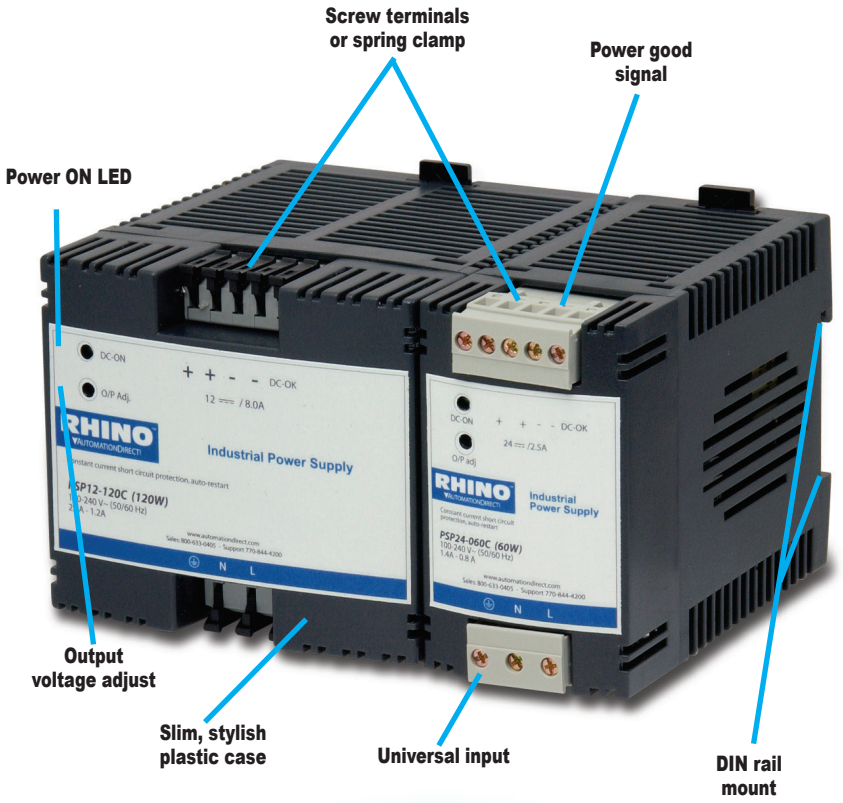
RHINO PSP Series 5, 12, And 24 VDC Power Supplies



Slimline Power Supplies

RHINO PSP series power supplies are plastic housed ultracompact switching supplies available in 5V, 12V and 24V adjustable models. There are 13 models available with power ratings of 20W to 240W and up to 10A output current. They are DIN rail or panel-mountable and feature universal inputs, adjustable DC voltage outputs, power good signal and feature low output ripple along with short circuit, overvoltage and overload protection.

The RHINO PSP series of switching power supplies offer an excellent price/performance ratio. They provide tightly regulated output voltage for sensitive loads in industrial environments. The slim plastic case is lightweight and compact, and comes in both screw and spring clamp terminal versions. The constant-current, short-circuit protection limits the output current as the voltage is reduced, to safely protect the control components from direct shorts and device failures. Once a fault is corrected, the power supply automatically resumes supplying full-voltage power. (PSPxx-024x models have foldback current protection with auto-recovery.)

The RHINO PSP power supplies have a Power ON LED for easy visual indication of operation as well as a Power Good signal for feedback to your system controller.

With a UL 508C rating, the RHINO PSP series is the right choice for space limited applications.

