



Size: 5.17in x 1.89in x 4.92in (131.39mm x 48mm x 125mm)

FEATURES

- Input Voltage Range of 85-264VAC / 120-370VDC
- Accepts AC or DC Input (Dual-Use of Same Terminal)
- High Efficiency
- High I/O Isolation Test Voltage Up to 3000VAC
- Low Ripple & Noise
- Active PFC
- DC OK Function
- Output Short Circuit, Over Current, Over Voltage, and Over Temperature Protection
- DIN Rail TS-35/7.5 or 15 Mountable
- Ultra Slim Design
- RoHS Compliant
- IEC/EN/UL62368-1 & UL61010-1 Safety Approvals

DESCRIPTION

The PSFDN480 series of AC/DC converters offers up to 480 watts of power in a ultra slim 5.17" x 1.89" x 4.92" 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 I/O isolation test voltage, and low ripple & noise. It is protected against output short circuit, over current, over voltage, and over temperature conditions and design refers to IEC/EN/UL62368-1 & UL61010-1 safety approvals.

MODEL SELECTION TABLE

Model Number ⁽¹⁾	Input Voltage Range	Output Voltage	Output Voltage Adjustable Range	Output Current	Output Power	Maximum Capacitive Load	Efficiency
PSFDN480-24S	85~264VAC	24V	24-28V	20A	480W	4700μF	94%
PSFDN480-48S	(100~370VDC)	48V	48-55V	10A	480W	2700μF	94%

SPECIFICATIONS

All specifications are based on Ta=25°C, Humidity <75%, 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		264	VAC		
	DC Input		120		370	VDC		
Input Frequency			47		63	Hz		
Input Current	115VAC				5	A		
	230VAC				2.5			
Inrush Current	Cold Start	115VAC		20		A		
		230VAC		40				
Power Factor	115VAC		0.99			mA		
	230VAC		0.95					
Leakage Current	240VAC				0.8			
Hot Plug			Unavailable					
OUTPUT SPECIFICATIONS								
Output Voltage			See Table					
Voltage Accuracy	Full Load Range			±1.0		%		
Line Regulation	Rated Load			±0.5		%		
Load Regulation	0%-100% Load			±1.0		%		
Output Power			See Table					
Output Current			See Table					
Maximum Capacitive Load			See Table					
Ripple & Noise ⁽²⁾	20MHz bandwidth (Peak-Peak Value)	24V			100	mV		
		48V			120			
Minimum Load			0			%		
Hold-Up Time	115VAC		16	22		ms		
Temperature Coefficient				±0.03		%/°C		
DC OK Signal			30VDC/1A Max.					

SPECIFICATIONS

All specifications are based on Ta=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
PROTECTION							
Short Circuit Protection	Recovery time <10s after the short circuit disappears			Hiccup, constant current mode works 1s, continuous, self-recovery			
Over Current Protection	230VAC, Rated Load	Normal Temperature, High Temperature. Output turns off after working normally for 1s, Self-Recovery		110		150	%Io
		Low Temperature, automatic recovery after fault condition is removed			≥105		
Over Voltage Protection	Output voltage turn off or clamp, re power on for recovery or automatic recovery	24V		29		35	V
		48V		56		60	
Over Temperature Protection	230VAC, 100%Io	Over Temperature Protection Start				90	°C
		Over Temperature Protection Release		60			
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	1.0			%/VAC
MTBF	MIL-HDBK-217F @25°C			300,000			H
GENERAL SPECIFICATIONS							
Typ. Efficiency	@230VAC			See Table			
Isolation Test	Electric strength test for 1min. Leakage Current <10mA	Input-⎓		2000			VAC
		Input-Output		3000			
		Output-⎓		500			
Insulation Resistance	At 500VDC	Input-⎓		100			MΩ
		Input-Output		100			
		Output-⎓		100			
PHYSICAL SPECIFICATIONS							
Weight				2.16lbs (980g) Typ.			
Dimensions (L x W x H)				5.17in x 1.89in x 4.92in (131.39mm x 48mm x 125mm)			
Cooling				Free Air Convection			
Case Material				Metal (AL1100, SPCC) and Plastic (PC940)			
SAFETY CHARACTERISTICS							
Safety Standard	UL61010-1, UL61010-2-201, IS1325 (Part1) & EN62368-1 (Report) Design Refers to IEC/EN/UL62368-1						
Safety Class				Class I			
Emissions	CE	CISPR32/EN55032		Class B			
	RE	CISPR32/EN55032		Class B			
	Harmonic Current	IEC/EN 61000-3-2		Class A and Class D			
Immunity	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	±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	10Vr.m.s	Perf. Criteria A			
	Voltage Dips, Short Interruptions and Voltage Variations Immunity	IEC/EN61000-4-11	0%, 70%	Perf. Criteria A			

