MPE-75C

75W, High Isolation AC/DC Power Supplies

Key Features:

- 75W Output Power
- 85-264 VAC Input
- 4,000 VAC Isolation
- Efficiency to 91.5%
- -30°C to +70°C Temp
- Meets EN 55032 B
- >300 kHour MTBF
- OVC Class III
- 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	85		264	VAC
	DC Input	120		370	VDC
Input Frequency		47		63	Hz
Input Current	115 VAC			2.0	A
	230 VAC			1.0	
Inrush Current (Cold Start)	115 VAC		40		A
	230 VAC		65		
Leakage Current	240 VAC			0.75	mA

Output

Parameter	Conditions		Min.	Typ.	Max.	Units
Output Voltage Accuracy	Full Load	5V Output		±2		%
		Other Outputs		±1		
Line Regulation	Full Load			±0.5		%
Load Regulation	0-100% Load	5V Output		±1		%
		Other Outputs		±0.5		
Ripple & Noise (20 MHz)	5V Output				100	mV P - P
	12, 15V Outputs				120	
	24V Output				150	
	36, 48V Outputs				200	
Hold-Up Time	115 VAC		8			ms
	230 VAC		55			
Standby Power Consumption					0.3	W
Power Derating	5V Output	+40 to +70°C	1.3			%/°C
	Other Outputs	+50 to +70°C	2			
	85 - 100VAC		1.33			%/VAC
Temperature Coefficient	0 to 50°C, 230VAC			±0.03		%/°C
Over Load Protection			120		250	%Io
Short Circuit Protection	Recovery time <5s after short circuit removed		Hiccup Mode, Continuous, Self-Recovery			
Switching Frequency				65		kHz

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input - Ground	2,000			VAC
	Input - Output	4,000			
	Output - Ground	1,250			
Isolation Resistance	See Note 6	100			MΩ

EMI Characteristics

Parameter	Standard	Criteria	Level
Radiated Emissions, See Page 3	CISPR32/EN 55032		Class B
Conducted Emissions	CISPR32/EN 55032		Class B

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			95	%RH
Storage Humidity		20		90	

Physical

Case Size	3.90 x 3.82 x 1.18 in (See Mechanical Drawing on Page 4)
Case Material	Metal (AL1100, SGCC)
Weight	7.76 oz (220g) (See Mechanical Drawing on Page 4)

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				

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Model Selection Guide

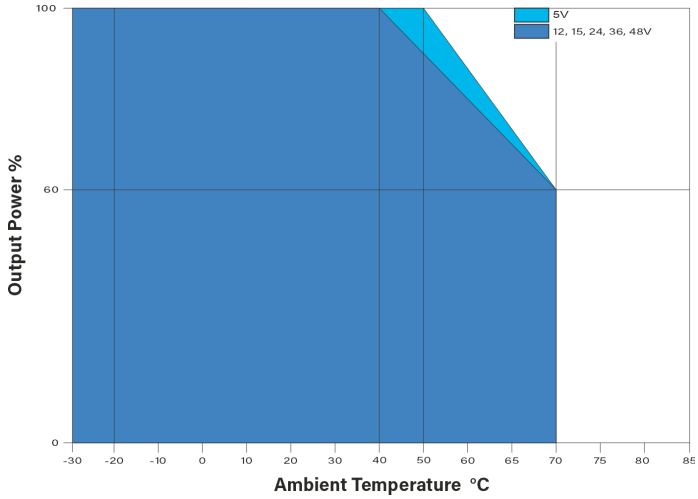
Model Number	Input		Output				Over Voltage Protection (Max) (VDC) See Note 5	Output Capacitive Load (μF Max)	Efficiency (%, Typ)
	Current (mA)		Voltage (VDC)	Voltage Adjustable Range (VDC)	Current (A, Max)	Power (W)			
	115 VAC	230 VAC							
MPE-75C-05	2000	1000	5	4.5 - 5.5	14	70	6.75	10000	86
MPE-75C-12	2000	1000	12	10.2 - 13.8	6	72	16.2	6000	88
MPE-75C-15	2000	1000	15	13.5 - 18	5	75	21.75	5000	88
MPE-75C-24	2000	1000	24	21.6 - 28.8	3.2	76.8	33.6	1500	90
MPE-75C-36	2000	1000	36	32.4 - 39.6	2.1	76.8	50	1000	90
MPE-75C-48	2000	1000	48	43.2 - 52.8	1.6	76.8	60	680	91.5

