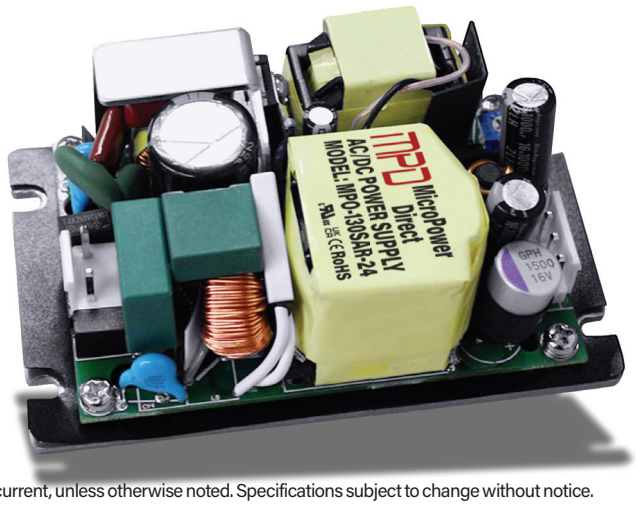
MPO-130SAR

Very Compact, Open Frame, High Performance 130W AC/DC Power Supplies



Key Features:

- 130W Output Power
- Universal 90-264 VAC Input
- Small 3.59 x 2.15 x 1.36 Size
- EN 62368 Approved (UL)
- Efficiency To 91%
- -30°C to +70°C Temp Range
- Meets 60068 Shock & Vibe
- Meets EN 55032 B
- >400 kHour MTBF
- <0.3W No Load Power
- 4,000 VAC Isolation
- Active PFC Function
- Tight Line/Load Regulation

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, See Note 1		90		264	VAC
		120		370	VDC
Input Frequency		47		63	Hz
Input Current	See Model Selection Guide				
Inrush Current, <2ms, Cold Start	115 VAC			50	A
	230 VAC			85	
Power Factor	Full Load, 230 VAC	0.9			
Leakage Current	264 VAC			0.75	mA

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Wattage, Max.	See Model Selection Guide				
Output Voltage Accuracy			±2.0		%
Line Regulation	VIN = Min to Max		±1.0		%
Load Regulation	10% to 100%		±1.0		%
Minimum Load			0.0		%
Ripple/Noise, See Note 2	12V Output		160		mV
	24V Output		240		
	48V Output		340		
Hold-Up Time	115 VAC, 90% VOUT	8.0			mS
Over Power Protection	Protection Level 1 (Nominal): Auto Recovery, Hiccup Mode				
	Protection Level 2 (Instantaneous High Current): Latch				
Over Voltage Protection	Protection Level 1 (Nominal): Auto Recovery				
	Protection Level 2 (Instantaneous High Voltage): Latch				
Short Circuit Protection, Level 1	Protection Level 1 (Nominal): Continuous, Auto Recovery				
	Protection Level 2 (Instantaneous High Current): Latch				
Over Temperature Protection	Continuous				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage, See Note 3	Input to Output		4,000		VAC
			5,656		VDC
	Input to PE		2,000		VAC
			2,828		VDC
	Output to PE		1,500		VAC
			2,121		VDC
EMC	EMI (Conducted/Radiated Emmisions)				EN 55032 Class B
	EMS (Noise Immunity)				EN55035

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	With Derating	-30		+70	°C
Storage Temperature Range		-30		+80	°C
Temperature Coefficient			±0.05		%°C
Cooling	Free Air Convection (See Derating Curves)/ 8 CFM Fan				
Humidity	RH, Non-condensing	20%		90%	RH
Altitude During Operation			5,000		m

Physical

Size & Weight	See Page 4

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	400			kHours
Safety Standards	UL/cUL 62368-1 Recognition (UL certificate)				
Vibration	IEC 60068-2-6, 10-500 Hz, 2G 10 min/1 cycle, 60 min each along X, Y, Z axis				
Shock	IEC 60068-2-27				

