



Size: 4.33in x 1.26in x 4.88in (110mm x 32mm x 124mm)

FEATURES

- Input Voltage Range of 85-264VAC / 120-370VDC
- Accepts AC or DC Input (Dual-Use of Same Terminal)
- High Efficiency, High Reliability
- Active PFC
- RoHS Compliant
- DC ON Output Status Indicator LED
- Output Short Circuit, Over Current, Over Voltage, and Over Temperature Protection
- OVC II
- 150% Peak Load Output for 3 Seconds
- Indoor Use
- Operating Altitude up to 5000m
- UL61010-1, UL61010-2-201 and EN62368-1 (report) Safety Approvals

DESCRIPTION

The PSFDN120 series of AC/DC converters offers 120 watts of power in a 4.33" x 1.26" x 4.88" DIN rail package. This series consists of single output models with a wide input voltage range of either 85-264VAC or 120-370VDC as this series supports AC and DC dual-use. Features of this series include high efficiency, high reliability, and DC ON output status indicator LED. It is protected against output short circuit, over current, over voltage, and over temperature conditions and has UL61010-1, UL61010-2-201 and EN62368-1 (report) safety approvals.

MODEL SELECTION TABLE

Model Number	Input Voltage Range	Output Voltage	Output Voltage Adjustable Range	Output Current	Output Power	Maximum Capacitive Load	Efficiency
PSFDN120-12S	85~264VAC (100~370VDC)	12V	11.8 – 14V	10A	120W	80,000µF	93.5%
PSFDN120-24S		24V	23.5 – 28V	5A		50,000µF	94%
PSFDN120-48S		48V	47 – 53V	2.5A		30,000µF	94%





SPECIFICATIONS

All specifications are based on Ta=25°C, Humidity <90% 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	Rated Input (Certified Voltage)	100		240	VAC
	AC Input	85		264	
	DC Input	120		370	VDC
Input Frequency	Rated AC Input	50		60	Hz
	AC Input	47		63	
Input Current	Rated Input			1.5	A
	115VAC			1.5	
	230VAC			0.75	
Inrush Current	Cold Start	115VAC	15		A
		230VAC	30		
Power Factor	115VAC		0.98		
	230VAC		0.94		
Leakage Current	240VAC			1	mA
Hot Plug					Unavailable
OUTPUT SPECIFICATIONS					
Output Voltage					See Table
Voltage Accuracy	Full Load Range		±1		%
		Rated Load	±0.5		%
Line Regulation	Rated Load		±1.0		%
Load Regulation	0%-100% Load				%
Output Power					See Table
Output Current					See Table
Maximum Capacitive Load					See Table
Ripple & Noise ⁽¹⁾	20MHz bandwidth (Peak-Peak Value)	12V/24V		100	mV
		48V		200	
Stand-by Power Consumption			2		W
Hold-Up Time	115VAC		20		ms
Start-Up Delay Time	230VAC		300	1000	ms

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SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
PROTECTION						
Short Circuit Protection	Recovery time <10s after the short circuit disappears		Constant current hiccup mode (constant current mode works 1s and stops 10s) continuous, self-recovery			
Over Current Protection	230VAC, Rated Load	Normal Temperature, High Temperature	105 - 200%Io, self-recovery			
		Low Temperature	≥105% full load after derating, self-recovery			
Over Voltage Protection	Hiccup, self-recovery after the abnormality is removed	12V		≤18		V
		24V		≤35		
		48V		≤60		
Over Temperature Protection	230VAC, 70% Load	Over-Temperature Protection Start		90		°C
		Over-Temperature Protection Release	60			
ENVIRONMENTAL SPECIFICATIONS						
Operating Temperature			-40		+70	°C
Storage Temperature			-40		+85	°C
Storage Humidity	Non-Condensing		20		95	%RH
Operating Humidity	Non-Condensing				95	%RH
Power Derating	Operating Temperature Derating	-40°C to -25°C		3.34		% / °C
		+55°C to +70°C	85VAC-164VAC	2.0		
		+60°C to +70°C	165VAC-264VAC	3.0		
	Input Voltage Derating	85VAC-100VAC		0.67		% / VAC
MTBF	MIL-HDBK-217F @25°C		300,000			H
GENERAL SPECIFICATIONS						
Typ. Efficiency	230VAC			See Table		
Switching Frequency				100		kHz
Isolation Test	Electric strength test for 1min. Leakage Current <15mA	Input- 		1500		VAC
		Input-Output		3000		
		Output- 		500		
Insulation Resistance	At 500VDC	Input- 		50		MΩ
		Input-Output		50		
		Output- 		50		
PHYSICAL SPECIFICATIONS						
Weight			1.08lb (490g) ±10%			
Dimensions (L x W x H)			4.33in x 1.26in x 4.88in (110mm x 32mm x 124mm)			
Casing Material			Metal (AL5052, SPCC, SGCC) and Plastic (PA66)			
Cooling			Free Air Convection			
SAFETY CHARACTERISTICS						
Safety Standards	UL61010-1, UL61010-2-201 Safety Approved & EN62368-1 (Report) Design Refers to IEC/EN/UL62368-1, UL61010-1, UL61010-2-201					
Safety Class						Class I
EMI	CE	CISPR32/EN55032				Class B
	RE	CISPR32/EN55032				Class B
	Harmonic Current	IEC/EN61000-3-2				Class A and Class D
EMS	ESD	IEC/EN61000-4-2	Contact ±6kV/Air ±8kV			Perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m			Perf. Criteria A
	EFT	IEC/EN61000-4-4	±4kV			Perf. Criteria A
	Surge	IEC/EN61000-4-5	Line to Line ±2kV Line to Ground ±4kV			Perf. Criteria A
	CS	IEC/EN61000-4-6	10Vr.m.s			Perf. Criteria A
	Voltage Dips, Short Interruptions and Voltage Variations Immunity	IEC/EN61000-4-11	0%, 70%			

