

Medical Power Supply

MP600U Series

MEGMEET
www.megmeet.com

600W AC-DC OPEN FRAME



FEATURES

- Medical 60601-1 Safety Approvals
- IT/AV 62368-1 Safety Approvals
- Internal Fan Forced-Air Cooling
- High Efficiency - Up to 95.5%
- Remote On/Off, Power OK
- 5VSB @ 2A Output
- Universal AC Input With Active PFC
- EN55011 / FCC Part 15J Class B Emissions
- 3-Year Warranty



GENERAL DESCRIPTION

MP600U series is an AC-DC converter adopts a metal shell and a forced-air cooling mode. The maximum output is up to 600W while the efficiency can be up to 95.5%. Full range AC input with active PFC design; 5V@2A output with remote control switch signal. The model has excellent EMC performance with perfect and accurate protection function, which allows it meets all medical compliance requirements including 4th Edition EMC.

APPLICATIONS



MODELS & RATINGS

MODELS	OUTPUT VOLTAGE	OUTPUT CURRENT	RIPPLE & NOISE (MAX)	STANDBY OUTPUT	MAX TOTAL REGULATION
MP600U-12	12V	50.0A	200mV	5VSB @ 2A	±2%
MP600U-15	15V	40.0A	200mV	5VSB @ 2A	±2%
MP600U-19	19V	31.6A	280mV	5VSB @ 2A	±2%
MP600U-24	24V	25.0A	280mV	5VSB @ 2A	±2%
MP600U-28	28V	21.4A	280mV	5VSB @ 2A	±2%
MP600U-36	36V	16.67A	480mV	5VSB @ 2A	±2%
MP600U-48	48V	12.5A	480mV	5VSB @ 2A	±2%

NOTES

PS_ON	Remote on/off (main output), Low (0~0.8V)= ON, High(3~5V) = OFF
Power good	Combined AC Fail and DC OK signal, Low(0~0.8V)= Fail, High(3~5V) = OK
The power supply need be mounted on the metal plate	

Medical Power Supply

MP600U Series

MODEL ENCODING

MP600U	-	xx/xxx	-	abc
OPEN FRAME 600 Watts		OUTPUT VOLTAGE 12: 12V 165: 16.5V		CUSTOMER CODE OR OTHERS

INPUT ELECTRICAL CHARACTERISTICS

Normal voltage range	100-240VAC
Input Voltage Range	85~264Vac (Universal)
Input Frequency	47~63Hz
Input Current	7.0A max @100VAC
Inrush Current	<50A @ 240 VAC, 25°C Cold start
Input Protection	Internal 10A / 250V Fuse (Line & Neutral)

Power Factor	>0.95
Earth Leakage Current(NC)	<200μA @ 264VAC
Earth Leakage Current (SFC)	<400μA @ 264VAC
Touch Current (NC)	<100μA @ 264VAC
Touch Current (SFC)	<200μA @ 264VAC
Patient Leakage Current	<100uA @ 264VAC
Rated output power	600W@Forced-air flow

OUTPUT ELECTRICAL CHARACTERISTICS

Total Regulation	±2%
Line Regulation	±0.5%
Load Regulation	±2%
Minimum Load	None
Transient Response	±5%, 50% Step Load , Slew Rate 1A/μS

Ripple & Noise	See Table
Turn-On Delay	2.0 seconds Max @ 100VAC
Hold-Up Time	>10ms 600W Load

Medical Power Supply

MP600U Series

SAFETY & EMC

Safety	IEC/EN 60601-1
	UL 60601-1
	IT/AV 62368-1
	Protection type: Class I & Class II
Conduction Emission	EN55011, FCC Part J15, Class B
Radiated Emission	EN55011, FCC Part J15, Class B
Voltage Fluctuation & Flicker	IEC61000-3-3 Class A
Harmonic Distortion	IEC61000-3-2 Class A
ESD	IEC61000-4-2 Class A (Contact $\pm 8\text{KV}$ /Air $\pm 15\text{KV}$)
EFT	IEC61000-4-4 Class A Power supply lines: $\pm 2\text{KV}$
SURGE	IEC61000-4-5 Class A, Line to line: $\pm 1\text{KV}$ line to earth: $\pm 2\text{KV}$, 12ohms
DIP ⁽¹⁾	IEC61000-4-11 Criterion A/B/C GB17626.11-1998
Conducted Immunity	IEC 61000-4-6 Class A
Radiated Immunity	IEC 61000-4-3 Class A
Magnetic Fields Immunity	IEC 61000-4-8 Class A

