

# iStarUSA™

## 400W AC-DC PFC MEDICAL & ITE DEGREE POWER SUPPLY CP-M0402 SINGLE OUTPUT SERIES



CP-M0402U Series (U-Chassis Type): 8(L) x 5(W) x 1.6(H) inches.  
CP-M0402E Series (Enclosed Type): 9(L) x 5(W) x 1.6(H) inches.

### FEATURES:

- ◆ Both Medical & ITE 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)



### PRODUCT SPECIFICATIONS:

**Input Voltage:** 90-264Vac full range, 47~63Hz.

**Input Current:** 6.35A at 90VAC full load.

**Inrush Current:** 35A Max @ 230VAC 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 2.5mS for a 50% load change and the peak transient does not exceed 5%.

**Overshoot:** Turn-on/off not exceed 5% over nominal voltage.

**Efficiency:** 70% for 3.3V, 75% for 5V, 80% for 12V and 83% minimum for others output @ 230V and full load.

**Turn On Delay:** 1 second maximum at 120 VAC.

**Hold Up Time:** 20mS min. at 80% of full load.

**Adjustability:** Output user adjustable +/-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 green **LED** in front panel (CP-M0402E only);

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.

**Current Monitor:** Designated as **CMN** on the CN3 for current sense for a 0.5V to 3VDC to represent 0% to 100% output current.

**Margin:** Designated as **MAG** on the CN3 providing 50% of output voltage remote adjustment by applying 0.4 ~ 5V signal on **MAG**.

**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 86VAC.

**Input Circuit Protection (primary):** Two T8A/250V fuses inserted.

**Over-Power Protection:** C.C. mode 110-140% and auto-recovery.

**Input Voltage Protection:** Power shut down under 80 +/-5Vac, and recovered over 86Vac.

**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 degree, and automatic recovery.

**Switching Frequency:** 30KHZ fixed frequency.

**Operating Temperature:** 0 to 70°C ambient, de-rating at 2.5% per degree from 50°C to 70°C.

**Storage Temperature:** -20 to 85 degrees 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:** Medical degree 300uA; ITE degree 1.5mA;

**HI-POT Test:** 1500 Vac between input line and chassis (2mA DC cut off current); 4000Vac between primary and secondary windings; Primary to core 1500VAC. 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°C.

**Cooling:** :CP-M0402U Series: U-Chassis @400W max. with 23CFM airflow or 250W max. under convection cooling.

CP-M0402E Series: Enclosed with side built-in fan @400W max.

**Burn in:** 45 +/- 5 degree C for 1 hour @230Vac with full load.

**Enclosure:** CP-M0402U Series: 8(L) x 5(W) x 1.6(H) inches.

CP-M0402E Series: 9(L) x 5(W) x 1.6(H) inches.

**Weight:** CP-M0402U Series: 1.3KG; CP-M0402E Series: 1.6KG.

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

Model	Output Range	Preset Voltage	Max. Output Power or Current		Total Regulation	Ripple & Noise
			Type U (Convection)	Type U (with forced air) & E		
CP-M0402x-03	2 ~ 3.3V	3.3V	45A	60A	+/- 1%	+/-1%
CP-M0402x-05	5 ~ 6V	5V	45A	60A	+/- 1%	+/-1%
CP-M0402x-12	12 ~ 15V	12V	250W	400W	+/- 1%	+/-1%
CP-M0402x-18	16 ~ 21V	18V	250W	400W	+/- 1%	+/-1%
CP-M0402x-24	22 ~ 30V	24V	250W	400W	+/- 1%	+/-1%
CP-M0402x-36	31 ~ 41V	36V	250W	400W	+/- 1%	+/-1%
CP-M0402x-48	42 ~ 58V	48V	250W	400W	+/- 1%	+/-1%

### NOTE:

- \* CP-M0402x-y. x = **U** (U-Chassis Type) or **E** (Enclosed with built-in Fan Type). y = **03, 05, 12, 18, 24, 36 or 48**.
- \* CP-M0402U Series: 400W max. with 23CFM airflow or 250W max. under convection cooling.
- \* CP-M0402E Series: 400W max. with built-in fan flow.
- \* 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.

### OUTLINE DRAWING:

CP-M0402U Series (U-Chassis Type): 8(L) x 5(W) x 1.6(H)inches; Weight: 1.3kg; Option: Top Cover.



