



Medical



### FEATURES AND BENEFITS

Meets UL/EN/IEC60601-1-2, 4th edition for EMC\*

Approved to EN/IEC/UL60601-1, 3rd edition with isolation levels which satisfy the 2 MOPP requirements

Meets DoE efficiency level VI requirements

- No load input power
- Average efficiency

Up to 90W of AC-DC power

Desktop Style Package

Meets EN55011/CISPR11, FCC Part 15.109 Class B conducted & radiated emissions, with 6db margin

E-cap life of >7 years

3 years warranty

IP22 rated enclosure

Note: \* Professional equipment only. Consult factory for Table 9 compliance information.

### MODEL SELECTION

| Model Number | Volts | Output Current | Output Power | Ripple & Noise <sup>1</sup> | Line Regulation | Load Regulation | Output Connector   | Overvoltage Trip Level                          |
|--------------|-------|----------------|--------------|-----------------------------|-----------------|-----------------|--|---|
| ME90A1251F01 | 12.0V | 7.50A          | 90W          | 120mV pk-pk                 | ±1%             | ±5%             | 6 pin Molex Type <sup>2</sup><br>2.5 x 5.5 x 9.5mm<br>Straight Barrel Type,<br>center positive | Class I Desktop,<br>IEC60320 C14<br>Receptacle  |
| ME90A1503F01 | 15.0V | 6.00A          | 90W          | 150mV pk-pk                 | ±1%             | ±5%             |  |   |
| ME90A1803F01 | 18.0V | 5.00A          | 90W          | 180mV pk-pk                 | ±1%             | ±5%             |  |   |
| ME90A2403F01 | 24.0V | 3.75A          | 90W          | 240mV pk-pk                 | ±1%             | ±5%             |  |   |
| ME90A1251N01 | 12.0V | 7.50A          | 90W          | 120mV pk-pk                 | ±1%             | ±5%             | 6 pin Molex Type <sup>2</sup><br>2.5 x 5.5 x 9.5mm<br>Straight Barrel Type,<br>center positive | Class II Desktop,<br>IEC60320 C8<br>Receptacle  |
| ME90A1503N01 | 15.0V | 6.00A          | 90W          | 150mV pk-pk                 | ±1%             | ±5%             |  |   |
| ME90A1803N01 | 18.0V | 5.00A          | 90W          | 180mV pk-pk                 | ±1%             | ±5%             |  |   |
| ME90A2403N01 | 24.0V | 3.75A          | 90W          | 240mV pk-pk                 | ±1%             | ±5%             |  |   |
| ME90A1251Q01 | 12.0V | 7.50A          | 90W          | 120mV pk-pk                 | ±1%             | ±5%             | 6 pin Molex Type <sup>2</sup><br>2.5 x 5.5 x 9.5mm<br>Straight Barrel Type,<br>center positive | Class II Desktop,<br>IEC60320 C18<br>Receptacle |
| ME90A1503Q01 | 15.0V | 6.00A          | 90W          | 150mV pk-pk                 | ±1%             | ±5%             |  |   |
| ME90A1803Q01 | 18.0V | 5.00A          | 90W          | 180mV pk-pk                 | ±1%             | ±5%             |  |   |
| ME90A2403Q01 | 24.0V | 3.75A          | 90W          | 240mV pk-pk                 | ±1%             | ±5%             |  |   |

Notes : 1. Measured at the output connector, with noise probe directly across output and load terminated with 0.1µF ceramic and 10µF low ESR capacitors.  
2. Molex p/n 39-01-2060 or equivalent. See outline drawing for pinout information.  
3. For Input Class I models: For AC GND connected to output common (-), insert a "B" in the part number where the "A" is located (ME90B1251F01).

