

MPE-100SVF Series

Single Output, 100W Wide Input, Active PFC AC/DC Power Supplies



Key Features:

- 100W Output Power
- Universal 85-305 VAC In.
- UL 62368 Approval
- -30°C to 70°C Operation
- Built - In Active PFC
- Reinforced Insulation
- Meets EN 55032 B
- Meets EN 60335
- Meets EN 61558
- >300 kHour MTBF
- Low Cost



RoHS



MicroPower Direct

292 Page Street
Suite D
Stoughton, MA 02072
USA

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



Electrical Specifications

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

Input		Min.	Typ.	Max.	Units
Parameter	Conditions				
Input Voltage Range		85		305	VAC
Input Frequency		120		430	VDC
Input Current		47		63	Hz
Leakage Current	See Model Selection Guide				
Power Factor, At Full Load	277 VAC	0.97	0.98	2.0	mA
Inrush Current, Cold Start	115 VAC	0.92	0.93		---
	230 VAC		25		A Pk
	230 VAC		45		

Output		Min.	Typ.	Max.	Units
Parameter	Conditions				
Output Voltage Accuracy	12V & 15V Outputs		±2.0		%
Line Regulation	24V & 48V Outputs		±1.0		%
Load Regulation	At Rated Load		±0.5		%
	0 - 100% Load		±0.5		%
Ripple & Noise (20 MHz), See Note 1	12 & 15V Output			100	mV
	24V Output			150	mV
	48V Output			250	mV
Hold-Up Time	230 VAC	16			mSec
Temperature Coefficient			±0.05		%/°C
Standby Power Consumption	12V, 15V & 24V Outputs			2.0	W
	48V Output			2.5	W
Over Current Protection	Self Recovery	105		150	%IOUT
Over Temperature Protection	Hiccup (Autorecovery)				
Short Circuit Protection, See Note 2	Continuous (Autorecovery)				

General		Min.	Typ.	Max.	Units
Parameter	Conditions				
Isolation Voltage, See Note 3	Input to Output	4,000			VAC
	Input to Ground	2,000			VAC
	Output to Ground	500			VAC
Insulation Resistance	See Note 4	100			MΩ
Switching Frequency			65		kHz

Remote On/Off		Min.	Typ.	Max.	Units
Parameter	Conditions				
Remote Control, CN 1, See Note 5	Power On	0.0		0.8	VDC
	Power Off	4.0		10	VDC

Environmental		Min.	Typ.	Max.	Units
Parameter	Conditions				
Operating Temperature Range	Ambient	-30	+25	+70	°C
Storage Temperature Range		-40		+85	°C
Cooling	Free Air Convection (See Derating Curves)				
Humidity, Operation	RH, Non-condensing	20		90	%

Physical		Min.	Typ.	Max.	Units
Parameter	Conditions				
Size and Weight					See Mechanical Drawing (Page 4)
Case Material					Metal (AL1100, SGCC)
Conformal Coating, See Note 8					Option Available For Use In Harsh Environments

Reliability Specifications		Min.	Typ.	Max.	Units
Parameter	Conditions				
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	300			kHours
Safety Standards	UL/cUL 62368-1 recognition (UL certificate)				
Safety Class	Class I				
Overvoltage Class	Class III				

www.micropowdirect.com

Model Number	Input			Output					Over Voltage Protection (VDC) See Note 6	Max Output Capacitance (μF)	Efficiency (% Typ)
	Current (A)			Voltage (VDC)	Adjust Range (VDC)	Current (A)		Power (W)			
	85 VAC	115 VAC	230 VAC			Rated	% Min.				
MPE-100SV-12F	1.7	1.3	0.7	12.0	11.4 - 13.8	8.50	0.00	102.0	16.80	5,000	85
MPE-100SV-15F	1.7	1.3	0.7	15.0	14.3 - 16.5	6.70	0.00	100.5	20.25	5,000	86
MPE-100SV-24F	1.7	1.3	0.7	24.0	22.8 - 27.6	4.20	0.00	100.8	32.40	4,200	86
MPE-100SV-48F	1.7	1.3	0.7	48.0	45.6 - 55.2	2.10	0.00	100.8	60.00	2,200	87

