Report EN62368-1 GB4943.1 BS EN 62368-1 RoHS

Size: 9.13in x 3.19in x 1.22in
(232mm x 81mm x 31mm)

FEATURES

- Universal 85-305VAC or 120~430VDC Input Voltage
- Accepts AC or DC Input (Dual-Use of Same Terminal)
- Low Ripple & Noise
- High I/O Isolation Test Voltage up to 4000VAC
- Ultra-Narrow Package
- Semi-Potted Process
- Fanless Design
- Output Short Circuit, Over Current, Over Voltage, and Over Temperature Protection
- 150% Peak Load Output for 1 Second
- High Efficiency
- Active PFC
- Safety According to IEC/UL62368, IEC60335, EN61558

APPLICATIONS

- Industrial
- LED
- Street Light Control
- Security
- Telecommunications
- Smart Home

DESCRIPTION

The PSEH500 series of AC/DC switching power supplies offers up to 501.6 watts of output power in an enclosed 9.13” x 3.19” x 1.22” ultra-narrow package. This series consists of single output models with an input voltage range of 85~305VAC or 120~430VAC as this series accepts AC or DC input. Each model features built-in active PFC function, high isolation test voltage, and fanless design. This series has short circuit, over current, over voltage, and over temperature protection, and also has safety according to IEC/UL62368, IEC60335, EN61558.

MODEL SELECTION TABLE

Model Number	Input Voltage Range	Output Voltage	Output Current	Output Voltage Adjustable Range	Output Power[1]	Maximum Capacitive Load		Efficiency	Certification
						Room Temp.	Low. Temp.		
PSEH500-05S	85-305VAC (120-430VDC)	5V	80A	4.5-5.5V	400W	12000μF	6000μF	90%	EN/CCC/B (Pending)
PSEH500-12S		12V	41.7A	11.4 - 12.6V	500.4W	10000μF	4000μF	94%	EN/CCC/BS
PSEH500-24S		24V	20.9A	22.8 - 25.2V	501.6W	8000μF	3000μF	94.5%	
PSEH500-36S		36V	13.9A	34.2-37.8V	500.4W	6000μF	2000μF	95%	EN/CCC/B (Pending)
PSEH500-48S		48V	10.45A	45.6 - 50.4V	501.6W	4000μF	1000μF	95%	
PSEH500-55S		55V	8.9A	45 – 58V	489.5W	2000μF	600μF	95%	

SPECIFICATIONS

All specifications are based on 25°C, Humidity <75%RH, Nominal Input Voltage, and Rated Output Load unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
INPUT SPECIFICATIONS						
Input Voltage Range	AC Input		85		305	VAC
	DC Input		120		430	VDC
Input Voltage Frequency			47		63	Hz
Input Current	115VAC				5	A
	230VAC				3	
Inrush Current	Cold Start	115VAC		30		A
		230VAC		60		
Power Factor	Normal Temperature, Full Load	115VAC		≥0.98		
		230VAC		≥0.95		
Leakage Current	277VAC				0.75	mA
Hot Plug			Unavailable			
OUTPUT SPECIFICATIONS[4]						
Output Voltage			See Table			
Voltage Accuracy	Full Load Range	5V		±2.0		%
		12V/24V/36V/48V/55V		±1.0		
Line Regulation	Rated Load	5V		±0.5		%
		12V/24V/36V/48V/55V		±0.3		
Load Regulation	0% - 100% load	5V		±1.0		%
		12V/24V/36V/48V/55V		±0.5		
Output Voltage Adjustable Range			See Table			
Output Power			See Table			
Output Current			See Table			
Minimum Load			0			%
Maximum Capacitive Load			See Table			
Ripple & Noise[2]	20MHz bandwidth (peak-to-peak value)				200	mV
Hold-Up Time	115VAC			12		ms
	230VAC			12		