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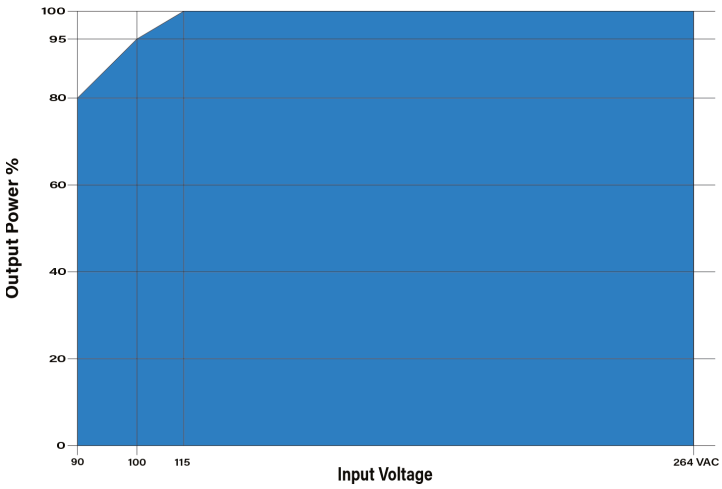
Model Selection Guide

Model Number	Input		Output								Capacitive Load (μF, Max)	Efficiency @ 230 VAC (%, Typ)
	Current (A Max)		Voltage (VDC)	Voltage Adjust Range	Current (A Max)			Power (W Max)				
					With 8 CFM	Natural Convection		With 8 CFM	Natural Convection			
	115 VAC	230 VAC				115 VAC IN	230 VAC IN		115 VAC IN	230 VAC IN		
MPO-130SAR-12	2.0	1.0	12	±10%	10.833	9.116	9.917	130	110	119	4,000	90
MPO-130SAR-24	2.0	1.0	24	±10%	5.417	4.583	4.958	130	110	119	1,000	90
MPO-130SAR-48	2.0	1.0	48	±10%	2.708	2.395	2.604	130	115	125	330	91

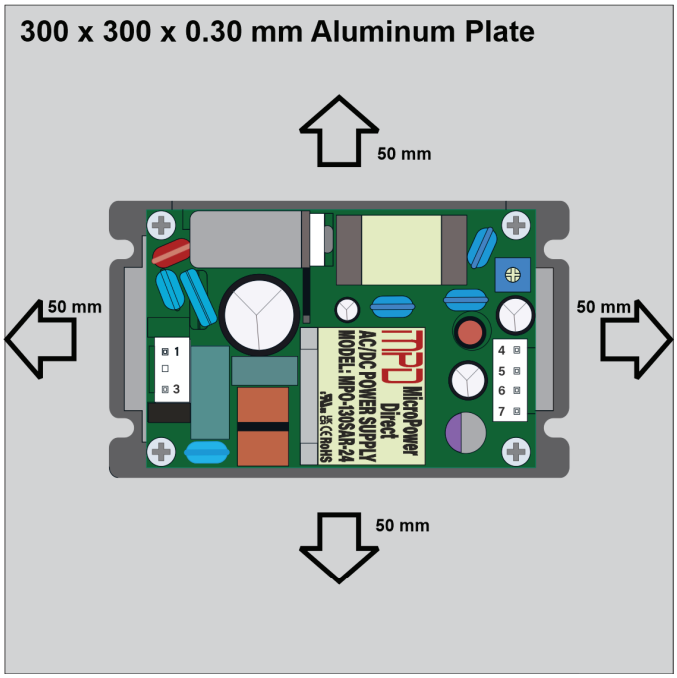
Notes:

