

RHINO PSB Series DIN rail Power Supplies

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 RHINO PSB series is available with universal single- and three-phase input and with output voltages of 12 and 24 VDC from 15 to 480 Watts. 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.

Features

- Universal input voltage, 85-264 VAC / 120-375 VDC single phase or 320-575 VAC 3-phase
- 24 VDC or 12 VDC outputs, 15 to 480 Watts
- Adjustable output voltage
- Rugged plastic or aluminum housings with integral 35mm DIN rail mounting adapters
- Output voltage status LED
- Robust fixed-screw terminal strips with finger-safe covers
- Overload, overvoltage and thermal protection
- UL 508 listed, UL 60950 recognized, CSA certified, CE marked and RoHS compliant
- Three year warranty



| PSB Single-Phase Series Input Specifications | | | | | | | | | | | | |
|--|-------|--------------------|----------|--|----------------------------|----------------------------------|--|-----------------|------------------------------|--|-------------------------------------|---------|
| Part No. | Price | Weight | Housing | Input Voltage | Input Frequency Range | Nominal Current | Inrush Current Limitation I_{t1} @ 77°F (+25°C) typ. | Leakage Current | Recommended Circuit Breaker* | Mains Buffering at Nominal Load (Typ.) | Turn-on Time | |
| PSB12-015-P | <--> | 0.175 kg (0.39 lb) | Plastic | 85-264 VAC (DC input range 120-375 VDC); Nominal 100-240 VAC | 47-63 Hz (0 Hz @ DC Input) | 0.37A @ 115 VAC, 0.22A @ 230 VAC | <30A @ 115 VAC, <65A @ 230 VAC | <1 mA | 6A | >22 ms @ 115 VAC, >110 ms @ 230 VAC | <2.5 sec. | |
| PSB12-030-P | <--> | 0.197 kg (0.43 lb) | Plastic | | | 0.7A @ 115 VAC, 0.42A @ 230 VAC | <40A @ 115 VAC, <80A @ 230 VAC | | | | | |
| PSB12-060 | <--> | 0.325 kg (0.72 lb) | Aluminum | | | 1.35A @ 115 VAC, 0.8A @ 230 VAC | <50A @ 115 VAC, <100A @ 230 VAC | | | | | |
| PSB12-100 | <--> | 0.636 kg (1.40 lb) | Aluminum | | | 2.5A @ 115 VAC, 1.5A @ 230 VAC | <100A @ 115 VAC, no damage @ 230 VAC | | <3.5 mA | 16A | >20 ms @ 115 VAC, >125 ms @ 230 VAC | <3 sec. |
| PSB24-060 | <--> | 0.37 kg (0.82 lb) | Aluminum | | | 1.1A @ 115 VAC, 0.7A @ 230 VAC | <40A @ 115 VAC, <80A @ 230 VAC | | | | | |
| PSB24-060-P | <--> | 0.325 kg (0.72 lb) | Plastic | | | 1.1A @ 115 VAC, 0.7A @ 230 VAC | <40A @ 115 VAC, <80A @ 230 VAC | | | | | |
| PSB24-120 | <--> | 0.54 kg (1.19 lb) | Aluminum | | | 1.4A @ 115 VAC, 0.8A @ 230 VAC | <80A @ 115 VAC, <150A @ 230 VAC | | <1.25 mA | >20 ms @ 115 VAC & 230 VAC | <1 sec. | |
| PSB24-240 | <--> | 1.04 kg (2.29 lb) | Aluminum | | | 2.9A @ 115 VAC, 1.5A @ 230 VAC | <40A @ 115 VAC, <100A @ 230 VAC | | | | | |
| PSB24-480 | <--> | 1.8 kg (3.97 lb) | Aluminum | | | 5.7A @ 115 VAC, 2.8A @ 230 VAC | <50A @ 115 VAC, <150A @ 230 VAC | | | | | |