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SPECIFICATION	TEST CONDITIONS			Min	Typ	Max	Unit
PROTECTION[4]							
Short Circuit Protection	Recovery time <5s after the short circuit disappears			Hiccup, continuous, self-recover			
Over Current Protection	Hiccup, Self recovery			110			%Io
Over-voltage Protection	Output Voltage Turn Off, Re-Power on for Recovery		5V	5.75VDC ≤ Vo ≤ 6.75VDC			
			12V	13.2VDC ≤ Vo ≤ 15.6VDC			
			24V	26.4VDC ≤ Vo ≤ 31.2VDC			
			36V	39.6VDC ≤ Vo ≤ 46.8VDC			
			48V	52.8VDC ≤ Vo ≤ 60VDC			
			55V	60VDC ≤ Vo ≤ 69VDC			
Over Temperature Protection	Output voltage turn-off, self-recover after the temperature drops						
ENVIRONMENTAL SPECIFICATIONS							
Operating Temperature				-40		+85	°C
Storage Temperature				-40		+85	°C
Storage Humidity	Non-Condensing			10		95	%RH
Operating Humidity	Non-Condensing			20		90	%RH
Power Derating	Operating Temperature Derating (with heat-sink plate)[5]	5V	+40°C to +85°C	1.667			%/°C
		12V	+45°C to +85°C	2			
		24V/36V/48V/55V	+50°C to +85°C	2.5			
	Operating Temperature Derating (110VAC Input, without heat-sink plate)	5V (derating from 70% load)	+40°C to +85°C	1.0			
		12V/24V/36V/48V/55V (derating from 70% load)	+50°C to +85°C	1.5			
	Operating temperature derating (230VAC input, without heat-sink plate)	5V (derating form 80% load)	+40°C to +50°C	1.0			
			+50°C to +85°C	1.5			
		12V (derating from 90%)	+40°C to +85°C	1.3			
		24V/36V/48V/55V (derating from 90% load)	+45°C to +85°C	1.6			
	Input Voltage Derating	85VAC-110VAC		1.0			%/VAC
MTBF	MIL-HDBK-217F@25°C			≥200,000			H
GENERAL SPECIFICATIONS							
Efficiency	@230VAC			See Table			
Isolation Test	Electric Strength Test for 1min., leakage current <10mA		Input - ⏚	2000			VAC
			Input – Output	4000			
			Output - ⏚	1500			
Insulation Resistance	Environment Temperature 25±5°C Relative Humidity: <95%RH, non-condensing Testing Voltage: 500VDC		Input - ⏚	50			MΩ
			Input – Output	50			
			Output - ⏚	50			
PHYSICAL SPECIFICATIONS							
Weight				2.17lbs (0.985kg)			
Dimensions (L x W x H)				9.13 x 3.19 x 1.22in (232 x 81 x 31mm)			
Case Material				Metal (AL6063, SGCC)			
Cooling[6]				Free Air Convection			
SAFETY CHARACTERISTICS							
Safety Standard[7]				GB4943.1 Safety Approved & EN62368-1, BS EN62368-1 (Report) Design Refers to IEC/UL62368-1, IEC60335-1, EN61558-1			
Safety Class				Class I			
Emissions	CE	CISPR32/EN55032		Class B			
	RE	CISPR32/EN55032		Class B			
	Harmonic Current	IEC/EN61000-3-2		Class A/D			
	Voltage Flicker	IEC/EN6100-3-3					

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SPECIFICATION	TEST CONDITIONS			Min	Typ	Max	Unit
SAFETY CHARACTERISTICS (CONT.)							
Immunity	ESD	IEC/EN61000-4-2	Contact ±8KV/ Air ±15KV				Perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m				Perf. Criteria A
	EFT	IEC/EN61000-4-4	±2KV				Perf. Criteria A
	Surge	IEC/EN61000-4-5	Line to Line ±2KV/ Line to Ground ±4KV				Perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.m.s				Perf. Criteria A
	Power Frequency Magnetic Field	IEC/EN61000-4-8	30A/m				Perf. Criteria A
	Voltage dips, short interruptions, and voltage variations immunity	IEC/EN 61000-4-11	0%, 70%				Perf. Criteria B
	Intercom Interference Test	MS-SOP-DQC-007					Perf. Criteria B
Immunity (for output port)	EFT	EN61000-6-2	±2kV				Perf. Criteria A
	Surge	EN61000-6-2	Line to Line ±0.5KV/Line to Ground ±1KV				Perf. Criteria A
	RS	EN61000-6-2	10Vr.m.s				Perf. Criteria A

