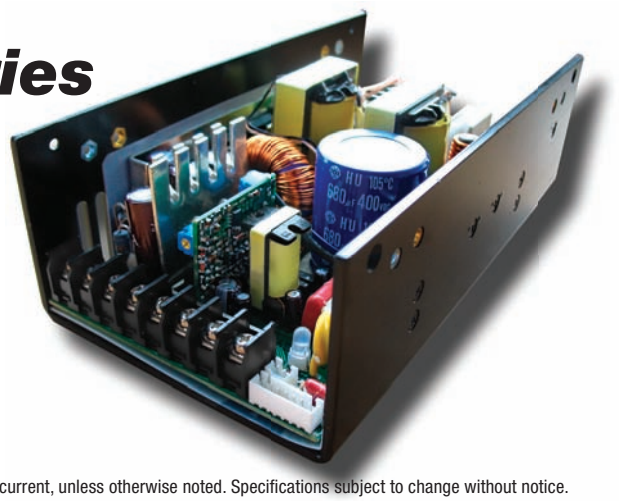
MPU-500U Series

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



Key Features:

- Compact 500W Supply
- PFC to EN61000-3-2 “D”
- EN 60950 Approved (UL)
- CE Certified
- FCC Class B Emissions
- 2 - 56 V Output Voltages
- Universal AC Input
- Small 5” x 3.2” x 1.5” Size

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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		5		A
Inrush Current, Cold Start	110 VAC			35	A
	220 VAC			70	
Leakage Current	240 VAC		3.5		mA
Power Factor Correction	Meets EN61000-3-2 Class D				
Input Protection	T10A/250V Fuse				
Input Undervoltage Protection	Under 80VAC ±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		%
Overshoot/Undershoot	At Turn On/Off			±5.0	%
Turn On Delay	120 VAC			1	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
Fan Fail	An open collector output rated for 28V/5 mA sink current maximum. Goes high if a fan failure is detected
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				
EEMI Compliance	Compliance to EN55022 (CISPR22) Class B; EN61000-3-2,3				
EMS Immunity Compliance	EN6100-4-2,3,4,5,6,8,11; EN55024,; CE Marked (LVD)				
Vibration	5~50 Hz, Acceleration 7.35 ms^3 on X, Y & Z Axis				

Model Selection Guide

Model Number	Output Voltage (VDC)		Output Current With 30 CFM (Max A)	Max. Output Power (W)	Ripple & Noise (% p-p)	Efficiency (%)
	PreSet	Range				
MPU-500S-03YZ	3.3 VDC	2.0 - 3.3	80.00	264	±1%	75%
MPU-500S-05YZ	5 VDC	5.0 - 6.0	80.00	400	±1%	80%
MPU-500S-12YZ	12 VDC	12.0 - 15.0	41.67	500	±1%	80%
MPU-500S-18YZ	18 VDC	16.0 - 21.0	31.25	500	±1%	80%
MPU-500S-24YZ	24 VDC	22.0 - 30.0	27.73	500	±1%	80%
MPU-500S-36YZ	36 VDC	31.0 - 47.0	16.13	500	±1%	80%
MPU-500S-48YZ	48 VDC	48.0 - 56.0	10.42	500	±1%	80%