*Characteristic B

RHINO PSB Series DIN rail Power Supplies



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| PSB Single-Phase Series Output Specifications | | | | | | | | | |
|---|---|--------------|----------------|--------------------------|-------------------------------|--------------------------------|---|--|---------------|
| Part No. | Output Voltage (Vnom) / Adjustment Range | Output Power | Output Current | Ripple and Noise (20MHz) | Startup with Capacitive Loads | Derating above 50°C (122°F) | Max Power Dissipation Idling / Nominal Load Approx. | Efficiency (at 400 VAC and Nominal Values) | MTBF |
| PSB12-015-P | 12 VDC ±2%/11-14VDC (maximum power <15W) | 15 Watt | 1.25A | <100mV | Max 5,000 µF | 2.5%/°C. (>70°C [158°F] 4%/°C) | ≤ 3.2 Watts | 83.5% Min @ 115VAC & 83% Min @ 230VAC | >300,000 hrs. |
| PSB12-030-P | 12 VDC ±2%/11-14VDC (maximum power ≤30W) | 30 Watt | 2.5A | | Max 6,600 µF | | ≤ 5.6 Watts | 84.5% Min @ 115VAC & 230VAC | |
| PSB12-060 | 12 VDC ±2%/11-14VDC (maximum power ≤60W) | 60 Watt | 5A | | Max 8,000 µF | | ≤ 10.2 Watts | 85.5% Min @ 115VAC & 230VAC | |
| PSB12-100 | 12 VDC ±2%/11-14VDC (maximum power ≤100W) | 100 Watt | 8.33A | | Max 10,000 µF | | ≤ 16.3 Watts | 86% Min @ 115VAC & 87% Min @ 230VAC | |
| PSB24-060 | 24 VDC ±2%/22-28VDC (maximum power ≤60W) | 60 Watt | 2.5A | <50mV / <240mVpp | Max 8,000 µF | 2.5%/°C. (<0° [32°F] 1%/°C) | 10 Watts | >85% typical | >800,000 hrs. |
| PSB24-060-P | 24 VDC ±2%/22-28VDC (maximum power ≤60W) | 60 Watt | 2.5A | | 22.5 Watts | | >84% typical | | |
| PSB24-120 | 24 VDC ±2%/22-28VDC (maximum power ≤120W) | 120 Watt | 5A | | Max 10,000 µF | 2.5%/°C. | 42.5 Watts | >86% typical | >300,000 hrs. |
| PSB24-240 | 24 VDC ±2%/22-28VDC (maximum power ≤240W) | 240 Watt | 10A | | | 2.5%/°C. (>70° [158°F] 4%/°C) | 72 Watts | >86% typical | |
| PSB24-480 | 24 VDC ±2%/22-28VDC (maximum power ≤480W) | 480 Watt | 20A | | | 2.5%/°C. | | | |

| PSB Single-Phase Series General Specifications | |
|--|---|
| Output Line Regulation | <0.5% typical (@ 85-264 VAC input, 100% load) |
| Output Load Regulation | <1% typical (@ 85-264 VAC input, 0-100% load) |
| Parallel Operation | With decoupling diode |
| Case Cover | Aluminium (AI5052) or Plastic (PC), for P Series (closed) |
| Signals | Green LED DC OK |
| Humidity at 25°C (77°F), no condensation | <95% RH |
| Shock | 30g half sign, 3 times per direction, 6 directions, per IEC60068-2-27 |
| Vibration (Non-Operating) | 10 to 150Hz, 5 g, 90 min. each axis per IEC60068-2-6 |
| 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 | EN 50178 / IEC62103 |
| Safety Entry Low Voltage | PELV (EN 60204), SELV (EN 60950) |
| Electrical Safety (of information technology equipment) | UL/C-UL recognized to UL60950-1 (#E198298), CSA C22.2 No.60950-1 (#249074), CB scheme to IEC60950-1 |
| Industrial Control Equipment | UL listed to UL508 (#E197592), CSA to CSA C22.2 No.107.1-01 (#249074) |
| Protection Against Electric Shock | DIN 57100-410 |
| CE | In conformance with EMC directive 2004/108/EC and low voltage directive 2006/95/EC |

| PSB Single-Phase Series Safety and Protection | |
|---|--|
| Transient surge voltage protection | VARISTOR |
| Current Limitation at Short-circuits Approx. | I _{surge} = 150 % of P _{max} typically |
| Surge Voltage Protection Against Internal Surge Voltages | Yes |
| 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 | IPX0 |
| Safety Class | Class I with GND connection |