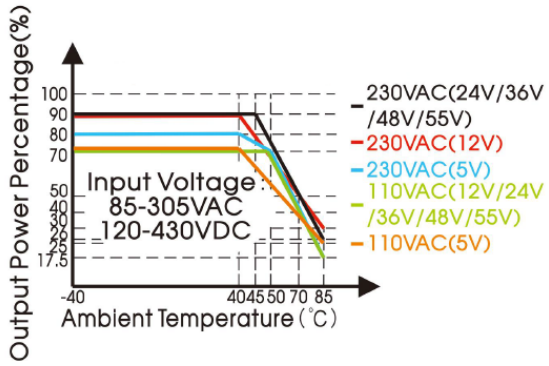
NOTES

1. Under any conditions, the total power of the product should not exceed the rated output power, and the output current should not exceed the rated output current.
2. Output voltage accuracy including setting error, line regulation, load regulation.
3. Tip and barrel method is used for ripple and noise test. Output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, contact factory for more information
4. For test items in this section, contact factory for specific test specifications and methods.
5. In order to optimize the heat dissipation performance when the aluminum plate is used for auxiliary heat dissipation. Please note:
   a. the size of the aluminum plate is 450mm x 450mm x3mm.
   b. The surface of the aluminum plate must be coated with thermal grease.
   c. The product must be tightly attached to the aluminum plate.
6. For cooling method and output power derating refer to the product characteristic curves.
7. This product is Listed to applicable standards and requirements by UL.
8. The room temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m.
9. In order to improve the efficiency at high input voltage, there will be audible noise generated, but does not affect product performance and reliability.
10. Product customization service is available, please contact factory for more details.
11. Out case needs to be connected to PE (⏚) of system when terminal equipment is operating.
12. Output voltage can be adjusted b the ADJ. clockwise to increase.
13. Products should be classified according to ISO14001 and related environmental laws and regulations and should be handled by qualified units.
14. Power supply is considered a component which will be installed into terminal equipment. All EMC tests should be confirmed with final equipment.

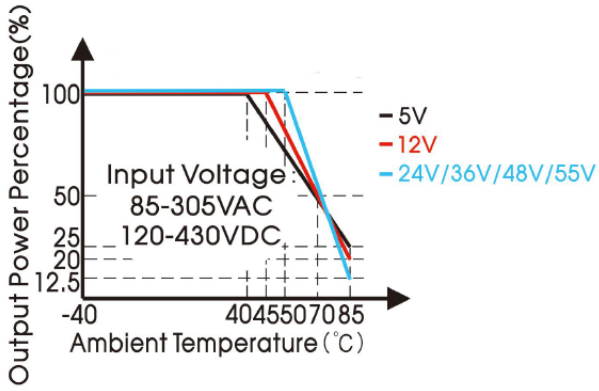
**Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES

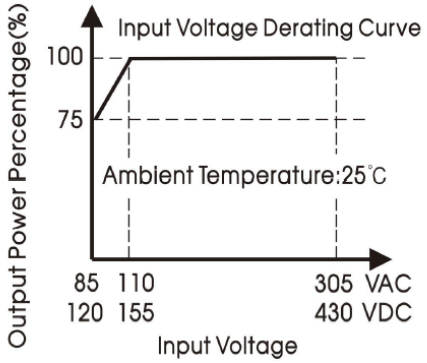
Temperature Derating Curve



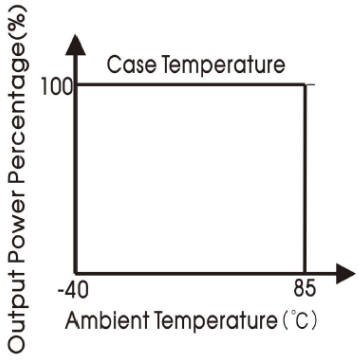
Temperature Derating Curve



Input Voltage Derating Curve
No Aluminum Plate for Heat Dissipation



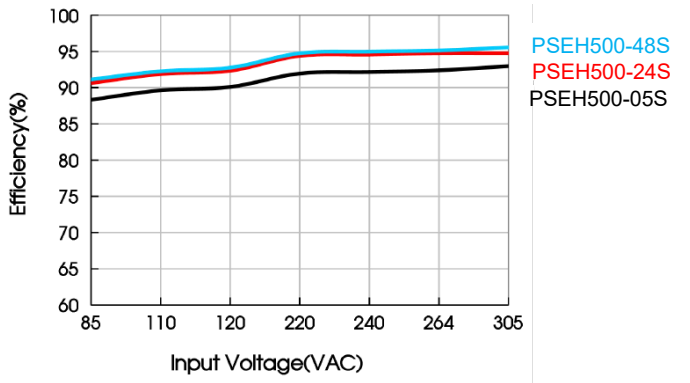
With Aluminum Plate for Heat Dissipation



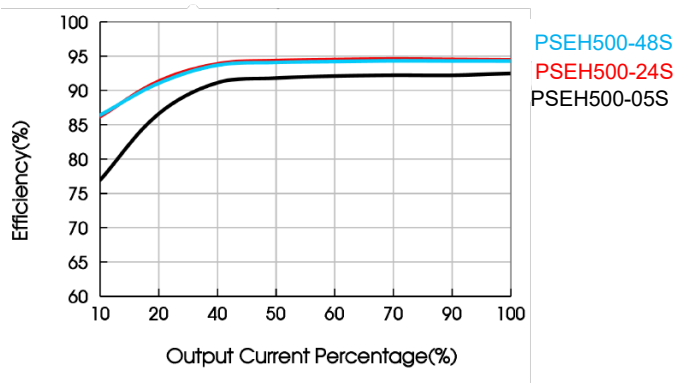
Note: This product is suitable for applications using natural air cooling, for application in closed environment, please contact factory.

