

# MPU-500E Series

## Single Output 500W Power Factor Corrected AC/DC Power Supplies



### Key Features:

- Compact 500W Supply
- PFC to EN 61000-3-2 "D"
- EN 60950 Approved (UL)
- CE Certified
- FCC Class B Emissions
- Universal AC Input
- Current Share Option
- Compact Case w/End Fan



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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	
Input Frequency		47		63	Hz	
Input Current, Full Load	90 VAC		8.0		A	
Inrush Current, Cold Start	110 VAC			35	A	
	220 VAC			70		
Leakage Current	264 VAC			2.0	mA	
Power Factor Correction	Meets EN 61000-3-2 Class D					
Input Protection	T10A/250V Fuse					
Input Undervoltage Protection	Under 80 VAC ±5 VAC Unit Shuts Down; Unit Recovers Over 86 VAC					

Output						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Output Voltage Adjustment	By Trim Pot		±5.0		%	
Output Regulation, See Note 1			±1.0		%	
Hold Time	120 VAC, 80% Load	20			mSec	
Ripple & Noise (20 MHz), See Note 2	See Model Selection Guide					
Overload Protection	Foldback Circuit, Autorecovery	110		140	%	
Over Voltage Protection	>130% of Rated Output Voltage. Recycle AC Input.					
Over Temperature Protection	Autorecovery		+85		°C	
Temperature Coefficient			±0.04		%/°C	
Transient Recovery Time, See Note 4	50% Load Change		2.5		mS	
Transient Response Deviation			5.0		%	
Overshoot/Undershoot	At Turn On/Off			±5.0	%	
Turn On Delay	230 VAC			1.0	S	
Output Short Circuit	Continuous With Autorecovery					

General						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Isolation Voltage, See Note 5	Input - Output	3,000			VAC	
	Input - FG (Frame Ground)	1,500				
	Primary - Core	1,500				
Switching Frequency	Fixed		24		kHz	

Interface Signals						
LED Power Supply On	Bi-color LED Is Green For Power On; Orange When Protection Enabled					
Current Monitor	A 0.5 to 3.0V Output That Represents 0% to 100% Output Current					
Current Share	Optional For Sharing Up To Four Units. Contact The Factory For Details					
Remote Sense	Compensates For Up To A 0.5V Line Drop					
Power Good Signal	Goes TTL high 100 to 500 mS after regulation. Goes low at least 1 mS before the loss of regulation. Will sink 100 mA.					
Remote On/Off	A TTL low signal inhibits the output. Hiccup mode.					

Environmental						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Operating Temperature Range	Ambient	0	+25	+70	°C	
Output Derating	2.5%/ °C from +50 °C to + 70 °C					
Storage Temperature Range		-20		+85	°C	
Cooling	See Model Selection Guide					
Operating Humidity	RH, Non-condensing			90	%	

Reliability Specifications						
Parameter	Conditions	Min.	Typ.	Max.	Units	
MTBF	MIL HDBK 217F, 30°C, Gnd Benign	100			kHours	
Safety Standards	UL 60950, EN 60950					
EMI Compliance	Compliance to EN 55022 (CISPR22) Class B; EN 61000-3-2,3					
EMS Immunity Compliance	EN 6100-4-2,3,4,5,6,11; EN 55024, CE Marked (LVD)					
Vibration	Sinusoidal 5~50 Hz, Acceleration ±7.35 m/s <sup>2</sup> on X, Y & Z Axis					

[www.micropowdirect.com](http://www.micropowdirect.com)

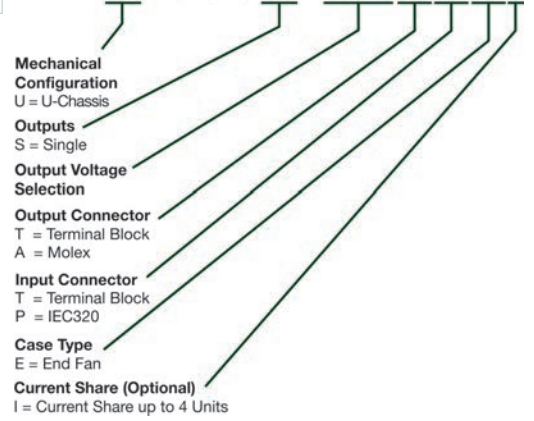
Model Number	Output Voltage (VDC)		Output Current (Max A)	Max. Output Power (W)	Ripple & Noise (% p-p)	Efficiency (%)
	PreSet	Range				
MPU-500S-12YYEI	12 VDC	12.0 - 15.0	41.67	500	±1%	80%
MPU-500S-24YYEI	24 VDC	22.0 - 30.0	22.73	500	±1%	83%
MPU-500S-48YYEI	48 VDC	48.0 - 56.0	10.42	500	±1%	83%

Models with other output voltage levels are available (i.e. 15 VDC, 36 VDC, etc)  
Contact the factory for details at:  
sales@micropowerdirect.com

