O Type: Open Frame

Size: 3in x 2in x 1.16in

U Type: U-Chassis

Size: 3.6in x 2.44in x 1.54in

C Type: Enclosed Case

Size: 3.6in x 2.44in x 1.54in

DN Type: Din Rail

Size: ~3.60in x 2.45in x 1.54in

OPTIONS

- Mechanical Type
- Output Voltage
- Protection Type

FEATURES

- Protection Type Class I and Class II
- Active Power Factor Correction
- 2 x 3 Inch Footprint
- Low Leakage Current Under 75µA
- High Efficiency up to 92%
- Adjustable Output Voltage
- Built-In EMI Filter
- 5000m Operating Altitude
- 100 Watts Maximum Output Power
- 4000VAC Reinforced Insulation
- 2xMOPP
- 85~264VAC (120~370VDC) Input Voltage Range
- -25ºC to 85ºC Operating Temperature Range
- Over Voltage, Over Load, and Short Circuit Protection
- Low Standby Power Consumption under 0.3W
- Compliant to RoHS and REACH, CE Marked
- Designed to Meet Efficiency Level VI
- IEC/EN/ANSI/AAMI ES60601-1 UL: E360199 and IEC/EN/UL60950-1 CB: UL(Demko) Safety Approvals
- Open Frame, U-Chassis, Enclosed Case, and Din Rail Mechanical Options Available

APPLICATIONS

- Medical
- Automation
- Datacom
- IPC
- Industrial
- Measurement
- Telecom

DESCRIPTION

The PSMAD100 series of AC/DC medical power supplies provides 100 watts of output power in a compact 2 x 3 inch footprint. These supplies feature a universal 85-264VAC (120~370 VDC) input, enabling them to be used anywhere in the world. The off load power draw is less than 0.3 watts, which complies with many energy-saving initiatives. 12V~48VDC single output voltages are available for this series, all of which have a ±10% adjustment range. These supplies also feature a low leakage current of less than 75µA at 264VAC and are designed to withstand 4000VAC, input to output. The PSMAD100 series has an operating temperature range of -25°C to +85°C, active power factor correction, and a high efficiency up to 92%. These supplies are also protected against short circuit, over voltage, and over current conditions. The PSMAD100 series has IEC/EN/ANSI/AAMI ES60601-1 UL: E360199 and IEC/EN/UL60950-1 CB: UL(Demko) safety approvals, is CE marked, designed to meet Efficiency Level VI, and meets the conducted and radiated EMI requirements of EN55011, EN55032, EN60601-1-2 and FCC Part 18/15. Open frame, U-chassis, enclosed case, and DIN rail mechanical options are available. Class I and Class II protection types are also available.

