

# SL POWER SLE90 SERIES

90 W Single Output  
External Power Adapters



Medical



Industrial

LEAN LINE  
by Advanced Energy

Advanced Energy's SL Power SLE90 series AC-DC power adapters feature both medical and ITE safety approvals. It meets Department of Energy Level VI and European Code of Conduct V5 Tier 2 Directive efficiency standards.

## AT A GLANCE

### Total Power

90 W

### Input Voltage

90 to 264 VAC

### # of Outputs

Single

## SPECIAL FEATURES

- Medical and ITE safeties
- Suitable for medical equipment up to class BF
- 2 x MOPP input to output isolation
- $\leq 0.15$  W standby power
- Overvoltage, overcurrent and short circuit protection
- EU CoC V5 Tier 2 compliant
- DoE Efficiency level VI
- Low leakage current less than 100  $\mu$ A
- Up to 5000 m operating altitude
- AC inlet IEC60320 C8 (class II) or C14 (class I) input

## SAFETY

- CB Medical: IEC 60601-1  
ANSI/AAMI ES 60601-1  
ITE: IEC 62368-1,  
UL 62368-1
- UL Medical: CAN/CSA C22.2.  
No. 60601-1  
ITE: CAN/CSA C22.2  
No. 62368-1
- TUV Medical: EN 60601-1  
ITE: EN 62368-1
- CCC China GB4943



## ELECTRICAL SPECIFICATIONS

Input	
Input Voltage Range	90 to 264 VAC
Frequency	47 to 63 Hz
Input Current	1.5 A @ 90 VAC
Inrush Current	100 A @ 240 VAC cold start
Touch Leakage Current	≤ 100 µA @ 264 VAC
Isolation Safety Rating	Input to output: 4,000 VAC (2 x MOPP)
Dielectric Withstand Voltage	Input to output: 5,656 VDC
Insulation Resistance	Input to output: 10 Mohms, 500 VDC
Output	
Output Voltage	12.0 V, 19.0 V, 24.0 V, 48.0 V
Voltage Regulation	±5%
Start-up Delay	≤ 3 s
Overvoltage Protection	130% to 150% rated output voltage, recycle input to reset
Overload Protection	130% to 200% rated output power, auto-recovery
Short Circuit Protection	Trip and restart, hiccup mode

## RELIABILITY

MTBF	> 50,000 hours MIL-HDBK-217 at 25°C
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## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	0 to +40°C ambient
Storage Temperature	-20 to +60°C
Operating Humidity	10% to 90% RH, non-condensing
Storage Humidity	5% to 90% RH
Operating Altitude	5,000 m
Weight	425 g
Dimension	146.0 x 59.5 x 36.0 mm
Packing Quantity	15.6 kg individual box: 32/carton

## EMC/EMI COMPLIANCE

Conducted Emissions	Medical: IEC/EN 60601-1-2, CISPR 11 ITE: EN 55032, CISPR 22
Radiated Emissions	Medical: IEC/EN 60601-1-2, CISPR 11 ITE: EN 55032, CISPR 22
Immunity	Medical: IEC/EN 60601-1-2 ITE: EN 55024, CISPR 24
Electro-Static Discharge (ESD) Immunity on Power Ports	EN 61000-4-2, $\pm 15$ kV air, $\pm 8$ kV contact
Radiated RF EM Fields Susceptibility	EN 61000-4-3, 10 V/m, 3 V/m (80 MHz to 2700 MHz)
Electrical Fast Transients (EFT) / Bursts	EN 61000-4-4, $\pm 2$ kV on AC port, $\pm 1$ kV on signal ports
Surges, Line to Line (DM) and Line to Ground (CM)	EN 61000-4-5, $\pm 1$ kV line to line (diff mode)
Conducted RF Immunity	EN 61000-4-6, 3 Vrms, 6 Vrms (0.15 MHz to 80 MHz)
Power Frequency Magnetic Field Immunity	EN 61000-4-8, 30 A/m
Voltage Dip Immunity	EN 61000-4-11, 0%, 70%, 0% of UT
Harmonic Current Emissions	EN 61000-3-2, Class A
Flicker Test	EN 61000-3-3

