

Wall Industries, Inc.

PSMP05 SERIES

85~264VAC (125~373VDC) Input Voltage Range
Single Outputs, Isolation Class II
5 Watts, Open Frame
Medical AC/DC Switching Power Supplies



FEATURES

- Isolation Class II
- 2.28" x 1.77" x 0.75" Open Frame Package
- Single Outputs
- 100% Full Load Burn-in Tested
- Cooling by Free Air Convection
- $\pm 10\%$ Voltage Adjustment
- RoHS Compliant
- Energy Star Compliant
- Green Design, No-Load Power Consumption $< 0.3W$
- Withstand 2G Vibration Test
- Universal Input Voltage: 85~264VAC or 125~373VDC
- 5 Watts Output Power
- All Using 105°C Long Life Electrolytic Capacitors
- -20°C ~ +70°C Wide Operating Temperature Range
- Short Circuit, Over Load, Over Voltage, and Brown-out (Low AC Input Voltage) Protection
- UL60601-1, TUV EN60601-1, and IEC60601-1 Medical Approvals

DESCRIPTION

The PSMP05 series of Medical AC/DC switching mode power supplies provides 5 Watts of continuous output power in a 2.28" x 1.77" x 0.75" open frame package. This series consists of 5V, 12V, 15V, and 24VDC output models with a universal input voltage range of 85~264VAC or 125~373VDC. These power supplies are protected against short circuit, over load, over voltage, and brown-out (low AC input voltage) conditions and have an MTBF of 217,400 hours using MIL-HDBK-217F. This series also has UL60601-1, TUV EN60601-1, and IEC60601-1 medical approvals. All models have been 100% full load burn-in tested and are RoHS and Energy Star compliant.

SPECIFICATIONS: PSMP05 Series						
All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted. We reserve the right to change specifications based on technological advances.						
SPECIFICATION	TEST CONDITIONS		Min	Nom	Max	Unit
INPUT SPECIFICATIONS						
Input Voltage Range	AC Input Voltage Range		85		264	VAC
	DC Input Voltage Range		125		373	VDC
Input Frequency			47		63	Hz
Input Current	Low Line	Full Load, Vin = 115VAC		0.13		A
	High Line	Full Load, Vin = 230VAC		0.08		
Inrush Current	Low Line	Cold Start, Vin = 115VAC		25		A
	High Line	Cold Start, Vin = 230VAC		45		
No Load Power Consumption					0.3	W
OUTPUT SPECIFICATIONS						
Output Voltage			See Table			
Voltage Tolerance	5VDC output model		-2		+2	%
	12V, 15V, & 24VDC output models		-1		+1	
Voltage Adjustment Range			-10		+10	%
Load Regulation	5VDC output model		0% to 100% rated load	-1	+1	%
	12V, 15V, & 24VDC output models			-0.5	+0.5	
Line Regulation	Low Line to High Line at rated load		-0.5		+0.5	%
Output Power			0		5	W
Output Current			See Table			
Ripple & Noise (<i>See Note 1</i>)			See Table			
Hold-Up Time	Low Line	Full Load, Vin = 115VAC		25		ms
	High Line	Full Load, Vin = 230VAC		100		
Setup Time (<i>See Note 3</i>)	Full Load, Vin = 115/230VAC			100		ms
Rise Time	Full Load, Vin = 115/230VAC			25		ms
Temperature Coefficient	0~50°C		-0.03		+0.03	%/°C
PROTECTION						
Over Voltage Protection	Latch-off mode		115		145	%
Over Load Protection	Hiccup mode, recovers automatically after fault condition is removed		110			%
Short Circuit			yes			
Brown-out (Low AC Input Voltage)			yes			
GENERAL SPECIFICATIONS						
Efficiency	Vin = 230VAC		See Table			
Withstand Voltage	Input to output		4000			VAC
Isolation Resistance	500VDC		100			MΩ
ENVIRONMENTAL SPECIFICATIONS						
Operating Temperature	With derating (see derating curve)		-20		+70	°C
Storage Temperature			-40		+85	°C
Operating Humidity	Non-condensing		20		90	% RH
Storage Humidity			10		95	% RH
Vibration	10~500Hz, 2G 10min/1cycle, period for 60 min each along X, Y, and Z axes					
Cooling			Free air convection			
MTBF	MIL-HDBK-217F		217,400 hours			
PHYSICAL SPECIFICATIONS						
Weight			Approximately 1.16oz (33g)			
Dimensions (L x W x H)			2.28 x 1.77 x 0.75 inches (57.9 x 45 x 19.1 mm)			
SAFETY & EMC						
Safety Approvals	UL60601-1, TUV EN60601-1, and IEC60601-1					
EMI Conduction & Radiation	EN55011: 2007+A2: 2007 Class B					
Harmonic Current	EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005					
EMS Immunity	EN60601-1-2: 2001+A1: 2006, IEC61000-4-2,3,4,5,6,8,11 light industry level, criteria A					