MODEL SELECTION TABLE

Model Number[1]	Input Voltage Range	Output Voltage	Output Current	Ripple & Noise	Output Power	Efficiency	Package Type
PSMAD100-12S-O	85 - 264VAC (120 – 370VDC)	12 VDC	8.34 A	120mVp-p	100W	91%	Open Frame
PSMAD100-15S-O		15 VDC	6.67 A	150mVp-p	100W	92%	
PSMAD100-18S-O		18 VDC	5.56 A	160mVp-p	100W	92%	
PSMAD100-24S-O		24 VDC	4.17 A	160mVp-p	100W	92%	
PSMAD100-28S-O		28 VDC	3.58 A	180mVp-p	100W	92%	
PSMAD100-36S-O		36 VDC	2.78 A	190mVp-p	100W	91%	
PSMAD100-48S-O		48 VDC	2.09 A	340mVp-p	100W	91%	
PSMAD100-12S-U	85 – 264VAC (120 – 370VDC)	12 VDC	8.34 A	120mVp-p	100W	91%	U-Chassis
PSMAD100-15S-U		15 VDC	6.67 A	150mVp-p	100W	92%	
PSMAD100-18S-U		18 VDC	5.56 A	160mVp-p	100W	92%	
PSMAD100-24S-U		24 VDC	4.17 A	160mVp-p	100W	92%	
PSMAD100-28S-U		28 VDC	3.58 A	180mVp-p	100W	92%	
PSMAD100-36S-U		36 VDC	2.78 A	190mVp-p	100W	91%	
PSMAD100-48S-U		48 VDC	2.09 A	340mVp-p	100W	91%	
PSMAD100-12S-C	85 – 264VAC (120 – 370VDC)	12 VDC	8.34 A	120mVp-p	100W	91%	Enclosed Case
PSMAD100-15S-C		15 VDC	6.67 A	150mVp-p	100W	92%	
PSMAD100-18S-C		18 VDC	5.56 A	160mVp-p	100W	92%	
PSMAD100-24S-C		24 VDC	4.17 A	160mVp-p	100W	92%	
PSMAD100-28S-C		28 VDC	3.58 A	180mVp-p	100W	92%	
PSMAD100-36S-C		36 VDC	2.78 A	190mVp-p	100W	91%	
PSMAD100-48S-C		48 VDC	2.09 A	340mVp-p	100W	91%	
PSMAD100-12S-DN	85 – 264VAC (120 – 370VDC)	12 VDC	8.34 A	120mVp-p	100W	91%	Din Rail
PSMAD100-15S-DN		15 VDC	6.67 A	150mVp-p	100W	92%	
PSMAD100-18S-DN		18 VDC	5.56 A	160mVp-p	100W	92%	
PSMAD100-24S-DN		24 VDC	4.17 A	160mVp-p	100W	92%	
PSMAD100-28S-DN		28 VDC	3.58 A	180mVp-p	100W	92%	
PSMAD100-36S-DN		36 VDC	2.78 A	190mVp-p	100W	91%	
PSMAD100-48S-DN		48 VDC	2.09 A	340mVp-p	100W	91%	

SPECIFICATIONS

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	Typ	Max	Unit
INPUT SPECIFICATIONS						
Operating Input Voltage Range	AC Input		85		264	VAC
	DC Input		120		370	VDC
Input Frequency	AC Input		47		63	Hz
Input Current	115VAC and Full Load				1.15	A
	230VAC and Full Load				0.55	
No Load Input Power	230VAC				0.3	W
Power Factor Correction			0.95			
Input Inrush Current	230VAC				60	A
Input Protection	Internal Fuse in line and Neutral		T3.15A/250VAC			
OUTPUT SPECIFICATIONS						
Output Voltage			See Table			
Initial Set Voltage Accuracy	230VAC and Full Load		-1.0		+1.0	%
Line Regulation	Low Line to High Line at Full Load		-0.2		+0.2	%
Load Regulation	No Load to Full Load		-0.5		+0.5	%
	10% Load to 90% Load		-0.4		+0.4	
Voltage Adjustability			-10		+10	%
Output Power			See Table			
Output Current			See Table			
Minimum Load				0		%
Ripple & Noise (20MHz bandwidth)	With 10µF/25V 1206 X7R MLCC capacitor	12V output model		120		mVp-p
	With 10µF/25V 1206 X7R MLCC capacitor	15V output model		150		
	With 10µF/25V 1206 X7R MLCC capacitor	18V output model		160		
	With 1µF/50V 1206 X7R MLCC capacitor	24V output model		160		
	With 1µF/50V 1206 X7R MLCC capacitor	28V output model		180		
	With 1µF/50V 1206 X7R MLCC capacitor	36V output model		190		
	With 0.1µF/100V 1206 X7R MLCC capacitor	48V output model		340		
Transient Response	Load step from 50~75% change at 2.5A/µs	Peak Deviation			3	% Vout
		Recovery Time		500		µs
Start-Up Time					1000	ms
Rise Time				20		ms
Hold Up Time	115VAC and Full Load		16			ms
Temperature Coefficient			-0.02		+0.02	%/ºC
PROTECTION						
Short Circuit Protection			Continuous, Automatic Recovery			
Over Load Protection	% if Iout rated; Hiccup Mode		115		150	%
Over Voltage Protection	% of Vout (nom); Latch Mode		115		135	%
ENVIRONMENTAL SPECIFICATIONS						
Operating Ambient Temperature	Natural Convection with Derating		-25		+85	ºC
Storage Temperature			-40		+85	ºC
Operating Altitude				5000		M
Relative Humidity	Non-Condensing		5		95	% RH
Thermal Shock			MIL-STD-810F			
Shock			IEC60068-2-27			
Vibration			IEC60068-2-6			
MTBF	MIL-HDBK-217F Ta=25ºC, Full Load			790,300		hours
GENERAL SPECIFICATIONS						
Efficiency			See Table			
Switching Frequency				60		kHz
Isolation Voltage	1 minute (2MOPP Insulation)	Input to Output	4000			VAC
		Input to F.G.	1500			
		Output to F.G.	1500			
Isolation Resistance	500VDC		0.1			GΩ
Leakage Current	264VAC				75	µA

