MPU-300 Series

Single Output 300W Power Factor Corrected AC/DC Power Supplies

Key Features:

- Small 300W Supply
- PFC to EN 61000-3-2 “D”
- EN 60950 Approved (UL)
- CE Certified
- FCC Class B Emissions
- Universal AC Input
- Small 5” x 3.2” x 1.5” Size

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 EN 61000-3-2 Class D				
Input Protection	F5A/350V Fuse				

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Adjustment	By Trim Pot, U Channel Model Only		±5.0		%
Output Regulation, See Note 1			±1.0		%
Hold Time	120 VAC, 80% Load	16			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		+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	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

Power Supply On	Green LED on the PCB
Fan Fail	An open collector output rated for 28V/5 mA sink current maximum. Goes high if a fan failure is detected
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/s² on X, Y & Z Axis				

PFC ACTIVE

RoHS

MicroPower Direct
292 Page Street
Suite D
Stoughton, MA 02072
USA

T: (781) 344-8226
F: (781) 344-8481
E: sales@micropowerdirect.com
W: www.micropowerdirect.com

Model Selection Guide

Model Number	Output Voltage (VDC)		Output Current (Max A)		Ripple & Noise (% p-p)	Efficiency (%)
	PreSet	Range	Convection	With 25 CFM		
MPU-300S-12YZ	12 VDC	12.0 - 13.8	12.50	25.00	±1%	80%
MPU-300S-15YZ	15 VDC	14.0 - 16.0	10.00	20.00	±1%	80%
MPU-300S-24YZ	24 VDC	23.0 - 28.0	6.25	12.50	±1%	80%
MPU-300S-48YZ	48 VDC	44.0 - 52.0	3.12	6.25	±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 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. The maximum continuous output power level is 150W without providing 25 CFM airflow. 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 (350V/5A). 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.

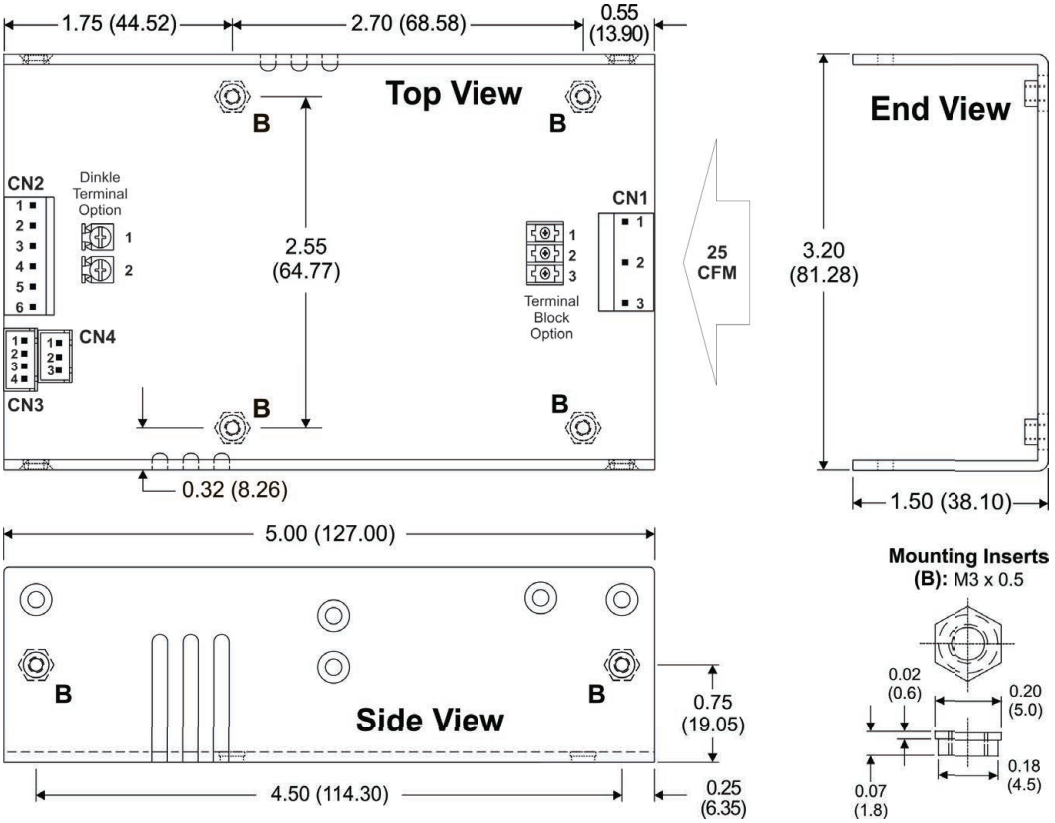
Model Number

MPU-300S-XXYZ

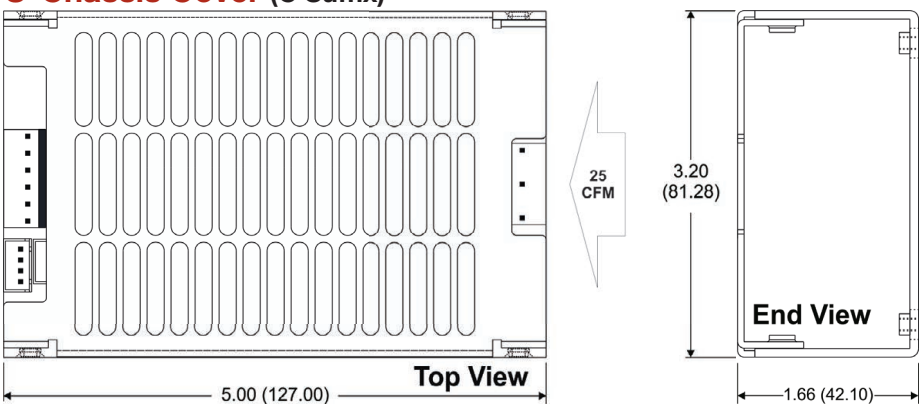
- **Outputs** S = Single
- **Output Voltage Selection**
- **Connector Type** T = Terminal Block, A = Molex
- **Case Options** C = Cover

Models with other output voltage levels are available (i.e. 5 VDC, 30 VDC, etc) Contact the factory for details at: **sales@micropowerdirect.com**

Mechanical Dimensions



U-Chassis Cover (C Suffix)



Connections

Input Connector (CN1):
- Terminal Block:
  Howder HD-601-3P
  3 pins, 6.35 mm Centers
- Molex Mating Part No:
  Molex 035977-0500 or equivalent
  (two pins removed)

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

Output Connector (CN2):
- Terminal Block (Must be used on 12 VOUT):
  Dinkle P-830N
  M5 Screws
- Molex Mating Part No:
  Molex 035977-0600 or equivalent

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

Pin	Dinkle
1	-VOUT
2	+VOUT

Logic Signal Connector (CN3):
- Mating Part No:
  JST XHP-4 or equivalent
  (CHYAO SHIUNN JS-21001-4)
- Mating Pins: JST SXH-002T-P0.6
  For AWG 30 to 26

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

Fan Driver Connector (CN4):
- Mating Part No:
  JST XHP-3 or equivalent
  (CHYAO SHIUNN JS-21001-3)
  3 Pins 0.98 Pitch

Pin	Function
1	Fan Fail
2	Minus
3	Plus

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

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