



MicroPower Direct

Go Direct - **MicroPower Direct** - For Product, Performance and Price

400W AC-DC ACTIVE PFC MEDICAL POWER SUPPLY MPA400MD DUAL OUTPUT SERIES



U - Chassis Type: 8 x 5 x 1.6"
Enclosed with built-in fan Type: 9 x 5 x 1.6"

FEATURES:

- Medical Safety Approvals
- Power Factor Corrected to EN61000-3-2 class D
- 1U height size
- U-Chassis & Enclosed with built-in fan Mechanical Options
- High power density: 6.25 watts/cu inches
- Current Monitoring and Remote Voltage adjustment (Margin)

PRODUCT SPECIFICATIONS:

Input Voltage: 90-264 Vac full range, 47~63 Hz.
Input Current: 6.35A at 90 Vac full load.
Inrush Current: 35A Max @ 230 Vac with full load and cold start.
PFC: Active power factor correction meet EN61000-3-2 class D.
Fan Drive: 12 VDC/400 mA is available to drive an external fan.
Transient Response: Returns to within 1% in less than 2.5 mS for a 50% load change and the peak transient does not exceed 5%.
Overshoot: Turn-on/off not exceed 5% over nominal voltage.
Efficiency: 75% minimum (Measuring at 230V and full load).
Turn On Delay: 1 second maximum at 120 Vac.
Hold Up Time: 20 mS min. at 80% of full load.
Adjustability: Output user adjustable $\pm 5\%$ minimum.
Remote Sense: Designated "RS+" and "RS-" on the CN3.
Remote On-Off: Designated as "RSW" on the CN3, requires a low signal to inhibit output.
Power Supply On: Green LED designated as "LED 1" on the PCB.
LED display: Bi-color "LED1" emit green light on operating. Any protection occurred or RSW applied low signal will emit orange.
Power Good: Designated as "PG" on the CN3 will go high 100-500mS after regulation and goes low 1mS before loss of regulation.
Input Circuit (primary): Two protected fuse inserted, shall be blown only by an internal power fault.
Input Voltage Protection: Power shut down under 80 ± 5 Vac, and recovered over 86 Vac.
Over-Power Protection: C.C. mode 110-140% and auto-recovery.
Over-Voltage Protection: Latching down will occur when output voltage exceed 130% and recycle AC input to reset.
Over Temp. Protection: Protected at ambient 85°C; Auto-recovery.



Short Circuit Protection: Trip without damage and auto-recovery.
Switching Frequency: 30 kHz fixed frequency.
Operating Temperature: 0°C to 70°C ambient, de-rating at 2.5% per degree from +50°C to +70°C.
Storage Temperature: -20 to 85°C.
Operating Humidity: 5% to 90% RH, Non-condensing.
Storage Humidity: 5% to 95% RH, Non-condensing.
Vibration: Frequency 5 to 50 Hz, acceleration ± 7.35 M/(SxS) on X, Y and Z Axis.
Emissions: FCC Part 15, CISPR 22 class B, Conducted.
Safety Regulation: Approved to UL60950-1/ 60601-1, CSA C22.2 No. 60950-1-03/ 601.1-M90, TUV EN60950-1/ 60601-1, CE Mark (LVD) EN61204-3/ 60601-1-2/ 61000-3-2,3 & IEC61000-4 Series Regulations and CB.
Leakage Current: 300 μ A
HI-POT Test: 1500 Vac between input line and chassis (2 mA DC cut off current); 4000 Vac between primary and secondary windings; Primary to core 1500 Vac. All for 3 sec.
Grounding Test: Apply 40 A from ground pin to the earthed connection point. Maximum allowable resistance is 0.1ohm.
Warranty: 2 years.
MTBF: 100000 Hrs (according to MIL-HBK-217F) at 30° .
Cooling: Enclosed Type: Self cooled by internal ball bearing fan. U-Chassis Type: Full rating under 22.95 CFM forced air flow.
Burn in: 45 +/- 5 degree C for 1 hour @230Vac with full load.
Enclosure: U-Chassis type - 8(L) x 5(W) x 1.6(H) inches. Enclosed type - 9(L) x 5(W) x 1.6(H) inches.
Weight: U-Chassis Type – 1.3KG; Enclosed Type – 1.6KG;

MicroPower Direct

www.micropowerdirect.com

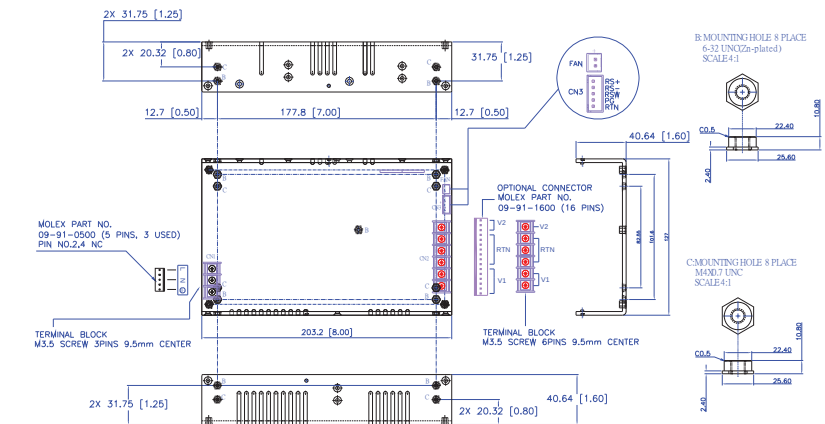
OUTPUT VOLTAGE / CURRENT RATING CHART: Measured at output power connector.

