MPE-150SV Series

Single Output, 150W Wide Input, Enclosed AC/DC Power Supplies

Key Features:

- 150W Output Power
- Universal 85-305 VAC In.
- UL 62368 Approval
- -30°C to 70°C Operation
- Reinforced Insulation
- Meets EN 55032 B
- Meets EN 60335
- Meets EN 61558
- >300 kHour MTBF
- Low Cost

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		85		305	VAC
		120		431	VDC
Input Frequency		47		63	Hz
Input Current	See Model Selection Guide				
Leakage Current	240 VAC			0.75	mA
Inrush Current, Cold Start	115 VAC		30		A Pk
	230 VAC		60		

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±1.0		%
Line Regulation	At Rated Load		±0.5		%
Load Regulation	0 - 100% Load		±1.0		%
Ripple & Noise (20 MHz), See Note 1	12 and 15V Outputs			150	mV
	All Other Outputs			200	
Hold-Up Time	115 VAC	8			mSec
	230 VAC	40			
Temperature Coefficient			±0.03		%/°C
Standby Power Consumption				0.50	W
Over Current Protection	Self Recovery	110		150	%IOUT
Over Temperature Protection	Output Voltage Turn-Off, Autorecovery				
Short Circuit Protection, See Note 2	Continuous (Autorecovery)				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage, See Note 3	Input to Output	4,000			VAC
	Input to Ground	2,000			
	Output to Ground	1,250			
Insulation Resistance	See Note 4	50			MΩ
Switching Frequency			65		kHz

EMI See Page 2

Environmental

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

Physical

Size	See Mechanical Drawing (Page 4)	
Case Material	Metal (AL1100, SGCC)	
Conformal Coating, See Note 7	Option Available For Use In Harsh Environments	
Weight	12 & 15VOUT Models	15.67 Oz (430g)
	All Other Models	14.46 Oz (410g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
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				

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Model Selection Guide

Model Number	Input		Output					Over Voltage Protection (VDC) See Note 5	Max Output Capacitance (μF)	Efficiency (%, Typ)
	Current (A)		Voltage (VDC)	Adjust Range (VDC)	Current (A)		Power (W)			
	115 VAC	230 VAC			Rated	% Min.				
MPE-150SV-12	4.0	2.0	12.0	10.2 - 13.8	12.50	0.00	150.0	16.20	10,000	86
MPE-150SV-15	4.0	2.0	15.0	13.5 - 18.0	10.0	0.00	150.0	21.75	6,000	87
MPE-150SV-24	4.0	2.0	24.0	21.6 - 28.8	6.50	0.00	156.0	33.60	2,400	88
MPE-150SV-36	4.0	2.0	36.0	32.4 - 39.6	4.30	0.00	154.8	48.60	1,200	88
MPE-150SV-48	4.0	2.0	48.0	43.2 - 52.8	3.30	0.00	158.4	60.00	600	89

EMI/RFI

Parameter	Standard	Criteria	Level
Radiated Emissions	CISPR 32/EN 55032		Class B
Conducted Emissions	CISPR 32/EN 55032		Class B
Harmonic Current (7)	EN 61000-3-2		Class A
ESD	EN 61000-4-2	A	±6 kV Contact
			±8 kV Air
RS	EN 61000-4-3	A	10V/m
EFT	EN 61000-4-4	A	±4 kV
Surge	EN 61000-4-5	A	±2 kV L-L
			±4 kV L-G
CS	EN 61000-4-6	A	10 Vrms
Voltage Dips	EN 61000-4-11	B	0% - 70%