PROTECTION

Over shoot	5%
Over-Voltage	110-150% Latching
Over-Temperature	Auto-Recovery
Over-Load	110~150% (Hiccup Mode, Auto-Recovery)
Short Circuit	Hiccup Mode
Over Current Protection	Hiccup, Auto Recovery
Input Brown Out	AC On Voltage $\leq 80\text{Vac}$
	AC Off Voltage $\geq 60\text{Vac}$
	Minimum Hysteresis 5Vac

RELIABILITY & ENVIRONMENTAL REQUIREMENTS

Operating Temperature	-10°C to +70°C
Derating	1.67%/°C > 40°C, up to 70°C max
Storage Temperature	-40°C to +80°C.
Operating Humidity	5% to 95% (non-condensing)
Storage Humidity	5 to 100% (non-condensing)
Operating Altitude	-60 to 5000 m
Storage Altitude	up to 5000 m
Cooling Method	Forced air 600W, Wind speed: 2.7m/s
Shock	98m/s ² (10G), 6ms, once each on 3 axes
Vibration	10-500Hz, 19.6m/s ² (2G), 30minutes each along X, Y and Z axis.

DIMENSION & PACKING

Efficiency	90%/93.0% lowest@ 115/230 VAC, Full Load
Isolation	4000 VAC – Input to Output; 2xMOPP 1500 VAC – Input to earth; 1xMOPP 1500 VAC – Output to earth; 1xMOPP
MTBF	100K Hours, @230Vac, 25°C, Rated output
Weight	700g ref
Dimensions	165x85x42.5mm
	6.5x3.35x1.67" inch

(1) Power supply DIP voltage sag requirements table:

Drop	Time	Criterion
0%Ut	10ms	A
70%Ut	500ms	B
40%Ut	200ms	C
0%Ut	5000ms	C

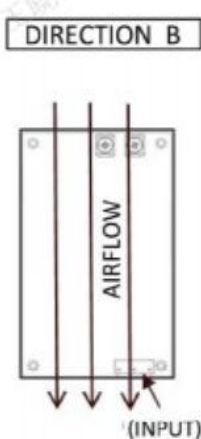
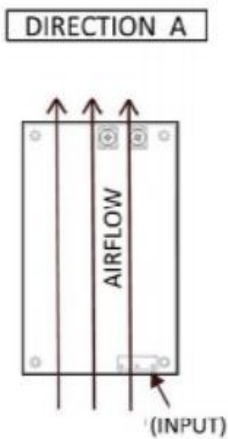
Medical Power Supply

MP600U Series

DERATING CURVE

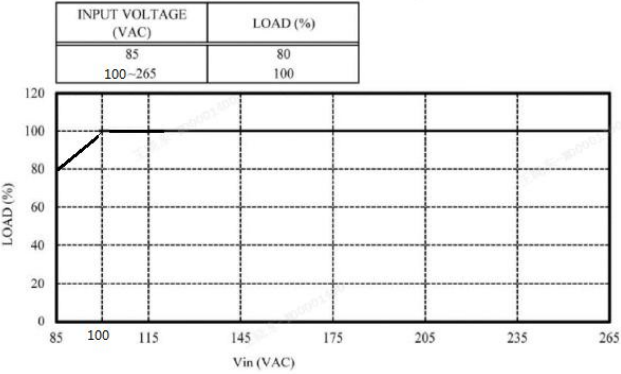
AIRFLOW DIRECTION

Windspeed : 2.7m/s.

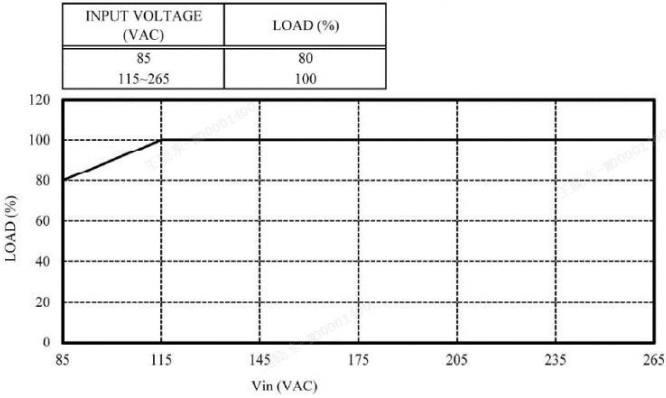


OUTPUT POWER VS INPUT VOLTAGE

DirectionA:



DirectionB:

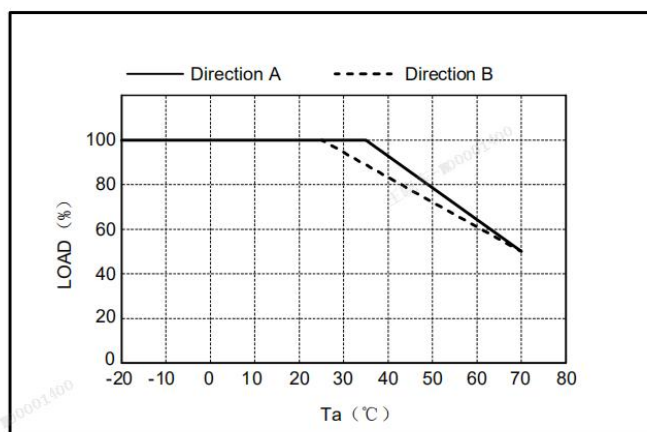


OUTPUT POWER VS AMBIENT TEMPERATURE

Forced Air Cooling MP600U-12&-15 (2.7m/s)

The additional derating for input below 100Vac applies to Direction A, and the additional derating for input below 115Vac applies to Direction B.

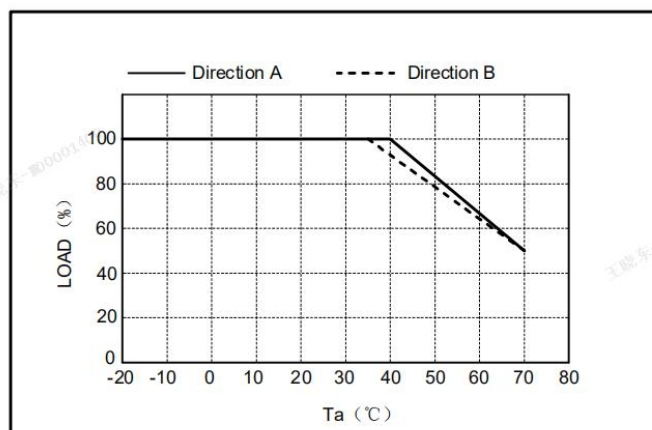
Ta(°C)	Direction A	Direction B
	LOAD(%)	LOAD(%)
-20~+25	100	100
35	100	89
40	92.8	83.5
45	85.6	78
50	78.4	72.5
55	71.2	67
60	64	61.5
70	50	50



Forced Air Cooling MP600U-19 to-48 (2.7m/s)

The additional derating for input below 100Vac applies to Direction A, and the additional derating for input below 115Vac applies to Direction B.

Ta(°C)	Direction A	Direction B
	LOAD(%)	LOAD(%)
-20~+25	100	100
35	100	100
40	100	92.8
45	91.7	85.6
50	83.4	78.4
55	75.1	71.2
60	66.8	64
70	50	50