Features

- Regulated switch mode type
- Ultra-compact plastic case
- Finger-safe terminals
- Reliable snap-on mounting on DIN rails
- Wall mounting bracket included
- Universal input 120/240 VAC, 50/60 Hz or 85-375 VDC (120 or 240 VAC only for PSP24-240S input)
- Models with 5, 12 or 24 VDC output
- Output voltage adjustable
- Parallel operation up to five units (not PSP24-240S)
- Power good signal (some models)
- Low ripple and noise
- Overload and short-circuit protection
- UL/cUL 508 listed, UL/cUL 60950 recognized*
- Worldwide safety approvals
- 3-year warranty

** Note: PSP24-240S is not cUL listed. PSP05-020S, PSP12-024S, and PSP24-240S are not UL 60950 recognized.*

RHINO PSP Series 5, 12, And 24 VDC Power Supplies

PSP05-020S
PSP12-024S
PSP24-024S

PSP24-024C

PSP12-060S
PSP24-060S

PSP12-060C
PSP24-060C

PSP12-120C
PSP24-120C

PSP24-120S
PSP12-120S

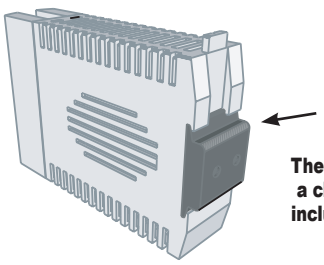
PSP24-240S

Input Specifications

Part Number	Input Voltage Range		Input Freq. Range	Input Current [Typical] at full load		Efficiency [Typ @ 115VAC]	C-Curve Circuit Breaker or Slow-blow Fuse
				115 VAC	230 VAC		
PSP05-020S	85–264 VAC 85–375 VDC UL Approved for 100–240 VAC only	30% output derating below 93 VAC/130 VDC	47–63 Hz	0.35A	0.2A	82% @ 115 VAC and 230 VAC	5.0A
PSP12-024S		20% output derating below 93 VAC/130 VDC				82% @ 115 VAC, 83% @ 230 VAC	
PSP24-024S				0.35A	0.2A	85% @ 115 VAC and 230 VAC	
PSP24-024C						85% @ 115 VAC and 230 VAC	
PSP12-060S		15% output derating below 93 VAC/130 VDC		1.2A	0.6A	81% @ 115 VAC, 84% @ 230 VAC	
PSP12-060C						81% @ 115 VAC, 84% @ 230 VAC	
PSP24-060S						83% @ 115 VAC, 86% @ 230 VAC	
PSP24-060C						83% @ 115 VAC, 86% @ 230 VAC	
PSP12-120S				2.0A	1.0A	77% @ 115 VAC, 84% @ 230 VAC	
PSP12-120C						77% @ 115 VAC, 84% @ 230 VAC	
PSP24-120S						80% @ 115 VAC, 86% @ 230 VAC	
PSP24-120C						80% @ 115 VAC, 86% @ 230 VAC	
PSP24-240S	85–132/ 187–264 VAC	20% output derating below 93 VAC		4.7A	2.0A	82% @ 115 VAC, 85% @ 230 VAC	

Output Specifications

Part Number	Price	Drawing Link	Output Volt. Adjust. Rang	Output	Hold-Up Time		MTBF [IEC 1709 @ 25°C]
					115 VAC	230 VAC	
PSP05-020S	$93.00	PDF	5–5.25 VDC	5 VDC @ 4A/20W (adjustable)	15 ms	125 ms	2,681,000h
PSP12-024S	$112.00	PDF	12–16 VDC	12 VDC @ 2A/24W (adjustable)			
PSP24-024S	$86.00	PDF	24–28 VDC	24 VDC @ 1A/24W (adjustable)			
PSP24-024C	$91.00	PDF		24 VDC @ 1A/24W (adjustable)			
PSP12-060S	$146.00	PDF	12–15 VDC	12 VDC @ 4A/48W (adjustable)			2,947,000h
PSP12-060C	$165.00	PDF		12 VDC @ 4A/48W (adjustable)			
PSP24-060S	$130.00	PDF	24–28 VDC	24 VDC @ 2.5A/60W (adjustable)			
PSP24-060C	Retired	PDF		24 VDC @ 2.5A/60W (adjustable)			
PSP12-120S	$234.00	PDF	12–15 VDC	12 VDC @ 8A/96W (adjustable)			1,620,000h
PSP12-120C	$207.00	PDF		12 VDC @ 8A/96W (adjustable)			
PSP24-120S	$205.00	PDF	24–28 VDC	24 VDC @ 5A/120W (adjustable)			
PSP24-120C	$218.00	PDF		24 VDC @ 5A/120W (adjustable)			
PSP24-240S	$275.00	PDF		24 VDC @ 10A/240W (adjustable)			1,912,000h



The unit can be mounted on a chassis or wall using the included mounting bracket.