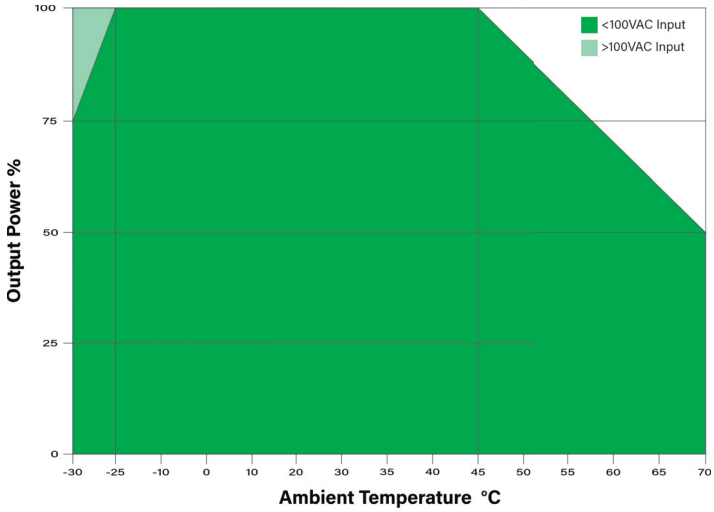
Notes:

1. 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.
2. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers <5 seconds after the fault condition is removed.
3. Input-output, input-ground and output-ground isolation are tested for 60 seconds with a leakage current of <10 mA.
4. Insulation resistance is given for input - output, input - ground and output - ground. It is tested at 500 VDC.
5. After an overvoltage fault the unit must be power recycled to recover.
6. All units include an on-board slow blow fuse.
7. Specified at ≤ 80% Load
8. For use in harsh environments such as exposure to a salt or chemical spray or high humidity the unit is available conformaly coated.

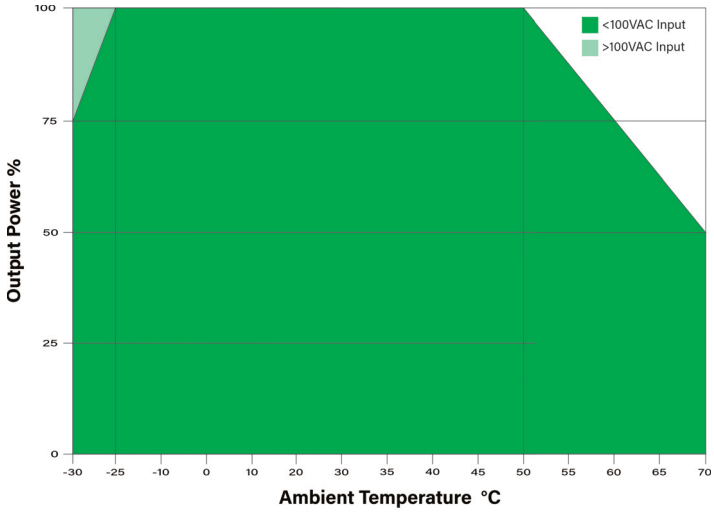
For a Terminal Strip Cover, add the suffix "TC" to the part number:
(i.e. **MPE-150SV-36TC**)

For Conformal Coating, add the suffix "CC" to the part number:
(i.e. **MPE-150SV-12CC**)

