

# RHINO PSP Series DC to DC Converters

Both 25W and 60W DC-DC converters are available in the Rhino PSP DIN rail series. Wide input ranges of 9.5 to 18VDC and 18 to 75VDC allow these models to operate from all popular DC supply voltage systems. With tightly regulated output voltage these DC-DC converters provide a reliable power source for sensitive loads in industrial process controls, factory automation and other equipment exposed to a critical industrial environment. They can be used to isolate a specific load from the 24 volt bus voltage, and offer easy installation with snap-on DIN rail mounting and detachable screw terminal blocks.



PSP 25 Watt DC-DC Converters

## Features

- Ultra-wide input voltage range
- Output voltage adjustable
- Overload and short circuit protection
- Low ripple and noise
- I/O-isolation 1500 VDC
- Compact, slim plastic case
- Reliable snap-on 35mm DIN rail mount
- Wall-mount bracket included
- 3-year warranty



PSP 60 Watt DC-DC Converters



| PSP Series DC-DC Converters |   |  |  |                    |              |         |              |
|-----------------------------|---|--|--|--------------------|--------------|---------|--------------|
| Part Number                 | Input Voltage Range                           | Input Current Max. @ Vin, (Iout = 0% / 100%) | Output Voltage (Adjustable)                  | Output Current Max | Output Power | Price   | Weight (lbs) |
| PSP24-DC12-1                | 9.5 - 18.0 VDC                                | 80mA / 2.5 A @ 12VDC                         | 24VDC  | 1A                 | 25W          | \$78.00 | 0.31         |
| PSP05-DC24-5                | 18.0 - 75.0 VDC                               | 80mA / 1.3 A @ 24VDC<br>60mA / 0.7 A @ 48VDC | 5VDC   | 5A                 |              | \$79.00 | 0.31         |
| PSP12-DC24-2                |   |  | 12VDC  | 2A                 |              | \$79.00 | 0.31         |
| PSP24-DC24-1                |   |  | 24VDC  | 1A                 |              | \$75.00 | 0.31         |
| PSP12-DC24-5                |   |  | 31mA / 2.9 A @ 24VDC<br>19mA / 1.4 A @ 48VDC | 12VDC              | 5A           | 60W     | \$92.00      |
| PSP24-DC24-2                | 45mA / 3.1 A @ 24VDC<br>25mA / 1.54 A @ 48VDC | 24VDC  | 2.5 A  | \$95.00            | 0.59         |         |              |

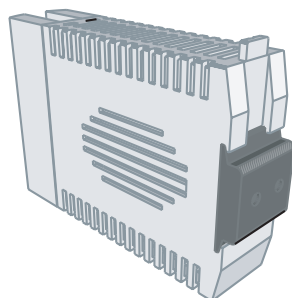
# RHINO PSP Series DC to DC Converters

| General Specifications   |   |
|--|---|
| <b>Startup Voltage / Undervoltage Shut-down</b>                        | 17.2 VDC / 15.7 VDC (PSP24-DC12-1: 8.4 VDC / 7.6 VDC)   |
| <b>Efficiency (Typical)</b>  | 86%   |
| <b>Output Voltage Adjustable Range</b>                                 | 5VDC model: 5.0 - 5.25 VDC<br>12VDC models: 12.0 - 15.0 VDC<br>24VDC models: 24.0 - 28.0 VDC  |
| <b>Oversvoltage Protection, Trigger Point</b>                          | 5VDC model: <6.5 V<br>12VDC models: <24V<br>24VDC models: <42V  |
| <b>Output Voltage Regulation*</b>                                      | 0.5% max  |
| <b>Ripple/Noise (20MHz bandwidth)</b>                                  | <50mV (pk-pk)   |
| <b>Temperature: Operating<br/>Storage (non-operating)<br/>Derating</b> | -25°C to 70°C max (-13°F to 158°F max)<br>-25°C to 85°C max, (-13°F to 185°F max)<br>1.5%/K above 50°C (122°F) for 25W models, 2%/K above 40°C (104°F) for 60W models |
| <b>Humidity (Non-condensing)</b>                                       | 95 % relative humidity max.   |
| <b>Temperature Coefficient</b>   | 0.02%/K   |
| <b>Switching Frequency</b>   | 55 – 180kHz depending on load (frequency modulation)  |
| <b>Isolation Voltage (1 min.) – Input/Output</b>                       | 1500VDC   |
| <b>Safety Standards</b>  | IEC 60950-1, EN 60950-1 (output SELV), UL 60950-1, EN 60204, CSA 22.2 60950-1-07, EN50178, UL 508   |
| <b>Electromagnetic Compatibility (EMC)</b>                             | Emissions: EN 61000-6-3; Immunity: EN 61000-6-2   |
| <b>Parallel Operation</b>  | No parallel operation   |
| <b>Safety Class</b>  | Degree of protection class 1  |
| <b>Environmental Air</b>   | No corrosive gases permitted  |
| <b>Enclosure Rating</b>  | IP 20 (IEC 60529)   |
| <b>Enclosure Material</b>  | Plastic FR2010-110C (UL 94V-0 rated)  |
| <b>Mounting</b>  | DIN rails per EN 50022-35x15/7.5 (snap-on with self-locking spring); bracket for wall/chassis mount included  |
| <b>Mounting Orientation</b>  | Vertical only   |
| <b>Wiring</b>  | 12-24 AWG (3.16-0.21 mm <sup>2</sup> )  |
| <b>Connections</b>   | Screw type plug-in connector (standard), Recommended tightening torque 0.5-0.7 Nm (4.5-6.2 in-lb)   |
| <b>Short Circuit Protection</b>  | Current limited at 110% typical   |
| <b>MTBF (IEC 61709 @ 25° C)</b>  | >2.5 million hours  |
| <b>Agency Approvals**</b>  | UL/cUL 508 listed, File E197592; CSA File 229285; CE; Reach; RoHS   |

\* Input variation  $V_{in}$  min to  $V_{in}$  max and load variation 0 to 100%

\*\* To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at [www.automationdirect.com](http://www.automationdirect.com)

Note: All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.



