

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 24VDC 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.



PSB Three-Phase Series Input Specifications

| Part Number | Price | Weight kg [lb] | Housing | Input Voltage | Input Frequency Range | Max. Input Current | Inrush Current Limitation 12t @ 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 | \$69.00 | 0.66 [1.46] | Aluminum | Nominal 480VAC UL/CSA approved to 500VAC | 47-63 Hz | <0.3 A / Phase @ 400VAC and <0.25 A / Phase @ 500VAC | <30A @ 400VAC & 500VAC @ 25°C [With 3Ph AC source capability up to 3KVA] <55A @ 400VAC & 500VAC @ 25°C [With 3Ph AC source capability up to 18KVA] | <3.5 mA | 3 x circuit breakers 16A "B" Curve | >20ms @ 3 x 400VAC, >40ms @ 3 x 500VAC | <1000ms @ 100% load [25°C] and typical line input |
| PSB24-120S-3 | \$89.00 | | | | | <0.5 A / Phase @ 400VAC and <0.4 A / Phase @ 500VAC | <30A @ 400VAC & 500VAC @ 25°C [With 3Ph AC source capability up to 3KVA] <60A @ 400VAC & 500VAC @ 25°C [With 3Ph AC source capability up to 18KVA] | | | | |
| PSB24-240S-3 | \$148.00 | 0.89 [1.96] | | | | <0.75 A / Phase @ 400VAC and <0.65 A / Phase @ 500VAC | <40A @ 400VAC & 500VAC @ 25°C [With 3Ph AC source capability up to 3KVA] <60A @ 400VAC & 500VAC @ 25°C [With 3Ph AC source capability up to 18KVA] | | | | |
| PSB24-480S-3 | \$211.00 | 1.35 [2.98] | | | | <0.95 A / Phase @ 400VAC and <0.75 A / Phase @ 500VAC | <50A @ 400VAC & 500VAC @ 25°C [With 3Ph AC source capability up to 3KVA] <70A @ 400VAC & 500VAC @ 25°C [With 3Ph AC source capability up to 18KVA] | | | | |
| PSB24-960S-3 | \$312.00 | 2.6 [5.73] | | | | 1.7 A Max / Phase | <50A @ 500VAC @ 25°C | | | | |

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

| PSB Three-Phase Series General Specifications | |
|---|--|
| Output Line Regulation | <0.5% typ. @ 320 to 600VAC 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 [Al5052] |
| 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](#)

| PSB Three-Phase Series 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.

| PSB Three-Phase Series 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 |

RHINO PSB Series DIN Rail Power Supplies

| Additional Data | | | | | | |
|-------------------------------------|---|---|-----------------------|---------------------------------|-------------------------------|----------------------------|
| Part Number | Wire Size / Torque* | | Terminal Block Type | Ambient Operating Temperature** | Storage Temperature | Drawing Link |
| | Input | Output | | | | |
| <u>PSB24-060S-3</u> | 0.82–3.3 mm ² [AWG 18–12] / 0.92 Nm [8.1 lb-in] | 0.82–3.3 mm ² [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] | <u>PDF</u> |
| <u>PSB24-120S-3</u> | | | | | | <u>PDF</u> |
| <u>PSB24-240S-3</u> | 0.82–3.3 mm ² [AWG 18–12] / 0.92 Nm [8.1 lb-in] | 1.3–3.3 mm ² [AWG 16–12] / 0.61 Nm [5.4 lb-in] | | | | <u>PDF</u> |
| <u>PSB24-480S-3</u> | 0.82–8.4 mm ² [AWG 18–8] / 0.92 Nm [8.1 lb-in] | 3.3–5.3 mm ² [AWG 12–10] / 0.92 Nm [8.1 lb-in] | | | | <u>PDF</u> |
| <u>PSB24-960S-3</u> | | | | | | <u>PDF</u> |
| | | | | -25 to 65°C [-13 to 149°F] | | |

*Stripping length 7 mm [0.28 in] 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 - |
| \perp | AC Ground | - | Out - |

[PSB24-240S-3](#)

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

[PSB24-480S-3](#)

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

[PSB24-960S-3](#)

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