

RHINO PSB Series DIN rail Power Supplies

Single-Phase Input

AutomationDirect's RHINO PSB series of DIN rail power supplies is perfect for applications that require a basic DC voltage power supply. These low-cost power supplies offer high performance and reliability without all the additional features of higher-cost full-featured power supplies. The following models in the RHINO PSB series are available with universal single-phase input and with output voltages of 24VDC or 48VDC from 60 to 480 Watts. They feature removable terminal blocks, high efficiencies, conformal coated circuit boards, and approval for Class 1, Division 2 hazardous locations. The rugged plastic and aluminum housings easily install with integral 35mm DIN rail mounting adapters. These high-quality power supplies include overload, overvoltage and thermal protection, and are UL 508 listed, UL 60950 recognized, CSA certified, CE marked and RoHS compliant.

PSB48-480S is perfect for Stepper Drives, like our STP-DRV-6575, STP-DRV-4850 or STP-DRV-80100

Features

- Universal input voltage, single-phase 120/240 VAC or 120–375 VDC
- 24VDC or 48VDC outputs, 60 to 480 Watts
- Adjustable output voltage
- Rugged plastic or aluminum housings with integral 35mm DIN rail mounting adapters
- Output voltage status LED
- Removable terminal blocks (except PSB24-060S-P, PSB24-480S and PSB48-480S) with IP20 protection
- Conformal coated circuit board for protection against demanding environments
- Overload, overvoltage and thermal protection
- UL 508 listed, UL 60950 recognized, CSA certified, approved for Class I, Division 2 hazardous locations CE marked and RoHS compliant
- Three year warranty



PSB Single-Phase Series Input Specifications

Part No.	Price	Weight	Housing	Input Voltage	Input Frequency Range	Max. Input Current	Inrush Current Limitation $I_{t @ 77^{\circ}F (+25^{\circ}C)}$ typ.	Leakage Current	Recommended Circuit Breaker	Hold-Up Time at Nominal Load (Typ.) (Mains Buffering)	Turn-on Time
PSB24-060S-P	\$35.00	0.33 kg [0.73 lb]	Plastic	85–264 VAC Nominal 100–240 VAC	47–63 Hz (0Hz @ DC Input)	<1.5 A @ 100VAC	<40A @ 115VAC, <80A @ 230VAC	<1mA @ 240VAC	16A "B" Curve	>20ms @ 115VAC >125ms @ 230VAC (100% load, 25°C)	<3 sec.
PSB24-060S	\$42.00	0.37 kg [0.82 lb]	Aluminum	85–264 VAC (DC input range 120–375 VDC) UL Approved for 100-240 VAC only		<1.4 A @ 115VAC, <0.8 A @ 230VAC	<20A @ 115VAC, <35A @ 230VAC			<3mA @ 240VAC	>20ms @ 115VAC >115ms @ 230VAC (100% load, 25°C)
PSB24-120S	\$75.00	0.72 kg [1.59 lb]				<2.2 A @ 115VAC, <1.2 A @ 230VAC	<35A @ 115VAC, <35A @ 230VAC	<1mA @ 240VAC			>20ms @ 115VAC >115ms @ 230VAC (100% load, 25°C)
PSB24-240S	\$125.00	1.10 kg [2.43 lb]				<2.5 A @ 115VAC, <1.3 A @ 230VAC				>20ms @ 115VAC & 230VAC (100% load, 25°C)	
PSB24-480S	\$192.00	1.37 kg [3.02 lb]				<5A @ 115VAC, <3A @ 230VAC	>20ms @ 115VAC >115ms @ 230VAC (100% load, 25°C)				
PSB48-120S	\$75.00	0.72 kg [1.59 lb]				<2.2 A @ 115VAC, <1.1 A @ 230VAC	>20ms @ 115VAC >115ms @ 230VAC (100% load, 25°C)				
PSB48-240S	\$125.00	0.97 kg [2.14 lb]				<2.5 A @ 115VAC, <1.3 A @ 230VAC	>20ms @ 115VAC >115ms @ 230VAC (100% load, 25°C)				
PSB48-480S	\$170.00	1.37 kg [3.02 lb]				<5A @ 115VAC, <3A @ 230VAC	>20ms @ 115VAC & 230VAC (100% load, 25°C)				