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| Additional Data | | | | |
|--|---|---|--|--------------------------------|
| Part No. | Dimensions (L x W x H) | Wire Size / Torque* | Ambient Operating Temperature | Storage Temperature |
| PSB12-015-P PSB12-030-P | 100 mm x 32 mm x 100 mm (3.94 in x 1.26 in x 3.94 in) | 0.32-2.1 mm ² (AWG 22-14) / 0.79Nm (7.0 lb-in) | -20°C to 50°C (-4°F to 122°F) | -25°C to 85°C (-13°F to 185°F) |
| PSB12-060 | 121 mm x 32 mm x 120 mm (4.76 in x 1.26 in x 4.72 in) | 0.52-2.1 mm ² (AWG 20-14) / 0.78-0.98Nm (6.94-8.68 lb-in) | | |
| PSB12-100 | 121 mm x 50 mm x 118.2 mm (4.76 in x 1.97 in x 4.65 in) | 0.82-2.1 mm ² (AWG 18-14) / 0.78-0.98Nm (6.94-8.68 lb-in) | | |
| PSB24-060 | 121 mm x 32 mm x 120 mm (4.76 in x 1.26 in x 4.72 in) | 0.32-2.1 mm ² (AWG 22-14) / 0.78-0.98Nm (6.94-8.68 lb-in) | -20°C to 75°C (>50°C [122°F] derating) [-4°F to 167°F] | -25°C to 85°C (-13°F to 185°F) |
| PSB24-060-P | 126 mm x 32 mm x 113 mm (4.96 in x 1.26 in x 4.45 in) | | | |
| PSB24-120 | 121 mm x 50 mm x 118.2 mm (4.76 in x 1.97 in x 4.65 in) | | | |
| PSB24-240 | 121 mm x 85 mm x 118.2 mm (4.76 in x 3.35 in x 4.65 in) | | | |
| PSB24-480 | 121 mm x 160 mm x 115 mm (4.76 in x 6.30 in x 4.53 in) | (1) 1.3-2.1mm ² (AWG 16-14) (2) 3.5-5.3mm ² (AWG 12-10) / 1.18-1.57Nm (10.41-13.89 lb-in) | | |

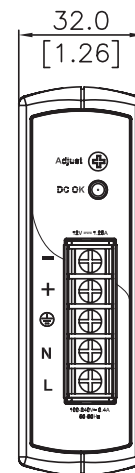
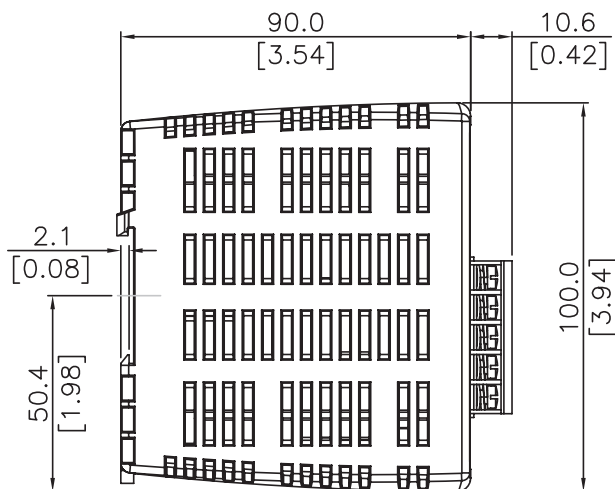
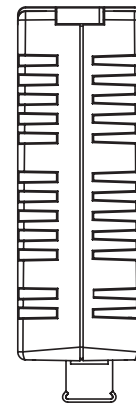
*Stripping length 7 mm (0.28 in) or use suitable lug to crimp

Dimensions

All dimensions in mm [inches]

