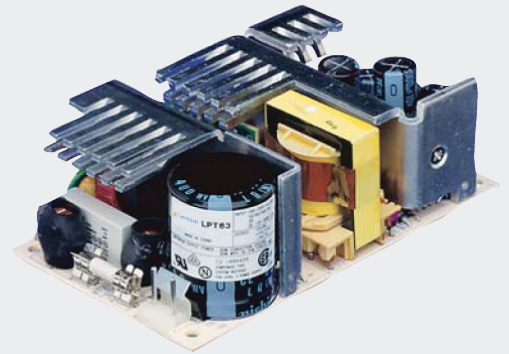


# ARTESYN LPS60-M SERIES

60 W Medical



Advanced Energy's Artesyn LPS60-M series of open-frame AC-DC power supplies comprises three single output models, offering voltages of 12 V, 15 V or 24 V. All three models accept a universal input of 85 to 264 VAC or 120 to 300 VDC and feature medical safety approvals, with a very low safety ground leakage current of less than 75 mA. These compact switch-mode power supplies feature output overvoltage and short-circuit protection on all outputs, as well as main output remote sense. LPS60-M series power supplies provide 60 W of output power with free air convection cooling and 80 W with 30 CFM of forced air. They are suitable for a wide variety of medical, laboratory and dental applications, as well as low power industrial applications.

## SPECIAL FEATURES

- Medical safety approvals
- Universal input
- 3" x 5" footprint
- Remote sense
- Built in EMI filter
- Low output ripple
- Adjustable output voltage
- Overload protection
- 110 KHz switching frequency
- RoHS compliant
- LPX60 enclosure kit available

## SAFETY

- UL+CUL UL 2601-1  
ES 60601-1
- CB IEC 62368-1  
IEC 60601-1
- CE Mark
- UKCA Mark

## AT A GLANCE

### Total Power:

60 to 80 W

### Input Voltage:

85 to 264 VAC  
120 to 300 VDC

### # of Outputs:

Single



## ELECTRICAL SPECIFICATIONS

| Input                         |   |
|-------------------------------|---|
| Input range                   | 85 to 264 VAC, 120 to 300 VDC   |
| Frequency                     | 47 to 440 Hz  |
| Inrush current                | <18 A peak @ 115 VAC, < 36 A peak @ 230 VAC, cold start @ 25 °C   |
| Input current                 | 1.5 A max. (RMS) @ 115 VAC  |
| Efficiency                    | 70% typical at full load  |
| EMI filter                    | FCC Class A conducted, CISPR22 Class A conducted, EN55022 Class A conducted, VDE0878 PT3 Class A conducted          |
| Safety ground leakage current | < 75 $\mu$ A @ 50/60 Hz, 264 VAC input  |
| Output                        |   |
| Maximum power                 | 60 W for convection, 80 W with 30 CFM forced air  |
| Adjustment range              | -5, +10% minimum  |
| Hold-up time                  | 20 ms @ 60 W load, 115 VAC nominal line   |
| Overload protection           | Short circuit protection on all outputs<br>Case overload protected @ 110 to 145% of peak rating                     |
| Overvoltage protection        | 5 V output, 5.7 - 6.7 V, other outputs 110% to 125% of nominal output   |
| Remote sense                  | Compensates for 0.5 V lead drop min.<br>Will operate without remote sense connected<br>Reverse connection protected |

## ENVIRONMENTAL SPECIFICATIONS

|                                |  |
|--------------------------------|--|
| Operating temperature          | 0° to 50 °C ambient. Derate each output as 2.5% per degree from 50 °C to 70 °C, -20 °C startup                       |
| Storage temperature            | -40 °C to +85 °C   |
| Electromagnetic susceptibility | Designed to meet IEC61000-4-2, -4-3, -4-4, -4-5, -4-6, Level 3   |
| Humidity                       | Operating, non-condensing 5% to 95% RH   |
| Vibration                      | Three orthogonal axes, sweep at 1cot/min, 5 min.dwell at four major resonances 0.75G peak 5Hz to 500 Hz, operational |
| Temperature coefficient        | $\pm$ 0.04% per °C   |
| MTBF demonstrated              | > 550,000 hours at full load and 25 °C ambient conditions  |

ORDERING INFORMATION

| Model Number | Output Voltage | Minimum Load | Maximum Load with Convection Cooling | Maximum Load with 30CFM Forced Air | Peak Load <sup>1</sup> | Regulation <sup>2</sup> | Ripple P/P(PARD) <sup>3</sup> |
|--------------|----------------|--------------|--------------------------------------|------------------------------------|------------------------|-------------------------|-------------------------------|
| LPS63-M      | 12 V           | 0A           | 5 A                                  | 6.7 A                              | 7.5 A                  | ± 2%                    | 120 mV                        |
| LPS64-M      | 15 V           | 0A           | 4 A                                  | 5.3 A                              | 6 A                    | ± 2%                    | 150 mV                        |
| LPS65-M      | 24 V           | 0A           | 2.5 A                                | 3.3 A                              | 3.8 A                  | ± 2%                    | 240 mV                        |

