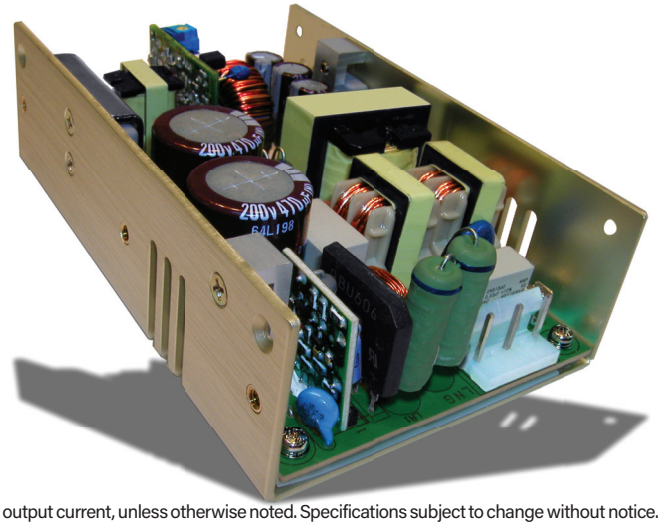
MPU-250 Series

Single Output 250W Power Factor Corrected AC/DC Power Supplies



Key Features:

- Small 250W Supply
- PFC to EN 61000-3-2 "A"
- EN 62368 Approved (UL)
- Available With Built-In Fan
- Meets EN 55024 B
- Remote On/Off
- Power Good Signal
- 90 to 264 VAC Input
- Outputs From 2 - 60V Avail.
- 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	Autoranging	90		132	VAC
		180		264	
Input Frequency		47		63	Hz
Input Current, Full Load	110 VAC		6		A
	220 VAC		3		
Inrush Current, Cold Start	110 VAC			35	A
	220 VAC			70	
Leakage Current	264 VAC			1.0	mA
Power Factor Correction	Meets EN 61000-3-2 Class A				
Input Protection	T8A/250V Fuse				

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Adjustment	By Trim Pot		±5.0		%
Output Regulation	See Note 1		±1.0		%
Hold Time	110 VAC, 80% Load	20			mSec
Ripple & Noise (20 MHz) See Note 2	See Model Selection Guide				
Overload Protection	Autorecovery	110		140	%
Over Voltage Protection	>130% of Rated Output Voltage. Recycle AC Input.				
Over Temperature Protection	Autorecovery		+110		°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	230 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		25		kHz

Interface Signals

Power Supply On	Green LED on the PCB
Power Good Signal	Signal goes TTL high 100 to 500 mS after regulation. Signal goes low at least 1 mS before the loss of regulation.
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/cUL 62368 recognition (UL certificate)				
EMI Compliance	Compliance to EN 55024 (CISPR22) Class B; EN 61000-3-2,3				
EMS Immunity Compliance	EN 61000-4-2,3,4,5,6,8,11; EN 55024; CE Marked (LVD)				
Vibration	Sinusoidal 5~50 Hz, Acceleration ±7.35 m/s² on X, Y & Z Axis				

Model Selection Guide

Model Number	Output Voltage (VDC)		Output Current (Max A)		Ripple & Noise (% p-p)	Efficiency (%)
	PreSet	Range	Convection	With 16 CFM		
MPU-250S-05YZ	5 VDC	2.0 - 5.0	20.0A	40.0A	±1%	83%
MPU-250S-09YZ	9 VDC	6.0 - 10.0	13.5A	25.0A	±1%	83%
MPU-250S-12YZ	12 VDC	11.0 - 13.8	135W	250W	±1%	83%
MPU-250S-15YZ	15 VDC	14.0 - 15.5	135W	250W	±1%	83%
MPU-250S-18YZ	18 VDC	16.0 - 20.0	135W	250W	±1%	83%
MPU-250S-24YZ	24 VDC	21.0 - 26.0	135W	250W	±1%	83%
MPU-250S-28YZ	28 VDC	27.0 - 34.0	135W	250W	±1%	83%
MPU-250S-36YZ	36 VDC	35.0 - 42.0	135W	250W	±1%	83%
MPU-250S-48YZ	48 VDC	43.0 - 50.0	135W	250W	±1%	83%
MPU-250S-52YZ	52 VDC	51.0 - 60.0	135W	250W	±1%	83%