EFFICIENCY GRAPHS

Efficiency vs Input Voltage (Full Load)

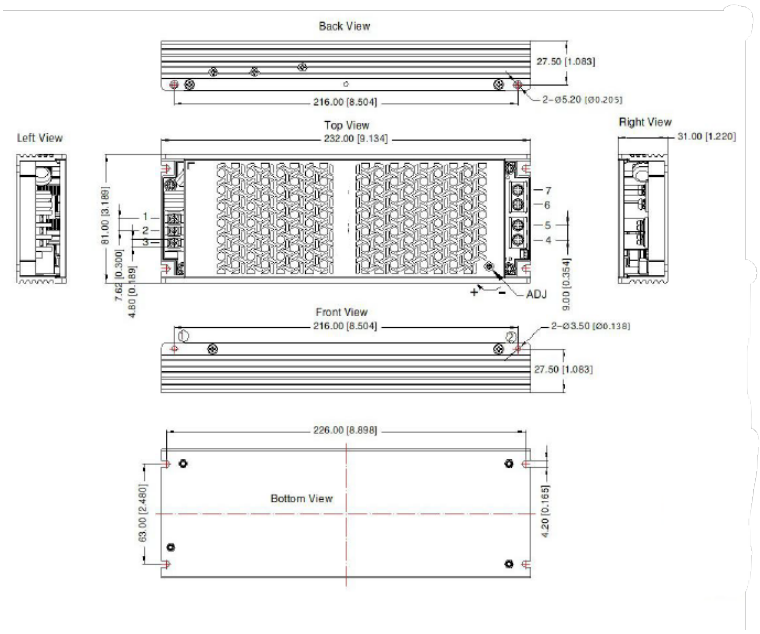


Efficiency vs Output Load (Vin=230VAC)



MECHANICAL DRAWINGS

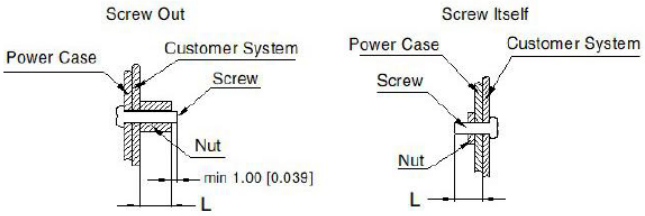
THIRD ANGLE PROJECTION



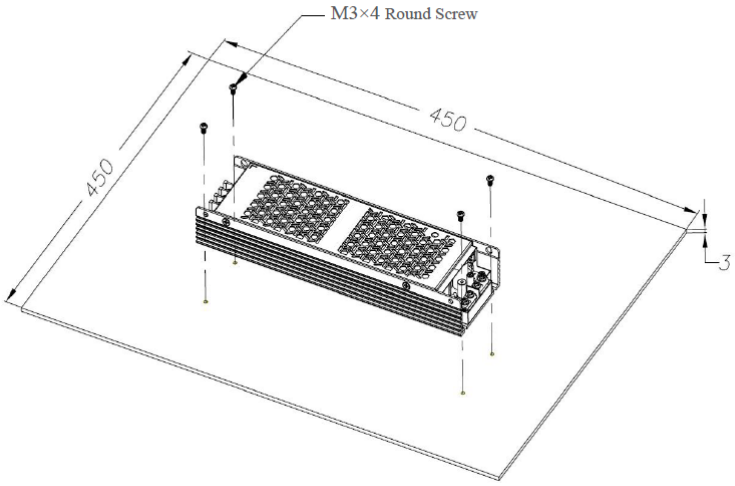
Pin Out

Pin	Function
1	⏚
2	AC(N)
3	AC(L)
4	+Vo
5	+Vo
6	-Vo
7	-Vo

Position	Installation Method	Screw Spec.	L	Torque (max)
①-②	Screw Out	M3	Min 10mm	0.4N·m
	Screw Itself	M3	Max 8mm	0.4N·m



Note:
Unit: mm[inch]
ADJ: Output Voltage Adjustable Resistor
Wire range: 22-14AWG
Tightening Torque: M3, Max 0.5N.m
General Tolerances: ±1.00 [±0.039]



COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001: 2015 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact **Wall Industries** for further information:

Phone: ☎(603)778-2300
Toll Free: ☎(888)597-9255
Fax: ☎(603)778-9797
E-mail: sales@wallindustries.com
Web: www.wallindustries.com
Address: 37 Industrial Drive
Exeter, NH 03833