Notes:

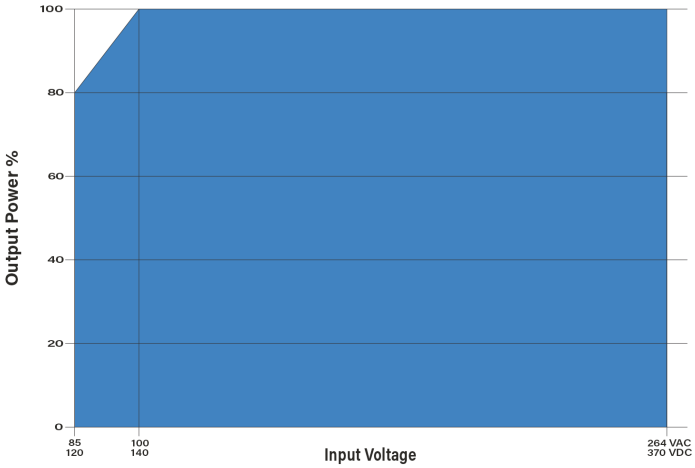
1. The "tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.
2. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
3. Input-output isolation is tested for 60 seconds with a leakage current of <10 mA.
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.

For conformal coating option, add the suffix "**-CC**" to the model number (e.g. **MPE-75C-05-CC**).

