



Size: 3.43in x 2.05in x 1.61in  
(87mm x 52mm x 29.5mm)

**FEATURES**

- Ultra-Wide Input Voltage Range 80~305VAC (110~430VDC)
- Cooling by Free Air Convection
- High Efficiency
- No Load Power Consumption <0.21W
- RoHS Compliant
- Meets Emission Class B and Surge ±2KV Without Additional Circuits
- 4000m altitude application
- Plastic Case meets UL94V-0 Flammability
- Short Circuit, Over Current, and Over Voltage Protection
- Over Voltage Category OVC III (Meets EN62368-1, EN61558-1) (2000m Altitude)
- High I/O Isolation Test Voltage Up to 4200VAC
- UL62368, EN62368 & UKCA Safety Approvals
- Design Refers to IEC62368-1, BS EN 62368-1, IEC/EN60335-1, IEC/EN61558-1 Safety Standards

**APPLICATIONS**

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

**DESCRIPTION**

The PSDAL90 series of AC/DC converters offers up to 90 watts of output power in a compact 3.43" x 2.05" x 1.61" package. This series consists of single output models with an ultra-wide 80-305VDC (110~430VDC) input range. Features of this series include short circuit, over current, and over voltage protection, high efficiency, and cooling by free air convection. This series is RoHS compliant, has UL62368, EN62368 & UKCA safety approvals, and the design refers to IEC62368-1, BS EN 62368-1, IEC/EN60335-1, IEC/EN61558-1 safety standards.

**MODEL SELECTION TABLE**

Model Number <sup>(1)</sup>	Input Voltage Range	Output Voltage	Output Current	Maximum Capacitive Load	Typ. Efficiency	Output Power	Max. Ripple & Noise	Certification
PSDAL90-12S	80~305VAC (110~430VDC)	12V	6700mA	6800µF	92%	80.4W	120mV	EN
PSDAL90-15S		15V	5670mA	4500µF	92.5%	85.05W	120mV	
PSDAL90-24S		24V	3750mA	3000µF	93%	90W	200mV	
PSDAL90-48S		48V	1875mA	470µF	93%	90W	240mV	

**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		Min	Typ	Max	Unit
	<b>INPUT SPECIFICATIONS</b>					
Input Voltage Range	AC Input		80		305	VAC
	DC Input		110		430	VDC
Input Frequency			47		63	Hz
Input Current	115VAC				2	A
	230VAC				1.1	
Inrush Current	115VAC			35		A
	230VAC			65		
Leakage Current	277VAC/50Hz		0.25mA RMS max.			
Built-In Fuse			3.15A/300V, slow-blow			
Hot plug			Unavailable			
<b>OUTPUT SPECIFICATIONS</b>						
Output Voltage			See Table			
Voltage Accuracy				±2		%
Line Regulation	Full Load			±0.5		%
Load Regulation	0%-100% load			±1		%
Output Power			See Table			
Output Current			See Table			
Minimum Load			0			%
Maximum Capacitive Load			See Table			
Ripple & Noise <sup>(1)</sup>	20MHz Bandwidth (peak-to-peak value)	12V/15V			120	mV
		24V			200	
		48V			240	
Stand-by Power Consumption					0.21	W
Hold-Up Time	115VAC Input			10		ms
	230VAC Input			30		
Temperature Coefficient				±0.02		%/°C

