

ARTESYN LPS170-M SERIES

Medical
175 Watts



Advanced Energy's Artesyn LPS170-M series medically-approved AC-DC power supplies are available with a nominal main output of 5 V, 12 V, 15 V or 24 V, adjustable over a wide 2:1 ratio. Auxiliary 12 V and 5 V standby outputs are also provided. Main output remote sense and single-wire current sharing are supported as standard. LPS170 power supplies provide 110 watts of output power with free air convection cooling, which can be boosted to 175 watts with 30 CFM of forced air. All models have an 8.5 x 4.25 x 1.5 inch form factor and are ideal for low-profile space-constrained applications.

DATA SHEET

Total Power:

100 - 175 Watts

Input Voltage:

85 - 264 Vac
120 - 300 Vdc

of Outputs:

Single

SPECIAL FEATURES

- Medical safety approvals
- Active power factor correction
- IEC EN61000-3-2 compliance
- Wide range adjustable output;
Remote sense on main output
- Single wire current sharing
- Power fail and remote inhibit
- Built-in EMI filter
- Low output ripple
- Overvoltage protection
- Overload protection
- Thermal overload protection
- DC power good
- 5 V standby output
- 12 V Aux output
- Optional cover (-C suffix)
- RoHS compliant

SAFETY

- TUV 60601-1
- UL UL2601
- CSA CSA 22.2 No. 601.1
- CB Certificate and report
- CE Mark (LVD)

ELECTRICAL SPECIFICATIONS

| Input | |
|-------------------------------|--|
| Input range | 85 - 264 Vac; 120 - 300 Vdc |
| Frequency | 47 - 67 Hz |
| Inrush current | 38 A max, cold start @ 25 °C |
| Efficiency | 75% typical at full load |
| EMI filter | FCC Class B conducted CISPR 22 Class B conducted EN55022 Class B conducted VDE 0878 PT3 Class B conducted |
| Power Factor | 0.99 typical |
| Safety ground leakage current | <250 μ A @ 50/60 Hz, 264 Vac inputs |
| Output | |
| Maximum power | 110 W convection (75 W with cover) 175 W with 30 CFM forced air (130 W with cover) |
| Adjustment range | 2:1 wide ratio minimum |
| Standby outputs | 5 V @ 2 A regulated \pm 5% |
| Hold-up time | 20 ms @175 W load at nominal line |
| Overload protection | Short circuit protection on all outputs. Case overload protected @ 110-145% above peak rating |
| Overvoltage protection | 10% to 40% above nominal output |
| Aux output | 12 V @ 1 A -5 %, +10% |

LOGIC CONTROL

| | |
|----------------|--|
| Power failure | TTL logic signal goes high 100 - 500 msec after V1 output; It goes low at least 4 msec before loss of regulation |
| Remote inhibit | Requires contact closure to inhibit outputs |
| Remote sense | Compensates for 0.5 V lead drop min. Will operate without remote sense connected. Reverse connection protected. |
| DC - OK | TTL logic signal goes high after main output is in regulation. It goes low when there is a loss of regulation |

ENVIRONMENTAL SPECIFICATIONS

| | |
|--------------------------------|---|
| Operating temperature | 0° to 50 °C ambient; derate each output at 2.5% per degree from 50° to 70 °C |
| Low temperature start | -20 °C |
| Temperature coefficient | ±0.4% per °C |
| Storage temperature | -40° to 85 °C |
| Electromagnetic susceptibility | Designed to meet IEC EN61000-4, -2, -3, -4, -5, -6, -8, -11 Level 3 |
| Humidity | Operating; non-condensing 5% to 95% |
| Vibration | Three orthogonal axes, sweep at 1 oct/min, 5 min. dwell at four major resonances 0.75G peak 5Hz to 500Hz, operational |
| 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 ¹ | Regulation ² | Ripple P/P(PARD) ³ |
|--------------|------------------|--------------|--------------------------------------|------------------------------------|------------------------|-------------------------|-------------------------------|
| LPS172-M | 5 V (2.5 - 6 V) | 0 A | 22 A | 35 A | 38 A | ±2% | 50 mV |
| LPS173-M | 12 V (6 - 12 V) | 0 A | 9.1 A | 15 A | 16.5 A | ±2% | 120 mV |
| LPS174-M | 15 V (12 - 24 V) | 0 A | 7.3 A | 12 A | 13.2 A | ±2% | <1% |
| LPS175-M | 24 V (24 - 54 V) | 0 A | 4.5 A | 7.5 A | 8.2 A | ±2% | <1% |

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

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

³ Peak-to-peak with 20 MHz bandwidth and 10 µF in parallel with a 0.1 µF capacitor at rated line voltage and load ranges.

⁴ Remote inhibit resets OVP latch.

⁵ 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.

Note: -C suffix added to the model number indicates cover option.

Notes:

¹ Specifications subject to change without notice.

² All dimensions in inches (mm), tolerance is ±0.02".