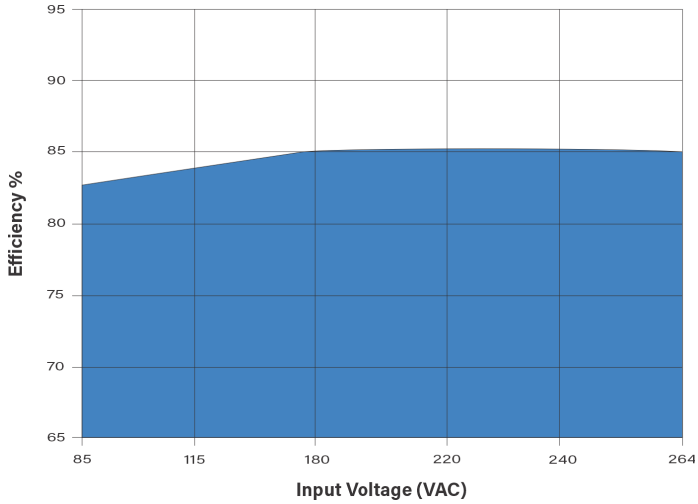
Temperature Derating



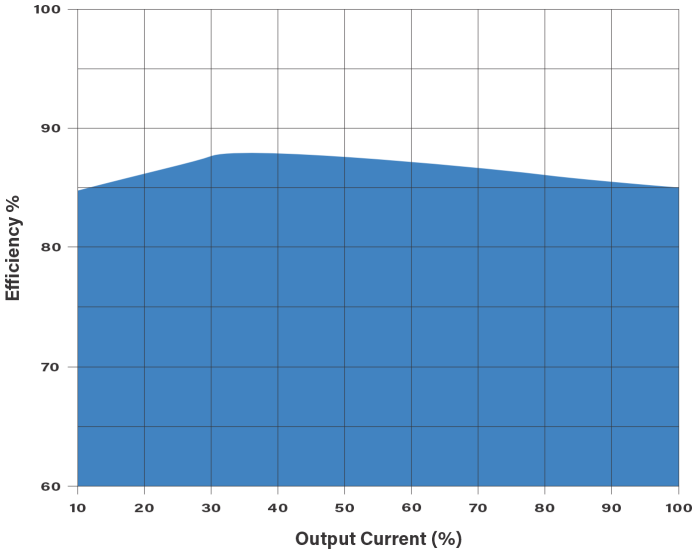
Input Voltage Derating



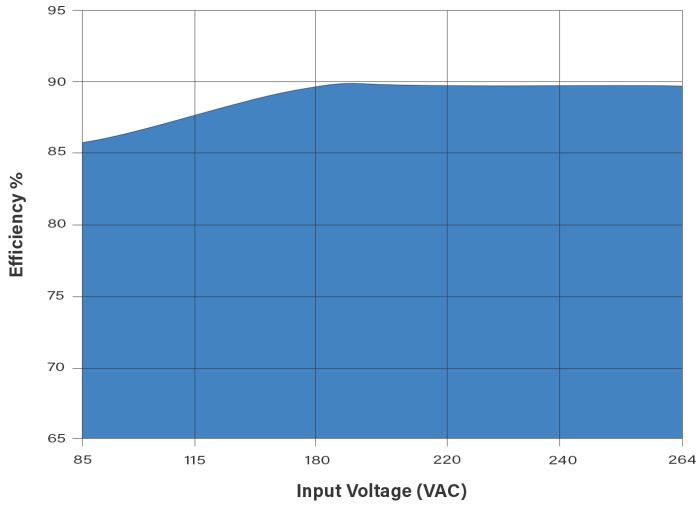
Efficiency vs Input Voltage: 5V



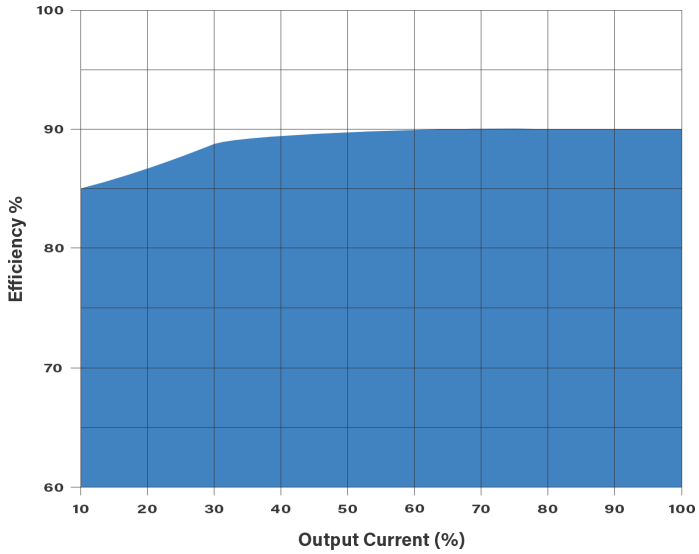
Efficiency vs Output Load: 5V (230VAC)



