



Size: 2.76in x 1.89in x 1.06in
(70mm x 48mm x 27mm)

FEATURES

- Ultra-Wide Input Voltage Range 85~305VAC (100~430VDC)
- High Efficiency
- Compact Size, High Power Density
- RoHS Compliant
- High I/O Isolation Test Voltage up to 4200VAC
- Short Circuit, Over Current, and Over Voltage Protection
- OVC III (Meets EN62477, 5000m Altitude)
- 5000m altitude application
- Meets Emissions Class B and Surge ± 2 KV Without Additional Circuits
- UL62368, EN62368 & UKCA Safety Approvals
- Design Refers to IEC62368-1, IEC/EN60335-1/62477-1, EN61558-1

APPLICATIONS

- Industrial
- Home Appliances
- Instrumentation
- Communication
- Civil Applications

DESCRIPTION

The PSDAL60 series of AC/DC converters offers up to 60 watts of output power in a compact horizontal package. This series consists of single output models with an ultra-wide 85-305VDC (100~430VDC) input range. Features of this series include short circuit, over current, and over voltage protection and high efficiency. This series is RoHS compliant, has UL62368, EN62368, and UKCA safety approvals, and it is designed to meet IEC62368-1, IEC/EN60335-1/62477-1, EN61558-1 safety approvals.

MODEL SELECTION TABLE

Model Number	Input Voltage Range	Output Voltage	Output Current	Maximum Capacitive Load	Typ. Efficiency	Output Power	Max. Ripple & Noise	Certification
PSDAL60-05S	85~305VAC (100~430VDC)	5V	10A	2000 μ F	89%	50W	150mV	EN
PSDAL60-12S		12V	5A	5000 μ F	91%	60W		
PSDAL60-15S		15V	4A	3000 μ F	90%	60W		
PSDAL60-24S		24V	2.5A	1800 μ F	90%	60W		
PSDAL60-48S		48V	1.25A	470 μ F	91%	60W		

SPECIFICATIONS

All specifications are based on 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	TEST CONDITIONS			Unit
		Min	Typ	Max	
INPUT SPECIFICATIONS					
Input Voltage Range	AC Input DC Input	85 100		305 430	VAC VDC
Input Frequency		47		63	Hz
Input Current	115VAC 230VAC			1.8 1.0	A
Inrush Current	115VAC 230VAC		30 60		A
Leakage Current	277VAC/50Hz	0.25mA RMS max.			
Fuse		3.15A/300V, slow-blow, required			
Hot plug		Unavailable			
OUTPUT SPECIFICATIONS					
Output Voltage		See Table			
Voltage Accuracy			± 2		%
Line Regulation	Full Load		± 1		%
Load Regulation	0%-100% Load		± 1.5		%
Output Power		See Table			
Output Current		See Table			
Minimum Load		0			%
Maximum Capacitive Load		See Table			
Ripple & Noise ⁽¹⁾	20MHz Bandwidth (peak-to-peak value)		80	150	mV
Stand-by Power Consumption	230VAC		0.3	0.45	W
Hold-Up Time	115VAC Input 230VAC Input		8 65		ms
Temperature Coefficient			± 0.02		%/°C
PROTECTION					
Short Circuit Protection		Hiccup, Continuous, Self-Recovery			
Over Current Protection		$\geq 140\%I_o$, self-recovery			
Over Voltage Protection	Hiccup or Clamp	5VDC		≤ 16	VDC
		12VDC		≤ 16	
		15VDC		≤ 25	
		24VDC		≤ 35	
		48VDC		≤ 60	

