

AC-DC CRPS Front-End Power Supply



August 2023, Rev. 01

AC-DC CRPS Front-End Power Supply



AC - DC CRPS Front-End power supply accepts a wide range 90 – 264V_{AC} input and provides a main 12V output plus a 12V standby output.

Rated between 550 and 1300 watts, it has a high peak efficiency of 94%.

Housed in a 1U high, 2.9inch wide rack mount enclosure, the power supply is primarily designed for enterprise servers and similar applications.

FEATURES

- Meets 80 PLUS Platinum Efficiency
- 12V Main Output
- 12V Standby Output
- 1U Height
- Redundant (N+1) Operation
- Power Factor Correction
- Overvoltage, Overcurrent, Overtemperature Protection
- Remote on/off Control
- Remote Sense
- Internal Cooling Fan (variable speed)
- PMBus 1.2 Support
- RoHS Compliant
- Three Year Warranty



*DPS-550AB-47 A only

Model Number	DPS-550AB-47 H	DPS-900AB-6 B	DPS-1300AB-21 N
Description	CRPS 550 W Platinum	CRPS 900 W Platinum	CRPS 1.3 KW Platinum
Input Voltage Range (V _{AC})	90 ~ 264		
Main Output Voltage (V _{DC})	+12V		
Main Output Rated Current (A)	45.8	75	200 ~ 240V _{AC} : 108 100 ~ 127V _{AC} : 84
Standby Output Voltage (V _{DC})	+12VSB		
Standby Output Rated Current (A)	3 ; Peak: 3.4 (20 S)		
Rated Power (W)	550W	900W	1300 (HL) 1000 (LL)
AC Input Current (A)	100 ~ 127V _{AC} : <7.1 200 ~ 240V _{AC} : <3.4	100 ~ 127V _{AC} : <11 200 ~ 240V _{AC} : <5.5	100 ~ 127V _{AC} : <12 200 ~ 240V _{AC} : <8
Inrush Current (A)	230V _{AC} <35		
Efficiency (%)	>94 @ 50% load		
Input Characteristics			
Frequency	47 ~ 63 Hz		
Power Factor	>0.98 @ 50% load		
Leakage Current	<0.875 mA		
Output Characteristics			
Ripple & Noise*	12V: <120mVp-p 12VSB: <120mVp-p		
Voltage Regulation	12V: ±5% 12VSB: ±5%		
Rise Time	<70 ms for DPS-550AB-47 H & DPS-1300AB-21 N only <50 ms for DPS-900AB-6 B only		
Hold Up Time (70% load)	>10 ms		

* Ripple & Noise measurement bandwidth is 0-20 MHz, with 10 μF, ceramic capacitor and 1 μF ceramic capacitor.

