

Open Frame (Standard)



Size: 4in x 2in x 1.28in

Enclosed Case ("E" Type)



Size: 4.79in x 2.48in x 1.57in

Enclosed Case w. External Fan ("FA" Type)



Size: 4.79in x 2.48in x 1.97in

Enclosed Case w. Internal Fan ("FB" Type)



Size: 4.79in x 2.48in x 2in

OPTIONS

- Form Factor
 - Open Frame
 - Enclosed
 - Enclosed with Internal Fan
 - Enclosed with External Fan
- Protection Class

FEATURES

- Wide Operating Voltage of 85-264VAC
- Input to Output: 2MOPP
- High Surge Immunity
- RoHS Compliant
- High Efficiency
- Over Voltage, Over Load, Over Temperature, and Short Circuit Protection
- 150W Full Load at Free Air Convection, 250W with 8CFM Forced Air, Peak Power 300W
- Protection Class I or II
- IEC62368-1 Edition 2.0, UL62368-1, CAN/CSA-C22.2 NO.62368-1-14, EN62368-1:2014, IEC60601-1 Edition 3.2, IEC 60601-1 3.1, ES60601-1:2005(R2012), CAN/CSA-C22.2 No. 60601-1:14, EN60601-1:2016/A1:2013 Safety

APPLICATIONS

- Medical
- Industrial
- Measurement
- Telecom
- IPC

DESCRIPTION

The PSMHBU250 series of AC/DC medical and ITE power supplies offers 150 watts full load at free air convection, 250 watts with 8CFM forced air, and peak power of 300 watts. This series consists of single output models with a wide operating voltage range of 85~264VAC and high surge immunity. Each model in this series is RoHS compliant, has over load, over voltage, over temperature, and short circuit protection. This series has IEC62368-1 Edition 2.0, UL62368-1, CAN/CSA-C22.2 NO.62368-1-14, EN62368-1:2014, IEC60601-1 Edition 3.2, IEC 60601-1 3.1, ES60601-1:2005(R2012), CAN/CSA-C22.2 No. 60601-1:14, and EN60601-1:2016/A1:2013 safety approvals.

MODEL SELECTION TABLE

Open Frame Models

Model Number	Input Voltage Range	Output Voltage		Output Current			Ripple & Noise	Efficiency	Output Power
		Vo1	Fan Output	Vo1		Fan Output			
				Max1	Max2				
PSMHBU250-105	85~264VAC	12VDC	12VDC	12.5A	20.83A	0.5A	108mVp-p	91%	250 Watts
PSMHBU250-106		15VDC	12VDC	10A	16.66A	0.5A	135mVp-p	91%	
PSMHBU250-107		19VDC	12VDC	7.89A	13.15A	0.5A	170mVp-p	91%	
PSMHBU250-108		24VDC	12VDC	6.25A	10.41A	0.5A	210mVp-p	92%	
PSMHBU250-109		30VDC	12VDC	5A	8.32A	0.5A	270mVp-p	92%	
PSMHBU250-110		36VDC	12VDC	4.16A	6.94A	0.5A	300mVp-p	93%	
PSMHBU250-111		48VDC	12VDC	3.12A	5.20A	0.5A	300mVp-p	93%	

*With 8CFM Forced Air to Max Load
 *Max. 1: Convection Cool Max. 2: Forced Air
 *PSMHBU250-105~107 0~10% Load Ripple ≤240mVp-p; PSMHBU250-108~111 0~10% Load Ripple ≤1% Vo1
 *Under convection cooling, fan output cannot be used
 *Vo1 min. load=5% Max. 2 Load
 *Temperature controlled fan output voltage: 7V-12V

MODEL SELECTION TABLE

Enclosed Models

Model Number	Input Voltage Range	Output Voltage	Output Current	Ripple & Noise	Efficiency	Max. Output Power
PSMHBU250-105E	85~264VAC	12VDC	10A	108mVp-p	91%	120 Watts
PSMHBU250-106E		15VDC	8A	135mVp-p	91%	
PSMHBU250-107E		19VDC	6.31A	170mVp-p	91%	
PSMHBU250-108E		24VDC	5A	210mVp-p	92%	
PSMHBU250-109E		30VDC	4A	270mVp-p	92%	
PSMHBU250-110E		36VDC	3.33A	300mVp-p	93%	
PSMHBU250-111E		48VDC	2.5A	300mVp-p	93%	

*PSMHBU250-105E~107E 0~10% Load Ripple ≤240mVp-p; PSMHBU250-108E~111E 0~10% Load Ripple ≤1% Vo1
 *For enclosed models, output for fan cannot be used.

