MPE-200C

200W, High Isolation AC/DC Power Supplies

Key Features:

- 200W Output Power
- 180-264 VAC Input
- 3,000 VAC Isolation
- Efficiency to 89.5%
- -30°C to +70°C Temp
- Meets EN 55032 A
- >300 kHour MBTF
- UL62368 Approval

Electrical Specifications

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

Input

Parameter	Conditions		Min.	Typ.	Max.	Units
Input Voltage Range	AC Input	Low Voltage (switch position 115)	90		132	VAC
		High Voltage (switch position 230)	180		264	
	DC Input	Switch position 230	240		373	VDC
Input Frequency			47		63	Hz
Input Current		115 VAC			5.0	A
		230 VAC			3.0	
Inrush Current (Cold Start)		115 VAC		60	80	A
		230 VAC		60	80	

Output

Parameter	Conditions		Min.	Typ.	Max.	Units
Output Voltage Accuracy	Full Load Range	5V Output		±3		%
		12V Output		±1.5		
		15, 24, 36, 48V Outputs		±1.0		
Line Regulation	Rated Load			±0.5		%
Load Regulation	0-100% Load	5V Output		±2		%
		12V Output		±1		
		15, 24, 36, 48V Outputs		±0.5		
Ripple & Noise (20 MHz)		5, 12, 15, 24V Outputs		150		mV P - P
		36, 48V Outputs		200		
Hold-Up Time	Room temperature, full load	115 VAC	12			ms
		230 VAC	16			
Standby Power Consumption	Room temperature, 230 VAC input				0.75	W
Temperature Derating	5V Output	+40°C to +70°C	1.66			%/°C
	Other Outputs	+50°C to +70°C	2.5			
	90 - 100 VAC	50Hz	3.5			
Input Voltage Derating	90 - 100 VAC	60Hz	2.0			%/VAC
Temperature Coefficient	0 to 50°C, 230 VAC				±0.03	%/°C
Short Circuit Protection	Recovery time <5s after short circuit removed		Hiccup, Continuous, Self-Recovery			
Over Current Protection	5V Output, self-recover		110		200	%Io
	12, 15, 24, 36, 48V Outputs, last for 5 sec		130		250	
Over Temperature Protection	5V Output		Output voltage turn off, re-power			
	12, 15, 24, 36, 48V Outputs		Hiccup, Self-Recover			

General

Parameter	Conditions		Min.	Typ.	Max.	Units
Isolation Voltage	Input - Ground	Leakage <5 mA	2,000			VAC
	Input - Output		3,000			
	Output - Ground		500			
Isolation Resistance	See Note 6		100			MΩ

EMI Characteristics

Parameter	Standard	Criteria	Level
Radiated Emissions, See Page 4	CISPR32/EN 55032		Class A
Conducted Emissions	CISPR32/EN 55032		Class A

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	0.3			MHours
Safety Standards	UL/cUL 62368-1 Recognition (UL Certificate)				
Safety Class	Class I				

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-30		+70	°C
Storage Temperature Range		-40		+85	°C
Cooling	Free Air Convection				
Operating Humidity	Non-condensing			90	%RH
Storage Humidity				95	

Physical

Case Size	7.05 x 3.90 x 1.18 in (See Mechanical Drawing on Page 4)	
Case Material	Metal (AL1100, SGCC)	
Weight	5V Output	18.34 oz (520g) (See Mechanical Drawing on Page 4)
	Other Outputs	17.64 oz (500g) (See Mechanical Drawing on Page 4)