PSB12-015-P
PSB12-030-P

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





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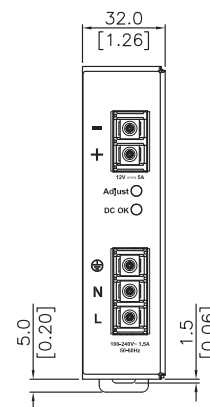
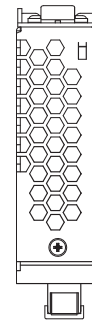
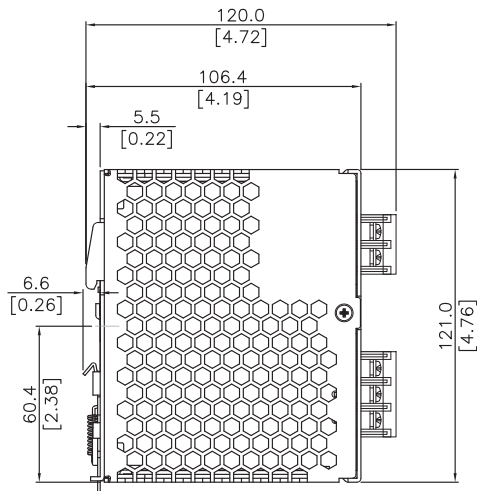
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RHINO PSB Series DIN rail Power Supply Dimensions

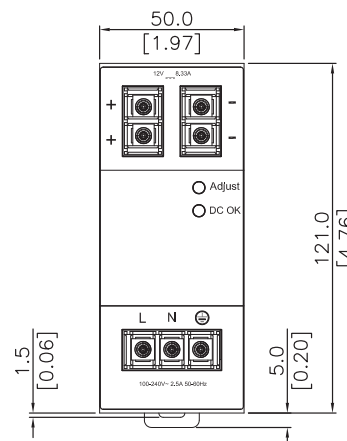
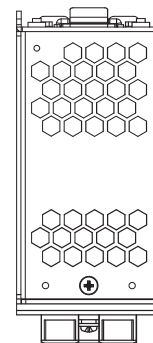
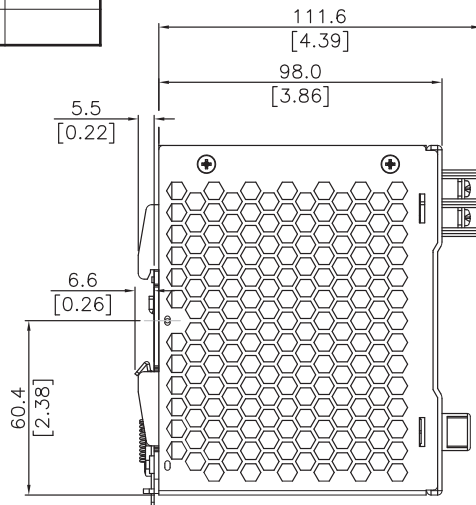
PSB12-060
PSB24-060

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



PSB12-100
PSB24-120

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

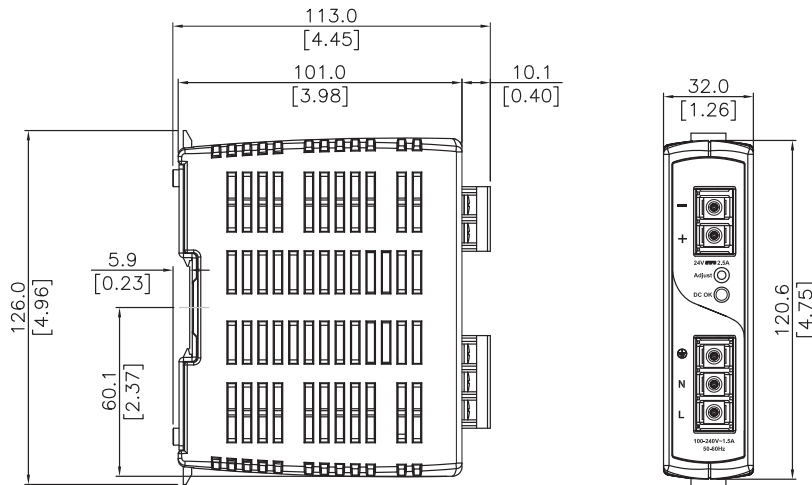
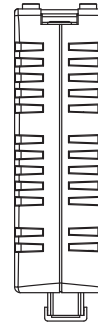


