

Size: 8.47in x 4.53in x 1.81in
(215mm x 115mm x 30mm)

FEATURES

- Universal 85-305VAC or 120~430VDC Input Voltage
- Accepts AC or DC Input (Dual-Use of Same Terminal)
- Built-In Active PFC Function
- High I/O Isolation Test Voltage up to 4000VAC
- Built-In DC Fan
- Output Short Circuit, Over Current, Over Voltage, and Over Temperature Protection
- Compact Size with Low 1U Profile
- LED Indicator for Power On
- Emissions Meet CISPR32/EN55032 Class B
- Design Refers to IEC/EN/UL62368-1, GB4943.1, IEC60950-1, and EN60335-1

APPLICATIONS

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

DESCRIPTION

The PSEF320 series of AC/DC switching power supplies offers up to 321.6 watts of output power in an enclosed 8.47" x 4.53" x 1.81" 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 LED indicator for power on. This series has short circuit, over current, over voltage, and over temperature protection, and the design refers to IEC/EN/UL62368-1, GB4943.1, IEC60950-1, and EN60335-1.

MODEL SELECTION TABLE

Model Number ⁽¹⁾	Input Voltage Range	Output Voltage	Output Current	Output Voltage Adjustable Range	Max. Ripple & Noise	Output Power	Maximum Capacitive Load	Efficiency	Certification
PSEF320-04S	85-305VAC (120-430VDC)	4V	60A	3.6-4.4V	150mV	240W	5000µF	83%	-
PSEF320-05S		5V	60A	4.5 - 5.5V	150mV	300W	5000µF	84%	UL/EN/CCC
PSEF320-12S		12V	26.7A	10 - 13.2V	150mV	320.4W	5000µF	86.5%	UL/EN/CCC/IEC
PSEF320-15S		15V	21.4A	13.5 - 18V	150mV	321W	5000µF	89%	UL/EN/CCC
PSEF320-24S		24V	13.4A	20 - 26.4V	150mV	321.6W	5000µF	88.5%	UL/EN/CCC
PSEF320-27S		27V	11.9A	26-31.5V	200mV	321.3W	5000µF	88%	-
PSEF320-48S		48V	6.7A	41 - 56V	200mV	321.6W	5000µF	89%	UL/EN/CCC

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			4	4.2	A
	230VAC			2	2.1	
Inrush Current	Cold Start	115VAC		35		A
		230VAC		65		
Power Factor	Full Load	115VAC		0.98		
		230VAC		0.95		
Hot Plug			Unavailable			
OUTPUT SPECIFICATIONS						
Output Voltage			See Table			
Voltage Accuracy	Full Load Range	4V/5V		±2		%
		12V/15V/24V/27V/48V		±1		
Line Regulation	Rated Load	4V/5V		±0.5		%
		12V/15V		±0.3		
		24V/27V/48V		±0.2		
Load Regulation	0% - 100%	4V/5V		±1		%
Output Voltage Adjustable Range		12V/15V/24V/27V/48V		±0.5		
Output Power			See Table			
Output Current			See Table			
Minimum Load ⁽²⁾			0			%
Maximum Capacitive Load			See Table			
Ripple & Noise ⁽³⁾	20MHz bandwidth (peak-to-peak value)	4V/5V/12V/15V/24V		60	150	mV
		27V/48V		60	200	
Hold-Up Time	115VAC/230VAC			12		ms
Temperature Coefficient				±0.03		%/°C

