



# Switching Power Supplies

## PSRP Series

### Overview

AutomationDirect's RHINO PRO PSRP series switching power supplies are designed for industrial applications inside a control cabinet. The PSRP series offers a sleek and space-saving design with push connectors in a rugged housing.

### Features

- High efficiency
- Power Boost to start difficult loads with additional power reserve
- Hyper Boost for 20ms
- Compact, space-saving footprint
- Integral 35mm DIN rail mounting
- Integrated device protection
- Quickly connect with push-in spring clamp
- DC OK alarm contact for remote monitoring
- Internal isolating transformer with reinforced insulation



**PSRP-24-120**



**PSRP-24-480-3**

| Switching Power Supplies      |          |                |                |              |                     |
|-------------------------------|----------|----------------|----------------|--------------|---------------------|
| Part Number                   | Price    | Output Voltage | Output Current | Output Power | Drawing Link        |
| Single-Phase                  |          |                |                |              |                     |
| <a href="#">PSRP-12-120</a>   | \$205.00 | 12-15 VDC      | 10A            | 120W         | <a href="#">PDF</a> |
| <a href="#">PSRP-24-120</a>   | \$156.00 | 24-28 VDC      | 5A             | 120W         | <a href="#">PDF</a> |
| <a href="#">PSRP-24-240</a>   | \$209.00 |                | 10A            | 240W         | <a href="#">PDF</a> |
| <a href="#">PSRP-24-480</a>   | \$305.00 |                | 20A            | 480W         | <a href="#">PDF</a> |
| Three-Phase                   |          |                |                |              |                     |
| <a href="#">PSRP-24-120-3</a> | \$173.00 | 24-28 VDC      | 5A             | 120W         | <a href="#">PDF</a> |
| <a href="#">PSRP-24-240-3</a> | \$194.00 |                | 10A            | 240W         | <a href="#">PDF</a> |
| <a href="#">PSRP-24-480-3</a> | \$352.00 |                | 20A            | 480W         | <a href="#">PDF</a> |
| <a href="#">PSRP-24-960-3</a> | \$478.00 |                | 40A            | 960W         | <a href="#">PDF</a> |