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MICROPOWER DIRECT

Model Selection Guide

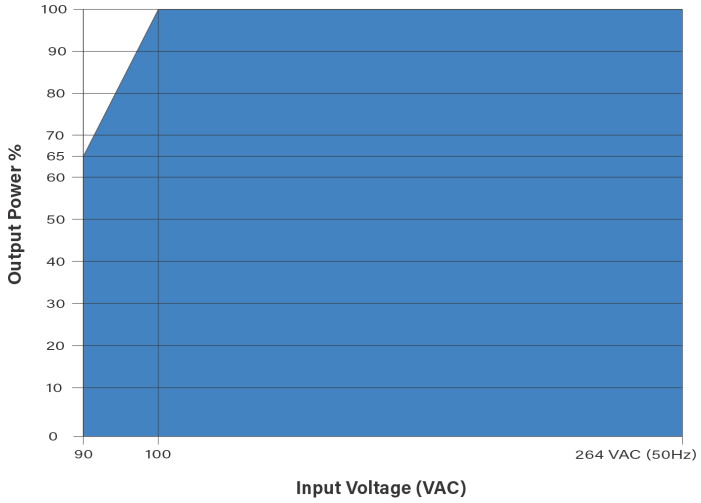
Model Number	Input		Output					Over Voltage Protection (Max) (VDC)	Efficiency (%, Typ)	Output Capacitive Load (μF Max)
	Current (mA)		Voltage (VDC)	Voltage Adjustable Range (VDC)	Current (A, Max)	Power (W)				
	115 VAC	230 VAC				Steady State	Transient			
MPE-200C-05	5000	3000	5	4.5 - 5.5	30	150	200	8	87	10000
MPE-200C-12	5000	3000	12	10.2 - 13.8	17	204	-	18	87.5	4000
MPE-200C-15	5000	3000	15	13.5 - 18	14	210	-	22	88	3300
MPE-200C-24	5000	3000	24	21.6 - 28.8	8.8	211.2	-	33.6	88.5	1500
MPE-200C-36	5000	3000	36	32.4 - 39.6	5.9	212.4	-	46.8	89	1500
MPE-200C-48	5000	3000	48	43.2 - 52.8	4.4	211.2	-	60	89.5	470

Notes:

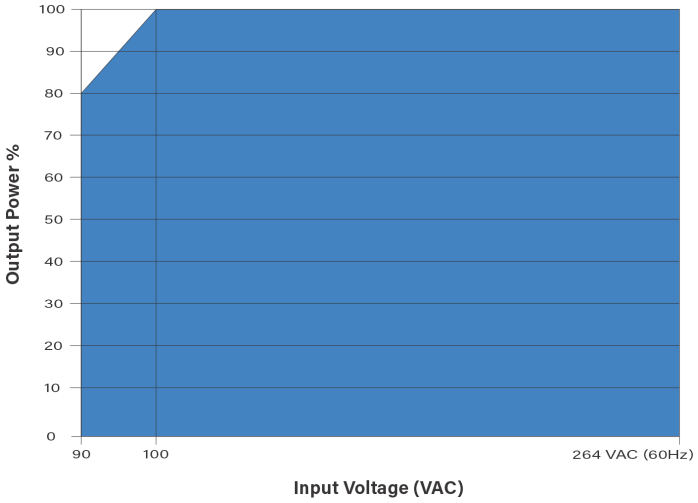
1. The “tip and barrel method” is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.
2. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
3. Input-output isolation is tested for 60 seconds.
4. A temperature derating of 5°C/1000m is required for operating altitude greater than 2000m.
5. The output voltage can be adjusted by the ADJ knob. Turn clockwise to increase and counterclockwise to decrease.
6. Isolation resistance is given for input - output, input - ground and output - ground. It is tested at 500VDC.
7. One magnetic bead (nickel-zinc ferrite) should be coupled with the output load line during CE/RE testing.

For conformal coating option, add the suffix “**-CC**” to the model number (e.g. **MPE-200C-05-CC**).

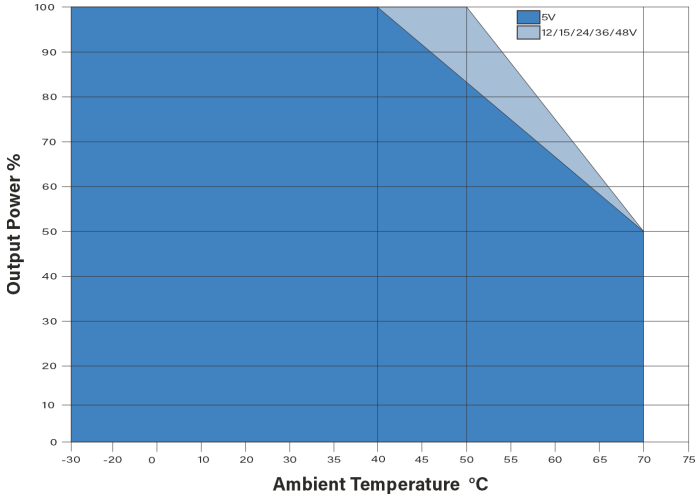
Input Voltage Derating (50Hz)