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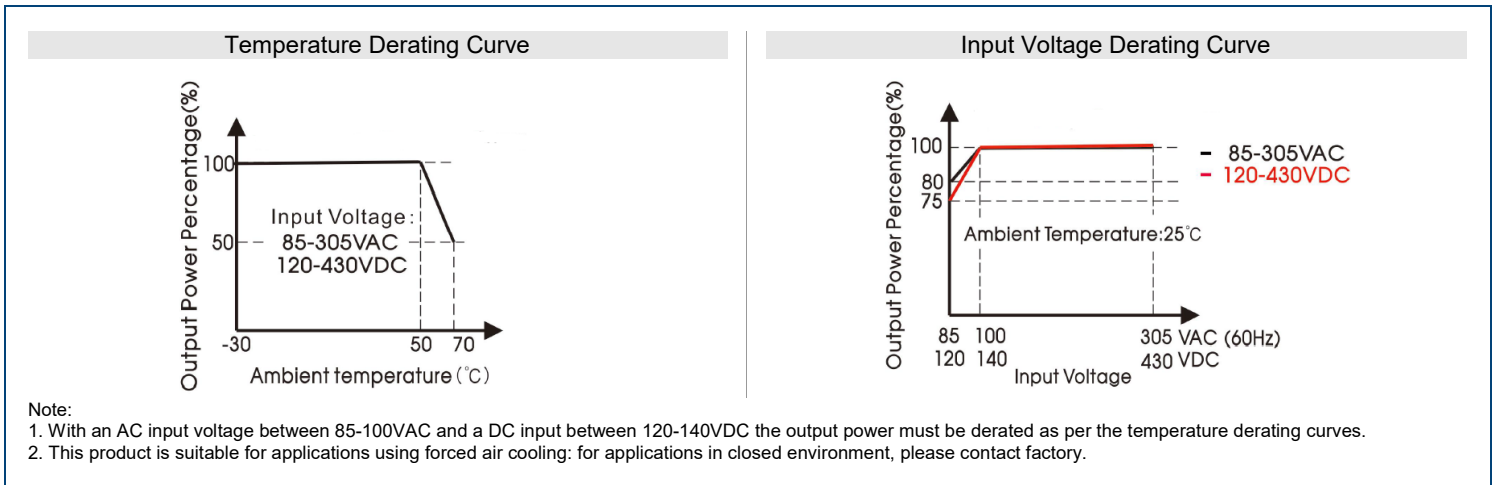
SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
PROTECTION						
Short Circuit Protection	Recovery time <5s after the short circuit disappears		Hiccup, continuous, self-recovery			
Over Current Protection ⁽⁴⁾	Hiccup, Self-Recovery		105		150	%Io
Over Voltage Protection	Hiccup, Self-Recovery	4V		≤5.3		V
		5V		≤7		
		12V		≤16.2		
		15V		≤21.8		
		24V		≤32.4		
		27V		≤35		
		48V		≤60		
Over Temperature Protection ⁽⁵⁾			Hiccup, Self-Recovery			
ENVIRONMENTAL SPECIFICATIONS						
Operating Temperature			-30		+70	°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	+50°C to 70°C	2.5			%/°C
	Input Voltage Derating	85VAC – 100VAC@50Hz	2.0			%/VAC
		85VAC – 100VAC@60Hz	1.33			
		120VDC – 140VDC	1.25			%/VDC
MTBF	MIL-HDBK-217F@25°C		250,000			H
GENERAL SPECIFICATIONS						
Efficiency			See Table			
Isolation Test	Electric Strength Test for 1min., leakage current <10mA	Input - ⊕	2000			VAC
		Input – Output	4000			
		Output - ⊕	500			
Insulation Resistance	500VDC 25±5°C Humidity <95%RH, non-condensing	Input - ⊕	100			MΩ
		Input – Output	100			
		Output - ⊕	100			
PHYSICAL SPECIFICATIONS						
Weight			1.65lbs (750g)			
Dimensions (L x W x H)			8.47in x 4.53in x 1.81 (215mm x 115mm x 30mm)			
Case Material			Metal (AL1100, SGCC)			
Cooling			Forced Air Cooling			
SAFETY CHARACTERISTICS						
Safety Standard ⁽⁶⁾	5V/15V/24V/48V		IEC/UL6268-1, GB4943.1 safety approved & EN62368-1 (Report) Design Refers to IEC/EN/UL62368-1, GB4943.1, IEC60950-1, EN60335-1			
	12V		IEC/UL6268-1, GB4943.1, IEC60950-1 safety approved & EN62368-1 (Report) Design Refers to IEC/EN/UL62368-1, GB4943.1, IEC60950-1, EN60335-1			
	4V/27V		Design Refers to IEC/EN/UL62368-1, GB4943.1, IEC60950-1, EN60335-1			
Safety Certification ⁽⁶⁾			IEC/EN/UL62368/GB4943			
Safety Class			Class I			
Emissions	CE	CISPR32/EN55032	Class B			
	RE	CISPR32/EN55032	Class B			
	Harmonic Current	IEC/EN61000-3-2	Class A and Class D			
	Voltage Flicker	IEC/EN61000-3-3				
Immunity	ESD	IEC/EN 61000-4-2	Contact ±6KV/Air ±8KV	Perf. Criteria A		
	RS	IEC/EN 61000-4-3	10V/m	Perf. Criteria A		
	EFT	IEC/EN 61000-4-4	±2KV	Perf. Criteria A		
	Surge	IEC/EN 61000-4-5	±1KV/±2KV	Perf. Criteria A		
	CS	IEC/EN 61000-4-6	10 Vr.m.s	Perf. Criteria A		
	DIP	IEC/EN 61000-4-11	0%, 70%	Perf. Criteria B		