1. Check the derating curves for full information.
2. Ripple and noise are measured at 20 Mhz bandwidth with a 0.1μF and a 47 μF capacitor connected in parallel as close to the unit output terminals as possible.
3. It is highly recommended that this test be conducted using a DC voltage. If an AC voltage is used, all Y capacitors must be disconnected from the power supply. For more information, please contact the factory.
4. If the unit is being used in either Class 1 or Class II equipment, the power supply should be securely attached to the metal case of the application. The four notches at the corners of the unit should be used to do this.
5. **Caution: The MPO-130SAR has double pole, neutral fusing. Disconnect the mains before servicing.**

Input Voltage Derating



EMI Connection



For optimum use (both EMI & thermal performance), the unit should be mounted on an aluminum plate, as shown in the illustration at left. The plate must have an even, smooth surface. Preferably, it would be coated with thermal grease.

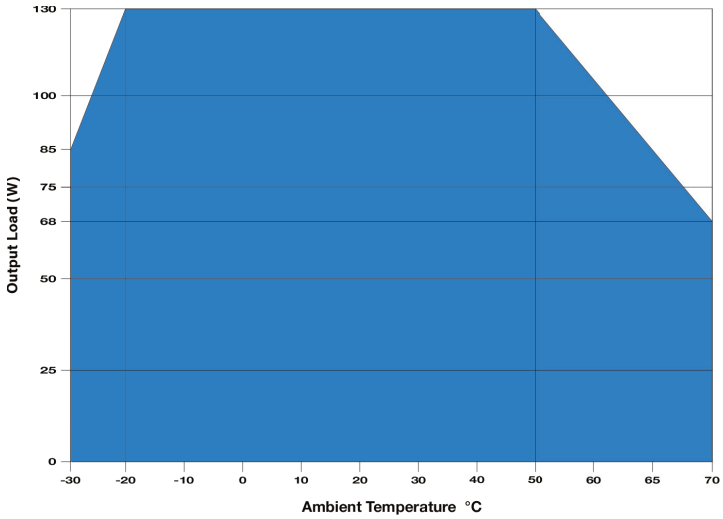
The unit should be firmly mounted to the center of the plate. To do this, the threaded inserts marked "A" (see the bottom view of the mechanical diagram on page 4) should be used.

Ideally, this plate would be 300 x 300 x 0.30 mm, as shown in the illustration above. If this is not possible, it should extend out from the unit by at least 50 mm on each side.

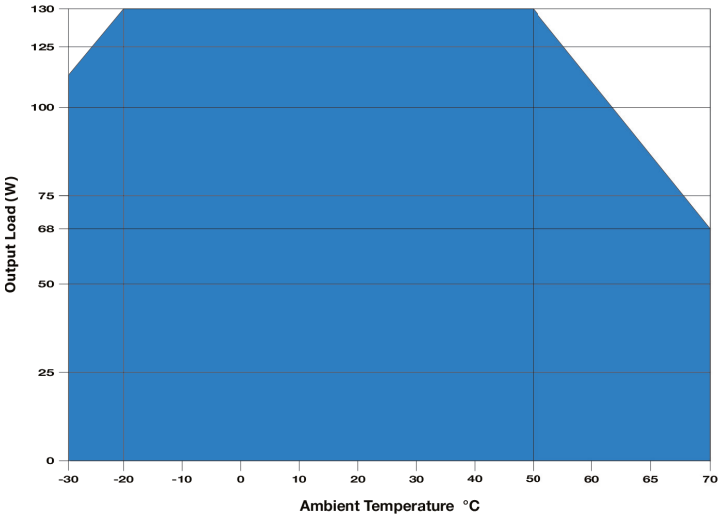
MPD has a very wide range of high performance AC/DC power supplies ranging from 600W UChannel units to 1W units in miniature Single-In-Line (SIP) packages. All are designed and certified to international safety and EMC/EMI standards.

Whatever your application, we probably have an "Off The Shelf" solution that fits your requirements. Call or visit us online today.