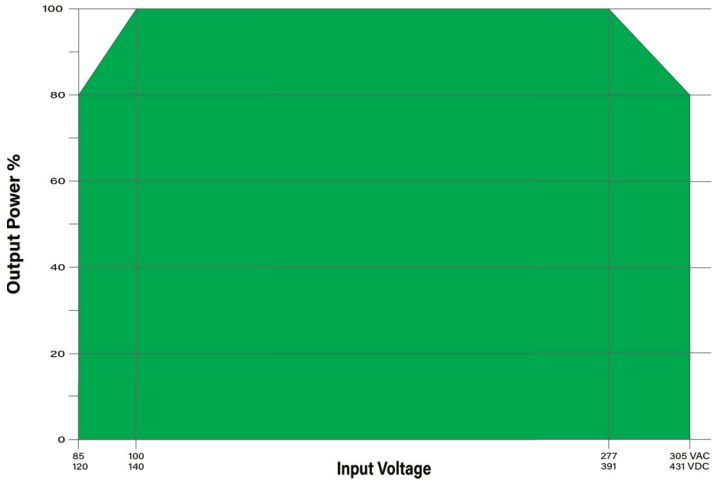
Temperature Derating: 12 V Output



Temperature Derating: All Other Outputs

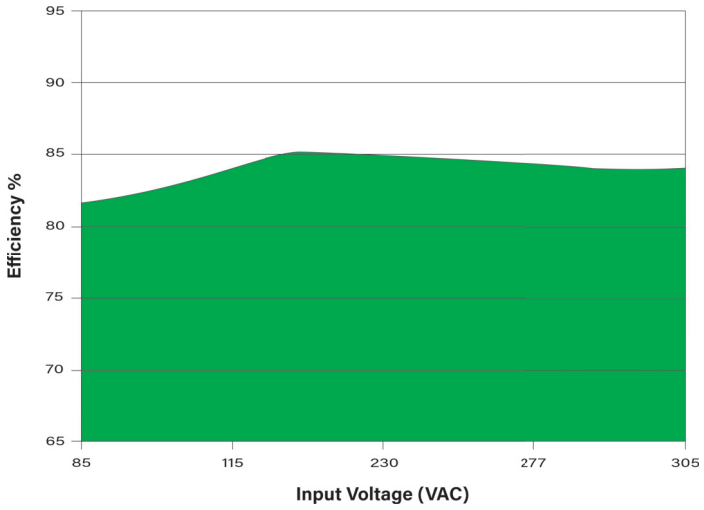


Input Voltage Derating

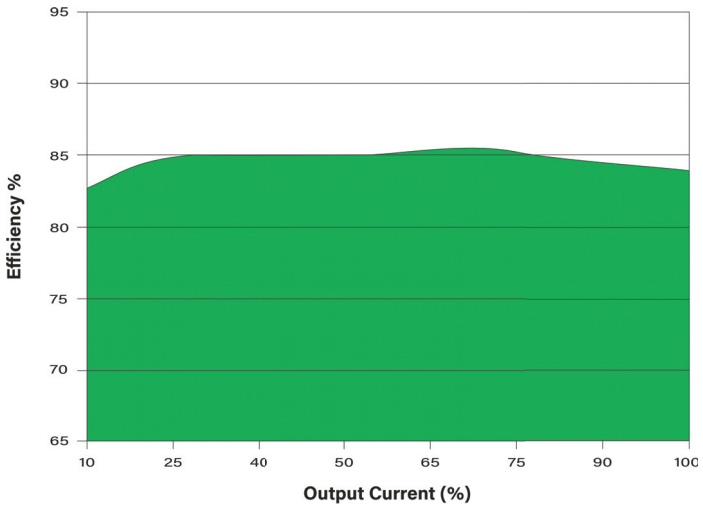


MPD offers a very wide variety of AC/DC power supplies. Our product line now includes a full range of enclosed units that combine industrial packaging, high performance features, application flexibility, and low cost. Models are available now over a power range of 15W to 320W.