MODEL SELECTION TABLE

Fan Models

Model Number	Input Voltage Range	Output Voltage	Output Current	Ripple & Noise	Efficiency	Fan Type	Max. Output Power
PSMHBU250-105FA	85~264VAC	12VDC	20.83A	108mVp-p	91%	External	250 Watts
PSMHBU250-105FB						Internal	
PSMHBU250-106FA		15VDC	16.66A	135mVp-p	91%	External	
PSMHBU250-106FB						Internal	
PSMHBU250-107FA		19VDC	13.15A	170mVp-p	91%	External	
PSMHBU250-107FB						Internal	
PSMHBU250-108FA		24VDC	10.41A	210mVp-p	92%	External	
PSMHBU250-108FB						Internal	
PSMHBU250-109FA		30VDC	8.32A	270mVp-p	92%	External	
PSMHBU250-109FB						Internal	
PSMHBU250-110FA		36VDC	6.94A	300mVp-p	93%	External	
PSMHBU250-110FB						Internal	
PSMHBU250-111FA		48VDC	5.20A	300mVp-p	93%	External	
PSMHBU250-111FB						Internal	

*With 8CFM Forced Air
*0~10% Load Ripple ≤1% Vo

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 techno+logical advances.

SPECIFICATION	TEST CONDITIONS	Min	Typ	Max	Unit
INPUT SPECIFICATIONS					
Input Voltage Range	Safety Approval Range, Safety Approval & Specification in Label Operate Voltage Range, See derating curve for more details	100		240	VAC
Input Frequency	Sine Wave	47		63	Hz
Input Current	Low Line, Full Load, Vin=100VAC High Line, Full Load, Vin=240VAC		3.1 1.3		A
Inrush Current	Low Line, Full Load, 25°C, Cool Start, Vin=100VAC High Line, Full Load, 25°C, Cool Start, Vin=240VAC			20 50	A
Power Factor Correction	Io=Full Load, Vin=Vins	0.9		1	
OUTPUT SPECIFICATIONS					
Output Voltage		See Table			
Line Regulation	Full Load, Vin=100~120VAC, or 200~240VAC			1	%
Load Regulation			±3		%
Output Power	Full Load Free Air Convection 8CFM Forced Air			150 250	W
Output Current		See Table			
Ripple & Noise		See Table			
Transient Response Time	Io=Full Load to Half Load, Vin=110VAC			4	mS
Start-Up Time	Full Load, Vin=100~240VAC		1		S
Hold-Up Time	Full Load, Vin=110VAC @250W			10	mS
Temperature Coefficient	All Condition			±0.04	%/°C
No Load Power Consumption	Open Frame & Enclosed Models Fan Models		0.21 3		W
PROTECTION					
Short Circuit Protection		Yes			
Over Load Protection	Recovers automatically after fault condition is removed @250W	120		150	%
Over Voltage Protection	Main Nominal Output, Latch Protection	112		132	%
Over Temperature Protection	Main Nominal Output, Recovers automatically when fault condition is removed				
ENVIRONMENTAL SPECIFICATIONS					
Operating Temperature	Derate linearly from 100% load at 50°C to 50% load at 70°C	-40		70	°C
Storage Temperature	10~95% RH	-40		85	°C
Operating Humidity	Non-Condensing	0		95	%RH
Storage Humidity		0		95	%RH
Operating Altitude (Elevation)				5000	
Vibration	10~500Hz, 10min./1cycle, 60 min. Each along X, Y, Z axes			5	G
Cooling		Free Air Convection, 8CFM Forced Air			
MTBF	Operating temperature at 25°C, Nominal Line, per MIL-HDBK-217F	300,000			Hours

SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
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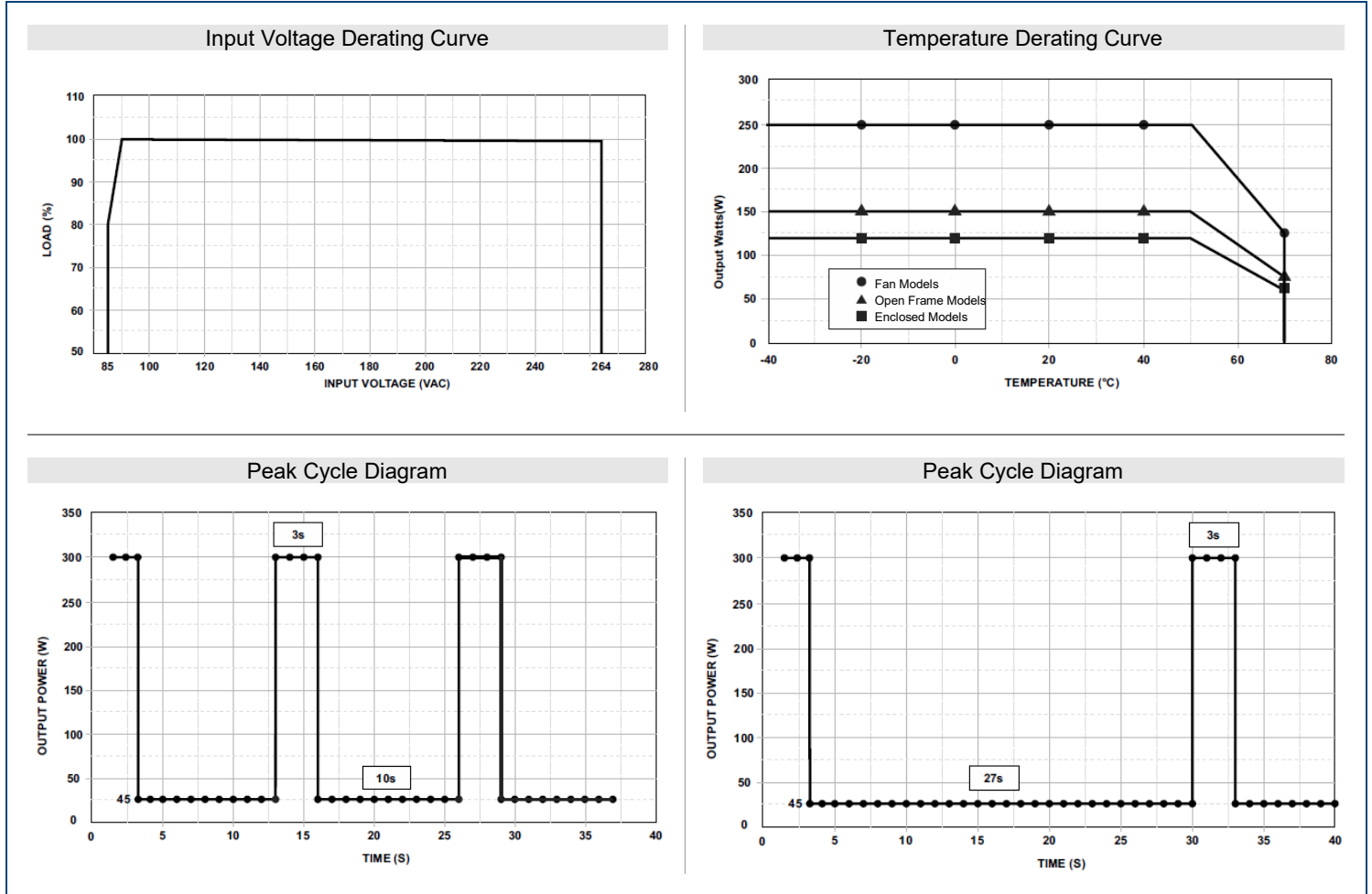
SPECIFICATION	TEST CONDITIONS	Min	Typ	Max	Unit
GENERAL SPECIFICATIONS					
Efficiency	Full Load, Vin=230VAC	See Table			
Dielectric Withstanding Voltage	Primary to Secondary, limit Current <10mA			4000	VAC
	Primary to PE, Limit Current <10mA			2828	
Surge Voltage	Line-Neutral			1	kV
	Line-PE & Neutral-PE			2	
Safety Ground Leakage Current	Vin=240VAC, Fi=60Hz		0.25		mA
Insulation Resistance		50			MΩ
PHYSICAL SPECIFICATIONS					
Weight	Open Frame Model (Standard)	7.05oz (200g)			
	Enclosed Frame Model ("E" Type)	11.46oz (325g)			
	Enclosed with External Fan ("FA" Type)	11.64oz (330g)			
	Enclosed with Internal Fan ("FB" Type)	11.99oz (340g)			
Dimensions (L x W x H)	Open Frame Model (Standard)	4.00in x 2.00in x 1.28in (101.6mm x 50.8mm x 32.5mm)			
	Enclosed Frame Model ("E" Type)	4.79in x 2.48in x 1.57in (121.6mm x 63mm x 40mm)			
	Enclosed with External Fan ("FA" Type)	4.79in x 2.48in x 1.97in (121.6mm x 63mm x 50mm)			
	Enclosed with Internal Fan ("FB" Type)	4.79in x 2.48in x 2in (121.6mm x 63mm x 50.8mm)			
SAFETY CHARACTERISTICS					
Safety Approvals ⁽¹⁰⁾	IEC62368-1 Edition 2.0, UL62368-1, CAN/CSA-C22.2 NO.62368-1-14, EN62368-1:2014, IEC60601-1 Edition 3.2, IEC 60601-1 3.1, ES60601-1:2005(R2012), CAN/CSA-C22.2 No. 60601-1-14, EN60601-1:2016/A1:2013				
EMC Emission	Compliance to EN55011 (CISPR11), EN60601-1-2, EN5502 (CISPR32)				Class B
Electro Static Discharge	Air Discharge, IEC61000-4-2			15	kV
	Contact Discharge, IEC61000-4-2			8	
Protection Classes	Class I or Class II				