**SPECIFICATIONS**

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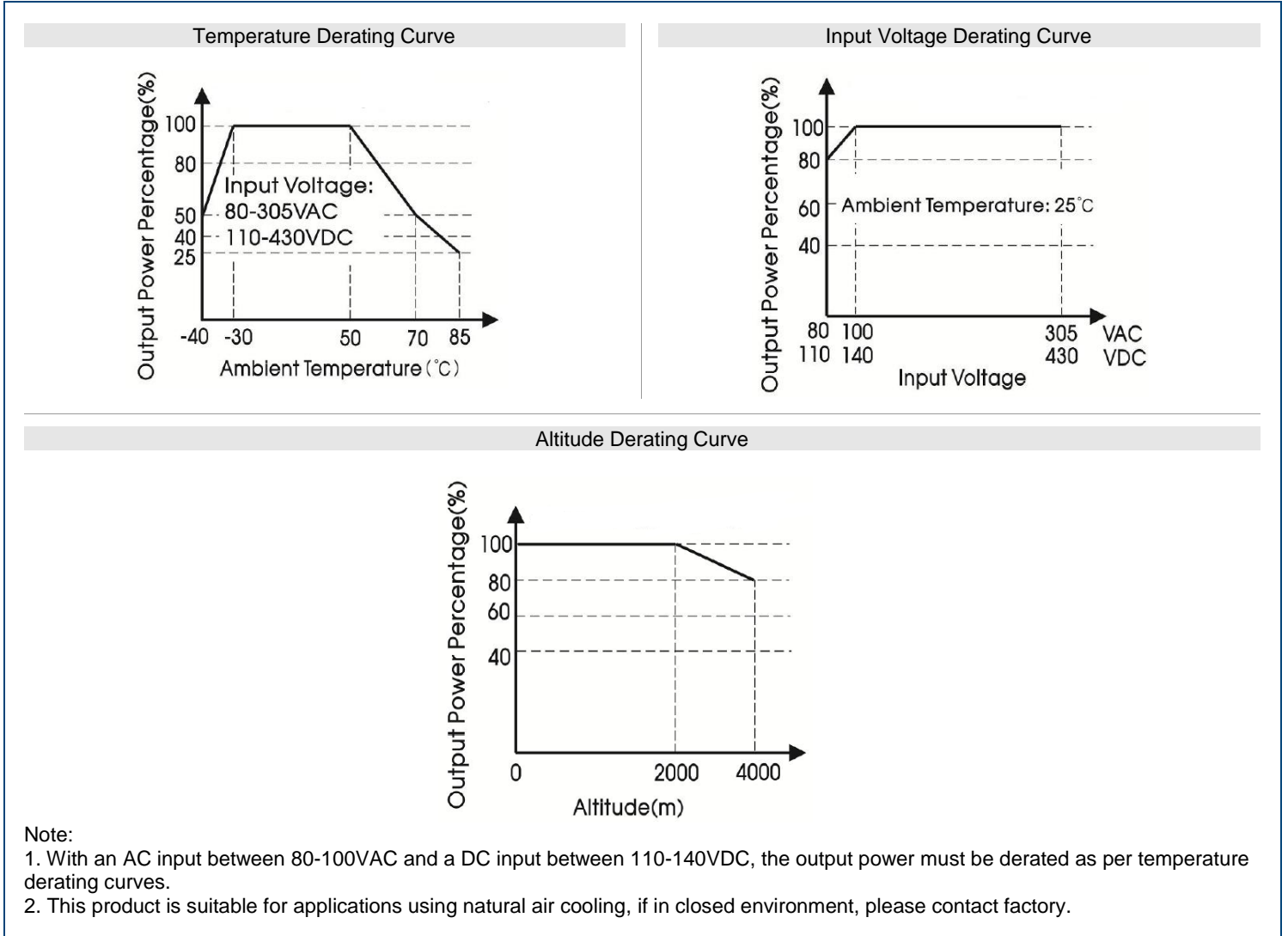
SPECIFICATION		TEST CONDITIONS		Min	Typ	Max	Unit
<b>PROTECTION</b>							
Short Circuit Protection				Hiccup, Continuous, Self-Recovery			
Over Current Protection				≥110%Io, self-recovery			
Over Voltage Protection	Hiccup or Clamp	12VDC			≤16		
		15VDC			≤25		
		24VDC			≤35		
		48VDC			≤60		
<b>ENVIRONMENTAL SPECIFICATIONS</b>							
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 -30°C			5.0			%/°C
	+50°C to 70°C			2.50			
	+70°C to +85°C			1.66			
	80VAC-100VAC			1.0			%/VAC
	2000-4000m			10.0			%/Km
Vibration	10-500Hz, 2G 10 min/1cycle, period for 60min. each along X, Y, Z axes						
MTBF	MIL-HDBK-217F @25°C			500,000			h
<b>GENERAL SPECIFICATIONS</b>							
Efficiency	230VAC				See Table		
Switching Frequency					75		kHz
Isolation	Input-Output, Electric Strength Test for 1min, leakage current <5mA			4200			VAC
Insulation Resistance	Input-Output, at 500VDC			100			MΩ
<b>PHYSICAL SPECIFICATIONS</b>							
Weight					7.05oz (200g)		
Dimensions (L x W x H)					3.43in x 2.05in x 1.61in (87mm x 52mm x 29.5mm)		
Cooling Method					Free Air Convection		
Case Material					Black Plastic, Flame-Retardant and Heat-Resistant (UL94V-0)		
<b>SAFETY CHARACTERISTICS</b>							
Safety Standards <sup>(2)</sup>			Approved to		UL62368, EN62368 & UKCA		
			Design Refers to		IEC/EN/UL62368-1, BS EN 62368-1, IEC/EN60335-1, IEC/EN61558-1		
Safety Class					Class II		
EMI	CE	CISPR32/EN55032				Class B	
	RE	CISPR32/EN55032				Class B	
	Harmonic Current	IEC/EN61000-3-2				Class A	
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		Perf. Criteria B		
		IEC/EN61000-4-5	line to line ±2KV/line to ground ±4KV <sup>(3)</sup>		Perf. Criteria A		
	CS	IEC/EN61000-4-6	10Vr.m.s		Perf. Criteria A		
	PFM	IEC/EN61000-4-8	30A/m		Perf. Criteria A		
	Voltage dip, short interruption and voltage variation	IEC/EN61000-4-11	0%, 70%		Perf. Criteria B		