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PSB Single-Phase Series Output Specifications									
Part No.	Output Voltage (Vnom) / Adjustment Range	Output Power	Output Current	Ripple and Noise (20 MHz)	Startup with Capacitive Loads	Derating	Max. Power Dissipation Idling / Nominal Load Approx.	Efficiency	MTBF
PSB24-060S-P	24VDC $\pm 2\%$ /22–28 VDC (maximum power ≤ 60 W)	60W	2.5 A	<50 mVpp/<240mVpp @ 25°C	Max 8,000 μ F	>50°C de-rate power by 2.5%/°C >70°C de-rate power by 4%/°C	9W	>86.0% @ 115VAC, >87.0% @ 230VAC	>800,000 hrs.
PSB24-060S						>50°C de-rate power by 2.5%/°C	7.4 W	>90.0% @ 115VAC & 230VAC	>1,000,000 hrs.
PSB24-120S	24VDC $\pm 2\%$ /22–28 VDC (maximum power ≤ 120 W)	120W	5A	<50 mVpp/<150mVpp @ 25°C	Max 10,000 μ F	>50°C de-rate power by 2.5%/°C	14.8 W	>89.0% @ 115VAC, >90.0% @ 230VAC	>800,000 hrs.
PSB24-240S						>50°C de-rate power by 2.5%/°C	30W	>90.0% @ 115VAC & 230VAC	>500,000 hrs.
PSB24-480S	24VDC $\pm 2\%$ /22–28 VDC (maximum power ≤ 480 W)	480W	20A	<50 mVpp @ 25°C		>50°C de-rate power by 2.5%/°C >70°C de-rate power by 5%/°C	59W	>90.0% @ 115VAC & 230VAC	>500,000 hrs.
PSB48-120S	48VDC $\pm 1\%$ /48–56 VDC (maximum power ≤ 120 W)	120W	2.5 A	<100 mVpp @ 25°C	Max 6,500 μ F	>50°C de-rate power by 2.5%/°C	14.8 W	>89.0% @ 115VAC & 230VAC	>600,000 hrs.
PSB48-240S						>50°C de-rate power by 2.5%/°C	29.6 W	>90.0% @ 115VAC >91.0% @ 230VAC	>500,000 hrs.
PSB48-480S	48VDC $\pm 1\%$ /48–56 VDC (maximum power ≤ 480 W)	480W	10A	<100 mVpp/ <200 mVpp @ 85VAC to 264VAC	Max 10,000 μ F	>50°C de-rate power by 2.5%/°C >70°C de-rate power by 5%/°C	59W	>91.0% @ 115VAC >92.0% @ 230VAC	>500,000 hrs.

PSB Single-Phase Series General Specifications	
Output Line Regulation	<0.5% typ. (@ 85–264 VAC input, 100% load)
Output Load Regulation	<1% typ. (@ 85–264 VAC input, 0–100% load)
Parallel Operation	PSB60-REM20S / PSB60-REM40S or with ORing Diode
Case Cover	Aluminium or Plastic (Polycarbonate) for P Series
Signals	Green LED DC OK
Humidity at 25°C [77°F], no condensation	<95% RH (non-condensing)
Shock	IEC60068-2-27, 30G (300 m/S ²) for a duration of 10ms
Vibration (Non-Operating)	IEC60068-2-6, 10Hz to 500Hz @ 30 m/S ² (3G peak); 60 min per axis for all X, Y, Z direction
Environmental Air	No corrosive gases permitted
Pollution Degree	2
Climatic Class	3K3 according to EN 60721