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SPECIFICATION	TEST CONDITIONS	Min	Typ	Max	Unit	
ENVIRONMENTAL SPECIFICATIONS						
Operating Temperature		-40		+85	°C	
Storage Temperature		-40		+85	°C	
Storage Humidity				95	%RH	
Soldering Temperature	Wave-Soldering	260±5°C; time: 5-10s				
	Manual-Welding	360±10°C; time: 3-5s				
Power Derating	-40°C to -25°C (85-200VAC Input)	3.33			% / °C	
	-40°C to -25°C (200-305VAC Input)	1.33				
	+40°C to +70°C (5VDC Output)	1.5				
	+45°C to +70°C (85-165VAC Input, 12/15/24/48VDC Output)	1.8				
	+50°C to +70°C (≥165VAC Input, 12/15/24/48VDC Output)	2.25				
	+70°C to +85°C	2				
	85VAC-100VAC	1.33			% / VAC	
	277VAC-305VAC	0.72				
Operating Altitude Derating	2000-5000m	6.67			% / Km	
MTBF	MIL-HDBK-217F@25°C	500,000			h	
GENERAL SPECIFICATIONS						
Efficiency	230VAC	See Table				
Isolation	Input-Output, Electric Strength Test for 1min, leakage current <5mA	4200			VAC	
Insulation Resistance	Input-Output, Test Voltage at 500VDC	100			MΩ	
PHYSICAL SPECIFICATIONS						
Weight		4.59oz (130g)				
Dimensions (L x W x H)		2.76in x 1.89in x 1.06in (70mm x 48mm x 27mm)				
Cooling Method		Free Air Convection				
Case Material		Black Plastic, Flame-Retardant and Heat-Resistant (UL94V-0)/Metal				
SAFETY CHARACTERISTICS						
Safety Standards ⁽²⁾	Approved to	UL62368, EN62368 & UKCA				
	Design refers to	IEC62368-1, IEC/EN60335-1/62477-1, EN61558-1				
Safety Class		Class II				
EMI	CE	CISPR32/EN55032			Class B	
	RE	CISPR32/EN55032			Class B	
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
			IEC/EN61000-4-4	±4kV ⁽²⁾		Perf. Criteria A
	Surge		IEC/EN61000-4-5	Line to Line ±2kV		Perf. Criteria A
			IEC/EN61000-4-5	line to line ±2KV/line to PE ±4KV ⁽²⁾		Perf. Criteria A
	CS	IEC/EN61000-4-6	10Vr.m.s		Perf. Criteria A	
Voltage dip, short interruption and voltage	IEC/EN61000-4-11	0%, 70%		Perf. Criteria B		

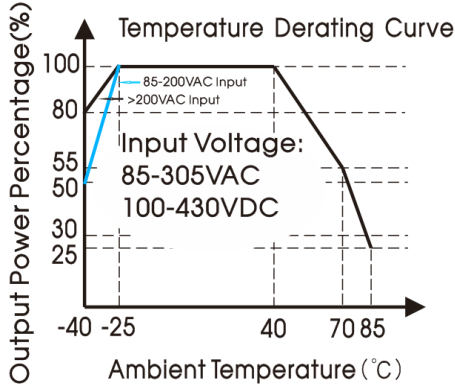
NOTES

1. Tip and barrel method is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 1uF ceramic capacitor, please contact factory for more information.
2. See Fig. 2 for recommended circuit.
3. If product is not operated within required load range, it is not guaranteed that the product performance will comply with all parameters in the datasheet.
4. Products classified according to ISO14001 and related environmental laws and regulations. It should be handled by qualified units.
5. Customization available.

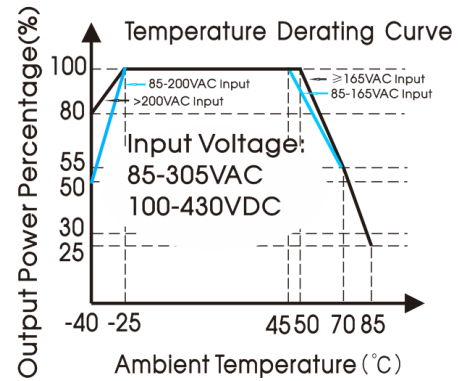
*Due to advances in technology, specifications subject to change without notice.

DERATING CURVES

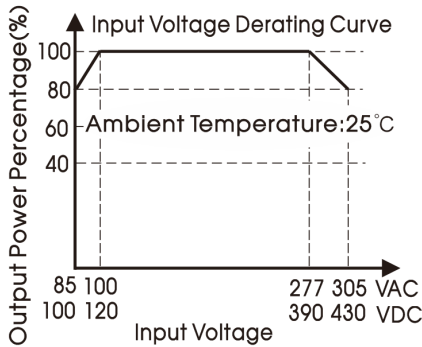
Temperature Derating Curve (5VDC Output)



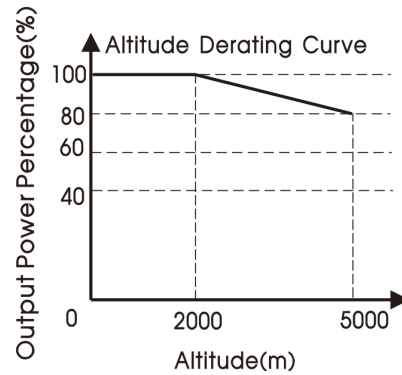
Temperature Derating Curve (12/15/24/48VDC Output)



