

MPU-250S Series

Compact U-Channel, 250W Power Factor Corrected, AC/DC Power Supplies



Key Features:

- 250W Output Power
- Universal 90-264 AC Input
- Active PFC = >0.97
- EN 60950 Approved
- Low Leakage Current
- Six Single Output Models
- Meets EN 55022 B
- >50 kHour MTBF
- Only 7.0" x 4.2" x 1.6"



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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	Universal	90		264	VAC
		120		370	VDC
Input Frequency		47		63	Hz
Input Filter	Meets EN 55022 Class B; FCC Class B				
Input Current	See Model Selection Guide				
Inrush Current	Cold Start, 115 VAC			40.0	A Pk
	Cold Start, 230 VAC			80.0	
Safety Ground Leakage Current	264 VAC			3.5	mA
	115 VAC	0.97			
Power Factor Correction, See Note 1	230 VAC	0.93			W/VA

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage/Current	See Model Selection Guide				
Minimum Load		0.0			%
Output Voltage Tolerance			±2.0		%
Line Regulation	Vin = Min to Max		±1.0		%
Load Regulation	Iout = 5% to 100%		±1.0		%
Ripple & Noise (20 MHz), See Note 2	3.3, 5 VDC Output			100	mV P - P
	12, 15, 24, 48 VDC Output			1	%
Hold-Up Time	115 VAC	18			mSec
Temperature Coefficient			±0.02		%/°C
Short Circuit Protection	Continuous (Autorecovery)				
Over Voltage Protection	See Model Selection Guide				
Overload Protection	See Note 3	130		150	%

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input to Output	3,000			
	Input to Ground	1,500			VAC
	Output to Ground	500			
Isolation resistance	500 VDC		100		MΩ
Isolation Capacitance			4,700		pF
EMI/RFI	Conducted	EN 55022; EN 61000-3-2, -3			
	Electrostatic Discharge (ESD)	IEC/EN 61000-4-2, -6, -8, -11			
	RF Field Susceptibility	IEC/EN 61000-4-3			
EMC Compliance	Electrical Fast Transients/Bursts On Mains	IEC/EN 61000-4-4			
	Surge	IEC/EN 61000-4-5			
Switching Frequency	Fixed		67		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-25	+25	+70	°C
Storage Temperature Range		-40		+85	°C
Cooling	Free Air Convection (See Derating Curve)				
Humidity	RH, Non-condensing			95	%

Physical

Size	7.0 x 4.2 x 1.6 Inches (177.8 x 106.68 x 40.64 mm)				
Weight	U-Channel				26.1 Oz (0.750 kg)
	With Cover				28.6 Oz (0.823 kg)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	50			kHours
Safety Standards	UL 1950, EN 60950, IEC 60950				
Vibration	10~500 Hz, 5G 10 min/1 Cycle. Period of 60 min each along X, Y & Z Axis				

Model Selection Guide

Model Number	Input			Output			Minimum Load (%)	Maximum Output Power (W)			Over Voltage Protection (VDC)	Efficiency (% Typ)
	Current (A)		Voltage (VDC)	Current (A)				Free Air	W/Cover	18 CFM		
	115 VAC	230 VAC		Free Air	W/Cover	18 CFM						
MPU-250S-3.3T(C)	4.0	2.0	3.3	31.81	24.24	40.00	0.0	105	80	132	3.9	72
MPU-250S-05T(C)	4.0	2.0	5.0	32.00	24.00	40.00	0.0	160	120	200	6.2	77
MPU-250S-12T(C)	4.0	2.0	12.0	16.67	13.50	20.83	0.0	200	162	250	15.0	81
MPU-250S-15T(C)	4.0	2.0	15.0	13.34	10.80	16.66	0.0	200	162	250	18.0	82
MPU-250S-24T(C)	4.0	2.0	24.0	8.34	6.75	10.40	0.0	200	162	250	28.0	83
MPU-250S-48T(C)	4.0	2.0	48.0	4.17	3.37	5.20	0.0	200	162	250	57.0	84

For Cover option, add suffix "C" to model number (i.e. MPU-250S-12TC)

