

# RHINO 5,12 & 24 VDC Power Supplies

## PSP Series

### 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.

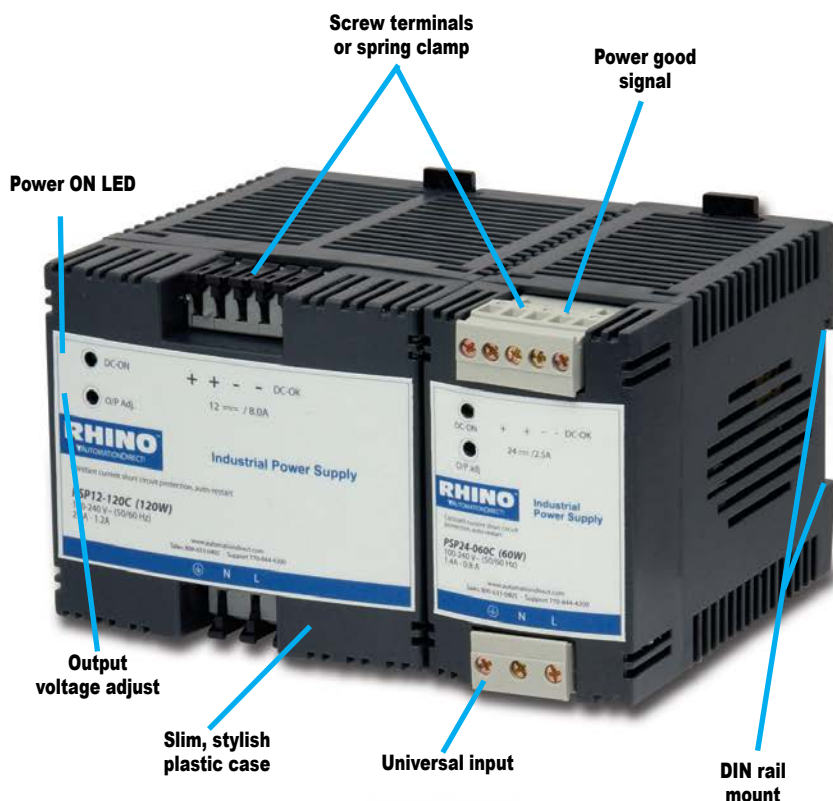
With a UL 508C rating, the RHINO PSP series is the right choice for space limited applications.

### 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 120/240VAC, 50/60Hz or 85-375 VDC (120 or 240VAC 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.



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**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**

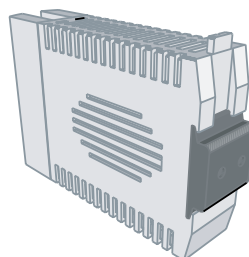
Input Specifications							
Part Number	Input Voltage Range		Input Freq. Range	Input Current [Typical] at full load		Efficiency [Typ @ 115VAC]	C-Curve Circuit Breaker or Slow-blow Fuse
				115 VAC	230 VAC		
<a href="#"><u>PSP05-020S</u></a>	85-264 VAC 85-375 VDC UL Approved for 100-240 VAC only	30% output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

Output Specifications											
Part Number	Price	Drawing Link	Output Voltage	Output Volt. Adjust. Range	Output Current [Max]	Output Power [Max]	Hold-Up Time		MTBF [IEC 1709 @ 25°C]		
							115 VAC	230 VAC			
<a href="#"><u>PSP05-020S</u></a>	\$91.00	<a href="#"><u>PDF</u></a>	5.1 VDC	5-5.25 VDC	4.0 A	20W	15 ms	125 ms	2,681,000 hours		
<a href="#"><u>PSP12-024S</u></a>	\$110.00	<a href="#"><u>PDF</u></a>	12 VDC	12-16 VDC	2.0 A	24W					
<a href="#"><u>PSP24-024S</u></a>	\$84.00	<a href="#"><u>PDF</u></a>	24 VDC	24-28 VDC	1.0 A	24W					
<a href="#"><u>PSP24-024C</u></a>	\$89.00	<a href="#"><u>PDF</u></a>									
<a href="#"><u>PSP12-060S</u></a>	\$143.00	<a href="#"><u>PDF</u></a>	12 VDC	12-15 VDC	4.0 A	48W @ 12VDC 60W @ 60VDC			15 ms	125 ms	2,947,000 hours
<a href="#"><u>PSP12-060C</u></a>	\$162.00	<a href="#"><u>PDF</u></a>									
<a href="#"><u>PSP24-060S</u></a>	\$128.00	<a href="#"><u>PDF</u></a>	24 VDC	24-28 VDC	2.5 A	60W					
<a href="#"><u>PSP24-060C</u></a>	\$129.00	<a href="#"><u>PDF</u></a>									
<a href="#"><u>PSP12-120S</u></a>	\$230.00	<a href="#"><u>PDF</u></a>	12 VDC	12-15 VDC	8.0 A	120W			15 ms	125 ms	1,620,000 hours
<a href="#"><u>PSP12-120C</u></a>	\$203.00	<a href="#"><u>PDF</u></a>									
<a href="#"><u>PSP24-120S</u></a>	\$201.00	<a href="#"><u>PDF</u></a>	24 VDC	24-28 VDC	5.0 A						
<a href="#"><u>PSP24-120C</u></a>	\$214.00	<a href="#"><u>PDF</u></a>			10.0 A						
<a href="#"><u>PSP24-240S</u></a>	\$270.00	<a href="#"><u>PDF</u></a>				240W					1,912,000 hours

### Part numbering system

PSP24-024S

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



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

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General Specifications		
<b>Temperature</b>	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]	
<b>Humidity</b>	95% [non-condensing] relative humidity max.	
<b>Output Regulation</b>	2.5% [1% for PSP12-060x], 10 to 90% load variation	
<b>Switching Frequency</b>	55 - 180 kHz depending on load	
<b>Safety Standards</b>	IEC/EN 60950 [output SELV], UL 60950, UL 508, EN 50178, EN 60204, EN 61558-2-8	
<b>Output Voltage Ripple</b>	<50 mV peak-to-peak	
<b>Output Protection</b>	Current Limit at 120% typ., constant current, auto recovery [PSPxx-024x foldback, auto-recovery], Voltage Limit <40 VDC	
<b>Power Good Signal*</b>	Trigger Point 12VDC Models: >11 V 24VDC Models: >22 V	Output Signal [reference to -Vout] 11.0 V+/- 1.0 V @ 60 mA max. 22.0 V+/- 2.0 V @ 30 mA max.
<b>Electromagnetic Compatibility (EMC)</b>	EN 61000-3-2, EN 61000-6-2, EN 61000-6-3	
<b>Enclosure Rating</b>	IP 20	
<b>Enclosure Material</b>	Plastic FR2010-110C [UL 94 V-O rated]	
<b>Mounting</b>	35mm DIN rails, snap on with self-locking spring or wall mount adapter included	
<b>Weight g[oz]</b>	PSP05-020S, PSP12-024S, PSP24-024x: 40 (4.9), PSPxx-060x: 265 (9.4), PSPxx-120x: 440 (15.5), PSP24-240S: 50 (33.5)	
<b>Connection</b>	S models: Plug-in Screw Terminals, wire stripping length 7-8mm, C Models: Clamp Terminals, wire stripping length 6mm. For 28-12 AWG wire.	
<b>Agency Approvals</b>	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