Notes:

1. Output regulation includes line & load.
2. Ripple & noise is measured from 10 kHz 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 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. For U-Channel without the built-in fan, output power is given for the factory preset voltage. The maximum continuous output power level is 135W without providing 16 CFM airflow. For units with the built in fan, the maximum continuous output power level is 250W All models provide a peak power level of 600W for a maximum duration of 500 µS. For more information, contact the factory.
8. Each unit includes an input fuse (250V/8A). 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.

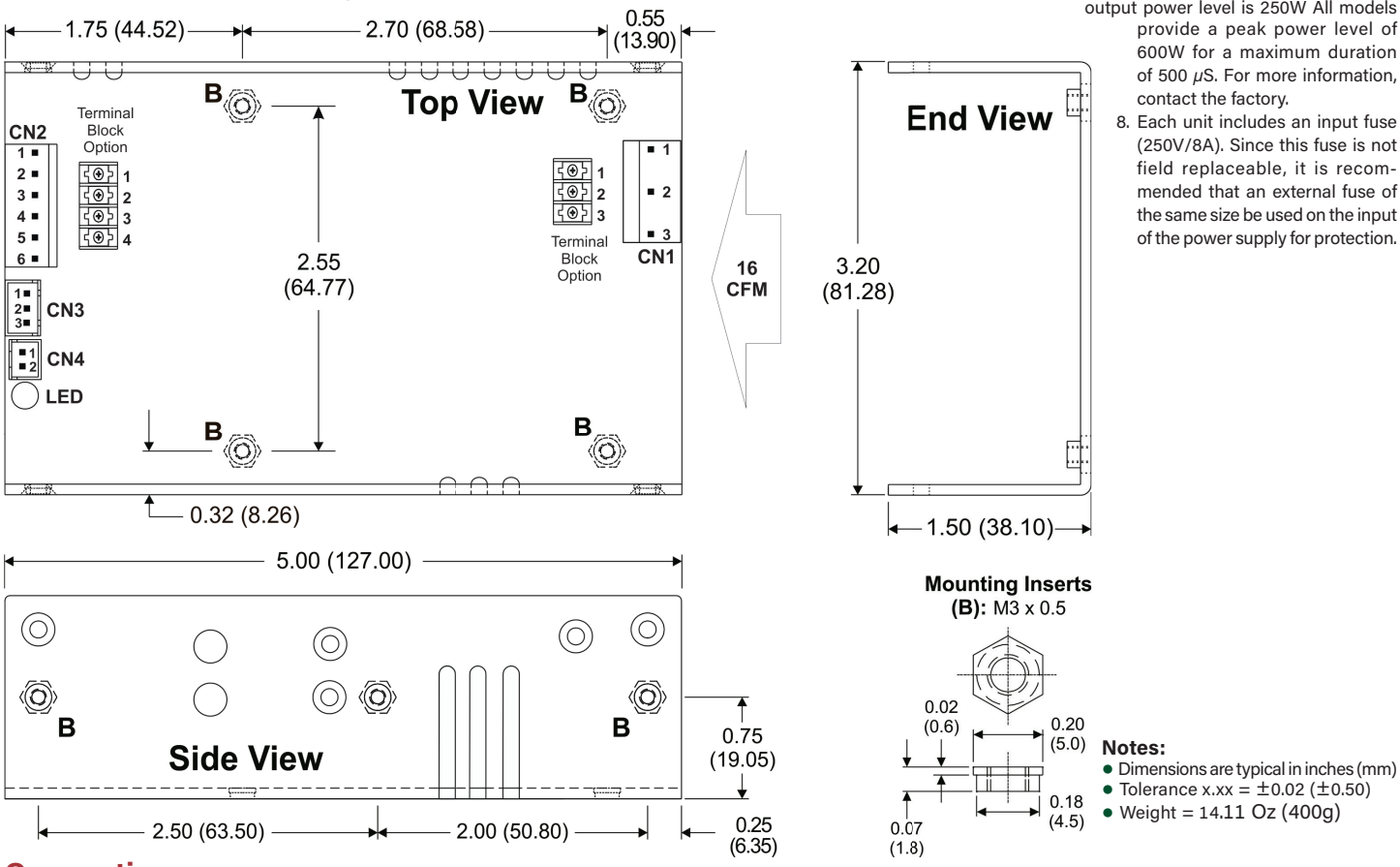
All models are available, but some units require minimum order quantities. Contact the factory for details at: **sales@micropowerdirect.com**