NOTES

1. Fan series support a peak load 3 sec. max of 300 watts for 3 seconds every 13 seconds.
2. Open frame and Enclosed models support a peak load 3 sec. max of 300 watts every 30 seconds.
3. At factory, in 60% rated load condition, each output is checked to be within voltage accuracy.
4. Line regulation is defined by changing ±10% of input voltage from nominal line at rated load.
5. Load regulation is defined by changing ±40% of measured output load from 60% rated load.
6. Ripple & Noise is measured from peak to peak with a bandwidth-limit of 20MHz, measured at the output connector with a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor.
7. Hold up time is measured from the end of the last charging pulse to the time which the main output drops down to low limit of main output at rated load and nominal line.
8. Efficiency is measured at rated load and nominal line.
9. Compliance with the requirement of EMC (Class II equipment) shall have appropriate ferrite core inserted. Contact factory for more information.
10. This product is Listed to applicable standards and requirements by UL.

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

DERATING CURVES

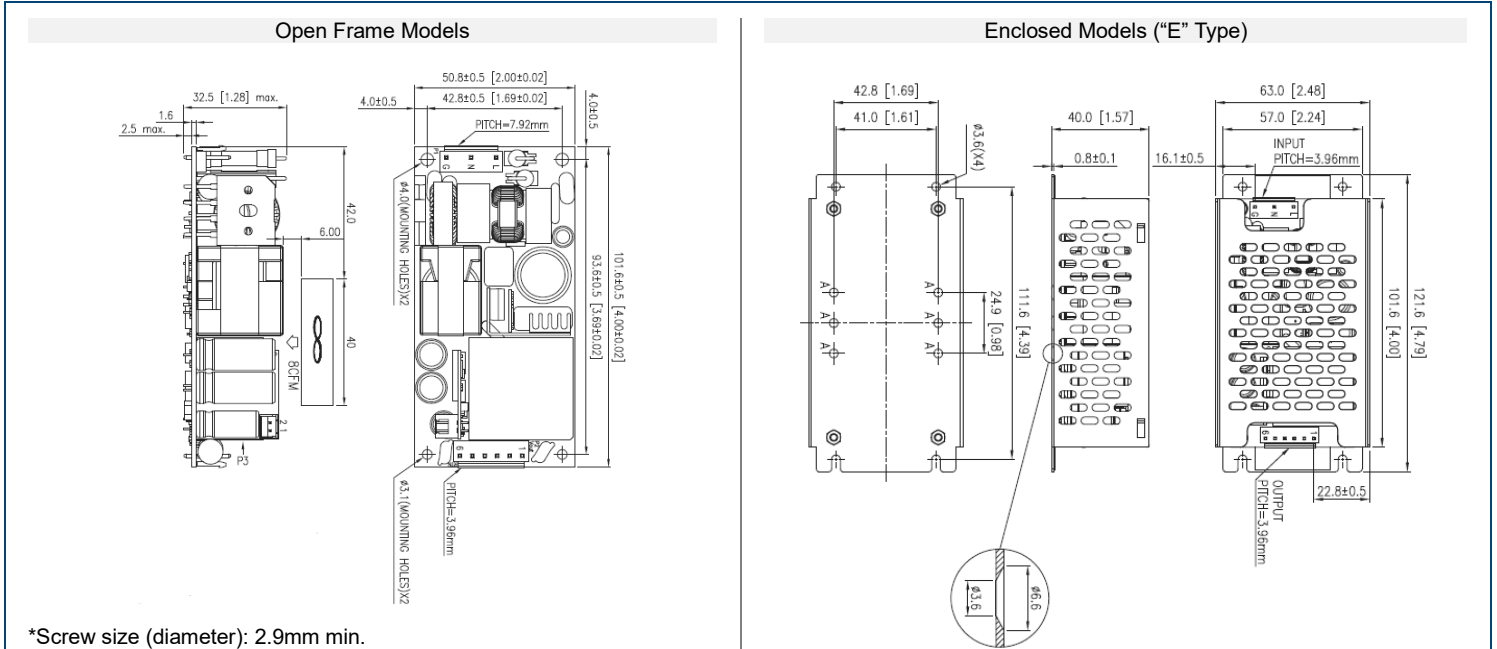


EMC SPECIFICATIONS

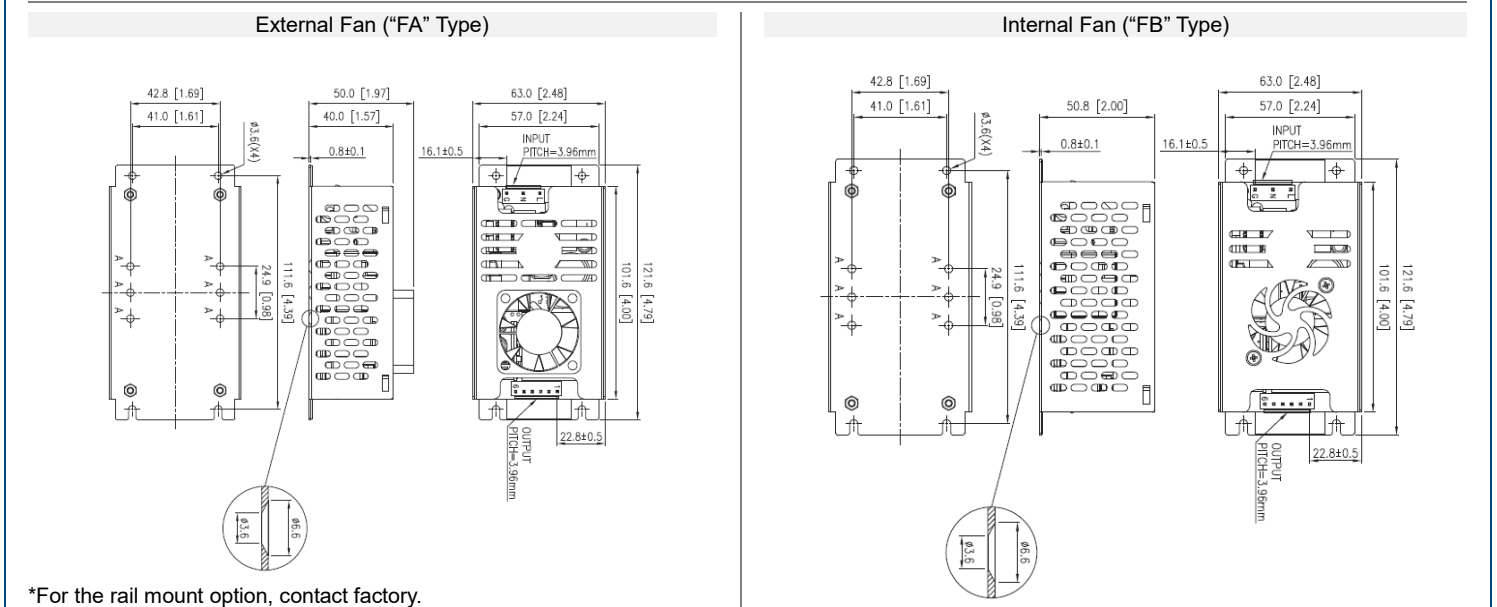
Emission		
Item	Standard	Result
Conducted	EN55011, EN55032	Class B
Radiated	EN55011, EN55032	Class B
Harmonics	EN61000-3-2	Class A, Class D
Flicker	EN61000-3-3	Pass