**NOTES**

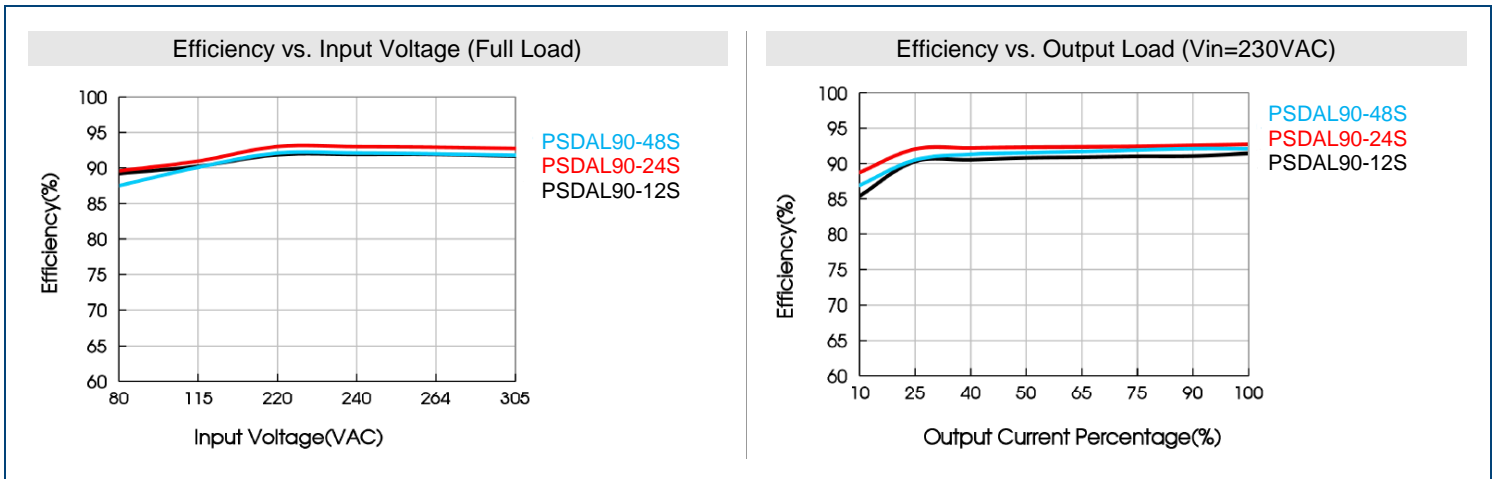
1. Tip and barrel method is used for ripple and noise test, output parallel 10uF electrolytic capacitor and 1uF ceramic capacitor, please contact factory for more information.
2. This product is Listed to applicable standards and requirements by UL.
3. See EMC compliance circuit for recommended circuit.
4. If product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet.
5. Customization available
6. Products classified according to ISO14001 and related environmental laws and regulations. It should be handled by qualified units.