Model Number

MPU-250S-XXYZ

- **Mechanical Config.** U = U-Chassis
- **Outputs** S = Single
- **Output Voltage** Selection
- **Connector Type** T = Terminal Block, A = Molex
- **Case Options** F = Top Fan (Blank - Uchannel)

Mechanical Dimensions, U-Channel Models



Mounting Inserts (B): M3 x 0.5

Notes:

- Dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)
- Weight = 14.11 Oz (400g)

Connections

Input Connector (CN1):

- Terminal Block: Howder HD-601-3P 3 pins, 6.35 mm Centers
- Molex Mating Part No: Molex 09-91-0500 or equivalent (two pins removed)

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

Output Connector (CN2):

- Terminal Block: Howder HD-601-4P 4 pins, 6.35 mm Centers
- Molex Mating Part No: Molex 09-91-0600 or equivalent

Pin	Molex	Pin	Molex
1	+VOUT	4	-VOUT
2	+VOUT	5	-VOUT
3	+VOUT	6	-VOUT
4	-VOUT		

Pin	Howder
1	+VOUT
2	+VOUT
3	-VOUT
4	-VOUT

Logic Signal Connector (CN3):

- Mating Part No: JST XHP-3 or equivalent (CHYAO SHIUNN JS-2001-03)
- Mating Pins: JST SXH-002T-PO.6 For AWG 30 to 26

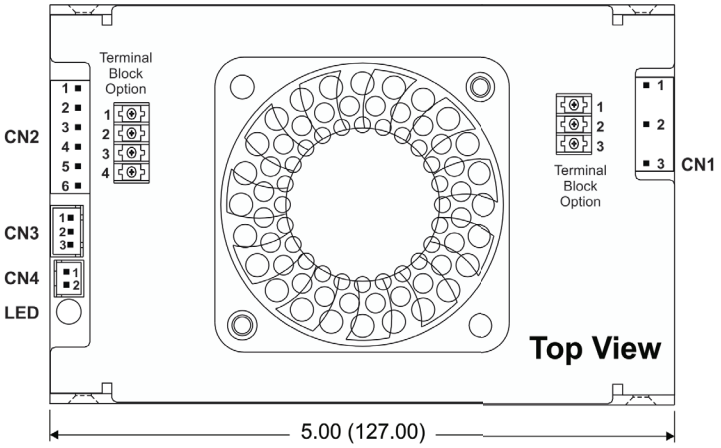
Pin	Function
1	Power Good
2	Remote On/Off
3	Common

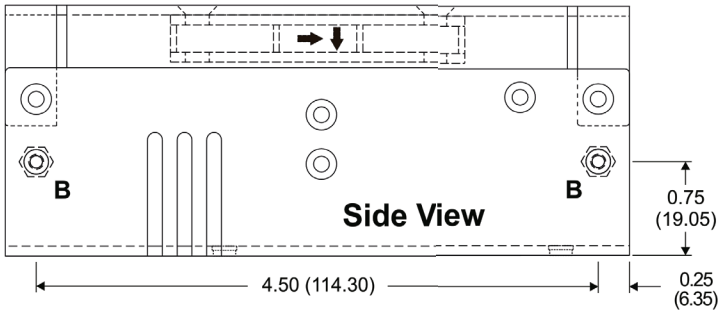
Fan Driver Connector (CN4):

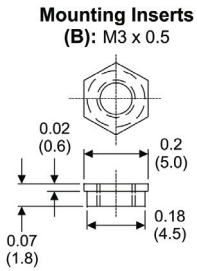
- Mating Part No: JST XHP-2 or equivalent (CHYAO SHIUNN JS-2001-2)