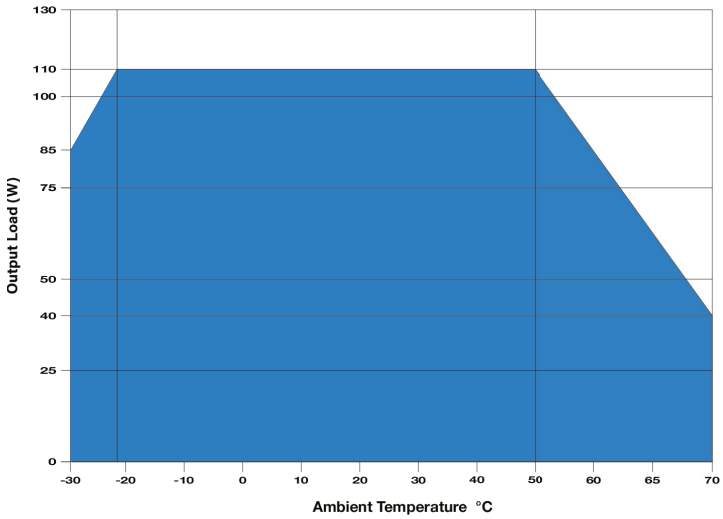
Temperature Derating: VIN: 115-229 VAC 8 CFM Fan



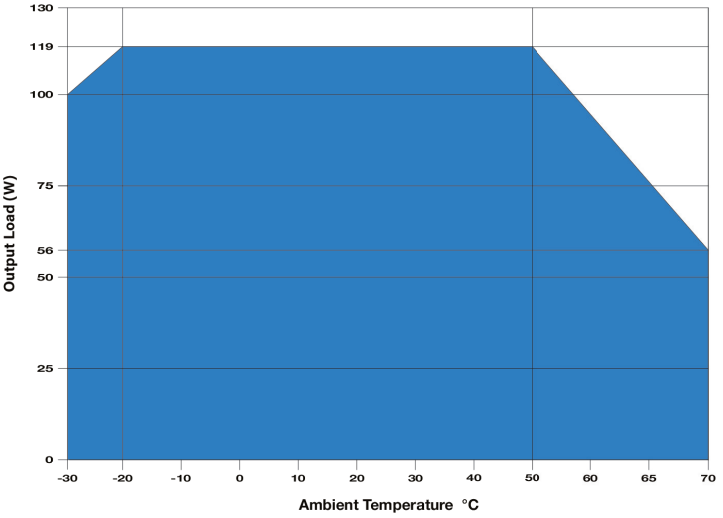
Temperature Derating: VIN: 230-264 VAC 8 CFM Fan



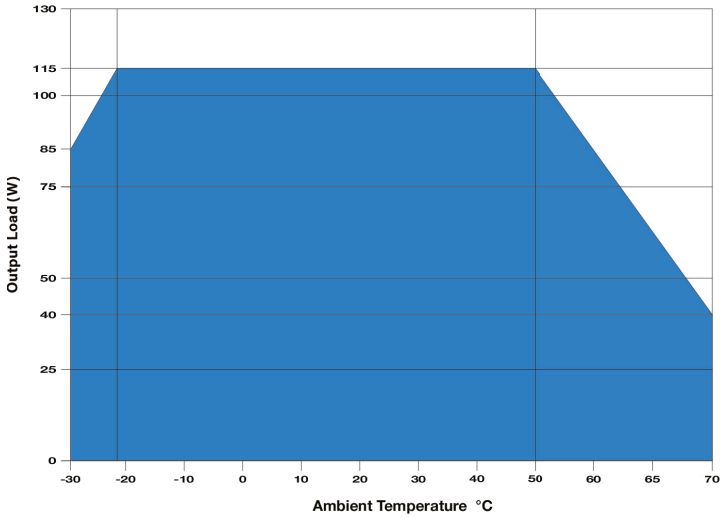
Temperature Derating: VIN: 115-229 VAC Natural Convection, 12, 24 VOUT