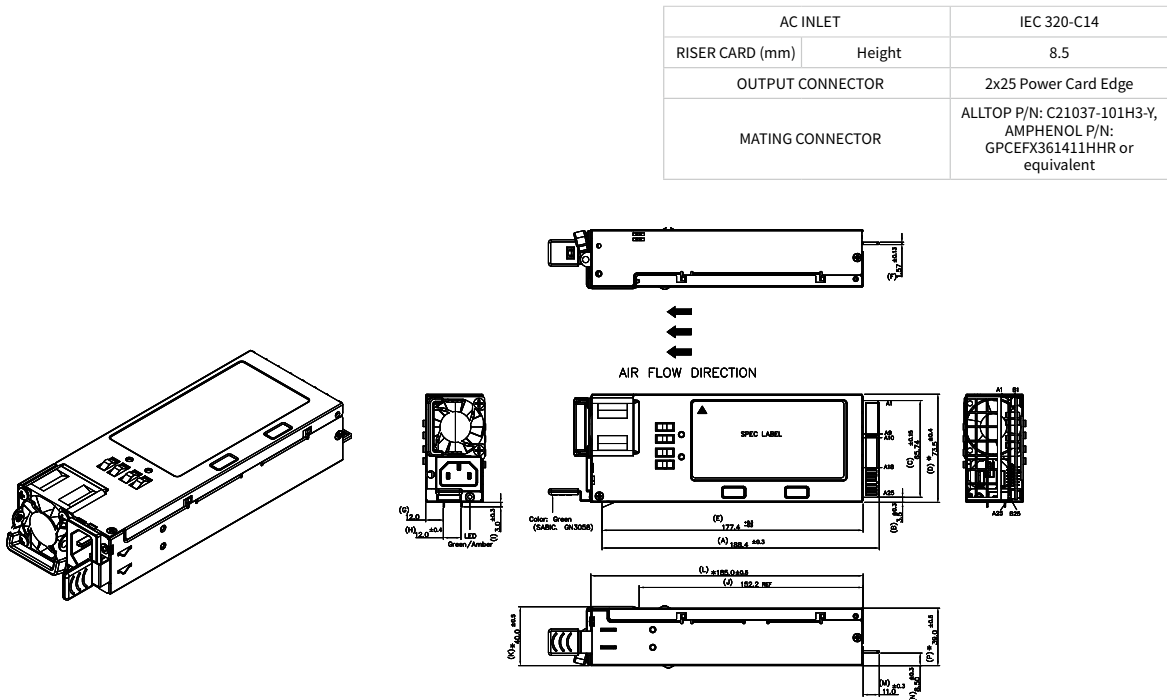
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Protections							
Over Current	If the current limits are exceeded, the power supply shuts down and latches off. The latch will be cleared by toggling the PSON# signal or by an AC power interruption. The power supply will not be damaged from repeated power cycling in this condition. 12 VSB will be auto-recovered after removing OCP limit.						
	Model Number	DPS-550AB-47 H	DPS-900AB-6 B	**	DPS-1300AB-21 N		
		Over Current Limit	Over Current Limit	OCP Delay Time	Low Line Loading Condition	High Line Loading Condition	OCP Delay Time
	OC Warning (SMBAlert#) for +12V	53A~55A	86A~94A	15~50 ms	OCW2 88A~92A	116A~121A	15~50 ms
	OCP2 for +12V	55A~59A	86A~104A	50~100 ms	OCP2 96A~104A	124A~135A	50~100 ms
	OCP1 for +12VSB	3.6A~4.5A	3.6A~4.5A	>10 ms (hiccup mode)	OCW1 110A~141A	140A~185A	<20 us
	** For DPS-550AB-47 H & DPS-900AB-6 B						
Over Voltage	12V: 13.0~14.5						
	12 VSB: 13.0~14.5						
	Shutdown and latch off						
Over Temperature	Shutdown						
Environmental Specifications							
Operating Temperature Range	0~55 °C / for NEBS: 61 °C						
Storage Temperature Range	-40~70 °C						
Storage Humidity	5~90 %						
Altitude	<5000 m						
MTBF (230 V _{AC})	250,000 (75% load and 55°C by Telcordia SR332) for DPS-550AB-47 H						
	200,000 (80% load and 50°C by Telcordia SR332) for DPS-900AB-6 B						
	250,000 (75% load and 55°C by Telcordia SR332) for DPS-1300AB-21 N						
Dimension	185*73.5*40 mm						
Safety							
Safety Approvals	TUV+CB, UL&cUL, CCC, CE, BSMI, KC, BIS, EAC for DPS-550AB-47 H TUV, CB, UL, CCC, KCC, BSMI, KC, BIS for DPS-900AB-6 B & DPS-1300AB-21 N						
EMC Emission	EN55022 (CISPR22) Class A, EN61000-3-2, -3						
EMC Immunity	EN55024, EN61000-4-2,3,4,5,6,8,11						
Function							
PG signal (PW OK)	Active TTL high when output is within regulation limits						
PS-ON signal	The output will be enabled when this signal is pulled low, outputs disabled when pin is driven high or left open						
SMBAlert Signal	Signal high when power supply is operating normally						
	Signal low when error occurs. (Ex: AC line loss for more than 2 ms)						
Remote Sense	+/-200 mV						
LED Indicator States							
Power Supply Condition	LED State						
		DPS-550AB-47 H DPS-1300AB-21 N	DPS-900AB-6 B				
Normal Operation, Output ON	Green		Green				
No AC power to all power supplies	Off		Off				
AC present / Only 12VSB on (PS off) or PS in Smart On state	1 Hz Blink Green		1 Hz Blink Green				
AC cord unplugged or AC power lost; with a second power supply in parallel still with AC input power	Amber		Red				
Power supply warning events where the power supply continues to operate; high temp, high power, high current, slow fan	1 Hz Blink Amber		1 Hz Blink Red				
Power supply critical event causing a main output shutdown; failure, OCP, OVP, Fan Fail	Amber		Red				
Power Supply FW updating	2 Hz Blink Green		2 Hz Blink Green				

