RHINO PSB Series DIN Rail Power Supplies

Three-Phase Input Overview

AutomationDirect's RHINO PSB series of DIN rail three-phase input 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 three-phase input eliminates the need for a separate step down transformer and the output of 24 VDC is available from 60 to 960 Watts. The rugged 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. Units are covered by a three year warranty.

Input Specifications

Part Number	Price	Weight kg [lb]	Housing	Input Voltage	Input Frequency Range	Max. Input Current	Inrush Current Limitation I2t @ 77 °F [+25 °C] typ.	Leakage Current	Recommended Circuit Breaker	Hold-Up Time at Nominal Load [Typ] (Mains Buffering)	Turn-on Time
PSB24-060S-3	Retired	0.66 [1.46]	Aluminum	Nominal 480 VAC UL/CSA approved to 500 VAC	47–63 Hz	<0.3A / Phase @ 400 VAC and <0.25A / Phase @ 500 VAC	<30A @ 400 VAC & 500 VAC @ 25 °C [With 3Ph AC source capability up to 3 KVA] <55A @ 400 VAC & 500 VAC @ 25 °C [With 3Ph AC source capability up to 18 KVA]	<3.5 mA	3 x circuit breakers 16A "B" Curve	>20 ms @ 3 x 400 VAC, >40 ms @ 3 x 500 VAC	<1000 ms @ 100% load [25 °C] and typical line input
PSB24-120S-3	Retired					<0.5A / Phase @ 400 VAC and <0.4A / Phase @ 500 VAC	<30A @ 400 VAC & 500 VAC @ 25 °C [With 3Ph AC source capability up to 3 KVA] <60A @ 400 VAC & 500 VAC @ 25 °C [With 3Ph AC source capability up to 18 KVA]				
PSB24-240S-3	Retired	0.89 [1.96]				<0.75A / Phase @ 400 VAC and <0.65A / Phase @ 500 VAC	<40A @ 400 VAC & 500 VAC @ 25 °C [With 3Ph AC source capability up to 3 KVA] <60A @ 400 VAC & 500 VAC @ 25 °C [With 3Ph AC source capability up to 18 KVA]				
PSB24-480S-3	Retired	1.35 [2.98]				<0.95A / Phase @ 400 VAC and <0.75A / Phase @ 500 VAC	<50A @ 400 VAC & 500 VAC @ 25 °C [With 3Ph AC source capability up to 3 KVA] <70A @ 400 VAC & 500 VAC @ 25 °C [With 3Ph AC source capability up to 18 KVA]				
PSB24-960S-3	$419.00	2.6 [5.73]				1.7A Max / Phase	<50A @ 500 VAC @ 25°C	<3mA @ 575 VAC		>20 ms @ 3 x 400 VAC & 3 x 500 VAC	

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Output Specifications

Part Number	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 [Typ 3 @ 400VAC and 500VAC]	MTBF
PSB24-060S-3	24–28 VDC [Max power ≤60W]	60W	2.5A [60W Max]	<150 mVpp at 320 VAC to 600 VAC input	Max 10,000µF	>50 °C de-rate power by 2.5%/ °C >70 °C de-rate power by 5%/°C	9.8W	86%	>500,000 hrs
PSB24-120S-3	24–28 VDC [Max power ≤120W]	120W	5A [120W Max]				16.5W	88%	
PSB24-240S-3	24–28 VDC [Max power ≤240W]	240W	10A [240W Max]				26.7W	92%	>300,000 hrs
PSB24-480S-3	24–28 VDC [Max power ≤480W]	480W	20A [480W Max]				53W	91%	
PSB24-960S-3	24–28 VDC [Max power ≤960W]	960W	40A [960W Max]	<240 mVpp at 320 VAC to 575 VAC input		>50 °C de-rate power by 2.5%/°C	94W	92%	

General Specifications

Output Line Regulation	<0.5% typ. @ 320 to 600 VAC input, 100% load
Output Load Regulation	<1% typical with rated input, 0 to 100% load
Parallel Operation	PSB60-REM20S* / PSB60-REM40S or with ORing Diode
Case Cover	Aluminium [AI5052]
Signals	Green LED DC OK
Humidity at +25 °C [77 °F], no condensation	<95% RH [non-condensing]
Shock	IEC 60068-2-27
Vibration (Non-operating)	IEC 60068-2-6
Pollution Degree	2
Climatic Class	3K3 according to EN 60721

*** Does not apply to the PSB24-960S-3**

Certification and Standards

EMC / Emissions	FCC Title 47, Class B / EN55032, CISPR32, CISPR11, Class B
Immunity	EN61000-4-2, 1995; EN61000-4-4, 1995; EN61000-4-5, 1995; IEC61000-4-12 or IEEE C62.41; EN61000-4-3, 1998; EN61000-4-8; EN61000-4-6, 1996
Voltage Dips	EN61000-4-11
Approvals	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, UR/cUR recognized to UL60950-1 and CSA C22.2 No. 60950-1 File no. E198298. CE (EMC and Low Voltage directive)

To obtain the most current agency approval information, see the Agency Compliance & Certifications Checklist section on the specific part number's web page.

Safety and Protection

Transient Surge Voltage Protection	Varistor
Overload/Short Circuit Protection	> 150% of rated load current, auto recovery [hiccup mode]
Overvoltage Protection	<32V, w10%, SELV output, non-latching [autorecovery]
Isolation Voltage: Input/output Input/GND Output/GND	 4 KVac 1.5 KVac 1.5 KVac
Protection Degree	IP20
Safety Class	Class I with GND connection

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Additional Data						
Part Number	Wire Size / Torque*		Terminal Block Type	Ambient Operating Temperature**	Storage Temperature	Drawing Link
	Input	Output				
PSB24-060S-3	0.82–3.3 mm² [AWG 18–12] / 0.92 Nm [8.1 lb-in]	0.82–3.3 mm² [AWG 18–12] / 0.61 Nm [5.4 lb-in]	Fixed screw terminals	-25 to +80 °C [-13 to +176 °F]	-25 to +85 °C [-13 to +185 °F]	PDF
PSB24-120S-3						PDF
PSB24-240S-3	0.82–3.3 mm² [AWG 18–12] / 0.92 Nm [8.1 lb-in]	1.3–3.3 mm² [AWG 16–12] / 0.61 Nm (5.4 lb-in)				PDF
PSB24-480S-3	0.82–8.4 mm² [AWG 18–8] / 0.92 Nm [8.1 lb-in]	3.3–5.3 mm² [AWG 12–10] / 0.92 Nm [8.1 lb-in]				PDF
PSB24-960S-3				-25 to +65 °C [-13 to +149 °F]		PDF

***Stripping length 7mm [0.28in] or use suitable lug to crimp**
**** See output specifications for temperature derating**

PSB24-060S-3
PSB24-120S-3

Wiring Connection			
Input		Output	
L1	Line 1	+	Out +
L2	Line 2	+	Out +
L3	Line 3	-	Out -
⏚	AC Ground	-	Out -

PSB24-240S-3

Wiring Connection			
Input		Output	
L1	Line 1	+	Out +
L2	Line 2	+	Out +
L3	Line 3	-	Out -
⏚	AC Ground	-	Out -

PSB24-480S-3

Wiring Connection			
Input		Output	
L1	Line 1	+	Out +
L2	Line 2	+	Out +
L3	Line 3	-	Out -
⏚	AC Ground	-	Out -

PSB24-960S-3

Wiring Connection			
Input		Output	
L1	Line 1	+	Out +
L2	Line 2	+	Out +
L3	Line 3	-	Out -
⏚	AC Ground	-	Out -