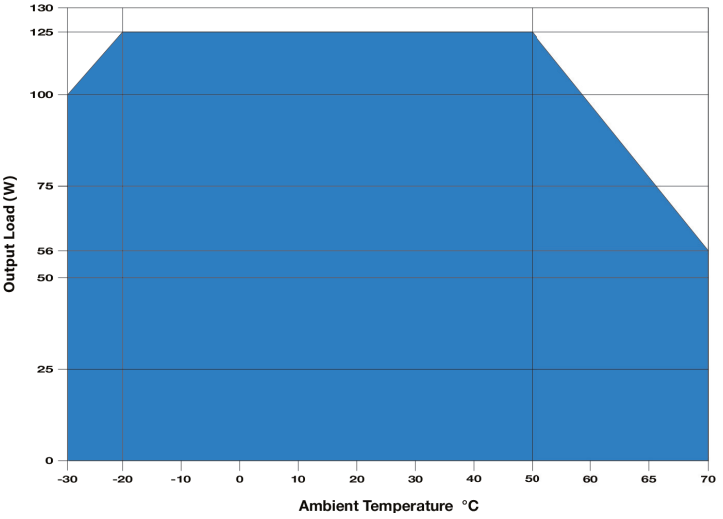
Temperature Derating: VIN: 230-264 VAC Natural Convection, 12,24 VOUT



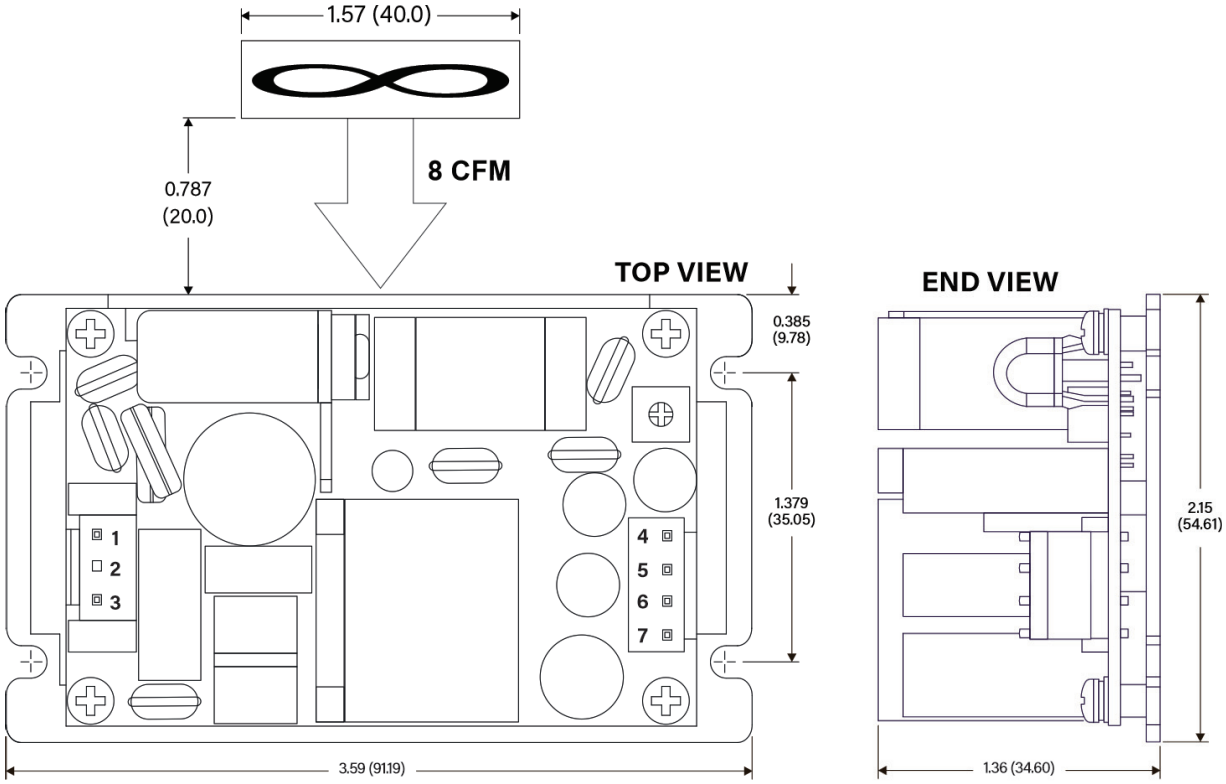
Temperature Derating: VIN: 115-229 VAC Natural Convection, 48 VOUT