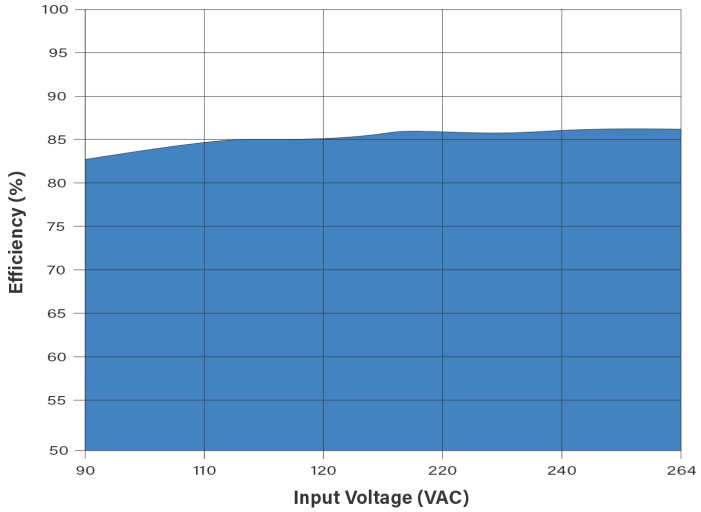
Input Voltage Derating (60Hz)



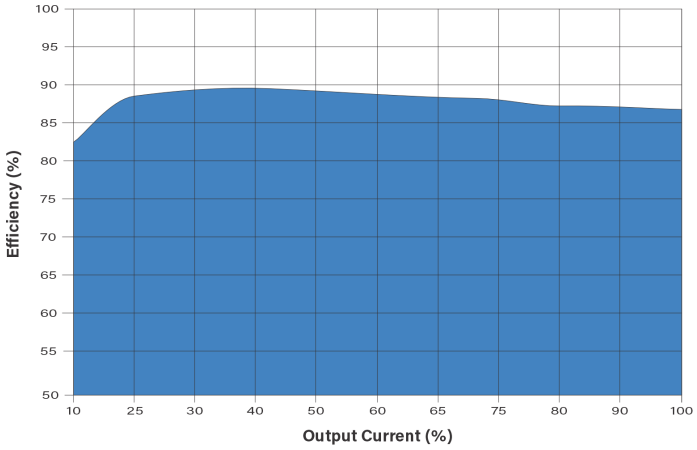
Temperature Derating



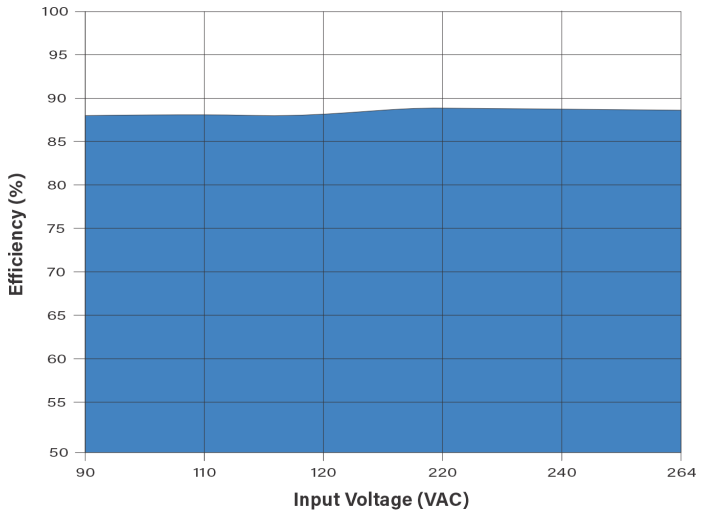
Efficiency vs Input Voltage: 5V (Full Load)