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| Input Specifications                 |                                    |                                        |                   |                                               |                                          |                                                |                                          |                                  |                      |                                          |
|--------------------------------------|------------------------------------|----------------------------------------|-------------------|-----------------------------------------------|------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------|----------------------|------------------------------------------|
| Part Number                          | Nominal Voltage                    | Input Voltage Range                    | Nominal Frequency | Nominal Input Current                         | Max. Inrush Current (after 1ms)          | Nominal Watts                                  | Efficiency [Typ.]                        | Circuit Breaker                  |                      |                                          |
| Single-Phase                         |                                    |                                        |                   |                                               |                                          |                                                |                                          |                                  |                      |                                          |
| <a href="#"><u>PSRP-12-120</u></a>   | 100-240 VAC<br>100-230 VDC         | 85-265 VAC<br>90-250 VDC               | 50/60 Hz<br>±6 %  | 1.3 A @ 100VAC/VDC<br>0.6 A @ 240VAC/VDC      | 6A                                       | 0.88 kW @ 230VAC                               | 91.6% @ 115VAC<br>93.1% @ 230VAC         | C4                               |                      |                                          |
| <a href="#"><u>PSRP-24-120</u></a>   |                                    |                                        |                   |                                               |                                          | 0.87 kW @ 230VAC                               | 92.8% @ 115VAC<br>94.3% @ 230VAC         |                                  |                      |                                          |
| <a href="#"><u>PSRP-24-240</u></a>   |                                    |                                        |                   |                                               |                                          | 0.95 kW @ 230VAC                               | 93.4% @ 115VAC<br>94.4% @ 230VAC         |                                  |                      |                                          |
| <a href="#"><u>PSRP-24-480</u></a>   |                                    | 90-265 VAC<br>90-250 VDC               |                   |                                               | 5.3 A @ 100VAC/VDC<br>2.3 A @ 240VAC/VDC | 26A                                            | 0.96 kW @ 230VAC                         | 93.4% @ 115VAC<br>94.6% @ 230VAC | C6, B10              |                                          |
| Three-Phase                          |                                    |                                        |                   |                                               |                                          |                                                |                                          |                                  |                      |                                          |
| <a href="#"><u>PSRP-24-120-3</u></a> | (3) 360-500 VAC<br>(3) 208-288 VAC | (3) 324 - 572 VAC<br>(3) 187 - 330 VAC | 50/60 Hz<br>±6 %  | 0.45 A @ (3 x 360VAC)<br>0.30A @ (3 x 500VAC) | 9.5 A (3 x 500VAC)                       | 0.61 kW (3 x 400VAC)                           | 92.5% @ 3 x 400VAC<br>91.8% @ 3 x 480VAC | C4                               |                      |                                          |
| <a href="#"><u>PSRP-24-240-3</u></a> |                                    |                                        |                   |                                               |                                          | 0.75 A @ (3 x 360VAC)<br>0.55 A @ (3 x 500VAC) | 9A (3 x 500VAC)                          |                                  | 0.66 kW (3 x 500VAC) | 93.7% @ 3 x 400VAC<br>93.2% @ 3 x 480VAC |
| <a href="#"><u>PSRP-24-480-3</u></a> |                                    |                                        |                   |                                               |                                          | 1.3 A @ (3 x 360VAC)<br>1.0 A @ (3 x 500VAC)   | 13A (3 x 500VAC)                         |                                  | 0.65 kW (3 x 500VAC) | 94.8% @ 3 x 400VAC<br>94.5% @ 3 x 480VAC |
| <a href="#"><u>PSRP-24-960-3</u></a> |                                    |                                        |                   |                                               |                                          | 2.3 A @ (3 x 360VAC)<br>1.6 A @ (3 x 500VAC)   | 14A (3 x 500VAC)                         |                                  | 0.88 kW (3 x 500VAC) | 93.7% @ 3 x 400VAC<br>93.5% @ 3 x 480VAC |

| Output Specifications                |                                 |                               |                                               |                              |                                   |                                     |               |
|--------------------------------------|---------------------------------|-------------------------------|-----------------------------------------------|------------------------------|-----------------------------------|-------------------------------------|---------------|
| Part Number                          | Output Voltage Adjustable Range | Output Current                | Output Current Power Boost                    | Output Current Hyper Boost   | Output Hold Up Time (Min.)        | Parallel Usage/ Serial Usage (Max.) | MTBF (@ 40°C) |
| Single-Phase                         |                                 |                               |                                               |                              |                                   |                                     |               |
| <a href="#"><u>PSRP-12-120</u></a>   | 12-15 VDC                       | 10A @ 12VDC<br>8A @ 15VDC     | 150% for min.<br>4s without voltage variation | 350% for min.<br>20ms @ 60°C | 30ms @ 100VAC<br>10A @ 12VDC      | 5 / 2                               | > 900,000h    |
| <a href="#"><u>PSRP-24-120</u></a>   | 24-28 VDC                       | 5A @ 24VDC<br>4.25 A @ 28VDC  |                                               | 30ms @ 100VAC<br>5A @ 24VDC  | > 900,000h                        |                                     |               |
| <a href="#"><u>PSRP-24-240</u></a>   |                                 | 10A @ 24VDC<br>8.5 A @ 28VDC  |                                               | 450% for min.<br>20ms @ 60°C | 30ms @ 100VAC<br>10A @ 24VDC      |                                     | > 800,000h    |
| <a href="#"><u>PSRP-24-480</u></a>   |                                 | 20A @ 24VDC<br>17A @ 28VDC    |                                               | 200% for min.<br>20ms @ 60°C | 30ms @ 100VAC<br>20A @ 24VDC      |                                     | > 800,000h    |
| Three-Phase                          |                                 |                               |                                               |                              |                                   |                                     |               |
| <a href="#"><u>PSRP-24-120-3</u></a> | 24-28 VDC                       | 5A @ 24VDC<br>4.3A @ 28VDC    | 7.5 A @ 24VDC > 5s                            | 30A/20ms                     | 25ms (3 x 360VAC)<br>5A @ 24VDC   | 3                                   | > 1,000,000h  |
| <a href="#"><u>PSRP-24-240-3</u></a> |                                 | 10A @ 24VDC<br>8.6 A at 28VDC | 15A @ 24VDC > 5s                              | 35A/20ms                     | 45ms (3 x 500VAC )<br>10A @ 24VDC |                                     | > 1,000,000h  |
| <a href="#"><u>PSRP-24-480-3</u></a> |                                 | 20A @ 24VDC<br>17.2 A @ 28VDC | 30A @ 24VDC > 5s                              | 60A/20ms                     | 40ms (3 x 500VAC)                 |                                     | > 900,000h    |
| <a href="#"><u>PSRP-24-960-3</u></a> |                                 | 40A @ 24VDC<br>34A @ 28VDC    | 60A @ 24VDC > 5s                              | 100A/20ms                    | 40ms (3 x 500VAC)                 |                                     | > 700,000h    |