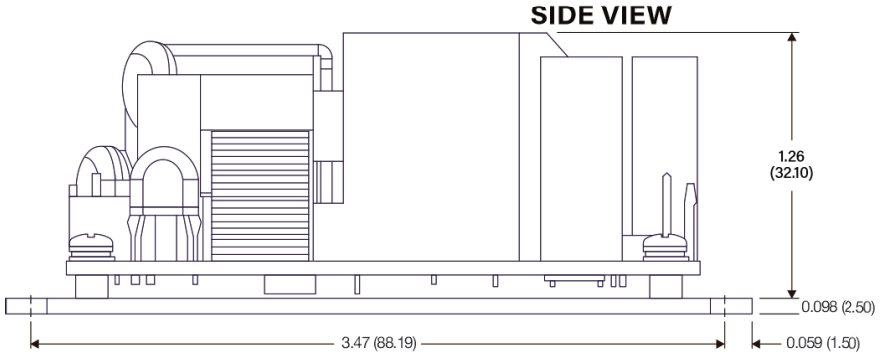


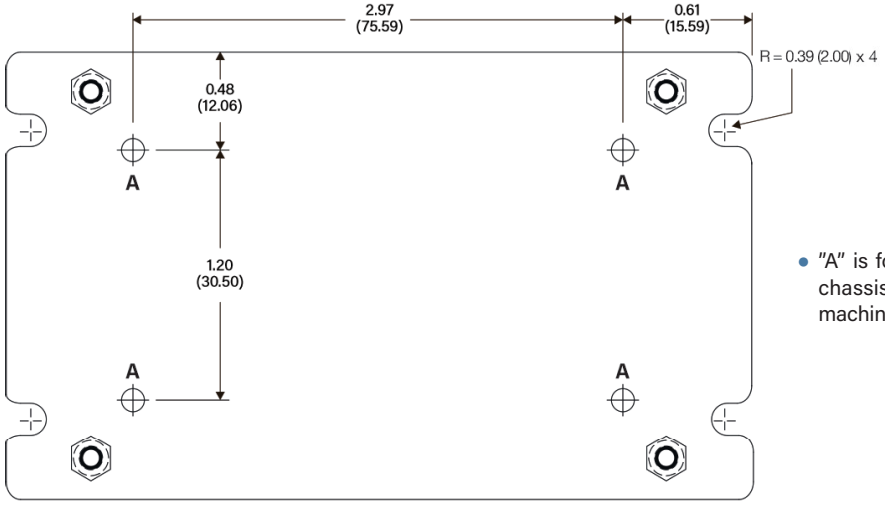
Temperature Derating: VIN: 230-264 VAC Natural Convection, 48 VOUT



Mechanical Dimensions







Bottom VIEW

Pin Connections

Pin	Function	JST Mating Housing	JST Terminal
1	AC-IN (N)	VHR-3N	SVH-41T-P1.1
3	AC-IN (L)		
4, 5	+VOUT	VHR-4N	SVH-41T-P1.1
6, 7	-VOUT		

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)
- Power supply weight is: 3.88 Oz (110g)
- The middle pin is removed on the input connector

- "A" is for attaching the unit to a PCB or chassis only. Suggested is a pan head machine screw: M3 x 0.5P

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