ME240 Family

240W Single Output
Medical Series

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 240W of AC-DC Power
- Universal Input Range 90 - 264Vac
- IP22 Rated Enclosure
- Class I and Class II input versions available
- Meets EN55011/CISPR11, FCC Part 15.109 Class B Conducted & Radiated Emissions, with 6db Margin
- E-Cap Life of >7 Years
- 3 Years Warranty

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

MODEL SELECTION

Model Number	Volts	Output Current	Output Power	Ripple & Noise[1]	Line Regulation	Load Regulation	Output Connector	Input Configuration
ME240A1251F01	12.0V	16.6A	200W	120mV pk-pk	±1%	±5%	6 pin Molex type[2]	Class I Desktop, IEC60320 C14 receptacle (See note 4 for class II input)
ME240A2451F01	24.0V	10.0A	240W	240mV pk-pk	±1%	±5%		
ME240A2851F01	28.0V	8.60A	240W	280mV pk-pk	±1%	±5%		
ME240A4851F01	48.0V	5.00A	240W	480mV pk-pk	±1%	±5%		

Note: 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 (ME240B1251F01).
4. Change "F" in model number to "N" for class II (ungrounded) input versions, via C-8 inlet.

INPUT

AC Input	100-240VAC, ±10%, 47-63Hz, 1Ø
Input Current	115VAC: 2.4A, 23 VAC: 1.2A
Inrush Current	264VAC, cold start: will not exceed 60A
Input Fuses	F1, F2: 3.5A, 250VAC fuses (line & neutral lines) provided on all models
Earth Leakage Current (Input to Ground)	Input-GND: <500µA @ 264VAC, 60Hz, NC Output-GND: <4mA @ 264VAC, 60Hz, NC
Efficiency	>88%, Typical
No Load Input Power	<0.210W (exceeds DoE efficiency Level VI requirements, meets EU CoC Tier 2 requirements)

OUTPUT

Hold-Up Time	20ms at full load, 100VAC input
Turn On Time	Less than 1 sec @115VAC, Full load
Output Power	240W continuous - See models chart for specific voltage model ratings
Output Voltage	See models chart
Ripple and Noise	See models chart
Transient Response	500µS 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, Δi/Δt< 0.2A/µS Max voltage deviation is +/-3.5%
Regulation	See models chart

RELIABILITY

MTBF	>2,50,000 hours, Full load, 110 & 220VAC input, 25°C amb., per Telcordia 332 Issue 6
E-Cap Life	>7 years 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

ISOLATION SPECIFICATION

Isolation	Input-Output: 2 MOPP Input-Ground: 1 MOPP (Class I only) Output-Ground: 1 MOPP (Class I only)

ENVIRONMENT

Operating Temperature	-20°C to +50°C. Derate above 40°C Start up at -40°C, Full load, (warmup period before all parameters are within published specifications)
Storage Temperature	See derating curves
Altitude	Operating: to 3,000m Non-operating: -500 to 40,000 ft
Relative Humidity	5% to 95%, Non-condensing
Vibration	Operating: 0.003g/Hz, 1.5grms overall, 3 axis, 10 min/axis, 5-500Hz Non-operating: Random waveform, 3 minutes per axis, 3 axis and Sine waveform, Vib. Frequency/Acceleration: 10-500Hz/1g, sweep rate of 1 octave/minutes, Vibration time of 10 sweeps/axis, 3 axis
Dimensions	W: 8.4" x L: 4.25" x H: 1.85" W: 214mm x L: 108mm x H: 47mm
Weight	700g

SAFETY

Safety Standards	EN/IEC/UL60601-1-1, 3rd edition
Shock	Operating: Half-sine, 20gpk, 10ms, 3 axis, 6 shocks total Non-operating: Half-sine waveform, Impact acceleration of 50G, Pulse duration of 6ms Number of shocks: 3 for each of the three axis