Model Number	Output Voltage	Max. Output current		Total Regulation	Ripple & Noise
		Convection	22.95 CFM		
MPA400MDx-0312z	V1: +3.3V	30A	40A	± 5%	± 1%
	V2: +12V	16.7A	25A	± 5%	± 1%
MPA400MDx-0324z	V1: +3.3V	30A	40A	± 5%	± 1%
	V2: +24V	8.34A	12.5A	± 5%	± 1%
MPA400MDx-0512z	V1: +5V	30A	40A	± 5%	± 1%
	V2: +12V	16.7A	25A	± 5%	± 1%
MPA400MDx-0524z	V1: +5V	30A	40A	± 5%	± 1%
	V2: +24V	8.34A	12.5A	± 5%	± 1%
MPA400MDx-1224z	V1: +12V	16.7A	25A	± 5%	± 1%
	V2: +24V	8.33A	12.5A	± 5%	± 1%

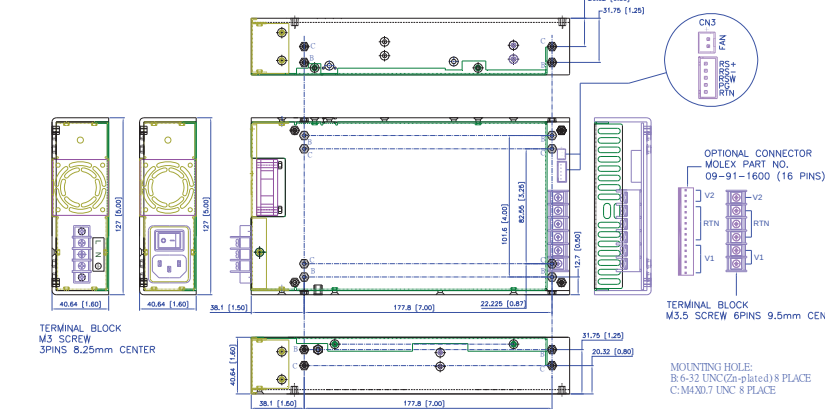
- * **MPA400MDx-00z:** x = E (Enclosed type) or U(U-Chassis type); z = Blank (terminal strips), M (Molex Connectors) or I (IEC Input Connector, Enclosed unit only).
- * 10% minimum load is required for all outputs to maintain the ripple and regulation. Output is fully isolated.
- * Total combined power of V1 and V2:
 400W Max. with 22.95 CFM forced air and 250W convection cooling for the **MPA400MDU-1224** and 400W for the **MPA400MDE-1224** by self cooling.
 300W Max. with 22.95 CFM forced air and 200W convection cooling for all other **MPA400MDU** models and 300W for all other **MPA400MDE** models by self cooling.

OUTLINE DRAWING:

Overall Size for U-Chassis Type: 8(L) x 5(W) x 1.6(H)inches; Weight: Maximum weight is 1.3kg; Option: Top Cover.



Overall Size for Enclosed Type: 9(L) x 5(W) x 1.6(H)inches; Weight: Maximum weight is 1.6kg



I/O Connector pin assignment:

Input Connector(CN1):
 U-Chassis Type – mating Molex Part No. 09-91-0700 equivalent(7 pin, 5 used), or Howder Terminal block Part No. HD-121-3P.
 Enclosed type – IEC320 or equivalent Snap-in mounting type or DINKLE Terminal block Part No. DT-35-A02W-03 (3 pin)

Output Connector (CN2): Mating Molex 16 pins (09-91-1600), or Howder (HD-121-6P) M3.5, 8 pins terminal block, 9.5MM Center.

Output Pin Assignment: (See table below)

Logic signal connectors (CN3):
 Mating JST XHP-8 or equivalent (CHYAO SHIUNN JS-2001-08) Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26.

Fan driver connector (FAN): 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 .

Mounting Inserts: 6-32, M4 4 Places individually with maximum penetration 0.15" on bottom side and 0.25" on both side.

	V1	V2	RTN
MOLEX	PINS 1-6	PINS 14-16	PINS 7-13
HOWDER	PINS 1-2	PINS 6	PINS 3-5



MicroPower Direct
www.micropowereirect.com

292 Page Street, Ste D Stoughton, MA 02072 • TEL: (781) 344-8226 • FAX: (781) 344-8481 • EMAIL: sales@micropowereirect.com