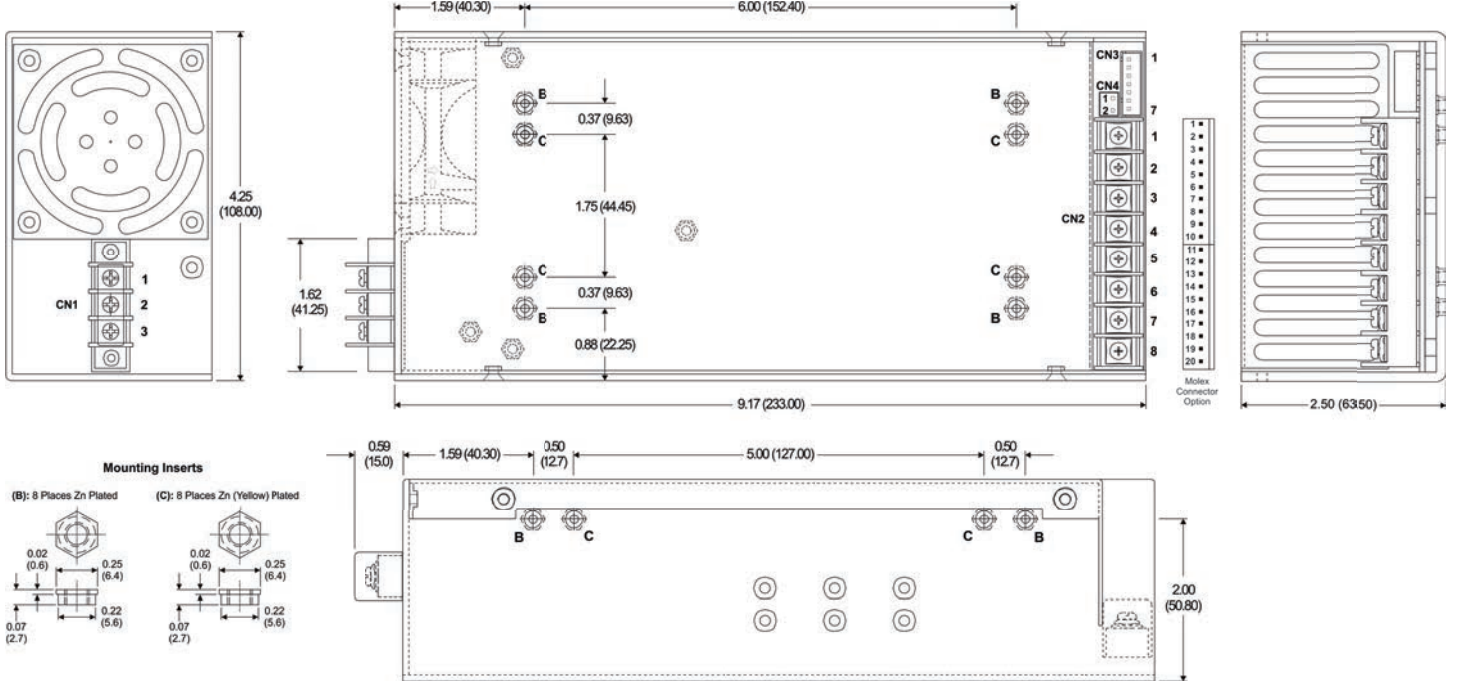
**Notes:**

- Output regulation includes line & load.
- Ripple & noise is measured from 10 Hz to 20 MHz. Connection to the unit is made with a 0.1 µF ceramic capacitor & a 22 µF electrolytic capacitor connected in parallel.
- A 1% minimum load is required to maintain regulation & ripple specifications.
- Transient recovery is measured to within a 1% error band for a load step change of 50% to 100%.
- Isolation specifications are production HI-Pot tested for 3 seconds.
- The full output range (see table) is covered in the safety agency certification. Standard models are factory set to the Preset voltage, but may be set to other levels within the range without affecting the agency certification. For more information, contact the factory.
- Output power is given for the factory preset voltage. The maximum continuous output power level is 500W. All models provide a peak power level of 900W for a maximum duration of 500 µS. For more information, contact the factory.
- Each unit includes an input fuse (250V/10A). Since this fuse is not field replaceable, it is recommended that an external fuse of the same size be used on the input of the power supply for protection.

**Model Number**  
**MPU-500S-XXYYEI**



**Mechanical Dimensions**



**Connections**

**Input Connector (CN1):**

- Terminal Block: Dinkle DT-35-A02W-03 (3Pin) M3 Screws, 8.25 mm Centers
- IEC320 or equivalent

Pin	Function
1	AC-Line
2	AC-Neutral
3	Field Ground

**Output Connector (CN2):**

- Terminal Block: Howder HD-121-8P: M3.5 Screws 8 pins, 9.5 mm Centers
- Molex Mating Part No: Molex 09-91-2000 or equivalent

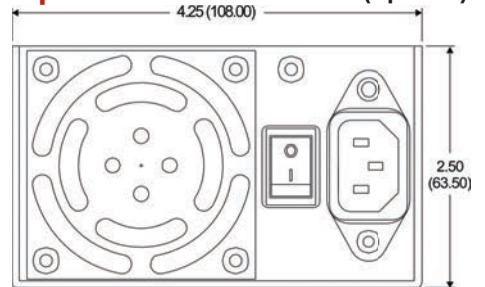
Howder		Molex	
Pin	Function	Pin	Function
1-4	-VOUT	1-10	-VOUT
5-8	+VOUT	11-20	+VOUT

**Logic Signal Connector (CN3):**

- Mating Part No: JST XHP-7 or equivalent (CHYAO SHIUNN JS-2001-07)

Pin	Function
1	+ Remote Sense
2	- Remote Sense
3	Remote On/Off
4	Power Good
5	Common
6	Current Share
7	Current Monitor

**Input IEC320 Connector (Optional)**



**Notes:**

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