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Mechanical Drawing

DPS-550AB-47 H



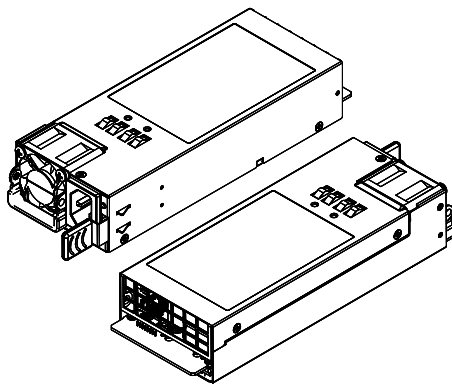
Output Pin Assignment

PIN	SIGNAL NAME	PIN	SIGNAL NAME
A1	GND	B1	GND
A2	GND	B2	GND
A3	GND	B3	GND
A4	GND	B4	GND
A5	GND	B5	GND
A6	GND	B6	GND
A7	GND	B7	GND
A8	GND	B8	GND
A9	GND	B9	GND
A10	+12V	B10	+12V
A11	+12V	B11	+12V
A12	+12V	B12	+12V
A13	+12V	B13	+12V
A14	+12V	B14	+12V
A15	+12V	B15	+12V
A16	+12V	B16	+12V
A17	+12V	B17	+12V
A18	+12V	B18	+12V
A19	SDA	B19	A0 (SMBus address)
A20	SCL	B20	A1 (SMBus address)
A21	PSON #	B21	+12Vsb
A22	SMBAlert #	B22	SMART_ON
A23	Return Remote Sense	B23	+12VLS
A24	+12V Remote Sense	B24	NC
A25	PWOK	B25	NC

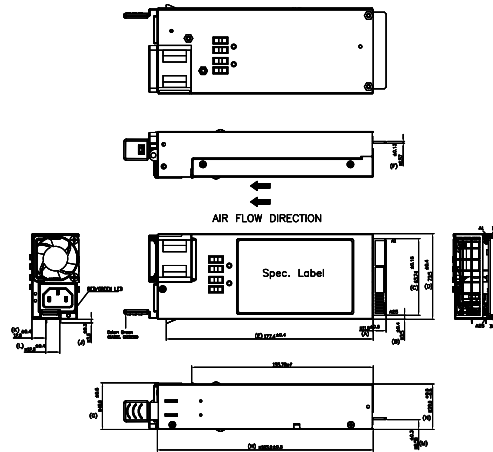
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Mechanical Drawing

DPS-900AB-6 B



AC INLET		IEC 320-C14
RISER CARD (mm)	Height	8.5
OUTPUT CONNECTOR		2x25 Power Card Edge
MATING CONNECTOR		ALLTOP P/N: C21037-101H3-Y, AMPHENOL P/N: GPCEF361411HHR or equivalent