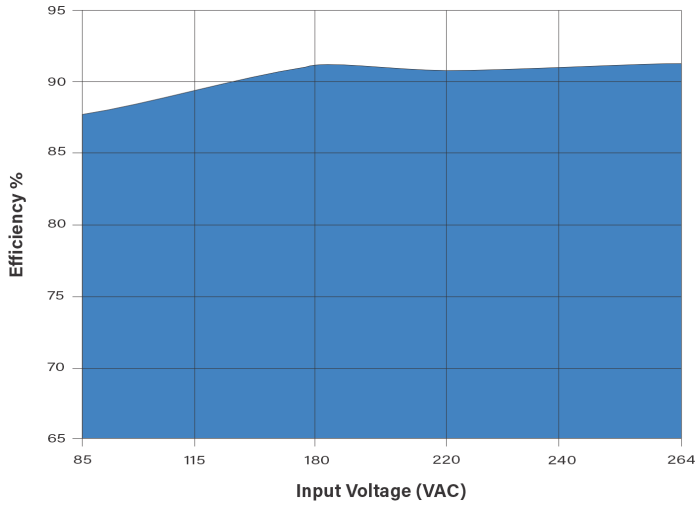
Efficiency vs Input Voltage: 24V



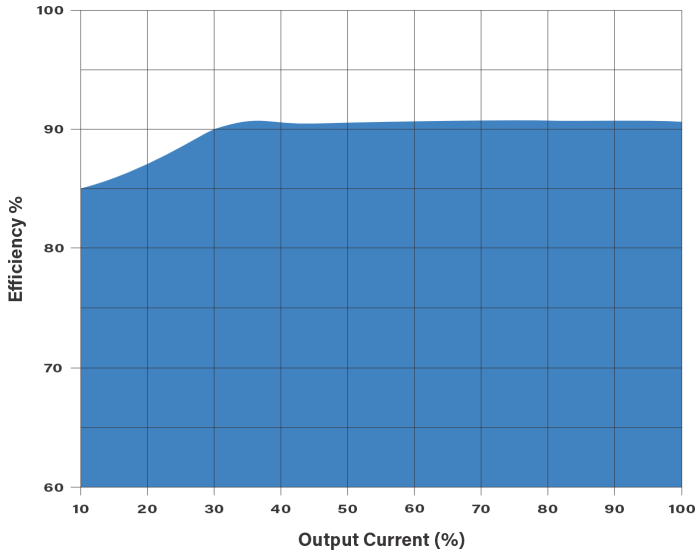
Efficiency vs Output Load: 24V (230VAC)



Efficiency vs Input Voltage: 48V



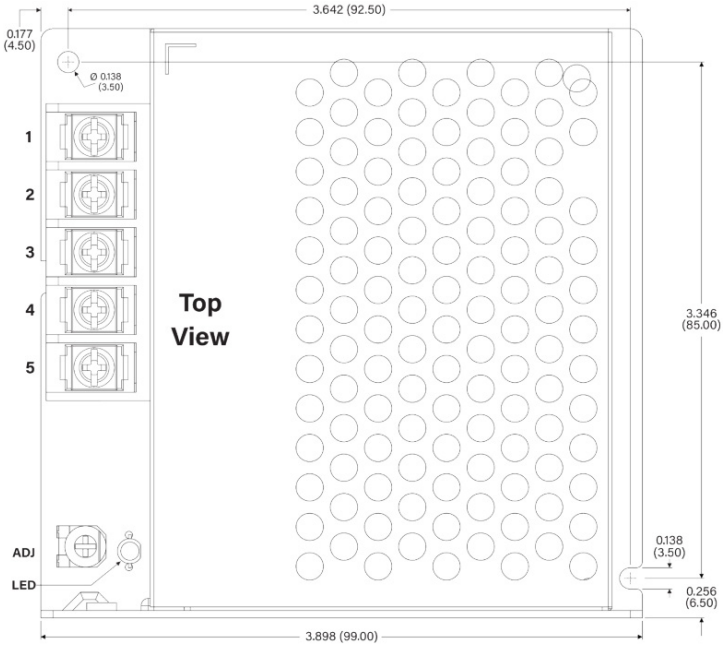
Efficiency vs Output Load: 48V (230VAC)

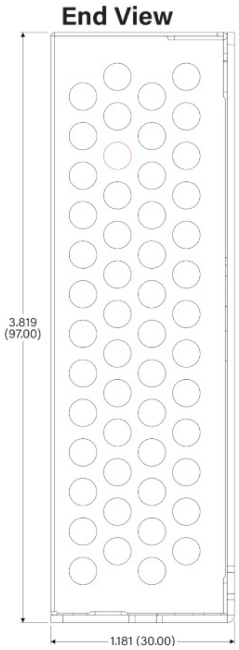


EMI Characteristics

Parameter	Standard	Criteria	Level
Radiated Emissions (RE)	CISPR32/EN55032		B
Conducted Emissions (CE)	CISPR32/EN55032		B
Harmonic Current	IEC/EN61000-3-2		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
MS	IEC/EN61000-4-8	A	30A/m
Voltage Dips, Short, Interruption	IEC/EN61000-4-11	B	0%, 70%