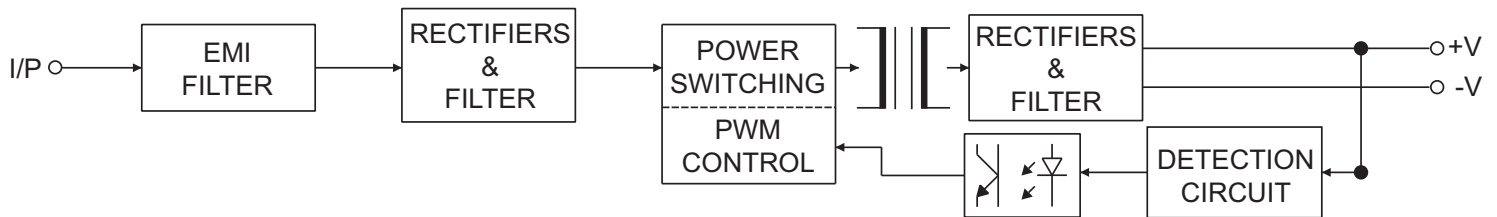
MODEL SELECTION TABLE

Model Number	Input Voltage Range	Output Voltage	Output Current	Ripple & Noise ⁽¹⁾	Efficiency	Output Power
PSMP-05-05	85 ~ 264 VAC or 125 ~ 373 VDC	5 VDC	1A	100mVp-p	71%	5W
PSMP-05-12		12 VDC	0.42A	150mVp-p	75%	5W
PSMP-05-15		15 VDC	0.33A	150mVp-p	75%	5W
PSMP-05-24		24 VDC	0.21A	240mVp-p	77%	5W

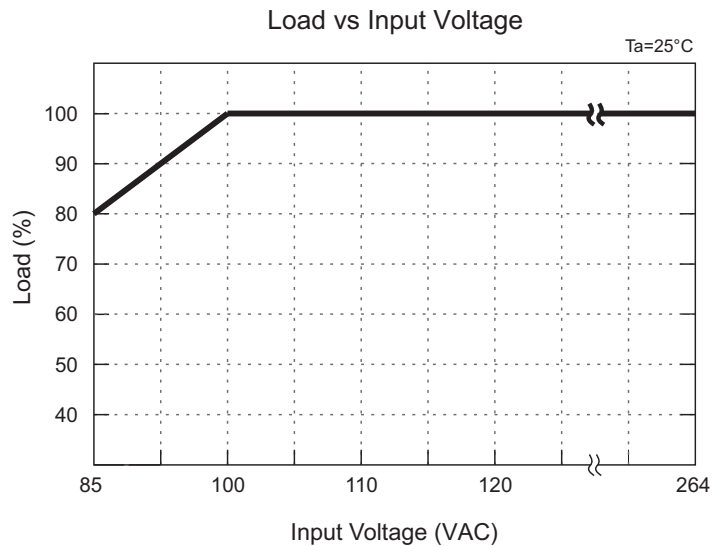
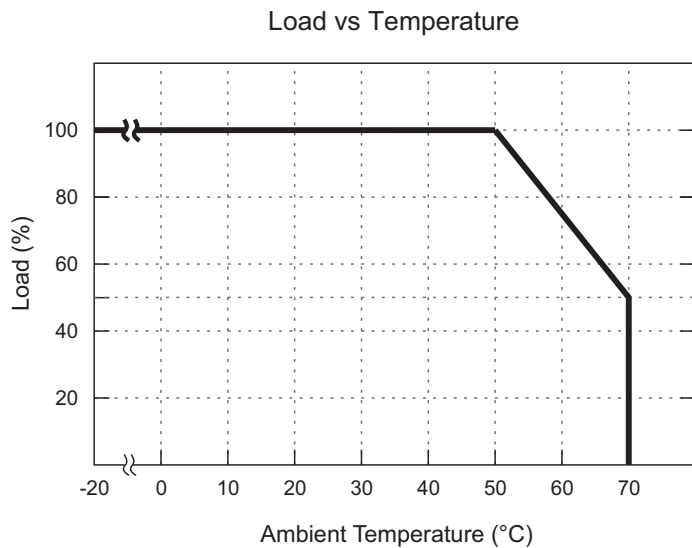
NOTES