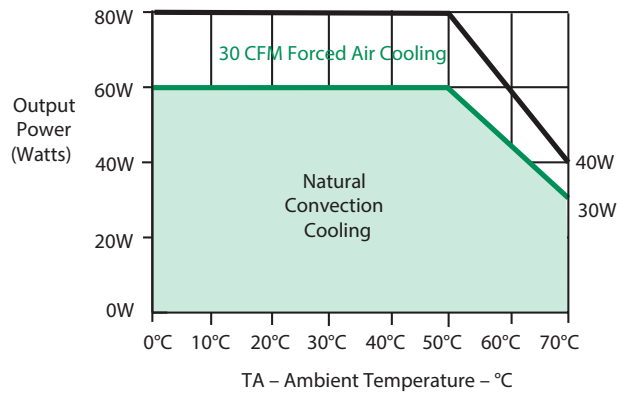
<sup>1</sup> Peak current lasting < 30 seconds with a maximum 10% duty cycle.

<sup>2</sup> At 25 °C including initial tolerance, line voltage, load currents and output voltages adjusted to factory settings.

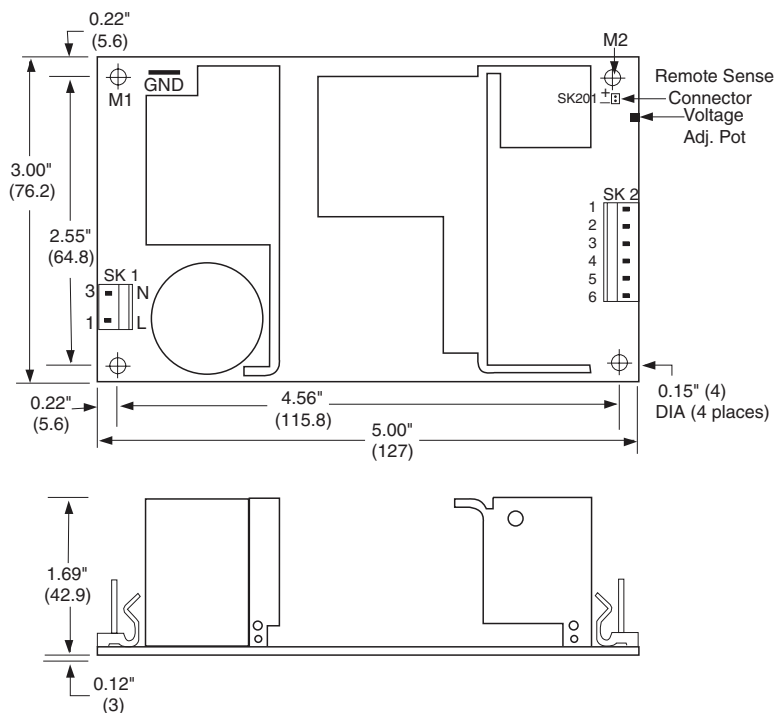
<sup>3</sup> Peak-to-peak with 20 MHz bandwidth and 10 µF (tantalum capacitor) in parallel with a 0.1 µF capacitor at rated line voltage and load ranges.

<sup>4</sup> This product is a Component Power Supply and is only for inclusion by professional installers within other equipment and must not be operated as a standalone product. EMC compliance to appropriate standards must be verified at the system level. This product is for sale to OEMs and System Integrators, including through Distribution Channels. It is not intended for sale to End Users.

Power Derating Curve



MECHANICAL DRAWINGS



**PIN ASSIGNMENTS**

| Connector | LPS62-M | LPS63-M | LPS64-M |
|-----------|---------|---------|---------|
| SK1-1     | Line    | Line    | Line    |
| SK1-3     | Neutral | Neutral | Neutral |
| SK2-1     | +12 V   | +15 V   | +24 V   |
| SK2-2     | +12 V   | +15 V   | +24 V   |
| SK2-3     | +12 V   | +15 V   | +24 V   |
| SK2-4     | Common  | Common  | Common  |
| SK2-5     | Common  | Common  | Common  |
| SK2-6     | Common  | Common  | Common  |
| SK201-1   | +Sense  | +Sense  | +Sense  |
| SK201-2   | -Sense  | -Sense  | -Sense  |

**MATING CONNECTORS**

|  |  |
|--|--|
| AC Input   | Molex 09-50-8031 (USA) Not required for (-T) option<br>09-91-0300 (UK)<br>PINS: 08-58-0111 |
| DC Outputs   | Molex 09-50-8061 (USA) Not required for (-T) option<br>09-91-0600 (UK)<br>PINS: 08-52-0113 |
| Remote Sense   | Molex 22-01-2025<br>PINS: 08-52-0113   |
| Astec Connector Kit #70-841-006, includes all of the above |  |

- 1 Specifications subject to change without notice.
- 2 All dimensions in inches (mm), tolerance is ±0.02" (±0.5 mm).
- 3 Mounting holes M1 and M2 should be grounded for EMI purposes.
- 4 Mounting hole M1 is safety ground connection.
- 5 Specifications are for convection rating at factory settings at 115 VAC input, 25 °C unless otherwise stated.
- 6 Warranty: 2 years.
- 7 Weight: 0.75 lbs/0.34 kg.



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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.

PRECISION | POWER | PERFORMANCE

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