EMI/RFI

Parameter	Standard	Criteria	Level
Radiated Emissions	CISPR 32/EN 55032		Class B
Conducted Emissions	CISPR 32/EN 55032		Class B
Harmonic Current	EN 61000-3-2		Class A
Voltage Flicker	EN 61000-3-3		
ESD	EN 61000-4-2	A	±6 kV Contact ±8 kV Air
RS	EN 61000-4-3	B	3V/m
EFT	EN 61000-4-4	A	±2 kV
Surge	EN 61000-4-5	A	±1 kV L-L ±2 kV L-G
CS	EN 61000-4-6	A	10 Vrms
Voltage Dips	EN 61000-4-11	B	0% - 70%

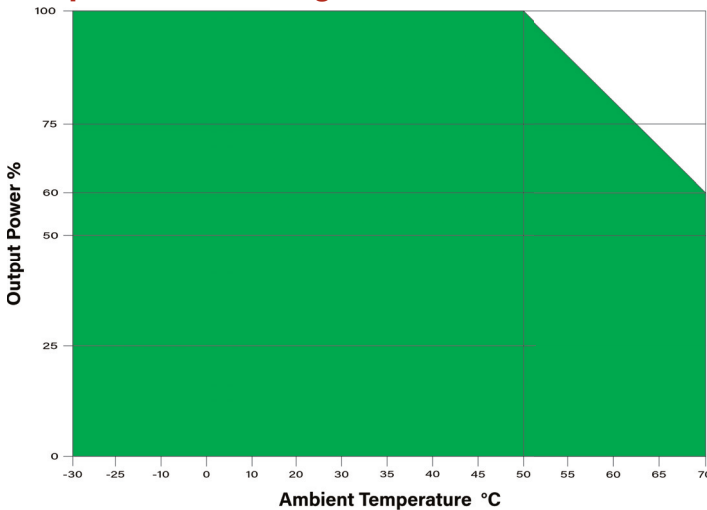
Notes:

- Output ripple is measured at 20 MHz bandwidth using 0.1 μF and 10 μF capacitors connected in parallel as close to the power supply terminals as possible.
- Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers <5 seconds after the fault condition is removed.
- Input-output & input-ground and output-ground isolation are tested for 60 seconds with a leakage current of <10 mA. Output-ground isolation is tested with a leakage current <5 mA.
- Insulation resistance is given for input - output, input - ground and output - ground. It is tested at 500 VDC.
- If the Remote Control Connector is left open, the unit operates.
- After an overvoltage fault the unit will recover automatically.
- All units include an on-board slow blow fuse.
- For use in harsh environments such as exposure to a salt or chemical spray or high humidity the unit is available conformally coated.

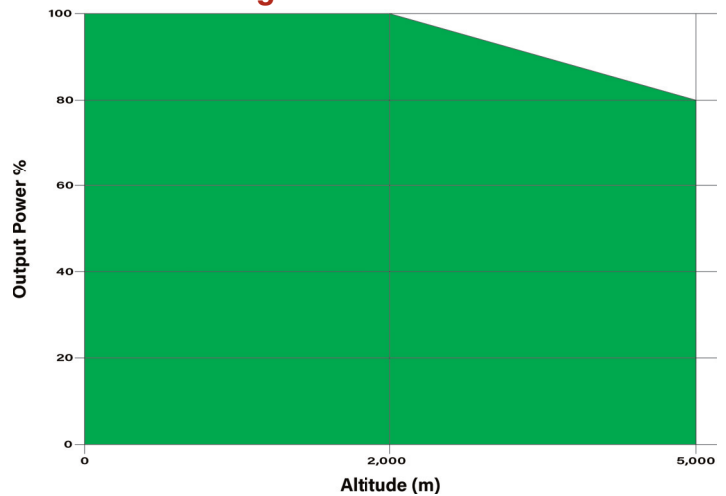
For a Terminal Strip Cover, add the suffix "TC" to the part number:
(i.e. MPE-100SV-15FTC)