SPECIFICATIONS

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	Typ	Max	Unit
PHYSICAL SPECIFICATIONS						
Weight	O Type			5.50oz (156g)		
	U Type			6.84oz (194g)		
	C Type			7.41oz (210g)		
	DN Type			8.18oz (232g)		
Dimensions (L x W x H)	O Type			3in x 2in x 1.16in (76.2mm x 50.8mm x 29.5mm)		
	U & C Types			3.6in x 2.44in x 1.54in (91.4mm x 62.0mm x 39.2mm)		
	DN Type			~3.60in x 2.45in x 1.54in (~76.3mm x 62.23mm x 39.2mm)		
SAFETY & EMC CHARACTERISTICS						
Safety Approvals[3]	IEC/EN/ANSI/AAMI ES 60601-1 IEC/EN/UL 60950-1					UL: E360199 CB: UL (Demko)
EMI[4]	EN55011, EN55032, EN60601-1-2 and FCC Part 18/15			Conducted Radiated		Class B Class A
Harmonic Currents	EN61000-3-2	Full Load				Class A and D
Voltage Flicker	EN61000-3-3					
EMS	EN55024 and EN60601-1-2					
ESD	EN61000-4-2	Air ±15kV and Contact ±8kV				Perf. Criteria A
Radiated Immunity	EN61000-4-3	20 V/m				Perf. Criteria A
Fast Transient	EN61000-4-4	±2kV				Perf. Criteria A
Surge	EN61000-4-5	DM ±1kV and CM ±2kV				Perf. Criteria A
Conducted Immunity	EN61000-4-6	20 Vr.m.s				Perf. Criteria A
Power Frequency Magnetic Field	EN61000-4-8	10 A/m				Perf. Criteria A
Dip and Interruptions	EN61000-4-11					

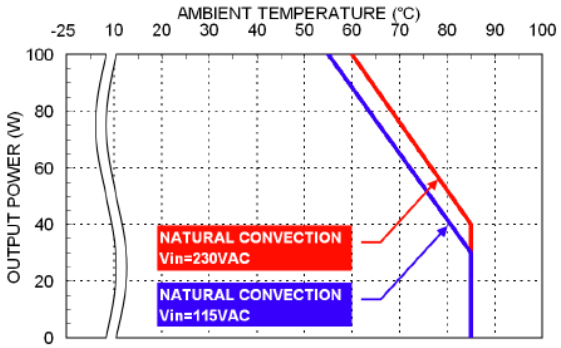
NOTES

(1) Protection types Class I and Class II are available for this series. Class I comes standard and for Class II add the suffix “B” to the model number. See page 7 for model number setup for model number setup.
(2) Din Rail option is only available for enclosed case type models.
(3) This product is listed to applicable standards and requirements by UL.
(4) External components may be required for Class I application