1. Ripple & noise is measured at 20MHz bandwidth by using 12" twisted pair-wire terminated with 0.1μF and 47μF capacitors in parallel.
2. Tolerance includes set up tolerance, line regulation, and load regulation.
3. The length of the setup time is measured a first cold start. Turning the power supply ON and OFF very quickly may lead to an increase in the setup time.
4. The power supply is considered a component which will be installed into final equipment. The final equipment must be re-confirmed that it still meets EMC directives.

BLOCK DIAGRAM

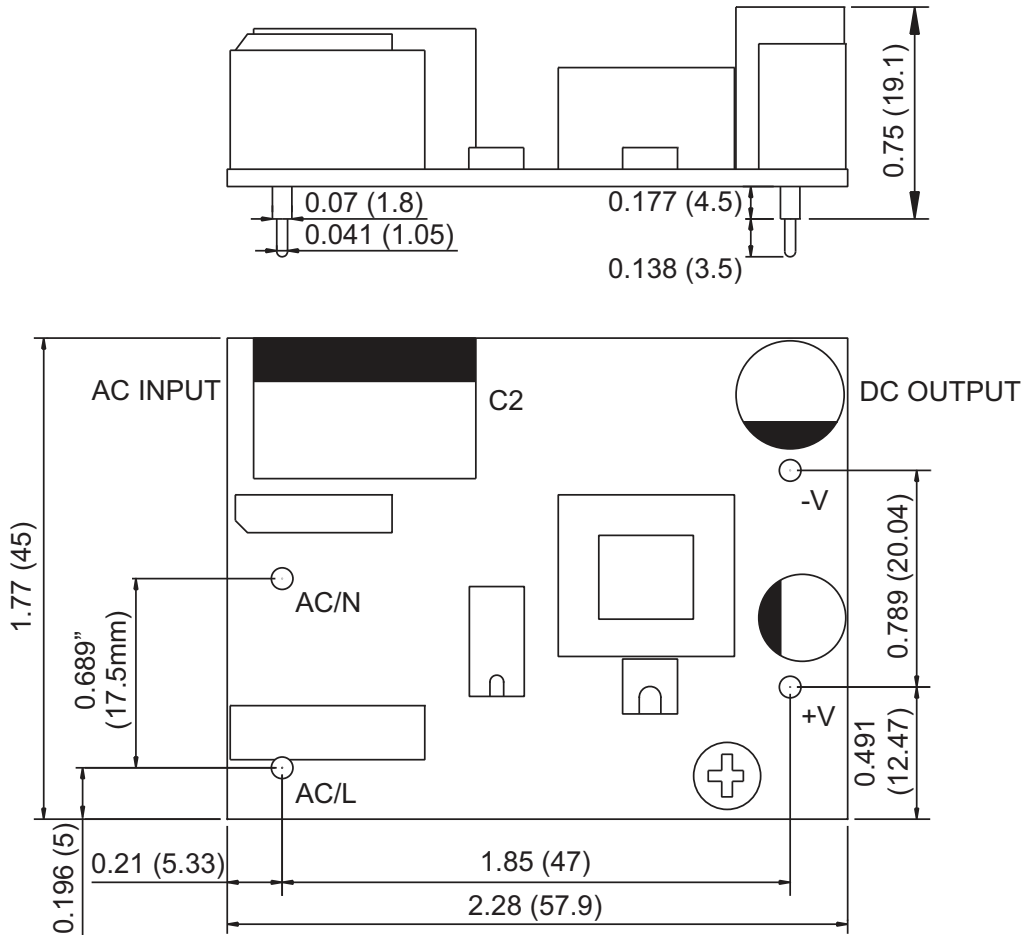


DERATING CURVE



MECHANICAL DRAWING

Unit: inches (mm)



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 ISO9001-2008 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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