For Conformal Coating, add the suffix "CC" to the part number:
(i.e. MPE-100SV-48FCC)

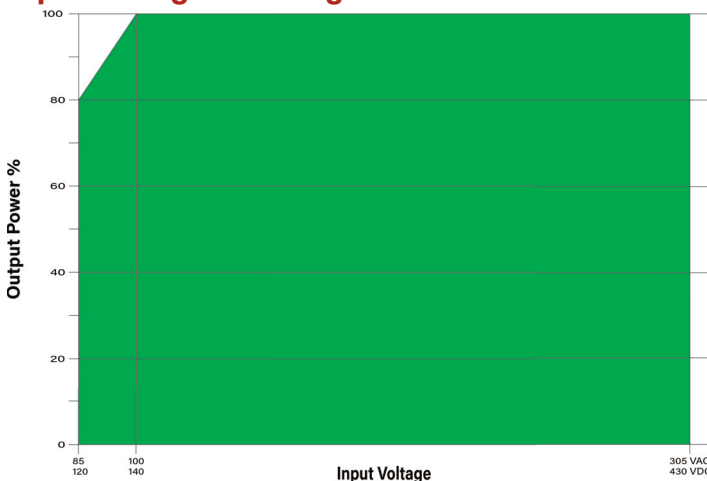
Temperature Derating



Altitude Derating

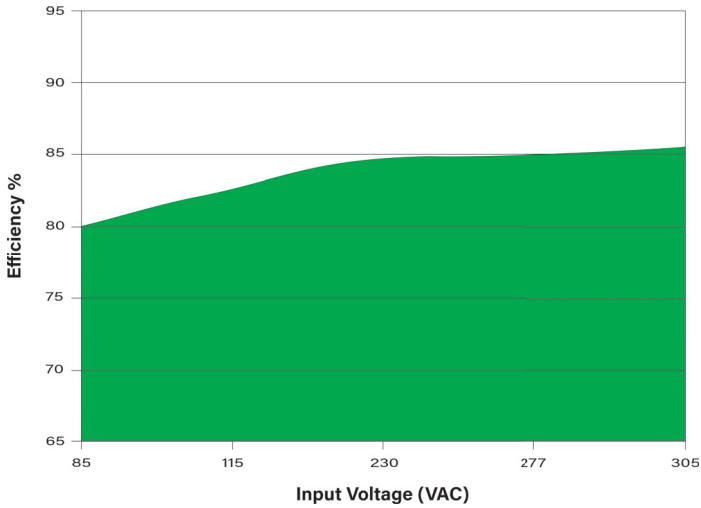


Input Voltage Derating

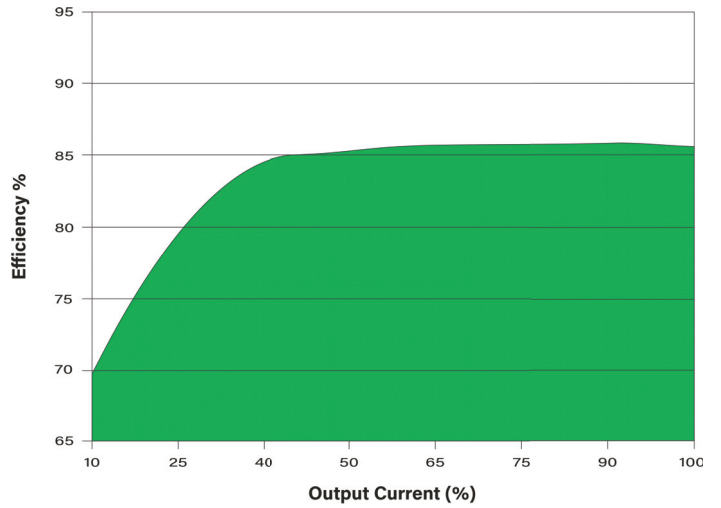


MPD offers a very wide variety of AC/DC power supplies. Our product line now includes a full range of enclosed units that combine industrial packaging, high performance features, application flexibility, and low cost. Models are available now over a power range of 15W to 1,000W.

