

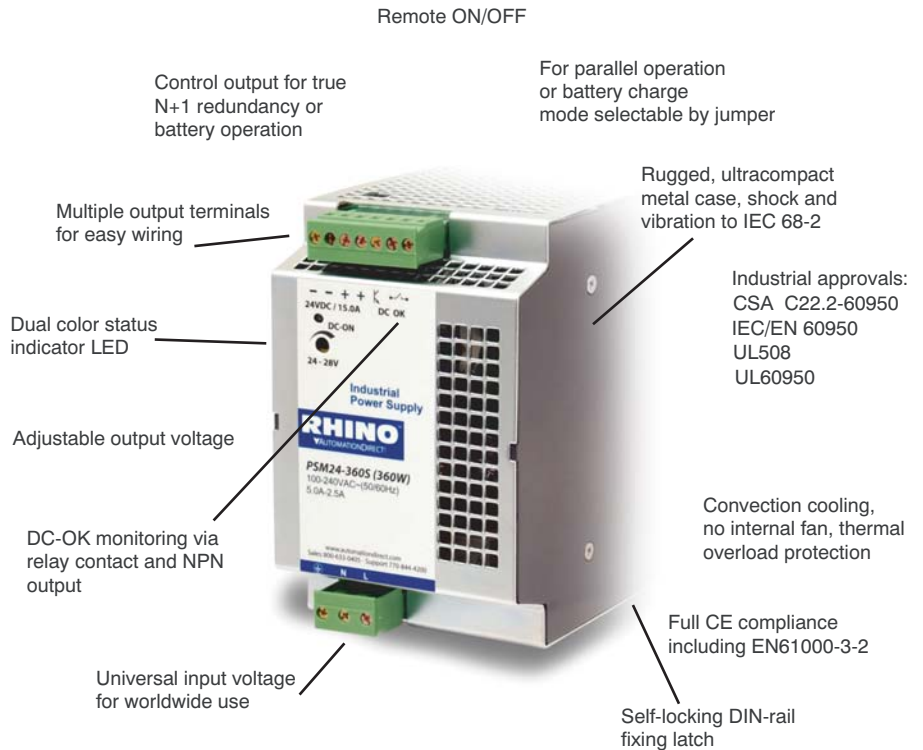
# RHINO PSM Series Power Supplies

## Versatile switching power supplies are DIN-rail mountable

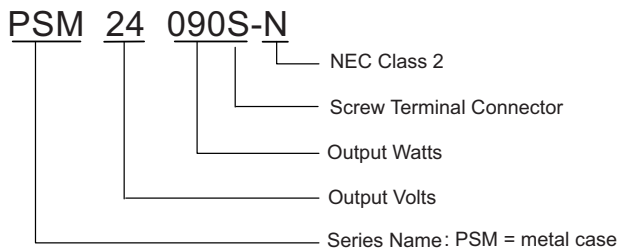
AUTOMATIONDIRECT offers the most practical industrial control power supplies available. The RHINO PSM series power supplies are industrial grade switching DC output supplies with a sturdy steel case to withstand harsh environments. Autoselect inputs for 115 VAC or 230 VAC and international agency approvals 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 product warranty



## Part Numbering System



RHINO PSM Industrial Power Supplies			
Part Number	*Output Voltage ( $V_{nom}$ )	**Output Current ( $I_{max}$ )	***Output Power ( $P_{max}$ )
PSM12-078S	12 VDC	6.5 A	78 W
PSM24-090S	24 VDC	3.75 A	90 W
PSM24-090S-N	24 VDC	3.75 A	90 W
PSM12-156S	12 VDC	13.0 A	156 W
PSM24-180S	24 VDC	7.5 A	180 W
PSM24-360S	24 VDC	15.0 A	360 W
PSM24-600S	24 VDC	25.0 A	600 W

\*12V models adjustable from 12 to 14 VDC. 24V models adjustable from 24 - 28 VDC

