RHINO PSM Series Power Supplies

Versatile switching power supplies are DIN rail mountable

AutomationDirect offers the most practical industrial control power supplies available. The RHINO PSM series power supplies are industrial grade switching DC output supplies with a sturdy steel case to withstand harsh environments. Autoselect inputs for 115 VAC or 230 VAC and international agency approvals make the RHINO PSM series suitable for worldwide use. RHINO PSM power supplies are available in 12 or 24 VDC output, with adjustable output voltages, and feature low output ripple along with overload and overtemperature protection. The seven models offer power ratings from 78W to 600W, and up to 25A output current.

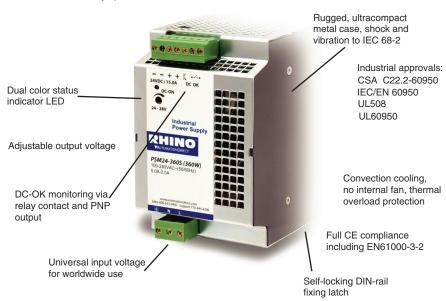
Features

- · Industrial grade design
- Sturdy metal case to withstand harsh industrial environments
- Model PSM24-090S-N meets NEC Class 2
- Universal 100/230 VAC input voltage
- Adjustable output voltage
- · Low output ripple
- Short-circuit, overvoltage and overtemperature protection
- Power Good signal
- Remote ON/OFF
- · Optional wall mounting
- Specialty modules for redundancy, power backup and UPS
- · Terminal connectors included
- 3-year warranty

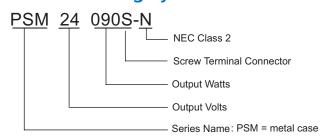
Remote ON/OFF

Control output for true N+1 redundancy or battery operation

For parallel operation or battery charge mode selectable by jumper



Part Numbering System



	RHINO PSM Industrial Power Supplies						
Part Number	Price	Drawing Link	*Output Voltage [V _{nom}]	**Output Current [I _{max}]	***Output Power [P _{max}]		
PSM12-078S	\$165.00	<u>PDF</u>	12VDC	6.0 A	78W		
PSM24-090S	\$123.00	<u>PDF</u>	24VDC	3.75 A	90W		
PSM24-090S-N	\$170.00	<u>PDF</u>	24VDC	3.75 A	90W		
PSM12-156S	\$197.00	<u>PDF</u>	12VDC	12.0 A	156W		
PSM24-180S	\$191.00	<u>PDF</u>	24VDC	7.5 A	180W		
PSM24-360S	\$288.00	<u>PDF</u>	24VDC	15.0 A	360W		
PSM24-600S	\$429.00	<u>PDF</u>	24VDC	25.0 A	600W		

^{*12}V models adjustable from 12 to14 VDC. 24V models adjustable from 24 - 28 VDC

^{**}Maximum current at nominal output voltage

^{***}Up to an operating temperature of +40°C

PSM Series Power Supplies Specifications

	Input Specifications									
Part Number	Input Voltage Range	Operating Voltage min/ max	Input Frequency Range	Input Current [Typical] at full load		Inrush Current max [<2ms] @ +25°C		Holdup Time	Efficiency [Typ @	Circuit Breaker or Fuse
				115 VAC	230 VAC	115 VAC	230 VAC		115VAC]	[slo-blow]
PSM12-078S		85 - 264 VAC		2.0 A	1.0 A	<12 A	<20 A	20 ms min. [full load 115/230 VAC]	81%	6.0 A to 16.0 A
PSM24-090S	100 - 240 VAC Universal Input			2.1 A	1.0 A				86%	
PSM24-090S-N	Onivoroal input			2.1 A	1.0 A				85%	
PSM12-156S	220 - 230 V/AC 3		47-63 Hz	2.5 A	1.4 A	<13 A	<25 A		85%	
PSM24-180S		85 - 132 VAC/		2.8 A	1.5 A				87%	
PSM24-360S		18/ - 264 VAC		5.0 A	2.5 A	<16 A	<25 A		85%	10.0 A to 16.0 A
PSM24-600S				10.0 A	5.0 A	<25 A	<30 A		88%	16.0 A to 25.0 A

	Output Specifications								
	Post Number Output		Output	Output	Output	Power - Good Signal			MTBF
Part Number	Voltage	Voltage Adj. Range	Current (Max.)	Power (Max.)	J Irinner	Active Output Signal	Relay Output	(IEC 61709 @ 25°C)	
PSM12-078S	12VDC	12 - 14 VDC	6.5 A	78 watts	20V	9 - 11 V	11V ± 1V / 20mA max.		
PSM24-090S	24VDC	24 - 28 VDC	3.75 A	90 watts	35V	18 - 22 V	22V ± 2V /10mA max	DC OK = contact closed (rated:30 VDC	350,000 hours
PSM24-090S-N	24000	24 - 20 VDC	3.75 A	90 watts	35V	10 - 22 V	22V ± 2V / 10111A 111ax		
PSM12-156S	12VDC	12 - 14 VDC	13.0 A	156 watts	20V	9 - 11 V	11V ± 1V / 40mA max.		
PSM24-180S			7.5 A	180 watts	35V			1.0A)	
PSM24-360S	24VDC	24 - 28 VDC	15.0 A	360 watts	35V	18 - 22 V	22V ± 2V / 20mA max		
PSM24-600S			25.0 A	600 watts	35V				

