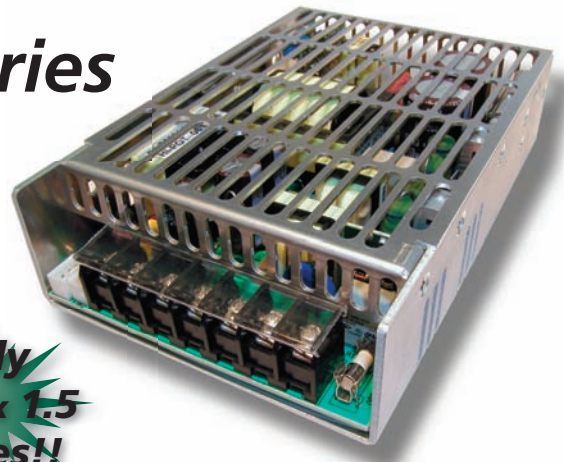


# MPA3000 Series

## Smallest 1U 300W Dual Output Power Factor Corrected AC/DC Power Supplies

Only  
6 x 4 x 1.5  
Inches!!



### Key Features:

- Smallest 1U 300W Supply
- Dual Outputs
- PFC to EN61000-3-2 "A"
- UL, cUL, TUV Approvals
- CE Certified
- FCC Class B Emissions
- Auto Selectable AC Input
- 700W Peak Power
- Four Mechanical Options



### MicroPower Direct

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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	90 180		132 264	VAC
Input Frequency		47		63	Hz
Input Current, Full Load	100 - 120 VAC		8		A
	200 - 240 VAC		4		A
Inrush Current, Cold Start	110 VAC			35	A
	220 VAC			70	A
Leakage Current (Note 1)	240 VAC		1.5		mA
Power Factor Correction	Meets EN61000-3-2 Class A				
Input Protection	T8A/250V Fuse				

#### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Adjustment	V1 By Trim Pot		±5.0		%
Output Regulation (Note 2)			±5.0		%
Hold Time	110 VAC, 80% Load		20		mSec
Ripple & Noise (20 MHz) (Note 3)	See Model Selection Guide				
Overload Protection	Power Limit	130		160	%
Over Voltage Protection	>130% of Rated Output Voltage. Recycle AC Input.				
Over Temperature Protection					
Temperature Coefficient			±0.04		%/°C
Transient Recovery Time (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 (Note 5)	Input - Output	3,000			VAC
	Input - FG (Frame Ground)	1,500			
	Primary - Core	1,500			
Switching Frequency	Fixed		23		kHz

#### Interface Signals

Power Supply On	Green LED (LED1) on the PCB
Power Good Signal	PG on CN1. Goes TTL high 100 to 500 mS after regulation. Goes low at least 1 mS before the loss of regulation. Will sink 100 mA.
Fan Fail	FF on pin 3 of CN1. Open collector output rated for 15 VDC/5 mA sink current maximum. Goes high if a fan failure is detected

#### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	0	+25	+50	°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; CSA C22.2 No. 60950; TUV EN60950; CB Report (IEC 60950)				
EEMI Compliance	Compliance to EN55022 (CISPR22) Class B; EN61000-3-2,3				
EMS Immunity Compliance	EN61000-4-2,3,4,5,6,8,11; EN55024;; CE Marked (LVD)				

## Model Selection Guide

Model Number	Output Voltage Factory		Max. Output Current (Note 7)		Ripple & Noise	Efficiency (Note 7)
			18 CFM (U/w Air, E, F)	Convection (U)		
MPA300Dx-0512z	V1	+5 VDC	30.00A	15.00A	1% p-p	75%
	V2	+12 VDC	16.67A	11.50	1% p-p	
MPA300Dx-0524z	V1	+5 VDC	30.00A	15.00A	1% p-p	75%
	V2	+24 VDC	8.33A	5.75A	1% p-p	
MPA300Dx-0548z	V1	+5 VDC	30.00A	15.00A	1% p-p	75%
	V2	+48 VDC	4.16A	2.60A	1% p-p	
MPA300Dx-1224z	V1	+12 VDC	16.67A	12.50A	1% p-p	75%
	V2	+24 VDC	8.33A	6.25A	1% p-p	

### Notes:

- Models are available with leakage current specified as low as 500  $\mu$ A (at 240 VAC) / 300  $\mu$ A (at 120 VAC). Contact the factory for details.
- Output regulation includes line & load.
- Ripple & noise is measured from 10 Hz to 20 MHz. Measurement connection to the unit is made with a 0.1  $\mu$ F ceramic capacitor & a 22  $\mu$ F electrolytic capacitor connected in parallel.
- 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 above) is covered in the safety agency certification. Standard models are factory set to the "Preset" voltage. This may be set

to other levels within the range without affecting the agency certification. For more information, contact the factory.

- The maximum continuous output power level, (combined for V1 & V2) is 300W (with 18 CFM) for the MPA300Dx-1224 & 250W for all other models. For convection cooling, the maximum continuous output power level (combined for V1 & V2) is 150W for the MPA300Dx-1224 & 125W for all other models. For more information, contact the factory.
- A 10% minimum load is required to maintain regulation and ripple specifications.

