MPM-20S Series

Universal Input, 20W Miniature, PC Mount AC/DC Power Supplies

Key Features:

- 20W Output Power
- Universal 85-264 VAC Input
- EN 60950 Approved
- Adjustable Output
- Meets EN55022 B
- >200 kHour MTBF
- Compact PC Mount Case

Electrical Specifications

Specifications typical @ +25°C, 230 VAC input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range		85		264	VAC
		120		370	VDC
Input Frequency		47		63	Hz
Input Current	See Model Selection Guide				
Inrush Current	115 VAC		16.0		A Pk
	230 VAC		30.0		
EMI	Meets CISPR Pub. 22/FCC Class B				
Safety Ground Leakage Current	115 VAC			0.1	mA
	230 VAC			0.3	

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage	See Model Selection Guide				
Output Current	See Model Selection Guide				
Output Voltage Accuracy			±2.0		%
Line Regulation			±0.5		
Load Regulation	See Model Selection Guide				
Ripple & Noise (20 MHz)			50		mV Pk - Pk
Hold-Up Time	115 VAC		20		mSec
	230 VAC		80		
Temperature Coefficient			±0.02		%/°C
Short Circuit Protection	Continuous (Autorecovery)				
Overload Protection	Typ. 110% of Output Power				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input to Output	3,000			VAC
	Input to Ground	1,500			
	Output to Ground	500			
EMI/RFI	Conducted	EN 55022 Level B			
EMC Compliance	Electrostatic Discharge (ESD)	IEC/EN 61000-4-2 Level 3			
	RF Field Susceptibility	IEC/EN61000-4-3			
	Electrical Fast Transients/Bursts On Mains	IEC/EN 61000-4-4 Level 3 2 kV			
	Surge	IEC/EN 61000-4-5 Level 3 1kV/2 kV			
Switching Frequency			150		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-25	+25	+70	°C
	Case			+90	°C
Storage Temperature Range		-25		+105	°C
Cooling	Free Air Convection (See Derating Curve)				
Humidity	RH, Non-condensing			85	%

Physical

Case Size	2.75 x 1.88 x 0.92 Inches (70.0 x 48.0 x 23.5 mm)
Case Material	Non-Conductive Black Plastic (UL94-V0)
Weight	5.65 Oz (160g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	200			kHours
Safety Standards	IEN 60950, IEC 60950				
Safety Approvals	IEN 60950, IEC 60950				

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Model Selection Guide

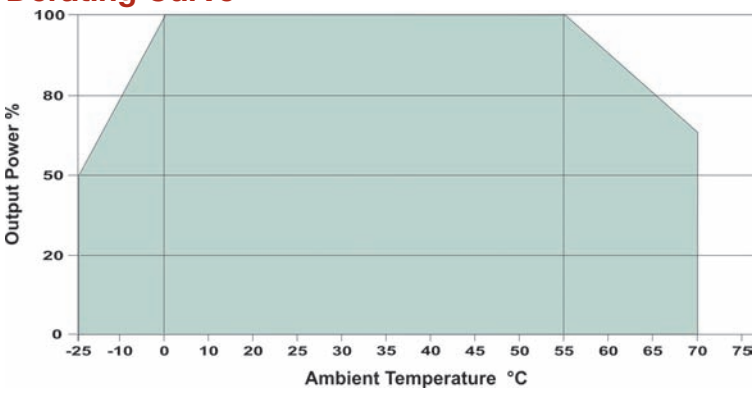
Model Number	Input Current (A)		Output 1 (Vout 1) Voltage (VDC)	Output 1 (Vout 1) Current (A)		Output 1 (Vout 1) Over Volt. Protection (VDC)	Efficiency (%, Typ)
	115 VAC	230 VAC		Typ.	Load Reg.		
MPM-20S-03	0.33	0.18	3.3	4.10	±1.0%	6.5	82
MPM-20S-05	0.33	0.18	5.0	3.50	±1.0%	6.5	82
MPM-20S-12	0.33	0.18	12.0	1.60	±1.0%	20.0	82
MPM-20S-15	0.33	0.18	15.0	1.30	±1.0%	20.0	82
MPM-20S-24	0.33	0.18	24.0	0.85	±1.0%	30.0	82

Dual & Triple Output Models Are Available.
For more information, contact the factory:
sales@micropowerdirect.com

