

SL POWER

ME240 Series

240 Watts Single Output External Power Adapter
Medical Grade



Medical



Advanced Energy's SL Power ME240 series of desktop AC-DC external power adapter comprises four output models. All models feature medical safety approvals and accept a universal input of 90 to 264 VAC. ME240 series power adapters provide up to 240 Watts of output power with IP22 rated enclosure and are ideal for applications that are used in environments where AC mains power may be noisy or unstable and equipment shutdown is not an option.

AT A GLANCE

Total Power

240 Watts

Input Voltage

90 to 264 VAC

of Outputs

Single

SPECIAL FEATURES

- Approved to EN/IEC/UL60601-1 edition 3.2 with isolation levels which satisfy the 2 MOPP requirements
- Desktop Style Package
- Up to 240 W of AC-DC Power
- IP22 Rated Enclosure
- Meets EN55011/CISPR11, FCC Part 15.109 Class B Conducted & Radiated Emissions, with 6db Margin
- Meets UL/EN/IEC60601-1-2, 4th edition for EMC
- >7 Years E-Cap Life
- >250,000 Hours MTBF
- 3 Years Warranty
- Meets DoE Efficiency Level VI Requirements
- RoHS Compliant

SAFETY

- IEC/EN/UL60601-1 edition 3.2
- CE Mark
- UKCA Mark



ELECTRICAL SPECIFICATIONS

Input	
Input range	100 to 240 VAC, $\pm 10\%$, 47 to 63 Hz, 1Ø
Input current	2.4 A @ 115 VAC, 1.2 A @ 230 VAC
Inrush current	60 A max., cold start @ 264 VAC input
Input fuses	F1, F2: 3.5 A, 250 VAC fuses (line & neutral lines) provided on all models
Leakage current Input to GND	<500 μ A @ 264 VAC, 60 Hz, NC
Efficiency	88%, Typical
Common Mode Noise	High frequency (100kHz to 20MHz); <50mA pk-pk
No load input power	<0.21 W per DoE Efficiency Level VI Requirements
Output	
Output voltage	See models chart on page 5
Output power	240 W continuous - See models chart for specific voltage model ratings
Turn on time	Less than 1 sec @ 115 VAC, full load
Hold-up time	20 mS min., at full load, 100 VAC input
Ripple and noise	See models chart on page 5
Transient response	500 μ 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, $\Delta i/\Delta t < 0.2$ A/ μ S. Max. voltage deviation is $\pm 3.5\%$
Regulation	See models chart on page 5
Reliability	
MTBF	>250,000 hours, full load, 110 VAC & 220 VAC input, 25°C amb., per Telcordia 332 Issue 6, Stress Method
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
Protection	
Overtemperature protection	Will shutdown upon an overtemperature condition, auto-recovery
Overload protection	115% to 160% of rating, hiccup mode
Overvoltage protection	110% to 130% of output voltage (60V max on 48V model), hiccup mode
Short circuit protection	Hiccup mode, auto-recovery
Safety	
Safety standards	Approved to EN/IEC/UL60601-1 edition 3.2
Isolation	
Isolation	Input to Output: 2 x MOPP Input to Ground: 1 x MOPP Output to Ground: 1 x MOPP

Note:

All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

EMI/EMC COMPLIANCE

Conducted emissions	EN55011/CISPR11 Class B, FCC Part 15.107, Class B, 6db margin typ., at 115 VAC and 230VAC
Radiated emissions	EN55011/CISPR11 Class B, FCC Part 15.109, Class B, 3db margin typ., at 115 VAC and 230VAC
Electro-static discharge (ESD) immunity on power ports	EN55024/IEC61000-4-2, Level 4: ± 8 kV contact, ± 15 kV air, Criteria A
Radiated RF EM fields susceptibility	EN55022/EN61000-4-3, 10 V/m, 80 MHz to 2.7 GHz, 80% AM at 1 kHz
Electrical Fast Transients (EFT)/Burst immunity	EN55024/IEC61000-4-4, Level 4, ± 4 kV, 100 kHz rep rate, 40 A, Criteria A
Surges, line to line (Diff mode) and line to ground (CMN mode)	EN55024/IEC61000-4-5, Level 4, ± 2 kV DM, ± 4 kV CM, Criteria A
Conducted disturbances induced by RF fields	EN55022/IEC61000-4-6, 3.6V/m - Level 4, 0.15 MHz to 80 MHz; and 12 V/m in ISM and amateur radio bands between 0.15 MHz and 80 MHz, 80% AM at 1 kHz
Rated power frequency magnetic fields	EN55024/IEC1000-4-8, Level 4: 30 A/m, 50 Hz / 60 Hz
Voltage interruptions, Dips, Sags & Surges	EN55024/IEC/EN61000-4-11: --100% dip for 10mS, at 0, 45, 90, 135, 180, 225, 270 and 315 degrees, Criteria A --100% dip for 20 mS, Criteria A --100% dip for 5000 mS (250/300 cycles), Criteria B --60% dip for 100 mS, Criteria B --30% dip for 500 mS, Criteria A
Harmonic current emissions	EN55011/EN61000-3-2, Class A
Flicker test	EN61000-3-3

Note:

All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

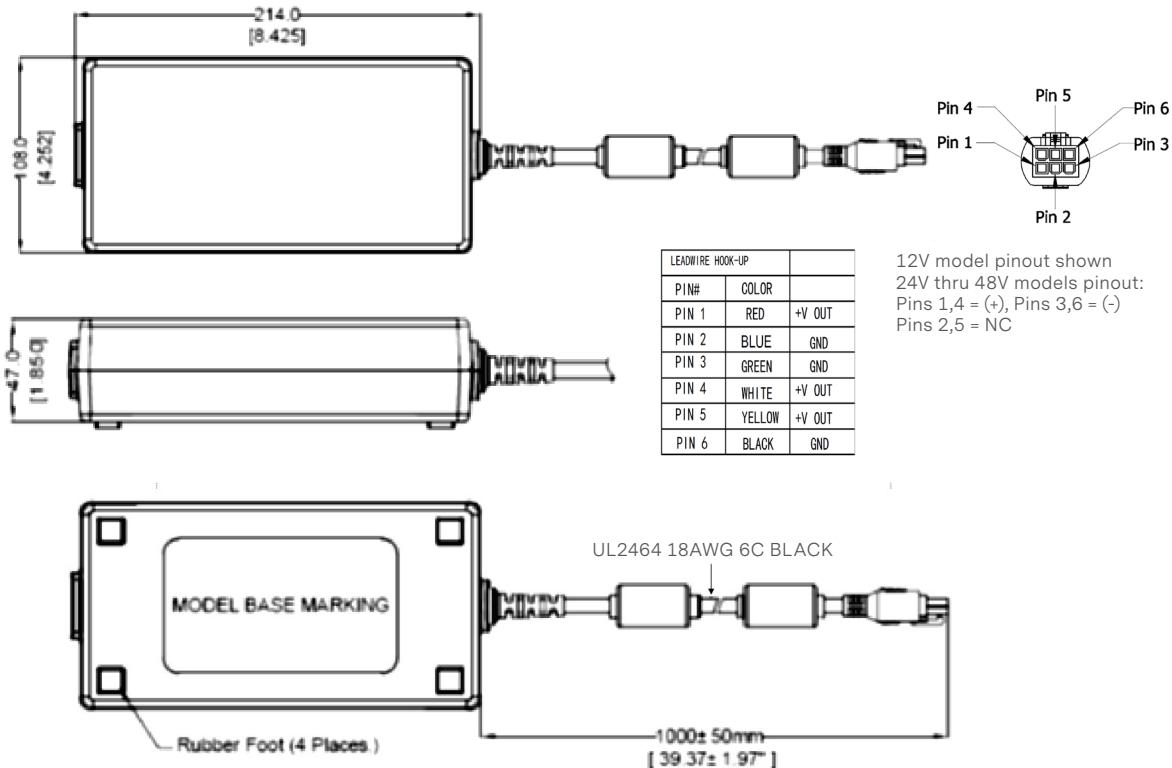
ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-20°C to +70°C. Derate above 40°C Start up at -30°C, full load (warm-up period before all parameters are within published specifications)
Storage temperature	-40°C to +85°C
Relative humidity	5% to 95%, non-condensing
Weight	700 grams
Altitude	Operating: to 3000 m Non-operating: -500 ft to 40000 ft
Vibration	Operating: 0.003 g/Hz, 1.5 grams overall, 3 axes, 10 min/axis, 5 Hz to 500 Hz Non-Operating: random waveform, 3 minutes/axis, 3 axes and sine waveform, Vib. frequency/acceleration: 10Hz to 500 Hz/1g, sweep rate of 1 oct/minutes, Vibration time of 10 sweeps/axes, 3 axes
Shock	Operating: Half-sine, 20gpk, 10ms, 3 axes, 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
Dimensions (W x L x H)	4.25" x 8.4" x 1.85" (108mm x 214mm x 47mm)

Note:

All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

MECHANICAL DRAWING

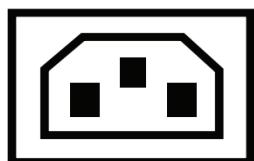
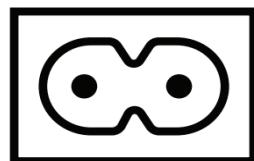


Notes:

1. All dimensions in mm.
2. The unit should not be covered or enclosed to protect against excessive case temperature rise.
3. Pins 4,5,6 are located closest to the locking tab.

LEADWIRE HOOK-UP		
PIN #	FUNCTION	COLOR
1	+V	RED
2	NC	-
3	COMMON	BLACK
4	+V	WHITE
5	NC	-
6	COMMON	GREEN
	BRAID	FG4

INPUT CONFIGURATION

IEC320 C14 - Class I
Grounded (F)IEC320 C8 - Class II
Ungrounded (N)

ORDERING INFORMATION

Model Number	Volts	Output Current	Output Power	Ripple & Noise ¹	Line Regulation	Load Regulation	Output Connector	Input Configuration
ME240A1251F01	12 V	16.6 A	200 W	120mV pk-pk	± 1%	± 5%	6Pin Molex Type ²	Class I Desktop, IEC60320 C14 Receptacle
ME240A2451F01	24 V	10.0 A	240 W	240mV pk-pk	± 1%	± 5%		
ME240A2851F01	28 V	8.60 A	240 W	280mV pk-pk	± 1%	± 5%		
ME240A4851F01	48 V	5.00 A	240 W	480mV pk-pk	± 1%	± 5%		

Notes:

1. Measured at the output connector, with noise probe directly across output and load terminated with 0.1 μ F ceramic and 10 μ F 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. All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

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
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 = (-))		

Note: Check with Advanced Energy's SL Power for suitability of specific connectors with certain models. Other connector options or different pinouts will require a modified model.



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ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

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