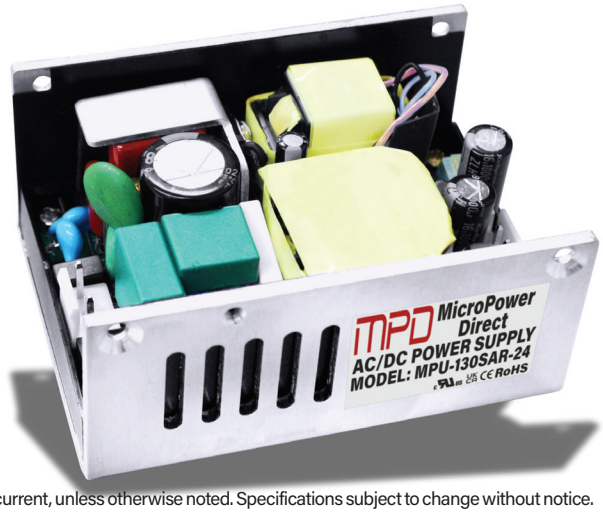
MPU-130SAR

Very Compact, U-Channel, High Performance 130W AC/DC Power Supplies



Key Features:

- 130W Output Power
- Universal 90-264 VAC Input
- Small 3.15 x 2.35 x 1.49 Size
- EN 62368 Approved (UL)
- Efficiency To 91%
- -30°C to +80°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		+80	°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				

MicroPower Direct
46 Eastman Street
Unit 1
Easton, MA 02375
USA

T: (781) 344-8226
F: (781) 344-8481
E: sales@micropowerdirect.com
W: www.micropowerdirect.com

MICROPOWER DIRECT

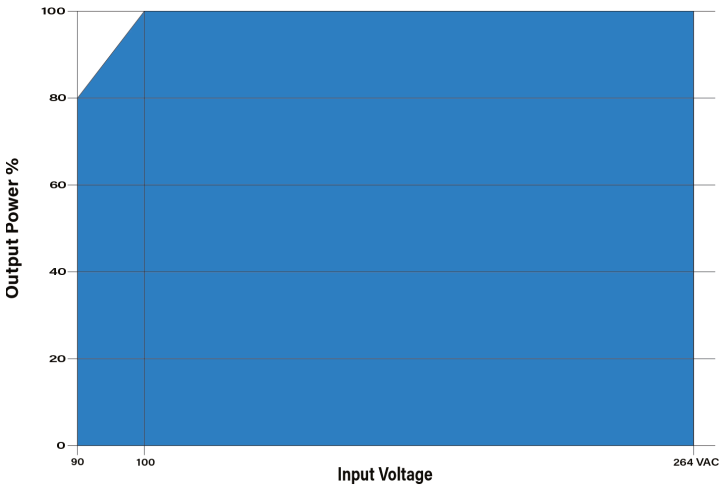
Model Selection Guide

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 (A Max)	Conduction Cooling (A Max)	Natural Convection			With 8 CFM	Natural Convection				
	115 VAC	230 VAC					100 VAC	115 VAC	230 VAC		100 VAC	115 VAC	230 VAC		
MPU-130SAR-12	2.0	1.0	12	±10%	10.833	10.833	9.167	4.792	2.50	130	110	115	120	4,000	90
MPU-130SAR-24	2.0	1.0	24	±10%	5.417	5.417	9.917	5.00	2.604	130	119	120	125	1,000	90
MPU-130SAR-48	2.0	1.0	48	±10%	2.708	2.708	9.917	5.00	2.604	130	119	120	125	330	91