### INPUT

|   |   |
|---|---|
| AC Input                                | 100-240Vac, ±10%, 47-63Hz, 1Ø   |
| Input Current                           | 115Vac: 2.0A, 230Vac: 1.0A  |
| Inrush Current                          | 264Vac, cold start: will not exceed 60A                                   |
| Input Fuses                             | F1, F2: 3.15A, 250Vac fuses (line & neutral lines) provided on all models |
| Earth Leakage Current (Input to Ground) | <500µA@264Vac, 60Hz, NC<br><1mA@264Vac, 60Hz, SFC                         |
| Efficiency                              | >88%, typical   |
| No Load Input Power                     | <0.210W (meets DoE efficiency level VI requirements)                      |



### OUTPUT

|   |   |
|---|---|
| Hold-Up Time                              | 20mS min., at full Load, 100Vac input   |
| Turn On Time                              | Less than 1 sec @115Vac, full load  |
| Patient Leakage Current (Output to Earth) | <100 $\mu$ A@264Vac, 60Hz, NC<br><500 $\mu$ A@264Vac, 60Hz, SFC   |
| Output Power                              | 90W continuous - See models chart for specific voltage model ratings  |
| Output Voltage                            | See models chart on pg 1  |
| Ripple and Noise                          | See models chart on pg 1  |
| Transient Response                        | 500 $\mu$ s response time for return to within 0.5% of final value for any 50% load step over the range of 5% to 100% of rated load, $\Delta i/\Delta t < 0.2A/\mu s$ . Max. voltage deviation is +/-3.5% |
| Regulation                                | See models chart on pg 1  |

### PROTECTION

|                            |  |
|----------------------------|--|
| Overtemperature Protection | Will shutdown upon an overtemperature condition, auto-recovery |
| Overload Protection        | 130 to 180% of rating, Hiccup Mode                             |
| Short Circuit Protection   | Hiccup Mode, auto recovery                                     |
| Overvoltage Protection     | 130 to 150% of output voltage, hiccup mode                     |
| Drop Test                  | 1.4m from table top to wooden platform, 4 faces                |

### ISOLATION SPECIFICATION

|           |   |
|-----------|---|
| Isolation | Input - Output: 2 MOPP<br>Input - Ground: 1 MOPP<br>Output - Ground: 1 MOPP |
|-----------|---|

### SAFETY

|                  |  |
|------------------|--|
| Safety Standards | EN/IEC/UL60601-1, 3rd edition  |
| Shock            | Operating: Half-sine, 20gpk, 10mS, 3 axes, 6 shocks total<br>Non-Operating: Half-sine waveform, impact acceleration of 100G, Pulse duration of 6mS, Number of shocks: 3 for each of the three axis |

### RELIABILITY

|            |   |
|------------|---|
| MTBF       | >2,50,000 hours, Full load, 110 & 220Vac input, 25°C amb, per Telcordia 332 Issue 6   |
| E-Cap Life | >7 year life based on calculations at 115Vac/60Hz & 230Vac/50Hz, ambient 25°C at 24 hrs per day, 365 days/year, 6 power up cycles per day. (80% load on 5V, 12V models) |

### ENVIRONMENT

|                       |   |
|-----------------------|---|
| Operating Temperature | -20°C to +50°C. Derate above 40°C<br>Start Up at -40°C, full load, (warmup period before all parameters are within published specifications)  |
| Storage Temperature   | -40°C to +85°C  |
| Altitude              | Operating: to 5000m.<br>Non-operating: -500 to 40,000 ft  |
| Relative Humidity     | 5% to 95%, non-condensing   |
| Vibration             | Operating: 0.003g/Hz, 1.5grms overall, 3 axes, 10 min/axis, 1-500Hz<br>Non-Oper.: random waveform, 3 minutes per axis, 3 axes and Sine waveform, Vib. frequency/acceleration: 10-500Hz/1g, sweep rate of 1 octave / minutes, Vibration time of 10 sweeps / axes, 3 axes |
| Dimensions            | W: 2.58" x L: 5.9" x H: 1.34"<br>W: 65.5mm x L: 150.5Mm x H: 34mm   |
| Weight                | 600g  |