\*\*Maximum current at nominal output voltage

\*\*\*Up to an operating temperature of +40°C

# RHINO PSM Series Power Supplies Specifications

Input Specifications									
Part Number	Input Voltage Range	Input Frequency Range	Input Current (Typical) at full load		Inrush Current max (<2ms) @ +25°C		Holdup Time	Efficiency (Typical) @ 115VAC	Circuit Breaker or Fuse (slo-blo)
			115 VAC	230 VAC	115 VAC	230 VAC			
PSM12-078S	100 - 240 VAC 85 - 264 VAC (47 - 63 Hz)	47-63 Hz	2.0 A	1.0 A	<12 A	<20 A	20 ms min. (full load 115/230 VAC)	82%	6.0 A to 16.0 A
PSM24-090S			2.1 A	1.0 A				85%	
PSM24-090S-N			2.1 A	1.0 A				85%	
PSM12-156S	100 - 120 VAC/ 220 - 230 VAC		2.5 A	1.4 A	<13 A	<25 A		85%	
PSM24-180S	85 - 132 VAC/ 187 - 264 VAC		2.8 A	1.5 A	<16 A	<25 A		88%	
PSM24-360S	5.0 A		2.5 A	87%				10.0 A to 16.0 A	
PSM24-600S	10.0 A		5.0 A	89%				16.0 A to 25.0 A	

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

General Specifications	
Specification	Description
Temperature	Operating (ambient): -25°C to +70°C max (-13°F to 158°F). Above +40°C(104°F) load derating Storage (non-operating): -25°C to +85°C max (-13°F 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 - peak maximum at I <sub>max</sub> )
Output Protection	Current limit: 110% constant current, automatic recovery, thermal protection, output rating, Voltage limit: 140% V <sub>out nom</sub>
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 KΩ to -V <sub>out</sub> , [3VDC max across V <sub>out</sub> (+) and V <sub>out</sub> (-)]
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 E157382, UL 60950 Recognized File E198298; CSA C22.2-60950 File 229285; CE

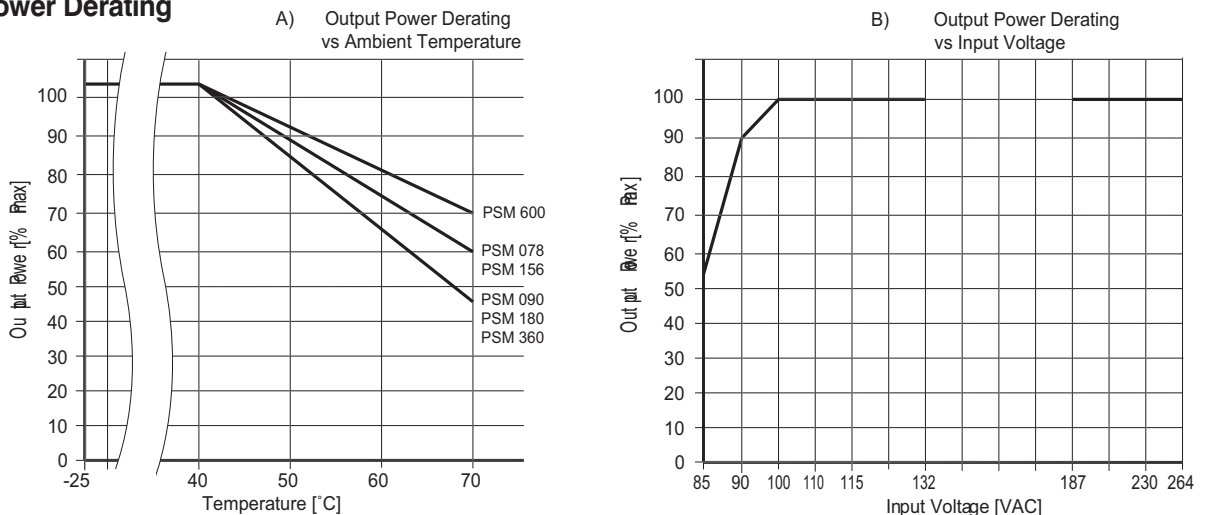
Note: Unless otherwise stated all specifications are valid at nominal input voltage, full load and +25°C after warmup time.