	General Specifications					
Specification	Description					
Temperature	Operating (ambient): -25 to 70°C max [-13 to 158°F]. Above +40°C [104°F] load derating Storage [non-operating]: -25 to 85°C max [-13 to 185°F]. Temperature drift: 0.02%/C. Cooling: convection, no internal fan					
Humidity	95% [non-condensing] relative humidity maximum					
Isolation	According to IEC/EN 60950, EN50178, EN61558-2-8, EN60204, CSA					
Output Regulation	Input variation: 0.5% maximum. Load variation [10 to 100%]: 0.5% maximum					
Output Voltage Ripple	100 mV peak-to-peak typical [20 MHz bandwidth], [200 mV peak to peak maximum at Imax]					
utput Protection Current limit: 110% constant current, automatic recovery, thermal protection, output rating, Voltage limit: 140% Vol						
Over-temperature Protection	Switch off at over-temperature, automatic restart					
Status Indicator Dual color LED [green: DC Ok; Red: DC Off]						
Remote ON/OFF	By external contact. DC On: -S contact open. DC Off: -S connected via 1 Kq to -Vout, (3VDC max across Vout [+] and Vout [-])					
Maximum Capacitive Load	Unlimited					
Vibration	IEC 60068-2-6: 3 axis, sine sweep, 10-55 Hz, 1g, 1 oct/min					
Shock	IEC 60068-2-27: 3 axis, 15g half sine, 11ms					
Enclosure Rating	IP20 [IEC 529]					
Enclosure Material	Aluminum [chassis] / zinc plated steel [cover]					
Mounting	Snap-on with self-locking spring for 35mm DIN rails per EN 50022-35x15/75, or wall mount with bracket					
Connection	Pluggable screw terminals [plugs included] 2 terminals per output [not available in 600 watt unit.]					
Agency Approvals	UL 508 Listed File E197592, UL 60950 Recognized File E198298; CSA C22.2-60950 File 229285; CE					

Note: Unless otherwise stated all specifications are valid at nominal input voltage, full load and +25°C after warmup time.

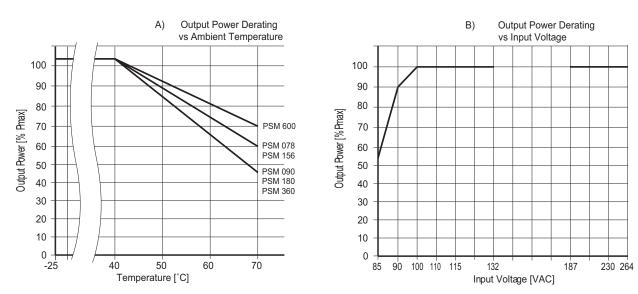
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PSM Series Power Supplies Specifications

	General Specifications (continued)						
Specification	Standard	Document Number					
Harmonic Limits	Harmonic Current Limits	EN 61000-3-2, Class A for limited output power					
	Information technology equipment	IEC/EN60950; CSA 60950-1-03/UL 60950-1					
	Industrial control equipment	UL 508					
Cofety Ctondondo	Electrical equipment of machines	EN 60204					
Safety Standards	Electronic equipment for power installation	EN 50178					
	Safety, transformers	EN 61558-2-8					
	Limited power source (model PSM24-090S-N)	EN 60950 sect. 2.5 and NEC Class 2					
Safety Approvals	CB-Report per IEC 60950	EN 50178, EN 60079-15 EN 61558-2-8, CSA					
Safety Class	Degree of electrical protection Class1	IEC 536					
E	EMC, Emissions	EN 61204-3, EN61000-6-3					
Electromagnetic Compatibility (EMC), Emissions	Conducted RI suppression on input	EN 55011 class B, EN 55032 class B					
	Radiated RI suppression	EN 55011 class B, EN 55032 class B					
	EMC, Immunity	EN 61000-6-2, EN 61204-3					
	Electrostatic Discharge [ESD]	IEC / EN 61000-4-2 4 kV [contact discharge] / 8 kV [air discharge]					
	Radiated RF field immunity [80-1000 MHz]	IEC / EN 61000-4-3 10 V / m					
Floatromognotic Compatibility (FMC)	Electrical fast transient / burst immunity	IEC / EN 61000-4-4 2 kV					
Electromagnetic Compatibility (EMC), Immunity	Surge immunity	IEC / EN 61000-4-5 1 kV / 2 kV					
·	Immunity to conducted RF disturbances [0.15 to 80 MHz]	IEC / EN 61000-4-6 10 V					
	Power frequency field immunity	IEC / EN 61000-4-8 30 A / m					
	Voltage dips	IEC / EN 61000-4-11 [70% UN Crit. B/40%/100% UN Crit. C]					
Pollution Degree	2*						

^{*}Note: Normally, only non-conductive pollution occurs. Temporary conductivity caused by condensation is to be expected.