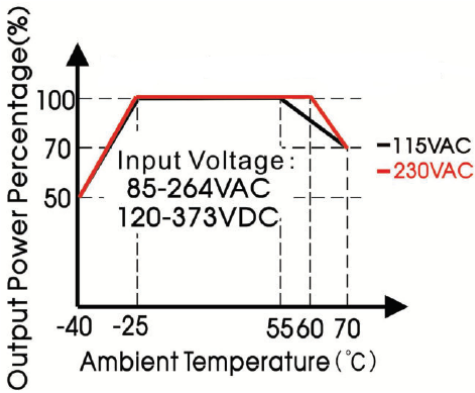
NOTES

1. 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.
2. The room temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m
3. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability.
4. Customization available, contact factory for more information.
5. Out case needs to be connected to the earth (⏚) of system when the terminal equipment is operating. See mechanical drawing.
6. Our product shall be classified according to ISO14001 and related environmental laws and regulations, and should be handled by qualified units; ⏚
7. Output voltage can be adjusted by the output adjustable resistance ADJ, turn it up clockwise
8. Units are open type power supplies, which needs to be mounted in a fire, mechanically and electrically safe enclosure.
9. If the equipment is used in a manner not specified by manufacturer, protection provided by the equipment may be impaired.
10. **WARNING:** Risk of electrical shock, fire, personal injury, or death
11. Do not use the power supply without proper grounding (Protective Earth). Use the terminal on the input block for earth connection and not one of the screws on the housing
12. Turn power off before working on the device, protect against inadvertent re-powering.
13. Make sure that the wiring is correct by following all local and national codes.
14. Do not modify or repair the unit.
15. Do not open the unit as high voltage are present inside.
16. Use caution to prevent any foreign objects from entering the housing.
17. Do not use in wet locations or in areas where moisture or condensation can be expected.
18. Do not touch during power-on, and immediately after power-off, hot surfaces may cause burns.
19. For ambient temperature ≤60°C, use ≥90°C – copper wire only for ambient temperature >60°C to 85°C, use ≥105°C – copper wire only; use only wires with a minimum dielectric strength of 300V (input) and 60V (output).

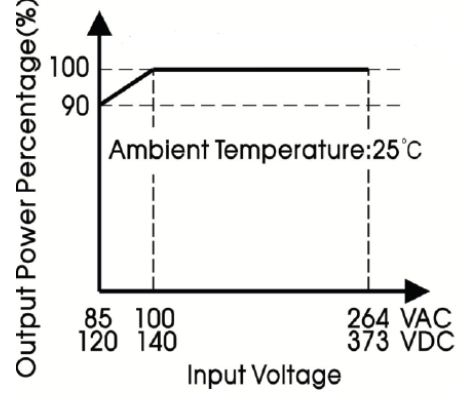
**Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES

Temperature Derating Graph

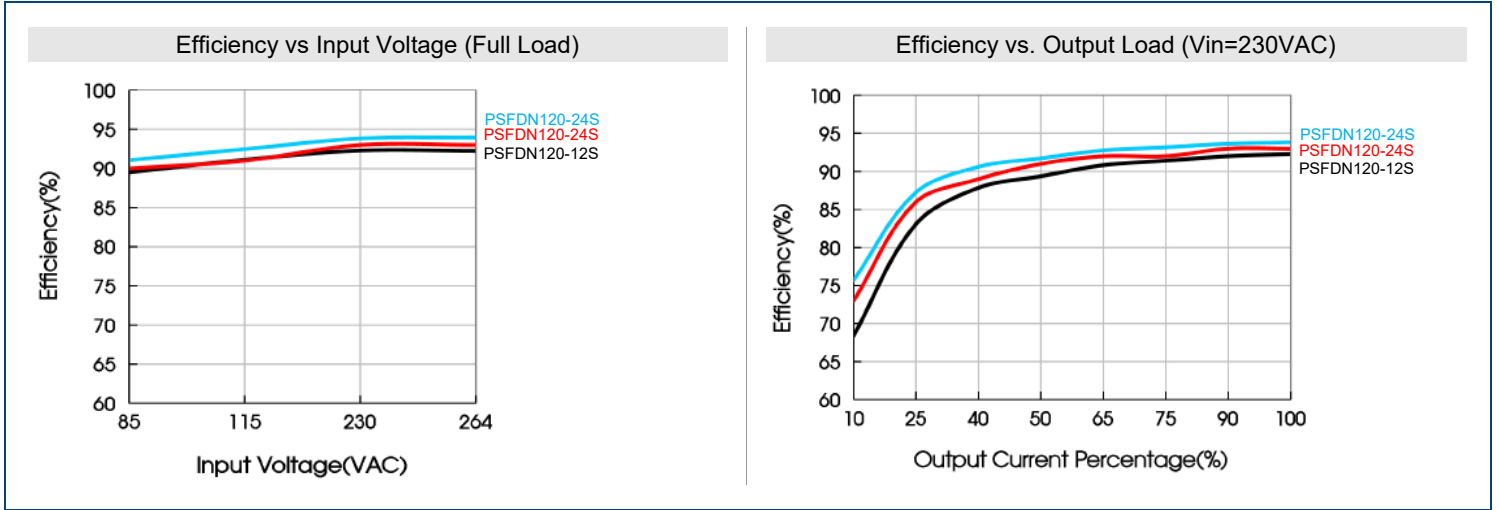


Input Voltage Derating Graph

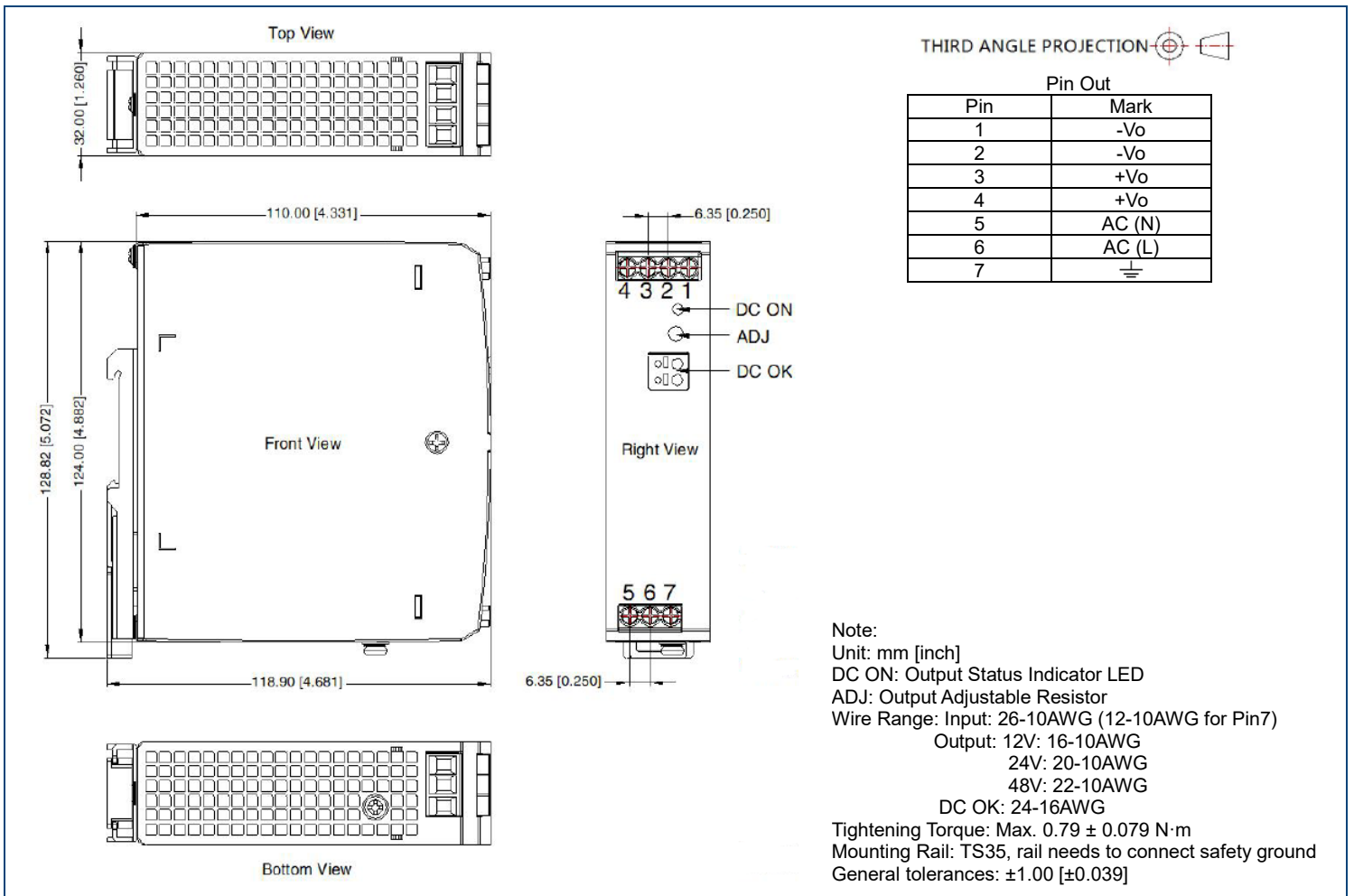


- Note:
1. With AC input voltage between 85-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curve.
 2. This product is suitable for applications using natural