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

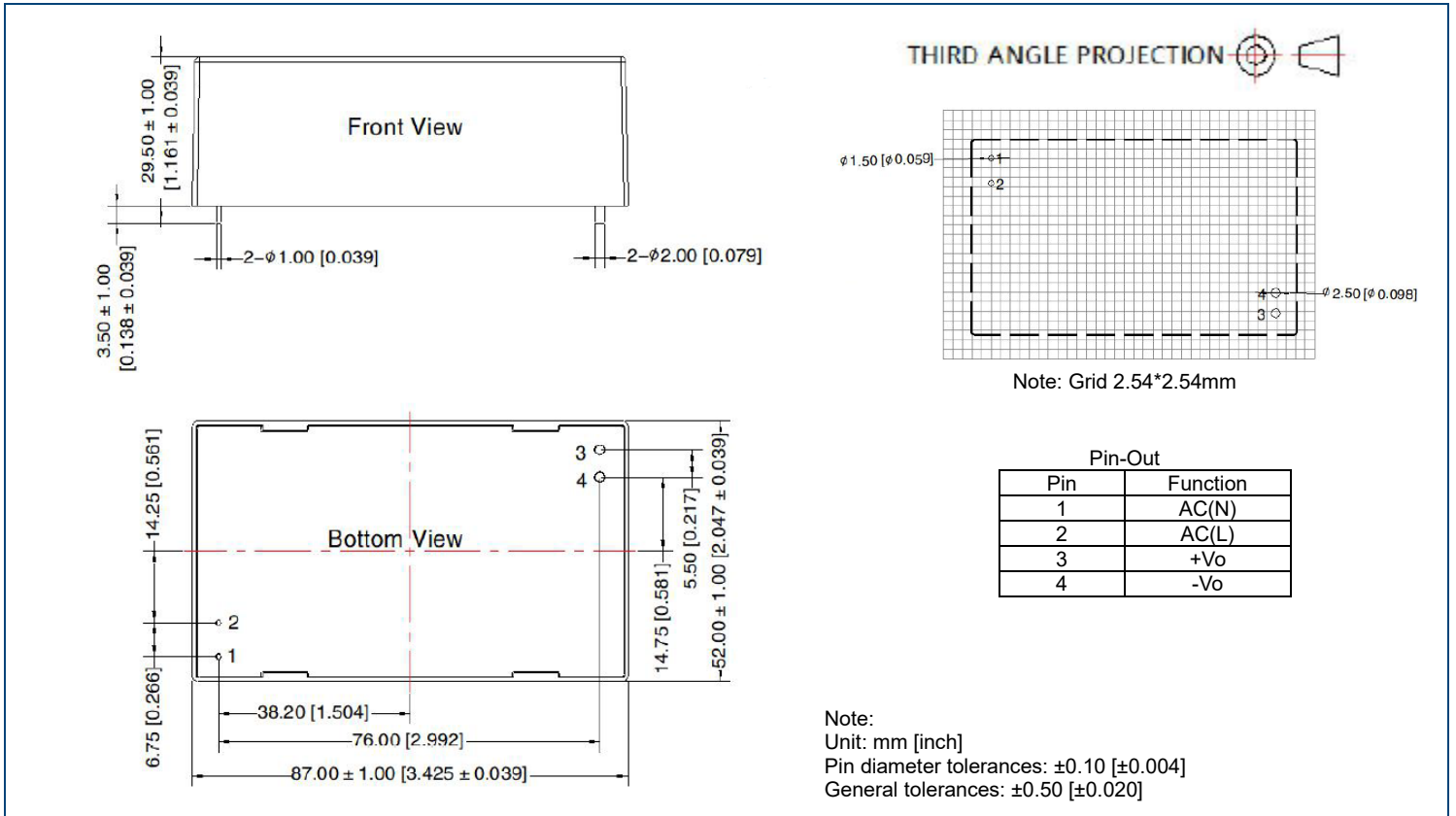
DERATING CURVES



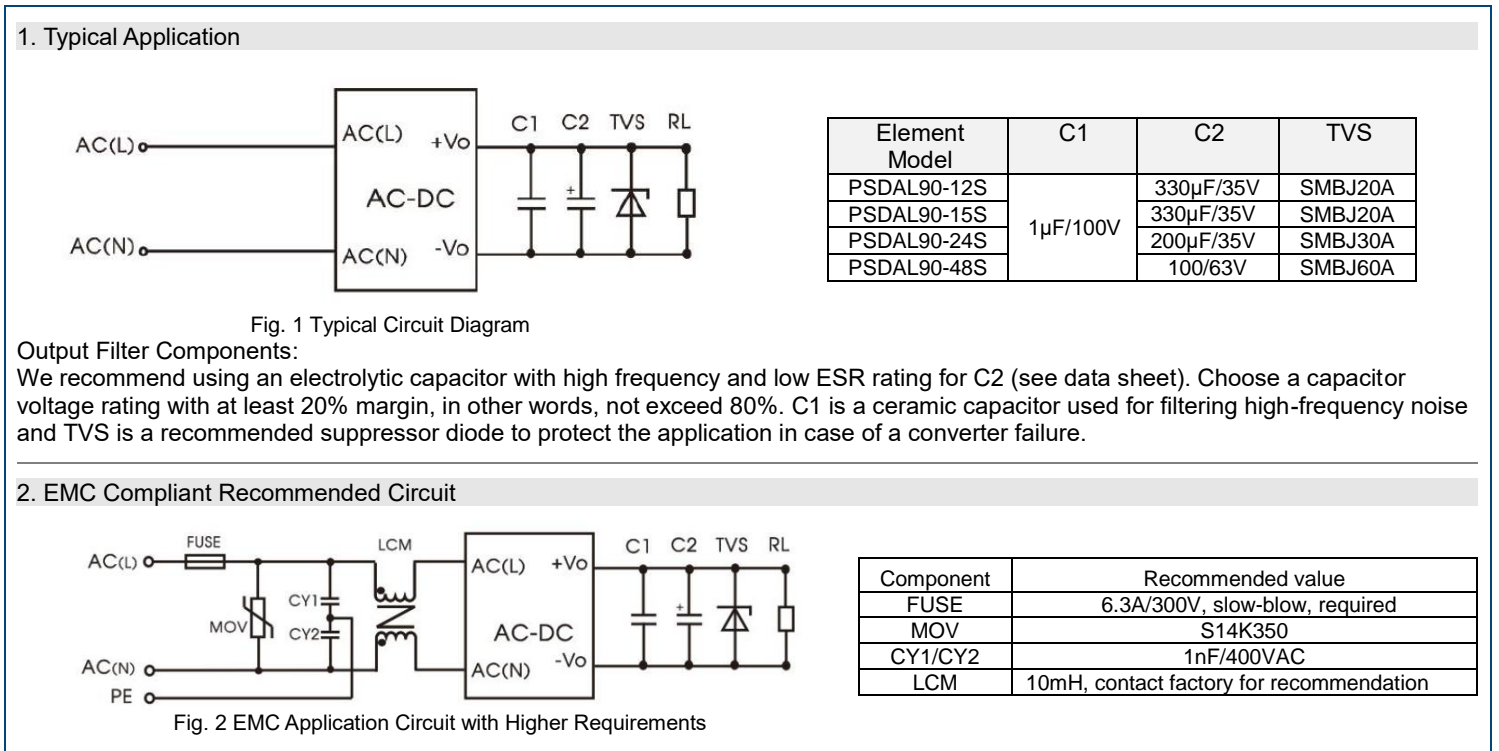
EFFICIENCY GRAPHS



MECHANICAL DRAWINGS



DESIGN REFERENCE



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**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:

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