



# Encapsulated Power Supplies PSE-S Series

**PSE15-110-S****PSE15-150-S**

## Overview

The RHINO PSE-S series offers 10-, 20-, 25-, and 50-watt AC/DC power supplies with an extended input range of 90-277 VAC. The power supplies are suitable for industrial, household, and building technology applications and are in a compact encapsulated plastic case.

## Features

- Wide input voltage range 90-277 VAC
- High efficiency up to 89%
- Compact chassis
- I/O-Isolation 4,000 VAC
- Plastic housing
- Wide operating temperature -40 to 70°C (-40°C cold start) [-40 to 158°F]
- Optional DIN rail mounting kit
- 3-year warranty

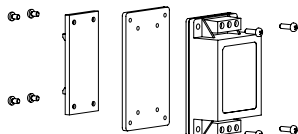
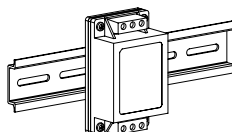


### Encapsulated Power Supplies Selection Table PSE-S Series

| Part Number                 | Price   | Output Power (max.) | Nominal Output Voltage | Nominal Input Voltage | Nominal Output Amperage | Efficiency @ 115VAC | Weight         | Dimensions W x H x D mm [in]            | Drawing Link        |
|-----------------------------|---------|---------------------|------------------------|-----------------------|-------------------------|---------------------|----------------|-----------------------------------------|---------------------|
| <a href="#">PSE05-110-S</a> | \$22.50 | 10W                 | 5VDC                   | 120/240 VAC           | 2A                      | 81%                 | 65g [2.29 oz]  | 55.1 x 43.2 x 22.9 [2.17 x 1.70 x 0.90] | <a href="#">PDF</a> |
| <a href="#">PSE12-110-S</a> | \$22.50 |                     | 12VDC                  |                       | 0.8 A                   | 85%                 |                |                                         | <a href="#">PDF</a> |
| <a href="#">PSE15-110-S</a> | \$22.50 |                     | 15VDC                  |                       | 0.6 A                   | 86%                 |                |                                         | <a href="#">PDF</a> |
| <a href="#">PSE24-110-S</a> | \$21.50 |                     | 24VDC                  |                       | 0.4 A                   | 86%                 |                |                                         | <a href="#">PDF</a> |
| <a href="#">PSE05-125-S</a> | \$31.00 | 20W                 | 5VDC                   |                       | 3.9 A                   | 84%                 | 100g [3.52 oz] | 88.4 x 38.1 x 24.1 [3.48 x 1.50 x 0.95] | <a href="#">PDF</a> |
| <a href="#">PSE12-125-S</a> | \$31.00 |                     | 12VDC                  |                       | 2.1 A                   | 88%                 |                |                                         | <a href="#">PDF</a> |
| <a href="#">PSE15-125-S</a> | \$31.00 |                     | 15VDC                  |                       | 1.6 A                   | 88%                 |                |                                         | <a href="#">PDF</a> |
| <a href="#">PSE24-125-S</a> | \$29.50 |                     | 24VDC                  |                       | 1A                      | 87%                 |                |                                         | <a href="#">PDF</a> |
| <a href="#">PSE12-150-S</a> | \$42.00 | 50W                 | 12VDC                  |                       | 4.1 A                   | 89%                 | 180g [6.34 oz] | 97 x 48.3 x 25.4 [3.82 x 1.90 x 1]      | <a href="#">PDF</a> |
| <a href="#">PSE15-150-S</a> | \$42.00 |                     | 15VDC                  |                       | 3.3 A                   | 88%                 |                |                                         | <a href="#">PDF</a> |
| <a href="#">PSE24-150-S</a> | \$42.00 |                     | 24VDC                  |                       | 2.1 A                   | 88%                 |                |                                         | <a href="#">PDF</a> |

