

# Medical Power Supply

## MP1200 Series

**MEGMEET**  
www.megmeet.com

1200W AC-DC OPEN FRAME



### FEATURES

- Medical 60601-1 Safety Approvals
- High Efficiency - Up to 92%
- Remote On/Off, AC Power GOOD, DC Power GOOD
- 5VSB @ 0.1A Output
- Suitable for Class I and Class II installations
- IEC/EN 60601-1-2 / FCC Part 15 Subpart B
- 3-Year Warranty

### GENERAL DESCRIPTION

The MP1200 series is a 8.2 x 5 x 1.81" full-range input 1200W power supply developed specific for high-end medical equipments. This model has high efficiency and reliability, silent mode, low leakage current, and excellent EMC performance.



### APPLICATIONS



### MODELS & RATINGS

| MODELS    | OUTPUT VOLTAGE | OUTPUT CURRENT | RIPPLE & NOISE (MAX) | PEAK CURRENT | MAX TOTAL REGULATION |
|-----------|----------------|----------------|----------------------|--------------|----------------------|
| MP1200-24 | 24V            | 50A            | 240mV                | 25.00A       | ±2%                  |
| MP1200-48 | 48V            | 25A            | 480mV                | 22.00A       | ±2%                  |

### SIGNALS NOTES

|            |                                                                                                           |
|------------|-----------------------------------------------------------------------------------------------------------|
| PS_ON      | Remote on/off: Switch on the main output, Low (0~1.4V)= ON, High(3.7~5.25V) = OFF                         |
| Power good | AC power good: Pull low (0~1.4V) on AC dropout<br>DC power good: Pull low (0~1.4V) on main output dropout |

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### MODEL ENCODING

|                |   |                    |   |               |
|----------------|---|--------------------|---|---------------|
| <b>MP1200S</b> | - | <b>xx/xxx</b>      | - | <b>abc</b>    |
| OPEN FRAME     |   | OUTPUT VOLTAGE     |   | CUSTOMER CODE |
| 1200 Watts     |   | 24: 24V<br>48: 48V |   |               |

### INPUT ELECTRICAL CHARACTERISTICS

|                      |                                 |
|----------------------|---------------------------------|
| Normal Voltage Range | 100-240VAC                      |
| Input Voltage Range  | 90~264Vac (Universal)           |
| Input Frequency      | 47~63Hz                         |
| Input Current        | 14A max@ 115VAC                 |
| Inrush Current       | <70A @ 240 VAC, 25°C Cold start |
| Power Factor         | >0.95                           |
| Hold up time         | 10ms                            |

|                             |                       |
|-----------------------------|-----------------------|
| Earth Leakage Current(NC)   | <250μA @ 264VAC       |
| Earth Leakage Current (SFC) | <500μA @ 264VAC       |
| Input Fuse                  | T20.0A(Both AC lines) |

### OUTPUT ELECTRICAL CHARACTERISTICS

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

|                |                           |
|----------------|---------------------------|
| Ripple & Noise | See Table                 |
| Turn-On Delay  | 3.0 seconds Max@ 100VAC   |
| Hold-Up Time   | >10ms @ 115VAC, Full Load |
| Rise time      | 5<Tr≤100ms                |

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### SAFETY & EMC

|                               |                                                                                                            |
|-------------------------------|------------------------------------------------------------------------------------------------------------|
| Safety                        | EN/IEC60601-1, 3.2rd Edition                                                                               |
|                               | ANSI / AAMIES60601-1                                                                                       |
|                               | CSA 22.2 No. 60601-1                                                                                       |
|                               | CE Mark (LVD)                                                                                              |
| EMC                           | IEC60601-1-2 Edition 4.1                                                                                   |
| Conduction Emission           | CISPR 11 Class B Group 1                                                                                   |
| Radiated Emission             | CISPR 11 Class B Group 1                                                                                   |
| Voltage Fluctuation & Flicker | EN61000-3-3                                                                                                |
| Harmonic Distortion           | EN61000-3-2 Class A                                                                                        |
| ESD                           | EN61000-4-2, 8kV contact, 15kV Air Discharge                                                               |
| EFT                           | EN61000-4-4, $\pm 2$ kV; repetition rate: 100kHz                                                           |
| SURGE                         | EN61000-4-5, line to line: $\pm 0.5$ kV, $\pm 1$ kV<br>line to earth: $\pm 0.5$ kV, $\pm 1$ kV, $\pm 2$ kV |
| DIP <sup>(1)</sup>            | EN61000-4-11                                                                                               |
| Conducted Immunity            | EN61000-4-6, Class A                                                                                       |
| Radiated Immunity             | EN61000-4-3, Class A                                                                                       |
| Magnetic Fields Immunity      | EN61000-4-8, Class A                                                                                       |

