

## Wall Industries, Inc.

### PSME20 SERIES

85~264VAC (125~373VDC) Input Voltage Range  
20 Watts, Encapsulated PCB Mount  
Single Outputs, Isolation Class II  
Medical AC/DC Switching Power Supplies



#### FEATURES

- Isolation Class II
- Fully Isolated Plastic Case
- Single Outputs
- 100% Full Load Burn-in Tested
- Cooling by Free Air Convection
- 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
- 20 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
- 3 Year Warranty

#### DESCRIPTION

The PSME20 series of Medical AC/DC switching power supplies provides 20 Watts of continuous output power in a 3.7" x 2.2" x 0.89" encapsulated PCB mountable 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 188,300 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: PSME20 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	
<b>INPUT SPECIFICATIONS</b>							
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		0.6		A	
	High Line	Full Load, Vin = 230VAC		0.4			
Inrush Current	Low Line	Cold Start, Vin = 115VAC		30		A	
	High Line	Cold Start, Vin = 230VAC		65			
No Load Power Consumption					0.3	W	
<b>OUTPUT SPECIFICATIONS</b>							
Output Voltage			See Table				
Voltage Tolerance			-3		+5	%	
Load Regulation	5VDC output model		10% to 100% rated load	-1.5		+1.5	%
	12VDC & 15VDC output models			-1.0		+1.0	
	24VDC output model			-0.5		+0.5	
Line Regulation	5VDC output model		LL to HL at rated load	-1		+1	%
	12V, 15V, & 24VDC output models			-0.5		+0.5	
Output Power			0		20	W	
Output Current			See Table				
Ripple & Noise (See Note 1)			See Table				
Hold-Up Time	Low Line	Full Load, Vin = 115VAC		18		ms	
	High Line	Full Load, Vin = 230VAC		60			
Setup Time (See Note 3)	Full Load, Vin = 115/230VAC			1000		ms	
Rise Time	Full Load, Vin = 115/230VAC			35		ms	
Temperature Coefficient	0~50°C		-0.03		+0.03	%/°C	
<b>PROTECTION</b>							
Over Voltage Protection	Latch-off mode		115		150	%	
Over Load Protection	Hiccup mode, recovers automatically after fault condition is removed		110			%	
Short Circuit			yes				
Brown-out (Low AC Input Voltage)			yes				
<b>GENERAL SPECIFICATIONS</b>							
Efficiency	Vin = 230VAC		See Table				
Withstand Voltage (Input to Output)			4000			VAC	
Isolation Resistance (Input to Output)	500VDC		100			MΩ	
<b>ENVIRONMENTAL SPECIFICATIONS</b>							
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		188,300 hours				
<b>PHYSICAL SPECIFICATIONS</b>							
Weight			Approximately 6.3oz (180g)				
Dimensions (L x W x H)			3.7" x 2.2" x 0.89" (94 x 56 x 22.7 mm)				
Warranty			3 years				
<b>SAFETY &amp; EMC</b>							
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				

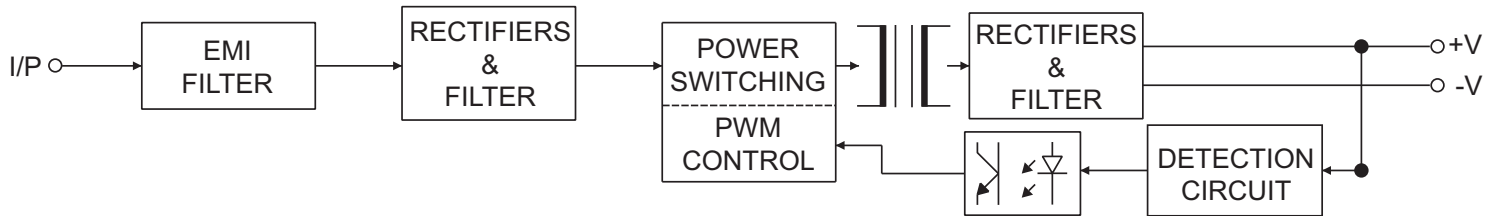
**MODEL SELECTION TABLE**

Model Number	Input Voltage Range	Output Voltage	Output Current	Ripple & Noise <sup>(1)</sup>	Efficiency	Output Power
PSME-20-05	85 ~ 264 VAC or 125 ~ 373 VDC	5 VDC	4A	80mVp-p	77%	20W
PSME-20-12		12 VDC	1.66A	150mVp-p	82%	20W
PSME-20-15		15 VDC	1.33A	150mVp-p	84%	20W
PSME-20-24		24 VDC	0.84A	240mVp-p	85%	20W