PSB Single-Phase Series Certification and Standards	
Electrical Equipment of Machines	IEC60204-1 (over voltage category III)
Electronic equipment for use in electrical power installations	EN50178 / IEC62103
Safety Entry Low Voltage	PELV (EN60204), SELV (EN60950)
Industrial Control Equipment	UL/cUL listed to UL508 and CSA C22.2 No. 107.1-01 (file no. E197592), CSA to CSA C22.2 No. 107.1-01 (file no. 249074)
Hazardous Location	cCSAus to CSA C22.2 No. 213-M1987, ANSI / ISA 12.12.01:2007 [Class I, Division 2, Group A,B,C,D T4, Ta = -25°C to +75°C (Vertical: > +50°C derating)], (file no. 249074)
Class 2 Power Supply	UR/cUR Class 2 power supply recognized to UL1310 and CSA C22.2 No. 223 (file no. E198298) (PSB24-060S-P only)
CE	CE Marked

PSB Single-Phase Series Safety and Protection	
Transient surge voltage protection	Varistor
Overvoltage	<57V, SELV Output, hiccup mode, non-latching (auto-recovery)
Overload / Overcurrent	>120% & 150% of rated load current, hiccup mode, non-latching (auto-recovery)
Isolation Voltage:: Input/output (type test/routine test) Input/GND (type test/routine test) Output/GND (type test/routine test)	4 kVAC / 3 kVAC 1.5 kVAC / 1.5 kVAC 1.5 kVAC / 500 VAC
Protection Degree	IP20
Safety Class	Class I with GND connection

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Additional Data					
Part No.	Wire Size / Torque*		Terminal Block Type	Ambient Operating Temperature**	Storage Temperature
	Input	Output			
PSB24-060S-P	0.32–5.3 mm ² [AWG 22–10] / 0.45 Nm [3.96 lb-in]	0.32–5.3 mm ² [AWG 22–10] / 0.45 Nm [3.96 lb-in]	Fixed screw terminals	-25°C to 80°C [-13°F to 176°F]	-25°C to 80°C [-13°F to 176°F]
PSB24-060S	0.32–3.3 mm ² [AWG 22–12] / 0.46 Nm [4.05 lb-in]	0.32–3.3 mm ² [AWG 22–12] / 0.46 Nm [4.05 lb-in]	Removable screw terminals	-25°C to 80°C [-13°F to 176°F] Cold start at -40°C [-40°F]	-40°C to 85°C [-40°F to 185°F]
PSB24-120S	0.52–3.3 mm ² [AWG 20–12] / 0.46 Nm [4.05 lb-in]	0.52–3.3 mm ² [AWG 20–12] / 0.46 Nm [4.05 lb-in]			
PSB24-240S	1.3–2.1 mm ² [AWG 16–14] / 0.46 Nm [4.05 lb-in]	1.3–2.1 mm ² [AWG 16–14] / 0.46 Nm [4.05 lb-in]			
PSB24-480S	0.82–5.3 mm ² [AWG 18–10] / 0.45 Nm [3.96 lb-in]	3.5–5.3 mm ² [AWG 12–10] / 0.45 Nm [3.96 lb-in]	Fixed screw terminals		
PSB48-120S	0.52–3.3 mm ² [AWG 20–12] / 0.46 Nm [4.05 lb-in]	0.52–3.3 mm ² [AWG 20–12] / 0.46 Nm [4.05 lb-in]	Removable screw terminals		
PSB48-240S					
PSB48-480S	0.82–5.3 mm ² [AWG 18–10] / 0.45 Nm [3.96 lb-in]	1.3–5.3 mm ² [AWG 16–10] / 0.45 Nm [3.96 lb-in]	Fixed screw terminals		

*Stripping length 7 mm (0.28 in)