# RHINO PSM Series Power Supplies Specifications

General Specifications (continued)		
Specification	Standard	Document Number
<b>Harmonic Limits</b>	Harmonic Current Limits	EN 61000-3-2, Class A for limited output power
<b>Safety Standards</b>	Information technology equipment	IEC/EN60950; CSA 60950-1-03/UL 60950-1
	Industrial control equipment	UL 508
	Electrical equipment of machines	EN 60204
	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
<b>Safety Approvals</b>	CB-Report per IEC 60950	EN 50178, EN 60079-15 EN 61558-2-8, CSA
<b>Safety Class</b>	Degree of electrical protection Class1	IEC 536
<b>Electromagnetic Compatibility (EMC), Emissions</b>	EMC, Emissions	EN 61204-3, EN61000-6-3
	Conducted RI suppression on input	EN 55011 class B, EN 55022 class B
	Radiated RI suppression	EN 55011 class B, EN 55022 class B
<b>Electromagnetic Compatibility (EMC), Immunity</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
	Electrical fast transient / burst immunity	IEC / EN 61000-4-4 2 kV
	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)
<b>Pollution Degree</b>	2*	

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

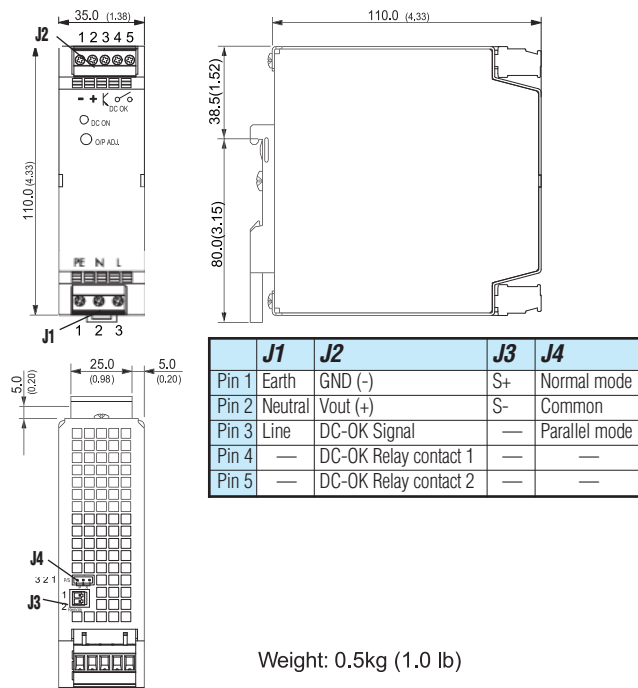
## Output Power Derating



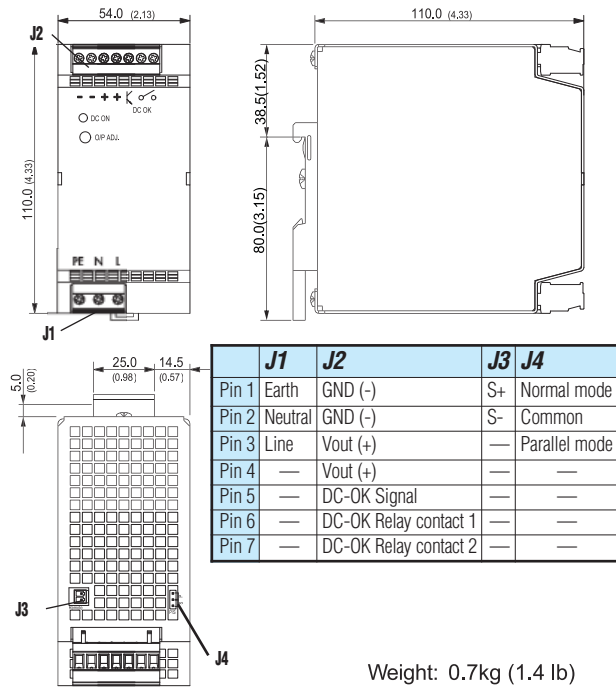
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# RHINO PSM Series Dimensions/Connections