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| General Specifications   |           |                                                                      |                               |             |             |                                                            |               |                                                            |                                                          |
|--------------------------|-----------|----------------------------------------------------------------------|-------------------------------|-------------|-------------|------------------------------------------------------------|---------------|------------------------------------------------------------|----------------------------------------------------------|
| Part Number              |           | PSRP-12-120                                                          | PSRP-24-120                   | PSRP-24-240 | PSRP-24-480 | PSRP-24-120-3                                              | PSRP-24-240-3 | PSRP-24-480-3                                              | PSRP-24-960-3                                            |
| Temperature              | Operating | -25 to 60°C<br>[-13 to 140 °F]                                       | -40 to 60°C<br>[-40 to 140°F] |             |             | -40 to 70°C<br>[-40 to 158 °F]                             |               |                                                            | -40 to 60°C<br>[-40 to 140°F]                            |
|                          | Storage   | -40 to 85°C<br>[-40 to 185°F]                                        |                               |             |             |                                                            |               |                                                            |                                                          |
| Humidity                 |           | 5 to 95%, no condensing                                              |                               |             |             |                                                            |               |                                                            |                                                          |
| Line Regulation          |           | < 1mV                                                                |                               |             |             | 10mV                                                       |               |                                                            |                                                          |
| Load Regulation          |           | 200mV                                                                | 220mV                         | 210mV       | 180mV       | Parallel mode on: 1000mV<br>Parallel mode off: 100mV       |               |                                                            |                                                          |
| Start-up Time (typ)      |           | < 400ms @ U <sub>Input</sub> 100-230 VAC                             |                               |             |             | < 400ms                                                    |               |                                                            | < 600ms                                                  |
| Short Circuit Protection |           | Yes                                                                  |                               |             |             |                                                            |               |                                                            |                                                          |
| Leakage Current          |           | 0.3 mA                                                               |                               | 0.78 mA     | 2mA         | (3 x 360VAC / 50Hz) 0.22 mA<br>(3 x 500VAC / 60Hz) 0.34 mA |               | (3 x 360VAC / 50Hz) 1.15 mA<br>(3 x 500VAC / 60Hz) 1.77 mA | (3 x 360VAC / 50Hz) 1.7 mA<br>(3 x 500VAC / 60Hz) 2.1 mA |
| Overload Protection      |           | Yes                                                                  |                               |             |             |                                                            |               |                                                            |                                                          |
| Overvoltage Shutdown     |           | —                                                                    |                               |             |             | 31VDC max.                                                 |               |                                                            |                                                          |
| Status Indicators        |           | LED (green): OK<br>LED (red): overload, overheating or short-circuit |                               |             |             |                                                            |               |                                                            |                                                          |
| Ripple                   |           | < 50 mVrms                                                           | < 50 mVeff                    | < 50 mVrms  | < 50 mVeff  | < 20 mVrms                                                 |               |                                                            |                                                          |
| Spikes                   |           | < 200 mVp-p                                                          | < 200 mVss                    | < 200 mVp-p | < 200 mVss  | -                                                          |               |                                                            |                                                          |
| Vibration                |           | IEC 60068-2-6 ; 5-17.8 Hz: 1.6mm 17.8 - 500 Hz: 2.3 g                |                               |             |             | IEC 60068-2-6; 5-17.8 Hz: 1.6mm 17.8 - 500Hz: 2g           |               |                                                            | IEC 60068-2-6<br>2-17.8 Hz: 7.84 mm<br>17.8-500 Hz: 5g   |
| Shock                    |           | IEC 60068-2-27 [30g / 11ms]                                          |                               |             |             | IEC 60068-2-27 [50g / 6ms]                                 |               | IEC 60068-2-27<br>[30g / 6ms]                              | IEC 60068-2-27<br>50g sinusoidal 8ms                     |
| Protection Rating        |           | IP20                                                                 |                               |             |             |                                                            |               |                                                            |                                                          |
| Mounting                 |           | 35mm DIN rail (horizontal only)                                      |                               |             |             |                                                            |               |                                                            |                                                          |
| Housing Material         |           | Aluminum (enclosed)                                                  |                               |             |             |                                                            |               |                                                            |                                                          |
| Connection               |           | Push-in spring clamp terminals                                       |                               |             |             |                                                            |               |                                                            |                                                          |
| Weight kg [lb]           |           | 0.66 [1.45]                                                          | 0.66 [1.45]                   | 0.85 [1.87] | 1.26 [2.77] | 0.65 [1.43]                                                | 0.78 [1.71]   | 1.25 [2.75]                                                | 2.70 [5.95]                                              |
| Agency Approval          |           | UL 508 File E197592, CE                                              |                               |             |             |                                                            |               |                                                            |                                                          |