All dimensions in mm [inches]

RHINO PSB Series DIN rail Power Supply Dimensions

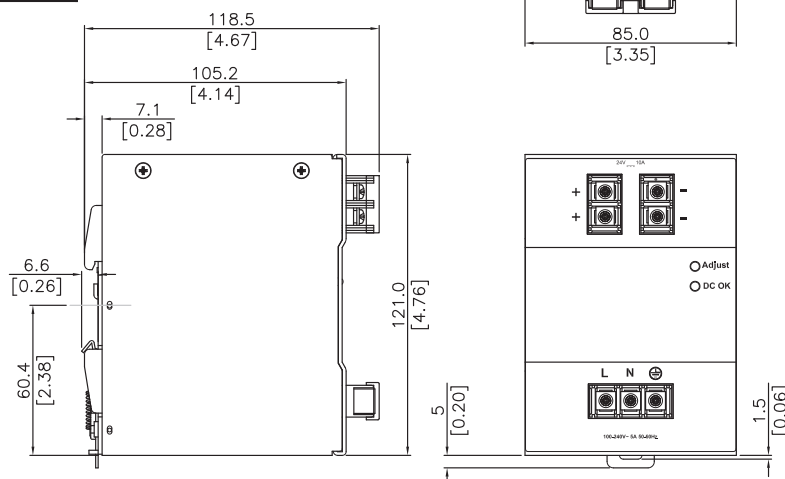
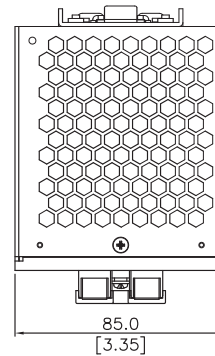
PSB24-060-P

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



PSB24-240

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

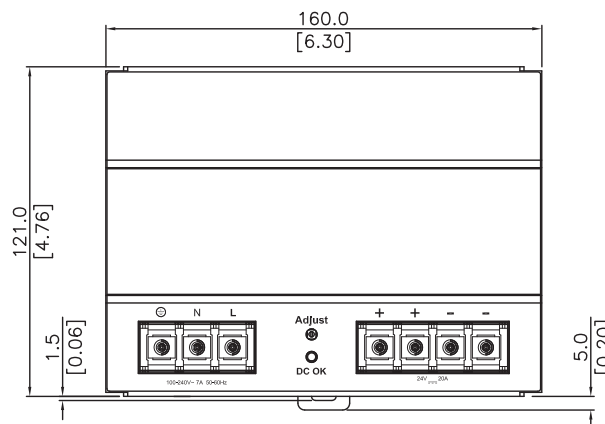
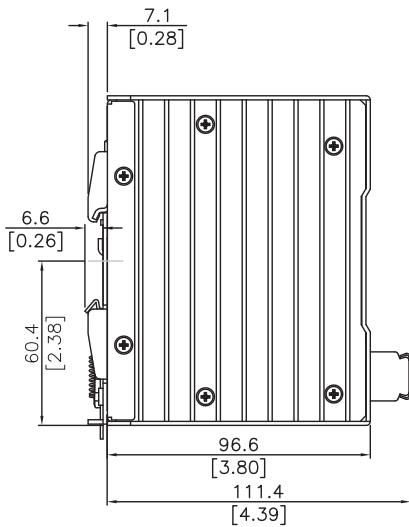
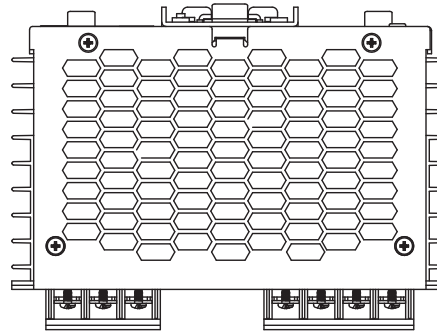


All dimensions in mm [inches]

RHINO PSB Series DIN rail Power Supply Dimensions

PSB24-480

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



All dimensions in mm [inches]



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Three-Phase PSB Series Units