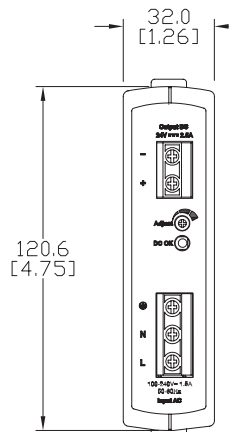
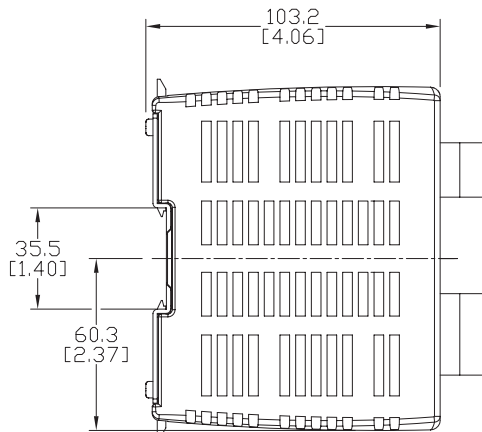
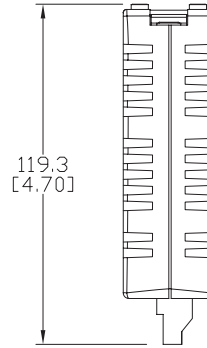
** See output specifications for temperature derating

Dimensions

mm [inches]

PSB24-060S-P

Wiring Connection			
Input		Output	
L	Line	+	Out +
N	Neutral	-	Out -
	AC Ground		



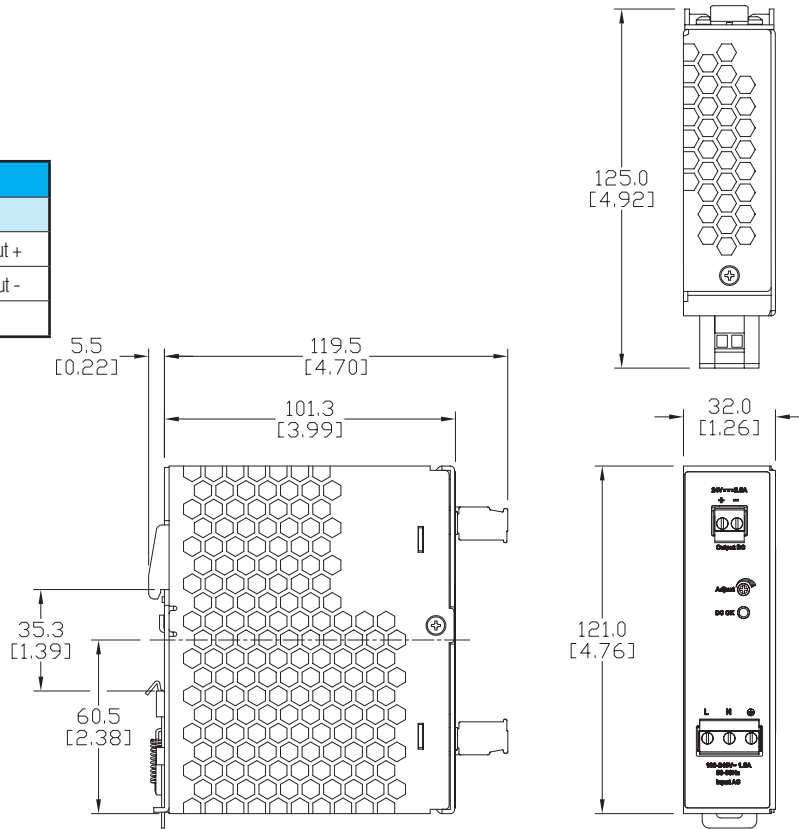
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Dimensions

mm [inches]

