SL POWER
ME60 Series

60 Watts Single Output External Power Adapter
Medical Grade

Medical

Advanced Energy's SL Power ME60 series of desktop AC-DC external power adapter comprises seven output models. All models feature medical safety approvals and accept a universal input of 90 to 264 VAC. ME60 series power adapters provide up to 60 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

60 Watts

Input Voltage

90 to 264 VAC

# of Outputs

Single

SPECIAL FEATURES

- A high performance power supply designed for Medical applications
- Great EMI, EMC, and noise performance ensures easy integration into the end equipment
- Up to 60 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

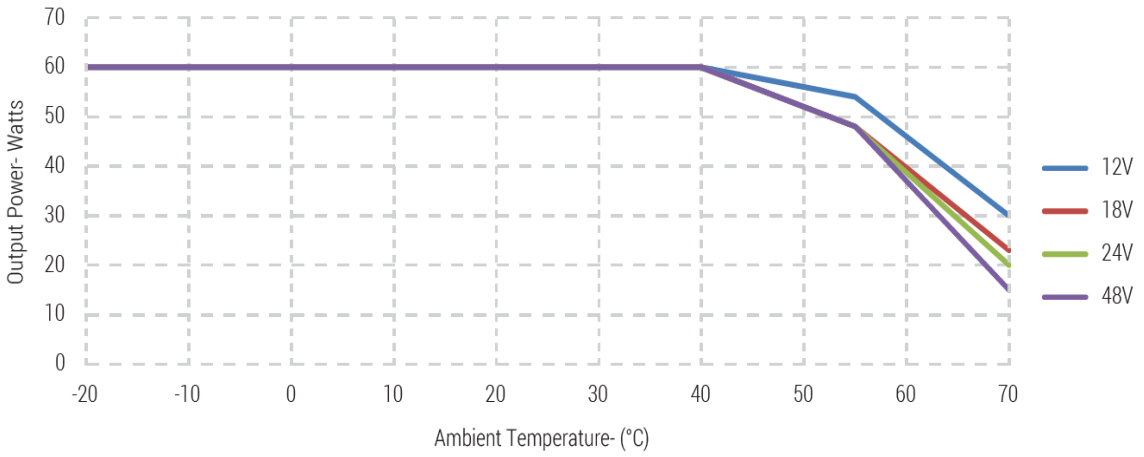
- IEC/EN/UL60601-1, 3rd edition
- CE Mark
- UKCA Mark

ELECTRICAL SPECIFICATIONS

Input	
Input range	100 to 240 VAC, ±10%, 47 to 63 Hz, 1Ø
Input current	1.5 A @ 115 VAC, 0.7 A @ 240 VAC
Inrush current	40 A max, cold start @ 264 VAC input
Input fuses	F1, F2: 2 A, 250 VAC fuses (line & neutral lines) provided on all models
Leakage current Input to GND	<500 µA @ 264 VAC, 60 Hz, NC
Efficiency	88%, Typical
Common Mode Noise	High frequency (100kHz to 20MHz); <40mA 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	60 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
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	130% to 180% of rating, hiccup mode
Overvoltage protection	130% to 150% of output voltage(max. 60V on 48V model), hiccup mode
Short circuit protection	Hiccup mode, auto-recovery
Safety	
Safety standards	Approved to EN/IEC/UL60601-1, 3rd edition
Drop test	1.4 m from table top to wooden platform, 4 faces
Isolation	
Isolation	Input to Output: 4000 VAC Input to Ground: 1500 VAC Output to Ground: 1500 VAC

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

DERATING CHART



EMI/EMC COMPLIANCE

Conducted emissions	IEC60601-1-2/EN55011/CISPR11 Class B, FCC Part 15, Class B, 6db margin typ., at 115 VAC and 230VAC
Radiated emissions	IEC60601-1-2/EN55011/CISPR11 Class B, FCC Part 15, 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
Flicker test	EN61000-3-3

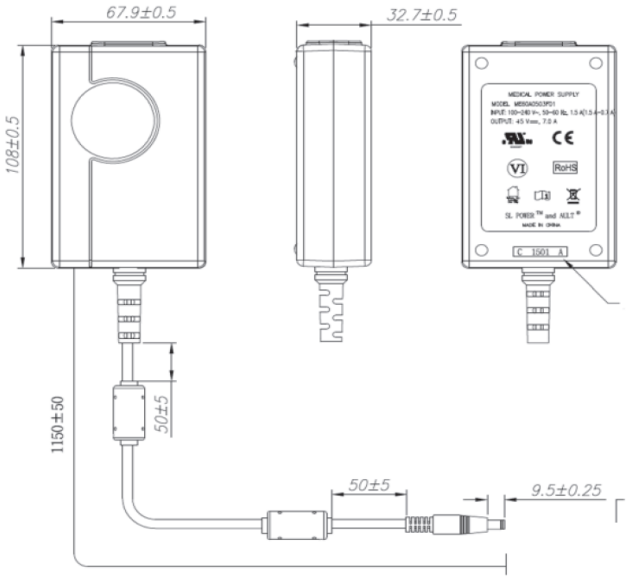
Note:
All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