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

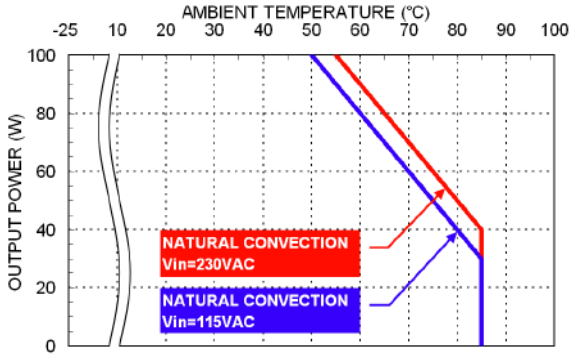
DERATING CURVES

Derating Curve vs. Ambient Temperature
C Type and DN Type



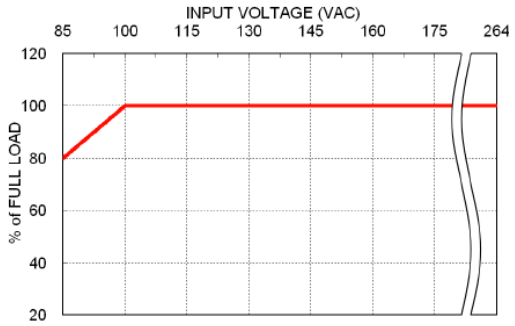
Derating Curve vs. Ambient Temperature

Derating Curve vs. Ambient Temperature
O Type and U Type



Derating Curve vs. Ambient Temperature

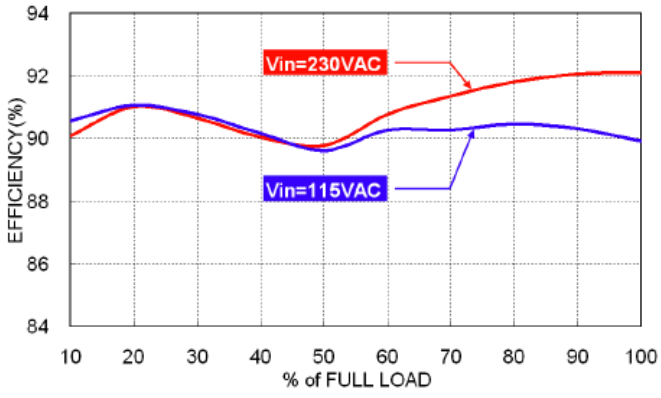
Derating Curve vs. Input Voltage



Derating Curve vs. Input Voltage

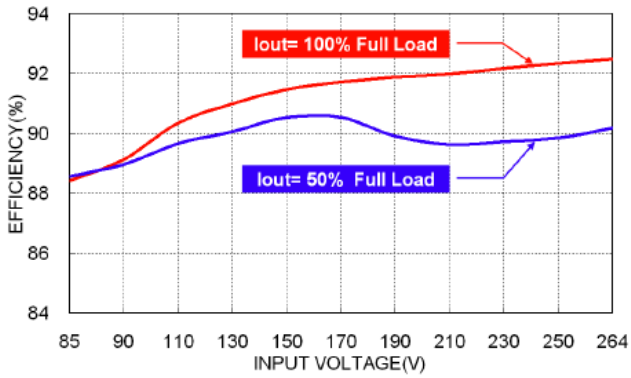
EFFICIENCY GRAPHS

Efficiency vs. Output Load
PSMAD100-24S-x



Efficiency vs. Output Load

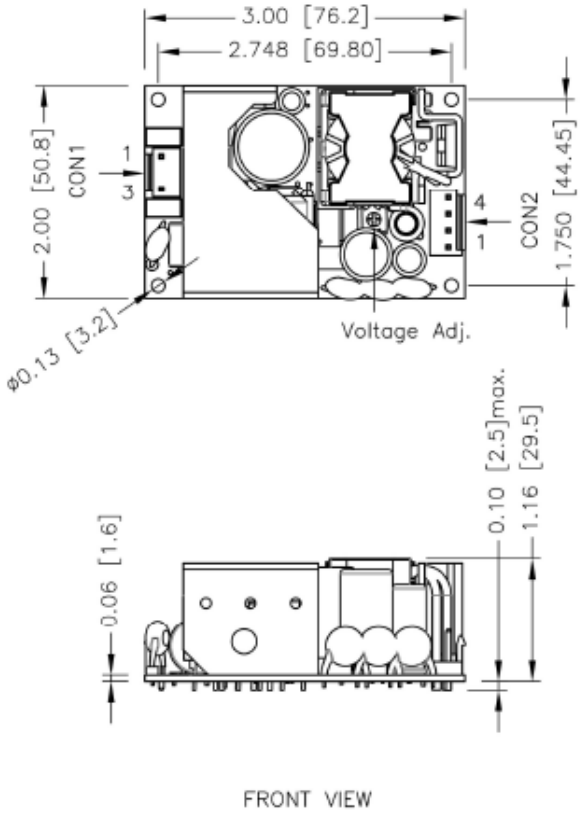
Efficiency vs. Input Voltage
PSMAD100-24S-x