PROTECTION

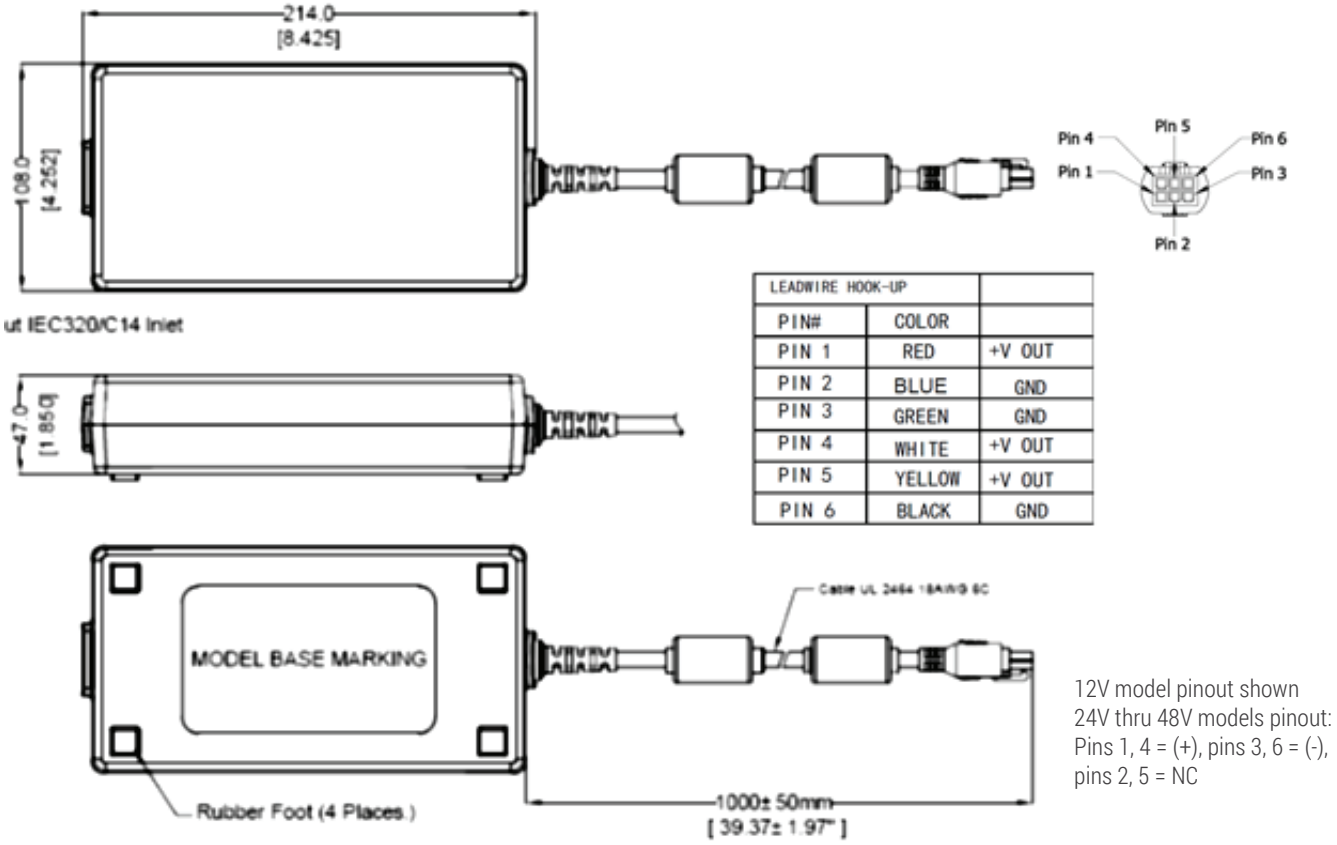
Overtemperature Protection	Will shutdown upon an overtemperature condition Auto-recovery
Overload Protection	115 to 160% of rating, Hiccup mode
Short Circuit Protection	Hiccup mode, Auto-recovery
Overvoltage Protection	110 to 130% of output voltage (max 60V on 48V model) Hiccup mode

EMI/EMC COMPLIANCE

Conducted Emissions	EN55011/CISPR11 Class B, FCC Part 15.107, Class B: 6db margin typ, at 115 and 230VAC
Radiated Emissions	EN55011/CISPR11 Class B, FCC Part 15.109, Class B: 3db margin typ, at 115 and 230VAC
Common Mode Noise	High frequency (100kHz-20MHz): <50mA pk-pk
Electro-Static Discharge (ESD) Immunity on Power Ports	EN55024/IEC61000-4-2, Level 4: +/- 8kV contact, +/- 15kV air, Criteria A 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 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 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 Surpasses IEC60601-1-2, 4th edition requirements
Conducted Disturbances Induced by RF Fields	EN55022/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 IEC60601-1-2, 4th edition, Table 5
Rated Power Frequency Magnetic Fields	EN55024/IEC1000-4-8, Level 4: 30A/m, 50/60 Hz 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 --100% dip for 20ms, Criteria A --100% dip for 5000ms (250/300 cycles), Criteria B --60% dip for 100ms, Criteria B --30% dip for 500ms, Criteria A IEC60601-1-2, 4th Edition, Table 5
Harmonic Current Emissions	EN55011/EN61000-3-2, Class A
Flicker Test	EN61000-3-3

Note: 1. Consult Factory for Table 9 compliance information.
2. Performance criteria are based on EN55024. According to the standards, performance criteria 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



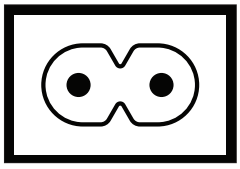
LEADWIRE HOOK-UP		
PIN#	COLOR	
PIN 1	RED	+V OUT
PIN 2	BLUE	GND
PIN 3	GREEN	GND
PIN 4	WHITE	+V OUT
PIN 5	YELLOW	+V OUT
PIN 6	BLACK	GND

12V model pinout shown
24V thru 48V models pinout:
Pins 1, 4 = (+), pins 3, 6 = (-),
pins 2, 5 = NC

Note: 1. All dimensions in mm.
2. The unit should not be covered or enclosed to protect against excessive case temperature rise.

INPUT CONFIGURATION

Input Receptacle



IEC320 C8 - Class II
Ungrounded (N)

CONNECTOR INFORMATION

Connector No.	Description	Connector No.	Description
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 
48	3 pin Snap n Lock, Kycon Kpp-3P or equivalent (Pin 1 = (+), pin 2 =(-)) 		

Check with SL Power for suitability of specific connectors with certain models. Other connector options or different pinouts will require a modified model.