

# RHINO PSE Series Encapsulated Power Supplies

The PSE series are AC/DC switch mode power supplies encapsulated in an ultra-compact, low profile housing. They are ideal for space limited applications and are easily screw mounted to a panel or equipment chassis, or can be DIN Rail mounted using the optional DIN Rail mounting kit. The PSE series features a universal input from 120/240 VAC and single or dual outputs from 15 Watts up to 60 Watts (above 30 Watt, single output only).

## Features

- Ultra compact, low profile plastic case
- Single or dual output models
- Screw terminal blocks
- Chassis mount or 35mm DIN Rail mount with optional adaptor
- Universal input 120/240 VAC, 47-440 Hz (60 Watt, 47-63 Hz)
- Double insulated - no external ground required
- UL508 listed, UL60950-1 recognized, CE marked
- Short circuit and overload protection
- DC on LED indicator
- 3-year warranty



Single Output Models 15 to 60 Watt					
Part No.	Price	Weight (lbs)	Output Power Max.	Output	Efficiency (Typ @ 115VAC)
PSE05-115		0.3	15 Watt	5 VDC / 3000 mA	74%
PSE12-115		0.3		12 VDC / 1250 mA	81%
PSE15-115		0.3		15 VDC / 1000 mA	81%
PSE24-115		0.3		24 VDC / 625 mA	83%
PSE05-130		0.5	30 Watt	5 VDC / 6000 mA	76%
PSE12-130		0.5		12 VDC / 2500 mA	80%
PSE15-130		0.5		15 VDC / 2000 mA	81%
PSE24-130		0.5		24 VDC / 1250 mA	81%
PSE05-150		0.8	51 Watt	5.1 VDC / 10,000 mA	76%
PSE12-160		0.8	60 Watt	12 VDC / 5000 mA	81%
PSE15-160		0.8		15 VDC / 4000 mA	82%
PSE24-160		0.8		24 VDC / 2500 mA	83%

Dual Output Models 15 to 30 Watt						
Part No.	Price	Weight (lbs)	Output Power Max.	Output 1	Output 2	Efficiency (Typ @ 115VAC)
PSE12-215		0.3	15 Watt	+12 VDC / 650 mA	-12 VDC / 650 mA	82%
PSE15-215		0.3		+15 VDC / 500 mA	-15 VDC / 500 mA	82%
PSE12-230		0.5	30 Watt	+12 VDC / 1300 mA	-12 VDC / 1300 mA	81%
PSE15-230		0.5		+15 VDC / 1000 mA	-15 VDC / 1000 mA	82%

# PSE Series Encapsulated Power Supplies

Input Specifications		
<b>Input Voltage</b>	Nominal	120/240 VAC
	AC range (universal input)	85 - 264 VAC
	DC range	120 - 370 VDC (not for 60 Watt models)
<b>Input Frequency</b>	47 - 440 Hz (47 - 63 Hz for 60 Watt models)	
<b>Input Current at Full Load (115 VAC / 230 VAC)</b>	15 Watt models	300 mA / 190 mA typ.
	30 Watt models	550 mA / 330 mA typ.
	51/60 Watt models (typical for all)	1050 mA / 670 mA typ.
<b>Input Current at No Load</b>	15 mA @ 115 VAC & 20 mA @ 230 VAC typ.	
<b>Inrush Current (&lt; 2ms, cold start at 115 VAC / 230 VAC)</b>	15 Watt models	15A / 30A
	30 Watt models	20 A / 40 A
	60 Watt models	30 A / 50 A
<b>External Input Fuse Required (recommended value)</b>	15 and 30 Watt models	1.5 A slow blow
	51/60 Watt models	3.0 A slow blow

Output Specifications					
<b>Voltage Set Accuracy</b>	±2%				
<b>Regulation</b>	Input variation	1% max.			
	Load variation	Single output models (10-100%): 1% max. Dual output models balanced load (10-100%): 2.5% max. Dual output models unbalanced load (20/100%): 5.0% max.			
<b>Minimum Load</b>	Single and dual output models	10% of rated max. current			
<b>Ripple and Noise (20MHz bandwidth)</b>	5.0 VDC outputs	1.8% of Vout [mVpk-pk]			
	All other outputs	1.3% of Vout [mVpk-pk]			
<b>Overload Protection by Current Limit</b>	105% min. of nominal current, fold back, automatic recovery (long term overload condition may cause damage to the power supply)				
<b>Max. Capacitive Load [μF]</b>	<b>Output</b>		<b>Model Series</b>		
			<b>PSE15</b>	<b>PSE30</b>	<b>PSE60</b>
	<b>Single Output Models</b>	5.0 VDC; 5.1 VDC	3900	8000	8000
		12 / 15 VDC	2200	3900	3900
		24 VDC	1000	1500	1500
<b>Dual Output Models</b>	+/-12 V; +/-15V	1500	1500	NA	

