

SL POWER GE150 Series

150 Watts Single Output
External Medical & ITE Power Adapter



Medical



Industrial

Advanced Energy's SL Power GE150 series of desktop AC-DC external power adapter comprises five output models. All models feature medical and industrial safety approvals and accept a universal input of 85 to 264 VAC. GE150 series power adapters provide up to 150 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

150 Watts

Input Voltage

85 to 264 VAC

of Outputs

Single



SPECIAL FEATURES

- Desktop Style Package
- IP22 Rated Enclosure
- Compact Size: 6.5" x 2.8" x 1.5"
- Up to 150 W of AC-DC Power
- Meets UL/EN/IEC60601-1-2, 4th edition for EMC
- Meets EN55011/CISPR11, FCC Part 15.109
- Meets DoE Efficiency Level VI Requirements
- >5 Years E-Cap Life
- RoHS Compliant
- 3 Years Warranty

SAFETY

- IEC/EN/UL60601-1, 3rd edition
- EN/IEC/UL62368-1
- CE Mark

ELECTRICAL SPECIFICATIONS

Input	
Input range	85 to 264 VAC, 47 to 63 Hz, 1Ø
Input current	2.2 A @ 115 VAC, 1.1 A @ 230 VAC
Inrush current	60 A max., cold start @ 264 VAC input
Input fuses	F1, F2: 3.15 A, 250 VAC fuses (line & neutral lines) provided on all models
Leakage current	Input to GND Output to GND <500 µA @ 264 VAC, 60 Hz, NC <50 µA @ 264 VAC, 60 Hz, NC
Efficiency	>88%, typical
Common Mode Noise	High frequency (100kHz to 20MHz); <40mA pk-pk
No load input power	<0.150 W per DoE Efficiency Level VI and CoC Tier 2 Requirements
Output	
Output voltage	See models chart on page 5
Output power	Up to 150 Watts
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 µS 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, $\Delta i/\Delta t < 0.2 \text{ A}/\mu\text{S}$. 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
E-cap Life	>5 years life based on calculations at 115 VAC / 60 Hz & 230 VAC / 50Hz, ambient 25°C at 24 hrs per day, 365 days/year, 6 power up cycles per day (80% load on 5V, 12V model).
Protection	
Overtemperature protection	Will shut down upon an overtemperature condition, auto-recovery
Overload protection	125% to 180% of rating, hiccup mode
Overvoltage protection	130% to 150% of output voltage, hiccup mode
Short circuit protection	Hiccup mode, auto-recovery
Safety	
Safety standards	Approved to EN/IEC/UL60601-1, 3rd edition; EN/IEC/UL62368-1
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 230 VAC
Radiated emissions	EN55011/CISPR11 Class B, FCC Part 15.109, Class B, 3db margin typ., at 115 VAC and 230 VAC
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 V/m - Level 4, 0.15 MHz to 80 MHz; and 12 V/m in ISM and 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
Drop test	1.4 m from tabletop to wooden platform, 4 faces

Note:

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

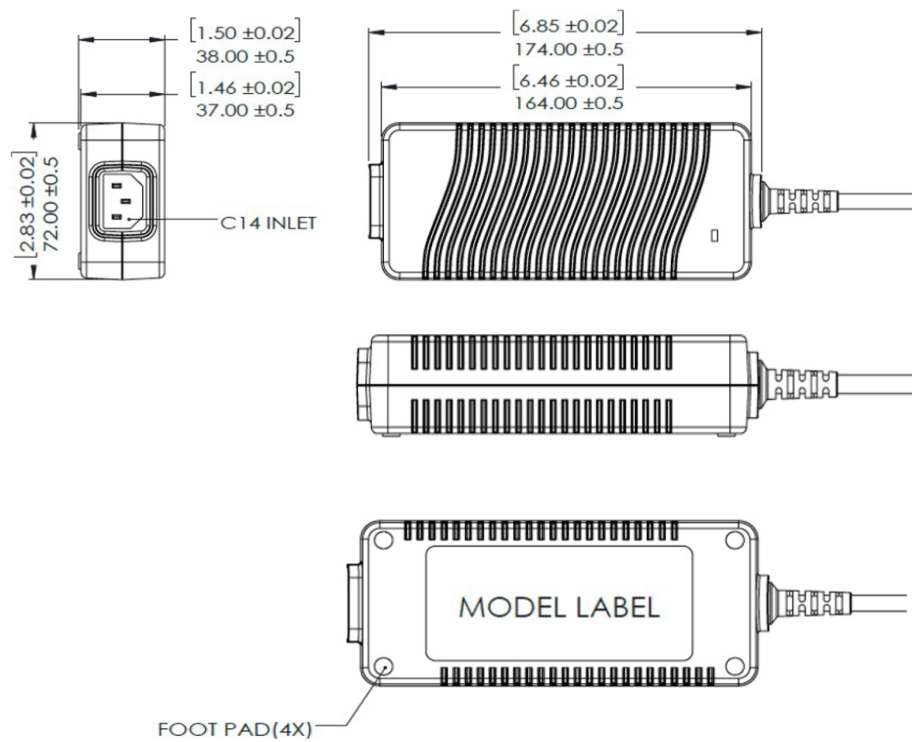
ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-20°C to +50°C. Derate above 40°C Start up at -40°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 5000 m Non-operating: -500 ft to 40,000 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/mins, Vibration time of 10 sweeps/axes, 3 axes
Shock	Operating: Half-sine, 20 gpk, 10 ms, 3 axes, 6 shocks total Non-operating: Half-sine waveform, impact acceleration of 50 G, Pulse duration of 6 ms; Number of shocks: 3 for each of the three axis
Dimensions (W x L x H)	2.83" x 6.5" x 1.46" (72mm x 165mm x 37mm)

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.

ORDERING INFORMATION

Model Number	Volts	Output Current	Output Power	Ripple & Noise ¹	Line Regulation	Load Regulation	Output Cable/Connector	Input Configuration
GE150A1251F01	12.0 V	12.1 A	145 W	120 mV pk-pk	± 1%	± 5%	#16 AWG, 1165 mm, 4 cond., 6 pin Molex Mini-fit ²	Class I Desktop, IEC60320 C14 Receptacle
GE150A1551F01	15.0 V	9.67 A	145 W	150 mV pk-pk	± 1%	± 5%		
GE150A1851F01	18.0 V	8.33 A	145 W	180 mV pk-pk	± 1%	± 5%		
GE150A2451F01	24.0 V	6.25 A	150 W	240 mV pk-pk	± 1%	± 5%	#18 AWG, 1165 mm, 4 cond., 6 pin Molex Mini-fit ²	
GE150A4851F01	48.0 V	3.13 A	150 W	480 mV pk-pk	± 1%	± 5%		
GE150A1251N01	12.0 V	12.5 A	145 W	120 mV pk-pk	± 1%	± 5%	#16 AWG, 1165 mm, 4 cond., 6 pin Molex Mini-fit ²	Class II Desktop, IEC60320 C8 Receptacle
GE150A1551N01	15.0 V	10.0 A	145 W	150 mV pk-pk	± 1%	± 5%		
GE150A1851N01	18.0 V	8.33 A	145 W	180 mV pk-pk	± 1%	± 5%		
GE150A2451N01	24.0 V	6.25 A	150 W	240 mV pk-pk	± 1%	± 5%	#18 AWG, 1165 mm, 4 cond., 6 pin Molex Mini-fit ²	
GE150A4851N01	48.0 V	3.20 A	150 W	480 mV 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.
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 (GE150B1251F01).
4. All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

CONNECTOR INFORMATION

Standard models include a Molex Minifit 39-01-2060 connector. Other standard options are listed below. The "51" in the standard model number is replaced by the applicable digits below. Consult factory for availability.

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



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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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