

Medical Power Supply

MP400 Series



INPUT SPECIFICATIONS

Input Voltage	90-264 VAC (Universal)
Input Frequency	47-63Hz
Input Current	5.5A _{RMS} at 115VAC / 2.8A _{RMS} at 230VAC
Inrush Current	<25A @ 240 VAC, Cold Start
Power Factor	>0.97
Earth Leakage Current	<250µA @ 264VAC
Patient Leakage Current	<100µA @ 264VAC
Input Protection	Internal 8A / 250V Fuse (Line & Neutral)

OUTPUT SPECIFICATIONS

Output Voltage	See Table
Line Regulation	±0.5%
Load Regulation	±2%
Minimum Load	None
Transient Response	±5%, 50% step-load, slow rate 1A/µS
Ripple / Noise	1% pk-pk max
Turn-On Delay	3 seconds max @ 115VAC
Hold-Up Time	>20ms at 115VAC Input (Full Load)
Over-Voltage	110-140% Latching
Over-Load	110-150% (Hiccup Mode, Auto-Recovery)
Short Circuit	Hiccup Mode
Over-Temperature	Auto-Recovery

GENERAL SPECIFICATIONS

Efficiency	92% typical at 115/230 VAC, full load
Isolation	4000VAC - Input to Output(2xMOPP) 1500VAC - Input to Earth(1xMOPP) 1500VAC - Output to Earth(1xMOPP)
MTBF	300K Hours, MIL-217F at 25 °C, full load
Weight	930g

FEATURES

- Medical 60601-1 Safety Approvals
- Full Load Convection Cooled Operation Up To 40°C
- High Efficiency - 92% Typical At Full Load
- Remote On/Off, Power OK & DC OK
- 5VSB @500mA Output
- Universal AC Input With Active PFC
- EN55011 / FCC Part 15J Class B Cond. Emissions
- 3 Year Warranty
- Medical (BF) Safety Approvals



ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	0 ~ +40°C (convection cooled) 2.5%/°C > 40°C, up to 50°C max
Storage Temperature	-40 ~ +80°C
Operating Humidity	5-95% (non-condensing)
Operating Altitude	4000m (max)
Shock	294m/s ² , 10ms on 3 axes
Vibration	10-500Hz, 19.6 m/s ² (2G), 20mins on 3 axes

EMC & SAFETY

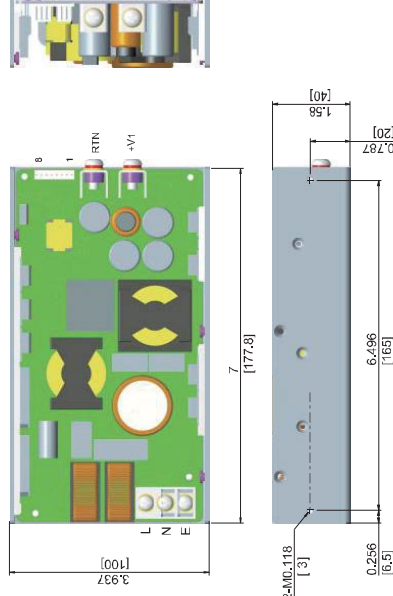
Emissions	EN55011, FCC Part J15, Class B, Conducted
Harmonic Current	EN55011, FCC Part J15, Class B, Radiated
Voltage Flicker	EN61000-3-2 Class A
ESD	EN61000-3-3
EFT/Burst	EN61000-4-2, 8kV contact, 15kV Air Discharge
Surge	EN61000-4-4, Level 3, Criterion A
Conducted Immunity	EN61000-4-5, Installation Class3, Criterion A
Radiated Immunity	EN61000-4-6, 3V _{RMS} (6V _{RMS} @100kHz), Criterion A
Proximity Fields Immunity	EN61000-4-3, 10V/m, Criterion A
Magnetic Field	EN61000-4-3, (table 9 in IEC60601-1-2 4 th ED)
Dips & Interruptions	EN61000-4-8, 30A/m, Criterion A EN61000-4-11, 0% 0.5 cycles at 0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°; 0%, 1cycle and 70% 25/30 cycles at 0°;

Safety Approvals	IEC 60601-1, 3rd Edition ANSI / AAMI ES60601-1 CSA C22.2 No 60601-1 EN60601-1, 3rd Edition CE Mark
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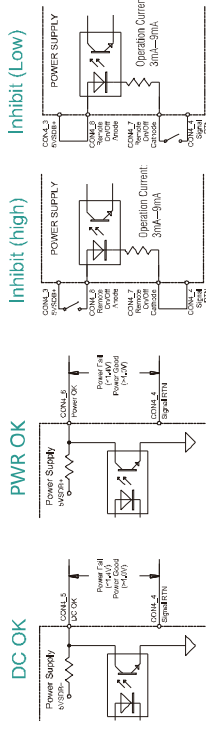
MODELS	MAIN OUTPUT VOLTAGE	OUTPUT CURRENT	PEAK CURRENT	RIPPLE & NOISE (MAX)	STANDBY OUTPUT	MAX TOTAL REGULATION
MP400-12	12V	30.0A	33.3A	120mV	5VSB @ 500mA	±2%
MP400-15	15V	26.6A	30.0A	150mV	5VSB @ 500mA	±2%
MP400-18	18V	22.2A	25.0A	180mV	5VSB @ 500mA	±2%
MP400-24	24V	16.67A	18.8A	240mV	5VSB @ 500mA	±2%
MP400-28	28V	14.2A	16.1A	280mV	5VSB @ 500mA	±2%
MP400-36	36V	11.1A	12.5A	360mV	5VSB @ 500mA	±2%
MP400-48	48V	8.33A	9.4A	480mV	5VSB @ 500mA	±2%

Notes: 1. The maximum duration of peak current shall be less than 100ms, and the average output power shall be less than 400W.
For 12V, the average output power shall be less than 360W.
2. The power supply need be mounted on the metal plate

OUTLINE DRAWING



OUTLINE DRAWING



SIGNALS

DC OK	HIGH Level(3.6V-5.25V)@Normal Operation; LOW Level(0-0.4V)@main output is below 90% nominal voltage.
PWR OK	Goes HIGH(3.6V-5.25V) 5-500ms after main output is above 90% nominal voltage when AC is applied. Goes LOW(0-0.4V) 4ms min. before loss of main output after AC failure.
Remote On/Off	Switch on the main output@when optocoupler diode turns off(0-0.8V); Switch on the main output@when optocoupler diode turns on(4.5V-5.25V).

NOTES

AC INPUT

Terminal Blocks	L Line
	N Neutral
	E Earth

DC OUTPUT

Terminal Blocks	RTN Return
	+V1 Output(+)

SIGNAL CONNECTOR

AMP P/N	6404506-8
8	Remote on/off (Anode)
7	Remote on/off (Cathode)
6	PWR OK
5	DC OK
4	5VSB Return
3	5VSB
2	-SENSE
1	+SENSE