### Input & Output Connector CN2:

Howder Terminal Block No. HB-95-7P or Mating Molex Part No. 09-91-1600 (16 pin)

### Output Pin Assignment:

Howder	Molex
Pins 1: V1	Pins 1 ~ 3: V1
Pins 2 ~ 3: RTN	Pins 4 ~ 8: RTN
Pin 4: V2	Pins 9 ~ 10: V2
Pin 5: GND	Pin 12: GND
Pin 6: Neutral	Pin 14: Neutral
Pin 7: Line	Pin 16: Line

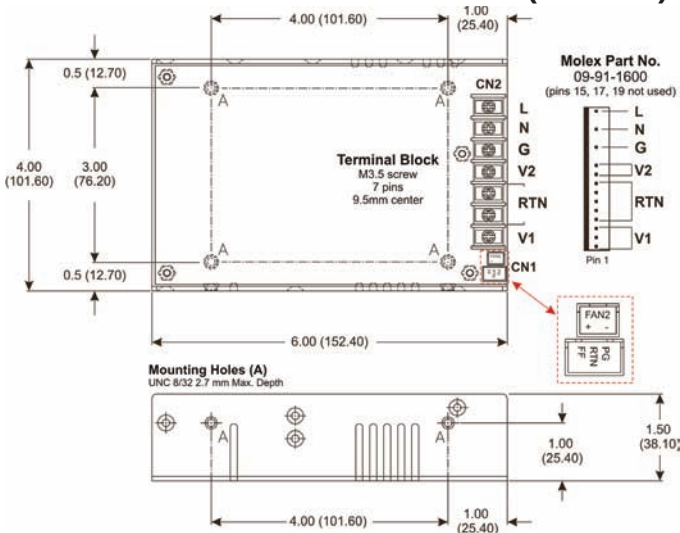
### Logic Signal Connector CN1:

Mating JST XHP or equivalent (CHYAO SHIUNN JS-21001-3) Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26.

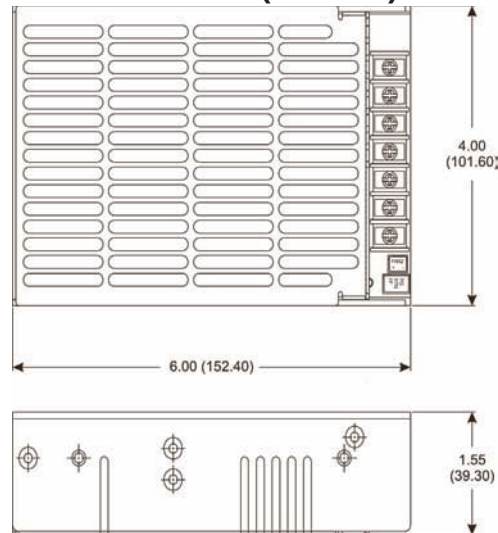
### Fan driver connector (FAN2):

12 VDC / 400 mA is available to drive an external fan. Mating connector is a JST XHP-2 or Molex P/N 48-151-0210 (2 pins 0.98 pitch). Mating Pins: JST SXH-001T-P0.62T or Molex 48150 .

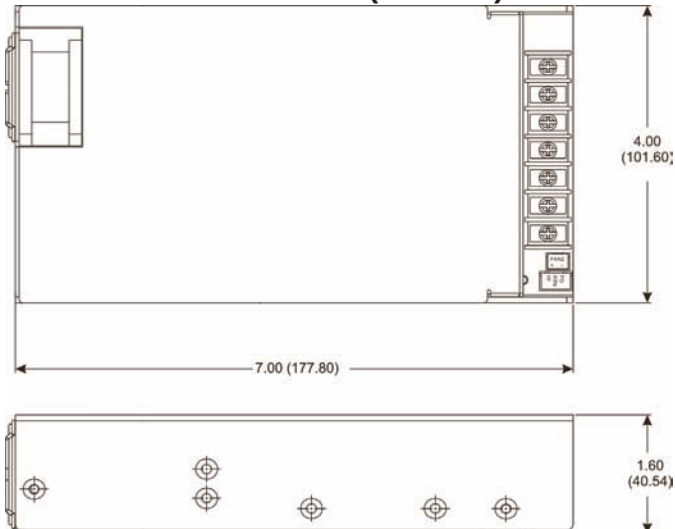
## Mechanical Dimensions: U-Chassis (U Suffix)



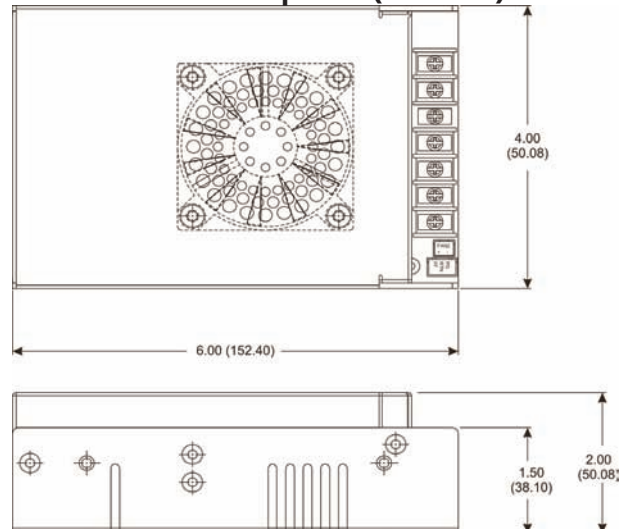
## U-Chassis Cover (C Suffix)



## Enclosure With End Fan (E Suffix)



## Enclosure With Top Fan (F Suffix)



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## MPA300DX-YYZ

Mechanical Configuration  
U = U-Chassis  
C = U-Chassis with Cover  
E = Enclosure With End Fan  
F = Enclosure With Top Fan

Output Voltage Selection  
(i.e. 05 = 5 VDC, 24 = 24 VDC, etc)

Input/Output Connector Type  
T = Terminal Block  
M = Molex