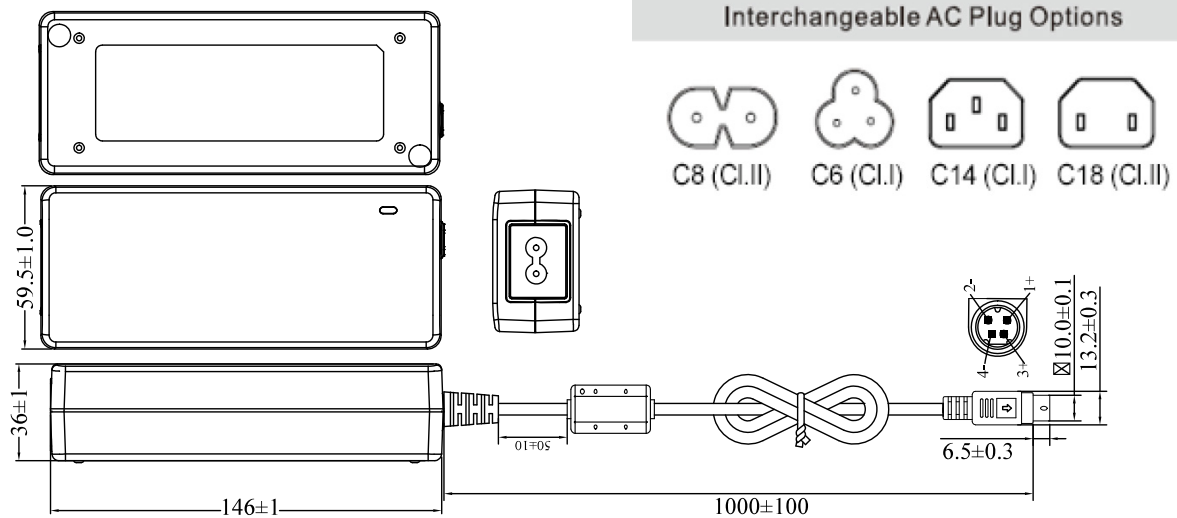
## ORDERING INFORMATION - SLE90 SERIES

Model Number <sup>3,4,5</sup>	Maximum Power	Output Voltage <sup>1</sup>	Maximum Load	Ripple & Noise <sup>2</sup>	Line Regulation	Load Regulation	Efficiency (Average)
SLE90S1203N01	84.0 W	12.0 V	7.0 A	150 mV pk-pk	$\pm 1\%$	$\pm 5\%$	88.6%
SLE90S1903N01	90.0 W	19.0 V	4.7 A	200 mV pk-pk	$\pm 1\%$	$\pm 5\%$	88.6%
SLE90S2403N01	90.0 W	24.0 V	3.75 A	200 mV pk-pk	$\pm 1\%$	$\pm 5\%$	88.6%
SLE90S4803N01	90.0 W	48.0 V	1.9 A	480 mV pk-pk	$\pm 1\%$	$\pm 5\%$	88.6%
SLE90S1203F01	84.0 W	12.0 V	7.0 A	150 mV pk-pk	$\pm 1\%$	$\pm 5\%$	88.6%
SLE90S1803F01	90.0 W	19.0 V	4.7 A	200 mV pk-pk	$\pm 1\%$	$\pm 5\%$	88.6%
SLE90S2403F01	90.0 W	24.0 V	3.75 A	200 mV pk-pk	$\pm 1\%$	$\pm 5\%$	88.6%
SLE90S4803F01	90.0 W	48.0 V	1.9 A	480 mV pk-pk	$\pm 1\%$	$\pm 5\%$	88.6%

Note:

- Other output voltages in the range of 12 V through 52 V are available, contact our sales representative for details.
- Measured at output connector with 20 MHz bandwidth and 0.1  $\mu$ F ceramic in parallel with 10  $\mu$ F electrolytic capacitors.
- "N" in the model number (SLE90S2403N01) indicates IEC60320 C8 inlet (class II). "F" indicates C14 (class I). C6, (class I) and C18 (class II) inputs are available. Contact our sales representative for details.
- "03" in the model number indicates 2.5 x 5.5 x 9.5 mm straight barrel type connector. Other output connector options are available, please contact our sales representative for details.
- Power supply is not provided with a line cord.
- Power supplies are not medical equipment (applied parts), medical product manufacturers take responsibility for further evaluation of class B/BF/CF compliance of their end product.

## MECHANICAL DRAWINGS



DC Cable: UL1185 16AWG 1000 mm with ferrite core

Connector: #03 - 2.5 x 5.5 x 9.5 mm, fork type, 18 to 52 V

#49 - 4PIN (Keycon equal), 12 to 17 V



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## ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than four 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.

**PRECISION | POWER | PERFORMANCE | TRUST**

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