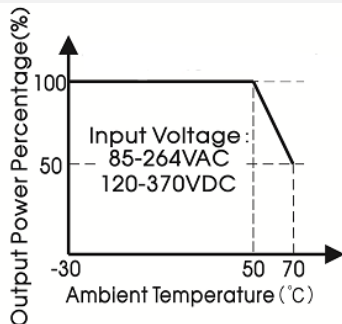
NOTES

1. Use "Q" suffix for double-faced conformal coating
2. 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.
3. Room temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m.
4. 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.
5. Out case needs to be connected to the earth (⊕) of system when the terminal equipment in operating
6. Customization is available, please contact factory.
7. Products classified to ISO14001 and related environmental laws and regulations and should be handled by qualified units.
8. WARNING: Risk of electrical shock, fire, personal injury, or death
9. 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
10. Turn power off before working on the device, protect against inadvertent re-powering.
11. Make sure that the wiring is correct by following all local and national codes.
12. Do not modify or repair the unit.
13. Do not open the unit as high voltage are present inside.
14. Use caution to prevent any foreign objects from entering the housing.
15. Do not use in wet locations or in areas where moisture or condensation can be expected.
16. Do not touch during power-on, and immediately after power-off, hot surfaces may cause burns.
17. 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).

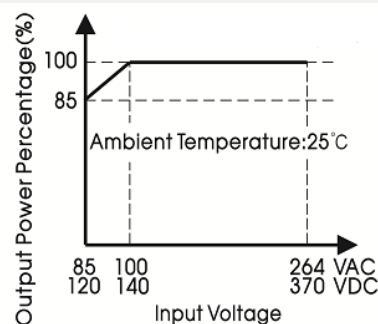
**Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES

Temperature Derating Curve



Input Voltage Derating Curve

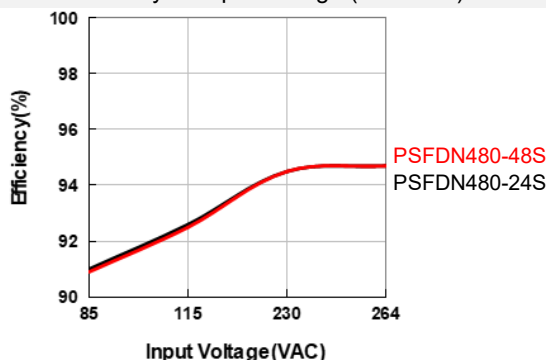


Note:

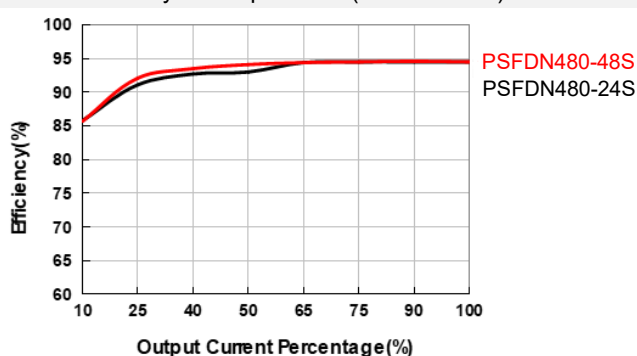
1. With AC input voltage between 85-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curve.
2. This product is suitable for applications using natural air cooling; for applications in closed environment, please contact factory.

EFFICIENCY CURVES

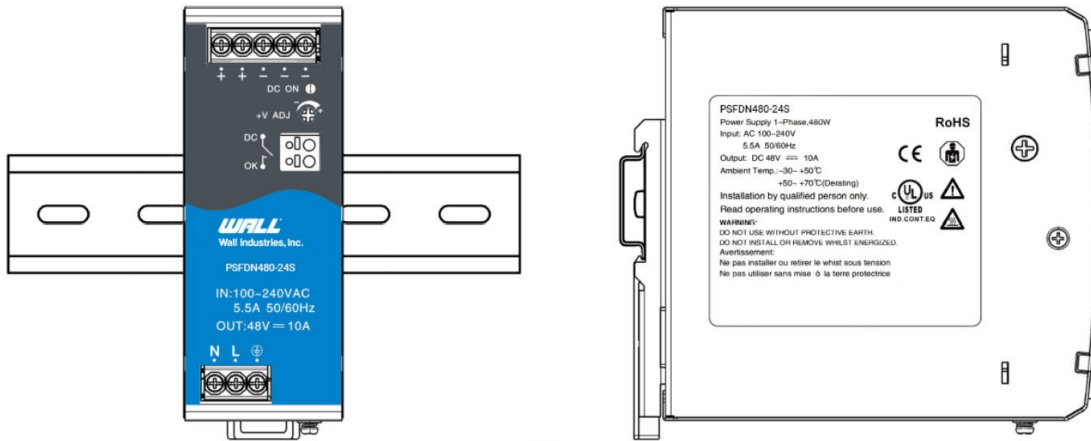
Efficiency vs Input Voltage (Full Load)