# PSE Series Encapsulated Power Supplies

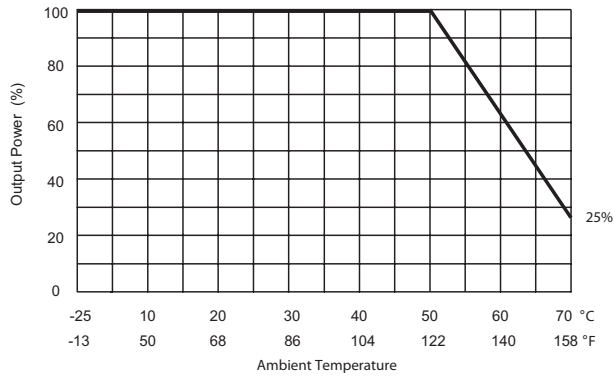
General Specifications					
Operating Temperature	Standard/Approval	Model Series			
		PSExx-x15	PSExx-x30	PSExx-150	PSExx-160
	IEC/EN60950-1	-25°C to +71°C (-13°F to +159.8°F)	-25°C to +71°C (-13°F to +159.8°F)	-10°C to +40°C (14°F to +104°F)	-10°C to +50°C (14°F to +122°F)
UL508	-25°C to +50°C (-13°F to +122°F)	-25°C to +50°C (-13°F to +122°F)	-10°C to +40°C (14°F to +104°F)	-10°C to +40°C (14°F to +104°F)	-10°C to +40°C (14°F to +104°F)
<b>Storage Temperature</b>	-40° to 185°F (-40° to 85°C)				
<b>Power Derating</b>	3.75% per °C above +122°F (50°C) 2.5% per °C above +104°F (40°C) (for PSE05-150)				
<b>Temperature Coefficient</b>	0.02 %/°C				
<b>Humidity (non-condensing)</b>	95% rel. H max.				
<b>Efficiency</b>	78% typ.				
<b>Switching Frequency</b>	100 kHz typ. (fixed)				
<b>Isolation Voltage (60 sec.)</b>	Input/Output	3,000 VAC			
<b>Isolation Resistance</b>	Input/Output	100 M $\Omega$ (@ 500VDC)			
<b>Electromagnetic Compatibility (EMC), Emissions</b>	EN 61000-6-3: 2007 EN61204-3: 2000, class A EN 55032, level B, FCC Part 15 level B				
<b>Electromagnetic Compatibility (EMC), Immunity</b>	EN61000-6-2: 2005 EN61204-3: 2000, class A				
	Electrostatic discharge ESD	EN61000-4-2 - 8kV / 4 kV, criteria B			
	RF field susceptibility	EN61000-4-3 - 10 V/m, criteria A			
	Electrical fast transient / burst immunity input	EN61000-4-4 - $\pm$ 2 kV, criteria B			
	Electrical fast transient / burst immunity output	EN61000-4-4 - $\pm$ 2 kV, criteria B			
	Surge immunity line - neutral	EN61000-4-5 - $\pm$ 1 kV, criteria B			
	Surge immunity output	EN61000-4-5 - $\pm$ 0.5 kV, criteria B			
	Immunity to conducted RF disturbances	EN61000-4-6 - 10 V, criteria B			
Mains voltage dips and interruptions	EN61000-4-11 - 30% 10 ms, criteria B, 60% 100 ms, criteria C, 95% 5000 ms, criteria C				
<b>Protection Class II</b>	to IEC/EN 60536				
<b>Safety Standards</b>	Information technology equipment	IEC/EN 60950-1, UL 60950-1			
<b>Agency Approvals</b>	UL and cUL for UL 508, Listed file #E197592; UL and cUL for UL 60950-1, Recognized file #E198298; CE				
<b>RoHS Compliant</b>	Yes				
<b>Vibration</b>	None				
<b>Shock</b>	None				
<b>Reliability / Calculated MTBF (MIL-HDBK-217F, @ +25° C, ground benign)</b>	15 Watt Models	>280,000 hours			
	30 Watt Models	>250,000 hours			
	60 Watt Models	>125,000 hours			
<b>Casing Material</b>	Plastic resin + fiberglass (UL 94V-0 rated)				
<b>Mounting Screw Torque Specifications</b>	4-5 in-lb [0.45-0.56 Nm]				

Note: All specifications valid at nominal input voltage, full load and +25° C [+77° F] after warm-up time unless otherwise stated.