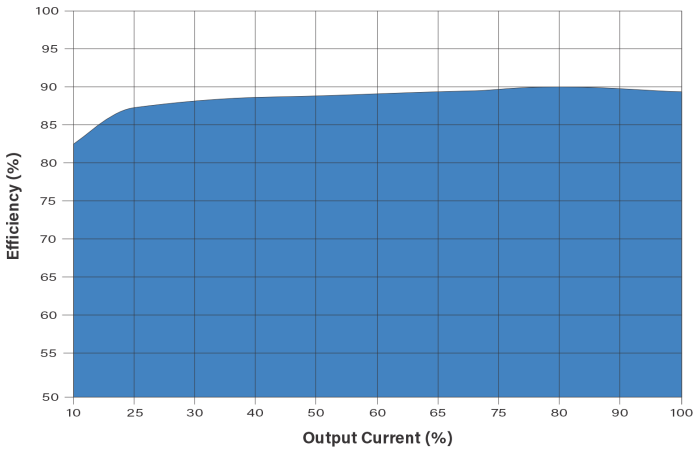
Efficiency vs Output Load: 5V



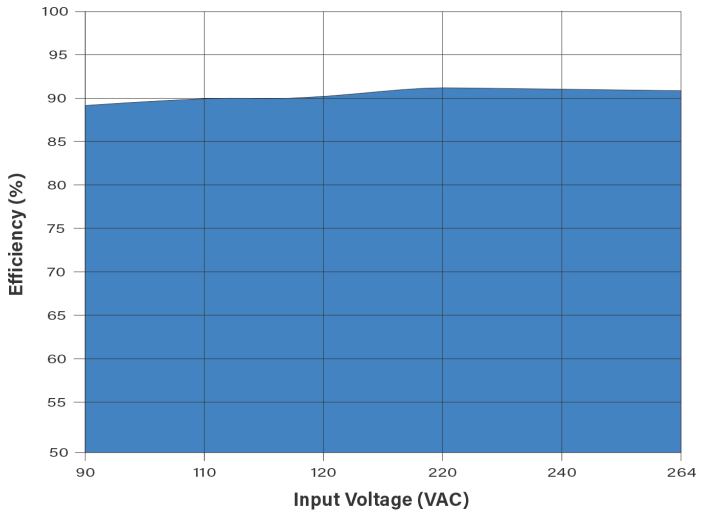
Efficiency vs Input Voltage: 24V (Full Load)



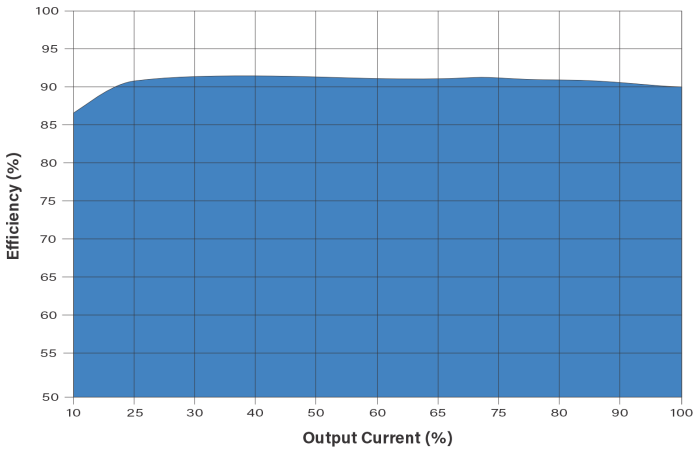
Efficiency vs Output Load: 24V



Efficiency vs Input Voltage: 48V (Full Load)