**NOTES**

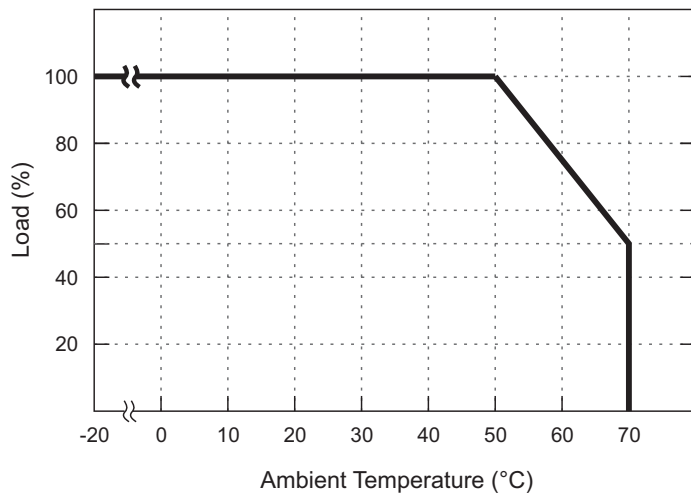
1. Ripple & noise is measured at 20MHz bandwidth by using 12" twisted pair-wire terminated with 0.1µF and 47µF capacitors in parallel.
2. Tolerance includes set up tolerance, line regulation, and load regulation.
3. The length of the setup time is measured a first cold start. Turning the power supply 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**

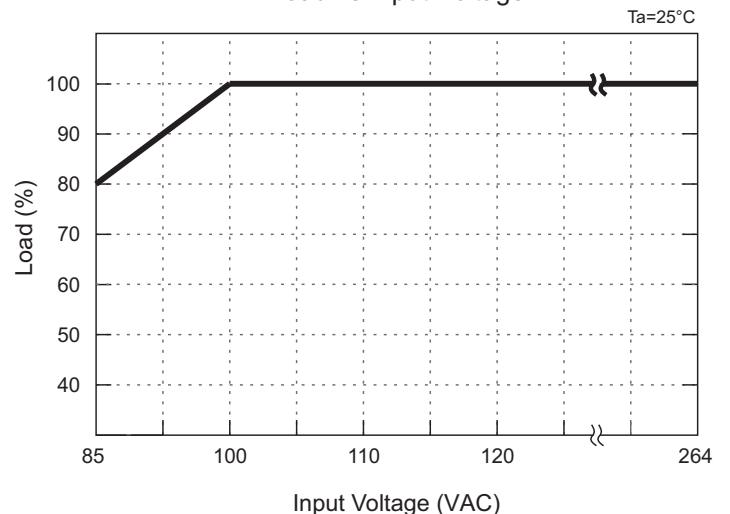


**DERATING CURVE**

Load vs Temperature

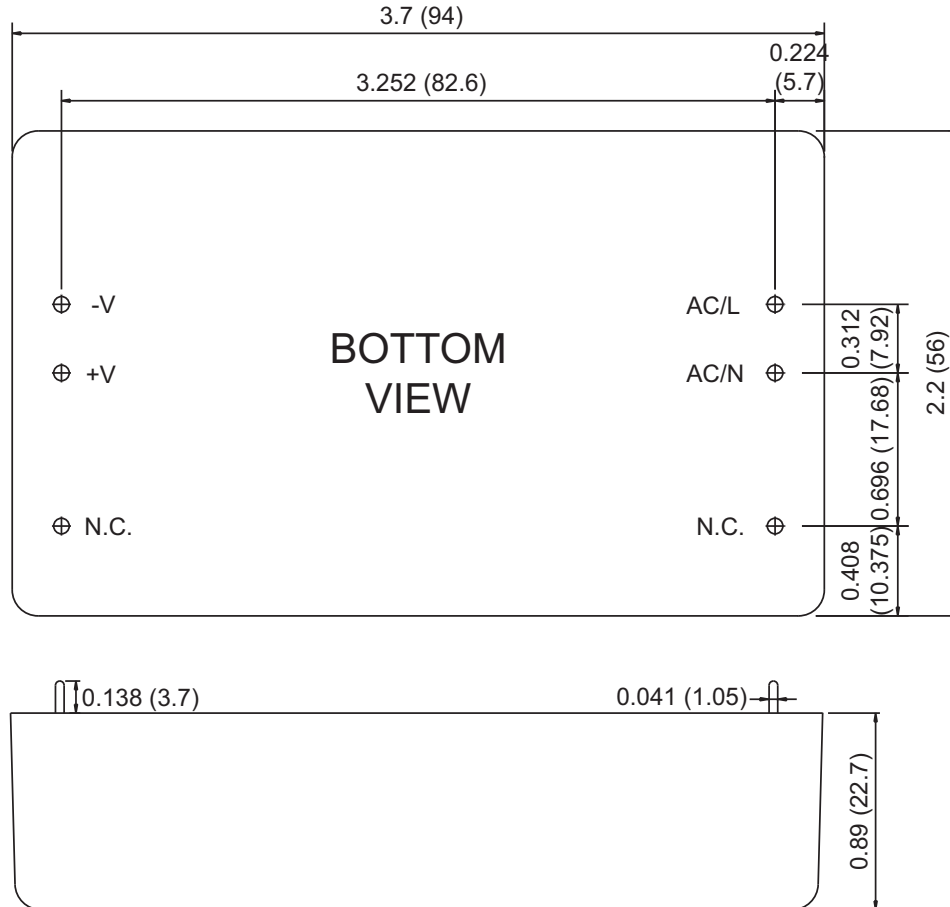


Load vs Input Voltage



**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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