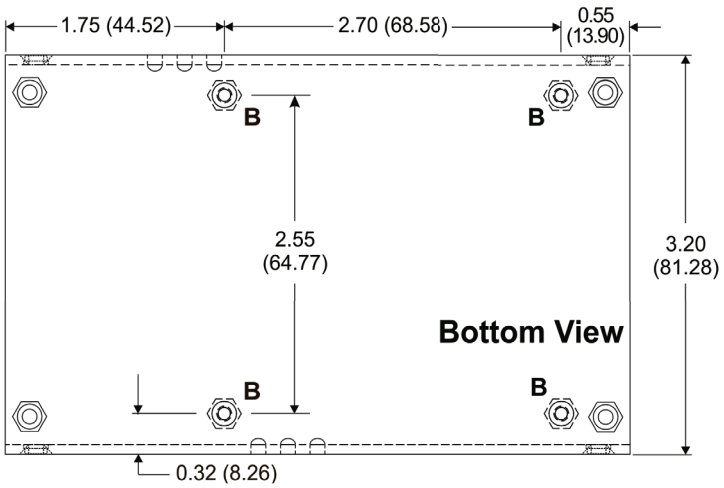
Pin	Function
1	Minus
2	Plus

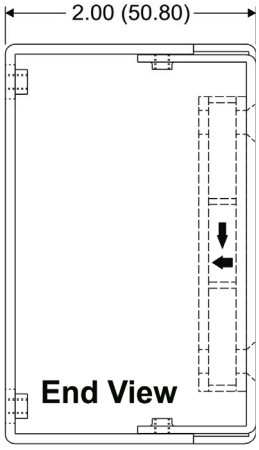
Mechanical Dimensions











Connections

Input Connector (CN1):

- Terminal Block:
  Howder HD-601-3P
  3 pins, 6.35 mm Centers
- Molex Mating Part No:
  Molex 09-91-0500 or equivalent
  (two pins removed)

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

Output Connector (CN2):

- Terminal Block:
  Howder HD-601-4P
  4 pins, 6.35 mm Centers
- Molex Mating Part No:
  Molex 09-91-0600 or equivalent

Pin	Molex
1	+VOUT
2	+VOUT
3	+VOUT
4	-VOUT
5	-VOUT
6	-VOUT

Pin	Howder
1	+VOUT
2	+VOUT
3	-VOUT
4	-VOUT

Logic Signal Connector (CN3):

- Mating Part No:
  JST XHP-3 or equivalent
  (CHYAO SHIUNN JS-2001-03)
- Mating Pins: JST SXH-002T-PO.6
  For AWG 30 to 26

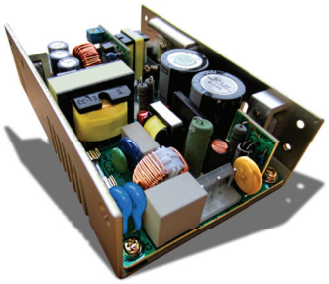
Pin	Function
1	Power Good
2	Remote On/Off
3	Common

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)
- Weight = 17.635 Oz (500g)

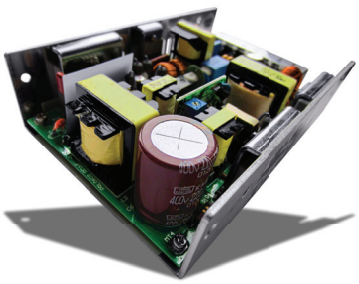
Related products that may be of interest:

MPU-300S



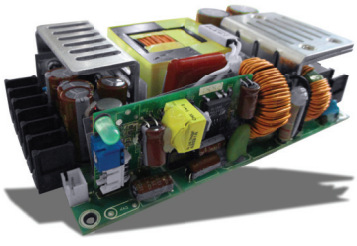
- 300W Output Power
- EN 62368 Approved
- Small 5 x 3.2 x 1.5 In U-Channel
- Cover Available

MPU-400S



- 400W Output Power
- Active Power Factor Correction
- Four Package Options
- EN 62368 Approved

MPO-500



- 500W Output Power
- 5" x 3" x 1.4" Open Frame
- Active Power Factor Correction
- EN 60950 Approved

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