### PROTECTION

|                  |                                                |
|------------------|------------------------------------------------|
| Over shoot       | 5%                                             |
| Over-Voltage     | 110-150%, Latch off, Recycle input to recovery |
| Over-Temperature | Auto Recovery                                  |
| Over-Load        | 110~150%<br>(Hiccup Mode, Auto-Recovery)       |
| Short Circuit    | Hiccup Mode                                    |

### RELIABILITY & ENVIRONMENTAL REQUIREMENTS

|                       |                                                                           |
|-----------------------|---------------------------------------------------------------------------|
| Operating Temperature | 0°C to +50°C                                                              |
| Derating              | 1.67%/°C > 50°C, up to 70°C max, TBD                                      |
| Storage Temperature   | -40°C to +85°C                                                            |
| Operating Humidity    | 5% to 95% (non-condensing)                                                |
| Storage Humidity      | 5% to 95% (non-condensing)                                                |
| Operating Altitude    | 5000m                                                                     |
| Storage Altitude      | 5000m                                                                     |
| Cooling Method        | Forced air                                                                |
| Vibration             | 10-500Hz, 19.6m/s <sup>2</sup> (2G), 20minutes each along X, Y and Z axis |
| Shock                 | 294m/s <sup>2</sup> (30G), 11ms, 6 directions, 3 axis                     |

### DIMENSION & PACKING

|            |                                        |
|------------|----------------------------------------|
| Efficiency | 90%-92% typical@115/230 VAC, Full Load |
| Isolation  | 4000 VAC – Input to Output; 2xMOPP     |
|            | 1500 VAC – Input to earth; 1xMOPP      |
|            | 500 VAC – Output to earth; 1xMOPP      |
| MTBF       | TBD                                    |
| Weight     | 1.6kg                                  |
| Dimensions | 208x127x46mm                           |
|            | 8.2×5×1.81"inch                        |

(1) Power supply DIP voltage sag requirements table:

| Drop  | Time         | Criterion |
|-------|--------------|-----------|
| 0%Ut  | 0.5cycle     | A         |
| 0%Ut  | 1cycle       | B         |
| 70%Ut | 25/30 cycles | B         |
| 0%Ut  | 300cycles    | C         |

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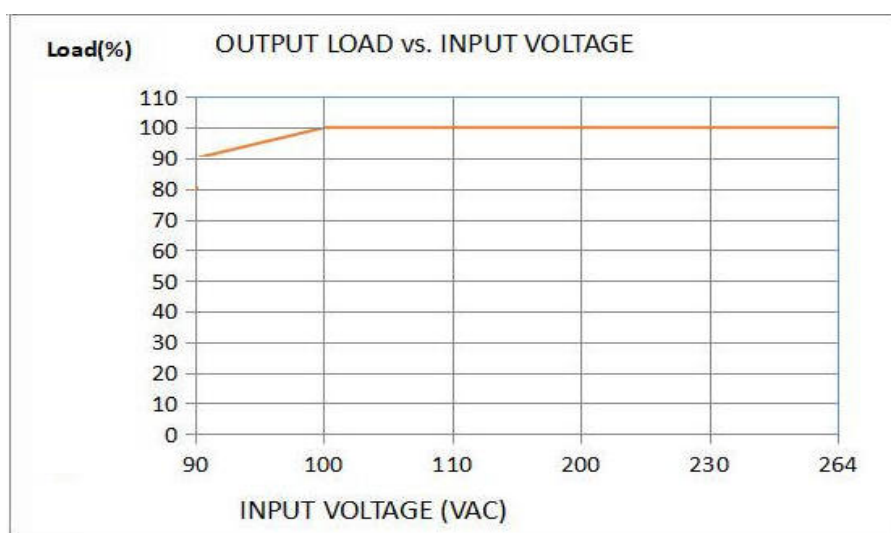
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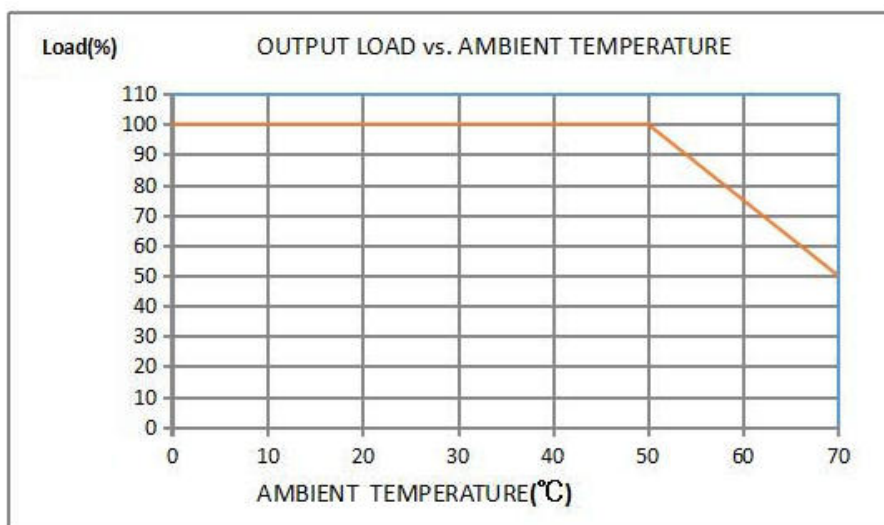
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### DERATING CURVE