Efficiency vs. Input Voltage

MECHANICAL DRAWINGS

O Type: Open frame



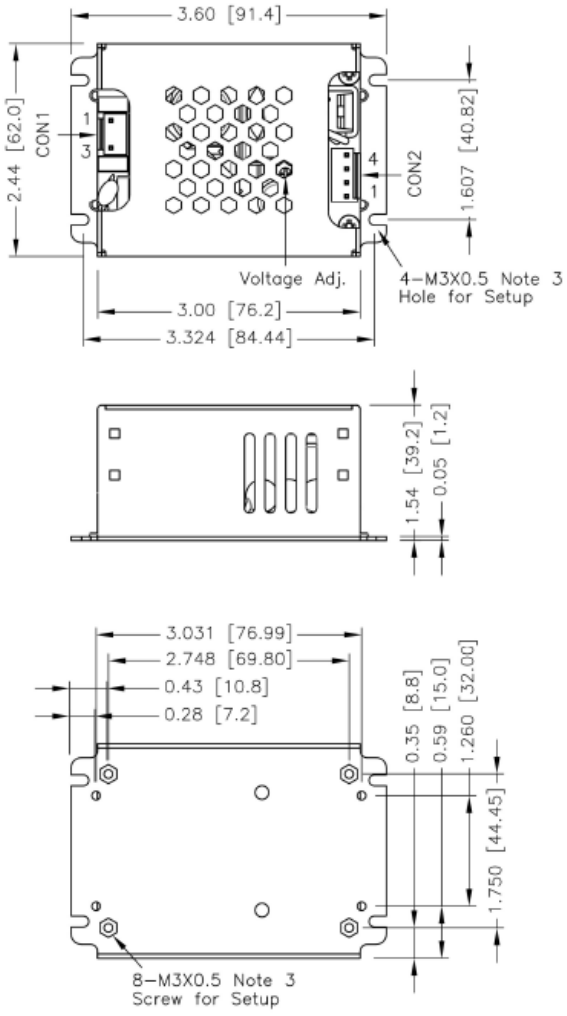
FRONT VIEW

Connectors
CON1-Input Connector

Pin 1	Line
Pin 3	Neutral

*Either one of four screw holes of Open/Chassis type can be considered as PE connection for CLASS I application.

C Type: Enclosed Case



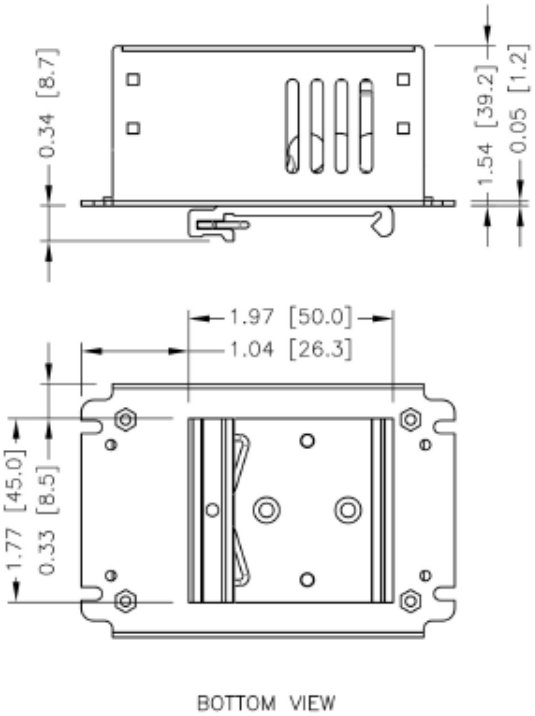
BOTTOM VIEW

Connectors
CON2-Output Connector

Pin 1	Line
Pin 3	Neutral

*Either one of four screw holes of Open/Chassis type can be considered as PE connection for CLASS I application.

