MicroPower Direct

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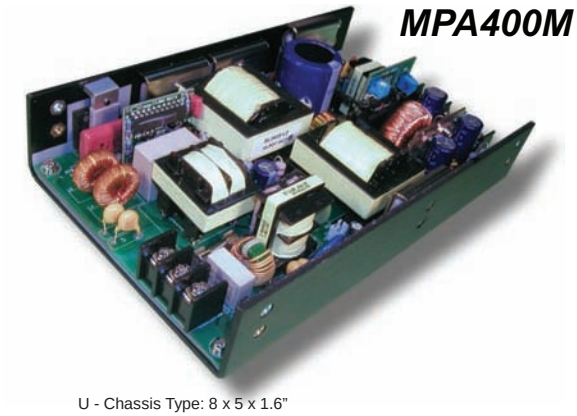
400W AC-DC ACTIVE PFC MEDICAL POWER SUPPLY
MPA400M SINGLE OUTPUT SERIES



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
- Optional N+1 Forced Active Current Sharing
- Power Factor Corrected to EN61000-3-2 class D
- Providing Peak Power 700W within 500uS duty duration
- U-Chassis & Enclosed with built-in fan Mechanical Options
- 1U height size and High power density: 6.25 watts/cu inches
- Current Monitoring and Remote Voltage adjustment (Margin)

c UL us E201808 ITE E257331 MEDICAL CE CB RoHS

PRODUCT SPECIFICATIONS:

Input Voltage: 90-264 Vac full range, 47~63 Hz.
Input Current: 6.35A at 90VAC 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: 12VDC/400mA 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 excess 5%.
Overshoot: Turn-on/off not exceed 5% over nominal voltage.
Efficiency: 82% 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 ±5% minimum.
Remote Sense: Designated “RS+” and “RS-” on the CN3. (Not available for current sharing models)
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 100-500 mS after regulation and goes low 1mS before loss of regulation.
Current Sharing: Designated as “CSH” on the CN3, optional single wired for forced current sharing function and parallel up to 4 units within 10% accuracy at full load.
Current Monitor: Designated as “CMN” on the CN3 for current sense for a 0.5V to 3 VDC to represent 0% to 100% output current.
Margin: Designated as “MGN” on the CN3 providing 50% of output voltage remote adjustment by applying 0.4 ~ 5V signal on “MGN”.
AC Fail (optional): Designated as “ACF” on the CN3 to monitor the input voltage, when input goes under 80 +/- 5VAC the signal will go low (0V) and then go high (+5V) once reappears over 86 Vac. (Input voltage protection must be disabled when AC Fail is enable.)
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.(Disabled unless AC Fail is requested)
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.
Short Circuit Protection: Trip without damage and auto-recovery.
Over Temperature Protection: Protected in the event of excessive operating ambient 85°C, with automatic recovery.
Switching Frequency: 30 kHz fixed frequency.
Operating Temperature: O 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: 300uA
HI-POT Test: 1500 Vac between input line and chassis (2mA 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: External forced air requires achieving full ratings.
Burn in: 45 +/- 5°C for 1 hour @ 230 Vac 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;

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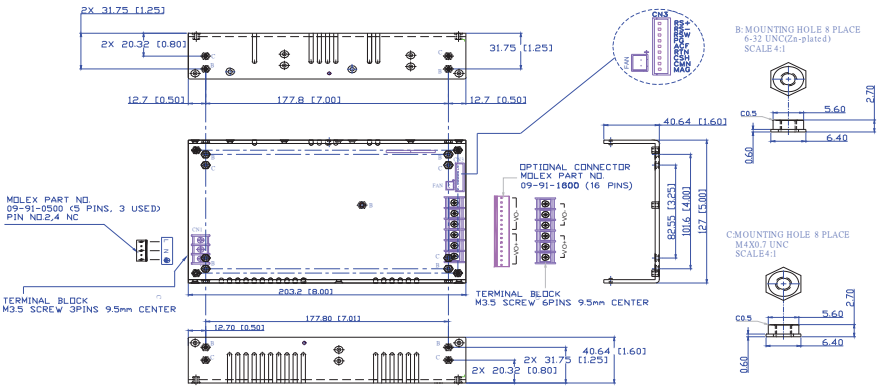
OUTPUT VOLTAGE / CURRENT RATING CHART: Measured at output power connector.

Model	Output Range	Preset Voltage	Max. Output current		Total Regulation	Ripple & Noise
			Convection	22.95CFM		
MPA400Mxy-03z	2 – 3.3V	3.3V	45A	60A	+/- 1%	+/-1%
MPA400Mxy-05z	5 - 6V	5V	45A	60A	+/- 1%	+/-1%
MPA400Mxy-12z	12 - 15V	12V	20.84A	33.34A	+/- 1%	+/-1%
MPA400Mxy-18z	16 - 21V	18V	15.64A	25A	+/- 1%	+/-1%
MPA400Mxy-24z	22 - 30V	24V	11.37A	18.19A	+/- 1%	+/-1%
MPA400Mxy-36z	31 – 41V	36V	8.07A	12.9A	+/- 1%	+/-1%
MPA400Mxy-48z	42 - 58V	48V	5.96A	9.53A	+/- 1%	+/-1%

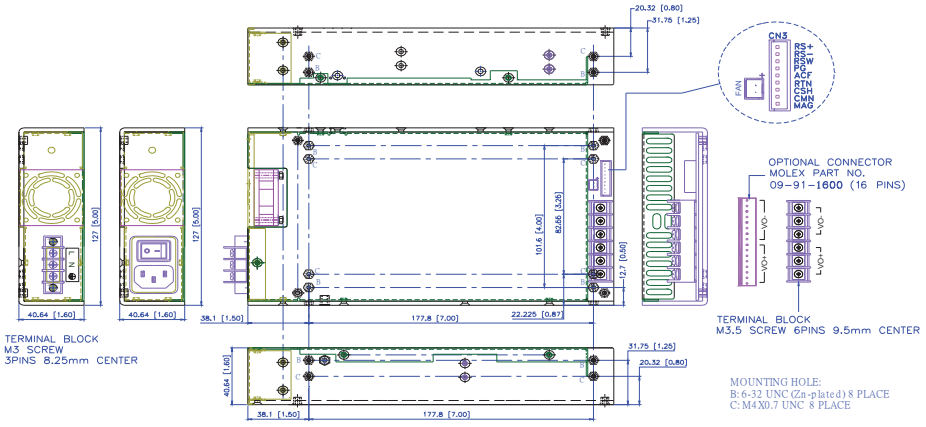
* **MPA400M**xy-00z x = E (Enclosed Type) or U (U-Chassis Type); y = Blank (Standard) or I (Forced current sharing option, Oring Diode); z = Blank (terminal strips), M (Molex Connectors) or I (IEC Input Connector, Enclosed unit only).
* Max power 400W continuous output with min. 22.95CFM forced air cooling or built-in fan. Convection cooled rating as above chart.
* All output ranges are covered in agency certifications and preset output voltage for each model as above listings.
* Providing peak power to 700W within 500uS for all models, longer duty duration need contact manufacture.
* 1% minimum load is required to maintain the ripple and regulation.
* Output is fully isolated.
* Cover is optional for U-Chassis enclosure.

OUTLINE DRAWING:

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



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.

	Molex	Howder
VO+	(Pins 1-8)	(Pins 1-3)
VO-	(Pins 9-16)	(Pins 4-6)

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