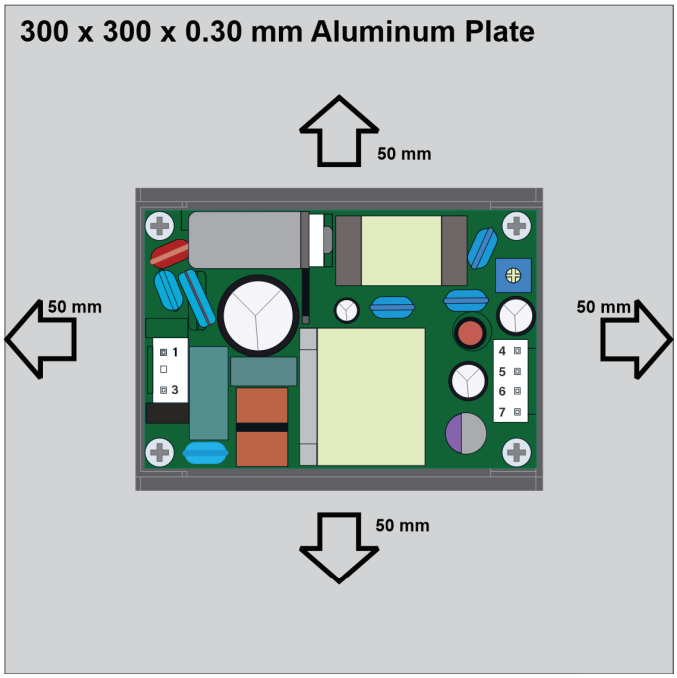
Notes:

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



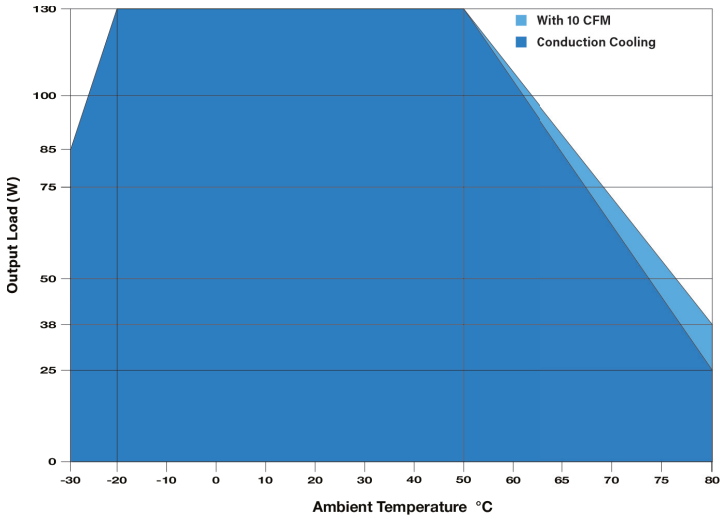
For optimum use (both EMI & thermal performance), the unit should be mounted on an aluminum plate, as shown in the illustration at left. The plate must have an even, smooth surface. Preferably, it would be coated with thermal grease.

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.

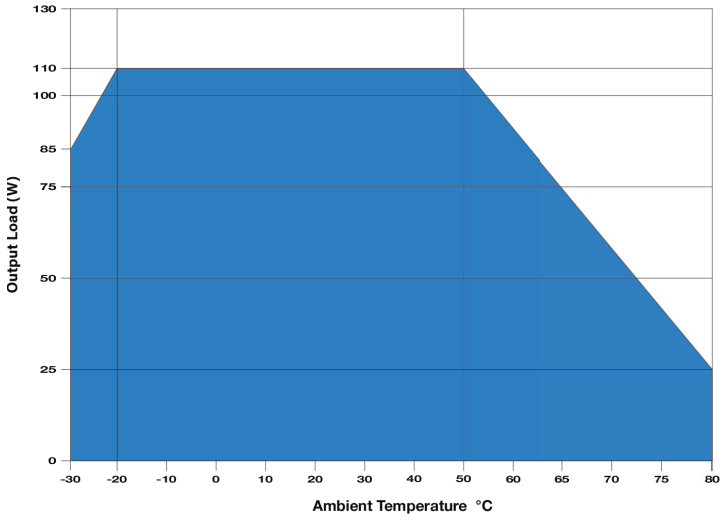
Ideally, this plate would be 300 x 300 x 0.30 mm, as shown in the illustration above. If this is not possible, it should extend out from the unit by at least 50 mm on each side.