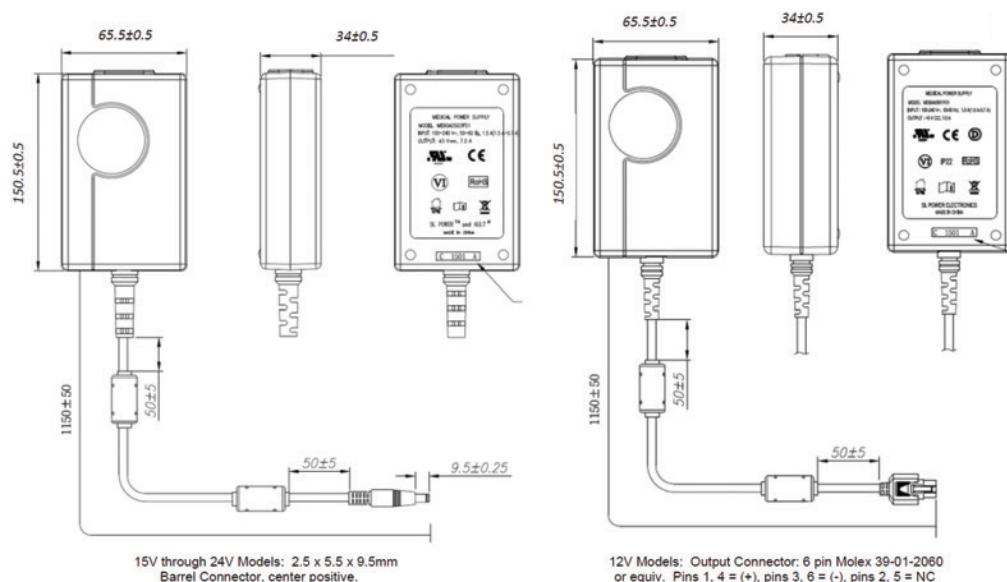


### EMI/EMC COMPLIANCE

|   |   |
|---|---|
| Conducted Emissions   | IEC60601-1-2/EN55011/CISPR11 Class B, FCC Part 15, Class B, 6db margin typ., at 115 and 230Vac  |
| Radiated Emissions  | IEC60601-1-2/EN55011/CISPR11 Class B, FCC Part 15, Class B, 3db margin typ., at 115 and 230Vac  |
| Common Mode Noise   | High Frequency (100kHz-20MHz): <40mA pk-pk  |
| Electro-Static Discharge (ESD) Immunity on Power ports      | EN55024/IEC61000-4-2, Level 4: +/- 8kV contact, +/- 15kV air, Criteria A<br>IEC60601-1-2, 4th Edition, Table 4  |
| Radiated RF EM Fields Susceptibility                        | EN55024/EN61000-4-3, 10V/m, 80MHz-2.7GHz, 80% AM at 1kHz<br>IEC60601-1-2, 4th Edition, Table 4  |
| Electrical Fast Transients (EFT) /Bursts                    | EN55024/IEC61000-4-4, Level 4, +/- 4kV, 100Khz rep rate, 40A, Criteria A<br>IEC60601-1-2, 4th Edition, Table 5  |
| Surges, Line to Line (Diff Mode) and Line to GND (CMN Mode) | EN55024/IEC61000-4-5, Level 4, +/-2kV DM, +/-4kV CM, Criteria A<br>Surpasses IEC60601-1-2, 4th Edition requirements   |
| Conducted Disturbances induced by RF Fields                 | EN55024/IEC61000-4-6, 3.6V/m – Level 4, 0.15 to 80Mhz; and 12V/m) in ISM and amateur radio bands between 0.15Mhz and 80Mhz, 80% AM at 1KHz<br>IEC60601-1-2, 4th Edition, Table 5  |
| Rated Power frequency magnetic fields                       | EN55024/IEC1000-4-8, Level 4: 30A/m, 50/60 Hz<br>IEC60601-1-2, 4th Edition, Table 4   |
| Voltage Interruptions, Dips, Sags & Surges                  | EN55024/IECEN61000-4-11: --100% dip for 10mS, at 0, 45, 90, 135, 180, 225, 270 and 315 degrees, Criteria A;<br>100% dip for 20mS, Criteria A<br>--100% dip for 500mS (250/300 cycles), Criteria B<br>--60% dip for 100mS, Criteria B<br>--30% dip for 500mS, Criteria A<br>IEC60601-1-2, 4th Edition, Table 5 |
| Harmonic Current Emissions                                  | EN55011/EN61000-3-2, Class A  |
| Flicker Test  | EN61000-3-3   |