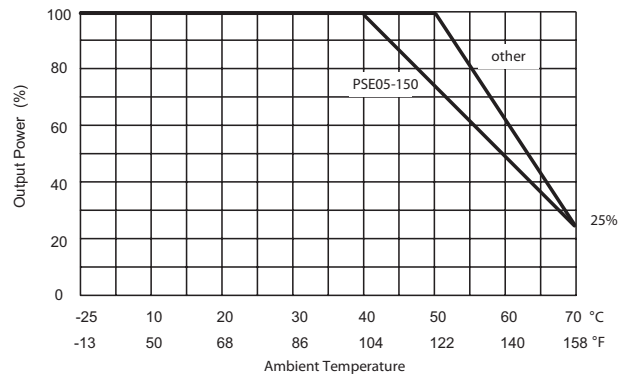
# PSE Series Encapsulated Power Supplies

## Derating Curves

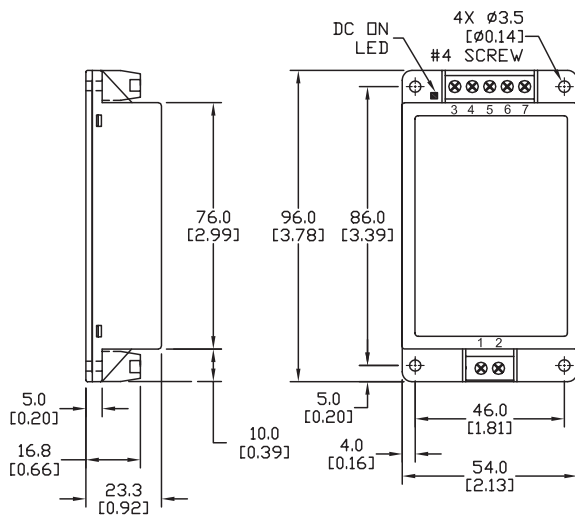
### PSE 15 & 30W Models



### PSE 51 & 60W Models



## PSE 15W models for chassis mount

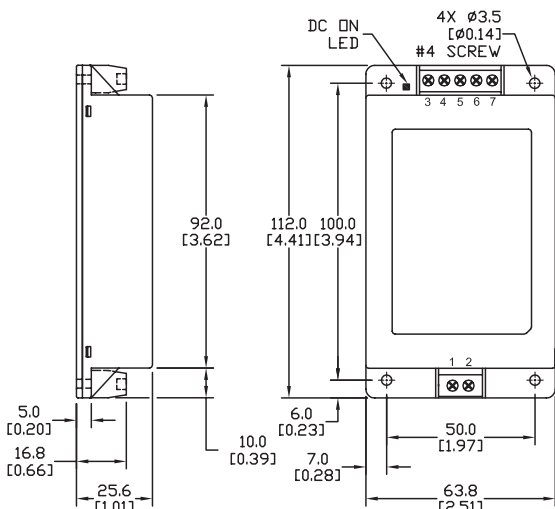


M3 x 0.5mm screw size, Typ

Dimensions mm [inches]

Connection		
Pin	Single	Dual (12V, 15V)
1	AC(N) - AC Neutral	
2	AC(L) - AC Line	
3	NC	
4	-Vout	
5	NC	Common
6	+Vout	
7	NC	

## PSE 30W models for chassis mount



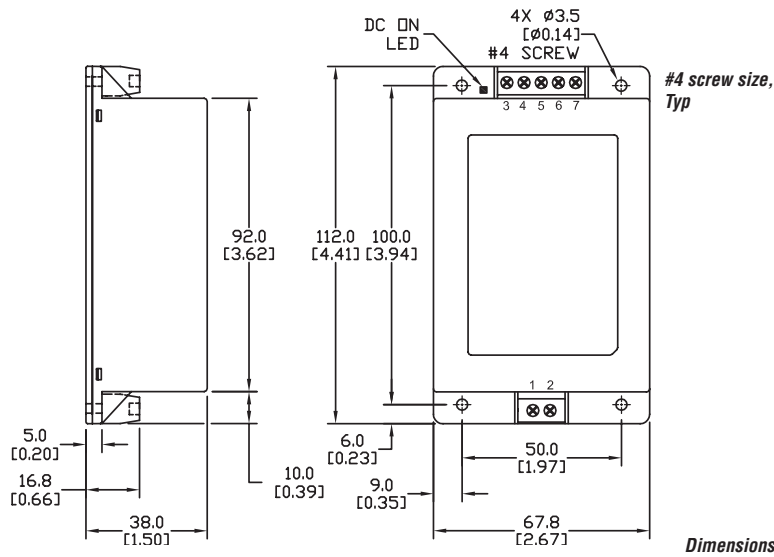
M3 x 0.5mm screw size, Typ

Dimensions mm [inches]