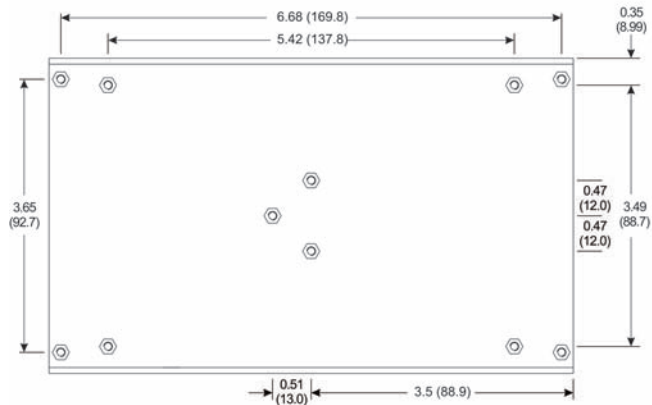
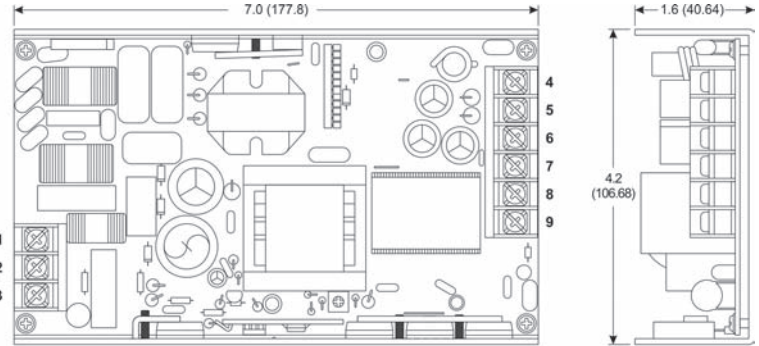
Mechanical Dimensions

Notes:

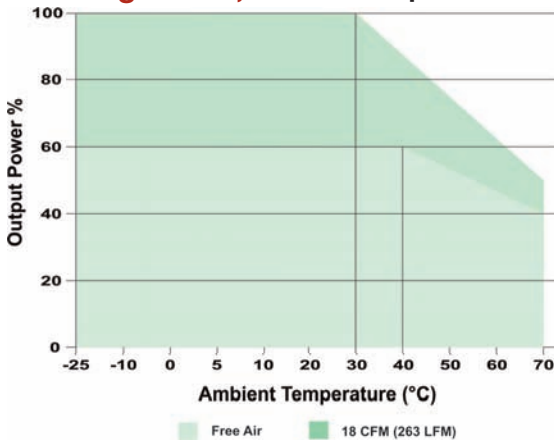
- PFC meets EN61000-3-2.
- Ripple and noise is measured at 20 MHz bandwidth using a 0.1 μF and a 47 μF capacitor connected in parallel as close to the power supply terminals as possible.
- Overload protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
- These units will operate at no load without damage.
- Each unit includes an input fuse. Since this fuse is not field replaceable, it is recommended that an external fuse be used on the input of the power supply for protection. For these units, a 15A/250V slow blow fuse is recommended.

Pin Connections

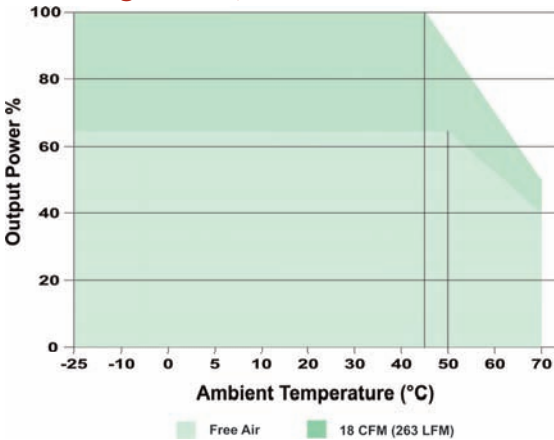
Pin	Function	Pin	Function
1	AC-Ground	4	+V _{OUT}
2	AC-Neutral	5	+V _{OUT}
3	AC-Line	6	+V _{OUT}
		7	-V _{OUT}
		8	-V _{OUT}
		9	-V _{OUT}



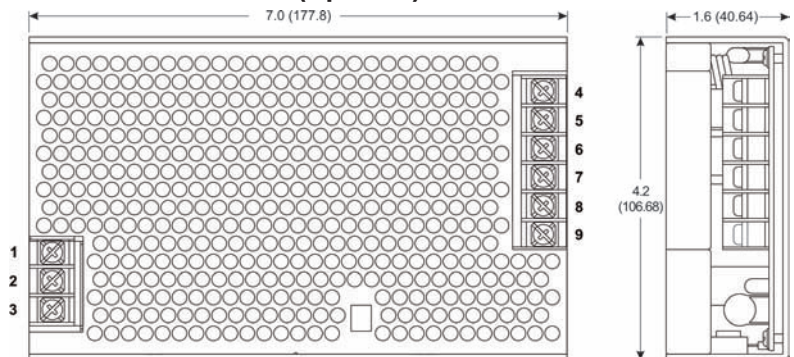
Derating Curve, 3.3 & 5V Outputs



Derating Curve, Other Outputs



Cover Dimensions (Optional)



Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)



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