger	S24	+54.5V VIBUS	+54.5V main output current shared bus		