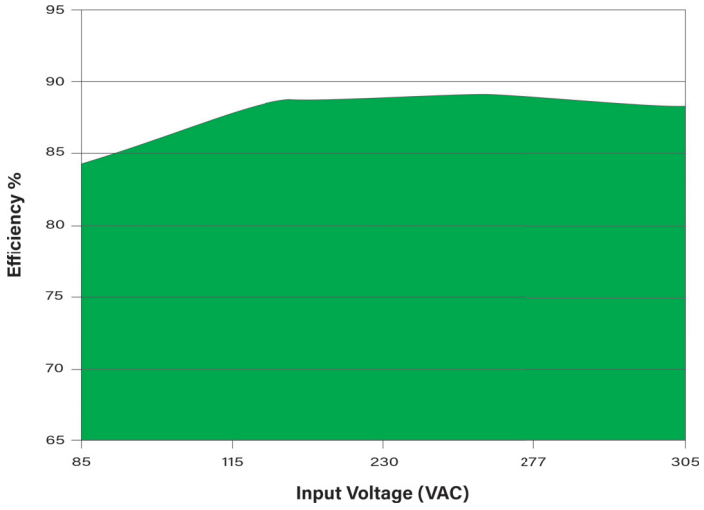
Efficiency vs Input Voltage: 12 VOUT



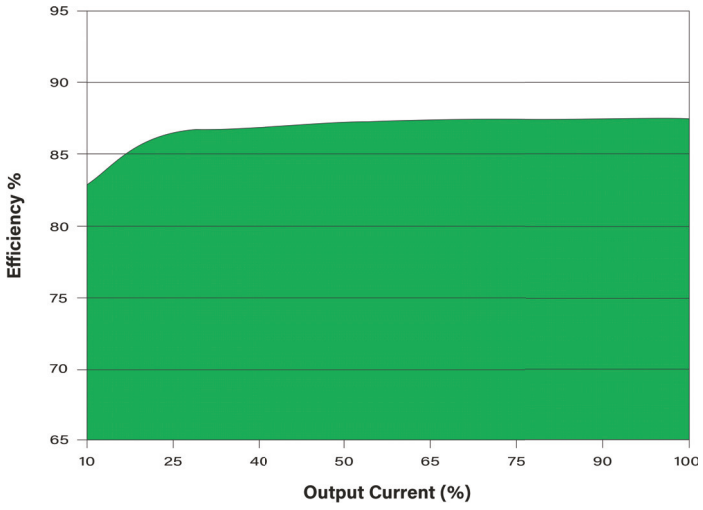
Efficiency vs Output Load: 12 VOUT



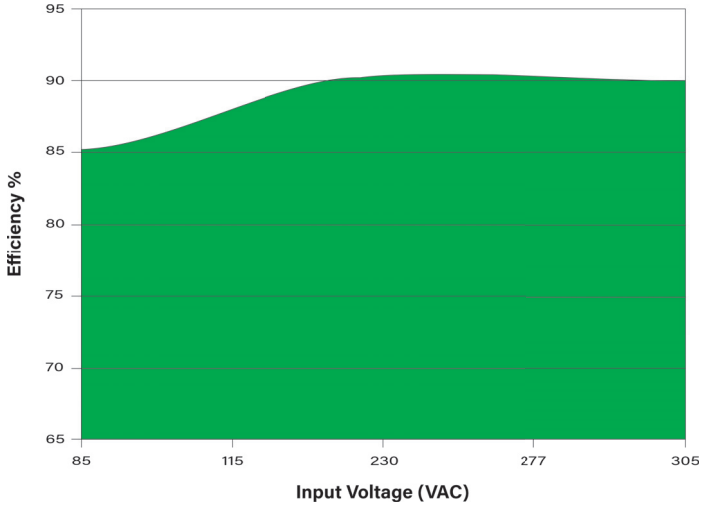
Efficiency vs Input Voltage: 24 VOUT



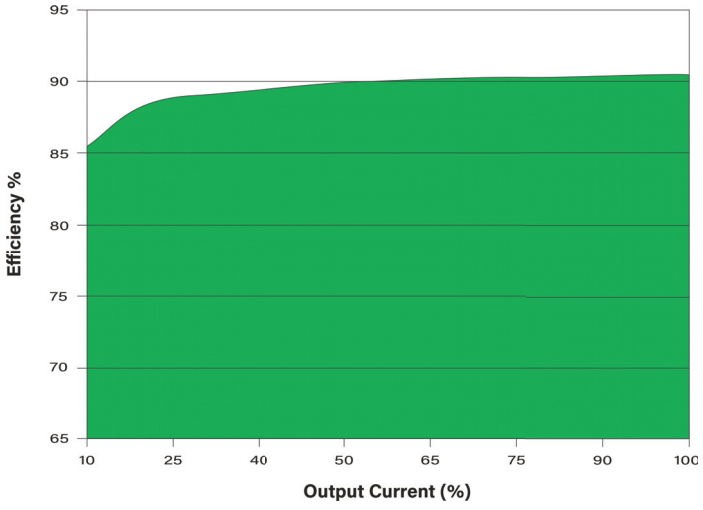
Efficiency vs Output Load: 24 VOUT



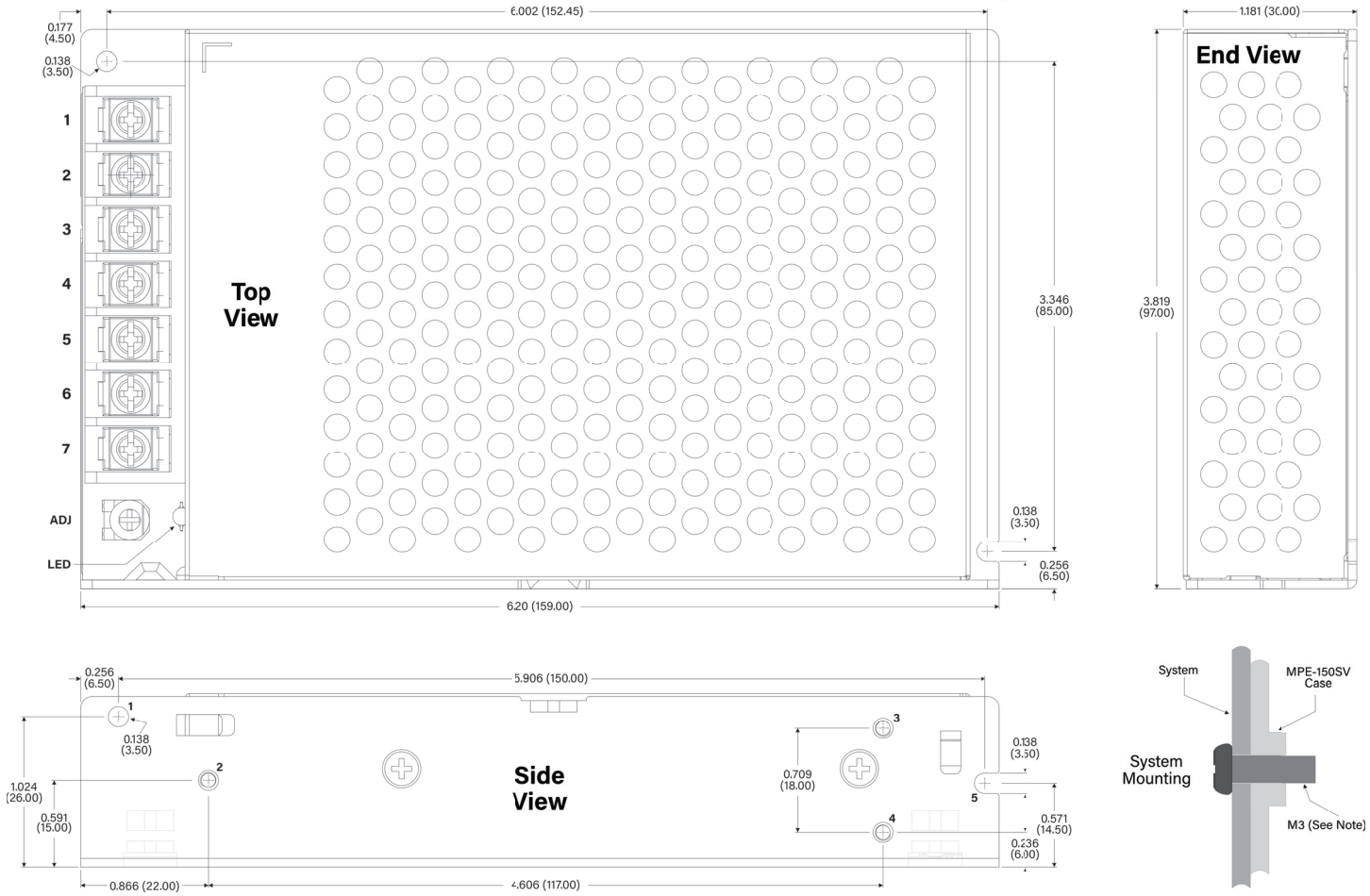
Efficiency vs Input Voltage: 48 VOUT



Efficiency vs Output Load: 48 VOUT



Mechanical Dimensions



Connections

- Wire range - 22 -12 AWG
- Tightenming Tourqe: M3.5, 0.8 N•m

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

The unit should be connected to PE before operating. This connection can be made at any position (1 to 9) as shown on the mechanical diagram. See the mechanical and system mounting diagrams at left and above.

Position	Screw	Max L	Max Torque
2, 3, 4	M3	5 mm	0.4N•m
7, 8	M3	3 mm	0.4N•m

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.039 (±1.00)

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