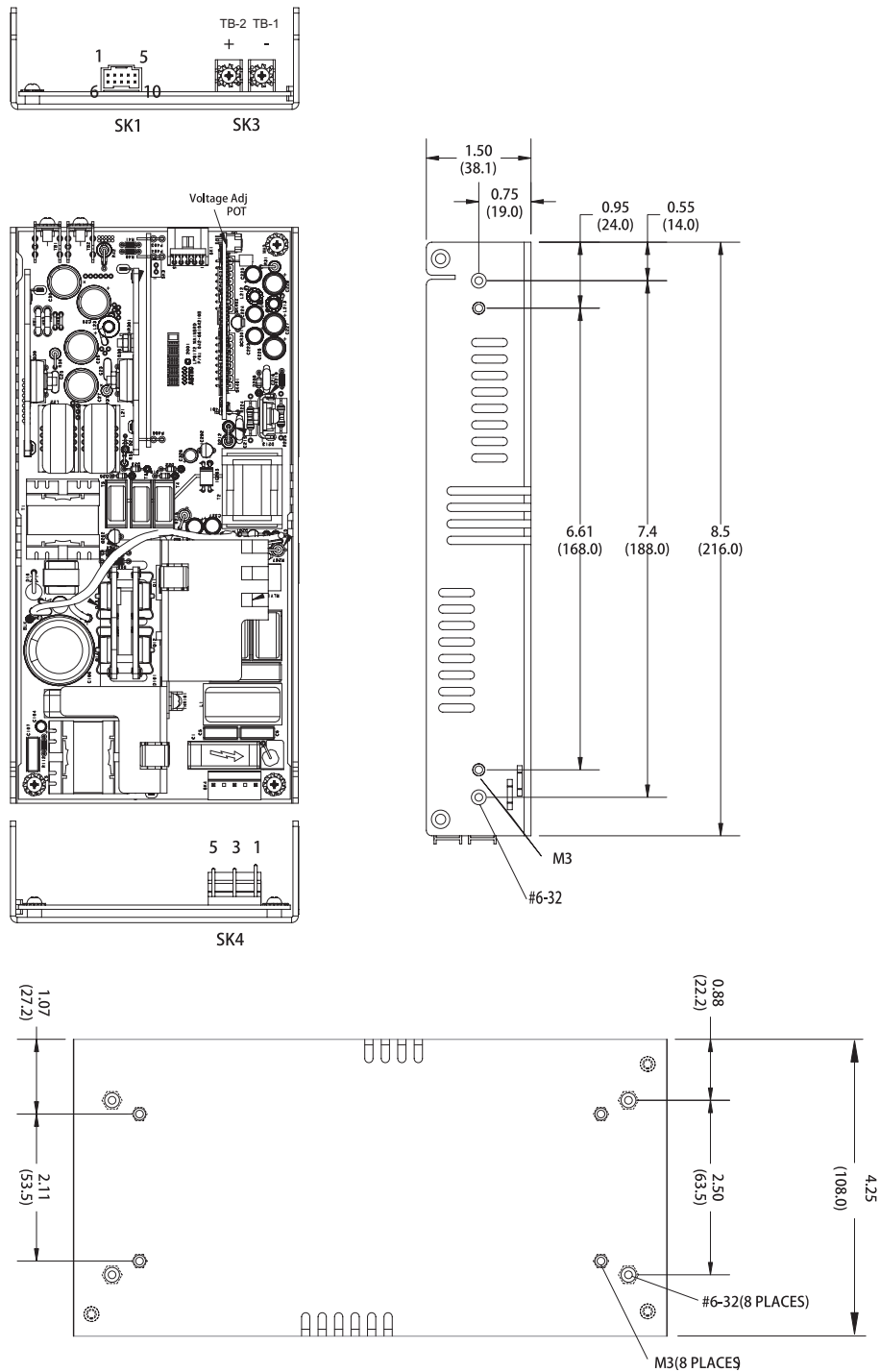
³ Specifications are for convection rating at factory settings unless otherwise stated.

⁴ Mounting screw maximum insertion depth is 0.12".

⁵ Warranty: 2 years

⁶ Weight: 1.8 lb/0.85 kg

MECHANICAL DRAWINGS



PIN ASSIGNMENTS

| Connector | LPS17x | |
|-----------|--------|----------------|
| SK1 | PIN 1 | +12 V |
| | PIN 2 | 5 V Standby |
| | PIN 3 | Common |
| | PIN 4 | V1 SWP |
| | PIN 5 | Common |
| | PIN 6 | +V1 sense |
| | PIN 7 | Sense common |
| | PIN 8 | Remote inhibit |
| | PIN 9 | DC power good |
| | PIN 10 | POK |
| SK3 | TB-1 | COMMON |
| | TB-2 | Main output |
| SK4 | PIN 1 | GROUND |
| | PIN 3 | LINE |
| | Pin 5 | NEUTRAL |

MATING CONNECTORS

| | |
|--|--|
| AC Input (SK4) | Molex 09-50-8051 (USA) Molex 09-91-0500 (UK) PINS: 08-58-0111 |
| DC Outputs (SK3) | Molex 19141-0058 |
| Control Signals (SK1) | Molex 90142-0010 (USA) PINS: 90119-2110 or Amp: 87977-3 PINS: 87309-8 |
| Artesyn Embedded Power Connector Kit #70-841-016 | |



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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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