ENVIRONMENTAL SPECIFICATIONS

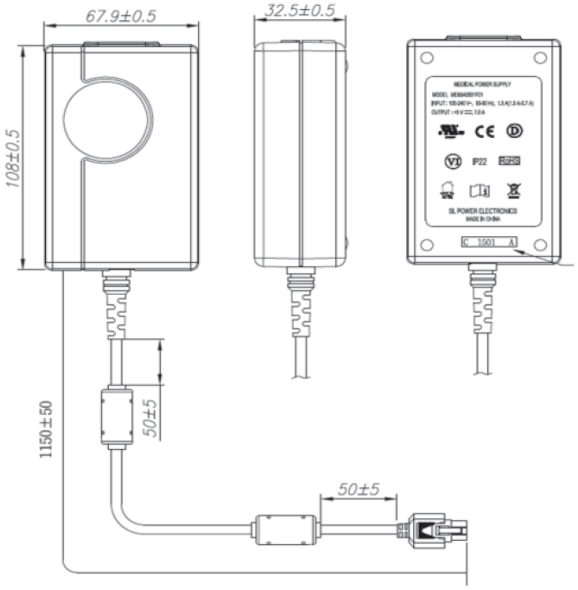
Operating temperature	-20°C to +70°C Start up at -40°C, full load (warmup period before all parameters are within published specifications)
Storage temperature	-40°C to +85°C
Relative humidity	5% to 95%, non-condensing
Weight	400 grams
Temperature derating	See derating chart
Altitude	Operating: to 5000 m Non-operating: -500 ft to 40000 ft
Vibration	Operating: 0.003 g/Hz, 1.5 grams overall, 3 axes, 10 min/axis, 1 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 100G, Pulse duration of 6ms Number of shocks: 3 for each of the three axis

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

MECHANICAL DRAWING



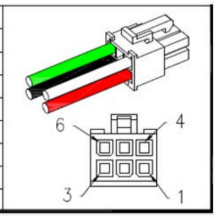
9V through 48V Models: 2.5mm x 5.5mm x 9.5mm or equiv, Barrel Connector, center positive[2]



5V Models Output Connector: 6 pin Molex 39-01-2060 or equiv. Pins 1,4 = (+), Pins 3,6 = (-), Pins 2,5 = NC[2]

Notes:
1. All dimensions in mm.
2. Other options are available.
3. Cable length on 12V through 48V models is 1500mm, nominal.
4. Pins 4,5,6 are located closest to the locking tab.
5. The unit should not be covered or enclosed to protect against excessive case temperature rise.

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



ORDERING INFORMATION

Model Number	Volts	Output Current	Output Power	Ripple & Noise[1]	Line Regulation	Load Regulation	Output Connector	Output Cable	Input Configuration
ME60A0551F01	5.0 V	7.00 A	35 W	75mV pk-pk	± 1%	± 5%	6 Pin Molex Type[2] 2.5 x 5.5 x 9.5mm Straight Barrel Type, Center Positive	1150mm, #18AWG 9V:1150mm 18AWG All others: 1500mm, #18AWG	Class I Desktop, IEC60320 C14 Receptacle
ME60A0903F01	9.0 V	6.00 A	56 W	90mV pk-pk	± 1%	± 5%			
ME60A1203F01	12.0 V	5.00 A	60 W	120mV pk-pk	± 1%	± 5%			
ME60A1503F01	15.0 V	4.00 A	60 W	150mV pk-pk	± 1%	± 5%			
ME60A1803F01	18.0 V	3.30 A	60 W	180mV pk-pk	± 1%	± 5%			
ME60A2403F01	24.0 V	2.70 A	60 W	240mV pk-pk	± 1%	± 5%			
ME60A4803F01	48.0 V	1.35 A	60 W	480mV pk-pk	± 1%	± 5%			
ME60A0551N01	5.0 V	7.00 A	35 W	75mV pk-pk	± 1%	± 5%	6 Pin Molex Type[2] 2.5 x 5.5 x 9.5mm Straight Barrel Type, Center Positive	1150mm, #18AWG 9V:1150mm 18AWG All others: 1500mm, #18AWG	Class II Desktop, IEC60320 C8 Receptacle
ME60A0903N01	9.0 V	6.00 A	56 W	90mV pk-pk	± 1%	± 5%			
ME60A1203N01	12.0 V	5.00 A	60 W	120mV pk-pk	± 1%	± 5%			
ME60A1503N01	15.0 V	4.00 A	60 W	150mV pk-pk	± 1%	± 5%			
ME60A1803N01	18.0 V	3.30 A	60 W	180mV pk-pk	± 1%	± 5%			
ME60A2403N01	24.0 V	2.70 A	60 W	240mV pk-pk	± 1%	± 5%			
ME60A4803N01	48.0 V	1.35 A	60 W	480mV pk-pk	± 1%	± 5%			
ME60A0551Q01	5.0 V	7.00 A	35 W	75mV pk-pk	± 1%	± 5%	6 Pin Molex Type[2] 2.5 x 5.5 x 9.5mm Straight Barrel Type, Center Positive	1150mm, #18AWG 9V:1150mm 18AWG All others: 1500mm, #18AWG	Class II Desktop, IEC60320 C18 Receptacle
ME60A0903Q01	9.0 V	6.00 A	56 W	90mV pk-pk	± 1%	± 5%			
ME60A1203Q01	12.0 V	5.00 A	60 W	120mV pk-pk	± 1%	± 5%			
ME60A1503Q01	15.0 V	4.00 A	60 W	150mV pk-pk	± 1%	± 5%			
ME60A1803Q01	18.0 V	3.30 A	60 W	180mV pk-pk	± 1%	± 5%			
ME60A2403Q01	24.0 V	2.70 A	60 W	240mV pk-pk	± 1%	± 5%			
ME60A4803Q01	48.0 V	1.35 A	60 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 µF ceramic and 10 µF low ESR capacitors. For 5 V models, values listed are typical 100 mV pk-pk maximum with 0.1 µF ceramic and 47 µF low ESR capacitors used at measurement point.
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 (ME60B1203F01).
4. All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

CONNECTOR INFORMATION

Standard models include a 2.5mm x 5.5mm x 9.5mm straight barrel type connector (Ault #3), center positive (6-pin Molex type - #51 – on 5V models). 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	2.5 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 (Pin 8 = (+); pin 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	2.5 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 		

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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