AutomationDirect's RHINO PSB series of DINrail 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 480 Watts. The rugged aluminum housings easily install with integral 35mm DINrail mounting adapters. These high-quality power supplies have a 3-year warranty, 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 3-year warranty.



| PSB Three-Phase Series Input Specifications | | | | | | | | | | | |
|---|-------|-------------------|----------|---|------------------------------|------------------------|--|-----------------|---|--|--------------|
| Part No. | Price | Weight | Housing | Input Voltage | Input Frequency Range | Nominal Current | Inrush Current Limitation I^2t @ 77°F (+25°C) typ. | Leakage Current | Recommended Circuit Breaker* | Mains Buffering at Nominal Load (Typ.) | Turn-on Time |
| PSB24-060-3 | <--> | 0.56kg (1.23 lb) | Aluminum | 320 to 575 VAC (DC input range 450 to 800 VDC), Nominal 3 x 400-500 VAC | 47 - 63 Hz (0 Hz @ DC Input) | 0.3A @ 400 VAC approx. | <30A @ 400 VAC | <3.5mA | 3 x circuit breakers 16A | >30ms @ 3 x 400 VAC, >60ms @ 3 x 500 VAC | <2 sec. |
| PSB24-120-3 | <--> | 0.72kg (1.59 lb) | Aluminum | | | 0.5A @ 400 VAC approx. | | | | >35ms @ 3 x 400 VAC, >70ms @ 3 x 500 VAC | |
| PSB24-240-3 | <--> | 0.99 kg (2.18 lb) | Aluminum | | | 0.8A @ 400 VAC approx. | <40A @ 400 VAC | | >35ms @ 3 x 400 VAC, >60ms @ 3 x 500 VAC | <1 sec. | |
| PSB24-480-3 | <--> | 1.71 kg (3.77 lb) | Aluminum | | | 1.6A @ 400 VAC approx. | <50A @ 400 VAC | | >25ms @ 3 x 400 VAC, >50 ms @ 3 x 500 VAC | | |

*Characteristic B

| PSB Three-Phase Series Output Specifications | | | | | | | | | |
|--|--|--------------|----------------|---------------------------------|-------------------------------|--------------------------------|---|--|---------------|
| Part No. | Output Voltage (Vnom) / Adjustment Range | Output Power | Output Current | PARD (ripple and noise) (20MHz) | Startup with Capacitive Loads | Derating above +50°C (122°F) | Max Power Dissipation Idling / Nominal Load Approx. | Efficiency (at 400 VAC and Nominal Values) | MTBF |
| PSB24-060-3 | 24 VDC ±2% / 22-28 VDC (≤60W) | 60 Watt | 2.5A | <50mV / <240 mVpp | Max 10,000 µF | 2.5%/°C | 9 Watts | 86% min @ 3x400 VAC 85% min @ 3x500 VAC | >500,000 hrs. |
| PSB24-120-3 | 24 VDC ±2% / 22-28 VDC (≤120W) | 120 Watt | 5A | | | | 18 Watts | | |
| PSB24-240-3 | 24 VDC ±2% / 22-28 VDC (≤240W) | 240 Watt | 10A | | | 2.5%/°C. (>70°C [158°F] 4%/°C) | 36 Watts | 87% min @ 3x400 VAC 86% min @ 3x500 VAC | >300,000 hrs. |
| PSB24-480-3 | 24 VDC ±2% / 22-28 VDC (≤480W) | 480 Watt | 20A | | | 2.5%/°C | 72 Watts | 86% min @ 3x400 VAC 85% min @ 3x500 VAC | |

| PSB Three-Phase Series General Specifications | |
|---|---|
| Output Line Regulation | <0.5% typical (@ 320-575 VAC input, 100% load) |
| Output Load Regulation | <1% typical (@ 320-575 VAC input, 0-100% load) |
| Parallel Operation | With decoupling diode |
| Case Cover | Aluminium (Al5052) |
| Signals | Green LED DC OK |
| Humidity at +25°C (77°F), no condensation | <95% RH |
| Shock | 30g half sign, 3 times per direction, 6 directions, per IEC60068-2-27 |
| Vibration (Non-operating) | 10 to 150Hz, 5 g, 90 min. each axis per IEC60068-2-6 |
| Pollution Degree | 2 |
| Climatic Class | 3K3 according to EN 60721 |