**Notes :** All specifications are typical at nominal input, full load, at 25°C ambient unless noted. Consult factory for information regarding testing for or usage under special environments.  
Performance criteria are based are defined as following:  
A – Normal performance during and after the test. B – Temporary degradation, self-recoverable.  
C – Temporary degradation, operator intervention required to recover the operation. D – Permanent damage.

### MECHANICAL DRAWING






**Notes :** 1) All dimensions in mm.  
2) 2.5mm barrel connector shown, other options are available.  
3) The unit should not be covered or enclosed to protect against excessive case temperature rise.



### CONNECTOR INFORMATION

Standard models include a 2.5 x 5.5 x 9.5mm straight barrel type connector (Ault #3), center positive. Other standard options are listed below. The "03" in the standard model number is replaced by the applicable digits below:

| Connector No. | Description   | Connector No. | Description  |
|---------------|---|---------------|--|
| 02            | 2.1 x 5.5 x 9.5 mm straight barrel plug - Center Positive                      | 45            | 902.5 x 5.5 x 9.5 mm straight barrel plug, locking - Center positive                  |
| 03            | 2.5 x 5.5 x 9.5 mm straight barrel plug - Center Positive (Standard models)    | 48            | 3 pin Snap n Lock, Kycon Kpp-3P or equivalent (Pin 1 = (+), pin 2 =(-))               |
| 12            | 5 pin DIN-180 male connector (Pins 3, 5 = (+), pins 1, 2, 4 = (-))             | 49            | 4 pin Snap n Lock, Kycon Kpp-4P or equivalent (Pins 1, 3 = (+), pins 2, 4 = (-))      |
| 22            | 6 pin DIN male connector (Pins 1, 2 = (+), pins 4, 5 = (-))                    | 51            | 6 pin Minifit - Molex 39-01-2060 or equivalent (Pins 1, 4 = (+), pins 3, 6 = (-))     |
| 23            | 8 pin DIN male connector (Pins 3, 7 = (+), pins 1, 4, 6, 8 = (-), shell = FG)  | 65            | Stripped and Tinned Leads   |
| 32            | 9 pin "D" type, female (Pins 8 = (+), pins 5=(-), all others=NC)               | 70            | 2.1 x 5.5 x 11 mm right angle barrel plug (high retention) Center positive            |
| 33            | 2.5 x 5.5 x 12.5 mm straight barrel plug - Center positive                   | 71            | 2.5 x 5.5 x 11 mm right angle barrel plug (high retention) Center positive          |
| 40            | 2.1 x 5.5 x 9.5 mm right angle barrel plug (high retention) Center positive  | 72            | 2.1 x 5.5 x 9.5 mm straight barrel plug (high retention, no spark) Center positive  |
| 41            | 2.5 x 5.5 x 9.5 mm right angle barrel plug (high retention) Center positive  | 73            | 2.5 x 5.5 x 9.5 mm straight barrel plug (high retention, no spark) Center positive  |
| 42            | 2.1 x 5.5 x 11 mm straight barrel plug (high retention) Center positive      | 74            | EIAJ#5 style connector Central positive   |
| 43            | 2.1 x 5.5 x 11 mm straight barrel plug (high retention) Center positive      | 99            | Micro USB   |
| 44            | 2.1 x 5.5 x 9.5 mm straight barrel plug, locking - Center positive           |               |  |

These are the most common standard connectors. SL Power has the capability to incorporate any non-standard output connector. All output connectors are limited by wattage range and application type. The SL Power applications team is available to provide professional support and can be contacted here: [info@slpower.com](mailto:info@slpower.com).