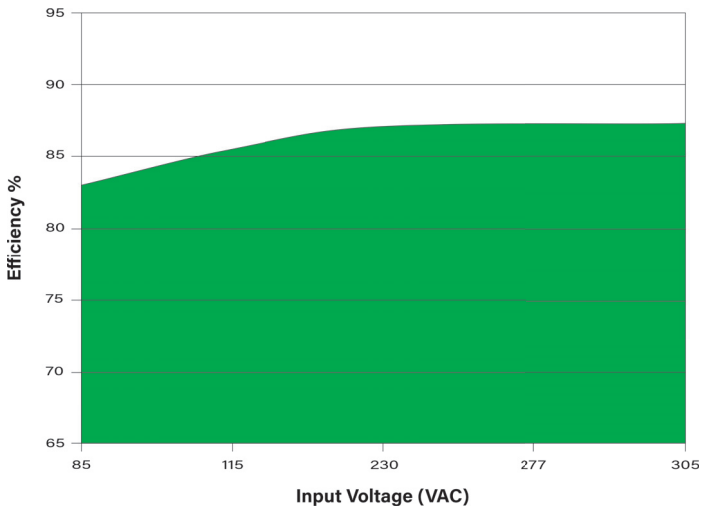
Efficiency vs Input Voltage: 12 V_{OUT}



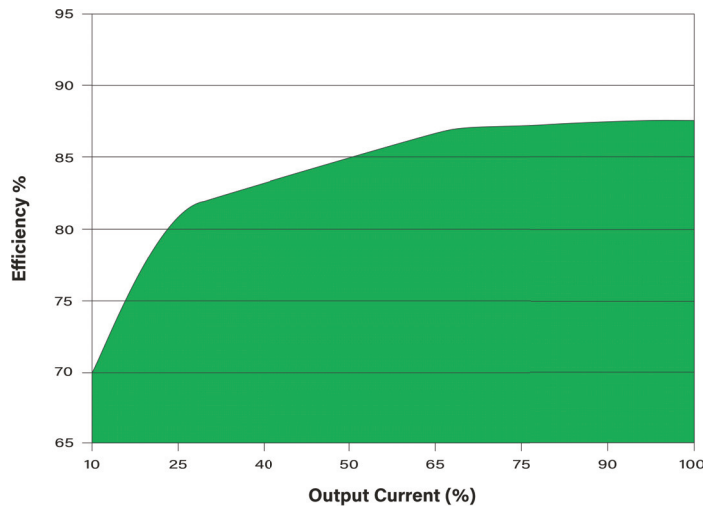
Efficiency vs Output Load: 12 V_{OUT}



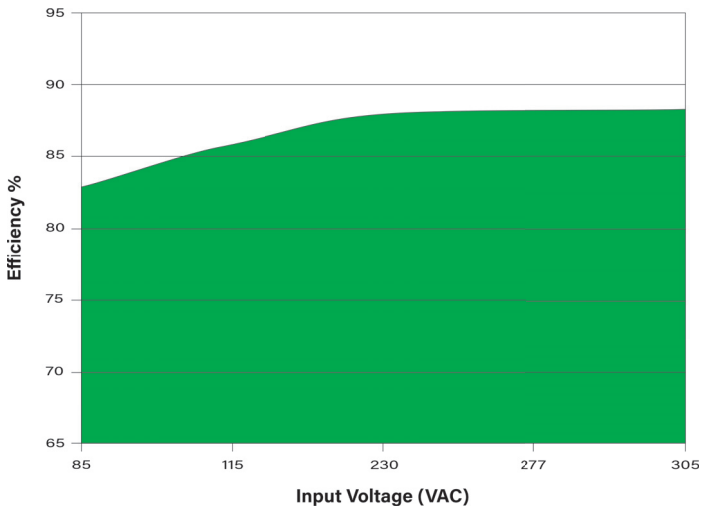