Efficiency vs Output Load (Vin=230VAC)

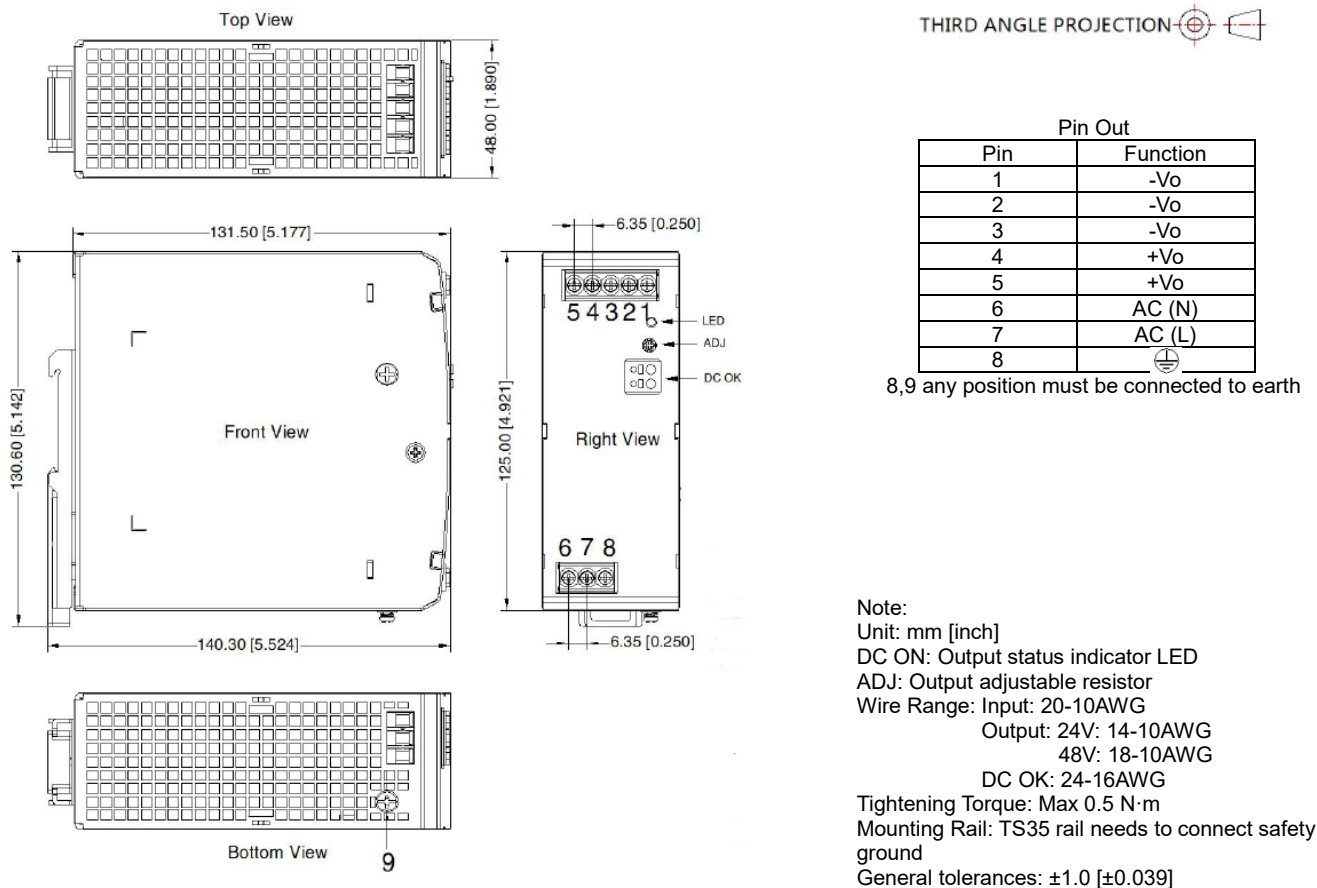


INSTALLATION DIAGRAM



Note: Keep the following installation clearances: 20mm on top, 20mm on bottom, 5mm on the left and right sides are recommended when the device is loaded permanently with more than 50% of the rated power. Increase this clearance to 15mm in case the adjacent device is a heat source (e.g. another power supply)

MECHANICAL DRAWINGS



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

©2021 Wall Industries, Inc. Specifications subject to change without notice. Wall Industries is not responsible for typographical errors. The information contained herein is for informational purposes only. This information is provided by Wall Industries and we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the information contained in this document for any purpose. All product and manufacturer names are trademarks or registered trademarks of their respective companies.