### Optional DIN Rail Mounting Brackets PSE-S Series

| Part Number                 | Price  | Description                                                                                                                           | Weight        | Drawing Link        |
|-----------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|
| <a href="#">PSE-BRKT-10</a> | \$7.50 | RHINO DIN rail mounting bracket, aluminum. For use with 10W PSE-S series encapsulated power supplies. Mounting hardware included.     | 34g [1.19 oz] | <a href="#">PDF</a> |
| <a href="#">PSE-BRKT-25</a> | \$7.50 | RHINO DIN rail mounting bracket, aluminum. For use with 20W-25W PSE-S series encapsulated power supplies. Mounting hardware included. | 39g [1.37 oz] | <a href="#">PDF</a> |
| <a href="#">PSE-BRKT-50</a> | \$7.50 | RHINO DIN rail mounting bracket, aluminum. For use with 50W PSE-S series encapsulated power supplies. Mounting hardware included.     | 46g [1.62 oz] | <a href="#">PDF</a> |

**PSE-BRKT-25**



# Encapsulated Power Supplies

## PSE-S Series

### Input Specifications

| Input Specifications PSE-S Series  |                                              |                                            |                                          |                              |                        |
|------------------------------------|----------------------------------------------|--------------------------------------------|------------------------------------------|------------------------------|------------------------|
| Part Number                        | Input Voltage                                | Input Current<br>(Full Load And Vin)       | Power Consumption<br>(No Load And Vin)   | Input Inrush<br>Current      | Recommended Input Fuse |
| <a href="#"><u>PSE05-110-S</u></a> | 100-277 VAC<br>(47-60 Hz)<br><br>100-250 VDC | 140mA max @ 230VAC<br>230mA max @ 115VAC   | 100mW max @ 230VAC<br>100mW max @ 115VAC | 60A @ 230VAC<br>30A @ 115VAC | 1.6 A<br>(slow blow)   |
| <a href="#"><u>PSE12-110-S</u></a> |                                              |                                            |                                          |                              |                        |
| <a href="#"><u>PSE15-110-S</u></a> |                                              |                                            |                                          |                              |                        |
| <a href="#"><u>PSE24-110-S</u></a> |                                              |                                            |                                          |                              |                        |
| <a href="#"><u>PSE05-125-S</u></a> |                                              | 320mA max @ 230VAC<br>490mA max @ 115VAC   |                                          | 90A @ 230VAC<br>45A @ 115VAC | 2.5 A<br>(slow blow)   |
| <a href="#"><u>PSE12-125-S</u></a> |                                              |                                            |                                          |                              |                        |
| <a href="#"><u>PSE15-125-S</u></a> |                                              |                                            |                                          |                              |                        |
| <a href="#"><u>PSE24-125-S</u></a> |                                              |                                            |                                          |                              |                        |
| <a href="#"><u>PSE12-150-S</u></a> |                                              | 600mA max @ 230VAC<br>1,000mA max @ 115VAC |                                          |                              |                        |
| <a href="#"><u>PSE15-150-S</u></a> |                                              |                                            |                                          |                              |                        |
| <a href="#"><u>PSE24-150-S</u></a> |                                              |                                            |                                          |                              |                        |
|                                    |                                              |                                            |                                          |                              |                        |

### Output Specifications

| Output Specifications PSE-S Series |                      |                          |                        |                         |                                  |                     |                           |                         |
|------------------------------------|----------------------|--------------------------|------------------------|-------------------------|----------------------------------|---------------------|---------------------------|-------------------------|
| Part Number                        | Voltage Set Accuracy | Ripple And Noise (20MHz) | Capacitive Load (max.) | Temperature Coefficient | Start-up Time (max.)             | Hold-up Time (min.) | Output Current Limitation | Overvoltage Protection  |
| <a href="#"><u>PSE05-110-S</u></a> | ±2% max.             | 60 mVp-p                 | 3,500 µF               | ±0.02 %/K max.          | 60ms @ 230VAC<br>60ms @ 115VAC   | 30ms @ 230VAC       | 140 - 235% of Iout max.   | 105 - 145% of Vout nom. |
| <a href="#"><u>PSE12-110-S</u></a> |                      | 120 mVp-p                | 700µF                  |                         |                                  |                     |                           |                         |
| <a href="#"><u>PSE15-110-S</u></a> |                      | 150 mVp-p                | 390µF                  |                         |                                  |                     |                           |                         |
| <a href="#"><u>PSE24-110-S</u></a> |                      | 240 mVp-p                | 180µF                  |                         |                                  |                     |                           |                         |
| <a href="#"><u>PSE05-125-S</u></a> |                      | 120 mVp-p                | 2,000 µF               | ±0.05 %/K max.          | 130ms @ 230VAC<br>130ms @ 115VAC | 36ms @ 230VAC       | 140 - 280% of Iout max.   |                         |
| <a href="#"><u>PSE12-125-S</u></a> |                      | 150 mVp-p                | 680 µF                 |                         |                                  |                     |                           |                         |
| <a href="#"><u>PSE15-125-S</u></a> |                      | 160 mVp-p                | 220 µF                 |                         |                                  |                     |                           |                         |
| <a href="#"><u>PSE24-125-S</u></a> |                      | 240 mVp-p                | 220 µF                 |                         |                                  |                     |                           |                         |
| <a href="#"><u>PSE12-150-S</u></a> |                      | 120 mVp-p                | 3,500 µF               |                         |                                  | 10ms @ 230VAC       | 130 - 215% of Iout max.   |                         |
| <a href="#"><u>PSE15-150-S</u></a> |                      | 150 mVp-p                | 3,000 µF               |                         |                                  |                     |                           |                         |
| <a href="#"><u>PSE24-150-S</u></a> |                      | 240 mVp-p                | 2,200 µF               |                         |                                  |                     |                           |                         |
|                                    |                      |                          |                        |                         |                                  |                     |                           |                         |