Efficiency vs Input Voltage: 24 V_{OUT}



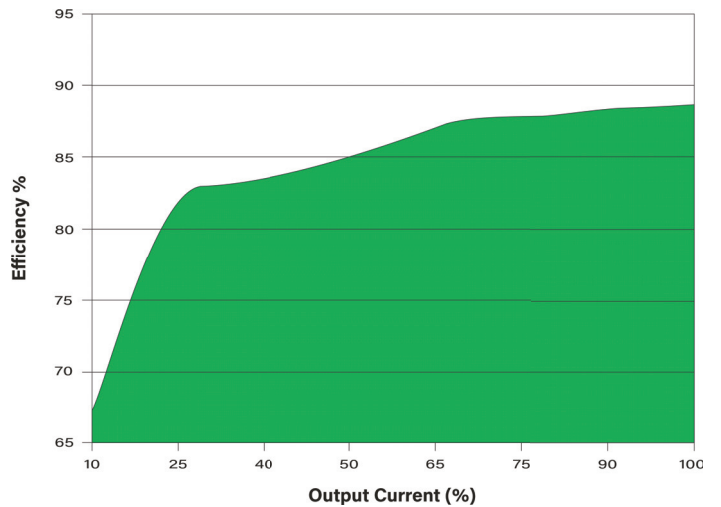
Efficiency vs Output Load: 24 V_{OUT}

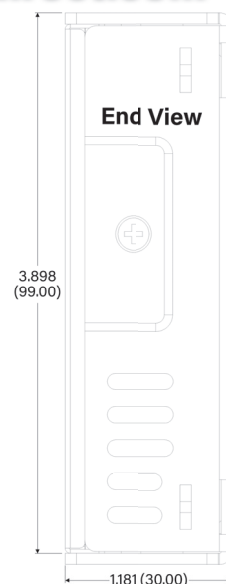
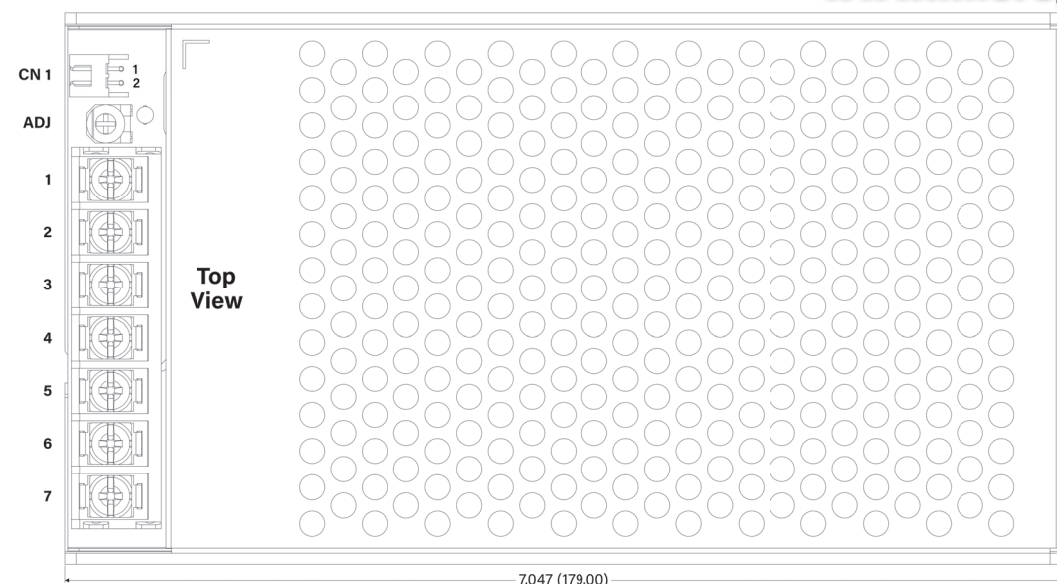