If a U-channel doesn't quite fit your requirements, **MPD** also offers this power supply as an open frame or enclosed model. Call today or visit our website for complete information.

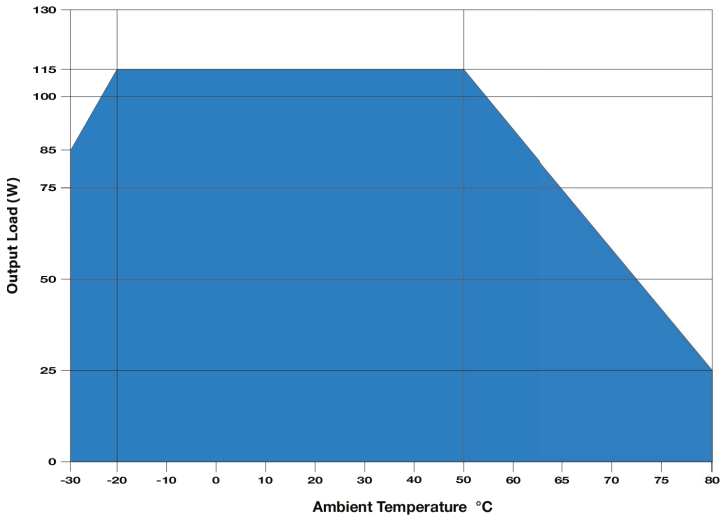
Temperature Derating: VIN: 100-115 VAC 10 CFM Fan / Conduction



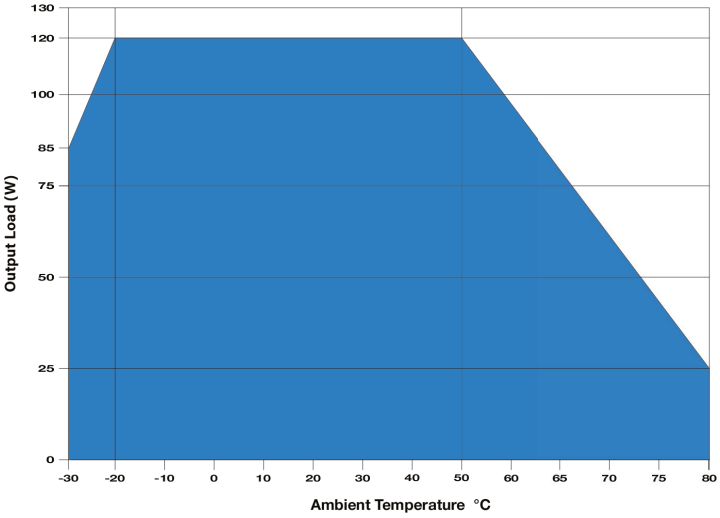
Temperature Derating: VIN: 100-115 VAC Natural Convection, 12 VOUT)



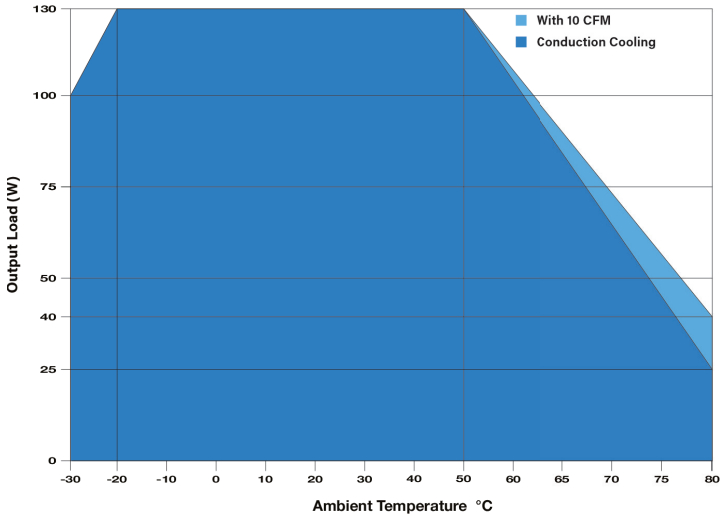
Temperature Derating: VIN: 100-115 VAC Natural Convection, 24 VOUT