Connection		
Pin	Single	Dual (12V, 15V)
1	AC(N) - AC Neutral	
2	AC(L) - AC Line	
3	+Vout	
4	NC	
5	-Vout	Common
6	NC	
7	NC	-Vout

# PSE Series Encapsulated Power Supplies

## PSE 60W models for chassis mount

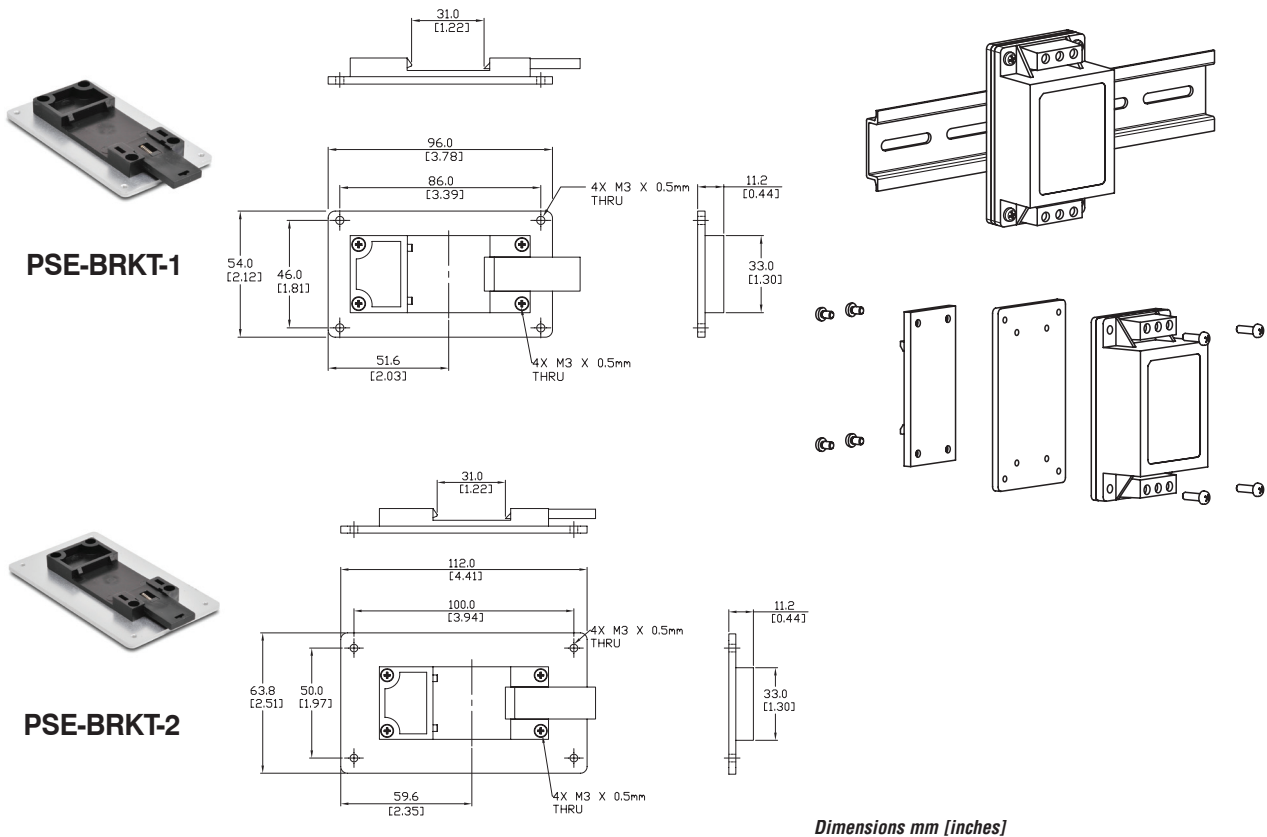


Connection	
Pin	Function
1	AC(N) - AC Neutral
2	AC(L) - AC Line
3	NC
4	+Vout
5	NC
6	-Vout
7	NC

Dimensions mm [inches]

35mm DIN Rail Mounting Bracket			
Part No.	Price	Weight (lbs)	Description
PSE-BRKT-1		0.2	DIN Rail mounting bracket for 15W PSE models
PSE-BRKT-2		0.2	DIN Rail mounting bracket for 30W-60W PSE models

Note: Kit contains interface plate, DIN Rail clip and necessary screws.



Dimensions mm [inches]