#### OUTPUT POWER VS INPUT VOLTAGE



#### OUTPUT POWER VS AMBIENT TEMPERATURE



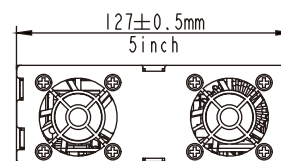
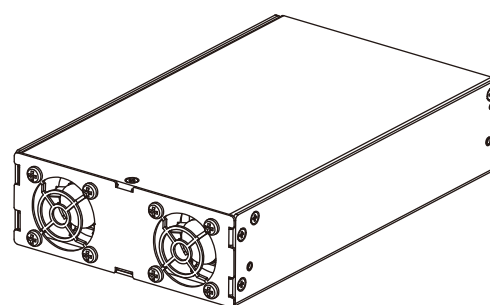
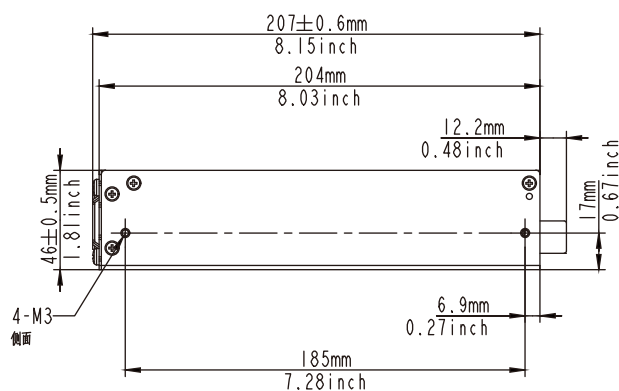
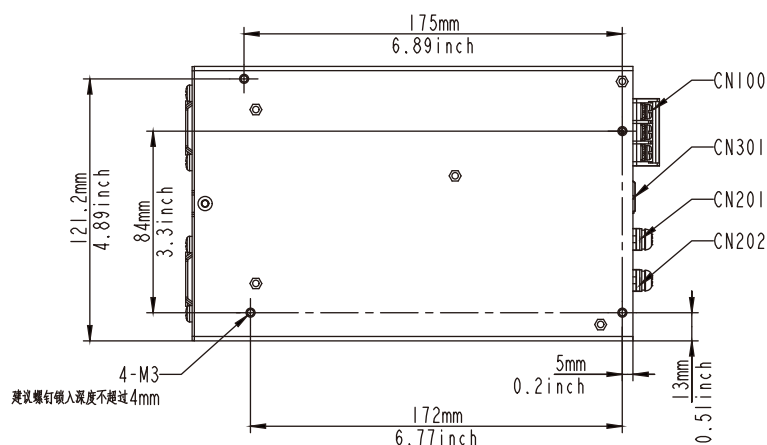
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### MECHANICAL AND CONNECTOR INFORMATION



|       | pin |             | Instuction                        | Terminal model                               | Matching terminals and plastic shell |
|-------|-----|-------------|-----------------------------------|----------------------------------------------|--------------------------------------|
| CN100 | 1   | Line        | Protected area                    | ANYTEK YK50A or DG48R-B-03P-13-30 A(H) OR EQ | M4 screw                             |
|       | 2   | PE          | AC input                          |                                              |                                      |
|       | 3   | Neutral     | AC input                          |                                              |                                      |
| CN201 | 1   | VOUT+       | Main output positive terminal     | Self-made Hardwares Welding terminal         | M5 screw                             |
| CN202 | 1   | VOUT-(DGND) | Main output positive terminal     |                                              |                                      |
| CN301 | 1,2 | N.C         |                                   | Molex 430450800 OR EQ                        | Molex 430250810 OR EQ                |
|       | 3   | DGND        | Signal reference ground           |                                              |                                      |
|       | 4   | PSON        | PSU control signal                |                                              |                                      |
|       | 5   | N.C         |                                   |                                              |                                      |
|       | 6   | AC_GOOD     | AC power good                     |                                              |                                      |
|       | 7   | DC_GOOD     | DC power good                     |                                              |                                      |
|       | 8   | 5Vsb        | 5V power output positive terminal |                                              |                                      |

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### GLOBAL OPERATION AND SERVICE



### MANUFACTURER

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### TECHNICAL SUPPORT

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