Input Voltage Derating Curve



Altitude Derating Curve

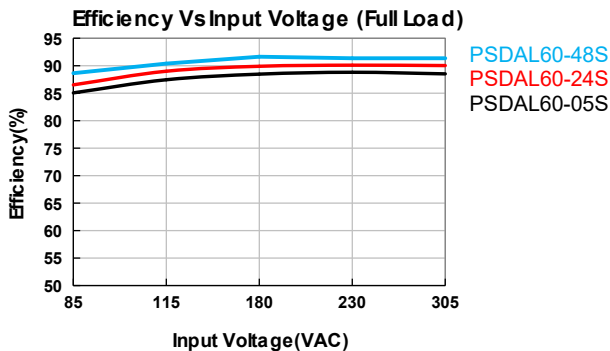


Note:

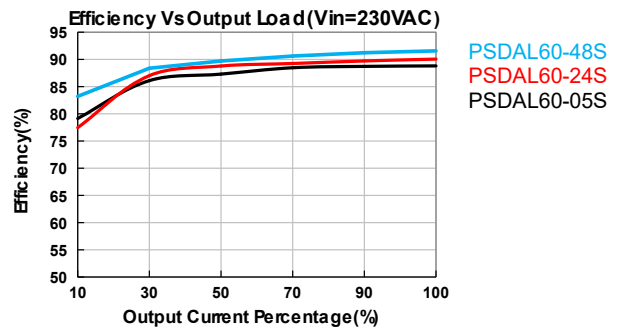
1. With an AC input between 85-100V/277-305VAC and a DC input between 100-120V/390-430VDC, the output power must be derated as per temperature derating curves.
2. This product is suitable for applications using natural air cooling, if in closed environment, please contact factory.

EFFICIENCY GRAPHS

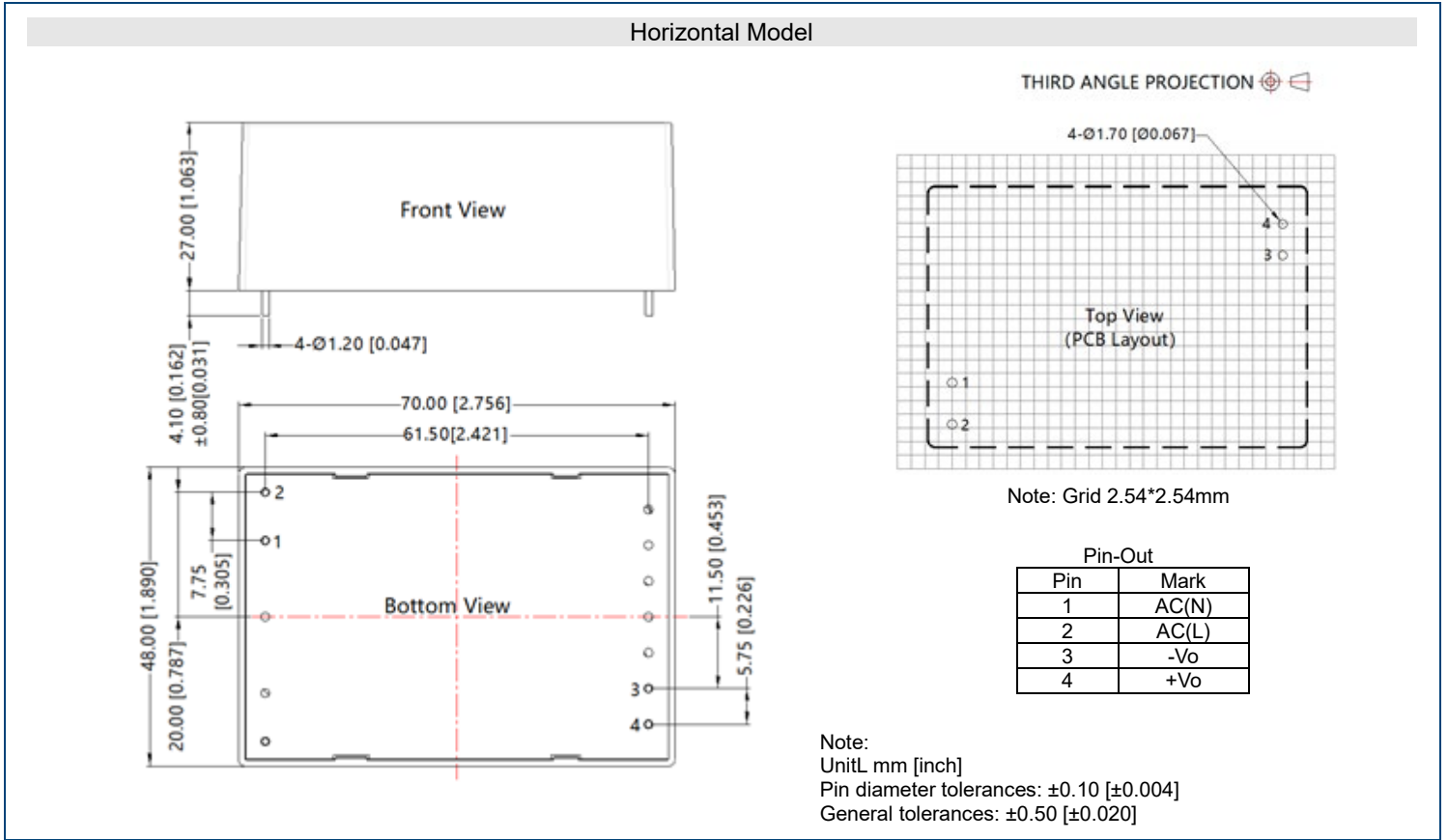
Efficiency vs. Input Voltage (Full Load)