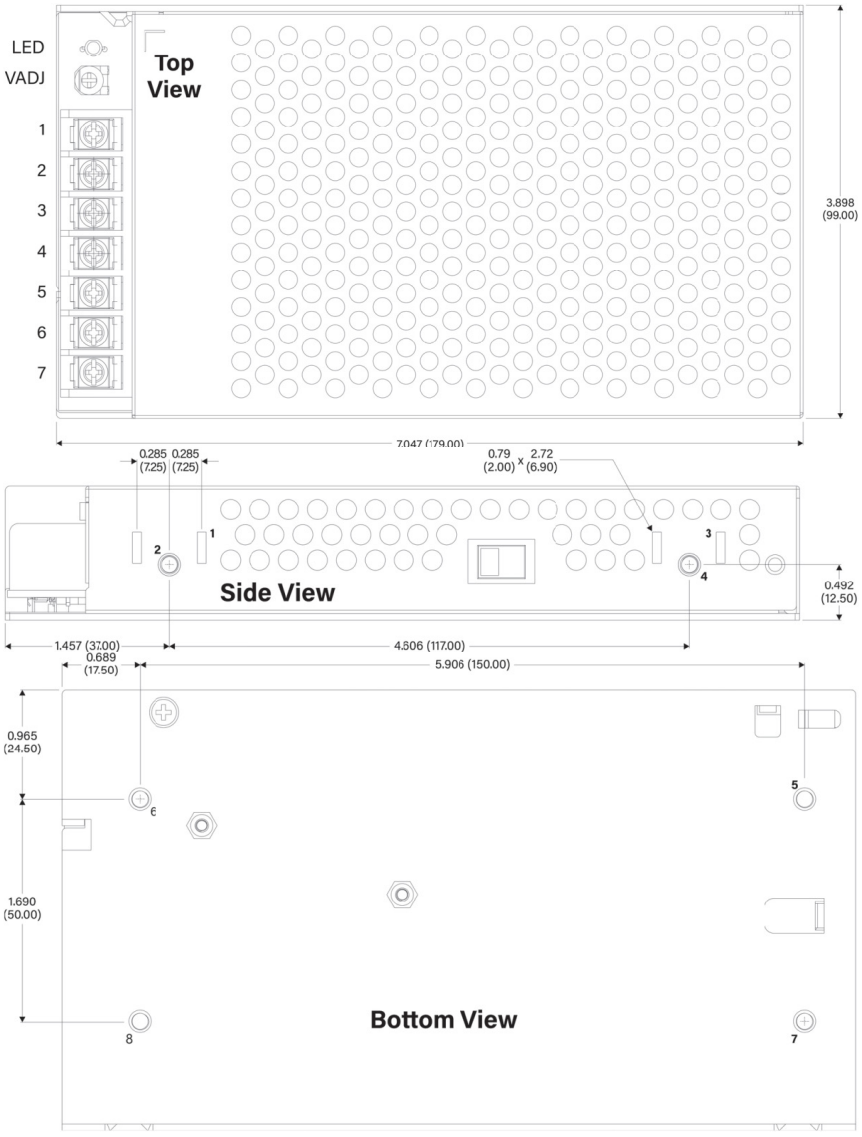
Efficiency vs Output Load: 48V

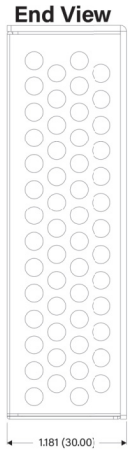


EMI Characteristics

Parameter	Standard	Criteria	Level
Radiated Emissions (RE)	CISPR32/EN55032		A
Conducted Emissions (CE)	CISPR32/EN55032		A
ESD	IEC/EN61000-4-2	A	Contact ±6kV/Air ±8KV
RS	IEC/EN61000-4-3	A	10V/m
EFT	IEC/EN61000-4-4	A	±2KV
Surge	IEC/EN61000-4-5	A	line to line ±2KV/line to ground ±4KV
CS	IEC/EN61000-4-6	A	10 Vr.m.s
Voltage Dips, Short, Interruption	IEC/EN61000-4-11	B	100% dip 1 period, 30% dip 25 periods, 100% interruption 250 periods

Mechanical Diagrams

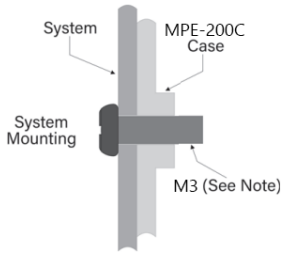




THIRD ANGLE PROJECTION

Pin-Out	
Pin	Function
1	+Vo
2	+Vo
3	-Vo
4	-Vo
5	GRND
6	AC(N)
7	AC(L)

Switch	AC Input	DC Input
115V	90 - 132 VAC	-
230V	180 - 264 VAC	240 - 373 VDC



Position	Screw Spec	Length of Locking Screw L (max)	Torque (max)
1 - 8	M4	4mm	0.9N · m

Notes:
- All dimensions are typical in inches (mm)
- ADJ: Output voltage adjustable
- Wire range: Input: 20-10AWG (16-10AWG for pin 5)
  Output: 5V, 12V: 12-10AWG
  15V, 24V: 16-10AWG
  36V, 48V: 20-10AWG
- Connector tightening torque: M3.5, Max 0.8N · m Max
- General tolerances: ±0.039 (±1.00)
- 1 - 8 any position must be connected to PE

Weight:
- 5V Output: 18.34 oz (520g)
- Other Outputs:17.64 oz (500g)

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