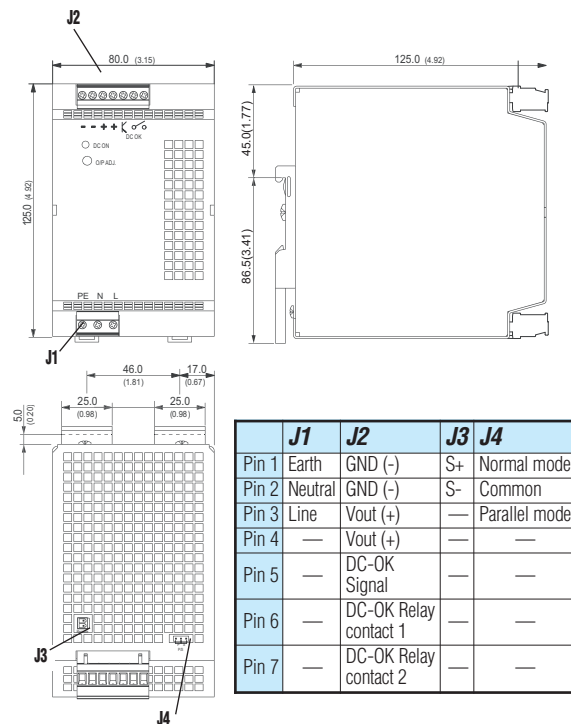
## PSM12-078S, PSM24-090S, PSM24-REM360S, PSM24-BCM360S



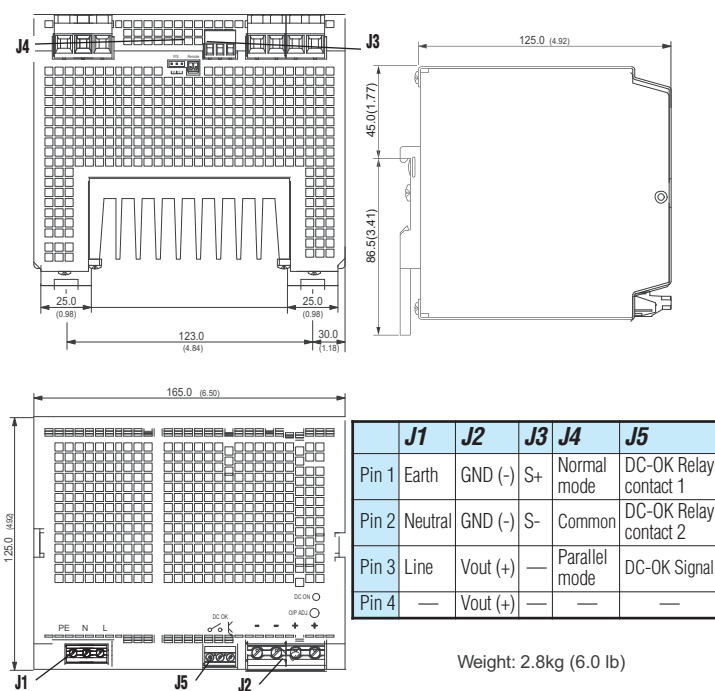
## PSM12-156S, PSM24-180S, PSM24-BFM600S



## PSM24-360S



## PSM24-600S



All dimensions in millimeters (inches)  
Tolerances: ±0.5mm (±0.02")