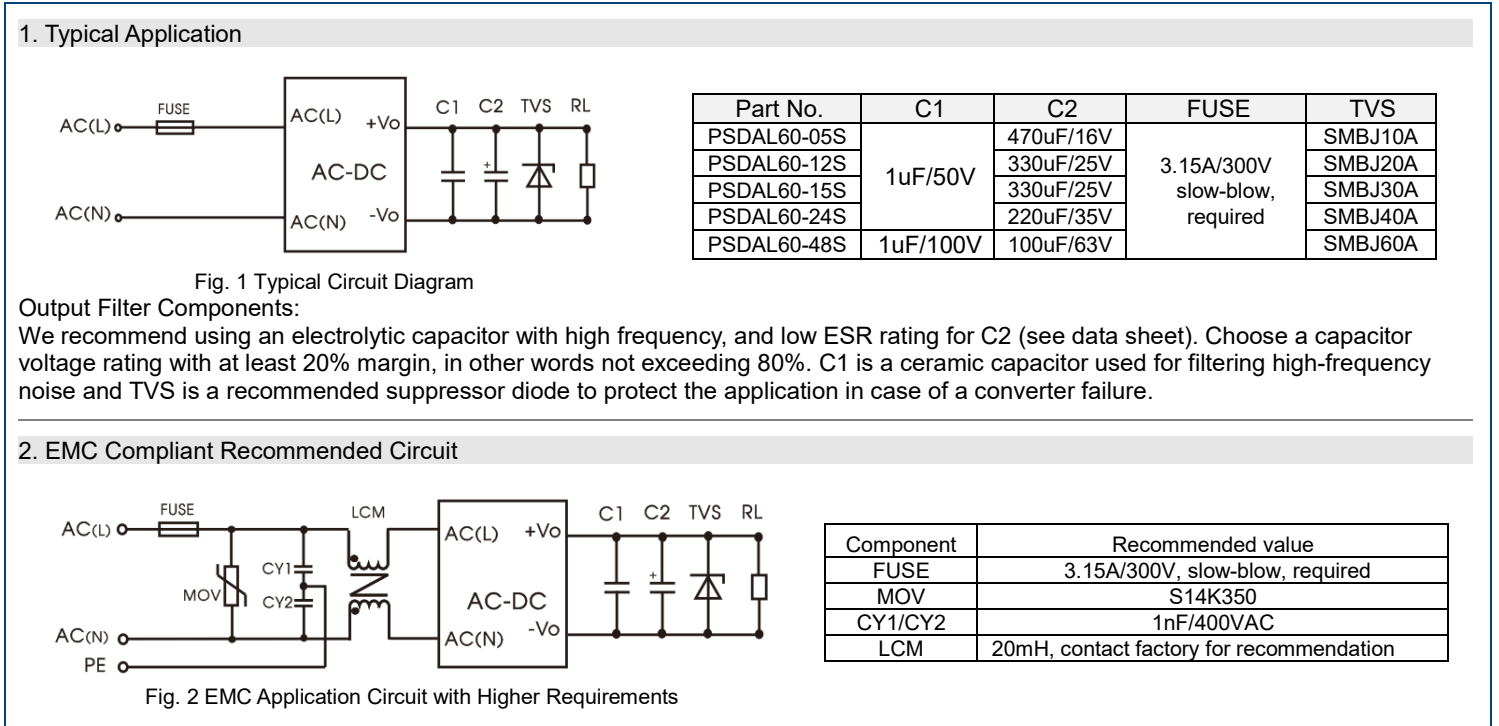
Efficiency vs. Output Load (Vin=230VAC)



MECHANICAL DRAWINGS



DESIGN REFERENCE



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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