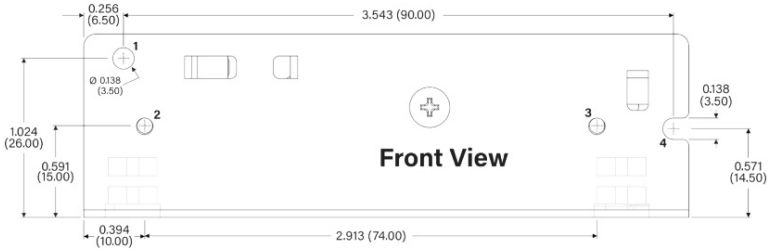
Mechanical Diagrams



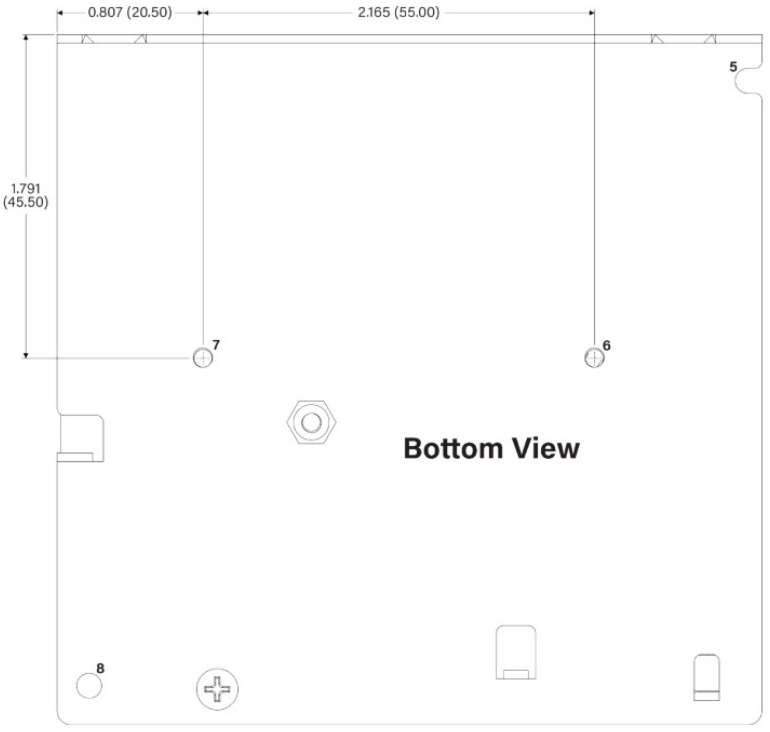


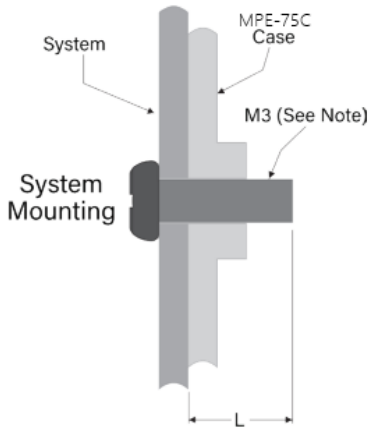
THIRD ANGLE PROJECTION

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



Position	Screw Spec	Length of Locking Screw L (max)	Torque (max)
2 - 3	M3	5mm	0.4N · m
6 - 7	M3	3mm	0.4N · m





Notes:

- All dimensions are typical in inches (mm)
- ADJ: Output voltage adjustable
- Wire range: Input: 22-10AWG (16-10AWG for pin 3)
  Output: 5V: 16-10AWG
  12V: 18-10AWG
  15, 24V: 20-10AWG
  36, 48V: 22-10AWG
- 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:

- 7.76 oz (220g)

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