DN Type: Din Rail



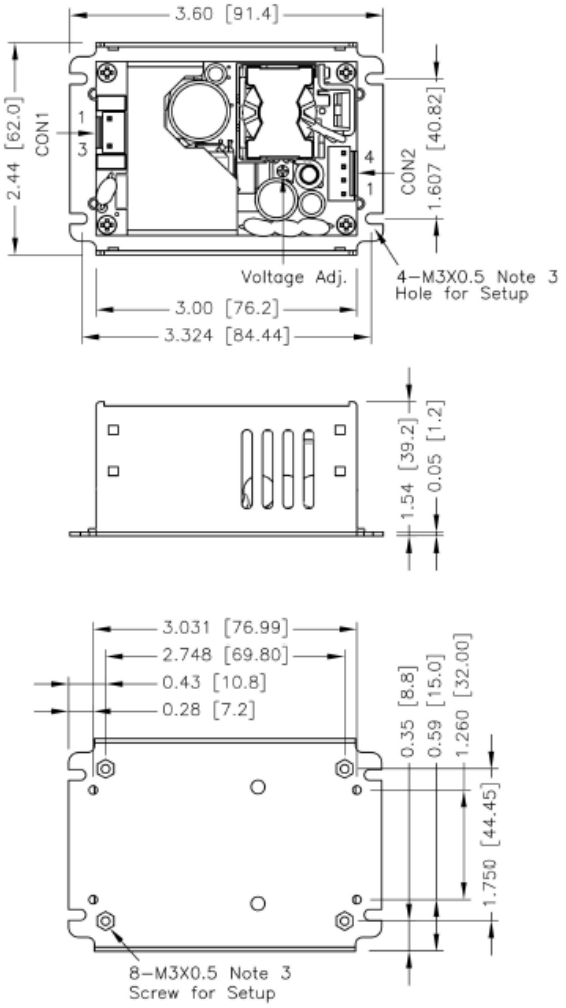
BOTTOM VIEW

Connectors
CON1-Input Connector

Pin 1,2	-Vout
Pin 3,4	+Vout

*Either one of four screw holes of Open/Chassis type can be considered as PE connection for CLASS I application.

U Type: U-Chassis



BOTTOM VIEW

Connectors
CON2-Output Connector

Pin 1,2	-Vout
Pin 3,4	+Vout

*Either one of four screw holes of Open/Chassis type can be considered as PE connection for CLASS I application.

Notes:

1. All dimensions in inch (mm)
2. Tolerance: x.xx±0.02 (x.x±0.5) x.xxx±0.01 (x.xx±0.25)
3. M3x0.5 screw locked torque MAX 5Kgf.xm/0.49N.m

CONNECTORS

Blank: JST Type	M: Molex Type	T: Terminal Block
		
Mates with Housing: CON1: VHR-3N CON2: VHR-4N **Crimp Terminals** CON1: SVH-21T-P1.1 CON2: SVH-21T-P1.1	**Mates with Housing:** CON1: 09-50-8031 CON2: 09-50-8041 **Crimp Terminals** CON1: SD-2478 CON2: SD-2478	**Screw Locked Torque:** MAX 2Kgf.cm/0.2N.m **Wire Dimension Range** 26~16AWG

MODEL NUMBER SETUP

PSMAD	100	-	12	S	-	O	B	M
Series Name	Output Power		Output Voltage	Output Quantity		Package Type	Protection Type	Connector
	100: 100 Watts		**12:** 12VDC **15:** 15VDC **24:** 24VDC **28:** 28VDC **36:** 36VDC **48:** 48VDC	**S:** Single		**O:** Open Frame **U:** U-Chassis **C:** Enclosed Case **DN:** DIN Rail [1]	**None:** Class I **B:** ClassII	**Blank:** JST **M:** Molex **T:** Terminal Block

NOTES
1. DIN Rail Option is only available for enclosed case models.

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 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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