NOTES

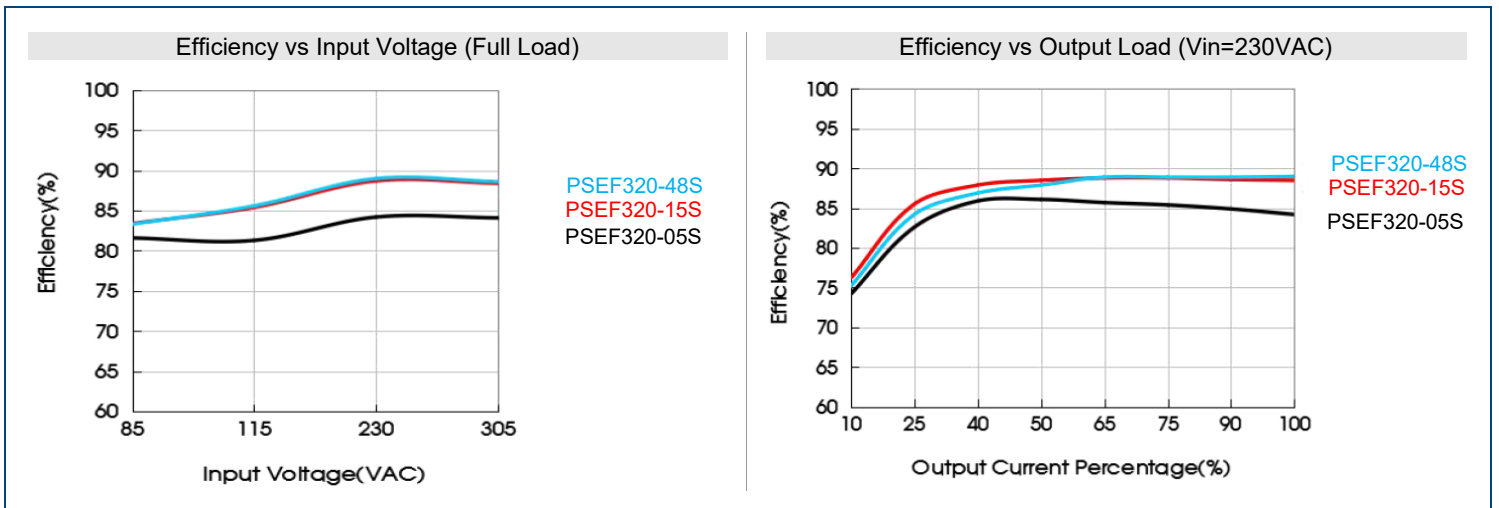
1. Add "C" to model number to indicate terminal with protective cover, and "Q" to model number for conformal coating.
2. Minimum load: when the product is working at a temperature above 50°C the minimum load is 5% of the rated load, so that the fan could work at high temperature to reduce the temperature rise of the product.
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. Over-Current Protection: test at rated output voltage. Io is rated output current load.
5. Over-Temperature Protection needs to be tested under rated full load conditions.
6. This product is Listed to applicable standards and requirements by UL.
7. One magnetic bead (nickel-zinc ferrite) should be coupled with the output load line during CE/RE testing.
8. The power supply is considered a component as part of a system. All EMC items are tested on a metal plate (450mm x 450mm x 3mm). Power supply should be combined with final equipment for EMC confirmation.
9. Ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m.
10. In order to improve the efficiency at high input voltage, there will be audible noise generated, but does not affect product performance and reliability.
11. Product customization service is available, please contact factory for more details.
12. Out case needs to be connected to PE (≡) of system when terminal equipment in operating.
13. Output voltage can be adjusted by the ADJ, clockwise to decrease
14. Products should be classified according to ISO14001 and related environmental laws and regulations and should be handled by qualified.
15. 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