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PSB Three-Phase Series Certification and Standards

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| Electrical Equipment of Machines | IEC60204-1 (over voltage category III) |
| Electronic Equipment for use in Electrical Power Installations | EN 50178 / IEC62103 |
| Safety Entry Low Voltage | PELV (EN 60204), SELV (EN 60950) |
| Electrical Safety (of information technology equipment) | UL/C-UL recognized to UL60950-1(#E198298), CSA C22.2 No.60950-1 (#249074), CB scheme to IEC60950-1 |
| Industrial Control Equipment | UL listed to UL508 (#E197592), CSA to CSA107.1-01 (#249074) |
| Protection Against Electric Shock | DIN 57100-410 |
| CE | In conformance with EMC directive 2004/108/EC and low voltage directive 2006/95/EC |
| EMC for ITE | EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024 |
| EMC for Industrial | EN 55011 |
| Limitation of Mains Harmonic Currents | EN 61000-3-2 |

PSB Three-Phase Series Safety and Protection

| | |
|---|--|
| Transient Surge Voltage Protection | VARISTOR |
| Current limitation at Short-Circuits Approx. | I _{surge} = 150 % of P _{max} typically |
| Surge Voltage Protection Against Internal Surge Voltages | Yes |
| 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 | IPX0 |
| Safety Class | Class I with GND connection |

Additional Data

| Part No. | Dimensions (L x W x H) | Wire Size / Torque* | Ambient Operating Temperature | Storage Temperature |
|--------------------|---|---|---|---------------------------------|
| PSB24-060-3 | 121 mm x 70 mm x 118.5 mm (4.76 in x 2.76 in x 4.67 in) | 0.82-2.1mm ² (AWG 18-14) / 1.18-1.57 Nm (10.41-13.89 lb-in) | -20°C to +75°C (>50°C [122°F] derating) [-4°F to 167°F] | -25°C to +85°C (-13°F to 185°F) |
| PSB24-120-3 | | 0.82-8.4mm ² (AWG 18-8) / 1.18-1.57 Nm (10.41-13.89 lb-in) | | |
| PSB24-240-3 | 121 mm x 85 mm x 120.5 mm (4.76 in x 3.35 in x 4.74 in) | | | |
| PSB24-480-3 | 121 mm x 160 mm x 115 mm (4.76 in x 6.3 in x 4.53 in) | Input - 0.82-2.1mm ² (AWG 18-14) / 1.18-1.57 Nm (10.41-13.89 lb-in) Output - 3.3 - 5.3mm ² (AWG12-10) / 1.18-1.57 Nm (10.41-13.89 lb-in) | | |

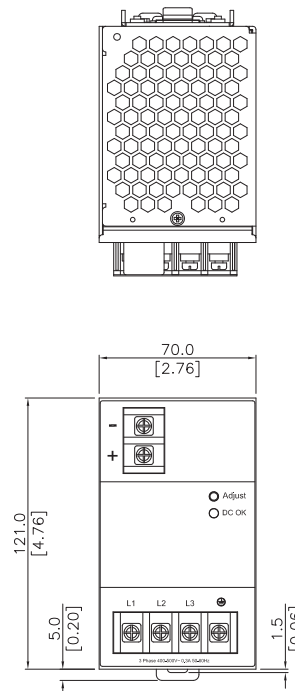
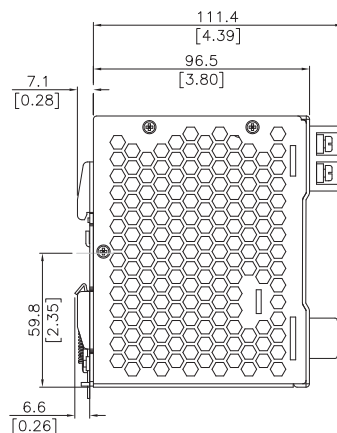
*Stripping length 7 mm (0.28 in) or use suitable lug to crimp

Dimensions

All dimensions in mm [inches]