air cooling for applications in closed environments. Contact factory for more details.

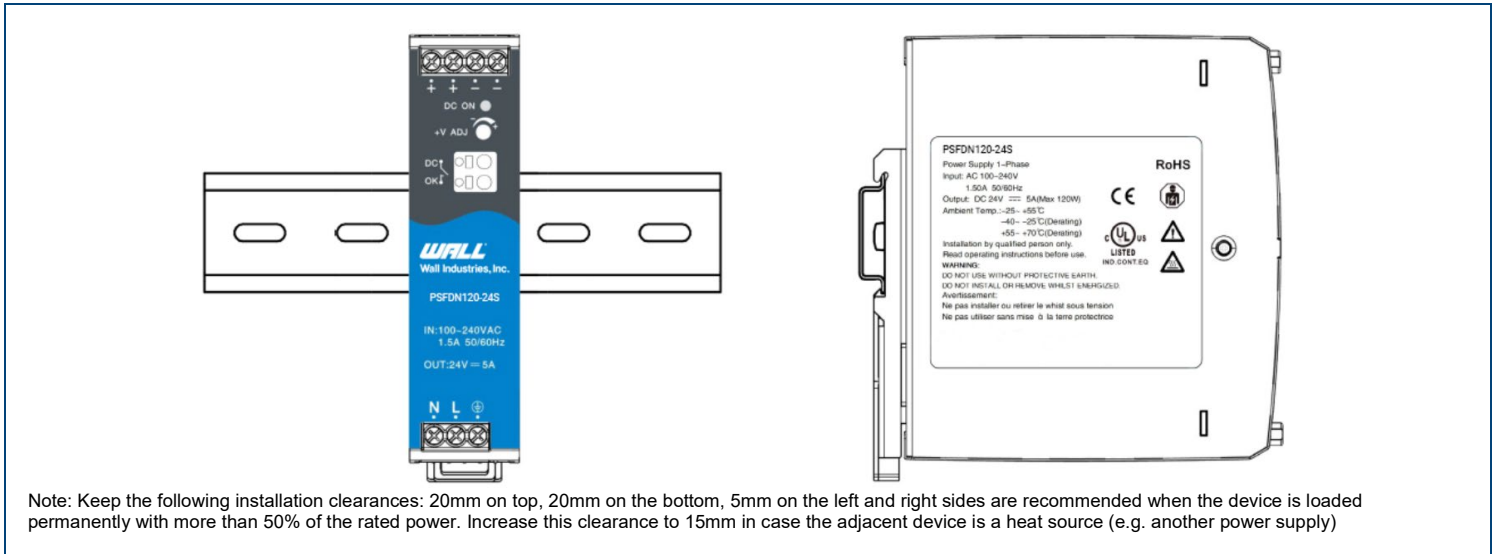
EFFICIENCY CURVES



MECHANICAL DRAWINGS



INSTALLATION DIAGRAM



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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