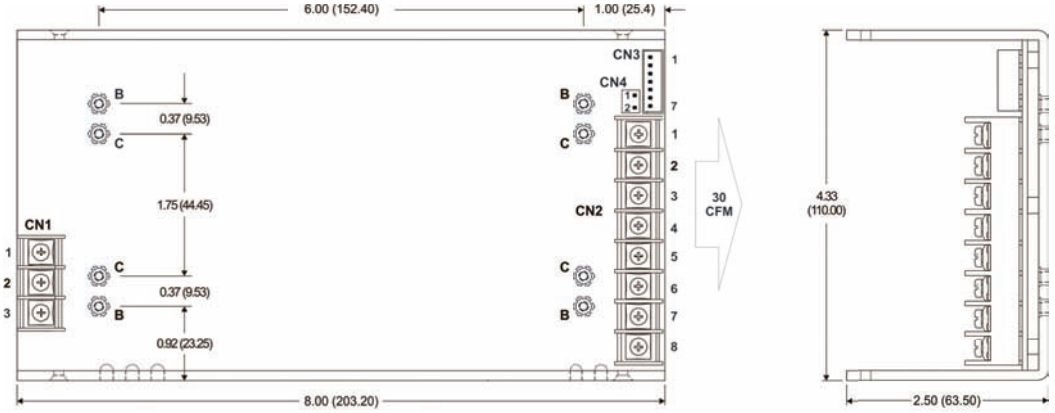
Notes:
1. Output regulation includes line & load.
2. Ripple & noise is measured from 10 Hz to 20 MHz. Connection to the unit is made with a 0.1 µF ceramic capacitor & a 22 µF electrolytic capacitor connected in parallel.
3. A 1% minimum load is required to maintain regulation & ripple specifications.
4. Transient recovery is measured to within a 1% error band for a load step change of 50% to 100%.
5. Isolation specifications are production HI-Pot tested for 3 seconds.
6. 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.
7. Output power is given for the factory preset voltage. With the exception of the "03" & "05" models, the maximum continuous output power level is 500W with 30 CFM airflow. All models provide a peak power level of 900W for a maximum duration of 500 µS. For more information, contact the factory.
8. Each unit includes an input fuse (250V/12A). 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.

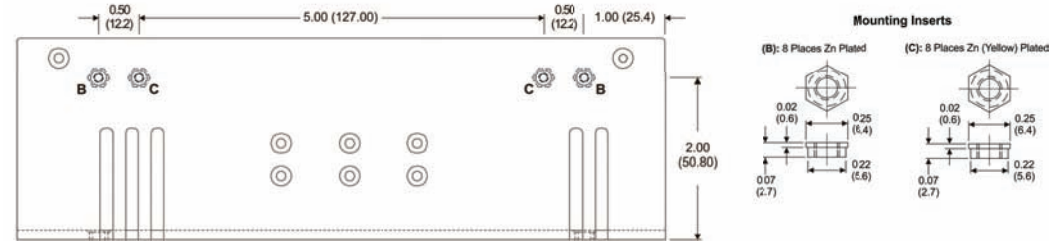
Model Number

MPU-500S-XXYZ

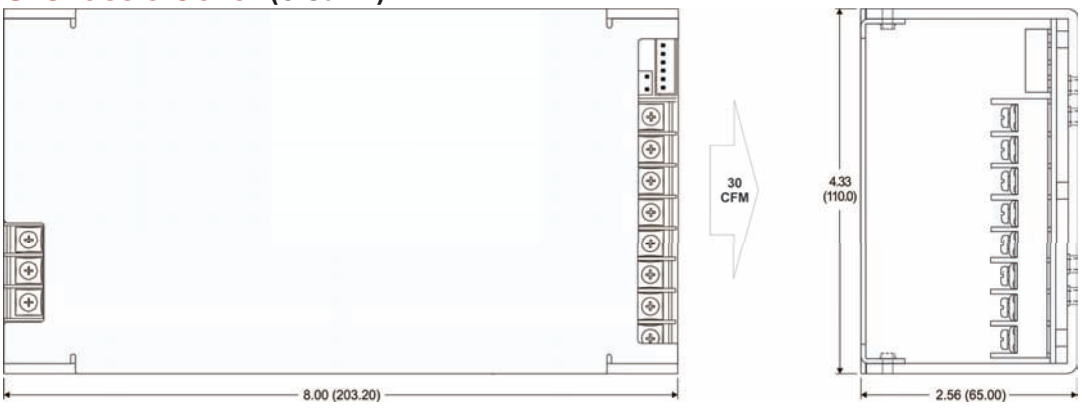
- **Mechanical Config.** U = U-Chassis
- **Outputs** S = Single
- **Output Voltage Selection**
- **Connector Type** T = Terminal Block, A = Molex
- **Case Options (If Available)** C = Cover

Mechanical Dimensions





U-Chassis Cover (C Suffix)



Connections

Input Connector (CN1):
- Terminal Block: Howder HD-121-3P: M3.5 Screws 3 pins, 9.5 mm Centers
- Molex Mating Part No: Molex 09-91-7000 or equivalent (two pins removed)

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	10-20	-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

Fan Driver Connector (CN4):
- Mating Part No: JST XHP-2 or equivalent (CHYAO SHIUNN JS-2001-2)

Pin	Function
1	Minus
2	Plus

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

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