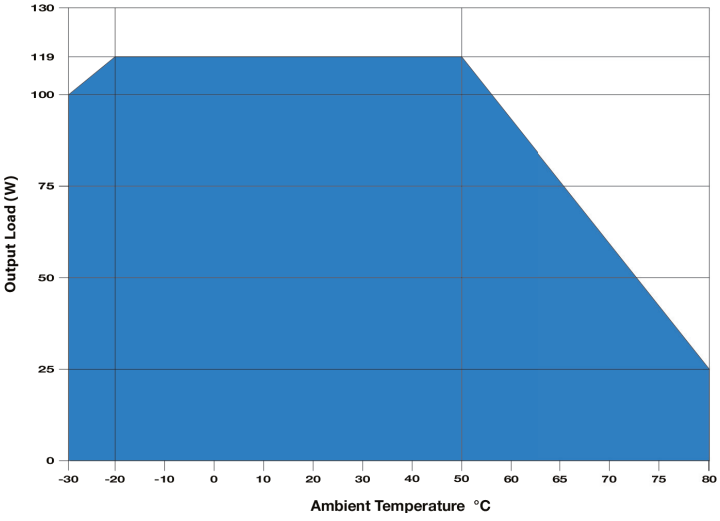
Temperature Derating: VIN: 100-115 VAC Natural Convection, 48 VOUT



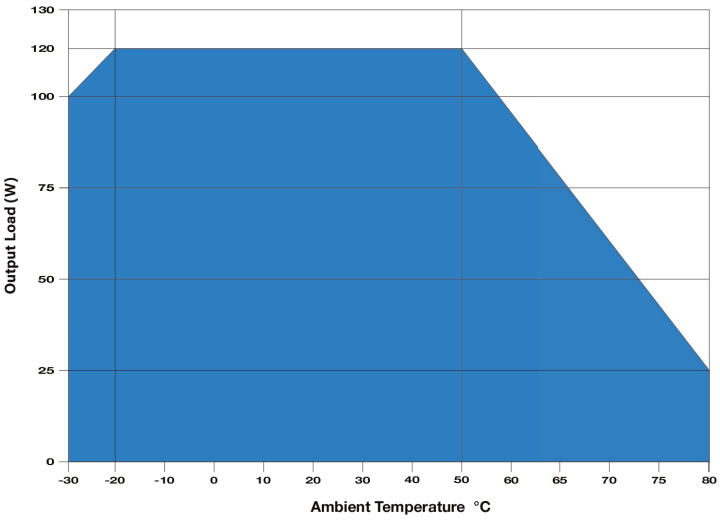
Temperature Derating: VIN: 115-264 VAC 10 CFM Fan / Conduction



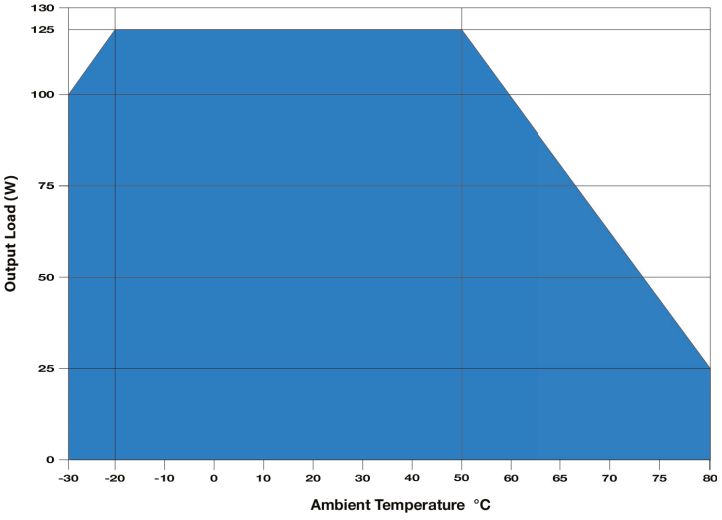
Temperature Derating: VIN: 115-264 VAC Natural Convection, 12 VOUT