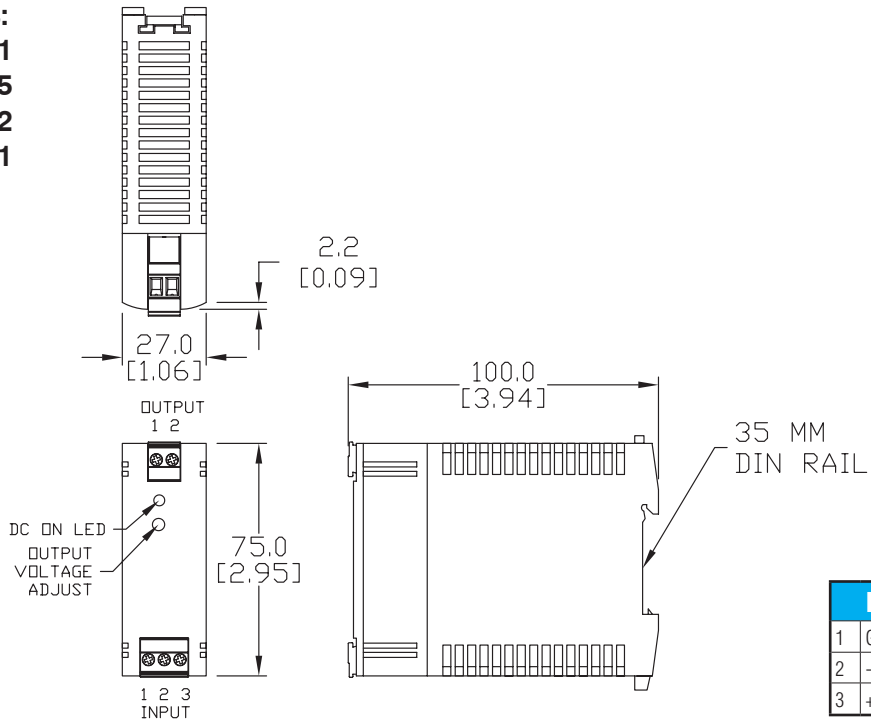
The unit can be mounted on a chassis or wall using the included mounting bracket.

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## Dimensions

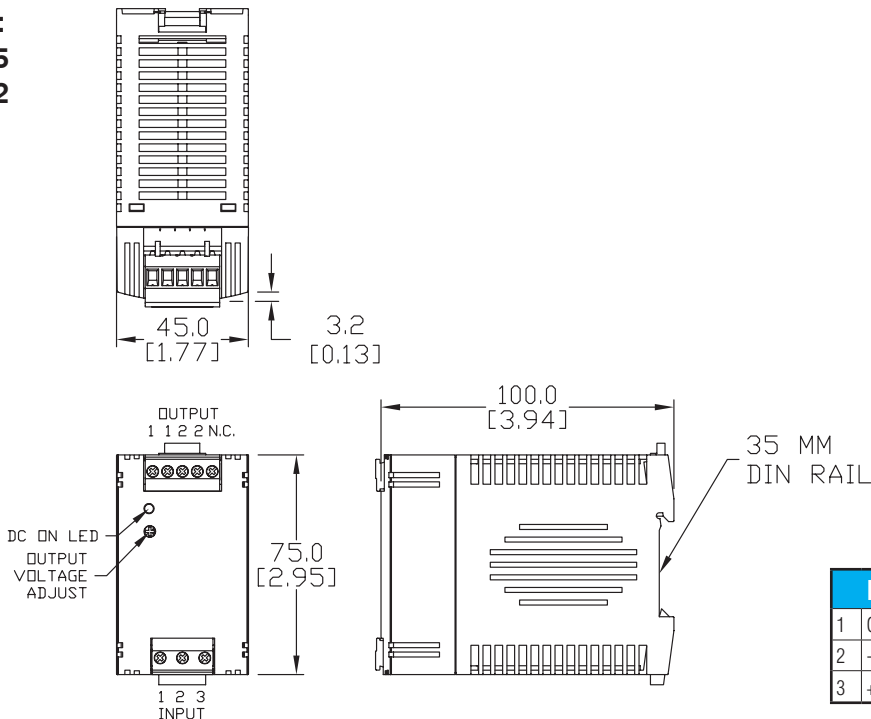
mm [inches]

**Part Numbers:**  
**PSP24-DC12-1**  
**PSP05-DC24-5**  
**PSP12-DC24-2**  
**PSP24-DC24-1**



| Input |        | Output |       |
|-------|--------|--------|-------|
| 1     | Ground | 1      | +Vout |
| 2     | -Vin   | 2      | -Vout |
| 3     | +Vin   |        |       |

**Part Numbers:**  
**PSP12-DC24-5**  
**PSP24-DC24-2**



| Input |        | Output |            |
|-------|--------|--------|------------|
| 1     | Ground | 1      | +Vout      |
| 2     | -Vin   | 2      | -Vout      |
| 3     | +Vin   | NC     | No Connect |

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