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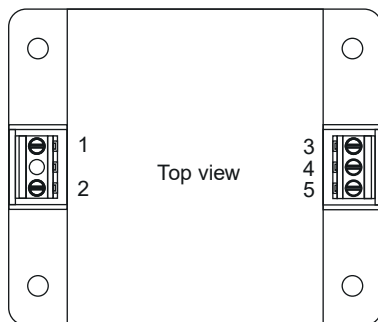
## PSE-S Series

### General Specifications

| General Specifications PSE-S Series |                                                                                    |                                                                                                                         |                                                                                  |
|-------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Models                              | 10W                                                                                | 20/25W                                                                                                                  | 50W                                                                              |
| Operating Temperature               | -40 to 70°C [-40 to 158°F]                                                         |                                                                                                                         |                                                                                  |
| Storage Temperature                 | -40 to 85°C [-40 to 185°F]                                                         |                                                                                                                         |                                                                                  |
| Humidity                            | 95% max. (non-condensing)                                                          |                                                                                                                         |                                                                                  |
| Power Derating                      | High temperature: 2.5 % / K above 50°C<br>Low input voltage: 2% / V below 100VAC   | High temperature: 2.5 % / K above 50°C<br>Low temperature: 2% / V below -30°C<br>Low input voltage: 2% / V below 100VAC | High temperature: 2.5 % / K above 50°C<br>Low input voltage: 2% / V below 100VAC |
| Cooling System                      | Natural convection (20LFM)                                                         |                                                                                                                         |                                                                                  |
| Altitude During Operation           | 5,000 m max. (according to IEC 62368-1)<br>2,000 m max. (according to IEC 60335-1) |                                                                                                                         |                                                                                  |
| Short Circuit Protection            | Continuous, automatic recovery                                                     |                                                                                                                         |                                                                                  |
| Switching Frequency                 | 35 - 75 kHz (PWM, PFM)                                                             | 50 - 68 kHz (PWM, PFM)                                                                                                  | 55 - 90 kHz (PWM, PFM)                                                           |
| Protection Class                    | Reinforced insulation Class I & II                                                 |                                                                                                                         |                                                                                  |
| Over Voltage Category               | OVC II                                                                             |                                                                                                                         |                                                                                  |
| Working Voltage (rated)             | 254 VAC                                                                            | 311 VAC                                                                                                                 | 342 VAC                                                                          |
| Isolation Test Voltage              | Input to Output, 60s; 4,000 VAC                                                    |                                                                                                                         |                                                                                  |
| Leakage Current                     | Touch current 250 µA max.                                                          |                                                                                                                         |                                                                                  |
| MTBF                                | 450,000 h (MIL-HDBK-217F, ground benign)                                           | 400,000 h (MIL-HDBK-217F, ground benign)                                                                                | 300,000 h (MIL-HDBK-217F, ground benign)                                         |
| Housing Material                    | Plastic resin (UL 94 V-0 rated)                                                    |                                                                                                                         |                                                                                  |
| Potting Material                    | Silicone (UL 94 V-0 rated)                                                         |                                                                                                                         |                                                                                  |
| Mounting Type                       | Chassis                                                                            |                                                                                                                         |                                                                                  |
| Connection Type                     | Screw terminal; torque: 0.3 N•m (3 kgfcm)                                          |                                                                                                                         | Screw terminal; torque: 0.2 N•m (2 kgfcm)                                        |
| Shock                               | IEC 60068-2-27                                                                     |                                                                                                                         |                                                                                  |
| Vibration                           | IEC 60068-2-6 2g, 3 axis, 60 min, 10-500 Hz, 10 min/cycle                          |                                                                                                                         |                                                                                  |
| Pollution Degree                    | PD 2                                                                               |                                                                                                                         |                                                                                  |
| Agency Approval                     | cURus File E198298 , CE, UKCA                                                      |                                                                                                                         |                                                                                  |