Output Pin Assignment

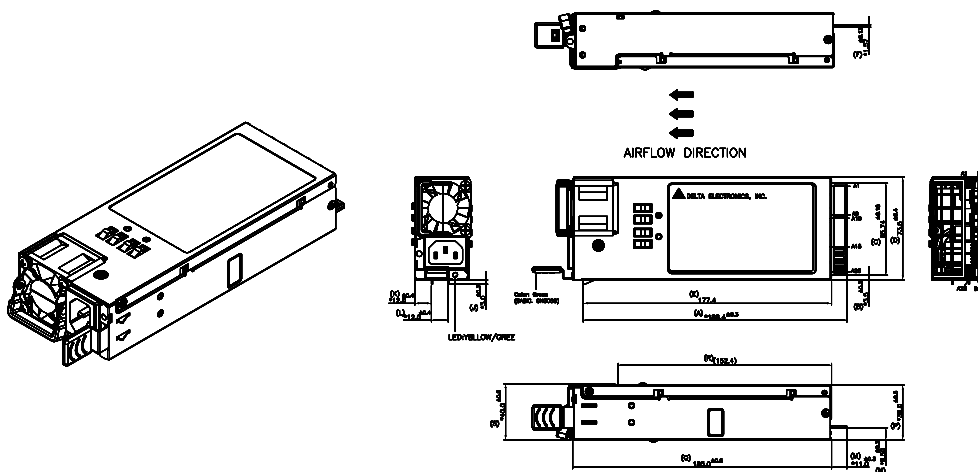
PIN	SIGNAL NAME	PIN	SIGNAL NAME
A1	GND	B1	GND
A2	GND	B2	GND
A3	GND	B3	GND
A4	GND	B4	GND
A5	GND	B5	GND
A6	GND	B6	GND
A7	GND	B7	GND
A8	GND	B8	GND
A9	GND	B9	GND
A10	+12V	B10	+12V
A11	+12V	B11	+12V
A12	+12V	B12	+12V
A13	+12V	B13	+12V
A14	+12V	B14	+12V
A15	+12V	B15	+12V
A16	+12V	B16	+12V
A17	+12V	B17	+12V
A18	+12V	B18	+12V
A19	SDA	B19	A0
A20	SCL	B20	A1
A21	PSON #	B21	+12VSB
A22	SMBAlert #	B22	SMART_ON
A23	RS-	B23	+12VLS
A24	RS+	B24	N/C
A25	PWOK	B25	N/C

AC-DC CRPS Front-End Power Supply

Mechanical Drawing

DPS-1300AB-21 N

AC INLET	IEC 320-C14	
RISER CARD (mm)	Height	8.5
OUTPUT CONNECTOR	2x25 Power Card Edge	
MATING CONNECTOR	ALLTOP P/N: C21037-101H3-Y, AMPHENOL P/N: GPCEFX361411HHR or equivalent	



Output Pin Assignment

PIN	SIGNAL NAME	PIN	SIGNAL NAME
A1	GND	B1	GND
A2	GND	B2	GND
A3	GND	B3	GND
A4	GND	B4	GND
A5	GND	B5	GND
A6	GND	B6	GND
A7	GND	B7	GND
A8	GND	B8	GND
A9	GND	B9	GND
A10	+12V	B10	+12V
A11	+12V	B11	+12V
A12	+12V	B12	+12V
A13	+12V	B13	+12V
A14	+12V	B14	+12V
A15	+12V	B15	+12V
A16	+12V	B16	+12V
A17	+12V	B17	+12V
A18	+12V	B18	+12V
A19	SDA	B19	A0
A20	SCL	B20	A1
A21	PSON #	B21	+12VSB
A22	SMBAlert #	B22	SMART_ON
A23	RS-	B23	+12VLS
A24	RS+	B24	PRESENT_N #
A25	PWOK	B25	ACFAIL

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