| Additional Data               |                                        |                                        |
|-------------------------------|----------------------------------------|----------------------------------------|
| Part Number                   | Solid Wire Size*                       |                                        |
|                               | Output                                 | Input                                  |
| <a href="#">PSRP-12-120</a>   | 1.5 - 4 mm <sup>2</sup> [16 - 12 AWG]  | 0.75 - 4 mm <sup>2</sup> [18 - 12 AWG] |
| <a href="#">PSRP-24-120</a>   | 0.75 - 4 mm <sup>2</sup> [18 - 12 AWG] |                                        |
| <a href="#">PSRP-24-240</a>   | 1.5 - 10 mm <sup>2</sup> [16 - 8 AWG]  |                                        |
| <a href="#">PSRP-24-480</a>   | 4 - 10 mm <sup>2</sup> [12 - 8 AWG]    |                                        |
| <a href="#">PSRP-24-120-3</a> | 0.2 - 4 mm <sup>2</sup> [24 - 12 AWG]  | 0.2 - 10 mm <sup>2</sup> [24 - 8 AWG]  |
| <a href="#">PSRP-24-240-3</a> | 0.2 - 10 mm <sup>2</sup> [24 - 8 AWG]  | 0.2 - 10 mm <sup>2</sup> [24 - 8 AWG]  |
| <a href="#">PSRP-24-480-3</a> | 0.2 - 10 mm <sup>2</sup> [24 - 8 AWG]  | 0.2 - 10 mm <sup>2</sup> [24 - 8 AWG]  |
| <a href="#">PSRP-24-960-3</a> | 0.75 - 16 mm <sup>2</sup> [18 - 6 AWG] | 0.2 - 10 mm <sup>2</sup> [24 - 8 AWG]  |

\* For other types of wire please see the insert.