Output Power Derating



Note: Unless otherwise stated, all specifications are valid at nominal input voltage, full load and +25°C after warmup time.

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RHINO PSM Series Connections

PSM12-078S / PSM24-090S PSM24-REM360S PSM24-BCM360S

		Wiring Connecti	ons	
Pin	J1	J2	J3	J4
1	Earth	GND [-]	S+	Normal mode
2	Neutral	Vout [+]	S-	Common
3	Line	DC-OK Signal	_	Parallel mode
4	_	DC-OK Relay contact 1	_	_
5	_	DC-OK Relay contact 2		_

PSM12-156S PSM24-180S PSM24-BFM600S

	Wiring Connections						
Pin	J1	J2	J3	J4			
1	Earth	GND [-]	S+	Normal mode			
2	Neutral	GND [-]	S-	Common			
3	Line	Vout [+]	_	Parallel mode			
4	_	Vout [+]	_	_			
5	_	DC-OK Signal	_	_			
6	_	DC-OK Relay contact 1	_	_			
7	_	DC-OK Relay contact 2	_	_			

PSM24-360S

	Wiring Connections						
Pin	J1	J2	J3	J4			
1	Earth	GND [-]	S+	Normal mode			
2	Neutral	GND [-]	S-	Common			
3	Line	Vout [+]	_	Parallel mode			
4	_	Vout [+]	_	_			
5	1	DC-OK Signal	_	_			
6	-	DC-OK Relay contact 1	_	_			
7	_	DC-OK Relay contact 2	DC-OK Relay contact 2 —				

PSM24-600S

	Wiring Connections						
Pin	J1	J2	J3	J4	J5		
1	Earth	GND [-]	S+	Normal mode	DC-OK Relay contact 1		
2	Neutral	GND [-]	S-	Common	DC-OK Relay contact 2		
3	Line	Vout [+]	_	Parallel mode	DC-OK Signal		
4	_	Vout [+])	_	_	_		

RHINO PSM Power Supplies - Accessories

A variety of accessories is available to complement the RHINO PSM power supplies. Choose panel mounting brackets and replacement plug kits from the table below, based on the size of the power supply. There is also a temperature sensor for the battery control module and replacement link cable for the redundancy and battery control modules.

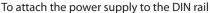


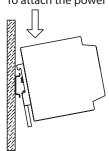
Accessories Access						
Part Number	Price	Drawing Link	Description			
PSM-PANEL1	\$38.00	PDF	Panel mounting bracket. 1 bracket type A includes M4-screw [DIN 74-4fA] for 78W, 90W, 156W, 180W PSM power supplies			
PSM-PANEL2	\$33.00	PDF	Panel mounting bracket. 2 brackets type A include M4-screws [DIN 74-4fA] for 360W, 600W PSM power supplies			
PSM-PK1	\$8.50	N/A	Replacement plug kit for PSM series with 78W and 90W outputs			
PSM-PK2	\$12.50	N/A	Replacement plug kit for PSM series with 156W, 180W and 360W outputs			
PSM-TS	\$33.50	N/A	Temperature sensor for PSM24-BCM360S battery control module			
PSM-JC01	\$9.00	N/A	Replacement link cable for PSM series redundancy module PSM24-REM360S and battery control module PSM24-BCM360S			

Mounting

PSM power supplies are designed for mounting on a DIN rail. Please allow minimum free space of 80 mm (3.15") above and below, and 50 mm (1.97") on each side of the power supply for air convection. To attach unit onto the DIN rail, hook the top part of clip on DIN rail, then push down and inward until you hear the clipping sound. To remove, pull the latch of the clip using an insulated flathead screwdriver.

For wall or chassis mounting, use mounting brackets <u>PSM-PANEL1</u> (for 78W to 180W PSM style power supplies) or <u>PSM-PANEL2</u> (for 360W and 600W PSM power supplies). Remove the DIN clips and replace with the brackets. Use the countersink screws included with the wall mount kit to attach the brackets to the power supply.





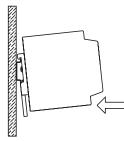
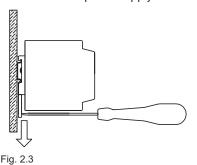


Fig. 2.2

To remove the power supply from DIN rail



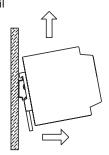


Fig. 2.4