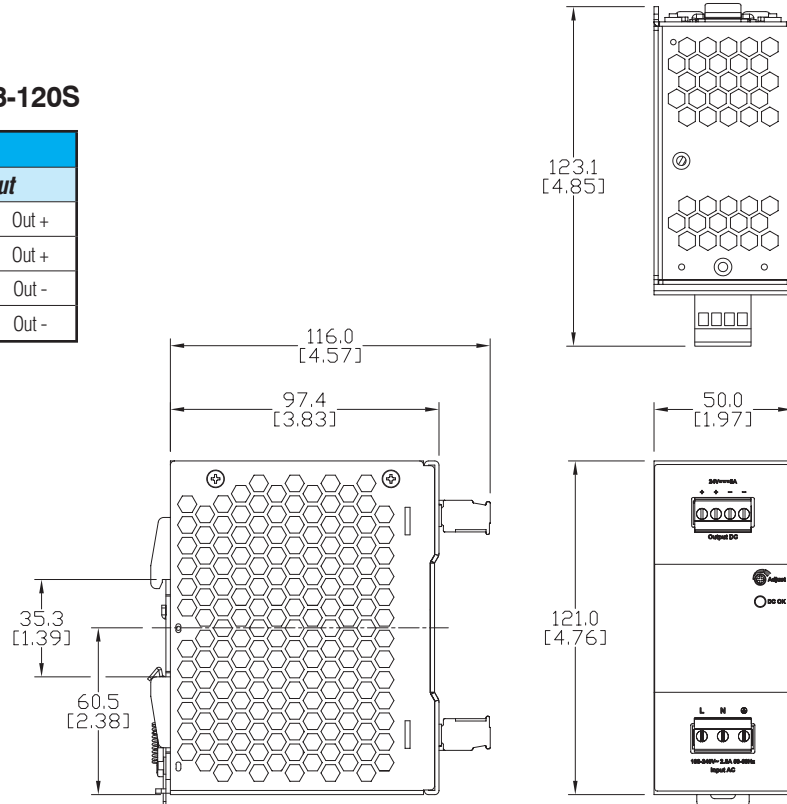
PSB24-060S

Wiring Connection			
Input		Output	
L	Line	+	Out +
N	Neutral	-	Out -
⏏	AC Ground		



PSB24-120S and PSB48-120S

Wiring Connection			
Input		Output	
L	Line	+	Out +
N	Neutral	+	Out +
⏏	AC Ground	-	Out -
		-	Out -



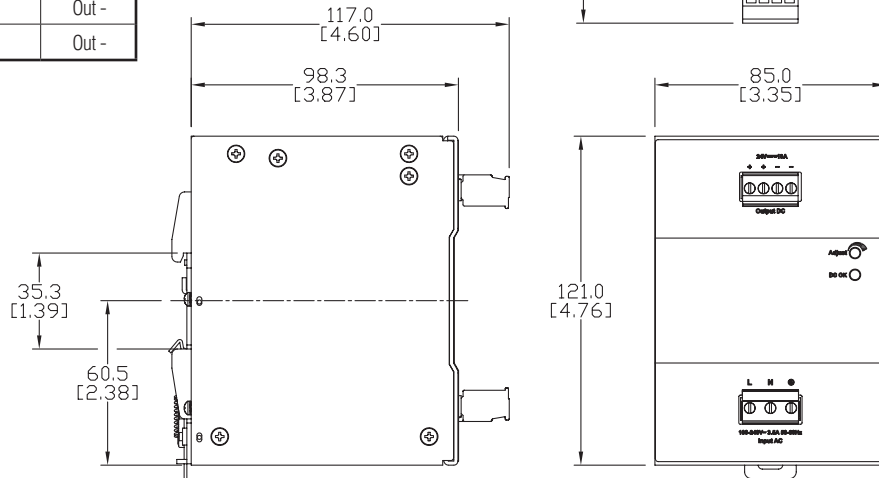
RHINO PSB Series DIN rail Power Supplies

Dimensions

mm [inches]

PSB24-240S and PSB48-240S

Wiring Connection			
Input		Output	
L	Line	+	Out +
N	Neutral	+	Out +
⏏	AC Ground	-	Out -
		-	Out -



PSB24-480S and PSB48-480S

Wiring Connection			
Input		Output	
L	Line	+	Out +
N	Neutral	+	Out +
⏏	AC Ground	-	Out -
		-	Out -