Efficiency vs Input Voltage: 48 V_{OUT}

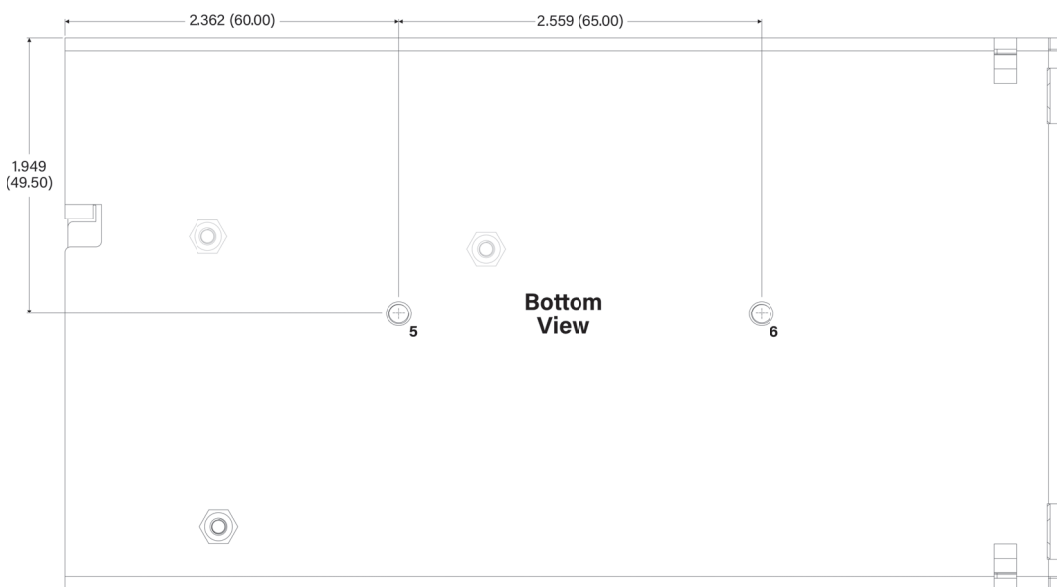
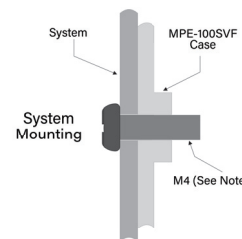
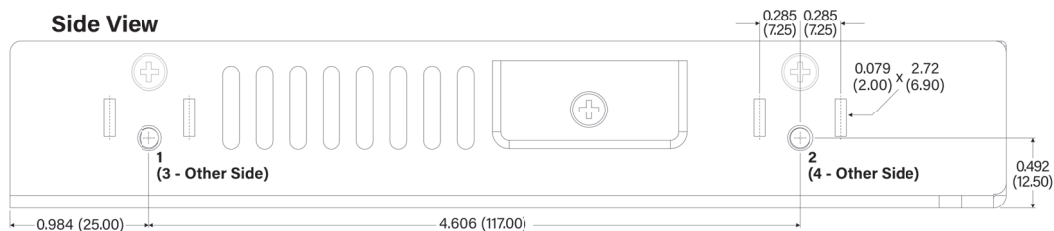


Efficiency vs Output Load: 48 V_{OUT}





Side View



Connections

Remote ON/OFF Connector

- Mating Part No: JST S2B-XH-A or equivalent
- 2 Pins

Pin	Function
1	+ Control
2	- Control

The unit operates if the Remote ON/Off connector is left open.

Terminal Block Connector

- Wire range - 22 -12 AWG
- Tightening Torque: M3.5, 0.8 N·m

Pin	Function
1	+VOUT
2	+VOUT
3	-VOUT
4	-VOUT
5	Ground
6	AC-Neutral
7	AC-Line

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ± 0.039 (± 1.00)
- Weight (Typ) = 16.22 Oz (460g)

The unit should be connected to PE before operating. This connection can be made at any position (1 to 6) as shown on the mechanical diagram. See the mechanical and system mounting diagrams at left and above.

Position	Screw	Max L	Max Torque
1 - 6	M4	4 mm	0.9N·m



MicroPower Direct

We Power Your Success - For Less!

292 Page Street Ste D Stoughton, MA 02072 ■ TEL: (781) 344-8226 ■ FAX: (781) 344-8481 ■ E-Mail: sales@micropowerdirect.com