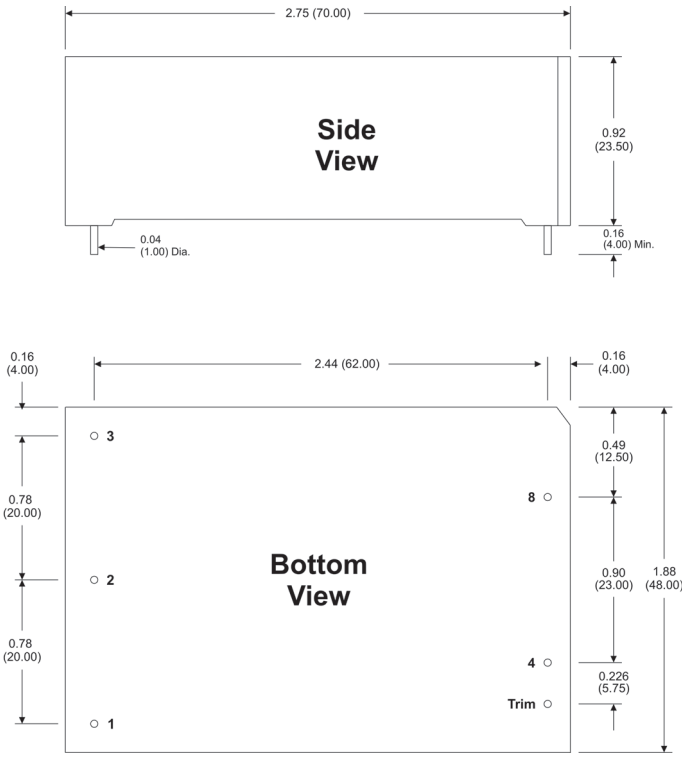
Notes:

1. Load regulation is measured for an output change of 10% to 90% at nominal input line. For multiple output models, the loads are balanced.
2. As shown in the connection diagram at right, a simple external circuit may be used to adjust the power supply output ±10%. To adjust the output DOWN, connect a 5%, 3W resistor between the plus output pin and the Vout trim pin. To adjust the output UP, connect a 5%, 3W resistor between the minus output pin and the Vout trim. Contact the factory for resistor values needed to achieve a specific output.
3. It is recommended that a fuse be used on the input of a power supply for protection. For the **MPM-20S** series, a 3.15A/250 VAC slow blow should be used.

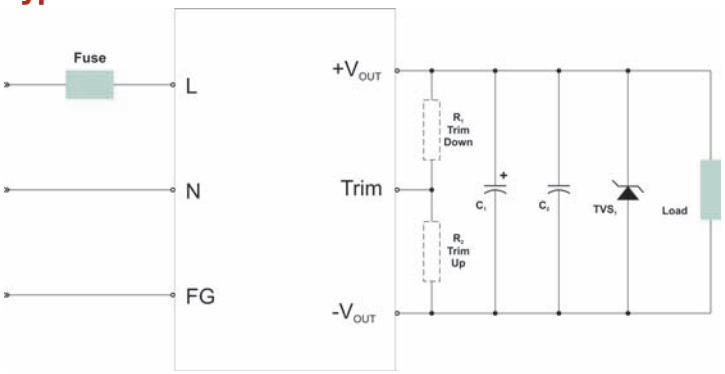
Derating Curve



Mechanical Dimensions



Typical Connection



Typical Component Values

Vout	C1	C2	Fuse	TVS
3.3	330 µF/16V	0.01 µF/25V	3.15A/ 250 VAC	P6KE6.8A
5.0	330 µF/16V			P6KE6.8A
12.0	220 µF/25V			P6KE16A
15.0	220 µF/25V			P6KE20A
24.0	220 µF/35V			P6KE33A

Notes:

1. C1 is a high frequency, low resistance electrolytic capacitor. Refer to the suppliers specifications for capacitance/current ratings.
2. Voltage derating on all capacitors should be 80% or higher.
3. C2 eliminates high frequency noise.
4. The power supply includes an internal TVS. If the user requires a tighter OVP threshold, an external TVS may be connected as shown.

Pin Connections

Pin	Function
1	AC-Ground
2	AC-Neutral
3	AC-Line
4	-Vout
8	+Vout
Trim	Trim

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.01 (±0.25)

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