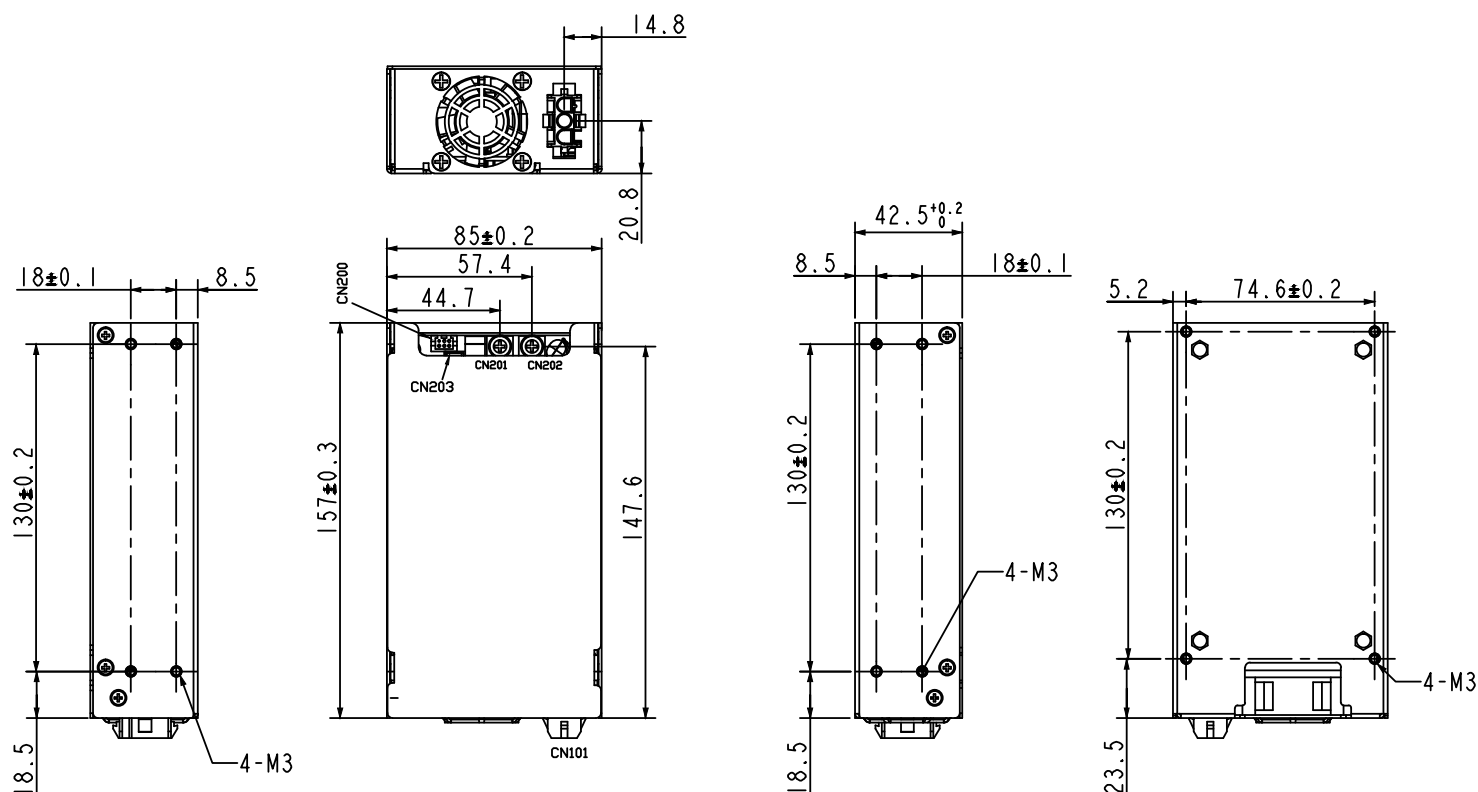
Medical Power Supply

MP600U Series

MEGMEET
www.megmeet.com

600W AC-DC OPEN FRAME

MECHANICAL AND CONNECTOR INFORMATION



	PIN		Instruction	Terminal model	Matching terminals and plastic shell
CN101	1	L	AC input	350767-1 (TE Connectivity) (Or equivalent)	TE: 350766-1 TE: 350536-1 (Or equivalent)
	2	N	AC input		
	3	PE	Protected area		
CN201	1	VOUT+	Main output positive terminal	M4 OUTPUT TERMINAL	
CN202	1	VOUT-(DGND)	Main output positive terminal	M4 OUTPUT TERMINAL	
CN200	1	PS_ON	PSU control signal	sheng lan (1200 2W00-2x3P-LS1-23-HF)/ jia wei (A200 6WV-2x3P-6T2-5eHK2.3)(or equivalent)	sheng lan : (12002H00-2x3P-L) sheng lan : (12002TOP-2E (or equivalent)
	2	Power Good	Power Good signal		
	3	DGND1	Signal reference ground		
	4	FAN_ON	Fan control signal		
CN203	5	DGND1	5V power out put reference ground		
	6	+5Vsb	5V power out put positive terminal		

Medical Power Supply

MP600U Series

MEGMEET
www.megmeet.com

600W AC-DC OPEN FRAME

GLOBAL OPERATION AND SERVICE



MANUFACTURER

CHINA

ZHUZHOU MEGMEET ELECTRICAL CO., LTD

Add: 1728 Taishan West Rd., Tianyuan Dist.,
Zhuzhou, Hunan, China

THAILAND

MEGMEET (THAILAND) CO., LTD

Add: 7/375 Moo6, Tambon Mabyangporn, Amphur
Pluakdaeng, Rayong 21140, Thailand

TECHNICAL SUPPORT

CHINA

SHENZHEN MEGMEET ELECTRICAL CO., LTD

Add: 3rd Floor, Block B, Unisplendour Information
Harbor, Langshan Rd., Nanshan Dist.,
Shenzhen, Guangdong, China

CHINA

HUNAN MEGMEET ELECTRICAL TECHNOLOGY CO., LTD

Add: 4th Floor, Block C2, Changsha Science & Technology Town,
Junction of Dongliu Rd. & Renmin Rd., Changsha Economic Dev-
elopment Dist., Changsha, Hunan, China

UNITED STATES

MEGMEET USA, INC.

Add: 4020 Moorpark Ave., San Jose, CA 95117 USA

GERMANY

MEGMEET GERMANY GMBH

Add: Meisenstr. 94, 33607 Bielefeld Germany