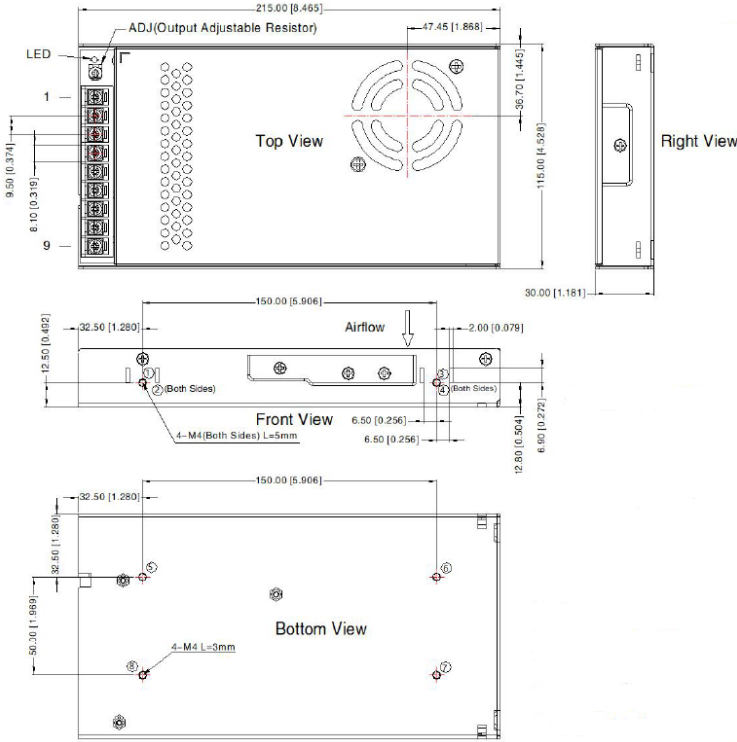
EFFICIENCY GRAPHS



MECHANICAL DRAWINGS

Standard and "Q" Suffix Models

THIRD ANGLE PROJECTION 



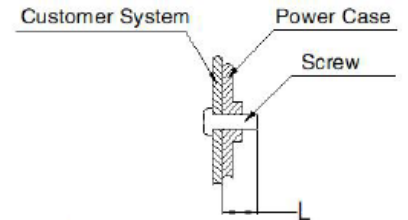
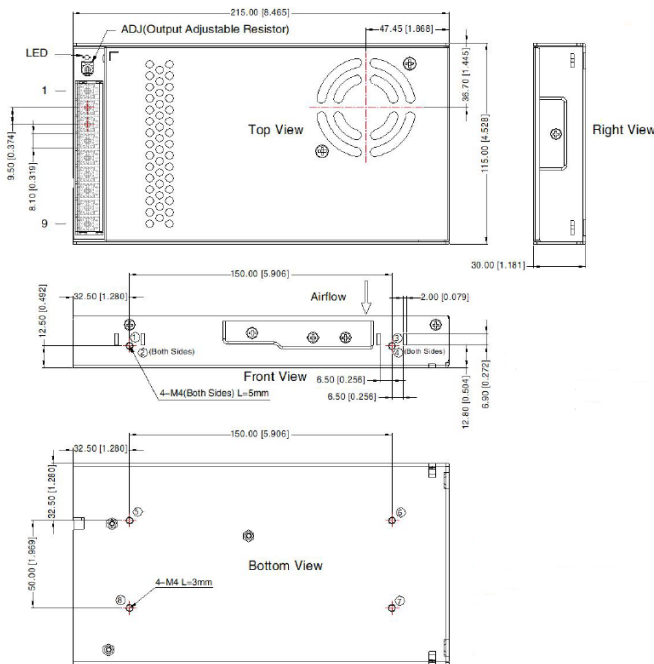
Pin-Out

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

①-⑧ any position must be connected to earth (⊥)

Position	Screw Spec.	L (max)	Torque (max)
①-④	M4	5mm	0.9N·m
⑤-⑧	M4	3mm	0.9N·m

"C" Suffix Models



Note:
Unit: mm [inch]
Wire range: 22-12AWG
Connector tightening torque: M3.5, 0.8N·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.

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