Immunity				
Item	Standard	Result	Criterion	
ESD	EN61000-4-2	15KV air discharge, 8KV contact discharge		A
RS	EN61000-4-3	PASS		A
EFT	EN61000-4-4	Power Line 2KV, 5 or 100KHz		A
SURGE	EN61000-4-5	1KV line to line, 2KV line to PE		A
CS	EN61000-4-6	3Vrms, 6Vrms		A
PFMF	EN61000-4-8	30A/m, 50Hz		A
Voltage Dips	EN61000-4-11	i) 100% reduction for 0.5 cycle at 50Hz ii) 100% reduction for 1 cycle at 50Hz iii) 30% reduction for 25/30 cycles at 50/60Hz		A
Voltage Interruptions	EN61000-4-11	100% reduction for 250/300 cycles at 50/60Hz		A

MECHANICAL DRAWINGS



*Screw size (diameter): 2.9mm min.



*For the rail mount option, contact factory.

Pin Chart

Model	Connector Definition	PIN					
		1	2	3	4	5	6
Open Frame Models	P2 Single Output	OUT	OUT	OUT	RTN	RTN	RTN
Enclosed Models	P3 Fan Output	OUT	RTN				
Fan Models	P2 Single Output	OUT	OUT	OUT	RTN	RTN	RTN

Output Cable Remark

1. Input connector mates with JST housing VHR-5N and JST SVH series crimp terminal.
2. Output connector mates with JST housing VHR-6N and JST SVH series crimp terminal.
3. Fan connector mates with JOINT_Tech housing A2501H-02P-N and JOINT A2501-XX-A series crimp terminal
4. Fan comes with 1-year warranty. Specifications of the fan are: (1) DC FAN, YEN_SUN, #FD124010EB (2) DC FAN, SUNON, MF40101V1-10000-A99

STANDARD PACKAGING

Open Frame Models	Enclosed and Fan Models
<p>Power Supplies per Box (Full Box): 70 PCS (7x5x2) Box Dimensions: L39 x W36 x H25 cm Gross Weight (Full Box): 15KG Packaging Part No: 84-40619-01</p>	<p>Power Supplies per Box (Full Box): 50 PCS (5x5x2) Box Dimensions: L43 x W37 x H33 cm Gross Weight (Full Box): Enclosed Models: 17.2KG External Fan: 17.8KG Internal Fan: 18.3KG Packaging Part No: 84-40676-01</p>
<p>Note: The above packing is for reference only. Please contact sales for more information.</p>	

MODEL NUMBER SETUP

PSMHBU	250	-	106	E
Series Name	Output Power		Output Voltage	Case Type
			105: 12VDC 106: 15VDC 107: 19VDC 108: 24VDC 109: 30VDC 110: 36VDC 111: 48VDC	Blank: Open Frame E: Enclosed FA: External Fan FB: Internal Fan

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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