PSB24-060-3
PSB24-120-3

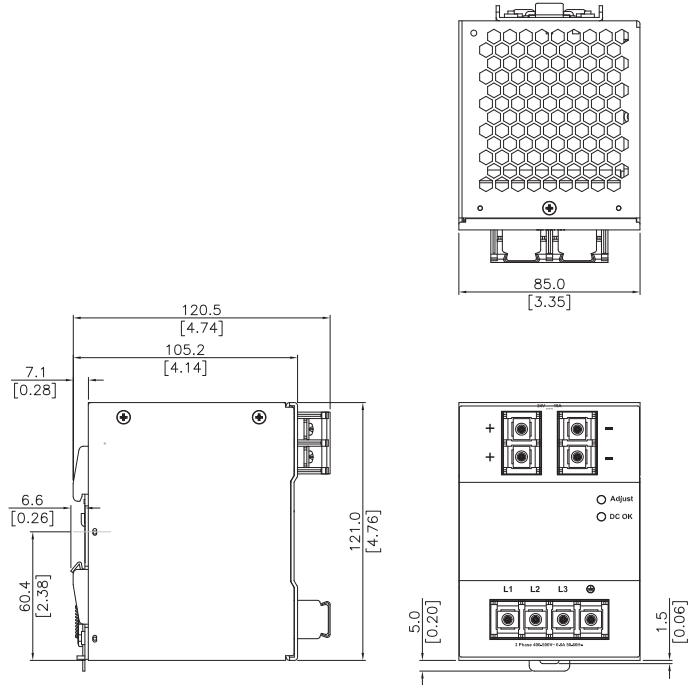
| Wiring Connection | | | |
|-------------------|-----------|--------|-------|
| Input | | Output | |
| L1 | Line 1 | -V | Out - |
| L2 | Line 2 | +V | Out + |
| L3 | Line 3 | | |
| ⊥ | AC Ground | | |



RHINO PSB Series DIN rail Power Supply Dimensions

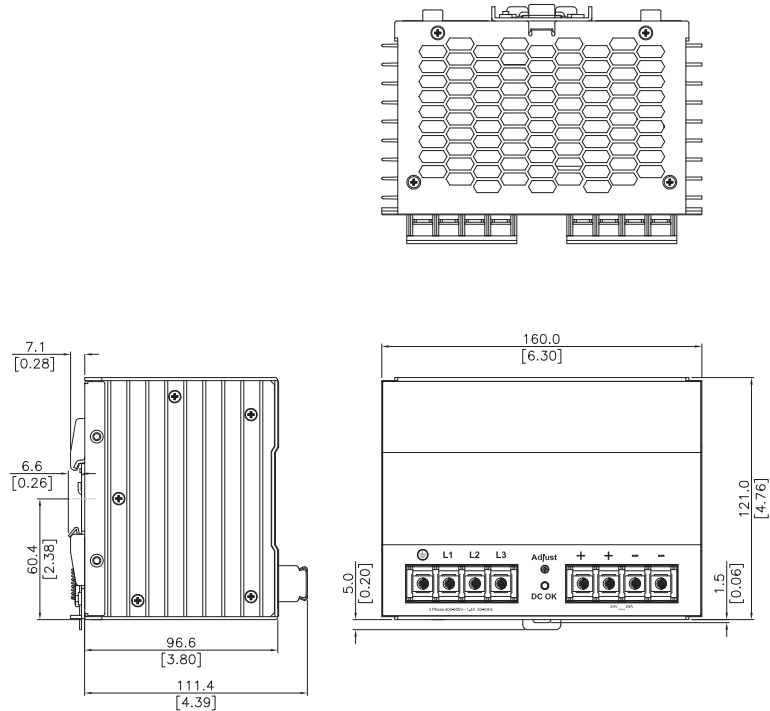
PSB24-240-3

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



PSB24-480-3

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



All dimensions in mm [inches]

PSB Power Supply Accessories

| PSB Series Power Supply Accessories | | |
|-------------------------------------|-------|---|
| Part No. | Price | Description |
| PSB-CVR | <---> | Universal replacement terminal cover kit for all RHINO PSB series power supplies. Universal kit includes (9) terminal covers to replace all terminal covers on any PSB power supply model |