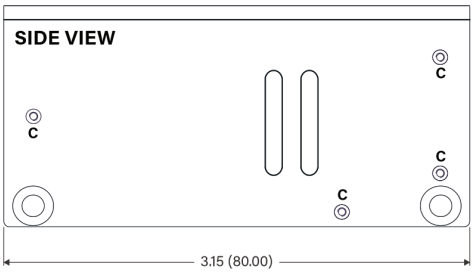
Temperature Derating: VIN: 115-264 VAC Natural Convection, 24 VOUT



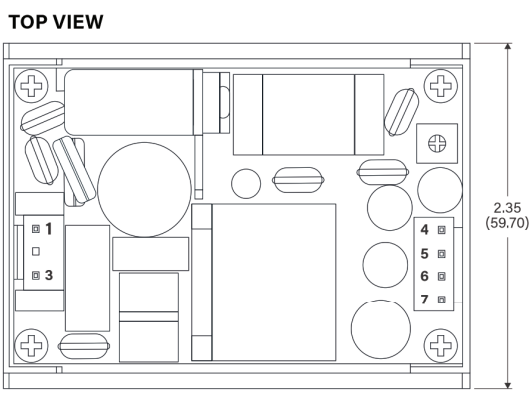
Temperature Derating: VIN: 115-264 VAC Natural Convection, 48 VOUT

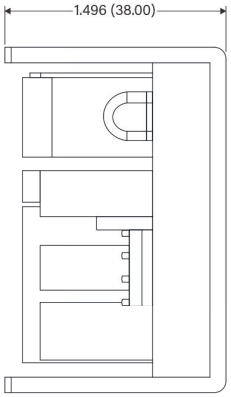


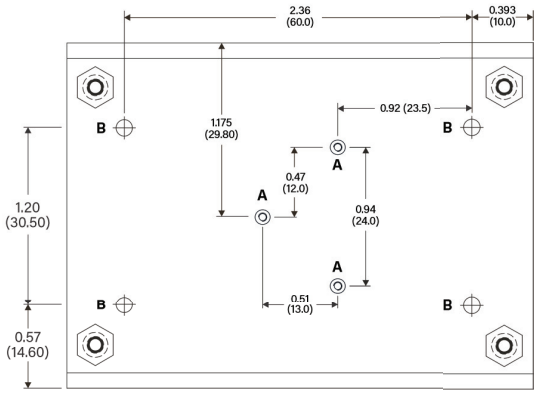
Mechanical Dimensions

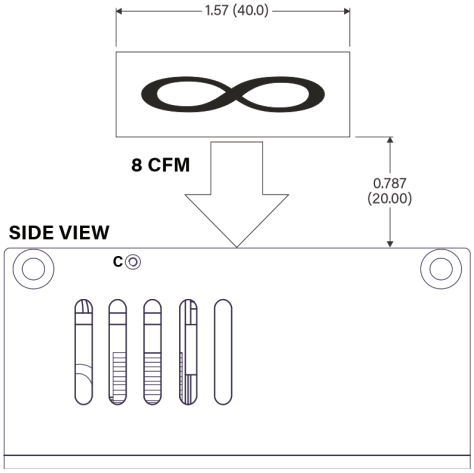


- "A" is for attaching the unit to a PCB or chassis only. Suggested is a pan head machine screw: M3 x 0.5P









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

MicroPower Direct
46 Eastman Street, Unit 1, Easton, MA 02375 • TEL: (781) 344-8226 • FAX: (781) 344-8481 • E-Mail: sales@micropowerdirect.com