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

### Wiring



| Pinout |           |
|--------|-----------|
| Pin    | Single    |
| 1      | AC IN (N) |
| 2      | AC IN (L) |
| 3      | -Vout     |
| 4      | NC        |
| 5      | +Vout     |

NC: Not connected



# Encapsulated Power Supplies

## PSE-S Series

### EMC Specifications

| EMC Specifications PSE-S Series |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EMI Emissions</b>            | <b>Conducted Emissions</b>                | EN 55032 class B (internal filter)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                 | <b>Radiated Emissions</b>                 | EN 55032 class B (internal filter)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                 | <b>Harmonic Current Emissions</b>         | EN61000-3-2 class A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                 | <b>Voltage Fluctuations &amp; Flicker</b> | Input to output 4.0 KVAC, Input to Ground 2.0 KVAC, Output to Ground 1.25 KVAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>EMS Immunity</b>             |                                           | EN 61000-6-2 (Generic Industrial)<br>EN 55024 (IT Equipment)<br>EN 55035 (Multimedia)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                 | <b>Electrostatic Discharge</b>            | Air: EN 61000-4-2, $\pm 8$ kV, perf. criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                 |                                           | Contact: EN 61000-4-2, $\pm 4$ kV, perf. criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                 | <b>RF Electromagnetic Field</b>           | EN 61000-4-3, 10 V/m, perf. criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                 | <b>EFT (Burst) / Surge</b>                | EN 61000-4-4, $\pm 2$ kV, perf. criteria A<br>L to L: EN 61000-4-5, $\pm 1$ kV, perf. criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                 | <b>Conducted RF Disturbances</b>          | EN 61000-4-6, 10 Vrms, perf. criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                 | <b>PF Magnetic Field</b>                  | Continuous: EN 61000-4-8, 30 A/m, perf. criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                 | <b>Voltage Dips &amp; Interruptions</b>   | 230 VAC / 50 Hz: EN 61000-4-11<br>30%, 25 periods, perf. criteria A<br>60%, 10 periods, perf. criteria A<br>>95%, 0.5 periods, perf. criteria A<br>>95%, 250 periods, perf. criteria B<br>100%, 0.5 periods, perf. criteria A<br>100%, 1 period, perf. criteria A<br>100%, 250 periods, perf. criteria B<br><br>115 VAC / 60 Hz: EN 61000-4-11<br>30%, 25 periods, perf. criteria A<br>60%, 10 periods, perf. criteria A<br>>95%, 0.5 periods, perf. criteria A<br>>95%, 250 periods, perf. criteria B<br>100%, 0.5 periods, perf. criteria A<br>100%, 1 period, perf. criteria A<br>100%, 250 periods, perf. criteria B |

### Safety Specifications

| Safety Specifications PSE-S Series |                                  |                                         |
|------------------------------------|----------------------------------|-----------------------------------------|
| <b>Standards</b>                   | <b>IT / Multimedia Equipment</b> | EN 62368-1<br>IEC 62368-1<br>UL 62368-1 |
|                                    | <b>Household</b>                 | EN 60335-1<br>IEC 60335-1               |
|                                    | <b>Power Transformers</b>        | IEC 61558-1<br>IEC 61558-2-16           |