Part numbering system

PSP24-024S

- PSP: Series Name
- Output Volts
- Output Watts
- Terminal Connector Type
  - Type
  - C: Clamp
  - S: Screw

RHINO PSP Series 5, 12, And 24 VDC Power Supplies

General Specifications		
Temperature	Operating: -10 to +70 °C [14 to +158 °F], Derating at 93–132 VAC or 130–187 VDC: -1.10%/C above 40 °C, Derating at 187–264 VAC or 265–375 VDC: -1.67%/C above 50 °C, Derating at 85–93 VAC or 85–130 VDC: -1.30%/C above 30 °C, Temperature Coefficient: 0.02%/C Storage: -25 to +85 °C [-13 to +185 °F]	
Humidity	95% [non-condensing] relative humidity max.	
Output Regulation	2.5% [1% for PSP12-060x], 10 to 90% load variation	
Switching Frequency	55 - 180 kHz depending on load	
Safety Standards	IEC/EN 60950 [output SELV], UL 60950, UL 508, EN 50178, EN 60204, EN 61558-2-8	
Output Voltage Ripple	<50 mV peak-to-peak	
Output Protection	Current Limit at 120% typ., constant current, auto recovery [PSPxx-024x foldback, auto-recovery], Voltage Limit <40 VDC	
Power Good Signal*	Trigger Point 12 VDC Models: >11V 24 VDC Models: >22V	Output Signal [reference to -Vout] 11.0V+/- 1.0V @ 60 mA max. 22.0V+/- 2.0V @ 30 mA max.
Electromagnetic Compatibility (EMC)	EN 61000-3-2, EN 61000-6-2, EN 61000-6-3	
Enclosure Rating	IP 20	
Enclosure Material	Plastic FR2010-110C [UL 94 V-O rated]	
Mounting	35mm DIN rails, snap on with self-locking spring or wall mount adapter included	
Weight g[oz]	PSP05-020S, PSP12-024S, PSP24-024x: 40 (4.9), PSPxx-060x: 265 (9.4), PSPxx-120x: 440 (15.5), PSP24-240S: 50 (33.5)	
Connection	S models: Plug-in Screw Terminals, wire stripping length 7-8mm, C Models: Clamp Terminals, wire stripping length 6mm. For 28–12 AWG wire.	
Agency Approvals	UL/cUL 508 listed; File No. E197592 (PSP24-240S not cUL), UL 60950 recognized; File No. E198298 (except PSP05-020S, PSP12-024S and PSP24-240S).	

***Note: PSP05-020S, PSP12-024S and PSP24-024x models do not have Power Good output.**
Note: All specifications are valid at nominal input voltage, full load and +25 °C after warmup time, unless otherwise stated.

PSP05-020S, PSP12-024S, PSP24-024x

Input		*Output*	
1	AC Ground	1	+Vout
2	Neutral	2	-Vout
3	Line		

PSPxx-060x

Input		*Output*	
1	AC Ground	1	+Vout
2	Neutral	2	+Vout
3	Line	3	-Vout
-	-	4	-Vout
-	-	5	Power Good

PSPxx-120x

Input		*Output*	
1	AC Ground	1	+Vout
2	Neutral	2	+Vout
3	Line	3	-Vout
-	-	4	-Vout
-	-	5	Power Good

PSP24-240S

Input		*Output*	
1	AC Ground	1	+Vout
2	Neutral	2	+Vout
3	Line	3	-Vout
-	-	4	-Vout
-	-	5	Power Good